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96/SMA-024 (ASK)
96/PRU-002

November 5, 1997

The Honorable Gary Gill, Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
State of Hawaii
Honolulu, Hawaii 96813

Dear Mr. Gill:

Acceptance Notice For
Proposed Queen's Beach Golf Course
Tax Map Keys: 3-9-11: 03, por. 02
Final Environmental Impact Statement (EIS)

We are notifying you of our acceptance of the Final EIS for the proposed Queen's Beach Golf Course, as satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes.

Pursuant to Section 11-200-23(c), Chapter 200, Title 11 ("Environmental Impact Statement Rules") of the Administrative Rules, this Acceptance Notice should be published in The Environmental Notice.

We have attached our Acceptance Report of the Final EIS for the Queen's Beach Golf Course and the "Document For Publication in the Environmental Notice".

Should you have any questions, please contact Ardis Shaw-Kim of our staff at 527-5349.

Very truly yours,

JAN NAOE SULLIVAN
Director of Land Utilization

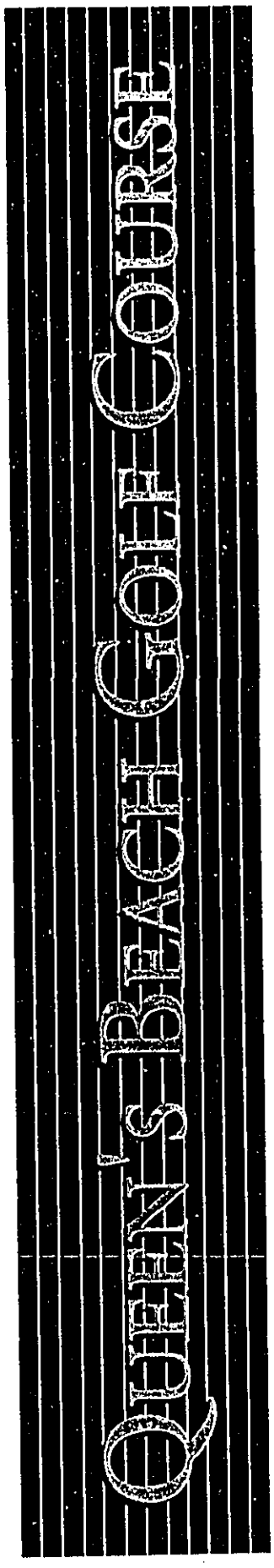
JNS:am
attach.

cc: Helber Hastert & Fee, Planners
Kaiser Aluminum and Chemical Corporation
Corporation Counsel

g:ppd\accpntc.ask

1997- Oahu - FEIS -
Queen's Beach

FILE COPY

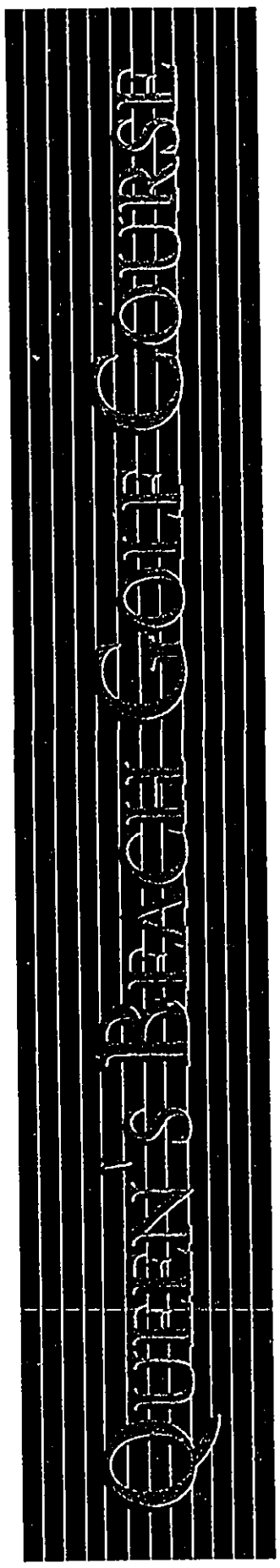


Final Environmental Impact Statement

Queen's Beach, O`ahu, Hawai`i

Volume 1

September 1997



Final
Environmental Impact Statement
Queen's Beach, O`ahu, Hawai`i

September 1997

Prepared for:	Kaiser Aluminum & Chemical Corporation
Accepting Authority:	Department of Land Utilization, City and County of Honolulu
Prepared by:	Helber Hastert & Fee, Planners

Scott Ezer, Senior Associate

9/30/97
Date

PREFACE

This Environmental Impact Statement (EIS) has been prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH), (Shoreline Management). The proposed project is an applicant action by Kaiser Aluminum and Chemical Corporation (KACC).

Subsequent to the completion of the Draft EIS (DEIS) for this project in September 1997, the Honolulu City Council adopted Resolution 97-09 which ended the City's participation in a proposed settlement of litigation affecting the property which is the subject of this EIS, and 11 other properties in the Hawaii Kai area. Consequently, there is no longer any effort being made to settle the litigation pending between the City and County of Honolulu and the three private landowners involved in the settlement (KACC, Kamehameha Schools Bernice Pauahi Bishop Estate, and Maunalua Associates, Inc.), nor is there any further relationship between this property and the 11 other properties involved in the settlement effort.

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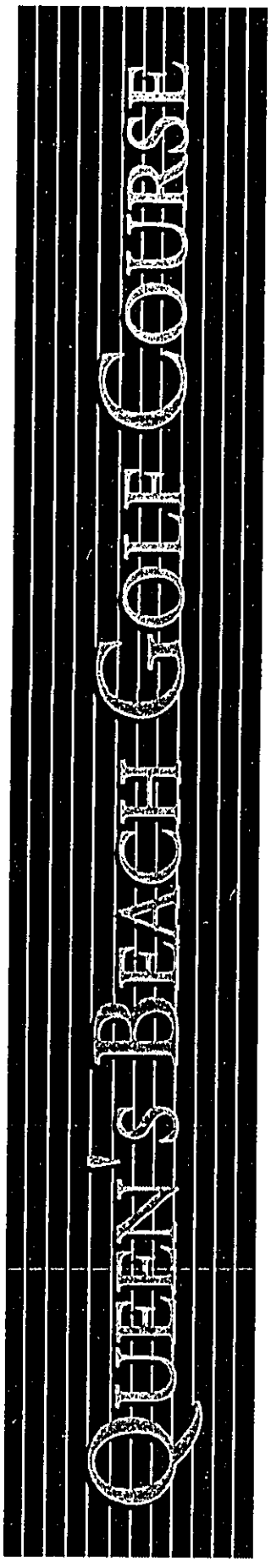


Chapter

1

Introduction and Summary

CHAPTER 1
INTRODUCTION AND SUMMARY

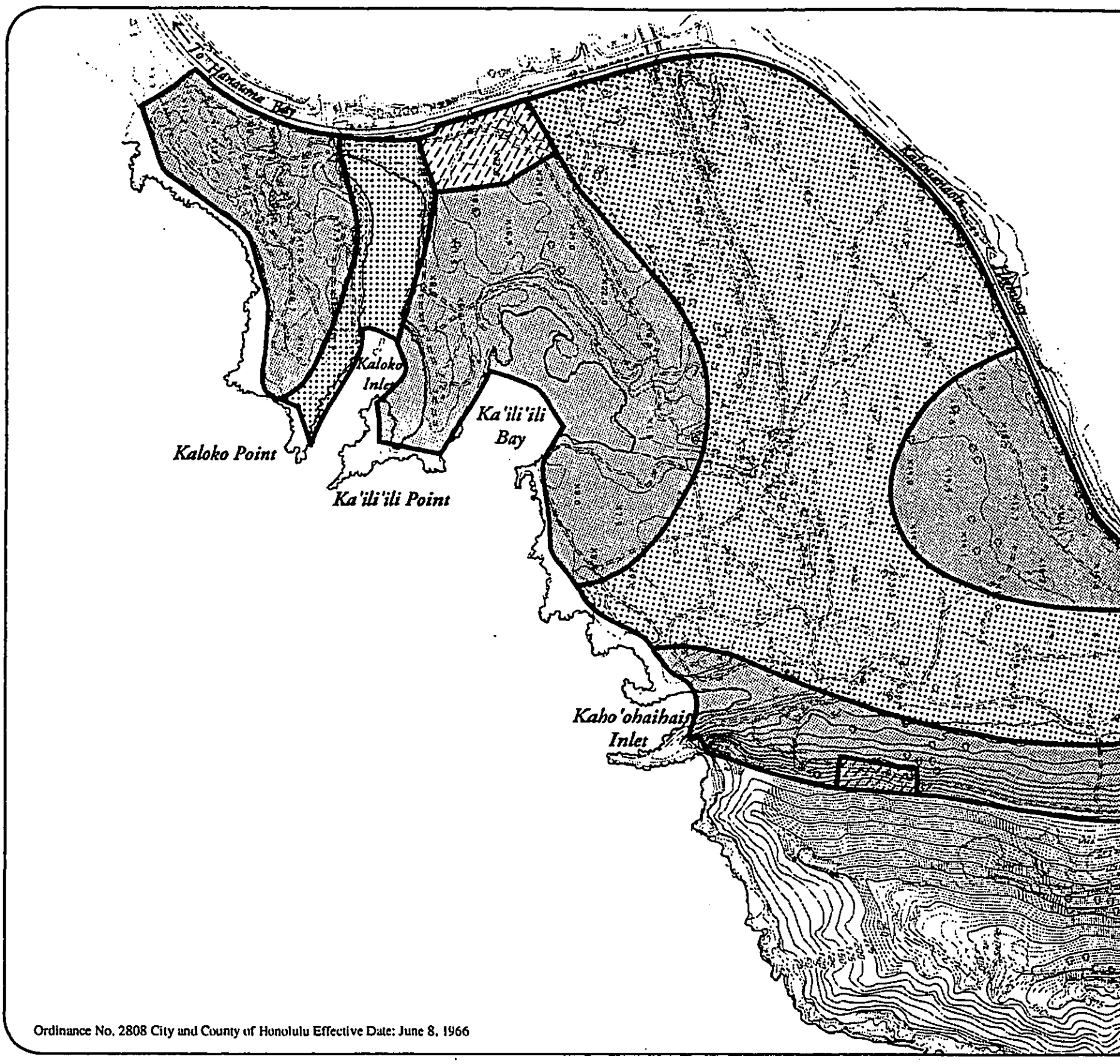
1.1 Background

Overview. This Section is intended to provide the reader with a background of the recent land use history for the area that includes the proposed site of a golf course at Queen's Beach, O`ahu (the project site). This background includes a description of how the community of Hawaii Kai came into existence, a chronological description of the land use designations for the project site, and a brief summary of the legal history involving the City and County of Honolulu and the Kamehameha Schools Bernice Pauahi Bishop Estate (the landowner) and Kaiser Aluminum and Chemical Corporation (the lessee and the applicant). This legal history is particularly important in understanding why the applicant is now petitioning the City and County to grant approval of a request for a Special Management Area Use Permit (SMP) for a golf course.

Initial Master Plan. In 1959, the Kaiser Hawaii Kai Development Company (KHKD), a wholly-owned subsidiary of Kaiser Industries Corporation, was formed by Henry Kaiser for the purpose of developing a portion of East Honolulu, which has come to be known as "Hawaii Kai." At the time, approximately 6,000 acres of land comprised the area which was the subject of a development agreement between KHKD and the Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE), the owner of the land. This agreement, executed in 1961, granted exclusive development rights for the 6,000 acres to KHKD.

To provide for the orderly development of Hawaii Kai, the Hawaii Kai Master Plan (Master Plan) was prepared by John Carl Warnecke and Associates after years of study and analysis during the early 1960's. The original master plan was envisioned to be a resort community for 60,000 people. A phasing plan for Hawaii Kai was developed to ensure that balanced incremental growth would occur concurrent with infrastructure development and availability of necessary public facilities.

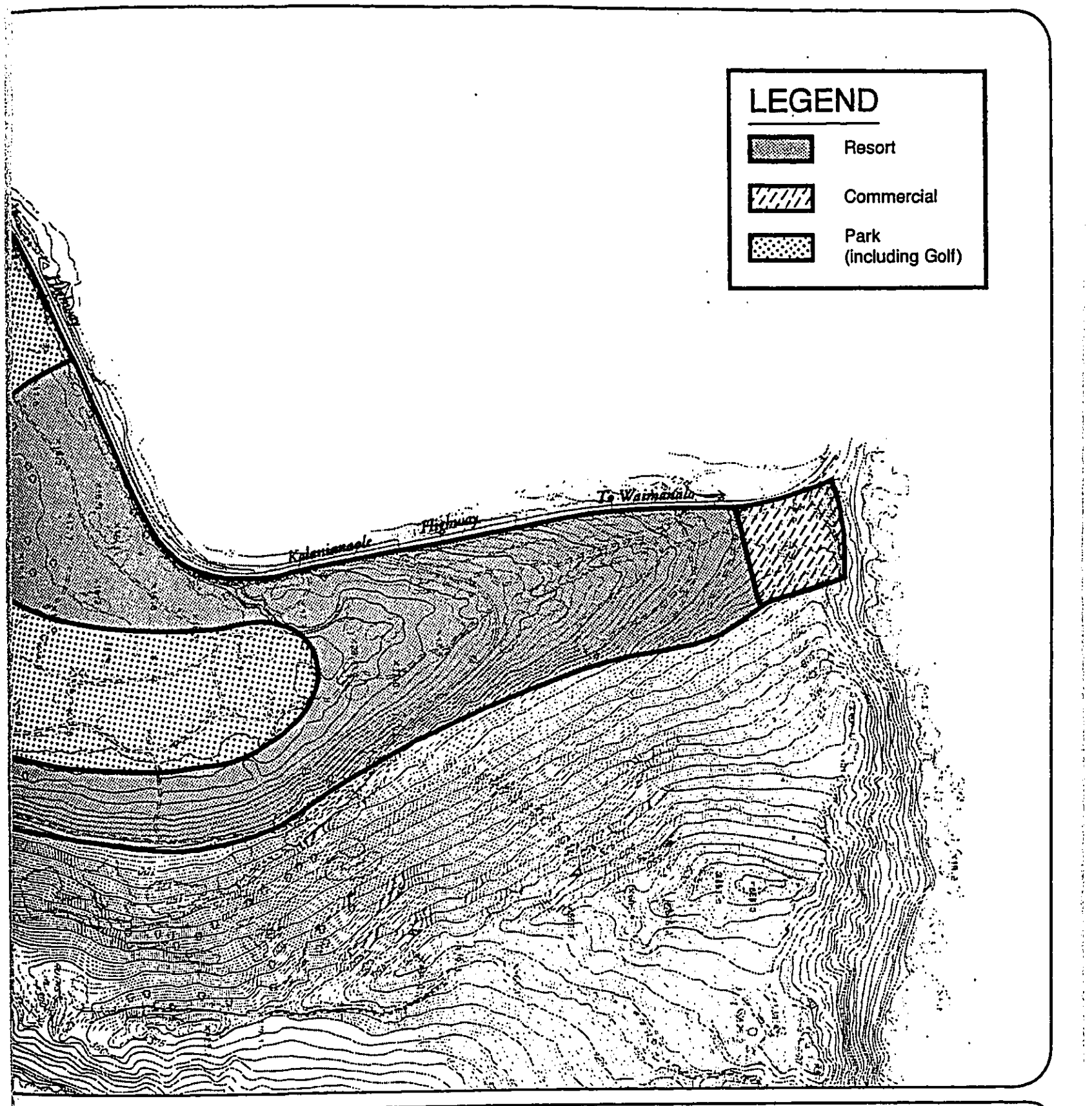
Land Use Plans/Policies. In 1966, the Master Plan was officially adopted as the "Detailed Land Use Map" (DLUM) by the Honolulu City Council (City Ordinance Number 2808). This ordinance served as the primary planning and land use enforcement tool used by the City and County of Honolulu and KHKD to implement the Master Plan until being replaced by the City's present "Development Plan" program. Land Use designations on the DLUM for the area that includes the proposed site for the Queen's Beach Golf Course included resort, commercial, and park (Figure 1).



Ordinance No. 2808 City and County of Honolulu Effective Date: June 8, 1966

City and County of Honolulu Detailed Land Use Map (1966-19

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation



p (1966-1983)

Figure 1

Feet

0 250 500 1000

Prepared By Helber Hastert and Fee, Planners

From 1964 through 1982, official land use plans of the City and County of Honolulu contained resort, commercial and park (which included golf courses as a permitted use) designations for the Queen's Beach site. The year 1982 marked the end of a decade of controversy about the resort that was proposed for the Queen's Beach area. At this time, the Honolulu City Council adopted a General Plan which deleted all policies allowing resort development at Queen's Beach. When the 1966 Detailed Land Use Map for Hawaii Kai, which had also designated resort development in the area, was replaced in May 1983 with the East Honolulu Development Plan Land Use Map, the project site was designated "park" and "preservation." The area's R-6 Residential zoning, first enacted in 1969, was repealed and replaced with P-1 Preservation zoning in March 1984.

Legal History. Subsequently, Kaiser Development Company and KSBE filed lawsuits in Federal court asking that either the R-6 zoning be restored or compensation paid for lost property value and investments. The trustees of KSBE argued that the rezoning barred economically viable use of the land and was an attempt to freeze development indefinitely and drive down the land's value. However, in 1987 this suit was dismissed by the U.S. District Court Judge, and the ruling was upheld again in September 1990 by the 9th U.S. Circuit Court of Appeals. In arguments before the court, the City and County of Honolulu successfully pleaded that the ***land was not without economically viable use, because under existing zoning regulations, a golf course could still be built***. Most recently, in March of 1991, the U.S. Supreme Court refused to hear an appeal of the lawsuit by KSBE.

This EIS is intended to support the application for a Special Management Area Use Permit (SMP) that would allow the construction of a golf course (and accessory uses as described herein) at Queen's Beach, O`ahu, Hawai`i. The EIS is the first step toward reaching clarification on the issue of whether an economically viable use can be developed at Queen's Beach within the limitations of existing zoning and other land use requirements.

1.2 Development Summary

Project Name:	Queen's Beach Golf Course
Applicant:	Kaiser Aluminum & Chemical Corporation 5847 San Felipe, Suite 2600 Houston, Texas 77057 Contact: Mr. Robert Burke Vice President of Development Kaiser Center, Inc. 300 Lakeside Drive, Suite 130 Oakland, CA 94612-3534 Phone: (510) 271-6155
EIS Preparer:	Helber Hastert & Fee, Planners 733 Bishop Street, Suite 2590 Honolulu, Hawaii 96813 Contact: Mr. Scott Ezer (808) 545-2055
Accepting Authority:	Department of Land Utilization City and County of Honolulu
Location:	Queen's Beach/Kealakipapa Valley Makapu`u, O`ahu, Hawai`i
Tax Map Key:	3-09-11:3, portion 2
Area:	Approximately 166 acres
Landowner:	Kamehameha Schools Bernice Pauahi Bishop Estate
Lessee:	Kaiser Aluminum & Chemical Corporation
Existing Uses:	Undeveloped land, utility transmission line
Proposed Action:	Development of 18-hole championship golf course and appropriate accessory uses
Applicable Permit:	Special Management Area Use Permit

1.3 Summary of Probable Impacts and Mitigation Measures

Physical Environment

Hydrogeology and Nearshore Marine Resources. In recognition of the relationship between shoreline development and the potential for impacts to groundwater and the nearshore marine environment, three studies were prepared, each taking into consideration the findings of the other two:

- *Potential Impact on Groundwater of the Proposed Golf Course at Queen's Beach, Oahu, Hawaii* (Tom Nance Water Resource Engineering, May 1995).

- *Baseline Survey of Water Quality and Marine Community Structure in the Vicinity of the Proposed Queen's Beach Golf Course, Oahu, Hawaii* (Marine Research Consultants, April 1996).

- *Geochemistry, Soil Chemistry and Potential Chemical Impacts from Construction and Maintenance of a Proposed Golf Course: Queen's Beach, Oahu, Hawaii* (William J. Walker, Ph.D., April 1995).

During investigations for this EIS, two experiments were conducted using soil native to the project site to assess the behavior of pesticides and fertilizers and their impact on groundwater , runoff, and the marine environment. On the basis of these analyses, it was determined that fertilizers would only marginally affect nutrient levels in groundwater and the nearshore marine environment. Analysis also indicates that under a regimen of normal pesticide application (0.16 kilograms/hectare per month) only low to moderate risks should be expected for use on the Queen's Beach Golf Course.

The potential for impacts to marine resources and groundwater quality as a result of the development of the golf course appears minimal, provided that pesticides and fertilizers are used reasonably and in accordance with accepted levels of treatment. However, due to the proximity of sensitive receptors, a two-part mitigation program is recommended as part of the construction and operation of the golf course, The first part involves the prevention of pollutants reaching ecological receptors. The second part involves monitoring to ensure that no pollutants are reaching these receptors. A key element of the prevention program is the implementation of a program to collect, treat and recycle leachate that percolates through the root zone of the turfgrass.

Flora. A plant which is listed as an endangered species, the Hawaiian water fern (or `ihi`ihilauakea) (*Marsilea villosa*) is found in three small areas on the project

site. In addition, another native species, the Hawaiian cotton plant, or ma`o (*Gossypium tomentosum*), is located in large numbers in select areas of the project site. The ma`o serves as host to a Hawaiian Beetle (*Rhyncogonus simplex*) (see below), that is a species of concern to the U.S. Fish and Wildlife Service. In addition, native vegetation along the shoreline and between the Wawamalu Ranch Wall and Kaloko Inlet is under threat as a result of unauthorized 4-wheel drive activity on the project site. In order to protect these species and habitats:

- the three areas which contain the *Marsilea* fern should be managed as a sanctuary or preserve, including the development of a management plan to be reviewed by the U.S Fish and Wildlife Service as well as the State's Division of Forestry and Wildlife;

- a large portion of the area with a high density of ma`o should be left intact;

- native plants will be incorporated into the landscape design for the golf course.

Wetlands. A wetlands study prepared for this EIS determined that no wetlands were present on the project site. The results of this study have been reviewed and approved by the U.S. Army Corps of Engineers. However, all three areas which were the subject of the wetlands study host a small colony of *Marsilea Villosa*, the endangered Hawaiian water fern, and have been recommended for preservation and management.

Insects. In previous documents prepared for the Kealakipapa Valley/Queen's Beach area, the presence of a rare insect, the Hawaiian beetle (*Rhycongonus simplex*) has been reported. The sighting of this insect goes back to 1935. A survey conducted over a two-year period for this EIS failed to locate a single specimen. However, eight (8) notches left on a leaf of one plant suggest that the insect may still be at the site, although in rather low numbers. The *Rhyncogonus simplex* is not listed as endangered or threatened, although it is thought that perhaps only one plant, the ma`o, may serve as its host. In this regard, large numbers of the ma`o plant will be incorporated into the design of the golf course. Other mitigative measures recommended are:

- grazing mammals should be excluded and off-road vehicles restricted from the habitat.

- during any earth moving work in the area, a buffer zone should be developed to ensure no disturbance occurs to the root zone of ma`o plants designated

for preservation. The buffer zone should be maintained if any fertilizer or pesticide applications are planned adjacent to the plants.

Terrestrial Fauna. No endangered or threatened terrestrial fauna have been found on the project site. However, the inland areas of the three small embayments on the makai portion of the project site do provide habitat where native birds feed and rest. To protect this habitat, it is recommended that:

- Water quality monitoring should be conducted before, during and after construction of the golf course in the estuaries fronting the property. This monitoring program should track chemical contaminants as well as suspended sediments that could lead to siltation.

- A buffer should be maintained in the form of dense tall trees and brush between the golf course and estuaries to ensure minimization of disturbance to wildlife. Posting of signs to warn people from wading through the intertidal areas near the mangroves where native birds feed and rest should also be implemented.

Scenic Resources. Changes to the texture and color of the project site, as embodied by the replacement of existing vegetation, will change its basic appearance. Applying the three elements of "visual quality," even with changes to the vegetation on the project site, the visual experience will retain high features of unity and vividness. As documented by using computer simulation techniques, the golf course clubhouse will be visible only for small portions of the driving experience between Makapu`u Lookout and the Wawamalu Ranch Wall, driving in either direction, and will not obstruct views toward the ocean from Kalanianaole Highway.

It is arguable that the change in texture and color could marginally impact the quality of the intactness of the visual experience in the vicinity of the project site. However, taken in a regional context, these impacts are expected to be minor. Further, views of Makapu`u Head will remain unobstructed by any building element proposed as part of the proposed golf course.

The key characteristics of the proposed project that have the opportunity to impact the visual experience enjoyed as one drives between the Wawamalu Ranch Wall and Makapu`u Lookout are the limited visibility of the clubhouse and the change in appearance and color of the vegetation that would be introduced to the project site. As such, the coloring characteristics of these elements need to be considered before final construction. The following measures are recommended to mitigate the appearance of the project:

- The selection of building color, particularly roof treatment should be complementary to the color scheme of dominant views
- Landscape treatment of the north-facing building walls of the clubhouse should be designed to "soften the appearance of the building form during the drive south of the Makapu`u Lookout
- Species of planting materials should be selected to the greatest extent practicable, to complement the existing appearance of the project site, with specific emphasis on native species that would otherwise be found within this region.
- Existing vegetation should be retained wherever possible, including clusters of large kiawe trees on the mauka side of the clubhouse.

Historic, Cultural, and Archaeological Resources. Several archaeological studies, including an archaeological inventory survey prepared for this EIS, have been prepared that have included the project site. Only one historic site (Site 03), known as "The King's Highway," has been identified within the project boundaries. This site is a remnant of an old trail/road that connected Waimanalo with Maunalua. The archaeological inventory survey determined that there is no remnant physical structure of this site within the project site, and is no longer considered significant. The findings of the inventory survey have been accepted by the State Historic Preservation Officer. It should be pointed out that portions of this site extend beyond the boundaries of the project site, and are visible as a paved and terraced series of four switchbacks that descend from the Makapu`u Lookout toward Makapu`u Beach Park. Because the site integrity has been preserved in the area beyond the project site, it is at this location that the historic site should be preserved as a significant historic resource.

Flood Hazards. Some areas of the makai portion of the project site are located within a flood hazard area that is susceptible to inundation by tsunami. However, no structures are being proposed in these areas. The golf course clubhouse is located approximately 1,500 feet away from these areas, although exact flood hazards in the area have not been determined. Prior to the issuance of any building permits, engineering analysis will be conducted to determine the specific flood hazard in the vicinity of the clubhouse. Clubhouse design will be consistent with all applicable flood hazard and zoning requirements.

Air Quality. There will be short-term air quality impacts that result from the activities associated with the construction of the golf course. These impacts will result primarily from fugitive dust and vehicle emissions. Because of the presence of the tradewinds, the open character of the area and the lack of adjacent development, these impacts are expected to be minimal.

Although modeling of pesticide wind drift under worst case conditions suggests low down-wind concentrations for short duration, the following mitigation measures are suggested to further reduce the potential for impacts associated with pesticide wind-drift.

- full compliance with label use instructions on all pesticides
- use of integrated pest control measures
- minimize pesticide use
- maximize use of non-chemical pest control measures
- use of low-toxicity/nonpersistent chemicals

Noise. Short-term construction period impacts are expected as a result of the activities associated with the construction of the golf course. However, because there are no existing residential areas within the area, noise impacts from construction activities are expected to be minimal. Potential noise sources attributable to the operation of the golf course include the public address system used by the clubhouse to control starts, the mechanical equipment at and near the clubhouse, and mobile equipment associated with the golf course maintenance activities. The nearest noise sensitive area is the proposed residential housing at *Queen's Rise*, west of the project site. Due to the greater than 500-foot distance between the proposed housing and the clubhouse, the noise generated from the clubhouse should not be objectionable. Noise from ground maintenance equipment, which would be used only during the daytime, would also be attenuated by the long distances and would usually be masked by traffic noise from the intervening Kalanianaole Highway.

Impacts to the clubhouse are also expected to be minimal because the clubhouse, which is set back from Kalanianaole Highway approximately 400 feet, will be exposed to L_{dn} less than 65 dBA. In accordance with the *American National Standard Sound Level Descriptors for Determination of Compatible Land Use*, the clubhouse is compatible with the existing outdoor noise environment and requires no special attenuation measures.

Socio-Economic Environment

Population. Development of the proposed golf course is expected to add four (4) residents to the State of Hawaii in the form of in-migrants who would move to Hawaii because of added employment opportunities (see below). This impact is negligible.

Employment. The project will generate both short-term construction jobs and permanent operational jobs. Analysis suggests that a total of 491 direct, indirect, and induced full-time-equivalent (FTE) positions would be created during the construction period of the golf course. Direct operational employment at the golf course and clubhouse has been estimated at about 30 and 15 FTE positions per year, respectively. Additionally, 26 and 8 FTE indirect and induced positions would be created elsewhere in the state as a result of the operation of the golf course.

Fiscal Impacts. Personal incomes of the work force associated with the construction of the project (direct, induced and indirect) would peak during the construction years of the project (assumed to be between 1998 and 2000) at about $6 million. After build-out in 2000, on-site direct operational employment would support some $800,000 in annual payroll. Indirect and induced jobs would support another $1 million. The project will also generate revenues for the City and County of Honolulu, primarily from Real Property taxes on developed land and buildings. By project build-out, property tax revenues would climb to about $187,000 annually. The cumulative increases in revenues would reach $2.6 million by 2013. Revenues will accrue to the State of Hawaii from project construction (excise taxes, corporate income taxes, personal income tax). State revenues associated with construction are projected to reach about $4.8 million over the entire construction period. Thereafter, the golf course will continue to generate excise taxes and personal income taxes totaling about $3 million dollars to 2013.

Public Facilities and Services

Transportation. Peak periods of traffic flow on Kalanianaole Highway in the vicinity of the proposed golf course occur during "off-hours." That is, rather than traditional AM and PM patterns of traffic associated with daily weekday commutes to and from downtown Honolulu, peak traffic occurs during the Sunday PM period when many families from around the island are travelling for recreational reasons. Level-of-service (LOS) on Kalanianaole Highway during Sunday PM peak periods fronting the project site would be rated E with or without the construction of the golf course. This is an acceptable level-of-service, as speed would be dictated by long platoons and chains of vehicles. These traffic situations ordinarily do not warrant the placement of a traffic signal, because the lowest level of service occurs only during one peak period during the week.

Stacking of cars will occur for vehicles making left-turn movements into and out of the proposed golf course access drive. To minimize delays for vehicles on the

highway, and to create safer driving conditions, a left-turn storage lane should be provided on Kalanianaole Highway for westbound vehicles turning into the new access roadway.

Water Supply. Both potable and non-potable water sources will be needed to support the golf course. Approximately 35,000 gallons per day of potable water will be needed to serve the clubhouse and other accessory facilities. Allotments for this domestic water will be taken from existing allotments already granted to the landowner, Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE).

Approximately 700,000 gallons per day of reclaimed water from the East Honolulu Wastewater Treatment Plant will be needed to irrigate the golf course. Although the salinity of this effluent is considered high, there are turfgrasses that will tolerate its use (Zoysiagrass in particular) for the fairways and tee box areas. Approximately 15,000 to 30,000 gallons of the reclaimed water will be desalinated for use on the greens, which will be planted with Bermudagrass which cannot tolerate higher salinities.

Existing potable transmission lines are capable of handling the added potable load. Reclaimed water will be obtained from the East Honolulu Wastewater Treatment Plant, which currently discharges an average of 3.7 million gallons per day of treated effluent into the ocean offshore from Sandy Beach.

Wastewater. The golf course and accessory facilities will produce approximately 32,000 gallons of wastewater each day. Existing transmission lines, pump stations and treatment plant have sufficient capacity to handle this additional demand.

Drainage.

Solid Waste. Based on a rate of 3.37 pounds per person per day, the proposed golf course at Queen's Beach would produce approximately 1,350 pounds of solid waste each day. In comparison, the existing population of Hawaii Kai generates about 92,445 pounds of solid waste each day. The solid waste generated by the proposed golf course represents about a 1 percent increase over current levels. Although the solid waste generated by the proposed golf course should have an insignificant impact on existing landfill requirements, there will be additional demands placed on limited space. These demands can be reduced by:

- composting and reuse of green cuttings and paper for landscape conditioner and mulch; and

- recycling of paper, glass, aluminum and ferrous material.

Recreational Facilities. The most obvious impacts of the proposed golf course relate to the elimination of the unauthorized use of the project site for off-road vehicle access. The proposed golf course would also alter the visual experience for hikers on the Makapu`u Lighthouse access road. Because this element of impact is quite subjective, it is difficult to assess quantifiable impact. It is impossible to predict how many, if any, potential hikers would be dissuaded from hiking this road, if a golf course were part of the landscape.

A shoreline trail running from Kaloko to Kaho`ohaihai Inlet and a spur trail from the Lighthouse access road to the shoreline trail will be provided. Therefore, pedestrian access for fisherman, beachgoers, and hikers will remain guaranteed.

Safety is an additional concern, with a popular hiking trail cutting through a golf course and a shoreline access trail (at a higher elevation) alongside the course. The safety of future hikers along trails in the vicinity of the golf course, will be foremost during the final design and layout of the course. The configuration of the course has been changed for the 1st, 17th and 18th holes to provide greater separation between the shoreline and the golf course. Additional landscape materials and the presence of an earth berm on the makai perimeter of the course will also provide additional protection/

Finally, the golf course will provide additional golf opportunities in East Honolulu, for residents of Hawaii and visitors alike.

Power, Communications and Civil Defense. Hawaiian Electric Company (HECO) will have to relocate an existing utility line that runs through the project site. It is estimated that approximately 60 additional telephone pairs will be required for the proposed golf course, with the bulk of the service at the clubhouse. Cable television service will be taken directly from Kalanianaole Highway. The proposed clubhouse site would be located outside the effective range of any existing civil defense siren. To compensate for this apparent lack of adequate civil defense sirens, the Oahu Civil Defense Agency has recommended that the developer of the golf course install a civil defense warning device in the golf course clubhouse office. This device, a siren simulator, would be activated along with all other indoor and outdoor warning devices whenever the Civil Defense Siren System is activated.

1.4 Alternatives Considered

Two alternatives to the proposed action were considered, including "no-action," and implementation of the Ka Iwi Park Master Plan, as proposed by the State of Hawaii Department of Land and Natural Resources (DLNR). The proposed action, development of a championship 18-hole golf course and clubhouse, was deemed to be the preferred alternative for the applicant. A more detailed discussion of these alternatives can be found in Chapter 7.

1.5 Unresolved Issues

At present, one issue remains unresolved: the status of the Ka Iwi Park Master Plan. As discussed in Section 3.2.6, the Department of Land and Natural Resources (DLNR) has proposed that 354 acres in East Honolulu, including the proposed project site, be incorporated into a new park, the Ka Iwi State Park. DLNR's plans were made public as part of a master plan and EIS that was distributed in April 1996. However, the State of Hawaii does not own the major portion of the 354 acres, and it is unclear how the State will acquire the property, or even if there are sufficient funds available to acquire the property. Some money has been appropriated by the Hawaii State Legislature for acquisition and other funds are being sought by the State from Federal sources. If acquisition by the State of Hawaii is to become a reality, either the affected parties must mutually agree on an acceptable value for the site, or the cost of condemnation would have to be established in court.

1.6 Compatibility with Land Use Plans and Policies

Chapter 3 includes a discussion of the project's compatibility with existing government plans, policies and objectives. Because of the competing nature of many of these plans, policies and objectives, the project supports many and is inconsistent with others. The golf course is consistent with many of the objectives of the proposed Ka Iwi State Park. Generally, the plan is consistent with State objectives for recreation and tourism, and State and County objectives and policies for management of the coastal zone. The project is consistent with State Land Use District designations and County Development Plan Land Use Maps and zoning regulations. A recent Development Plan Public Facility Map amendment has changed the designation for the entire site to "Publicly Funded Park, Site Determined , Within Six Years."

1.7 Necessary Permits and Approvals

Development of the property as proposed will require a number of permits and approvals from State and County agencies. A summary of possible required approvals is provided below.

Approval Required	***Authority***
Federal Government	
Department of the Army Permit (Section Rivers and Harbors Act)	U.S. Army Corps of Engineers
State of Hawaii	
Permit to Perform Work upon a State Highway	State Department of Transportation
National Pollutant Discharge and Elimination System Permit	State Department of Health
City and County of Honolulu	
Water Master Plan	Board of Water Supply
Wastewater Master Plan	Department of Wastewater Management
Special Management Area Use Permit	City Council
Plan Review Use Permit	City Council
Grading Permit	Department of Public Works
Building Permit	Building Department

1.8 Statement of Purpose and Need for Action

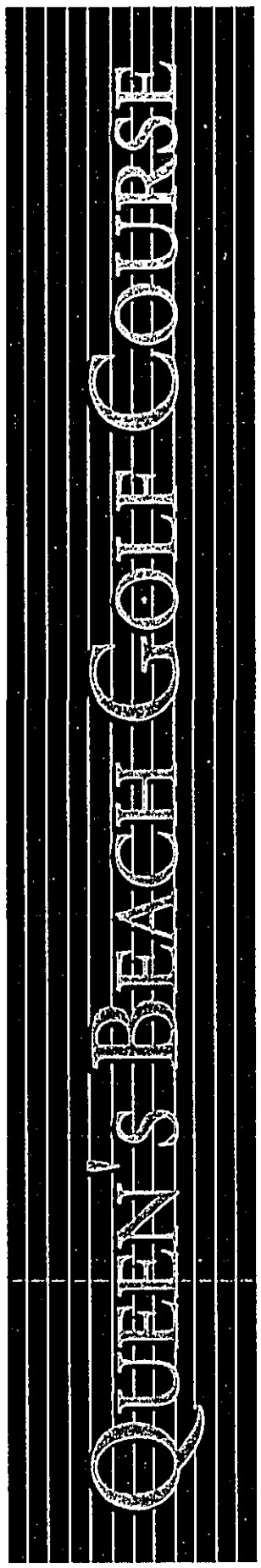
The applicant is requesting a Special Management Area Use Permit (SMP) and a Plan Review Use (PRU) Permit. The purpose of this action is to permit the development of an 18-hole championship golf course, clubhouse and accessory facilities.

1.9 Purpose and Need for this Environmental Impact Statement

The purpose of this Environmental Impact Statement is to describe and assess a proposal for the development of the 18-hole championship golf course, clubhouse and accessory facilities. The EIS is a disclosure document which provides information on all known or potential effects that the proposed action may have on the environment, and the economic and social welfare of the community. It includes a discussion of potential impacts of the proposed project, both beneficial and adverse, and proposes measures to either avoid or minimize adverse impacts to the environment.

An application for a Special Management Area Use Permit (SMP) and Plan Review Use (PRU) Permit was submitted to the Department of Land Utilization (DLU), City and County of Honolulu on March 19, 1996. The proposed action was subject to the provisions of Chapter 25, Revised Ordinances of Honolulu (ROH), because it lies within the Special Management Area (SMA).

By letter dated March 25, 1996, DLU notified the Office of Environmental Quality Control (OEQC) that it had determined the project may have a significant effect on the environment and that an EIS was required. Notice of this determination was published in the April 8, 1996 edition of *The Environmental Notice*, commencing a 30-day public review period which ended on May 8, 1996. Chapter 12 contains a listing of agencies, organizations and individuals consulted during the preparation of the EIS. The chapter also contains reproductions of written comments on the EIS Preparation Notice (EISPN) and the applicant's response to those comments.



Chapter

2

Project Description

CHAPTER 2
PROJECT DESCRIPTION

2.1 Location

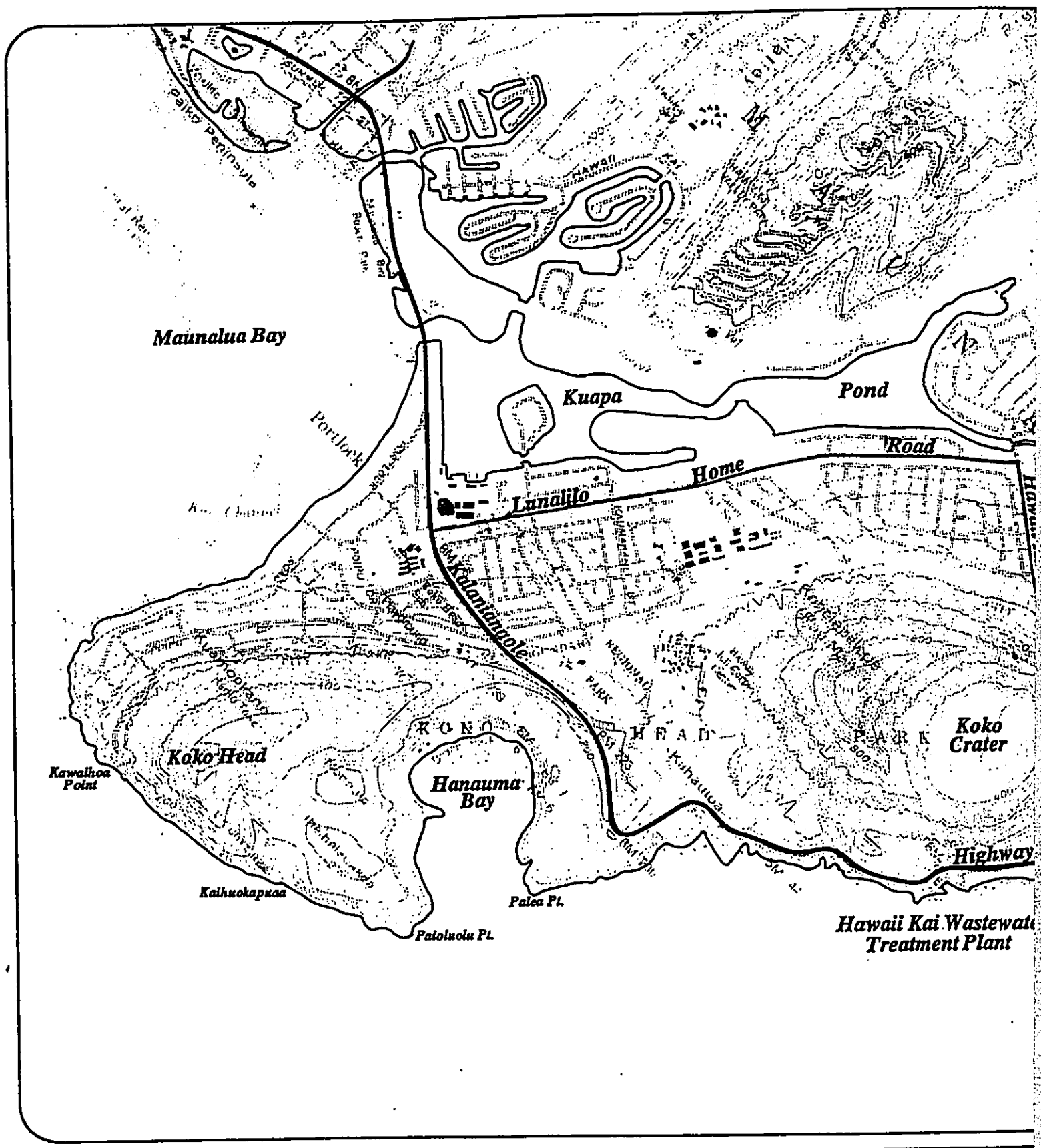
The proposed golf course is located about 15 miles from downtown Honolulu on the easternmost point of O`ahu in the East Honolulu District (Figure 2). The site, identified by TMK 3-9-11:3, por. 2 (Figure 3), is bounded by the Pacific Ocean on the south, Kalanianaole Highway on the southwest and west, and a scenic lookout overlooking Makapu`u Beach Park on the north. Sandy Beach Park is located about 1 mile to the southwest, and the Hawaii Kai Golf Course is across Kalanianaole Highway to the west. This area is known locally as "Queen's Beach" and encompasses the general area along the shoreline and inland from Wawamalu Beach to Makapu`u Head. Makapu`u Head, rising northeast of Kealakipapa Valley, reaches 647 feet above sea level at its highest point. Kealakipapa Valley extends mauka toward the Makapu`u Lookout. The coastal plain on the makai portions of the property extends to the Kaloko and Kaho`ohaihai Inlets and Ka`ili`ili Bay.

Elevations on the site range from a low of about 8 feet above mean sea level (AMSL) in an area between Ka`ili`ili Bay and Kaho`ohaihai Inlet to about 165 feet AMSL in the upper reaches of Kealakipapa Valley in the vicinity of proposed hole #11 of the golf course. In general, slopes range from 0-5% in the lower reaches of Kealakipapa Valley and the coastal plain, to 5-10% in the upper reaches of Kealakipapa Valley. Portions of the project site (in the vicinity of proposed hole #12) have slopes of approximately 20% (Figure 4).

The proposed golf course will occupy approximately 166 acres of land. The Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE) owns all of the property that comprises the proposed project. Kaiser Aluminum and Chemical Corporation (KACC) holds the Ground Lease from KSBE for the project site.

2.2 Existing Land Uses

The project site is uninhabited and undeveloped. Although the site is undeveloped, it is used for a variety of recreational activities. Shorecasting, throw-netting, limu gathering, hiking, diving, sunbathing, mountain biking, and surfing are among the activities pursued on the project site, or along the



Regional Location Map

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

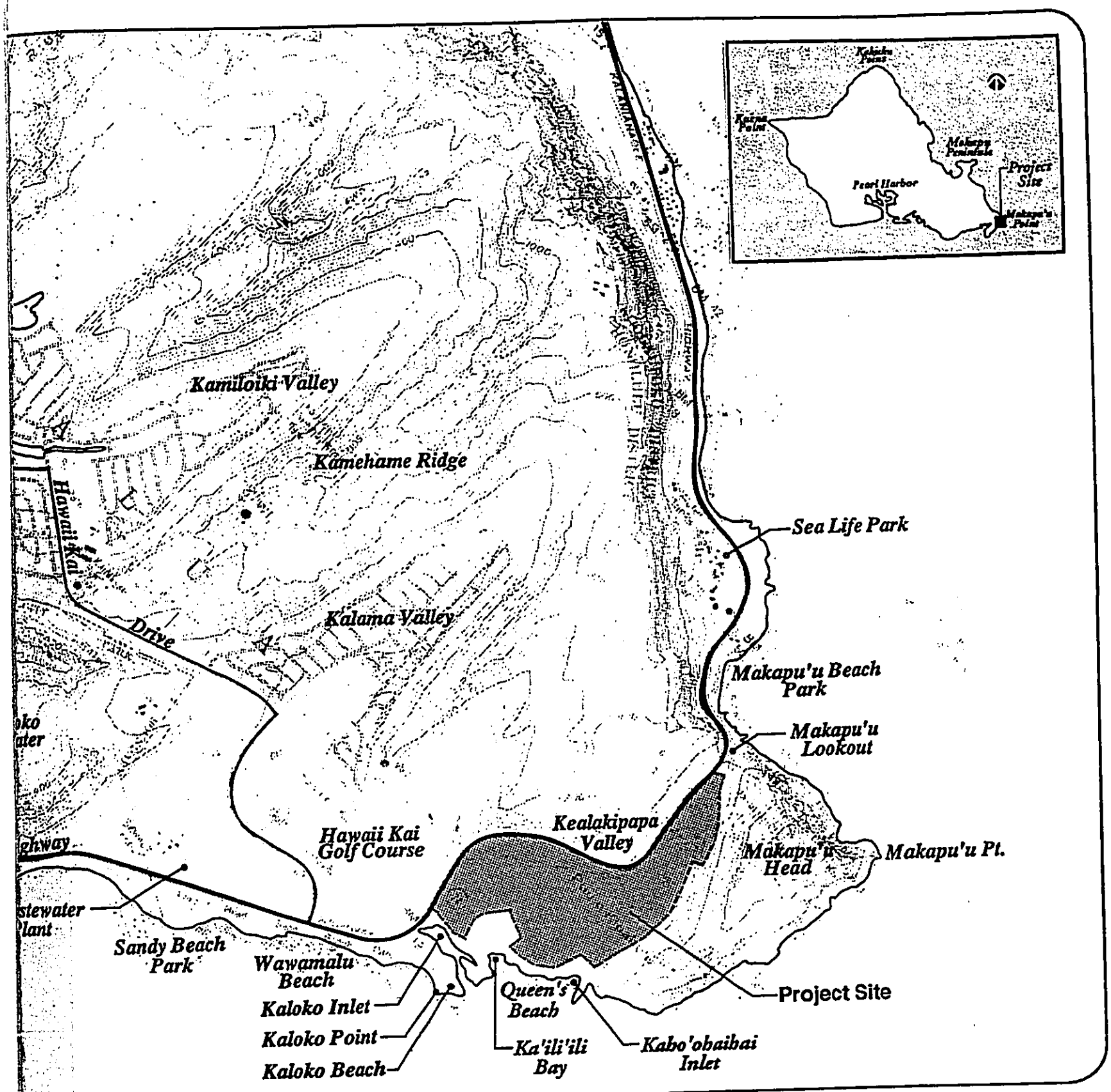


Figure 2

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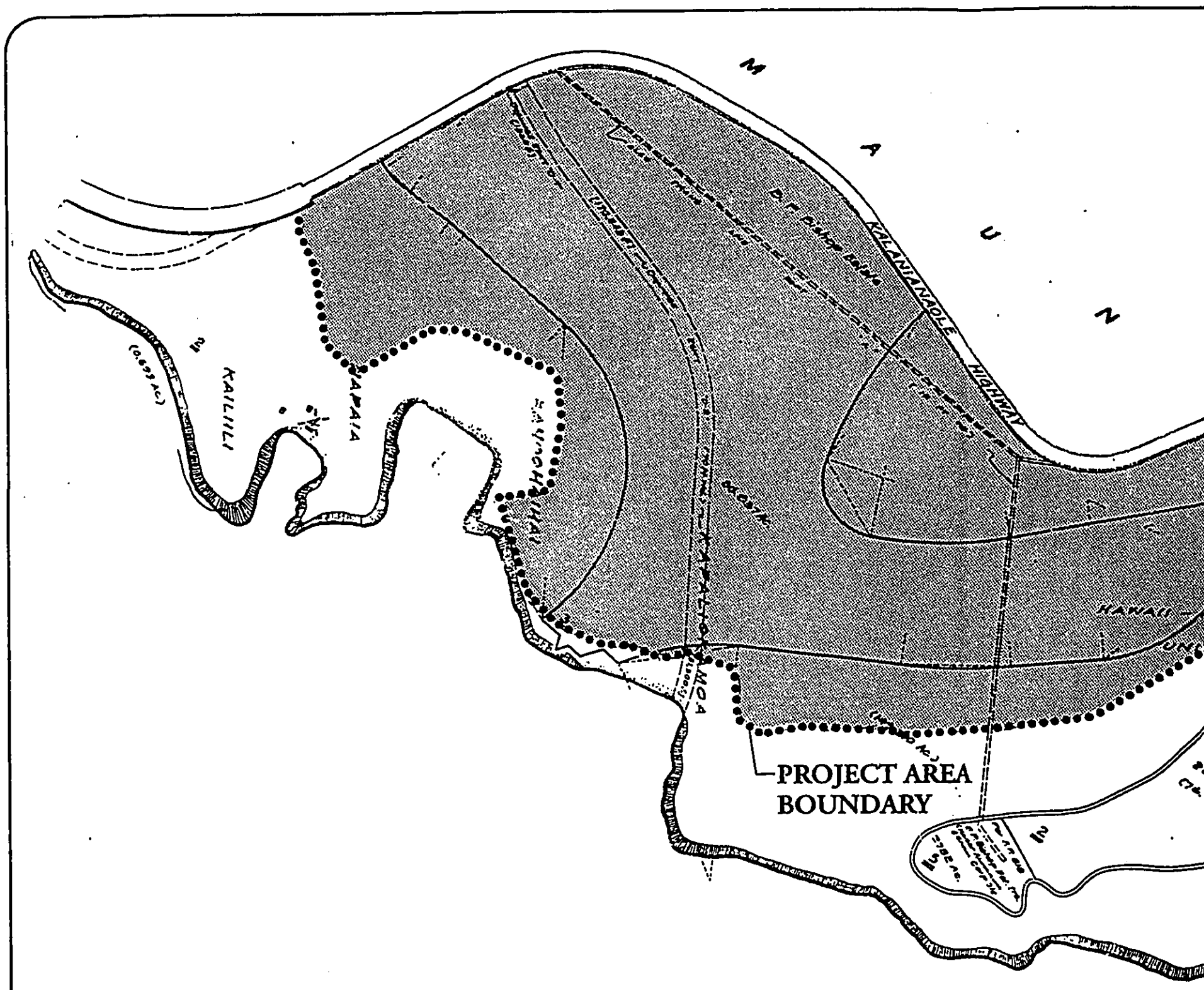
Prepared By Helber Hastert and Fee, Planners



Tax Map Plat 3-9-11

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

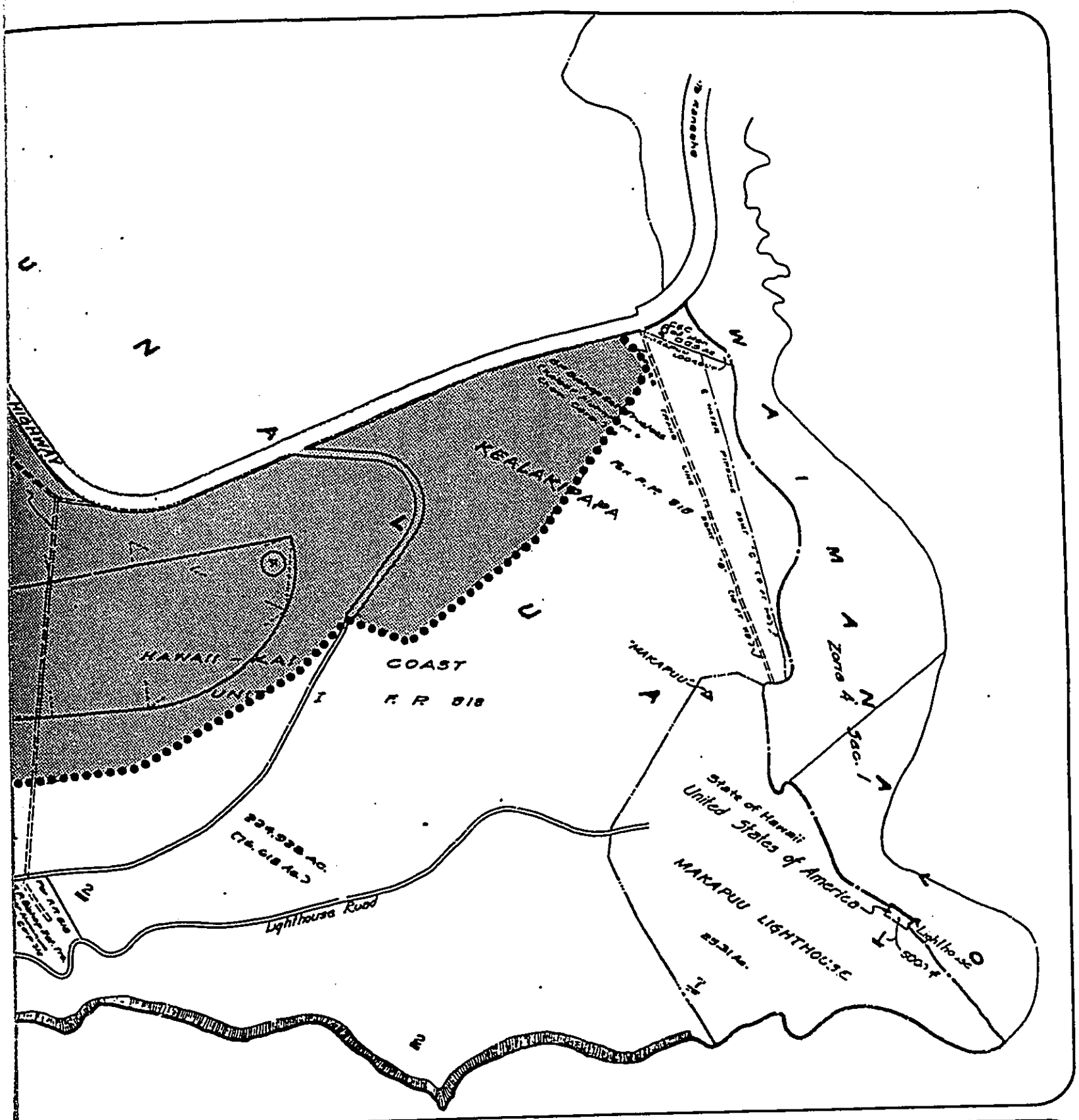


Figure 3

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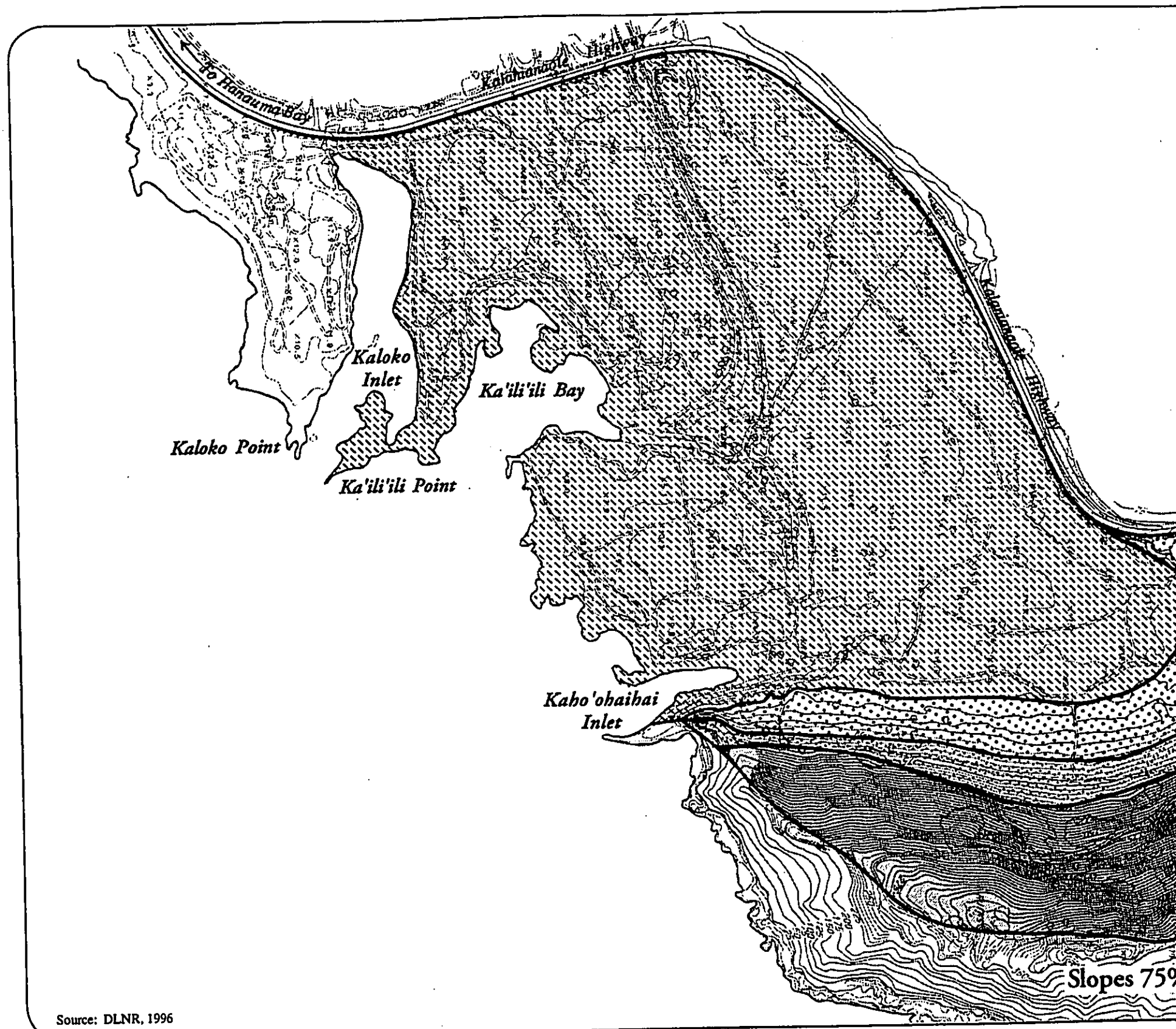

Source: DLNR, 1996

Slope Analysis

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

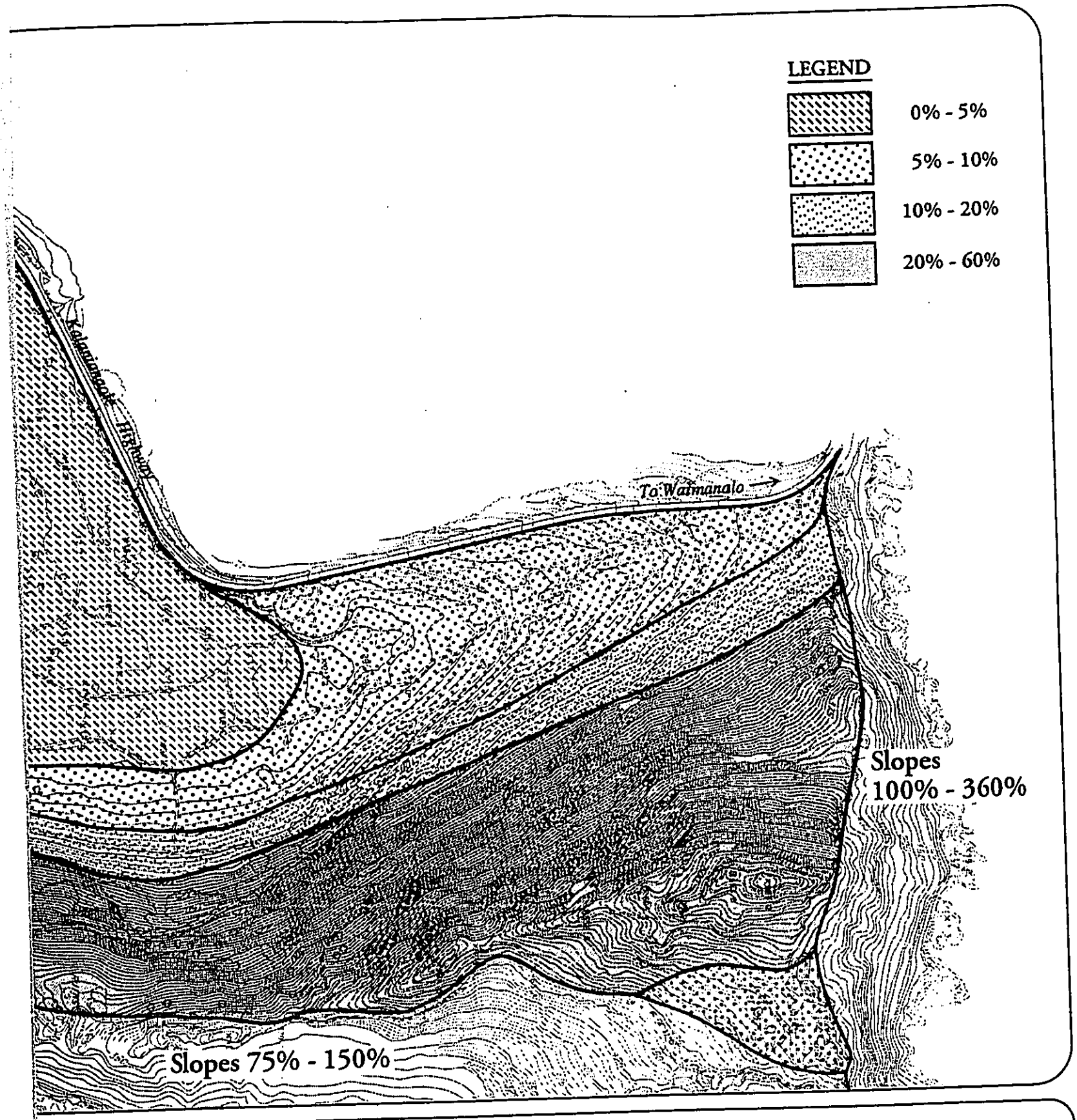

Figure 4

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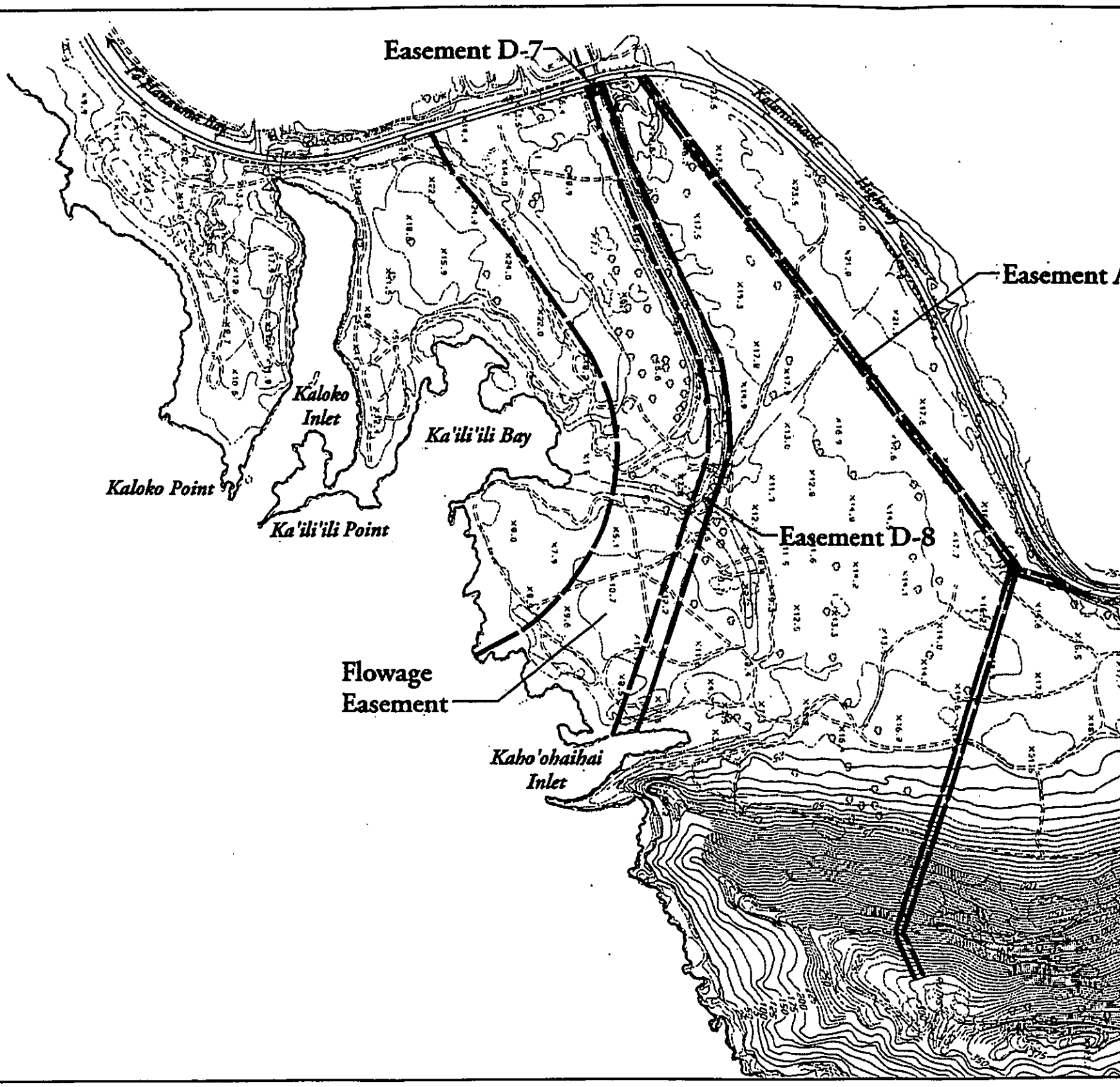
Prepared By Helber Hastert and Fee, Planners

shoreline fronting the site. It should be noted that off-road vehicle (4-wheel drive and motocross) enthusiasts often enter the property without permission, and have created a network of dirt trails throughout the coastal plain and Kealakipapa Valley. Two principal locations where riders have created trail systems are (1) mauka of Kaloko Beach and (2) in the area between Ka`ili`ili Bay and Kaho`ohaihai Inlet. These trail systems have particularly been responsible for the degradation of native coastal beach strand communities.

Four easements are located on the project site (Figure 5). The first easement, identified as "Easement A," is a 2,700-foot long, 10-foot wide utility easement that accommodates overhead telephone (GTE Hawaiian Tel) and electric lines (HECO) on the western side of the project site. Two easements, identified as Easements D-7 and D-8, are 70-foot wide drainage easements in favor of the City and County of Honolulu. Easement D-7 begins at the eastern edge of Kalanianaole Highway and encompasses only 1,640 square feet, whereupon it connects to Easement D-8, which extends in an easterly direction over the project site to Kaho`ohaihai Inlet. Currently, a 15-foot wide, unlined channel occupies a portion of this easement, until approximately midway across the property, whereupon the unlined channel turns sharply south and enters into the eastern side of Ka`ili`ili Bay.

The fourth easement is a flowage easement designed to accommodate overflow of portions of Easement D-8. This flowage easement, approximately 200 feet wide, begins at Easement D-7, and extends to Ka`ili`ili Bay.

A road which provides access to the Makapu`u Lighthouse and the State Wayside Park at Makapu`u Head, cuts across the northern portion of the project site in upper Kealakipapa Valley. This road is now owned by the State of Hawaii, while the lighthouse is still owned by the U.S. Government. The road was originally granted to the U.S. Government in 1916 by the Trustees of the Bishop Estate. A condition of the grant reserved "unto the grantors their successors in trust and assigns, and their lessees and tenants, the right to use the land hereby conveyed for all purposes as a roadway." The roadway was subsequently conveyed to the State of Hawaii in 1987, provided that "the hereinbefore described property is granted by the Grantor to the Grantee subject to ***any and all*** [emphasis added] outstanding easements for streets, utility systems, rights-of-way, railroads, pipelines, ***and/or covenants, restrictions, reservations, conditions, and agreements of record*** [emphasis added] which now exist affecting the foregoing described premises." It is intended that this roadway provide access between the northern two holes of the course, and the holes below the access road. Access could either be over the roadway, or by means of a tunnel beneath the road.



Easements Found at Proposed Queen's Beach Golf Course

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

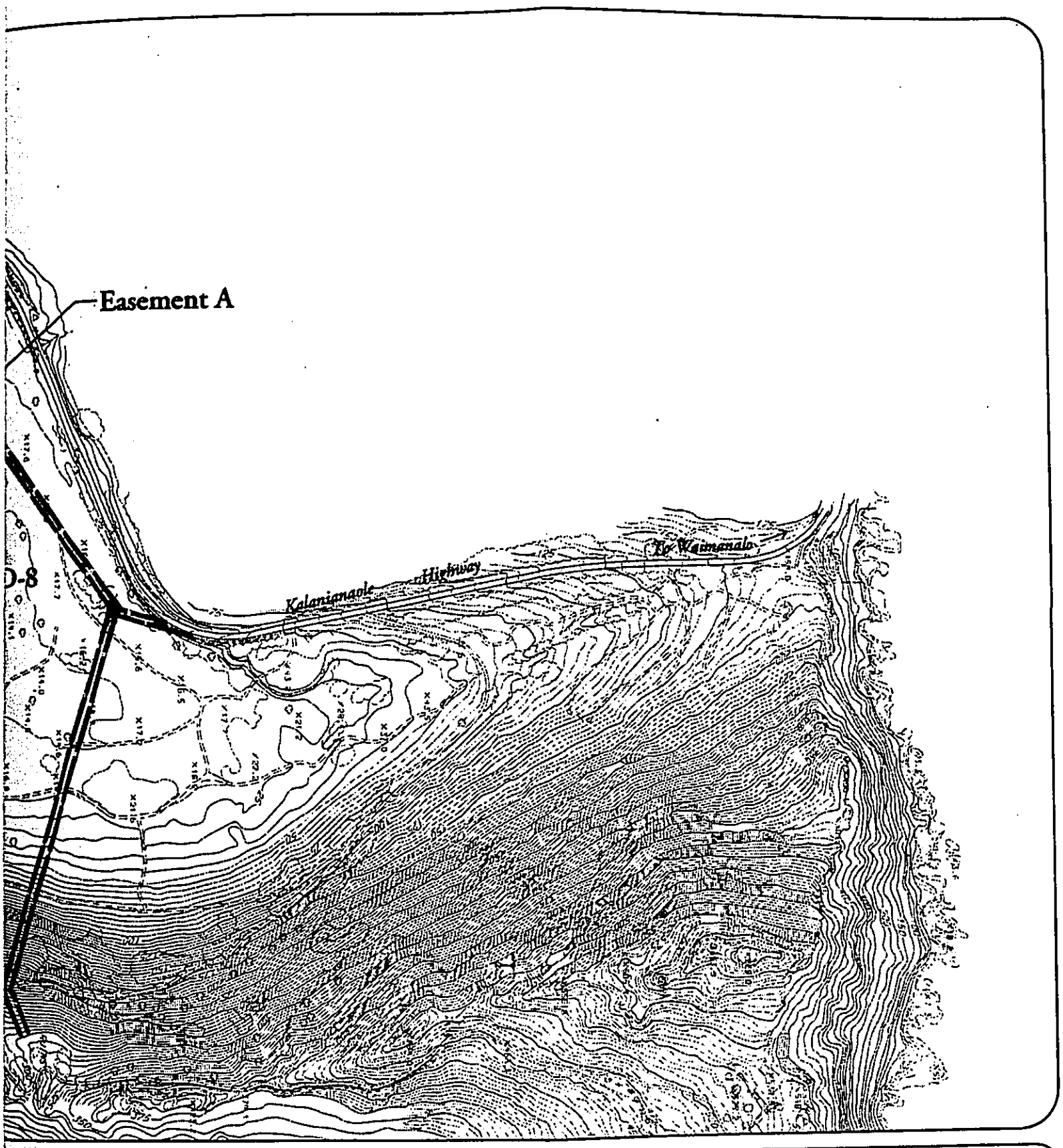


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Figure 5

Feet

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Prepared By Helber Hastert and Fee, Planners

CORRECTION

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SEE FRAME(S)
IMMEDIATELY FOLLOWING

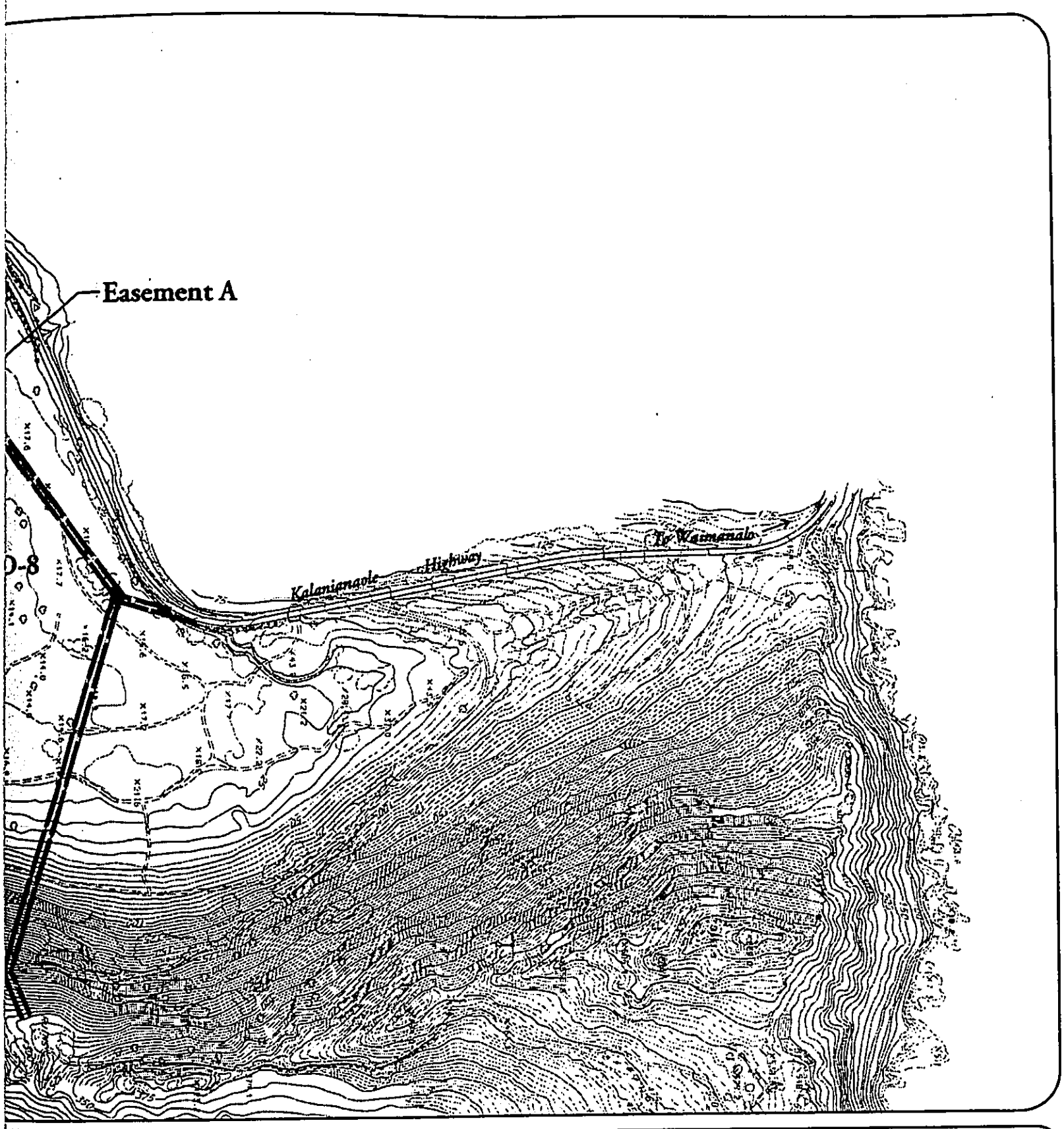

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Figure 5

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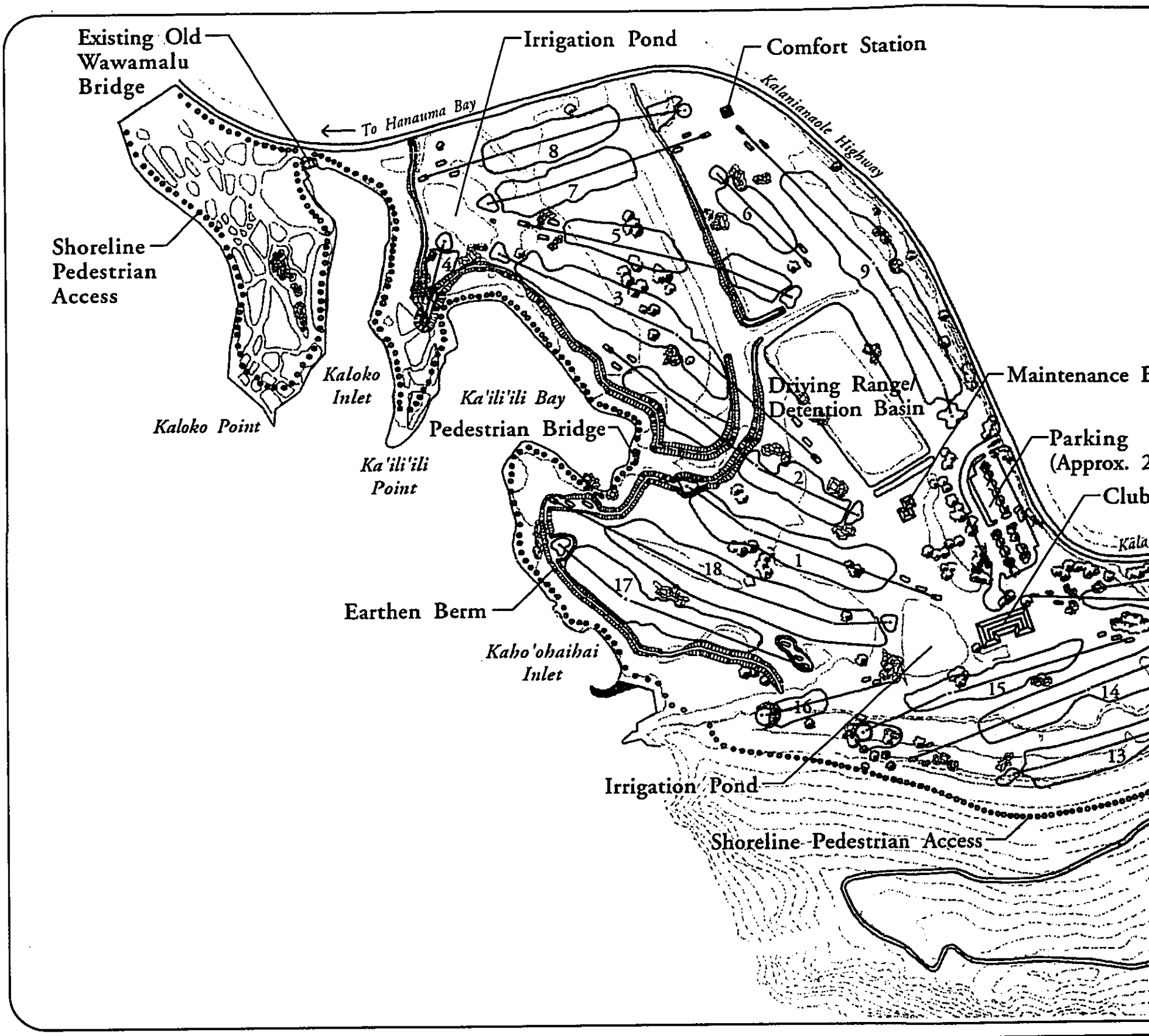
Prepared By Helber Hastert and Fee, Planners

2.3 Project Description

The proposed golf course includes a regulation par 72 layout (approximately 6,200 yards) with an accessory driving range, maintenance building and clubhouse facilities, as shown in Figure 6. Physical improvements to the site will require clearing, grubbing, and grading, in preparation for the construction of the golf course, the clubhouse and parking lot. Currently, a significant portion of the upland area of the site is covered with boulders that have been deposited over the last 20 years.

The selection of landscape materials will reinforce the existing appearance of the site. The retention of boulders in the southeastern section of the project site will have the beneficial impact of preserving large portions of an existing dense stand of the Hawaiian cotton plant or ma`o (*Gossypium tomentosum*). In addition, planting of ma`o will be expanded to the rough areas contiguous to the existing dense stand. There are few sites left in the Hawaiian Islands which support such large numbers of the ma`o. To the greatest extent possible, existing mature trees will either be retained in-place or transplanted elsewhere on-site. This approach to landscaping the golf course will keep the site in a similar appearance to its current condition.

The clubhouse will reach a maximum height of 25 feet above existing grade, and will be located approximately in the central portion of the site, about midway between Kaloko Inlet and the Makapu`u Lookout. The footprint of the clubhouse will be approximately 10,000 square feet, with a total floor area of about 20,000 square feet. The clubhouse would contain locker rooms, a pro shop, a snack bar/restaurant, and administrative offices. The ground floor would contain golf cart and club storage facilities. Ground elevation in this area is approximately 14 feet AMSL. The location of the clubhouse was selected for two primary reasons: (1) it is centrally positioned on the property making the design and layout of the course more efficient; and (2) the topography of the site will allow the clubhouse to more easily blend in with existing landforms, thereby minimizing the visual impacts of the clubhouse structure (a full description of the visual impacts of the clubhouse can be found in Section 4.9).



Conceptual Golf Course Plan/5-Year Master Plan

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

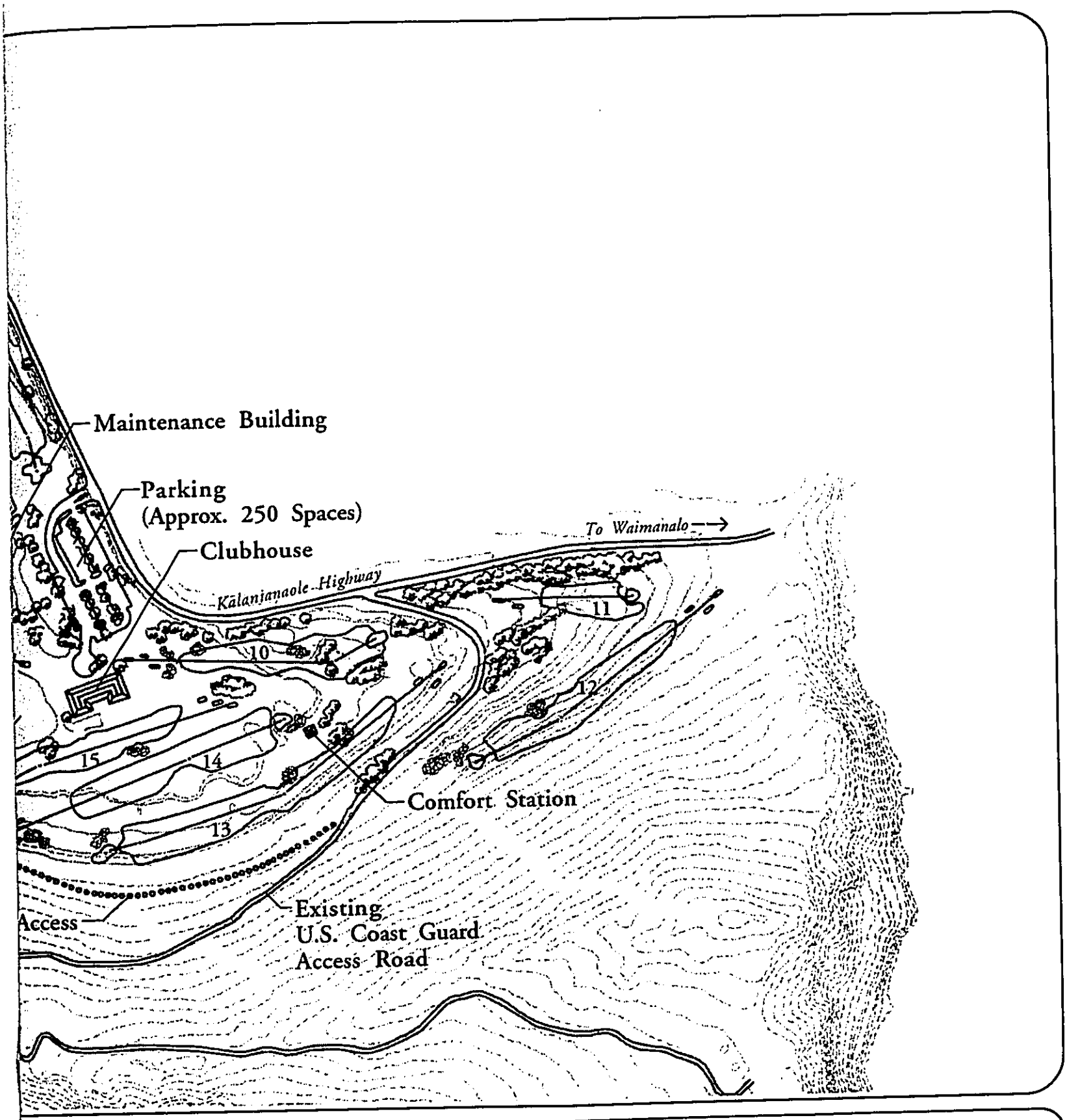


Figure 6

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Prepared By Helber Hastert and Fee, Planners

In addition to the clubhouse, other major improvements include:

- a parking area between the clubhouse and Kalanianaole Highway that will accommodate a maximum of 250 cars;
- a seven-acre driving range southwest of the clubhouse; and
- a one-story maintenance facility of about 7,500 square feet between the driving range and the clubhouse to store mowers and other equipment, fertilizer and other chemicals for use on the course

Other structural features of the golf course include two comfort stations in the vicinity of the 14th and 6th holes (these locations are subject to the final design of the course) and several bridges that will allow golf carts to cross over the 15-foot wide unlined drainage channel, and pedestrians to cross over the drainage channel near the eastern end of Ka`ili`ili Bay, thereby permitting continuous lateral access along the shoreline. The height of the comfort stations will not exceed 15 feet, and they will be approximately 500 square feet in size.

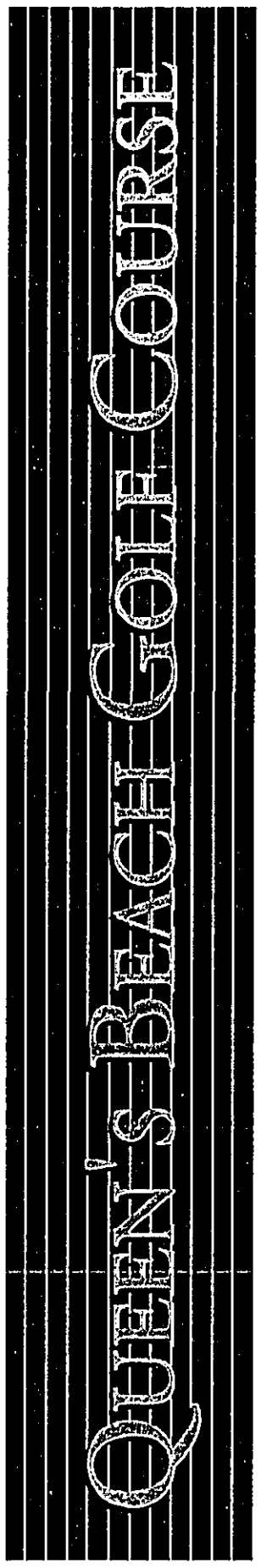
Two pedestrian trails will be provided for access to and along the entire shoreline fronting the property. The first trail would branch off from the Lighthouse Access Road and continue above the 13th, 14th, 15th, and 16th holes for approximately 2,000 feet until it reaches the shoreline in the area of Kaho`ohaihai Inlet. The second trail would commence in the vicinity of the old Wawamalu Ranch wall. Hikers could then either follow the shoreline around Kaloko Inlet or walk across the old Wawamalu Bridge. The trail would then stay close to the shoreline around the perimeter of Ka`ili`ili Bay, crossing the unlined drainage channel on a foot bridge (to be constructed by the applicant). After crossing the drainage channel, the trail would continue to follow the shoreline, until linking with first trail at Kaho`ohaihai Inlet.

The course layout follows a typical pattern for what is referred to as a "core golf course." This type of course is designed as an element unto itself (a "stand-alone" course), with holes generally clustered together. Because both the front- and back-nine holes of the course return to the clubhouse, it is the most efficient type of golf operation, consuming less land than other types of courses.

Although a landscaping plan has not yet been developed for the course, the design concept envisions maximum use of native species that are compatible with the climate of the region (very little rainfall) (see Section 4.5). A major portion of an existing stand of ma`o plants in the southeast portion of the course will be retained. Additional areas contiguous to the dense stand will be planted with ma`o.

A proposed earthen berm is a major feature of the drainage plan for the golf course. The berm will be constructed on the makai perimeter of the golf course and will utilize boulders that have been deposited throughout the site as an integral structural element. The berm, and other grading and drainage features will be capable of retaining stormwater on-site generated by the 100-year event (see Sections 4.2 and 6.4 for a full discussion of topography, grading and drainage).

The golf course will operate as a privately-owned course that is open to the public for play (otherwise known as "daily fee" course). Anyone will be able to play at the course by making a reservation for available tee times, or by arriving at the course and waiting for a tee time to open up. Rates for green fees and cart rentals have not been determined. However, it is intended that residents of the State of Hawaii would be allowed to play on the course at rates reduced from the regular "rack rate" (this practice is otherwise referred to as a "kama`aina rate"). Hawaii residents will have the same opportunity to reserve tee times as non-residents.



Chapter

3

Relationship of the Proposed Project to Existing Public Plans, Policies and Controls

CHAPTER 3
RELATIONSHIP OF THE PROPOSED PROJECT TO EXISTING PUBLIC PLANS, POLICIES AND CONTROLS

3.1 Federal

3.1.1 National Park Service

In the early 1990's, the National Park Service (NPS) had been directed to undertake a study of portions of the east O`ahu coastline, offshore islands of east O`ahu and other nearby lands on the windward side of O`ahu for consideration as a possible addition to the national park system. The project site, which is the focus of this EIS, was included in one of three land management units (the "Koko Rift Unit") that comprised the area of study for the NPS (Department of the Interior, 1993a).

The NPS publication *Criteria for Parklands* sets the criteria for determining the significance of an area's resources, and the suitability and feasibility of including an area in the national park system. To qualify as an addition to the national park system, an area must meet all three criteria: (1) national significance; (2) suitability; and (3) feasibility. The study which was published in 1993 (*Reconnaissance Survey Study of Management Alternatives Kai Iwi Shoreline Study*) concluded that the Koko Rift unit did not meet all three criteria for addition to the national park system. The Koko Rift unit did meet the single criteria for national significance because the area (from Hanauma Bay to Makapu`u) contains significant examples of the works of volcanism and the effects of wind and water on the forms of the land (Department of the Interior, 1993a).

The Koko Rift unit did not meet the criteria for suitability, primarily because it is, for the most part, protected and managed for public use by other entities, with the exception of the private lands which comprise the project site. As for suitability, the Koko Rift unit would be a feasible addition to the national parks system only if management authority over the public lands and waters were transferred to the NPS and adequate private lands could be acquired at reasonable cost or through other means, such as exchange, easements, or long-term, renewable leases (Department of the Interior, 1993a).

3.1.2 Makapu`u Lighthouse

The United States Department of Commerce owns about 5,000 square feet of land at Makapu`u Head, which includes the Lighthouse, the surrounding

grounds, and utility easements. The proposed project will not affect the administration and maintenance of this facility.

3.2 State of Hawaii

3.2.1 Hawaii State Plan

The Hawaii State Plan (Chapter 226, HRS, as amended) establishes a set of guidelines for the statewide planning system, and provides the overall theme, goals, objectives, policies and priority guidelines. The following describes the purpose of the State Plan.

> "...[it] shall serve as a guide for the future long-range development of the State; identify the goals, objectives, policies and priorities for the State; provide a basis for determining priorities and human resources, land, energy, water and other resources; improve coordination of federal, 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).

The goals, objectives, policies, and guidelines of the Hawaii State Plan are, on occasion, in competition with one another. As a result, the proposed project supports some of the goals, while it is inconsistent with others. The following discussion analyzes the project's impacts with respect to relevant State Plan goals, objectives, policies and priority guidelines:

Section 226-11 Objective and Policies for the physical environment--land-based, shoreline, and marine resources.

Section 226-11(a)(1) Prudent use of Hawaii's land based, shoreline and marine resources.

Section 226-11(a)(2) Effective protection of Hawaii's unique and fragile environmental resources.

Section 226-11(b)(2) Ensure compatibility between land-based and water based activities and natural resources and ecological systems.

Section 226-11(b)(3) Take into account the physical attributes of areas when planning and designing activities and facilities.

Section 226-11(b)(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.

Section 226-11(b)(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.

Section 226-11(b)(8) Pursue compatible relationships among activities, facilities and natural resources.

Section 226-11(b)(9) Promote increased accessibility and prudent recreational, educational, and scientific purposes.

Discussion: The relevant policies and objectives of Section 226-11 focus on the use, management and protection of environmental resources, with an emphasis on protection of rare or endangered plant and animal species native to Hawaii. While some may characterize the Queen's Beach area, including Kealakipapa Valley as "wild and pristine," the dominant plant and animal species found on the project site are introduced, with off-road vehicles threatening to destroy the one native habitat that remains at Queen's Beach, the coastal strand vegetation. As proposed, the golf course at Queen's Beach would leave the coastal strand area intact, and more protected than is the case today. Preventing access to this area by off-road vehicles will be enhanced by the full-time presence of golf-course employees . This will allow the native coastal plants an opportunity to recover from the damage and stress of exposure of constant trampling by tires.

The endangered water fern (or `ihi`ihilauakea) (*Marsilea villosa*) is found in three small areas on the project site. With the preparation of a botanical management plant, in cooperation with appropriate state and federal agencies, the existing colonies of *Marsilea* can be protected and managed properly. Similarly, the Hawaiian cotton plant, or ma`o (*Gossypium tomentosum*) is found on the site. In fact, the presence of the boulders at Queen's Beach has played a large role in protecting those plants that remain. This plant will be featured in the landscaping of the rough area of the golf course and will be an integral element of the botanical management plan. The protection of this plant will also provide habitat for a rare native insect, the Hawaiian beetle (*Rhyncogonus simplex*). This insect, which is listed as a species of concern by the U.S. Fish and Wildlife Service (USFWS), has not been seen at Queen's Beach for several decades. However, the protection of ma`o at the project site will provide an opportunity for the beetle to re-establish a presence at Queen's Beach.

Other aspects of the proposed golf course, including an integrated pest management (IPM) plan and a landscaping plan that utilizes native plants common to the climate found at Queen's Beach, will complement resource management activities.

In addition, coastal trails will provide access to and along the shoreline for pedestrians, thus ensuring the continuation of shoreline recreational activities, and the protection of native coastal plants for interpretive value as well as aesthetic enjoyment.

Section 226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources.

Section 226-12(a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii`s scenic assets, natural beauty, and multi-cultural/historical resources.

Section 226-12(b)(1) Promote the preservation and restoration of significant natural and historic resources.

Section 226-12(b)(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.

Section 226-12(b)(5) Encourage the design of developments and activities that complement the natural beauty of the islands.

Discussion: The physical beauty of the shoreline stretching from Hanauma Bay to Makapu`u Head is an internationally-recognized resource for the State of Hawaii. Coastal views along Kalanianaole Highway and views of the Makapu`u Head landform will not be interrupted by any development at Queen's Beach. In fact, there will be no structures within 1,500 feet of the shoreline. Some will argue that the "wild" character of the area will be irreparably harmed by the manicured appearance of a golf course. Careful attention to the selection of plant materials that are native to the region will mitigate the change in appearance. Transitory views of the golf clubhouse will be mitigated by careful landscaping, architectural treatment and placement of structures in less conspicuous locales on the site.

All known significant historic sites and cultural resources will be preserved and incorporated into the design of the golf course, with appropriate interpretive treatment.

Section 226-13 Objectives and policies for the physical environment--land, air, and water quality.

Section 226-13(b)(2) Promote the proper management of Hawaii`s land and water resources.

Section 226-13(b)(3) Promote effective measures to achieve desired quality in Hawaii`s surface, ground, and coastal waters.

Discussion: In recent years, there have been conflicting claims concerning the environmental impacts attributable to golf courses. Golf courses have been particularly singled out when examining impacts to groundwater resulting from the leaching of pesticides and fertilizers (Section 4.4 provides a detailed discussion of this issue). However, if properly managed, golf courses are capable of: (1) entrapping and retaining large quantities of precipitation; (2) reducing the rate and volume of surface runoff; (3) reducing sediment losses and surface losses of residual pesticides and nutrients in the soil; and (4) scavenging nitrate and increasing infiltration, therefore acting as a nitrate filter (Balogh and Walker, 1992). Best management practices and integrated pest management plans are inherent to the positive attributes of golf course impacts, including the ability to reduce or eliminate negative impacts to groundwater resources, and the applicant is committed to using them.

Section 226-15 Objectives and policies for facility systems--solid and liquid wastes

226-15(b)(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.

The proposed golf course will be using treated wastewater from the East Honolulu Wastewater Treatment Plant. The reuse of this resource will reduce the volume of effluent that has to be discharged to the ocean.

Section 226-16 Objective and policies for facility systems--water

226-16(b)(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.

226-16(b)(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.

See comment above.

Section 226-23 Objective and policies for socio-cultural advancement--leisure

226-23(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.

226-23(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.

226-23(b)(5) Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.

Market demand analysis has shown a need for additional opportunities to play golf in the East Honolulu/Primary Urban Center area (see Section 5.4). The proposed golf course will provide additional golfing opportunities while maintaining this important area in open space and creating hiking trails for pedestrian access to and along the shoreline for fishermen, surfers, hikers and others. At the same time, the proposed project will not develop portions of the coastal area that host unique coastal strand vegetation. In fact, the project would provide additional security that will be able to monitor use of the land area at Kaloko, thereby ensuring that off-road vehicles are prevented from further injuring this important resource.

3.2.2 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, 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, statewide guidelines, and priorities within a specific field of activity, when such activity or program is proposed, administered, or funded by an agency of the State" (Section 226-2 [10] Hawaii Revised Statute). Each functional plan contains objectives to be achieved and policies to be pursued within the specified areas. "...Such policies shall address major programs and the locations of major facilities" (Section 226-57 (b) HRS).

The State Functional Plans are approved by the Governor. The project generally supports the objectives and policies of the following State Functional Plans:

State Recreation Functional Plan

The Department of Land and Natural resources coordinated the preparation of this functional plan.

Issue Area: Public Access to the Shoreline and Upland Recreation Areas

Objective III-A: Prevent the loss of access to shoreline and upland recreation areas due to new developments.

Policy III-A(1): Require land use permit applications to fully address the impact on trails and public access.

Discussion: The applicant proposes to construct two trails as part of the proposed project. One trail would provide lateral access along the shoreline from Kaloko Inlet to Kaho`ohaihai Inlet. The second trail would connect the Makapu`u Lighthouse access road to Kaho`ohaihai Inlet.

Issue area: Resource Conservation and Management

Objective IV-B: Prevent degradation of the marine environment

Policy IV-B(1): Enhance Water Quality to provide high-quality ocean recreation opportunities.

Discussion: Best management practices and integrated pest management will be key elements of the maintenance and construction of the proposed golf course. These approaches to course design, construction and maintenance emphasize proper course design (for good drainage); the timing and amount of fertilizers to be applied to the course; specific pesticides to use and under what circumstances to use them (no indiscriminate use); the consideration of alternate chemical, biological, and cultural pest, nutrient and water management practices; and when possible, selection of appropriate turfgrass species and cultivars and other landscape species (native species found in the region).

Following these practices can reduce or eliminate negative impacts to groundwater and nearby marine water quality, thereby ensuring the long-term health of ocean resources.

State Tourism Functional Plan

Preparation of this functional plan was coordinated by the Department of Business, Economic Development and Tourism.

Issue area: Environmental Resources and Cultural Heritage

Objective III.A: Enhancement of respect and regard for the fragile resources which comprise Hawaii`s natural and cultural environment. Increased preservation and maintenance efforts.

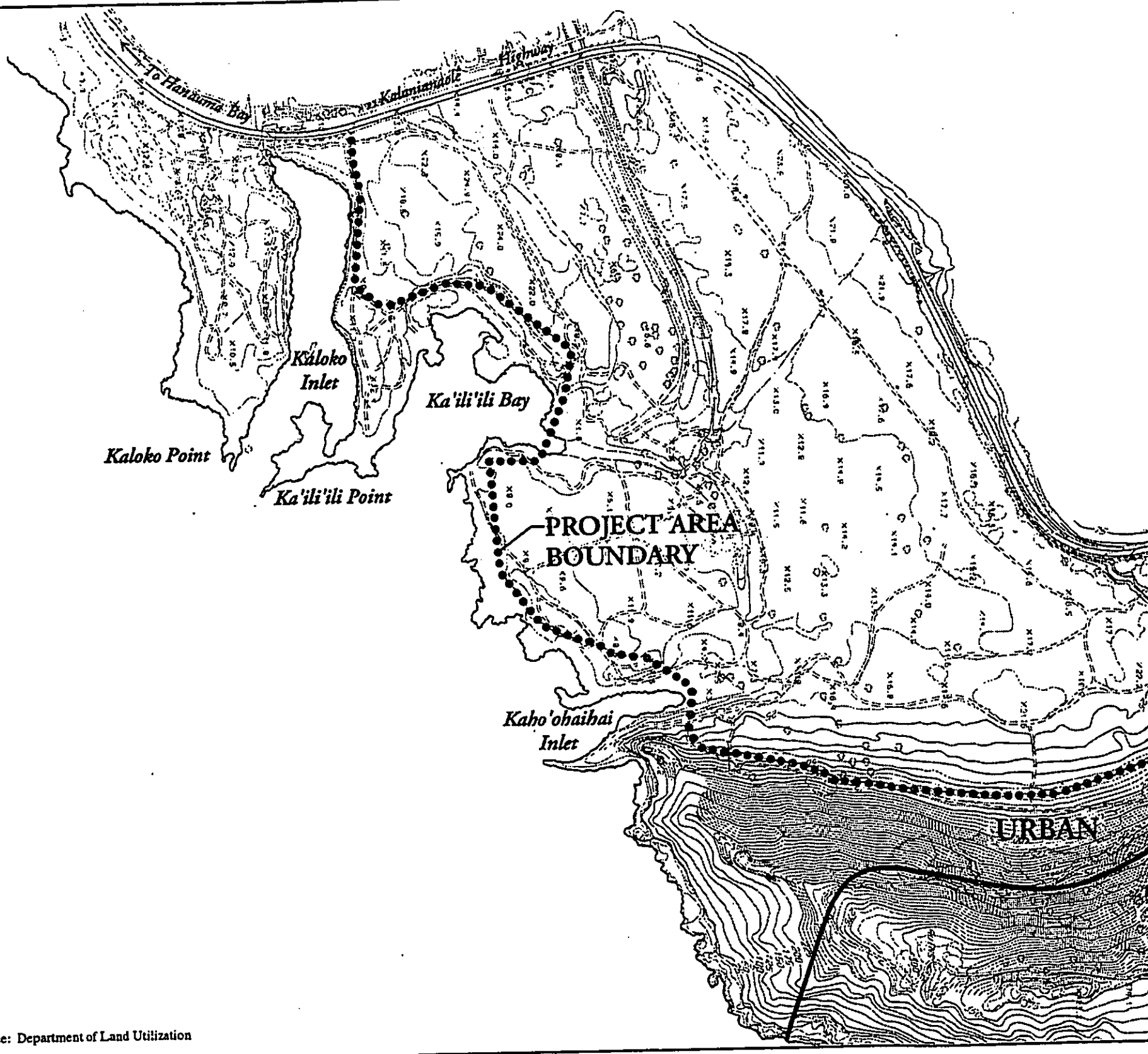
Policy III.A.1: Assist in preserving and maintaining recreational resources.

Discussion: Previous studies at Queen's Beach, and more recent investigations prepared for this EIS, have provided a wealth of information concerning the site's environmental resources. These studies have documented the presence of an endangered water fern and an important stand of a native cotton plant that provides potential habitat for a native beetle identified as a species of concern. Other information shows that a coastal habitat of native strand vegetation is under stress from repeated exposure to off-road vehicles. In addition, a remnant portion of a roadway that once connected Waimanalo with Maunalua is located in the upper reach of Kealakipapa Valley.

All of these features are important elements of the site which demonstrate the sensitivity with which a golf course must be designed and operated. Such design features will be incorporated into the design of the proposed project. Further, the proposed project will provide new recreational opportunities for visitors in the form of a new golf course, and will include a trail system that provides lateral access along the shoreline and a connector trail from the Makapu`u Lighthouse access road to the lateral shoreline trail. These trails will enhance access along the shoreline for visitors (and residents).

3.2.3 State Land Use Law

The State Land Use Law is intended to preserve, protect, and encourage the development of lands in the State for uses which are best suited to the public health and welfare of Hawaii`s people. 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 (LUC), pursuant to Chapter 205, HRS. The proposed golf course site is located entirely within the State Land Use Urban District (Figure 7). Control over land uses in the Urban District falls



Source: Department of Land Utilization

State Land Use Boundaries

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

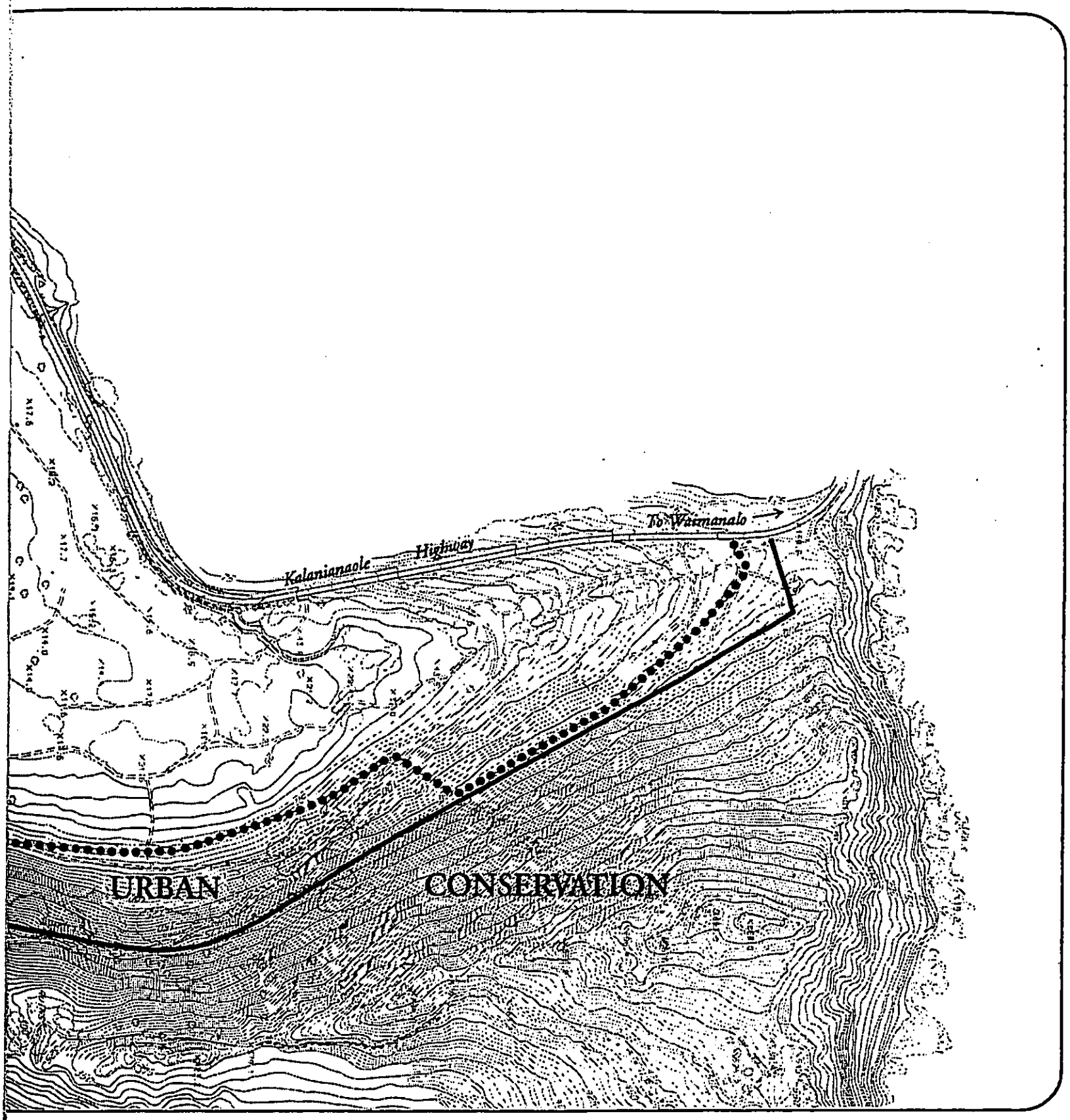


Figure 7

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under the jurisdiction of the County in which they are located, in this case the City and County of Honolulu.

3.2.4 Governor's Office of State Planning's Five-Year Boundary Review

During the 1992 State Land Use District Boundary Review conducted by the Office of State Planning, a "Priority 2" recommendation was made to reclassify the Queen's Beach area in its entirety to the State Conservation District. This recommendation was based on the conclusion that the area contains "significant scenic, recreational, coastal, and open space resources." It should be noted that Priority 2 recommendations are identified as lower priority than Priority 1 recommendations. They include five categories of land, as follows:

- are already protected because of government or non-profit ownership with conservation objectives such as national parks;
- are significant, but not of as high quality or abundance as other areas or not as critical to meeting a specific conservation objective;
- are believed or known to contain conservation resources but further survey work is necessary to either verify resources or determine appropriate boundary lines;
- are of high quality but resource constraints limit the number of petitions which can be prepared; and
- other methods are available to protect identified conservation values.

The Office of State Planning has determined that it will likely only petition the State Land Use Commission to redesignate the Priority 1 areas to the State Conservation District (Office of the Governor, 1992)[1].

3.2.5 Coastal Zone Management

In an effort by the State of Hawaii to preserve and protect the natural resources of the coastal zone, special controls on development along the shoreline have been implemented, as contained in Chapter 205A, Hawaii Revised Statutes, HRS), as amended (hereafter referred to as Chapter 205A). This law defines the Coastal Zone Management Area to be all areas of the State of Hawaii, except forest reserve areas. As such, the project site lies within the Coastal Zone. In addition, Chapter 205A contains the general objectives and policies upon which all counties within the State of Hawaii, including the City and County of

[1] On July 1, 1996, Governor Cayetano signed Act 299, which includes provisions to rename the Office of State Planning to the Office of Planning and place the office under the Department of Business, Economic Development and Tourism. As of the publication of this EIS, the future functions and responsibilities of the Office of Planning have not been clearly defined, and no work is in progress to prepare a new 5-year boundary review.

Honolulu, have structured more specific legislation which have created Special Management Areas (SMAs) for each county (the specific provisions of the county Special Management Area are discussed in Section 3.3.1). The requirements of Chapter 205A as related to the proposed project, are discussed below.

Recreational Resources

Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

1 *Protect coastal resources uniquely suited for recreational opportunities that cannot be provided in other areas.*

2. *Require replacement of coastal resources having significant recreational value, including but not limited to surfing sites and sandy beaches when such resources will be unavoidably damaged.*

3. *Provide and manage adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value.*

4. *Provide adequate supply of shoreline parks and other recreational facilities suitable for public recreation.*

5. *Encourage expanded public recreational use of county, State, and federally owned or controlled shoreline lands and waters having recreational value.*

6. *Adopt water quality standards and regulate point and nonpoint sources of pollution to protect and where feasible, restore the recreational value of coastal waters.*

7. *Develop new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, artificial reefs for surfing and fishing.*

8. *Encourage reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions, and credit such dedication against the requirements of park dedication rules and regulations.*

Discussion: The salient elements of the objective and policies for recreational resources that have bearing on the proposed project relate to the provision of adequate access to the shoreline and the provision of recreational facilities suitable for public recreation. Currently, the shoreline fronting the project site is used for a variety of recreational activities, including fishing, hiking, surfing, and sunbathing. In addition, the entire project site is heavily used by off-road vehicles. Unfortunately, the use of off-road vehicles has had a destructive impact on native vegetation near the shoreline, and has left acres of the project bare, subject to erosion during periods of high rainfall.

The proposed golf course will not prevent people from reaching the shoreline and participating in the activities currently enjoyed there (hiking, fishing, surfing, sunbathing). Trails will be established and clearly marked that will provide: (1) lateral access along the shoreline from near Wawamalu Beach to Kaho`ohaihai Inlet; and (2) linear access to the first trail from the existing Makapu`u Lighthouse access road. In this manner, access to and along the shoreline will be guaranteed.

On balance, pedestrian activities now enjoyed at Queen's Beach will continue, and it is hoped that native vegetation will have the opportunity to re-establish healthier communities by enforcing prohibitions against access to the shoreline by off-road vehicles.

Historic Resources

Objective: Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

1. *Identify and analyze significant archaeological resources.*

2. *Maximize information retention through preservation of remains and artifacts or salvage operations.*

3. *Support state goals for protection, restoration, interpretation, and display of historic resources.*

Discussion: Previous archaeological surveys conducted at Queen's Beach and an archaeological inventory survey prepared for this EIS have identified cultural resources in the area. Of three known historic sites, only one will be affected by

the proposed golf course: the remnants of a government road that used to connect Waimanalo with the ahupua`a of Maunalua. The road remnant has suffered extensive degradation over the years and no longer contains any signs of the paving, curbstones or "side rock-walls" formerly attributed to the historic site. The site remnant has been mapped and described, and its location has been plotted. Thus, all available information has been recorded for the site remnant, and is therefore considered no longer significant. These findings have been accepted by the State Historic Preservation Officer.

Scenic and Open Space Resources

Objective:

Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

1. *Identify valued scenic resources in the coastal zone management area.*

2. *Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline.*

3. *Preserve, maintain, and where desirable, improve and restore shoreline open space and scenic resources.*

4. *Encourage those developments which are not coastal dependent to locate in inland areas.*

Discussion: The scenic quality of the views along Kalanianaole Highway from Hanauma Bay to Makapu`u Lookout have been well-documented. There is no dispute that the landforms in this region, coupled with the proximity of the Pacific Ocean, contribute to a highly valued visual experience, which is an important resource for residents and visitors alike. The project site, which includes sections of coastline and Kealakipapa Valley, has been described by some as "wild and pristine." Certainly, the landscape has a "wild" character because of the interplay between the ocean and the landforms combined with the existing vegetation. However, the overwhelming abundance of plant species, by number and coverage, are introduced species.

"Pristine" connotes something characteristic of the earliest condition of the land, being still pure, untouched and unspoiled (Guralink, 1974). However, examination of the history of the property reveals that the use of the project site has changed many times over the centuries. Most recently it supported cattle ranching until the mid-1940's, when a tsunami destroyed the ranch, and in the 1970s and 1980s, it was used as a deposition for large builders. Many people have now come to expect that the Queen's Beach area and Kealakipapa Valley will forever resemble its current appearance, even though this appearance hardly resembles the mix of vegetation that existed in ancient times. Without question, the proposed golf course will alter the present appearance of the site. Managed turfgrass will replace acres of introduced vegetation that now grows wild. However, some intrinsic elements of the visual environment will not be altered. No structures will be present within 1,500 feet of the shoreline. Views to the shoreline and of the Makapu`u Head landform will not be interrupted. Rough areas of the course will remain in a more "wild" state, with native vegetation replacing introduced species to the extent possible, and the native Hawaiian cotton plant preserved, along with native coastal vegetation.

Visual analysis conducted for this EIS (Section 4.9) has shown that the golf clubhouse will be prominent as a viewing object for only transitory periods in both directions. In this context, the visual impacts of the proposed golf course are not significant, and can be mitigated by the proper selection of plant species for landscaping and the architectural treatment, including height, materials and color selection, of the clubhouse.

Coastal Ecosystems

Objective: Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

1. *Improve the technical basis for natural resource management.*

2. *Preserve valuable coastal ecosystems of significant biological or economic importance.*

3. *Minimize disruption or degradation of coastal water ecosystems of significant biological or economic dependence.*

4. *Encourage those developments which are not coastal dependent to locate in inland areas.*

Discussion: Although the objective and policies for this subject area emphasize coastal ecosystems, it is difficult to distinguish what "coastal" refers to. For the purposes of this analysis, we will assume it means within the coastal zone management area, rather than literally on the coast. In this context, there are four identifiable important ecosystems found on the project site: (1) native coastal strand vegetation; (2) three small colonies of *Marsilea villosa*, an endangered Hawaiian water fern; (3) stands of the Hawaiian cotton plant (*Gossypium tomentosum*) which are known to host a beetle (*Rhycongonus simplex*) that is identified as a species of concern by the U.S. Fish and Wildlife Service; and (4) the marine environment, including the inlets and bays found at the project site.

As currently proposed, all these important ecosystems will be preserved and enhanced. Because vehicular traffic along the shoreline will be eliminated, the coastal strand vegetation will be given an opportunity to thrive under less stressful circumstances. The colonies of *Marsilea villosa* will be incorporated into the design of the golf course and protected by a management plan that will be jointly developed by the applicant and appropriate state and federal agencies. The Hawaiian cotton plant will also be incorporated into the landscape plan for the golf course, primarily in the rough areas of the course. Coastal water quality will be protected with the development of an integrated pest management (IPM) plan, that will provide construction and operational directives that will minimize erosion and the application of pesticides and fertilizers. The effectiveness of the IPM plan will be evaluated by monitoring wells on the makai portion of the property, and by periodic, scheduled coastal water quality monitoring.

Economic Uses

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

1. *Concentrate in appropriate areas the location of coastal dependent development necessary to the State's economy.*

2. *Insure that coastal dependent development such as harbors and ports, visitor industry facilities, and energy generating facilities are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area.*

3. *Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:*
   - *utilization of presently designated locations is not feasible*
   - *adverse environmental effects are minimized*

Discussion: The proposed golf course is not coastal dependent, and the objective and policies in this area are not applicable to this type of development. It should be noted that even though a golf course can be built in other locations, existing zoning and development plan policies support a golf course on the site.

Coastal Hazards

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, and subsidence.

Policies:

1. *Develop and communicate adequate information on storm wave, tsunami, flood, erosion, and subsidence hazard.*

2. *Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard.*

3. *Ensure that developments comply with requirements of the Federal Flood Insurance Program.*

4. *Prevent coastal flooding from inland projects.*

Discussion: Flood Insurance Rate Maps (FIRM) show that portions of the site adjacent to the shoreline are subject to inundation, in zones "AE" and "VE" (see Section 4.11). Zone VE has an added velocity hazard which is not present in Zone AE. The clubhouse, which is the structure closest to the shoreline on the project site, is located about 1,500 feet from the shoreline, and is located within Zone D. Areas designated Zone D are areas in which flood hazards are undetermined. Prior to the issuance of a building permit, appropriate engineering studies will be conducted to determine the exact nature of any flood hazards in this area. Design of the clubhouse would then be influenced by these findings, if necessary.

Managing Development

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies:

1. *Effectively utilize and implement existing law to the maximum extent possible in managing present and future coastal zone development.*

2. *Facilitate timely processing of application for development permits and resolve overlapping or conflicting permit requirements.*

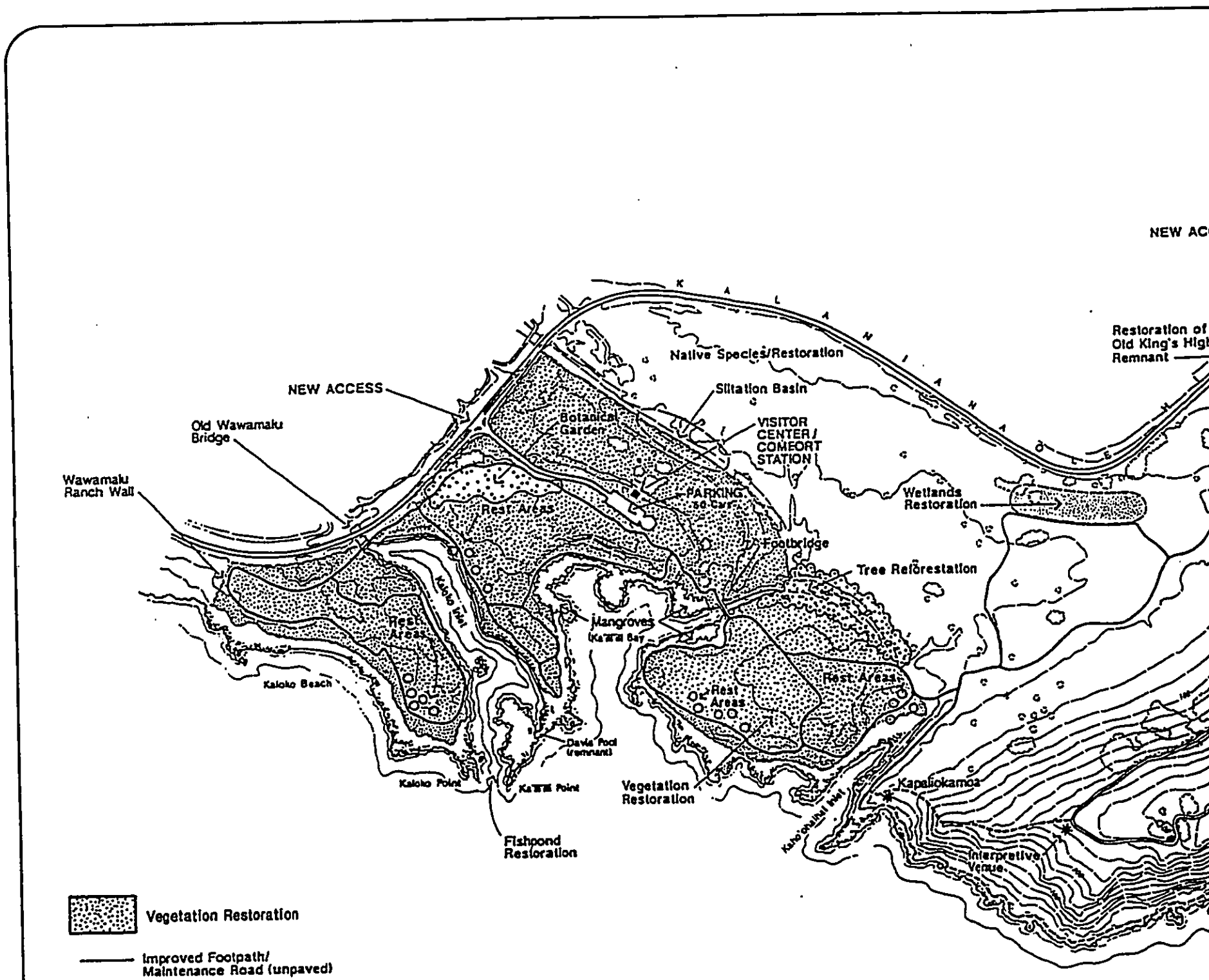
3. *Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the general public to facilitate public participation in the planning review process.*

The application for a Special Management Area Use Permit (SMP), the preparation of a an environmental impact statement for the project, including technical appendices, and the processing of the permit request, including public hearings, is consistent with these policies and objective.

3.2.6 Ka Iwi Park Master Plan

In April 1996, the Department of Land and Natural Resources published the *Ka Iwi Park Master Plan and Final Environmental Impact Statement* (DLNR, April 1996). The publication of this document culminated an effort by DLNR to determine whether the site which is the subject of this EIS, among other areas, should be acquired for inclusion in the Hawaii State Parks system. This effort by DLNR was a two-step process that began with the preparation of a master plan for the proposed park, and ended with the EIS.

The proposed Ka Iwi State Park encompasses about 354 acres of land and includes Queen's Beach, Kealakipapa Valley, and Makapu`u Head (Figure 8). Of the total 354 acres, Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE) owns 316 acres, all of which is under lease to Kaiser Aluminum and Chemical Corporation. Of those 316 acres, approximately 166 acres comprise



Source: Ka Iwi State Park Master Plan and FEIS, 1996

Proposed Ka Iwi Park Master Plan
State of Hawaii/Department of Land & Natural Resources

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

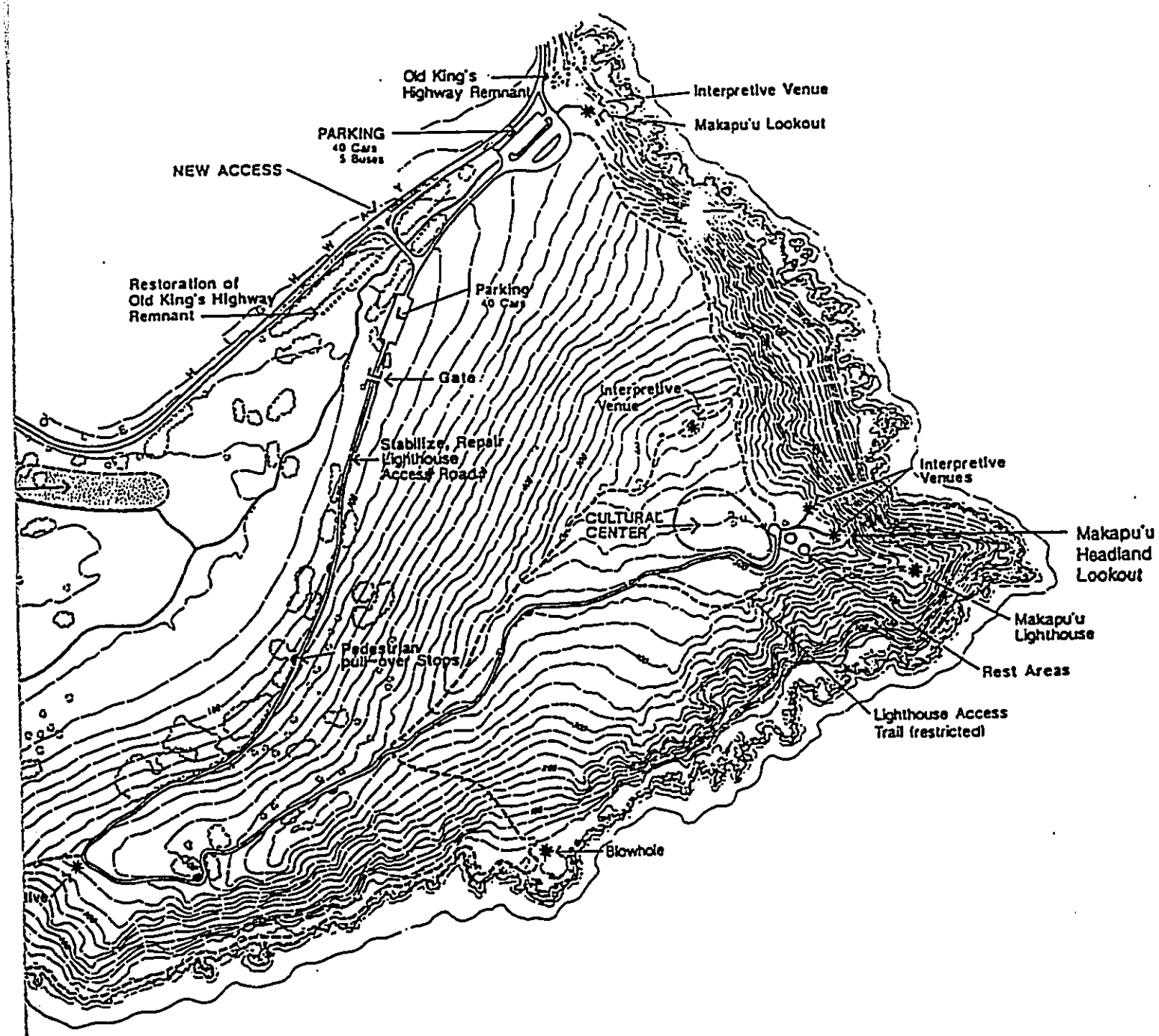


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Figure 8

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the project site. The Ka Iwi State Park Master Plan was prepared pursuant to House Concurrent Resolution No. 261 H.D.1, S.D.1 (H.C.R. 261), entitled "*Concerning an Integrated Scenic Shoreline Park in East Oahu Extending from Hanauma Bay to Makapu`u Point*," 1988 Legislative Session. H.C.R. 261 directed the DLNR to take all steps necessary to keep this coastal area in open space.

The planning process that led to the creation of a master plan for the proposed Ka Iwi State Park began in 1993 with a series of public meetings and input from the DLNR, Division of State Parks. The results of these meetings and dialogue resulted in the selection of a Recommended Plan for Ka Iwi State Park by DLNR, which was presented in 1996. The overall concept for the Recommended Plan is interpretive and passive in nature, with an emphasis on hiking trails, shoreline vegetation restoration, the creation of a botanical garden, and the construction of comfort stations and scenic interpretive venues. For a complete description of the proposed park and the planning process associated with it, the reader is directed to review the previously cited Master Plan and EIS (DLNR, April 1996).

Neither the proposed park nor the proposed golf course can be implemented without eliminating the other. However, there are some aspects of the proposed golf course that are complementary to the proposals for the proposed park:

- restoration of shoreline vegetation;
- prohibition of shoreline access for off-road vehicles;
- construction of a footbridge across the drainage channel; and
- establishment of a trail system along the shoreline and connect the shoreline trail to the Lighthouse access road.

The status of the proposed Ka Iwi State Park is uncertain. In order for the development of a park to proceed, the land must either be condemned or purchased by the State of Hawaii. Since the value of the property has not been established, a final purchase or condemnation price tag cannot be determined at the present time. In expectation of a possible purchase, the 1997 Hawaii State Legislature approved a budget that included an appropriation of $11.4 million for Ka Iwi Park acquisition. An additional $4.6 million is being sought in Federal funding made available by the Intermodal Surface Transportation and Enhancement Act (ISTEA).

3.2.7 Hawaii Ocean Resources Management Plan

The Hawaii Ocean Resources Management Plan (1991) sets forth guiding principles and overall recommendations for the State to achieve comprehensive

and integrated ocean and coastal resources management. The plan is mandated by Chapter 228, HRS, and developed by the Hawaii Ocean and Marine Resources Council. Several technical papers included as supplements to the plan provide detailed analysis and survey results that are the foundation of the plan. The subjects of the technical papers include: ocean research and education; ocean recreation; harbors; fisheries; marine ecosystem protection; beaches and coastal erosion; waste management; aquaculture; energy; and marine minerals.

The technical supplement for marine ecosystem protection provides a description of values associated with marine ecosystems (resource value, economic value, scientific and education value, cultural and historical value, recreational and aesthetic value, and ecological value), and the legislation and permit processes designed to protect them.

Included in this technical supplement is a discussion of several management issues pertaining to marine ecosystems. One of the key issues discussed relate to the need for establishment of a coordinated marine life and water quality monitoring effort that would provide a comprehensive data base regarding the quality of Hawaii's marine and coastal resources. This effort would require monitoring before, during, and after construction of coastal developments in order to obtain a better data base for understanding the numerous and cumulative impacts of these coastal developments. In this context, the proposed project at Queen's Beach would complement the need for additional data related to water quality in the vicinity of the project site. This could be compared to similar data now being gathered in the area around the ocean outfall for the East Honolulu Wastewater Treatment Plant.

3.3 City and County of Honolulu

3.3.1 Special Management Area

The City and County of Honolulu, similar to other counties in Hawaii, has adopted: (1) boundaries which identify the Special Management Area (SMA); and (2) rules and regulations which are consistent with Chapter 205A, HRS that control development within the SMA. These rules and regulations are contained in Chapter 25, Revised Ordinances of Honolulu (ROH).

Section 25-3.2, ROH, includes guidelines which are used by the City Council of the City and County of Honolulu for the review of developments proposed within the SMA. These review guidelines, and the relationship of the proposed golf course to them, are discussed below.

All development in the special management area shall be subject to reasonable terms and conditions set by the City Council to ensure that:

- *adequate access, by dedication or other means, to publicly owned or used beaches, recreation areas and natural reserves is provided to the extent consistent with sound conservation principles.*
- *adequate and properly located public recreation areas and wildlife preserves are reserved.*
- *provisions are made for solid and liquid waste treatment, disposition and management which will minimize adverse effects upon special management area resources.*
- *alterations to existing land forms and vegetation; except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation or failure in the event of earthquake.*

Discussion: The proposed project will provide two trails that provide access to and along the shoreline fronting the project site. Three colonies of the endangered Hawaiian water fern or `ihi`ihilauakea (*Marsilea villosa*) will be preserved and their habitats enhanced and managed to ensure their long-term success. Significant numbers of the Hawaiian cotton plant, or ma`o (*Gossypium tomentosum*), will be preserved and incorporated into the design of the golf course, thus protecting potential habitat for the Hawaiian snout beetle (*Rhyncogonus simplex*), an insect that is listed as a species of concern by the U.S. Fish and Wildlife Service.

Solid waste will be handled by a private refuse company and disposed off-site. This project will place additional demands on the limited space at existing landfill sites, however, these demands can be reduced by composting and reuse of green cuttings for landscaping conditioner and mulch, incineration of appropriate materials at the municipal H-Power Plant to generate electricity for general power consumption and recycling of paper, glass, aluminum and ferrous material.

The overall "wild" character of the project site will be altered by the shaping and landscaping of the golf course. However, this alteration will be ameliorated by the planting of native species appropriate for the climate, the retention of significant numbers of Hawaiian cotton plants, the retention of large numbers of existing mature trees, and appropriate design and finish treatment for the clubhouse. It should be emphasized that overall, the site will retain its open character, and views of the ocean and Makapu`u Head will not be compromised.

No development shall be approved unless the City Council has first found that:

- *the development will not have any substantial, adverse environmental or ecological effect except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interest. Such adverse effect shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect and the elimination of planning options.*
- *the development is consistent with the policies and objectives contained in HRS Section 205A-26.*
- *the development is consistent with the county general plan, the development plans and zoning. Such a finding of consistency does not preclude the concurrent processing where a development plan amendment or zone change may also be required.*

Discussion: The proposed golf course at Queen's Beach will not have any substantial, adverse environmental or ecological effect that cannot be minimized or mitigated. Positive impacts resulting from the project include:

- protection and enhancement of coastal strand vegetation;
- preservation and protection of three colonies of the Hawaiian water fern, or `ihi`ihilauakea (*Marsilea villosa*);
- preservation of significant numbers of the Hawaiian cotton plant, or ma`o (*Gossypium tomentosum*);
- management of on-site stormwater runoff; and
- reuse of treated wastewater that otherwise would be discharged to the ocean.

In addition, the implementation of an integrated pest management plan will ensure proper construction and operational practices that reduce the use of fertilizers and pesticides, control on-site storm water runoff, reduce irrigation requirements, and otherwise protect groundwater resources from contamination, thereby protecting the quality of the nearshore marine environment.

As discussed in Section 3.2.5, the proposed project is consistent with the policies and objectives contained in Section 205A-26, HRS. Further, as shown in Sections 3.3.2, 3.3.3, and 3.3.4, below, the proposed project is consistent with the county general plan, development plans, and zoning.

The City Council shall seek to minimize, where reasonable:

- *dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon.*
- *any development which would reduce the size of any beach or area usable for public recreation.*
- *any development which would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the special management area and the mean high tide line where there is no beach.*
- *any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast.*
- *any development which would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.*

Discussion: The proposed project will not alter any water bodies nor will it reduce the size of any beach or area usable for public recreation. In fact, public recreation opportunities will be enhanced by the 29 acres of land on the western edge of the golf course that will be set aside for possible public use. As discussed above, access to and along the shoreline will be continued with the construction of two trails.

The line of sight from Kalanianaole Highway toward the sea will not be impacted by the proposed golf course. In some instances, the character of the landscape will be altered from a "wild" to a more formal appearance, but the overall character of the entire project site will remain open.

Groundwater quality, and the marine environment, will not be impacted by the golf course, particularly with the implementation of an integrated pest management plan and the future monitoring of groundwater and ocean water quality.

3.3.2 General Plan

The General Plan for the City and County of Honolulu was adopted in 1977 and has been subsequently amended, most recently in 1992. 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 O`ahu. The Plan is also a statement of broad policies which facilitate the attainment of the objectives of the plan. The reader will note similarity in language and intent between some policies contained in the General Plan, the review guidelines

found in Chapter 25, ROH and the objectives and policies of Chapter 205A, HRS. The following General Plan policies pertain to the proposed project:

Natural Environment

Protect Oahu's natural environment, especially the shoreline, valleys, and ridges from incompatible development.

Seek the restoration of environmentally damaged areas and natural resources.

Require development projects to give due consideration to natural features such as slope, flood and erosion hazards, water recharge areas, distinctive land forms, and existing vegetation.

Protect the natural environment from damaging levels of air, water, and noise pollution.

Protect plants, birds and other animals that are unique to the State of Hawaii and the Island of Oahu.

Protect Oahu's scenic views, especially those seen from highly developed and heavily traveled areas.

Provide opportunities for recreational and educational use and physical contact with Oahu's natural environment.

Discussion: As discussed in Sections 3.2.5, and 3.3.1, Coastal Zone Management and Special Management Area, respectively, the proposed project will ensure that the physical environment, important ecosystems, rare and endangered plants and animals and Oahu's scenic views, are protected, and in many cases enhanced.

Culture and Recreation

Encourage the restoration and preservation of early Hawaiian structures, artifacts, and landmarks.

Identify, and to the extent possible, preserve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance.

Provide convenient access to all beaches and inland recreation areas.

Discussion: According to an archaeological inventory survey prepared for this EIS and accepted by the State Historic Preservation Officer, no significant historic sites remain on the project site. Two shoreline access trails will be provided for the public. One will enter the project from the Wawamalu Beach area. The second trail will connect to the Lighthouse Access Road.

3.3.3 Development Plan

The City and County of Honolulu`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 DP areas have been established on O`ahu, including the East Honolulu DP area where the project is located. The East Honolulu DP area includes the area from Aina Koa Ridge to Makapu`u Point. The East Honolulu Development Plan is codified as Ordinance No. 83-86, as amended, Revised Ordinances of Honolulu.

The City's DP Program is undergoing comprehensive revisions based on amendments to the City Charter adopted in the 1992 General Election and the General Plan. The Planning Department is now working on the East Honolulu DP, which will then be considered by the Planning Commission and City Council prior to adoption. Until amendments are made to the existing DP provisions, current requirements will prevail.

The DP Ordinance consists of four elements: Common Provisions (applicable for all DP regions), Special Provisions, DP Land Use Maps and DP Public Facilities Maps (for each DP region).

(1) Common Provisions

Section 24-1.3 of the DP Common Provisions describes the various land use categories found within each of the eight DP regions. The project site is designated "Preservation" on DP Land Use Maps. This land use category includes the following types of land (appropriate to the project site):

- Lands necessary for the conservation, preservation and enhancement of sites with scenic, historic, archaeologic or ecologic significance.
- Lands necessary for providing and preserving park lands, wilderness and beach reserves, and for conserving natural ecosystems of endemic plants, fish and wildlife, for forestry, and other related activities to these uses.
- Lands having an elevation below the maximum inland line of the zone of wave action, and marine waters, fish ponds and tide pools of O`ahu unless otherwise designated on the development land use map.

- Lands suitable for growing of commercial timber, grazing, hunting, and recreation uses, including facilities accessory to such uses when said facilities are compatible with the natural physical environment.

(2) Special Provisions

The DP Special Provisions for East Honolulu set forth urban design considerations for development within the district for open space and public views. Important views within the district include "mauka and makai coastal views along Kalanianaole Highway from Koko Head to Makapu`u Head." As discussed earlier in Sections 3.2.5 and 3.3.1, the design of the golf course, and the clubhouse, will respect existing views toward the shoreline from Kalanianaole Highway, and of Makapu`u Head.

(3) DP Land Use Map

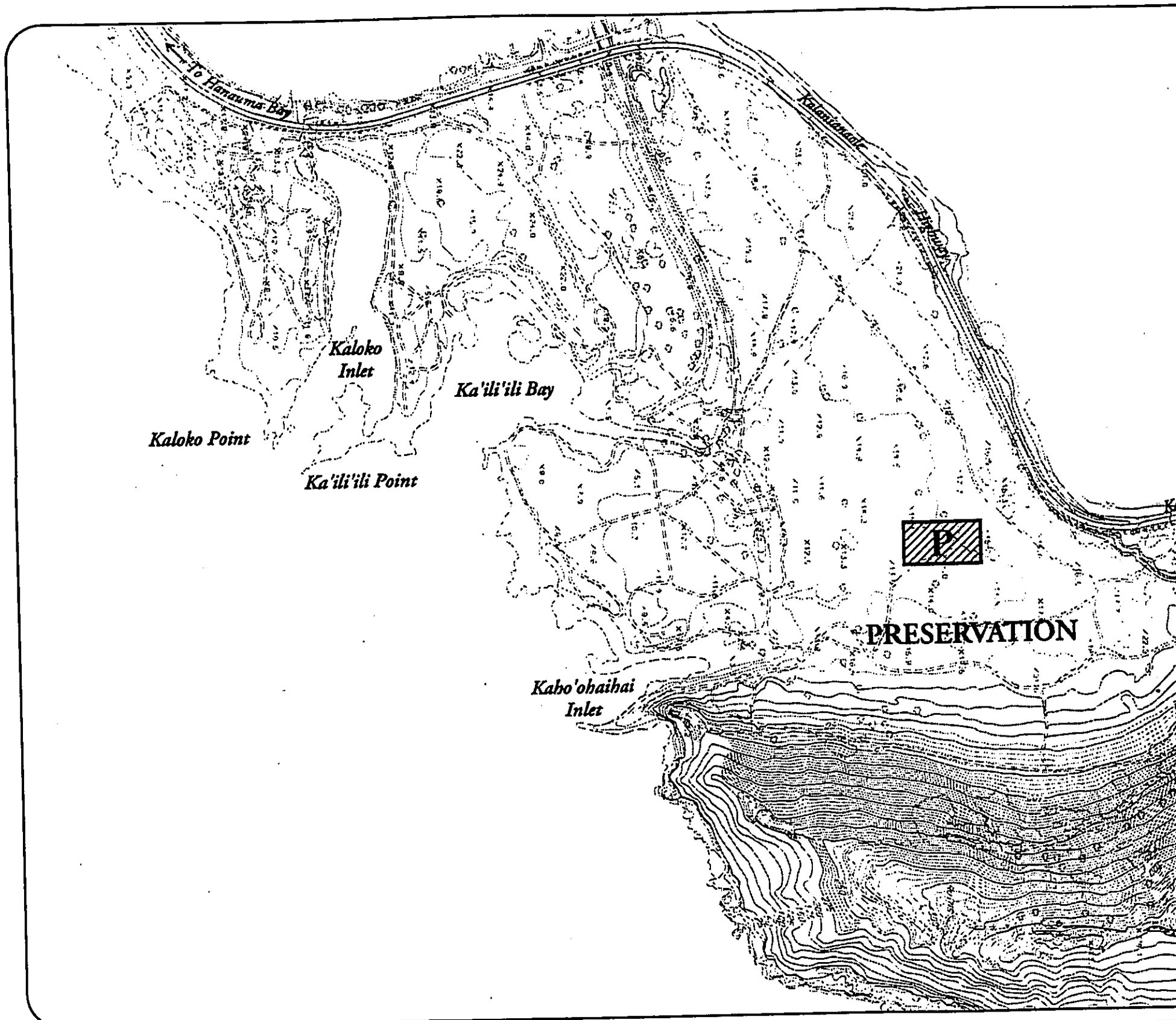
The entire project area is designated Preservation on the East Honolulu DP Land Use Map (Figure 9) A golf course is consistent with this DP designation.

(4) DP Public Facilities Map

The City and County of Honolulu DP Public Facilities Map identifies public and private proposals for parks, streets and highways, major public buildings, utilities, terminals and drainage. The East Honolulu DP Public Facilities Map was recently amended by the Honolulu City Council (Ordinance 97-23), to include the entire site as "Park Publicly Funded, Site Determined, Within Six Years." Figure 9).

3.3.4 Honolulu Land Use Ordinance

The Land Use Ordinance (LUO) and accompanying maps define the allowable uses of land within the City and County of Honolulu. The LUO describes the various zoning districts throughout the City and County, the uses allowed within each zoning district, and the applicable development standards for each district. The project site is zoned P-2, General Preservation District (Figure 10). According to the LUO:

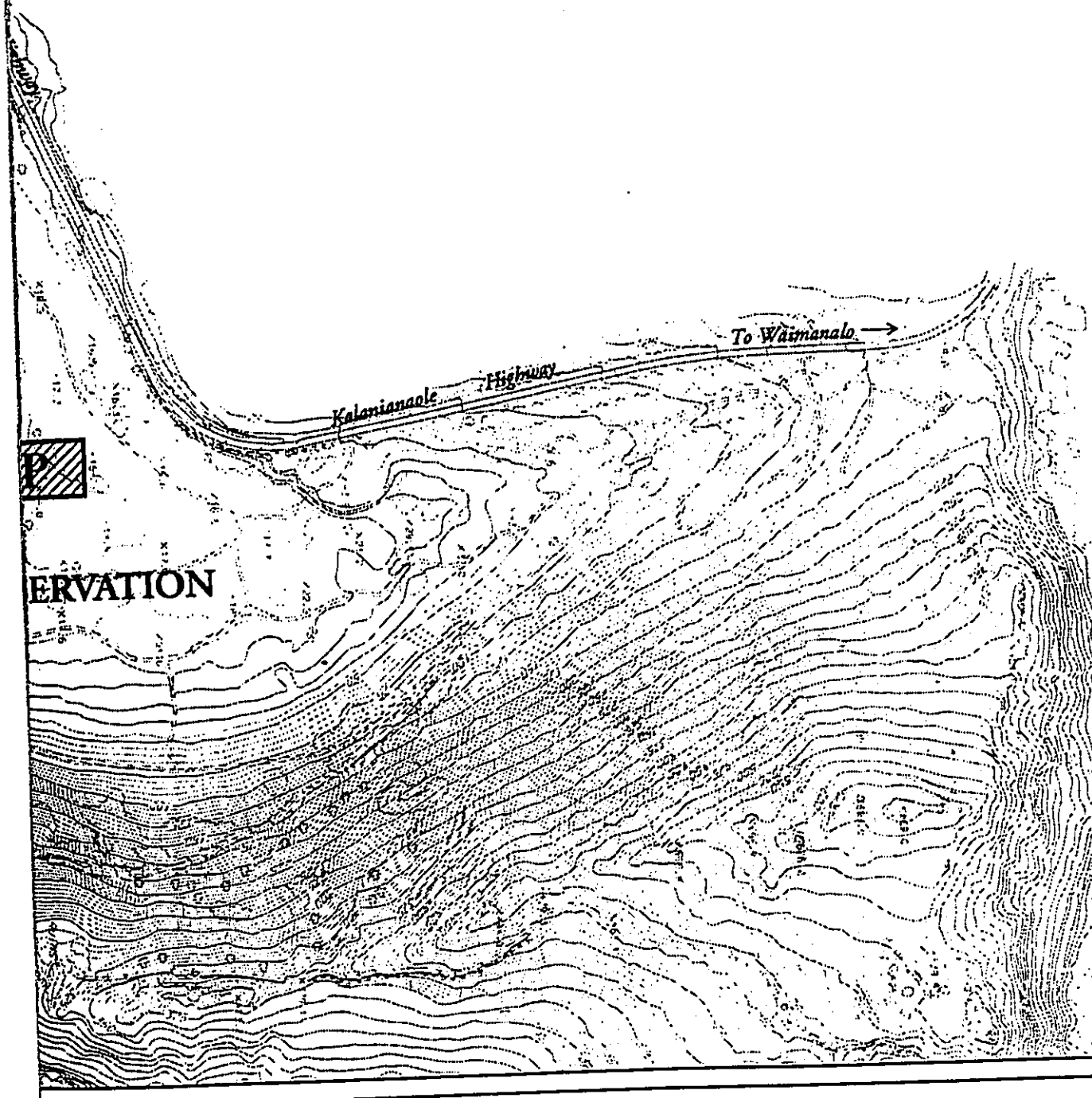


City and County East Honolulu Development Plan Land Use/ Public Facilities Map

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

LEGEND

P — Proposed Park Publicly Funded Site Determined Within 6 Years



and Use/

Figure 9

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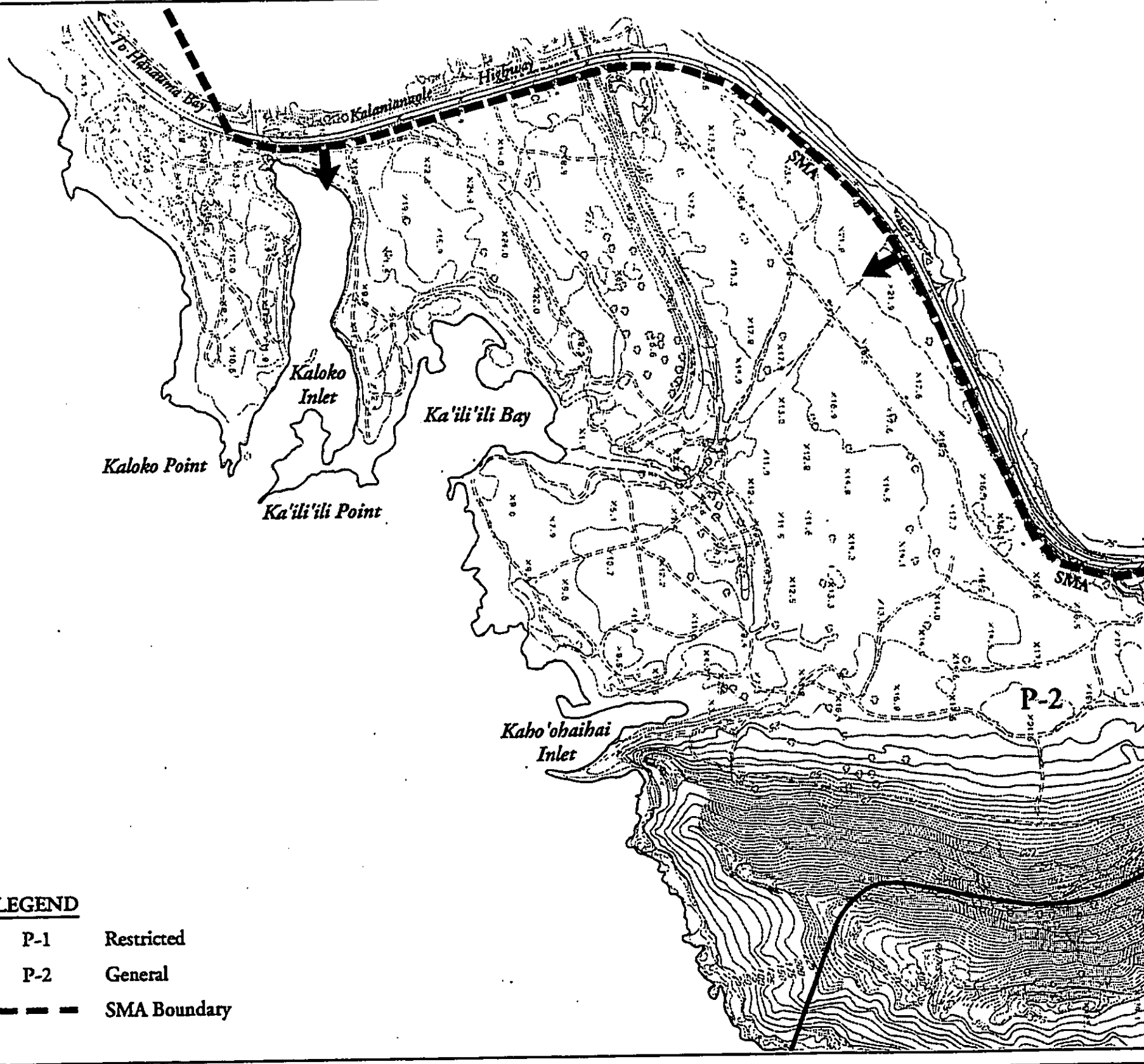
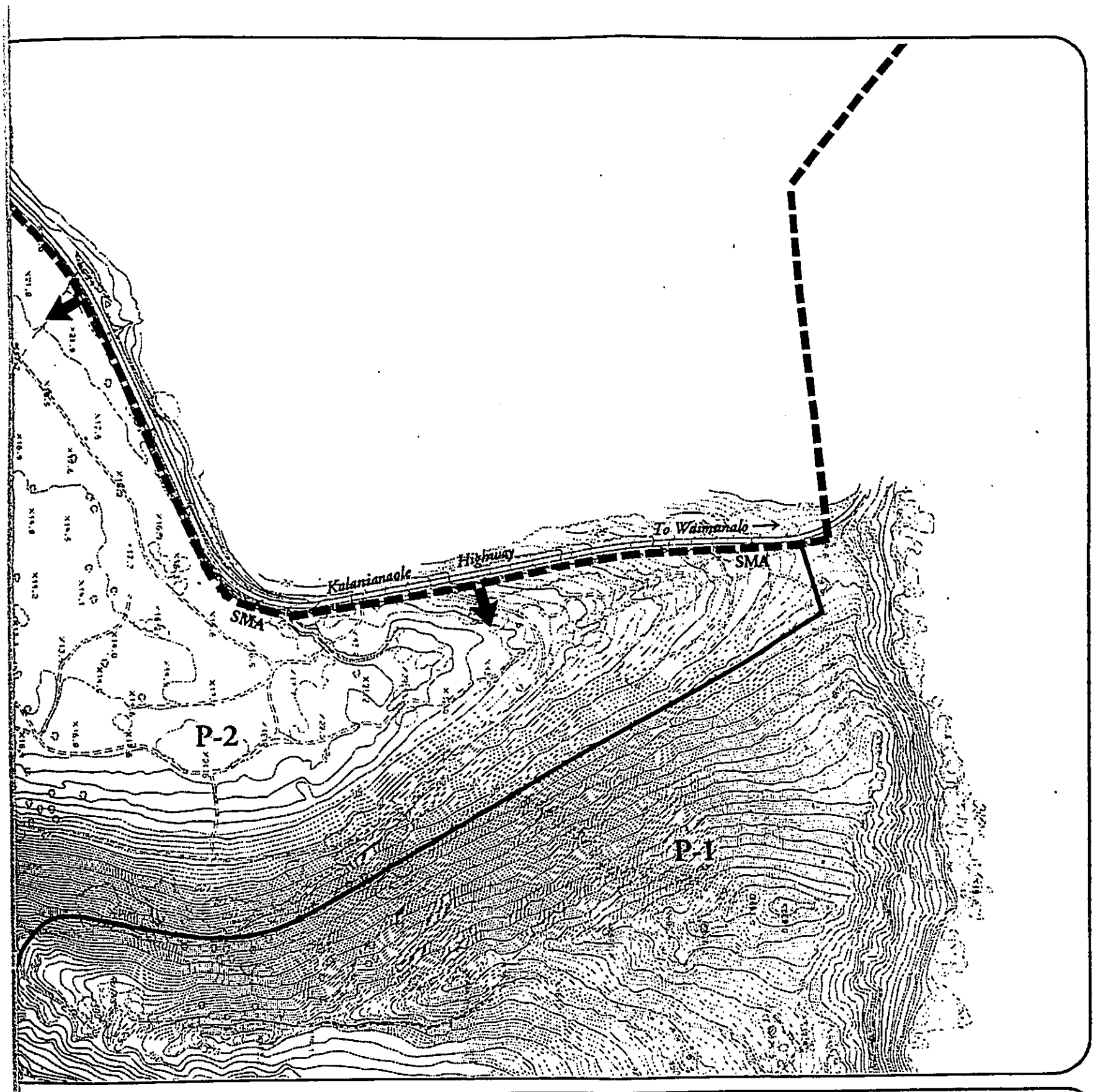


City and County of Honolulu Zoning and SMA Boundary Map

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation



Boundary Map

Figure 10

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> "The purpose of the preservation districts is to preserve and manage major open space and recreation lands and lands of scenic and other natural resource value."
>
> "It is also the intent that lands designated urban by the State, but well-suited to the functions of providing visual relief and contrast to the City's built environment or serving as outdoor space for the public's use and enjoyment be zoned P-2 General Preservation District. Areas unsuitable for other uses because of topographical considerations related to public health, safety and welfare concerns shall also be placed in this district."

Golf courses are allowed within the P-2 General Preservation District as a Plan Review Use, when the DP Land Use Map for the site is designated Preservation, parks and recreation or golf course.

QUEEN'S GOLF COURSE

Chapter
4

Assessment of Existing Conditions, Probable Impacts and Mitigation: Physical Environment

CHAPTER 4
ASSESSMENT OF EXISTING CONDITIONS, PROBABLE IMPACTS AND MITIGATION: PHYSICAL ENVIRONMENT

4.1 Climate

The National Oceanic and Atmospheric Administration, Environmental Data Center, has recorded temperature and rainfall at Makapu`u in its publication, *Climate of Makapu`u Point, Hawaii.* According to this record, the warmest month is September, with average daily temperatures at sea level ranging between 83° F and 74° F. The coolest month is February, with average daily temperatures ranging between 76° F and 67° F. From 1951 through 1973, the maximum temperature was 97° F and the minimum temperature was 53° F (U.S. Department of Commerce, 1978).

The area is usually sunny and dry. Between 1951 and 1973, average annual rainfall was 31.8 inches. Rainfall is chiefly from a few heavy winter storms between October and April. Rainfall from tradewind showers is negligible. On the average, there are only 15 days a year when rainfall is greater than 0.5 inches (ibid).

Between May and October, tradewinds predominate with wind mostly from the northeast or east. Wind direction is more variable during the rest of the year. During tradewind conditions, seaward facing cliffs and the shoreline at Queen's Beach are exposed to strong, steady gusts. The strength and constancy of the tradewinds is evident in plant life on the headland, which exhibits a form referred to as "windshear" (ibid).

4.2 Topography

4.2.1 Existing Conditions

The area in the vicinity of the project site can be divided into four topographic regions : (1) a coastal zone; (2) a valley (Kealakipapa Valley); a rocky headland (Makapu`u Head); and (4) a coastal bench trail.

The coastal plain and the lower portion of Kealakipapa Valley have gentle slopes of 5 percent or less, with maximum elevation of about 24 feet above Mean Sea Level (AMSL). Any variation in slope is mostly due to drainage ways which feed Kaloko and Ka`ili`ili Inlets, and to boulders deposited throughout this area. A general slope map is depicted in Figure 4.

The mouth of Kealakipapa Valley near the coastal plain is wide and narrows to its head near Makapu`u Lookout at about 160 feet A MSL. Slopes in the valley range from 5 to 10 percent. Again, any other variation in topography is mostly due to scattered boulders.

From the lowest point of Kealakipapa Valley to the summit of Makapu`u Head (at 669 feet MSL), the west slope of Makapu`u Head ranges from 10 to 60 percent. The slope of Makapu`u Head's north facing cliffs ranges from 100 to 360 percent, and its east facing cliffs range from 75 to 125 percent. This terrain is quite rugged and the cliffs are extremely dangerous for climbing. None of these areas are included in project area.

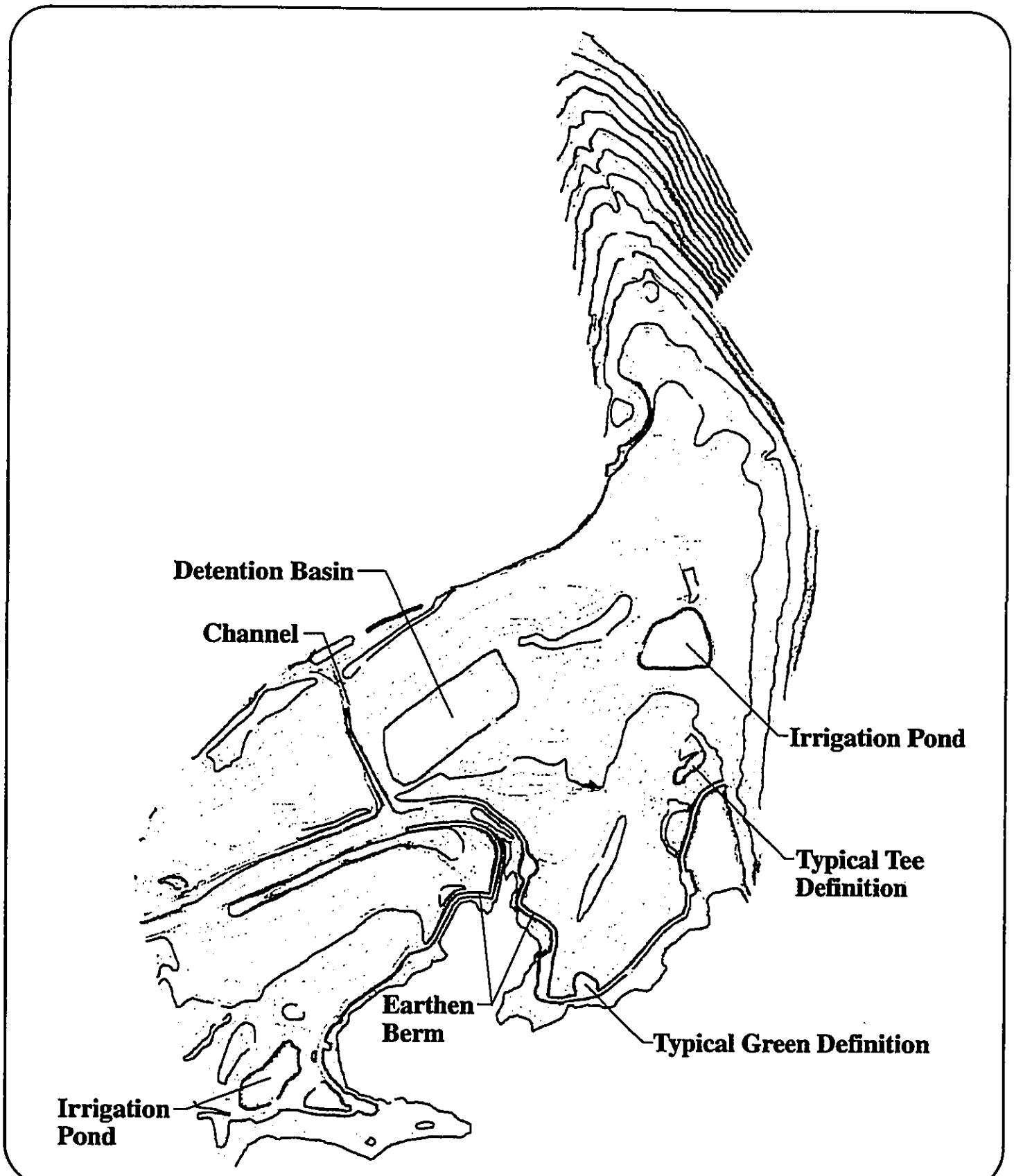
A fairly level shore bench along the eastern side of Makapu`u extends for about 4,500 feet beginning near the northern side of the rock groin at Kaho`ohaihai Inlet. This bench can be traversed by hikers or fishermen.

4.2.2 Probable Impacts

Topography and drainage are closely related, and the proposed grading plan for the golf course addresses issues related to retention of storm water runoff and erosion control. A detailed discussion of grading and drainage can be found in Section 6.4. However some observations about impacts to the topography of the site follow, which are based on the drainage and grading report prepared for this EIS by Sam O. Hirota, Inc. (Appendix N).

In general, the existing topographic profile for the site will be maintained. The seven-acre driving range for the course will be excavated to serve as an on-site detention basin during storm events (Figure 11). The elevation of the outer edge of the driving range will be at about 12 feet AMSL, with the inner basin of the driving range set at about 4 feet AMSL. Two other areas will be excavated for use as irrigation ponds. The first pond is located southeast of the clubhouse an has an area of about 1.7 acres. The overall depth of the pond will be 8 feet and it will have a holding capacity of about 3.9 million gallons (MG). The second irrigation pond, located between the 4th and 7th and 8th holes will have a similar depth profile as the first pond and will be 1.2 acres in size with a holding capacity of about 2.4 MG.

Another change in the topography of the project site involves the construction of a berm along the makai boundary of the project site. The major structural element of this berm will be the boulders which have been deposited throughout the project site over the years. Soil will be placed on top of the boulders, and the berm will then be grassed (boulders will not be removed from the area of dense



Grading Features of Proposed Golf Course

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

Figure 11

Source: Sam O. Hirota, Inc. 1997

Not to Scale

Prepared By Helber Hastert & Fee, Planners

ma`o plants that will be retained in the southeastern portion of the golf course in the vicinity of the 14th, 15th, and 16th holes).

Other impacts which would occur as a result of the topographic changes are related primarily to the grading activities associated with their construction and are discussed in Section 6.4.

4.3 Geology and Soils

4.3.1 Existing Conditions

Makapu`u Head is the southeastern end of the Ko`olau Range. The Ko`olau volcano is one of two shield volcanoes that formed the island of O`ahu. The Ko`olau Range is the eroded remnant of this great shield volcano, which was an unusually elongated shield built principally by eruptions along a northwest-trending rift zone. When volcanic activity associated with the Ko`olau volcano ended about 2.5 million years ago, the highest part of the Ko`olau Range was northeast of the existing crest. Subsequently, fluvial erosion carved a series of valleys in the Ko`olau shield which may have reduced its height by as much as 1,000 feet (MacDonald, et al, 1986).

Coastal areas of O`ahu also underwent a series of submergences and emergences resulting from changes in the ocean level during glacial and interglacial phases. Long ago, during much higher stands of the sea, ocean waves eroded away all ridgelines dividing windward valleys from Makapu`u through Waimanalo, cut a seacliff around Makapu`u Head and scattered blocks of marine limestone between Makapu`u Lookout and the summit of Makapu`u Head. The shore bench along the north and east sides of Makapu`u Head was probably cut by wave action in relatively recent times when sea level was slightly higher than at present. Wind, rain, and salt spray battering the face of Makapu`u Head have eroded the softer layers of exposed lava flows and left the harder layers standing in relief (Stearns, et al, 1985).

The Koko Rift is part of the landscape that was added to the southeastern edge of the Ko`olau Range about 30,000 years ago. It is one of the last areas of volcanic activity on O`ahu. From an aerial perspective, the Koko Rift is an easily discernible linear chain of tuff cones which extends from Koko Head to the offshore islands of Kaohikaipu and Manana, to the northeast of Makapu`u Beach Park (MacDonald, et al, 1986).

Most of the coastal plain in the vicinity of Queen's Beach was submerged until the Kalama Crater, at the mouth of Kalama Valley, erupted about at about

30,000 to 34,000 B.C. Lava from the Kalama Crater flowed to the sea and formed a rocky shoreline extending from Sandy Beach to the vicinity of Kaho`ohaihai Inlet. Subsequent wave action reshaped this shoreline and deposited sand and cobble beaches.

In October 1994, Environmental Chemistry, a firm which prepared an analysis for this EIS of potential impacts related to fertilizer and pesticide application, conducted a site visit and performed soil borings and sample collection in order to verify the occurrence and distribution of soils at the project site. The investigation also included sample analysis for soil chemical characterization that would be used as a baseline for assessing future chemical impacts, both on soil chemistry and groundwater chemistry at the site (Walker, 1995) (see Section 4.4).

Based on an evaluation of existing soils maps and the site investigation, the following soils predominate at the site:

Rock Land (rRK). This soil type includes areas of exposed rock which covers 25 to 90 percent of the surface. The rock outcrops and very shallow soils (less than a few millimeters are the main characteristics. This land type is commonly used for urban development. In many areas, especially on Oahu, the soil material associated with the rock outcrops is very sticky and very plastic. It also has high shrink-swell potential. Buildings on steep slopes are susceptible to sliding when the soil is saturated. The rRK soils cover small areas of the eastern portion of the proposed golf course. Other smaller pockets of rRK soils occur mainly between Kaloko Inlet and Ka`ili`ili Bay.

Koko silt loam, 2 to 6 percent slopes (KsB). This soil occupies smooth slopes. Included in mapping were small eroded spots, small nearly level areas, and small areas that have a buried profile. Gravelly soils are on foot slopes and along drainageways. Permeability is moderate, runoff is slow and erosion hazard is slight. These soils cover a very small portion of the proposed golf course in the vicinity of Kaloko Inlet.

Lualualei clay, 0 to 2 percent slopes (LuA). This soil is on alluvial fans. It is underlain by coral, gravel, sand, or clay at depths below 40 inches. this soil cracks widely upon drying. Permeability is slow and the erosion hazard is no more than slight. The shrink swell potential is high. These soils cover a majority of the project area.

Lualualei extremely stony clay, 3 to 35 percent slopes (LPE). This soil occurs on talus slopes on Oahu and Kauai. The soil is similar to Lualualei clay, 0

to 2 percent slopes, except that there are many stones on the surface in the profile. Runoff is medium to rapid and the erosion hazard is moderate to severe.

Boulders, soil and dredge spoil have been deposited over about half of the coastal plain east of Kalanianaole Highway. The two Lualualei series soils cover about 90 percent of the area comprising the project site (Figure 12).

Soils were also analyzed for chemical and mineralogical characteristics. Based on this analysis, data was used to draw initial conclusions regarding the soils and their role in chemical fate and transport (see Section 4.4). These are:

- The predominant soils of the site are of the LuA series (90% of the site) and are composed of clay and clay-rock mixtures. The clays are primarily montmorilonite which exhibit high shrink-swell capacity.
- The clays will likely provide a significant barrier to subsurface transport of chemicals (and water) due to the very fine texture of the soils and low permeability.

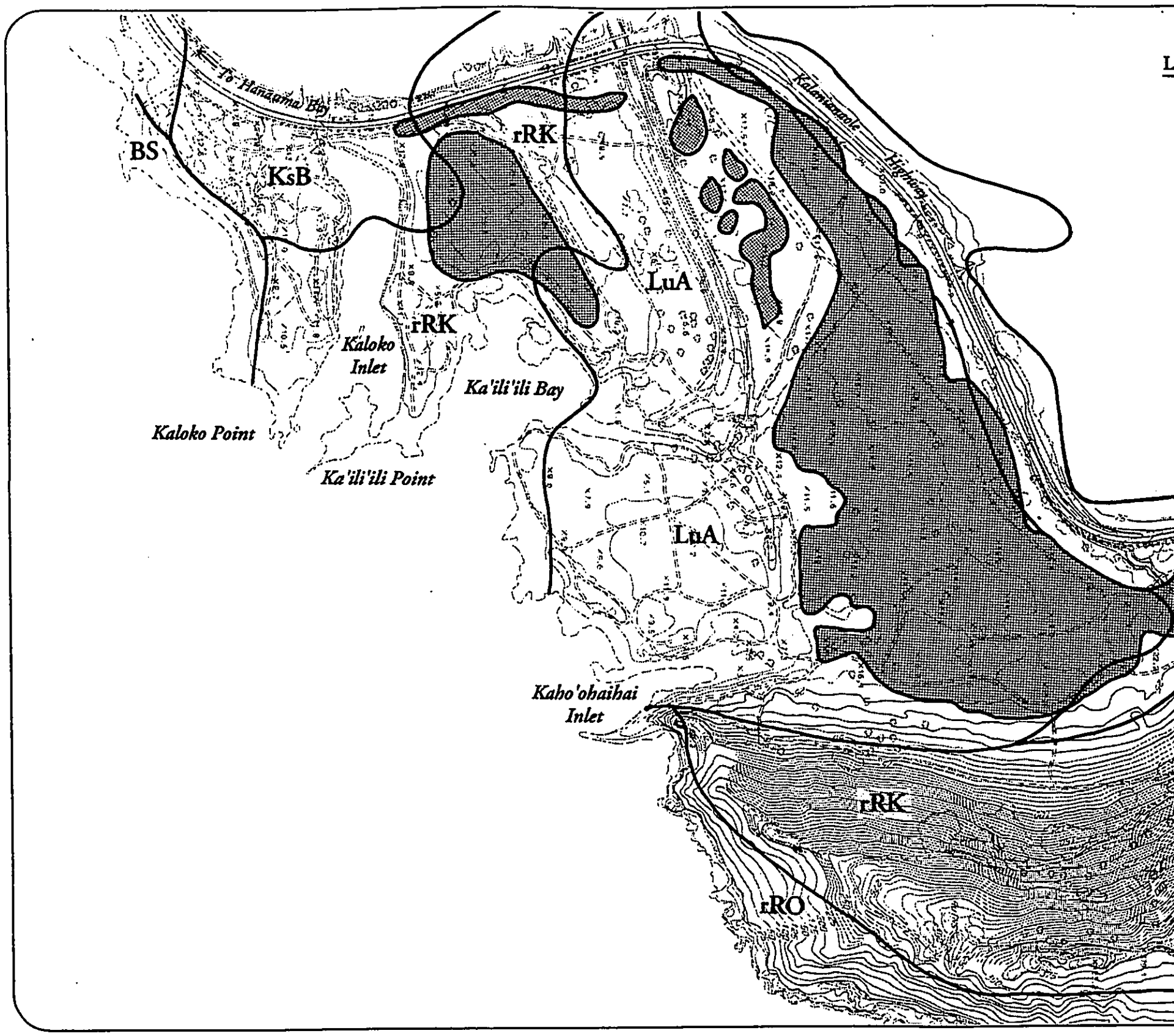
- The low permeability of the soils will be a benefit for subsurface movement but may enhance surface runoff transport processes.

4.3.2 Probable Impacts

Because of the complex relationship between soil chemistry, pesticide and fertilizer application, and impacts to groundwater and the nearshore environment, a full discussion of the impacts of pesticides and fertilizers is consolidated in Section 4.4. It is hoped this organization of material offers the reader a clearer description of impacts and relationships, rather than partially explaining material in various sections, or repeating all information in many sections.

4.4 Hydrogeology and Nearshore Marine Resources

Typical of most shoreline areas in Hawai`i, coastal development can influence marine resources in a direct path between the land and the ocean, using groundwater as a pathway. This relationship is a direct result of the volcanic origins of Hawai`i, which has created a myriad of subsurface pathways through porous lava for groundwater to reach the ocean. In this manner, pollutants can reach groundwater as a result of leaching through the soil, and ultimately find their way to the ocean. In recognition of this relationship, several studies have been prepared to anticipate the possible effects of the construction of a golf course at Queen's Beach on groundwater and the nearshore marine



Soils Map

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

LEGEND

rRO	Rock Outcrop	KsB	Koko Silt Loam
rRK	Rock Land	BS	Beaches
LPE	Lualualei Extremely Stony Clay		Stockpiled Boulders (overlaying other soil types)
LuA	Lualualei Clay		

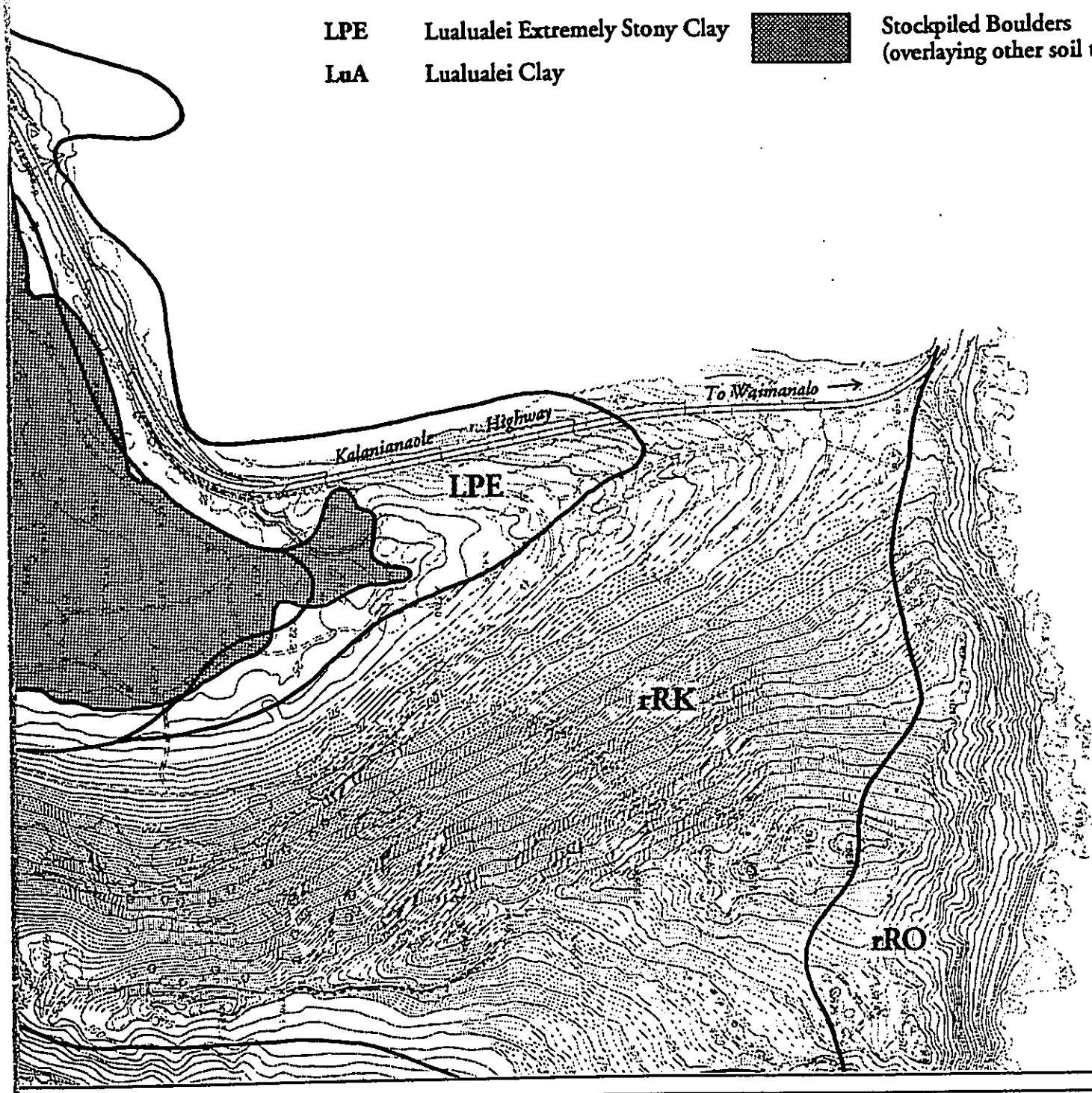


Figure 12

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environment. These studies are listed below. Following, this section will then discuss both hydrogeological resources and nearshore marine resources because of their interconnected association, and the potential impacts the operation and construction of the golf course could have on these resources.

Potential Impact on Groundwater of the Proposed Golf Course at Queen's Beach, Oahu, Hawaii (Tom Nance Water Resource Engineering, May 1995) (Appendix A).

Baseline Survey of Water Quality and Marine Community Structure in the Vicinity of the Proposed Queen's Beach Golf Course, Oahu, Hawaii (Marine Research Consultants, April 1996) (Appendix B).

Geochemistry, Soil Chemistry and Potential Chemical Impacts from Construction and Maintenance of a Proposed Golf Course: Queen's Beach, Oahu, Hawaii (William J. Walker, Ph.D., April 1995) (Appendix C).

4.4.1 Existing Conditions

Geologic formations in the project area. There are three geologic formations of significance on the surface of the project site: (1) the original island-building Koolau volcanics; (2) alluvium washed down from the eroded Koolau volcanic slopes; and (3) later-stage Honolulu series volcanics which flowed across the makai portion of the site from a vent in Kalama Valley. The inland edge of the later-stage flow has been obscured on the ground today by fill material which was brought onto the site over a number of years from the 1970s through the 1980s (Nance, 1995).

As is typical elsewhere, the Koolau volcanics are thin bedded and very permeable. At elevations below sea level at the site, they are separated from later-stage volcanics by a layer of coral, sand, and other calcareous materials which accumulated on the submerged shelf of the ancient shoreline (Nance, 1995).

The later-stage Honolulu series volcanics, which issued from a vent in Kalama Valley, form the present shoreline of the project site. Based on boreholes drilled for this project to obtain data on existing water quality, it is comprised of two or more flows with a total thickness of more than 50 feet near the shoreline and about 35-45 feet thick at distances of 300 to 500 feet back from the shoreline. The lavas are dark gray and very dense. Since its permeability is primarily derived from shrinkage cracks and clinker layers, it is locally quite variable (Nance, 1995).

Surface water. As indicated in Section 4.5, the tributary area for the project site includes Kalama Valley, which is not naturally tributary to the site. Runoff from Kalama Valley is intercepted by a concrete-lined ditch and conveyed along the edge of the Hawaii Kai Golf Course to the project site. A 15-foot wide unlined ditch receives storm runoff which then proceeds to Ka`ili`ili Bay (see Section 6.4) (Nance, 1995).

Substantial stormwater events in this dry area are infrequent. However, the curbs and gutters in the Kalama Valley residential area and the concrete-lined trapezoidal channel do deliver small amounts of water into the site at the Kalanianaole Highway bridge on an almost continuous basis. Past runoff events have eroded a sump area immediately downstream of the concrete apron of the lined ditch. The small, but almost continuous inflow from Kalama Valley creates a pond of standing water in this sump (Nance, 1995).

Groundwater. Based on data derived from the four onsite boreholes, groundwater beneath the site occurs as a thin, brackish basal lens in hydraulic contact with saline groundwater at depth and seawater at the shoreline. Groundwater levels move up and down in response to the ocean tide. Their mean levels are less than one foot above sea level everywhere throughout the site. Salinities measured at the top of this lens varied from 3 to 13 parts per thousand (PPT), equivalent to 9 to 37 percent seawater (by comparison, seawater salinity is 35 ppt). This water is too salty for irrigation use. Furthermore, the salinity levels in the test boreholes increase rapidly in response to pumping at moderate rates (Nance, 1995).

Data from the boreholes allows an estimated groundwater flow rate of approximately 110,000 gallons per day within the project site, which is one to two orders of magnitude lower than typical groundwater flow rates found elsewhere throughout the state. Given the high salinity of the groundwater, the tendency to increase salinity when pumped, and the extremely limited groundwater flowrate, it is easily understood that groundwater resources within the project site cannot be exploited for either drinking or irrigation uses. In fact, at present, there is no use of groundwater anywhere in the region, including the now abandoned wells that were drilled in Kalama Valley and on the northeastern side of Koko Head. Prior to residential development in the valley, these wells were used on a limited basis for agricultural irrigation. None were used very extensively and all produced brackish water (Nance, 1995).

Marine Environment Physical Structure. Other than the shallow embayments of Kaloko, Ka`ili`ili and Kaho`ohaihai, the intertidal zone fronting Queen's Beach

consists primarily of the wave-swept basaltic bench that is nearly barren of macrobiota. Seaward of the wave impact zone near the shoreline, the offshore region is comprised of a gently sloping limestone encrusted extension of the basaltic shoreline bench. Water depth in this mid-reef zone ranges from about 20 to 50 feet. As wave stress in this region is substantially less than in the shallower areas, and suitable hard substrata abound, the area provides an ideal locale for colonization by attached benthos, particularly reef corals, and generally the widest assortment of species and growth forms are encountered in this region (Marine Research Consultants, 1995).

The mid-reef bench is cut by numerous sand-filled fissures which create ledges and undercuts. Off the southwestern end of the property (Kaloko Inlet), bottom topography is characterized by a large number of irregularly-shaped basalt blocks, along with numerous small caves and ledges eroded into the basaltic structures. In comparison to the composition at Kaho`ohaihai, bottom topography at Kaloko and Ka`ili`ili was relatively flat (Marine Research Consultants, 1995).

The coral community structure offshore of Kaho`ohaihai differs substantially from that offshore of Kaloko and Ka`ili`ili, in that *Pocillopora meandrina* is the dominant species, rather than *Porites lobata*. In addition, reef fish community structure, in terms of numbers and species and individuals, is markedly higher offshore of Kaho`ohaihai than either Kaloko or Ka`ili`ili. The difference in both fish and coral community structure appears to be a response to the greater topographical relief created by basaltic rocks that occur offshore of Kaho`ohaihai (Marine Research Consultants, 1995).

The seaward edge of the mid-reef platform (at a depth of about 50 feet) is marked by a grading from solid basalt-limestone topography to an aggregate of generally unconsolidated sand and rubble. Little benthic biota occur in the sand-rubble deep reef zone, with the predominant forms being small colonies of *Porites spp.* growing on rubble fragments. The sand rubble bottom extends offshore for quite a distance (Marine Research Consultants, 1995).

Coral Community Structure. The predominant taxon of macrobenthos (bottom-dwellers) throughout the nearshore zones off the project site are Scleractinian (reef-building) corals. Other dominant benthos are echinoids (sea urchins) and holothurians (sea cucumbers). In total, 13 species of "stony" corals, and two "soft" corals were observed throughout the area off-shore the project site. Two dominant species of coral, *Porites lobata* and *Pocillopora meandrina* accounted for 77 percent of total coral cover and about 14 percent of total bottom cover. All told, all coral species accounted for 18 percent of bottom cover, which is typical of many open coastal regions off O`ahu (Marine Research Consultants, 1995).

Reef Fish Community Structure. The reef fish community off Queen's Beach is not particularly rich, and is typical of that found along an exposed coastline of O`ahu. Reef fish community structure is largely determined by the topography and composition of the benthos. However, the fish community also appears to be affected by a significant amount of fishing. A total of 47 species representing 15 families were observed during a recent survey. The largest numbers of species and individuals were observed in areas characterized by large numbers of irregularly shaped basalt rocks, small caves, and low ledges. This bottom topography is more typical in areas fronting Kaho`ohaihai and Kaloko Inlets (Marine Research Consultants, 1995).

The most abundant group of fish are algal-feeding acanthurids such as the brown surgeonfish (ma`i`i`i, *Acanthrus nigrofuscus*), goldring surgeonfish (kole, *Ctenochaetus strigosus*), orangeband surgeonfish (na`ena`e, *Acanthrus olivaceus*), convict tang (manini, *A. triostegus*), yellow tang (lau`i papa, *Zebrasoma flavescens*), and the orangespine unicornfish (umaumalei, *Naso luturatus*). The saddleback wrasse (hinalea, *Thalassoma duperry*) is also common at all sites. Other common fish are the planktivorous blackfin chromis (*Chromis vanderbilti*), the manybar goatfish (moano, *Parupeneus multifasciatus*) and triggerfish (family Balistidae) (Marine Research Consultants, 1995).

A few individuals of several "food fish" species were observed during the survey. These included jacks (ulua, *Caranx melamphygus*), parrotfishes (uhu, *Scarus spp.*), goatfishes (weke, *Parupeneus spp.* and *Mulloidichthys spp.*), and emperorfish (mu, *Monotaxis grandoculis*). However, most individuals were small and actively avoided divers. The behavior, small size and limited number of food fish noted indicates that fishing is exerting a significant influence on the fish community. The effect of fishing is superimposed on the effects of a physical habitat that, across most of the area, does not favor the development of a rich fish community (Marine Research Consultants, 1995).

Endangered and Protected Species. Three species of marine animals that occur in Hawaiian waters have been declared threatened or endangered under Federal jurisdiction. The threatened green sea turtle (*Chelonia mydas*) occurs commonly along the coastlines of O`ahu and is known to feed on selected species of microalgae. The endangered hawksbill turtle (*Eretmochelys imbricata*) is known infrequently in waters of the Hawaiian Islands. Several green sea turtles were sighted on the surface and underwater during the baseline survey off of Queen's Beach (Marine Research Consultants, 1995).

Populations of the endangered humpback whale (*Megaptera novaeangliae*) are known to winter in the Hawaiian Islands from December to April, and have been observed off of Queen's Beach. The present survey was conducted in September, when whales are not present in Hawaiian waters (Marine Research Consultants, 1995).

Sediment Quality in Estuaries. In an effort to develop baseline information regarding the presence of any pesticides that might be part of the existing Queen's Beach ecology, sediment samples were analyzed in all three embayments: The purpose for analyzing the sediment samples was to determine if any pesticides were present in the embayments that could possibly be tied to use at the existing Hawaii Kai Golf Course. The analysis would also provide a measuring point against future tests, once the golf course is developed. Kaloko Inlet; Ka`ili`ili Bay; and Kaho`ohaihai Inlet. Sediment samples were screened for a wide variety of pesticides, including those discussed by Walker (chlorpyrifos, chlorothalonil, 2,4-D, Dicamba; see Table 1, below). The results of the laboratory analysis, using biocide-specific Environmental Protection Agency screening protocol, found no trace of any pesticides (Marine Research Consultants, September 1996).

4.4.2 Probable Impacts

Public interest in the potential impacts that might result from the construction and operation of a golf course has increased dramatically in the last several years. In Hawai`i, this interest has focused on the impacts to ground water and the nearshore marine environment from the application of pesticides and fertilizers to the golf course. The ability to predict such impacts has relied on complex computer models that simulate climate, soil, turfgrass and application techniques. In the case of the investigations for this project, two paired experiments were conducted for both fertilizers and pesticides. In both experiments, actual soil from the project site was used. So instead of using models to predict results, data reflected actual physical conditions found on the site.

Fertilizer. In one set of experiments, Nitrogen, as ammonium sulfate, was applied to two columns, each containing 2 kilograms (kg) of the Lualualei clay (LuA) found on the project site. Nitrogen was applied to the soil at a rate of 200 kilograms/hectare (kg/ha). This rate is high, but not necessarily untypical for annual Nitrogen requirements for Bermudagrass. Each column also had a fresh layer of Bermudagrass. One set of columns had no nitrogen applied and served as a control for the experiment. Irrigation was applied as "rainfall." Water was applied to the column after the addition of fertilizer and effluent from the bottom

of the column was collected continuously. Nitrogen was analyzed in the effluent after the collection of each of the four pore volumes. At the end of the experiment (about 4 weeks due to the low permeability of the soils), the columns were cut into 4 sections and Nitrogen determined in each section. A replicate study was conducted using the same amounts of fertilizer on Bermudagrass, but with a sand/peat soil mixture in order to simulate Nitrogen movement through the greens.

The effluent concentrations of nitrate detected in the leachate from the Lualualei (LuA) soils was extremely low, less than 2 mg/L, for all pore volumes. The low leaching potential is due to the fact that soils are relatively impermeable, such that nutrient and ion movement is severely restricted. Both ammonium and nitrate only occur in significant concentrations in the top 2 inches of soil material. Very little of either species had leached below the top 2 inches of soil.

In contrast to the LuA soils, much more leaching of nitrate has occurred in the sandy mixtures (the growing medium for the greens), although the amounts in terms of total nitrate are still less than 10% of the amount applied. The results for the greens are similar to the soil experiments in that the top 2 inches has effectively tied up ammonium and nitrate. Leaching potential in the sandy peat mixtures is much greater than the LuA soils, but still appears to have attenuation abilities, probably due to the adsorptive capacity of the thatch[2] layer and the presence of the peat in the mixture.

Pesticides. In order to assess potential impacts of pesticides, it is first necessary to identify probable chemicals that would be used on the course. Logical pesticides for the Queen's Beach course were identified based on: (1) information obtained from other golf courses in the area (specifically the Hawaii Kai Golf Course); (2) publications from the University of Hawaii; and (3) peer review scientific literature. This investigation produced the list of pesticides found in Table 1 that are most likely to be used at Queen's.

In terms of potential environmental impact, the use and application of pesticides is the single most crucial issue of concern to regulatory agencies and to the public at large. Choice of pesticide to be used, application practices and timing, and efficacy of the pesticide to be used must always be considered in conjunction with site specific characteristics in order to reduce or eliminate any potential health risk and off-site transport. One of the first evaluations that should be made with regard to pesticide choice and application is to determine the persistence and degradation rates of the compounds under consideration (Walker, 1995).

[2] thatch is the partly decayed layer of leaves, stems, etc. between growing vegetation and the soil

Table 1
Probable Pesticides to be Used at the Queen's Beach Golf Course

Pesticide	Trade Name	Category	Family
Chlorpyrifos	Dursban	Insecticide	Organo-phosphate
Chlorothalonil	Daconil 2787	Fungicide	Halo-benzene
2,4-D	Many	Herbicide	Organo-phosphate
MSMA *	Daconate 6	Herbicide	Arsenical
Dicamba	Banvel	Herbicide	Arylaliph acid

* Not recommended for use in Hawaii due to high persistence of the compound and to the toxicity and potential health impacts of the breakdown products which include inorganic Arsenic.
Source: Walker, 1995.

All pesticides applied to turfgrass will degrade, but their rates of degradation, and hence persistence, are variable. These rates are a complex function of soil, climatic, chemical, microbiological, and physical factors. Numerous studies conducted over the last 20 years have shown that over-application and inappropriate application of pesticides can lead to significance and persistent degradation of soils, surface water and groundwater. In conjunction with the experiments described above, the pesticides listed in Table 1 were applied to the soils. It should be noted that the simulations performed for these experiments were ***worst-case scenarios***. These conditions were designed to simulate a year's worth of chemical being applied at one time, with a storm event (100-year event) occurring immediately after application (Walker, 1995).

Based on these tests, the following summarizes the probable behavior of pesticides that would be applied to the golf course at Queen's Beach:

- Data showed that greater than 90% of the pesticide added to the columns remained in the upper 2.5" of the LuA soil. This layer also contained thatch from the bermudagrass turf. The thatch and soil organic matter provided a significant sink for pesticide and clearly prevents downward migration of all the pesticides.

- Leachate from the sand/peat mixtures was in general higher than the LuA soils, but still quite low considering the solubility of and mobility of Dicamba, 2,4-D and MSMA. Careful management of Dicamba is required, while MSMA should not be used.

- Pesticide degradation followed predictable patterns. Dicamba, 2,4-D and Chlorpyrifos degraded quickly to less than 2 percent of the amount added in only 28 days. The only chemical that did not degrade quickly was MSMA, which is known to have a half-life of about 1,000 days.

The results of this simplistic analysis indicate that under the worst case scenario of a large, one-time application followed by rain, the most problematic pesticides will be those with solubility characteristics, such as Dicamba, that can readily impact surface water and the insecticides, chlorpyriphos and chlorthalonil, that have inherently high toxicity characteristics for non-target organisms. As noted in the Table, application of pesticides at normal rates of less than 0.16 kg/ha per month, will result in only low to moderate risk at worst.

Impact to Groundwater. The previous discussion describes what happens to the pesticides and fertilizers after they have been applied to the golf course and travel through the thatch layer and soil on its way to groundwater. The key question now is what happens to the percolate once it encounters groundwater?

Walker (1995) calculates that percolation from the golf course due to rainfall and irrigation application will average 16 inches per year. Over the area of the course planted in turfgrass, this would amount to 140,000 gpd (the balance of the irrigation water applied to the golf course would be lost to evapotranspiration). Since the present groundwater flow is estimated to be only 110,000 gpd, percolation from the golf course would ultimately more than double the amount of groundwater discharging along the project's shoreline. Walker (1995) also computes the expected quality of water percolating from the golf course. Table 2 shows these expected concentrations compared to the quality of the receiving groundwater. With the exception of those chemicals which were not analyzed for the borehole water samples, constituent concentrations in the percolate are lower than in the groundwater. In effect, the percolate will create lower salinities and otherwise dilute the receiving groundwater (Nance, 1995).

Table 2
Predicted Chemistry of Irrigation Water Which Will Ultimately Reach Groundwater

Constituent	Units	Percolate Quality[1]	Representative Receiving Groundwater Quality
Sodium	mg/L	1,104	1,720
Potassium	mg/L	10	60
Calcium	mg/L	756	290
Magnesium	mg/L	102	245
Chloride	mg/L	1,850	2,500
Nitrate (as NO_3)	mg/L	<0.5	6.0
Phosphate (as PO_4)	mg/L	<0.0001	0.4
Sulfate (as SO_4)	mg/L	None	430
pH	pH units	7.0±	7.5
Metals (Ni, Cu, Cd, Zn, Pb)	mg/L	<0.01	Not Analyzed
Pesticides[2]: 2,4-D	mg/L	3.7×10^{-3}	Not Analyzed
Dicamba	mg/L	0.43	Not Analyzed
MSMA	mg/L	8.5×10^{-8}	Not Analyzed

[1] *Prediction of percolate water quality from Walker (1995)*

[2] Computations of pesticides (from Walker, 1995) are based on a worst case of applying entire year's pesticide at one time followed immediately by 100-year storm event.

As indicated earlier, the saline groundwater occurs in only small quantities beneath the site, and is not a conceivable source of drinking water or irrigation supply. As such, the forecast changes due to the proposed golf course (an increase in flow from 110,000 gpd to 250,000 gpd and a dilution of constituents) are of little consequence to the groundwater resource. However, since the rate of discharge at the shoreline would be more than doubled, potential impacts to the nearshore environment should be assessed with the estimate quantities of discharged nutrients tallied below. The increased nutrient loading is very minor (Nance, 1995).

It may also be instructive to examine the potential subsurface loss of leachate under both normal and worst-case scenarios and then compare this loss to levels considered protective of ecological health. For this comparison, the leachate concentrations observed in the columns studies were used as the potential concentrations in groundwater. It should be noted that the column studies were conducted in a worst case scenario, wherein a large amount (about 1 year's worth) of pesticide was added in a single dose followed by rain. In fact,

	Conditions at Present	Conditions at Full Maturity of the Golf Course
• Groundwater Discharge into the Marine Environment (gpd)	110,000	250,000
• Total Nitrate-Nitrogen Discharged into the Marine Environment (lbs/day)	1.24	1.37
• Total Phosphate-Phosphorus Discharged into the Marine Environment (lbs/day)	0.12	0.12

this scenario should never occur. To evaluate more normal pesticide applications, a second calculation was done to determine the expected leachate and runoff concentrations expected if pesticide application occurred in smaller amounts (about 0.16kg/ha) over several time intervals throughout the year (each month). These values were then compared to all known acute and chronic toxicity levels obtained through the AQUIRE toxicity databases (USEPA). The results are presented below in Table 3.

The results of this simplistic analysis indicate that under the worst case scenario of a large, one-time application followed by rain, the most problematic pesticides will be those with solubility characteristics, such as Dicamba, that can readily impact surface water and the insecticides, chlorpyriphos and chlorthalonil, that have inherently high toxicity characteristics for non-target organisms. As noted in the Table, application of pesticides at normal rates of less than 0.16 kg/ha per month, will result in only low to moderate risk at worst.

The possible impact of pesticides on groundwater and the nearshore environment must be considered differently. The nutrient loading tallied above represents the average concentrations contributed continuously, day after day, as long as the golf course is being fertilized and irrigated. However, the potential for negative alteration to marine ecosystems owing to pesticides and herbicides seems to be nil. It has not been found necessary to utilize substantial quantities of pesticides on golf courses in Hawaii, and only very small applications of

Table 3
Summary of Toxicity Tests for Selected Pesticides and Toxicity Ranking

Chemical	Species Class	Toxicity Test	Range of Conc. for Effect to Occur (ug/L)	Observed Conc. in Leachate (ug/L) if a 1 year application applied at single time (worst case)1	Observed Conc. in Runoff (ug/L) if 1 year application applied at single time (worst case)	Expected Risk	Observed Conc. in Leachate if applied once each month (normal)2	Observed Conc. in Runoff if applied once each month (normal)	Expected Risk
Dicamba	Bird	LC50	>4640	3-16	625	low risk	0.3 - 1.3	52	low risk
	Bird	LD50	>2,510			low risk			low risk
	Mammal	LD50	757			high risk due to runoff			moderate risk
	Crustacea	LC50	>3,900			low risk			low risk
	Amphibia	LC50	106,000			low risk			low risk
	Fish	LC50	>28,000			low risk			low risk
2,4-D ester	Aquatic inverta-brates	POP	1000	1.3 - 3.2	1.71	low risk	0.1-0.3	0.14	low risk
	Crustacea	LC50	>440			moderate risk			low risk
	Fish	LC50	>303			moderate risk			low risk
	Insect	LC50	>1600			low risk			low risk
	Bird	LC50	> 5000			low risk			low risk
	Mammal	LC50	> 380			moderate risk			low risk
MSMA	Fish	LC50	>1200	3.2	0.05	low risk	0.3	nd	low risk
	Crustacea	LC50	>39,000			low risk			low risk

Table 3
Summary of Toxicity Tests for Selected Pesticides and Toxicity Ranking (continued)

	Mammal	LC50	>20,000			low risk			low risk
Chemical	Species Class	Toxicity Test	Range of Conc. for Effect to Occur (ug/L)	Observed Conc. in Leachate (ug/L) if a 1 year application applied at single time (worst case)1	Observed Conc. in Runoff (ug/L) if 1 year application applied at single time (worst case)	Expected Risk	Observed Conc. in Leachate if applied once each month (normal)2	Observed Conc. in Runoff if applied once each month (normal)	Expected Risk
Chlorpyriphos	Crustacea	LC50	>0.01	nd	1	high risk	nd	0.01	moderate risk
	Fish	LC50	>0.1			high risk			moderate risk
	Insect	LC50	>0.01			high risk			high risk (target organism)
	Mollusk	LC50	>800			moderate risk			low risk
Chlorthalonil	Mammal	LC50	310	nd	1.29	moderate risk	nd	0.1	low risk
	Fish	LC50	8-170			high risk			moderate risk
	Insect	LC50	>1,800			low risk			low risk
	Molluska	LC50	>9,000			low risk			low risk
	Amphibia	LC50	160			moderate risk			low risk
	Crustacea	LC50	>140			moderate risk			low risk

LC50= Median lethal concentration required to kill 50% of a population.
LD50=Median lethal concentration required to kill 50% of a population when administered through injection or diet.
nd=not detectable

[1]Worst case is application of approximately 2kg/ha (a year's application) at a single dose followed immediately by rainfall.

[2] Normal application is about 0.16 kg/ha applied 10 to 12 times per year.

herbicides are periodically made to the greens. Such small quantities do not appear to be of a magnitude great enough to leach through the soil and lava, be carried to the ocean via groundwater extrusions, and bioaccumulate to the point of producing noticeable effect. To date, there have been no substantiated instances of even detection of golf course biocides in any marine biota in Hawaii (Marine Research Consultants, April 1995). On this basis, the concentrations of pesticides in the percolate would be undetectable and have no impact on the marine environment (Nance, 1995).

Impacts Attributable to Runoff. Walker (1995) also simulated the impacts on water quality of runoff from the site under the worst case situation. Under this scenario, the following assumptions were made:

- all nitrate and ammonium in the upper 2.5 inches of soil/thatch could react with runoff;
- chemical residue available for impacting runoff would occur in the upper 2.5 inches of soil/thatch;
- rainfall occurred as a 100-year event (13 inches in 24 hours);
- rainfall occurred one day after pesticide application; and
- one-years worth of pesticide was applied at one time.

Based on this simulation, it was demonstrated that all observed maximum concentrations of nitrate and ammonium are below U.S. Environmental Protection Agency standards for drinking water, and thus, runoff and water quality are not adversely affected (Walker, 1995).

For pesticides, runoff concentrations were generally less than two parts per billion (ppb) for all compounds except Dicamba. Dicamba concentrations in runoff were high, approaching one part per million (ppm) (Walker, 1995).

Potential Impacts Related to Sedimentation. Presently the nearshore area fronting the project site receives runoff from a drainage area that includes Kalama Valley (Section 6.4). Therefore, the marine environment is subjected to the surface water input from this drainage area. Even in the event of heavy rainfall, the porous nature of the soil ground cover is such that sheet flow carrying suspended sediment toward the ocean would be expected to be relatively small (Marine Research Consultants, 1995).

Wind-borne sediment is another path that would allow sediment to reach the ocean. Once the project is competed, it is likely that less land area would be directly exposed to wind erosion, thereby reducing the potential for wind-borne sedimentation. During construction phases it is likely that grading permit

requirements will limit the area of excavation at any one time and require dust control measures. In addition, the predominant direction of wind (tradewinds) is from the northeast, resulting in any dust blowing inland, and not toward the ocean. In fact, none of the predominant wind directions (tradewind, kona, north) produce significant offshore transport. As a result, it appears there is little potential for significant input of sediment to the marine environment (Marine Research Consultants, 1995).

4.4.3 Mitigation

The potential for impacts to marine resources and groundwater quality as a result of the development of the proposed Queen's Beach Golf Course appears to be minimal. None of the development activities appear to have the potential to induce long-term changes in the physio-chemical composition of marine waters of a magnitude sufficient to cause changes in biological community structure. Marine environments are routinely subjected to stresses that can be much more destructive than the small changes that might result from any development activity. Tolerance to such changes appears to already be part of the physiological range of the community (Marine Research Consultants, 1995).

However, due to the proximity of the golf course to sensitive ecological receptors, a two-part mitigation program should be considered as part of the construction and operation of the golf course. The first part involves the prevention of pollutants reaching ecological receptors. The second part involves monitoring to ensure that no pollutants are reaching these receptors.

It can be concluded that as long as normal precautionary measures are followed during construction to minimize potential runoff, and operational procedures for the golf course follow predicted guidelines, there should be no adverse impacts to the marine environment. However, regardless of how unlikely, there is always the potential for an unexpected event. In this context, the selection of appropriate chemical practices for nutrient and pest management is an essential component of golf course construction and maintenance. The logical course of action would be to develop and follow a Turf Management System (TMS) that effectively provides guidelines that would limit the amount of chemicals necessary to apply to the golf course. However, some salient elements of the recommended plan are listed below.

Prevention

- all pesticide use should comply strictly with local, state and federal regulations;

- pesticides that minimize pollution potential should be selected;
- MSMA should not be used on the proposed golf course;
- reducing the frequency of pesticide application to turfgrass may be the single most effective practice to reduce potential adverse environmental effects;
- selection of less toxic, less mobile, and less persistent pesticides, or use of alternate control strategies will help reduce potentially adverse environmental effects;
- applying pesticides only when and where necessary will significantly decrease chemical loading and adverse effect on the environment;
- incorporation of pesticides, placement below the soil/thatch surface, and 'watering in' reduces exposure to runoff process and enhances soil adsorption;
- using minimal rates of nitrogen and phosphorus to maintain nutrient levels needed to sustain turfgrass quality is one of the primary management practices used to minimize both surface and subsurface losses of nutrients;
- slow release nitrogen fertilizers and nitrification inhibitors have potential for reducing the environmental impacts resulting from losses of nitrates; and
- depending on cost considerations, one of two alternatives should be used to recycle and filter leachate collected from irrigation water: (1) a water treatment plant to service effluent water from the golf course, or (2) a small treatment contactor placed off of each green. These treatment plants would allow for a closed loop approach to water use. The basic premise of each system would be to construct subsurface drain systems to collect irrigation water that leaches below the root zone, and direct the effluent to either a central treatment plant or individual contactors containing either multi-media (iron oxide zerovalent iron, granular activated carbon, and sand) or simply granular activated carbon;

Monitoring

Baseline Water Quality: Before construction of the course (and required by permitting agencies), an initial baseline survey of surface water and groundwater will need to be conducted in the area. The monitoring points will include:

1.) Three shallow groundwater wells installed along the shoreline. One located at the entrance to Ka`ili`ili Bay, one at the entrance to Kaho`ohaihai Inlet, and one near Kaloko Inlet.

2.) Three shallow groundwater wells installed upgradient from the shoreline in the approximate locations of the entrance to the concrete overflow channel, one north of the channel off-set from the highway and one near the center of the property due west of the Kaho`ohaihai Inlet. These three wells should serve to

characterize groundwater entering the property and possibly influenced by the developed areas west of Queen's Beach.

3.) Surface water sampling locations should be selected to obtain ambient incoming storm and surface water onto the property. Suggested sampling locations would include the concrete overflow channel, the entrance to Kaloko Inlet, the entrance to Ka`ili`ili Bay, and the entrance to Kaho`ohaihai Inlet. Additional sampling points may include runoff channels from Makapu`u Lookout and several adjacent to the highway in order to assess the contribution of traffic to ambient surface water quality.

The groundwater wells should be sampled quarterly while the surface sampling points should be monitored on an event basis through at least 3 storms sufficient to produce runoff such that some initial water quality characterization can be made representative of background. Samples collected under these conditions should be analyzed for:

Analyte	Groundwater	Surface water
pH	yes	yes
General Minerals (Ca, Mg, Na, K, Alkalinity, SO4, NO3, PO4, Cl)	yes	yes
Salinity	yes	optional
Metals (As, Cd, Cr, Cu, Pb, Zn)	yes	yes
Conductivity	yes	yes
Oil and grease	yes	yes
Suspended solids	yes	yes
Pesticides	yes	yes

Monitoring During Construction and Operation of Golf Course

Sampling of groundwater wells and surface water must be conducted during operation and construction activities at the site. Samples should be collected at the same locations as described before. For groundwater sampling, the quarterly monitoring will be sufficient to assess potential impacts from the golf course, especially if a thorough baseline study has been conducted to establish pre-construction and operation conditions. Surface water samples should also be collected during events that produce runoff in order to track chemical loadings to inlets and open ocean water. This will require sampling at each event until it can

be established that the course or certain sampling points are not contributing significant chemistry to samples collected during these events. This type of program will most likely be required by permitting agencies anyway. The same analytes as described previously should be determined in each sample until it can be demonstrated otherwise. Pesticide analysis should be limited to those used on the course including any known hazardous metabolites. It may also be wise to determine pesticide use at adjacent courses, such that disputes arising over chemical loading can be settled based on the use, timing and analysis of well water samples strategically located over the area.

Air samples should also be collected at time of application of pesticide. Air samplers should be placed down-wind of application areas. Protocols for this analysis should be coordinated with State protocols and experts.

Monitoring Program Cost and Sampling Responsibility

The cost of the program should be borne by the developers/owners as part of normal operations. Sampling should be conducted by a contractor with sampling and sample handling expertise. Splits of all samples should be made available to State and local authorities upon request.

Monitoring Program Data Analysis and Use

The monitoring program should provide the cornerstone of a sound chemical management system for the golf course. The establishment of baseline conditions should represent the target for chemical impacts in that any increase above baseline should be cause for concern. Once background conditions have been established, all chemical data collected as part of the on-going program should be compared to baseline conditions and to State water quality standards. Data entered should be automatically compared to these levels such that violations can be flagged immediately. To make the program responsive, short turn-around times from the certified lab used for chemical analysis should be requested (7 day maximum).

If increases in baseline chemistry are noted, then management must alter practices to insure that the trend is reversed. For example, an increase in groundwater nitrate would signal that application timing or amount of nitrogen fertilizers is excessive. This data, coupled with records of application conditions, would be used to alter application rates or timing. All corrective actions should be noted. A temporary increase in well water and surface water sampling should be conducted until the success of the corrective action can be demonstrated.

In addition to these mitigation measures, the Department of Health (DOH) , Clean Water Branch has circulated a pamphlet entitled *"Twelve (12) Conditions Applicable to All New Golf Course Development."* This pamphlet contains conditions recommended for all new golf course development in Hawaii. Many of conditions presented above are included in the DOH pamphlet. In any case, the developer will need to comply with all the conditions listed by DOH. Included, is a condition that requires incorporation of another DOH publication, *Guidelines for the Treatment and Use of Reclaimed Water* (Department of Health, November 1993). The guidelines are also applicable to the discussion of irrigation water in Section 6.2.

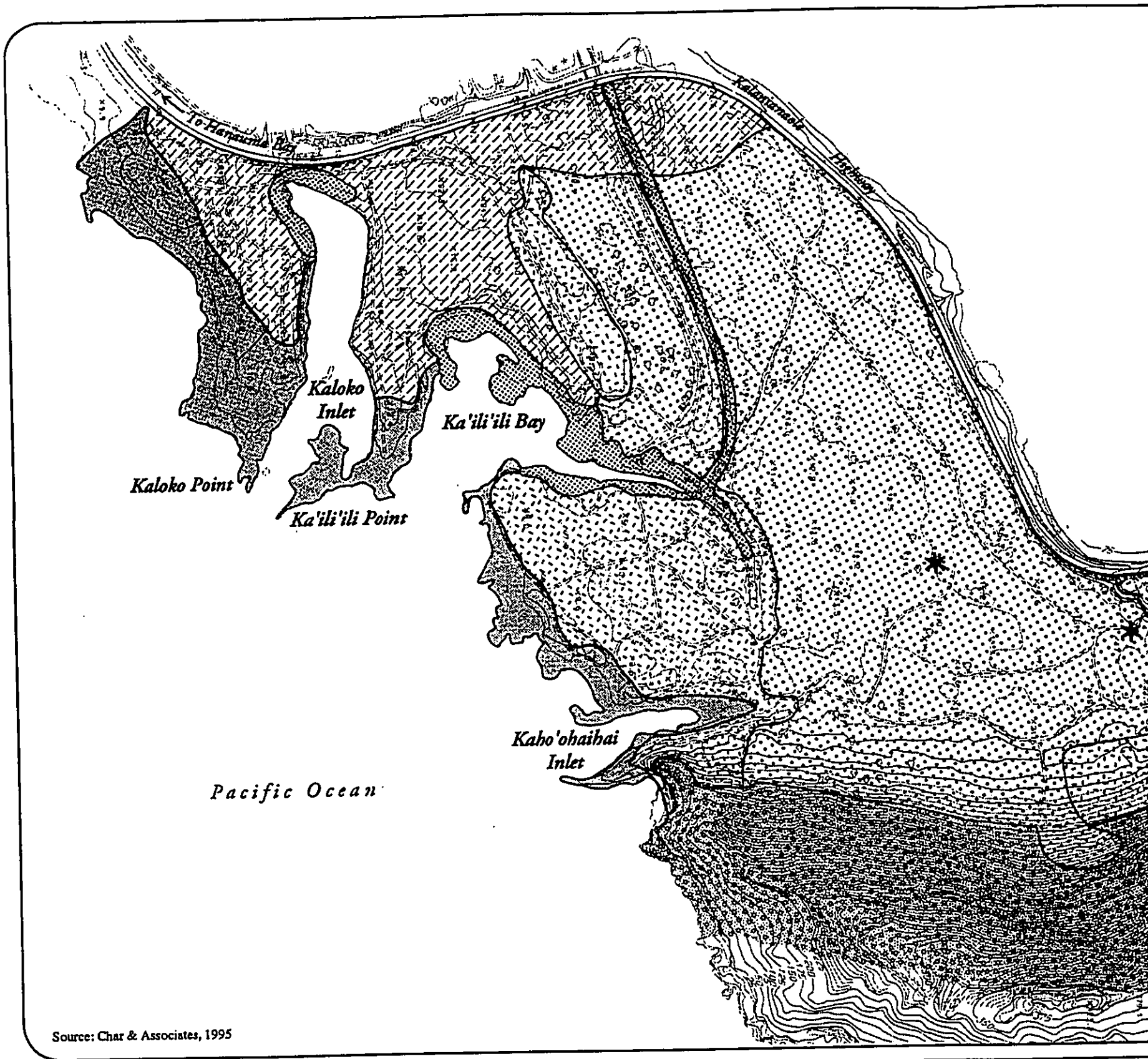
4.5 Flora

Char & Associates conducted a botanical survey of the project site for this EIS. Their findings are presented below and their full report is attached to this EIS as Appendix D).

4.5.1 Existing Conditions

The vegetation on the project site is composed of a mixture of introduced and native species, with the introduced plants, such as koa-haole and buffelgrass more abundant on those portions of the property which have been disturbed by past fires and bulldozing. Native plants are the dominant components in the coastal strand vegetation and the koa-haole/ma`o (Hawaiian cotton) shrubland. A listed endangered species, *Marsilea villosa*, or `ihi`ihi-lau-akea, an endemic water fern, is found in three small areas defined by deep ruts along 4-wheel drive roads which cross the koa-haole/ma`o shrubland (Figure 13) (Char & Associates, 1995).

Prior to the preparation of this EIS, at least three botanical studies had been conducted which described vegetation on the project site. The first was part of a dissertation study examining nine dry-grass community types on O`ahu (Kartawinata and Mueller-Dombois 1972). During that survey, a small population of *Marsilea villosa* was found on the western end of the project site, in an area now occupied by a drainage ditch. This area has been so heavily disturbed by the construction of the drainage ditch and parallel overflow channel, that the fern has probably been extirpated from this particular area. Two walk-through botanical studies of the Queen's Beach area were conducted by Funk, in 1984 and 1991. During the 1991 study, the population of the *Marsilea* fern found by



Source: Char & Associates, 1995

Existing Vegetation Types

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

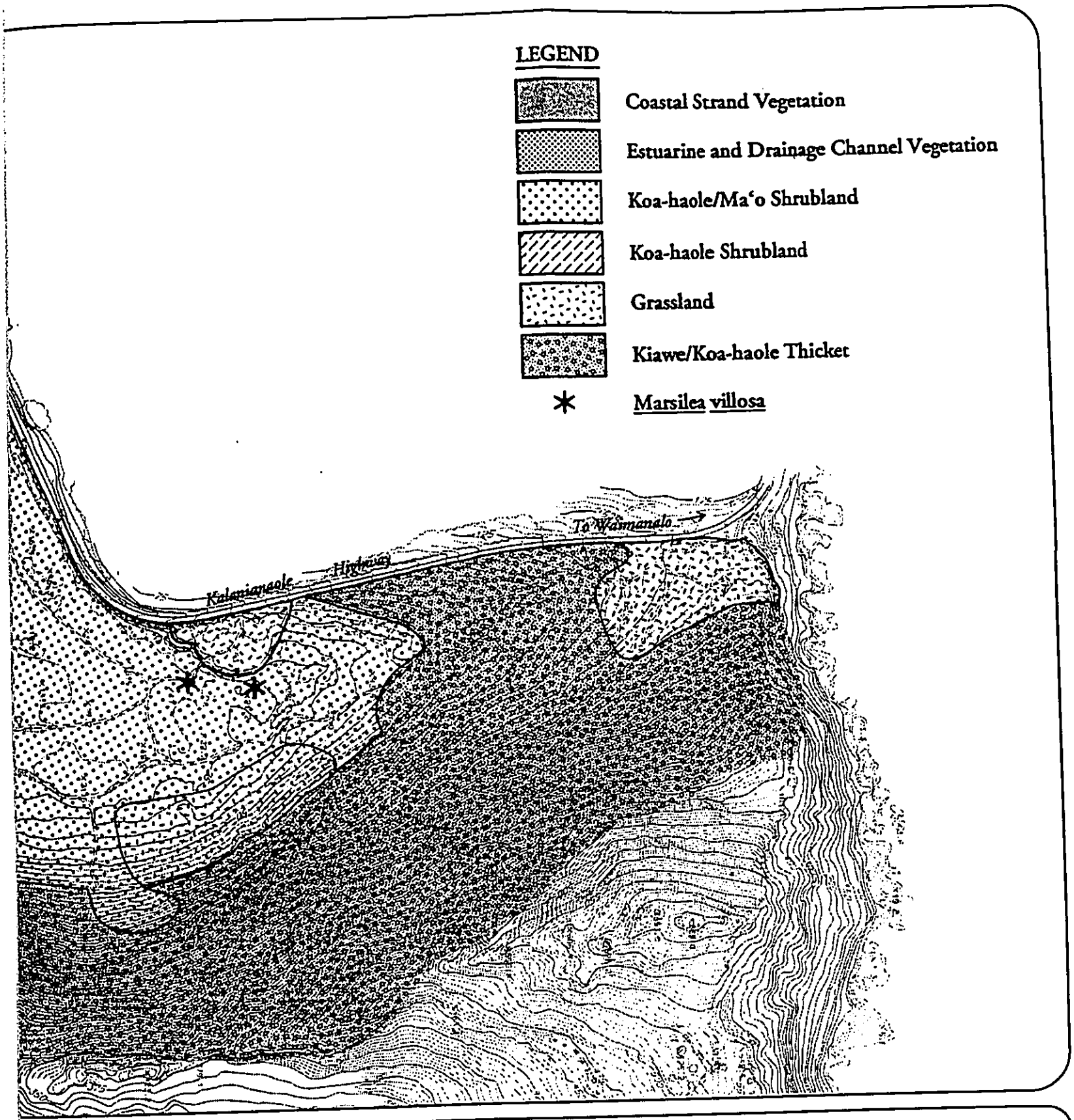


Figure 13

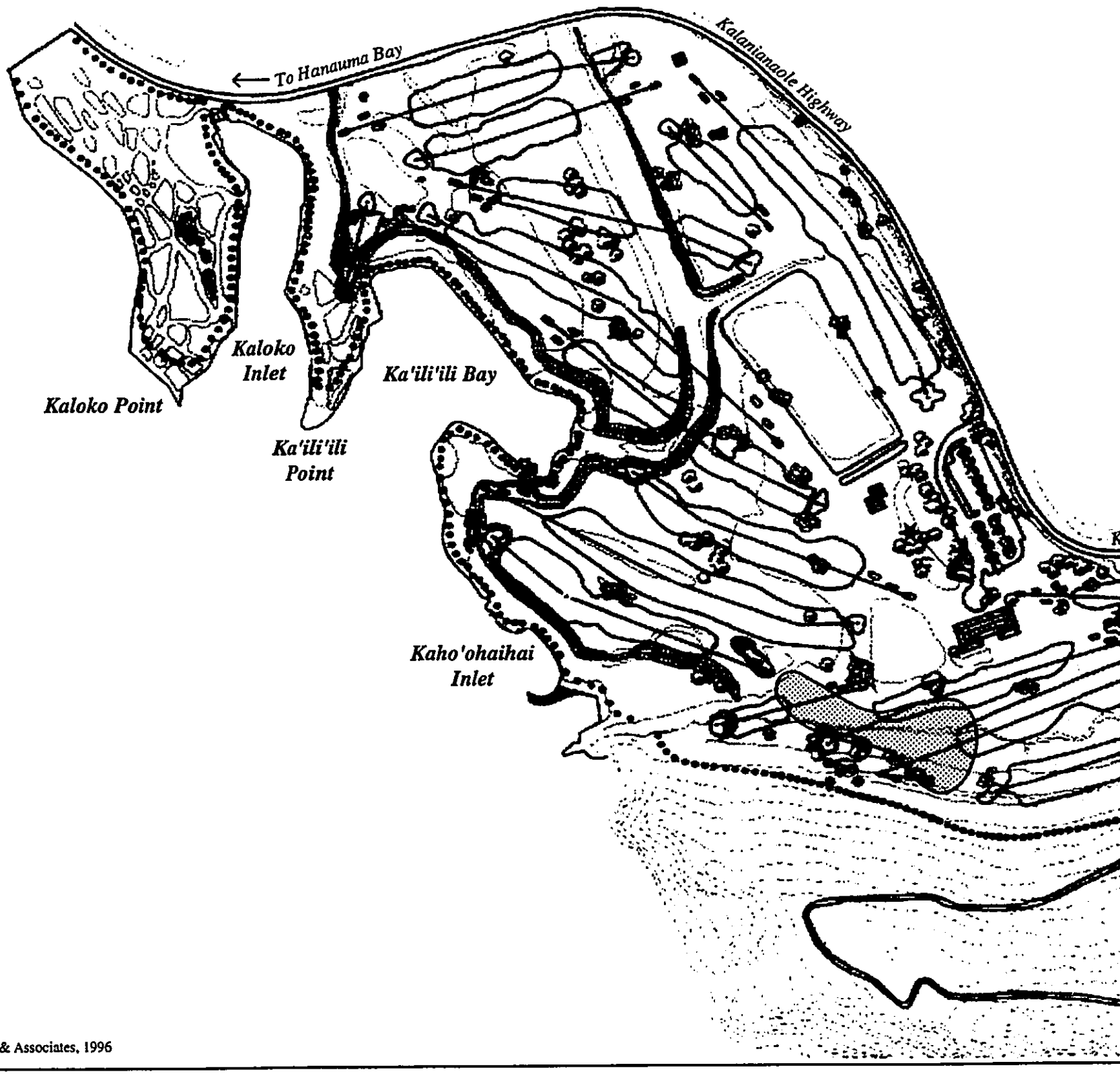
Prepared By Helber Hastert and Fee, Planners

Char & Associates in 1995 in the 4-wheel drive ruts was noted by Funk (Char & Associates, 1995).

In the most recent study (Char & Associates, 1995), six vegetation types are recognized on the project site: (1) coastal strand; (2) estuarine and drainage channel; (3) koa-haole/ma`o shrubland; (4) koa-haole shrubland; (5) grassland; and (6) kiawe/koa-haole thicket (Figure 13). The species recorded during the survey are indicative of the season ("rainy" vs. "dry"). This survey was conducted at an optimal time of the year after several days of heavy rainfall had been recorded for the area and sufficient time had elapsed for the plants to establish themselves or produce new growth and flowers.

On the Queen's Beach property, the most abundant plants are introduced species such as koa-haole, buffelgrass, kiawe, and Guinea grass. These alien species are the dominant components in four of the six vegetation types recognized on the project site. Native species are abundant in the other two (coastal strand and koa-haole/ma`o shrubland). On the sand beach and dune area from the Wawamalu Ranch Wall to Kaloko Point (Kaloko Beach), native species such as `ilima, alena, nohu, nama, beach naupaka, etc., are important components of the coastal strand vegetation. In other places along the exposed shoreline, the substrate is lava rock interspersed with waterworn coral and basalt cobble. Here native coastal species such as `ohelo kai, `akulikuli and *Fimbrisylis cymosa* are abundant (Char & Associates, 1995).

In the koa-haole/ma`o shrubland, ma`o or the Hawaiian cotton (*Gossypium tomentosum*) is codominant with koa-haole. One area located in the southeast section of the project site contains a dense stand of ma`o plants comprising 3.5 acres. Apparently, the ma`o has been protected from disturbance by the large boulders previously deposited there. Figure 14 shows the relationship of the golf course to the dense stand of ma`o and the three colonies of *Marsilea villosa*. There are few sites left in the Hawaiian Islands which support such large numbers of ma`o. This shrubland also supports other native species such as naio, `ilihe`e, `ilima, and the endangered `ihi`ihi-lau-akea or *Marsilea villosa* fern. It should be noted that an area first discovered to contain the *Marsilea* in the western portion of the project site seems to have been extirpated of the species. Apparently, the present population of *Marsilea* was transplanted to the project site after they were taken from a population at Koko Head (U.S. Department of the Interior, 1993b).



Source: Char & Associates, 1996

Dense Ma`o Plants and Colonies of *Marsilea villosa*

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

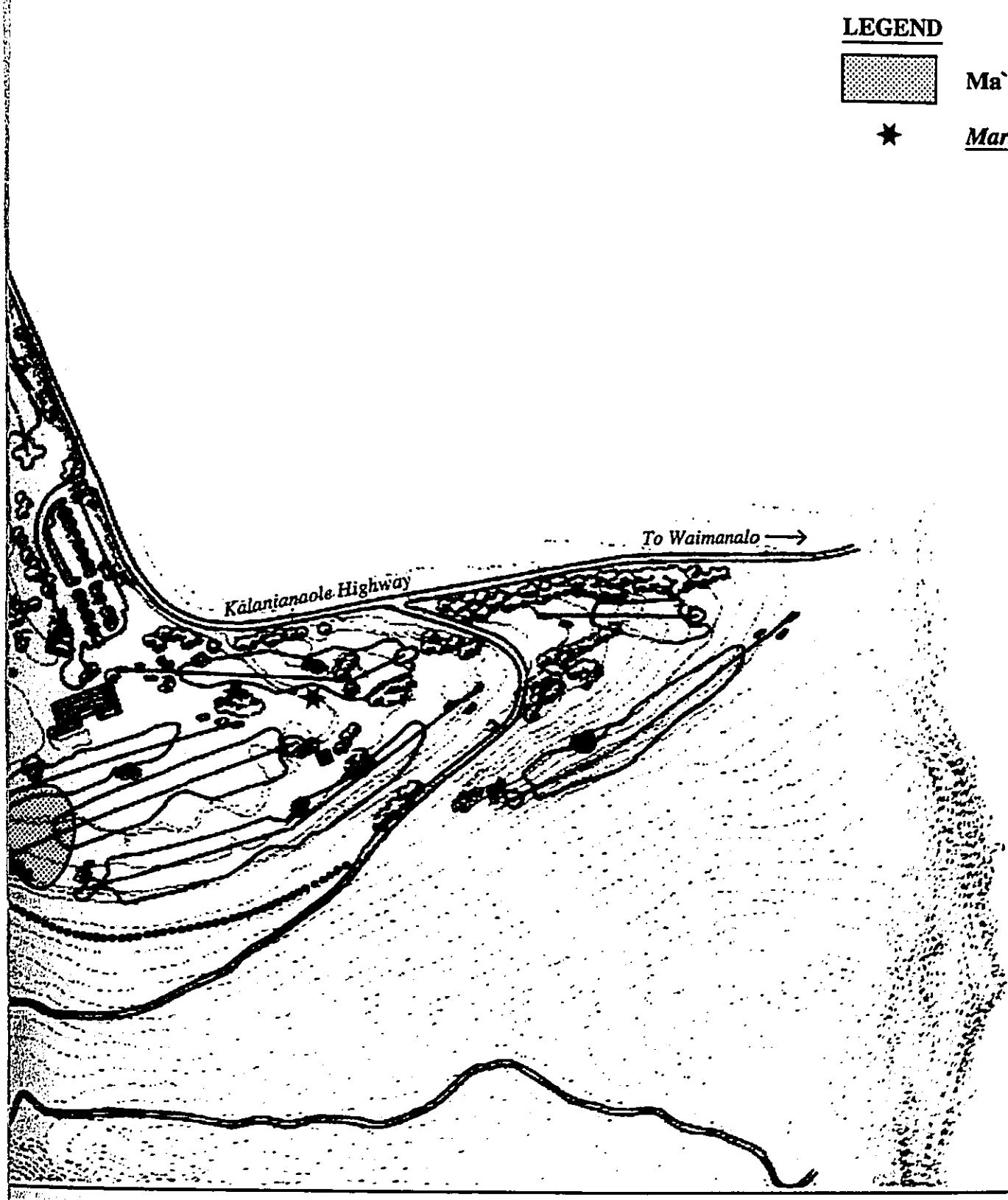


Figure 14

Feet

0 250 500 1000

Prepared By Helber Hastert and Fee, Planners

CORRECTION

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SEE FRAME(S)
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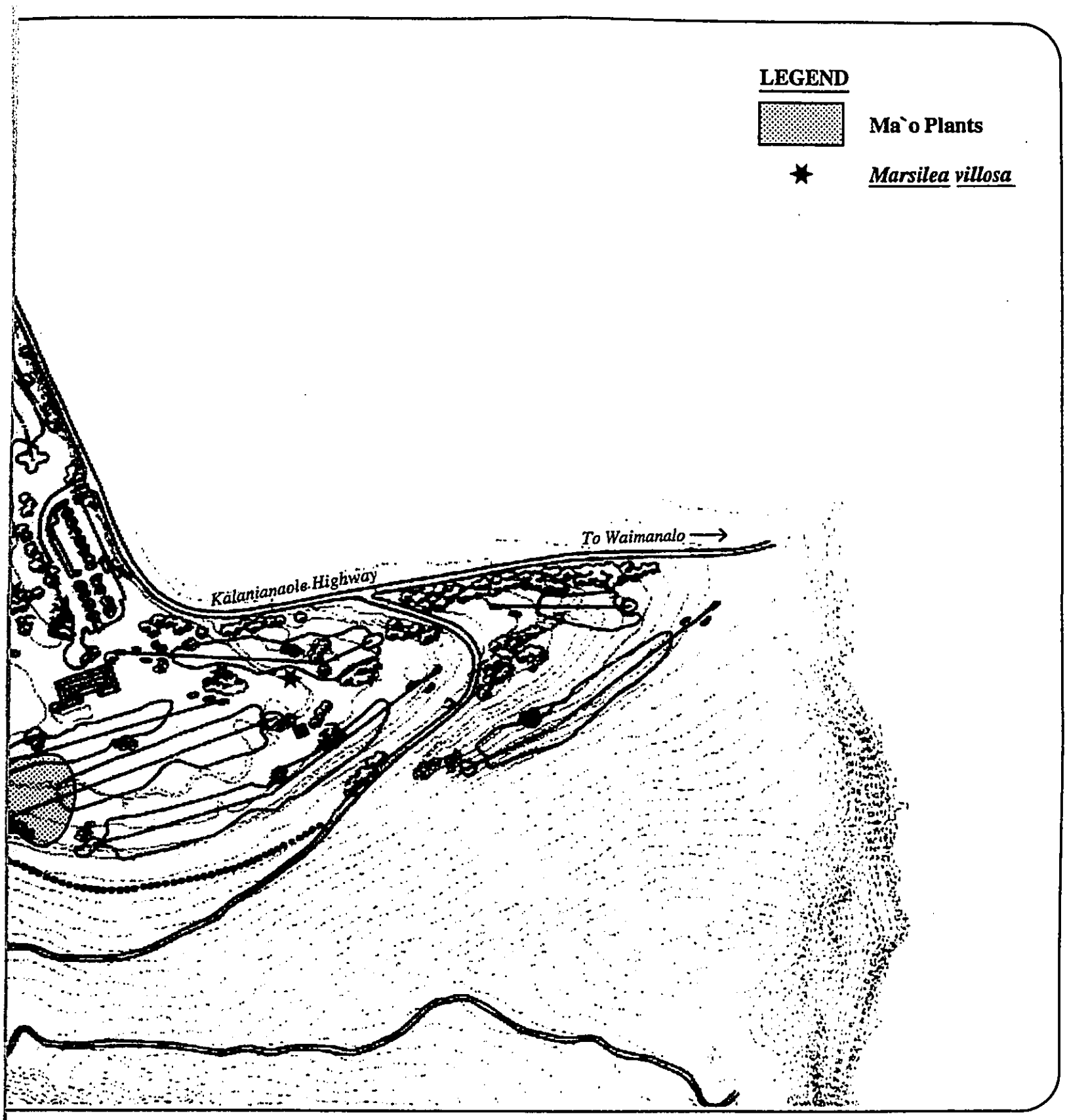


Figure 14

Feet

0 250 500 1000

Prepared By Helber Hastert and Fee, Planners

4.5.2 Probable Impacts

The golf course and ancillary facilities proposed for the site will impact its vegetation. Currently the areas that have the most native plants are the coastal strand and koa-haole/ma`o shrubland vegetation types. The coastal strand vegetation is most dominant on the sandy beach and dune area from the Wawamalu Ranch Wall to Kaloko Point. This area, of about 29 acres, is not included in the proposed project area. In other places along the exposed shoreline, the substrate is lava rock interspersed with water worn coral and basalt cobble. Here native coastal species such as `ohelo kai, `akulikuli and *Fimbristylis* are abundant. This area will also be left intact and is not part of the project area.

In the koa-haole/ma`o shrubland, ma`o or the Hawaiian cotton plant, is codominant with koa-haole. This shrubland also supports other native species such as naio, `ilihe`e, `ilima, and the endangered `ihi`ihilauakea, or *Marsilea villosa* fern. Impacts to this vegetation zone will result from the large-scale grubbing, grading and planting of turfgrass not currently found on the site. It has been estimated that approximately 90-100 acres of the 166-acre site will be planted in turf grass. Some of the golf holes are located in a portion of the koa-haole/ma`o shrubland that has a high density of ma`o plants. This area, in the vicinity of the 14th, 15th, and 16th holes, comprises approximately 3.5 acres of the project site.

There is also some concern about the fate of the three small colonies of the endangered *Marsilea villosa*, as they are located within the project site.

4.5.3 Mitigation

Areas which support high concentrations of native species will need to be preserved and managed. The following recommendations are proposed to mitigate the impacts of the project on the botanical resources of the site:

- **Preservation of *Marsilea* and Preparation of a Management Plan**. The three areas which contain the *Marsilea* fern should be managed as a sanctuary or preserve, including the development of a management plan. The plan would be based primarily on the U.S. Fish and Wildlife Service Recovery Plan (1993) drafted for the *Marsilea*. The plan would be reviewed by the Service as well as the State's Division of Forestry and Wildlife. Alien species control would be addressed in the management plan.

- **Preservation of the Area with High Ma`o Density**. A large portion of the area with a high density of ma`o should be left intact. Current design of the course will allow retention of about 2.5 acres of the existing high density area of ma`o, and planting additional ma`o plants between the fairways as rough areas will add to this habitat.

- **Control of Construction Activities**. No construction vehicles should be allowed in the coastal strand habitat, and where necessary, dust screens shall be erected to protect coastal strand vegetation during periods of grading, grubbing and shaping.

- **Use of Native Plants in Landscaping**. Incorporating native plants into the landscape design is strongly recommended. Native plants already found on the project site are well-adapted to the local climatic and soil conditions, and could be defined as "low-maintenance." This plant material should be collected and propagated before portions of the site are cleared. Many are highly-valued ornamentals and are recommended for landscaping the golf course and facilities. These include the nehe, naio, ma`o, naupaka, wiliwili, pa`u o Hi`iaka, hinahina, and `ilihe`e.

- **Avoidance of Coastal Strand Vegetation by Construction Vehicles**. No construction vehicles should be allowed in the vicinity of the coastal strand vegetation, and where necessary, dust screens should be erected during periods of grading, grubbing, and shaping of the golf course.

4.6 Wetlands

4.6.1 Existing Conditions

As discussed in Section 4.5, above, both Funk (Botanical Consultants 1991) and Char (Char & Associates, 1995) observed the endangered water fern, *Marsilea villosa* in flooded tire ruts at the base of Kealakipapa Valley. The *Federal Manual for Identifying and Delineating Wetlands*, set forth in 1989, outlines three specific criteria for a wetland:

- the presence "hydric" soils
- the presence of plants found on the federal list of plant species that thrive in wet areas (the list also includes plants that are also found in dry areas)
- the presence of water within 18 inches of the surface of the ground for at least 7 consecutive days during the year

In October of 1991, a representative of the U.S. Army Corps of Engineers inspected the area and indicated it was possible that wetland conditions were present. This information was presented in the *Ka Iwi State Park Master Plan and Environmental Impact Statement* (DLNR, April 1996). However, no formal delineation or documentation by the Corps had established that a wetland was indeed, present at Queen's Beach. As part of the investigation for this EIS, a wetlands study was conducted at Queen's Beach for the areas identified by the earlier EIS published by DLNR (Appendix E) (Char & Associates, March 1996). The findings of this study determined that none of the three sites studied (all sites where the Hawaiian water fern, *Marsilea villosa* was present) exhibited all necessary conditions to be considered wetlands. Specifically, no hydric soils were present. In June 1996, the Department of the Army, U.S. Army Engineer District, Honolulu, concurred with this finding, on the basis of a review of the wetlands study prepared by Char & Associates, and a site visit conducted by Army personnel (Dadey, June 5, 1996).

4.6.2 Probable Impacts

The issue of impacts to existing wetlands located on the project site is now moot, because no wetlands have been shown to exist there. However, this realization should not, and does not, minimize the fragility of this habitat for *Marsilea villosa*. The protection and preservation of Marsilea is covered in Section 4.5.3, above.

4.7 Insects

Steven Montgomery, Ph.D., conducted an entomological survey of the project site for this EIS, with specific focus on the Hawaiian beetle, *Rhycongonus simplex*. The findings of this survey are presented below and the full report is attached to this EIS as Appendix F).

4.7.1 Existing Conditions

Over the eons, the descendants of less than 300 ancestral insect species in Hawaii evolved to become the more than 10,000 known endemic Hawaiian insects. In relatively recent times, human activities have introduced a multitude of insect species that would not otherwise be found in Hawaii. The first known reconnaissance survey of the project site was conducted in 1934 (Swezey, 1935). During this survey, Swezey observed the Simple mallow robust weevil (*Rhyncogonus simplex*), otherwise known as the Hawaiian Snout Beetle, at Queen's Beach on Hawaiian cotton (ma`o) plants (Montgomery, 1996). This insect is currently listed as a "species of concern" by the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 1996). This species was previously

reported as a candidate endangered or threatened species. No other action or review is currently planned by the Service.

The eggs of this insect are glued to leaf tips and the larvae fall to the soil to eat roots. By day these weevils usually hide in leaf litter at the base of host plants. *R. simplex* is flightless, and possibly limited to one host plant, the ma`o. In addition to the project site, *R. simplex* has been observed variously between 1902 and 1994 at Ewa and Waianae on O`ahu, in the mid-western section of Molokai, and Kaho`olawe at Pu`u Koa`e Islet. It was originally recorded on Molokai at elevations between 700 and 1,000 feet. Other than Swezey's observations and collections in the 1930's, Robin Rice collected some *R. Simplex* specimens at Queen's Beach in 1975. *R. Simplex* has been unseen since Rice's collections in 1975, despite a careful search on O`ahu by W. Perreira during the last 10 years, and a recent survey at Queen's Beach by Montgomery (Montgomery, 1996).

Two other species of insects previously observed at the site by Swezey, the Hawaiian rhopalid bug (*Ithamar hawaiiensis* Kirkaldy), and the Oliarus wild cotton planthopper (*Oliarus discrepans* Giffard), are listed as species of concern by the U.S. Fish and Wildlife Service. Neither of these species were observed during a recent survey of the project site. Even though these species have previously been observed at the project site, it is probable that other habitat is more suited to support these species than are found at Queen's Beach (Montgomery, Personal Communication, 11 November 1995).

Finally, an unidentified yellow-faced bee (*Nesoprosopis sp.*) was recorded at Queen's Beach in August 1954 on tree heliotrope, but has not been reported since. There are 37 endemic species of *Nesoprosopis* listed as species of concern by the USFWS. Of these 37, 12 are known from O`ahu and 9 of these 12 species are possibly extinct in the wild.

4.7.2 Probable Impacts

Because the *Rhyncogonus simplex* is found primarily in the presence of the ma`o plant, the loss of any of this habitat would reduce the probability that this insect could be found in larger numbers at the project site. It should be emphasized that no live *Rhyncogonus simplex* were found during many visits to the project site over the course of two years, and examination of over 250 individual ma`o plants, although 8 leaf notches characteristic of the insect were observed on one visit to the site. These leaf notches probably indicate the presence of the insect, but at very low numbers. It should also be noted that this

insect species is not listed as an endangered or threatened species by the U.S. Fish and Wildlife Service.

4.7.3 Mitigation

Mitigation measures should focus on preserving habitat for the *Rhyncogonus simplex*, as this insect might be hosted by a single plant. The following measures are recommended to ensure the protection of this insect at the project site:

- Since the *Rhyncogonus simplex* are quite dependent upon native flora (the ma`o plant in particular), grazing mammals should be excluded and off-road vehicles restricted from the habitat.

- Patches of ma`o plants, especially in the eastern boulder fields, should be preserved in place (with no disturbance of the soil) for the benefit of any relict (remnant survivor) native insects.

- During any earth moving work in the area, a buffer zone should be developed to ensure no disturbance occurs to the root zone of ma`o plants designated for preservation. The buffer zone should be maintained if any fertilizer or pesticide applications are planned adjacent to the plants. Such a requirement should be incorporated into the Turf Management System (TMS) for the golf course.

4.8 Terrestrial Fauna

Phil Bruner conducted an avifauna and feral mammal survey of the project site for this EIS. The findings of this survey are presented below and the full report is attached to this EIS as Appendix G.

4.8.1 Existing Conditions

The project site provides a variety for habitat of both native and introduced birds. The mangrove estuaries and coastal shoreline are used by native waterbirds and migratory shorebirds, although no suitable habitat exists for any rare wildlife. Estuarine vegetation is found along the protected areas of the shoreline in embayments or inlets which have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by fresh water. Kaloko Inlet and Ka`ili`ili Bay both have areas with estuarine vegetation.

Kaloko Inlet has been artificially extended to reach a small gulch under Kalanianaole Highway. This portion of the inlet is shall with mud flats visible at low tide. Low mats of pickleweed (*Batis maritima*) fringe this portion of the inlet and there are small stands of mangrove (*Rhizophora mangle*) and milo tree trees with scattered clumps of Indian pluchea shrubs (*Pluchea indica*).

Along the mauka portions of Ka`ili`ili Bay, dense, almost impenetrable stands of mangrove occupy the mud flats. Low, yellow green-colored mats of pickleweed are abundant on muddy areas inland of the mangrove. The unlined drainage channel enters the bay here from the north, contributing silt to the mud flats in the bay's shallow water.

When there is salt water intrusion (and tidal influence), mangrove lines the drainage channel. Mangrove trees gradually thin out where there is more fresh water flow and plant species typical of fresh water wetlands appear.

Three species of common migratory shorebirds were found on a recent survey; Wandering Tattler or `Ulili (*Arenaria interpres*), Ruddy Turnstone or `Akekeke (*Heteroscelus incanus*), and the Pacific Golden Plover or Kolea (*Pluvialis fulva*) (Bruner 1995).

Several species of seabirds were observed offshore and flying over the property. During the recent survey, Red-footed Booby (*Sula sula*) and Great Frigatebird (*Fregeta minor*) were observed. The flat lands on the site are accessible to predators and no seabirds would be expected to nest in these areas. One Black-crowned Night Heron or Auku`u (*Nycticorax nycticorax*) was tallied on the survey. This bird was observed in the mangrove area. Bruner notes many sightings of this bird along this stretch of the coast. The Black-crowned Night Heron is the only native waterbird in Hawaii that is not listed as endangered (Bruner 1995).

The estuarine environment of the inlets provide foraging habitat for waterbirds and the mangrove are utilized for resting. Although no endangered species nest in the estuaries, Bruner has noted the endangered Black-necked Stilt (*Himantopus mexicanus knudseni*) and the endangered Hawaiian Coot (*Fulica alai*) in the area and around the patches of mangrove at this site.

No native mammals were found on the survey. Exotic mammals such as the Small Indian Mongoose, cats, rats and mice are common in this area (Bruner 1995).

4.8.2 Probable Impacts

Shoreline habitat and associated intertidal areas contain valuable resources for native waterbirds and migrants. Two possible impacts that could accompany development of adjacent inland areas are: (1) fouling of the inshore waters due to siltation during clearing of the uplands and subsequent contamination of the wetlands from herbicides and pesticides associated with golf course maintenance; and (2) disturbance of foraging and resting birds by pedestrian traffic on the planned adjoining golf course. It should be noted that analysis contained in Section 4.4, addressing potential impacts in the intertidal areas due to fertilizers and pesticides indicates the low probability of impact. However, that should not obviate the need to take adequate precautions to ensure that species and habitat are not damaged.

4.8.3 Mitigation

The following measures are recommended to protect native wildlife and habitat found at the project site:

- Water quality monitoring should be conducted before, during and after construction of the golf course in the estuaries fronting the property. This monitoring program should track chemical contaminants as well as suspended sediments that could lead to siltation.

- A buffer should be maintained in the form of dense tall trees and brush between the golf course and estuaries to ensure minimization of disturbance to wildlife. Posting of signs to warn people from wading through the intertidal areas near the mangroves where native birds feed and rest should also be implemented.

4.9 Scenic Resources

4.9.1 Existing Conditions

Regional Context. The scenic resources of the project site must be appreciated in the context of regional influences. A substantial amount of inventory and analysis work has previously been done in the region, identifying and describing scenic resources and visually sensitive areas. Previous work includes the *Coastal View Study* (City and County of Honolulu, 1987), the *Koko Head Park Master Plan - Final Report* (Belt Collins, 1992), and the *Ka Iwi Reconnaissance Survey* (Department of the Interior, 1993a). The scenic drive between Hanauma Bay and Makapu'u are consistently identified as high value scenic resources.

The *Coastal View Study* defines the limits of the Koko Head Viewshed as extending from the crest of Koko Head (Hanauma Bay) through the Sandy Beach area to Makapu`u Point:

> *"This section has long been recognized for its unique visual and environmental qualities. The serpentine roadway provides an inspiring sequence of viewing angles, capturing the jutting rock formations set in sharp contrast to the turbulent sea. The barren landscape, wind carved cliffs, the imposing coastal land forms of Makapuu Head, Koko Head Crater and Halona Point, and the long beach frontage at Sandy Beach are primary elements of this visual experience...This roadway is the crescendo of a continuous visual sequence covering the areas between Hawaii Kai in East Honolulu to the Waimanalo area in Koolaupoko."*

The scenic qualities of this region are greatly enhanced by the extensive and continuous open space. Perception of open space is primarily from the coastal highway (Kalanianaole Highway). The open space system between Halona Point and Wawamalu Beach is linear, and oriented in a lateral and makai direction, following the alignment of the highway. Open space along the mauka side of the highway is less significant as views are cut off by existing vegetation and earth berms. Major contributors to this open space system include Koko Crater, Sandy Beach Park, Wawamalu Beach and portions of the undeveloped parcels along the mauka side of the highway (Chu, 1996).

The open space system between Wawamalu Beach Park and the Makapu`u Lookout is expansive. The triple "S" curve along Kalanianaole Highway swings inland, permitting views into the open space along both sides of the highway to include the Queen's Beach area and the Hawaii Kai Golf Course. The highway alignment also brings the viewer very close to the Koolau Range and the Makapu`u Head land form (Chu, 1996).

Sandy Beach Park is an improved City and County park. It is not "natural," however, the wide open grass fields that front the highway contribute to the scenic quality and open space character of the area. It is simply landscaped, distinctly void of screening hedges and ornamental trees. Its parking lot is exposed with no landscape plantings or buffering or other means of screening the vehicles. This condition has not resulted in significant visual impacts. The separation between the parking lot and the coastal highway still allows for expansive views of the ocean from the coastal highway (Chu, 1996).

Wawamalu Beach remains in an "undeveloped" state. No parking lot, interior roads or other forms of park improvements are present at Wawamalu. Visitors to Wawamalu Beach park randomly along the roadway shoulder or along the beach frontage, thus contributing to the destruction of vegetation along the beach.

Queen's Beach is located between Makapu`u Head and Kalanianaole Highway on the coastal plain makai of Kealakipapa Valley. The general appearance of the Queen's Beach area can be characterized as "natural" and "rugged." However, in the years since the latter part of the 19th century, the "natural" condition of Queen's Beach has been altered: ranching operations were conducted at Queen's Beach until 1946, when a devastating tsunami destroyed the Wawamalu Ranch; Kaloko Inlet and Ka`ili`ili Bay were dredged and enlarged; a drainage ditch was constructed between the Hawaii Kai Golf Course and Ka`ili`ili Bay; an inlet was dredged on the east side of the property, (Kaho`ohaihai Inlet) and two groins were constructed that protect the inlet; boulders have been deposited throughout lower Kealakipapa Valley and the coastal plain; and off-road vehicles have carved numerous dirt roads throughout the property, destroying and damaging native plants and habitats.

Despite the intrusion and influence of human activities, Queen's Beach and Kealakipapa Valley remain in open space, dominated by scrub vegetation and offering unobstructed views from the coastal highway across the property to Makapu`u Head and the ocean.

Project Site Scenic Experience. The primary visual experience that occurs in the vicinity of the project site is the drive along Kalanianaole Highway between the Wawamalu Ranch Wall on the western end of the property to the Makapu`u Lookout on the northern end of the property, travelling in either direction. The total distance of this drive is approximately 1.3 miles.

Beginning at the Makapu`u Lookout and driving south (towards Hanauma Bay), views of the site are intermittent and the eye of the observer is drawn more toward the long-range view of the ocean which occurs in almost a straight line with Kalanianaole Highway. The portions of Kealakipapa Valley adjacent to the Highway are often obscured by vegetation immediately off the highway. Some of the lower slopes of the western side of Makapu`u Head are visible during this period of the drive.

At the bottom of this straight section of the highway, the road curves sharply toward the west into another straight section of highway. During this interval of the drive, views of the project site are mostly obscured by mature kiawe trees

which are immediately adjacent to the highway. Views toward the project site are transitory at best, lasting only portions of seconds (driving at the posted speed limit of 35 miles per hour). Kalanianaole Highway then curves towards the south, in the vicinity of the Hawaii Kai Golf Course. The elevation of the project site in this area is much closer to the elevation of the highway, and views of and across the site are often interrupted by trees or other vegetation on the east side of the highway. The ocean is not a viewing object along this stretch of the road. In fact, the viewer's eye is pulled more toward Koko Crater and the Hawaii Kai Golf Course.

After another straight segment of Kalanianaole Highway which terminates near the old Wawamalu Bridge, the road swings toward the west and Sandy Beach. At this point, views of the ocean become part of the visual landscape, and the project site is no longer visible.

Driving in the opposite direction, toward Waimanalo, long views of the upper portions of Makapu`u Head become visible in the vicinity of Sandy Beach Park, with the ocean becoming a prominent viewing object off to the right of the highway. Makapu`u Head does not become a prominent viewing object until one passes the old Wawamalu Ranch Wall. Still, at this point, the project site is not distinguishable.

Driving past the Wawamalu Bridge, the project site does become visible, but is not the primary viewing object, because the viewer's eye is drawn straight ahead along the highway toward the upper slopes of Makapu`u Head. Again, views of the project site are transitory, being obscured by vegetation and differences in topography. After passing the third "S" curve and beginning the climb toward the Makapu`u Lookout, some views of the project site in the upper reaches of Kealakipapa Valley are revealed.

4.9.2 Probable Impacts

Analytical Methodology. Because of the subjective nature of an individual's experience and interpretation of the visual environment, impacts to scenic resources are difficult to quantify. Nevertheless, attempts have been made to bring a subjective perspective to scenic resource impact analysis. *The Coastal View Study* (Chu, 1987) presents a concept which pertains to the character, or "visual quality" of an area. The terms of "vividness," "unity," and "intactness" are used to measure the visual quality of an area or viewing object. The following definitions are used in *The Coastal View Study*:

Vividness: *Memorability of a landscape is derived from contrasting landscape components as they combine to create striking and distinctive visual patterns, taking in account, form, line, texture and color.*

Unity: *The degree to which the visual resources of a landscape scene join together to form a coherent, harmonious visual patterns; a balanced composition between manmade and natural elements.*

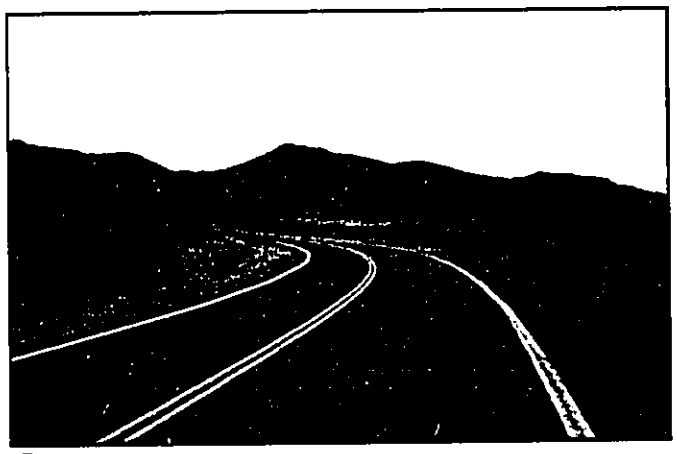
Intactness: *The extent to which the landscape is free from visually encroaching features.*

In order to begin the assessment of impact, an attempt was made to predict what the proposed development would look like after construction. To facilitate this assessment, a topographic map of the project site in an AutoCAD .dwg format (Release 12) was obtained from R.M. Towill Corporation. A terrain model of the project site was then developed utilizing the LANDCADD (Release 12, Version 2) "quadrangle module." An integral feature of the terrain model included the placement of a building footprint and building block for the proposed clubhouse, based on the site plan presented in Figure 6.

Ten (10) observation points were then selected (Figure 15), based on the results of multiple drives between the Wawamalu Ranch Wall and Makapu`u Lookout, in both directions, and suggestions received from the Department of Land Utilization in a letter submitted during the comment period for the draft environmental impact statement for this project. Once the observation points were identified, the "Perspective View" feature of LANDCADD was utilized to simulate the view of the clubhouse from each viewing point.

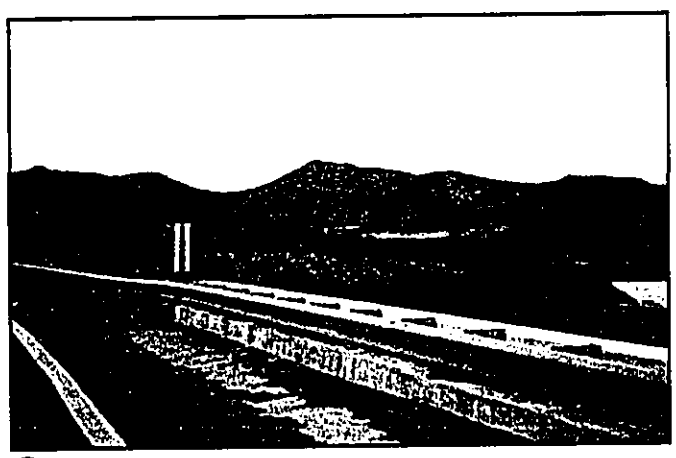
In this fashion, a three-dimensional model of the clubhouse was derived for each viewing point. Photographs were then taken using a 35mm camera (50 mm lens) from the same viewing points used for the computer simulation. Each photograph was scanned into computer format and imported into Adobe Photoshop Version 3.0. The image of the terrain model and individual photographs were then matched to place the view of the golf course appropriately in each photograph, thus simulating the future view of the golf course from each viewing point. The results of this modeling are shown in Figure 15.

Analysis of Impacts. The basis for assessing impact to the scenic resources that comprise the project site will be the three criteria of "visual quality" discussed above: vividness; unity; and intactness. In addition to the three criteria of "visual quality," the requirements of Chapter 25, ROH, must be taken into

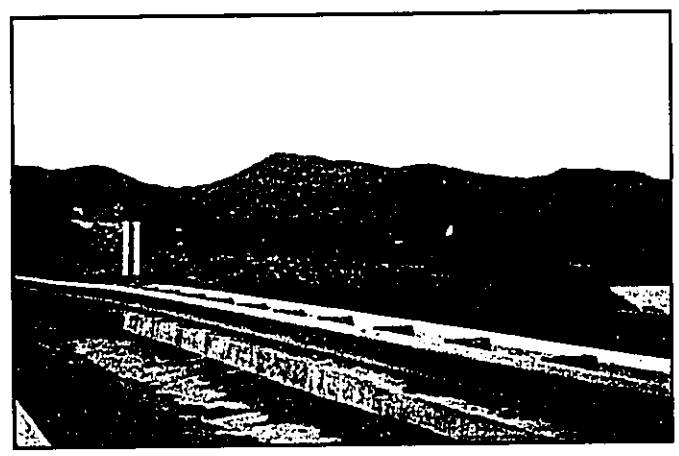


Picture looks east toward Makapu'u Head from western boundary of Wawamalu Beach.

At this distance, viewer will note addition of trees to golf course. No structures are visible.

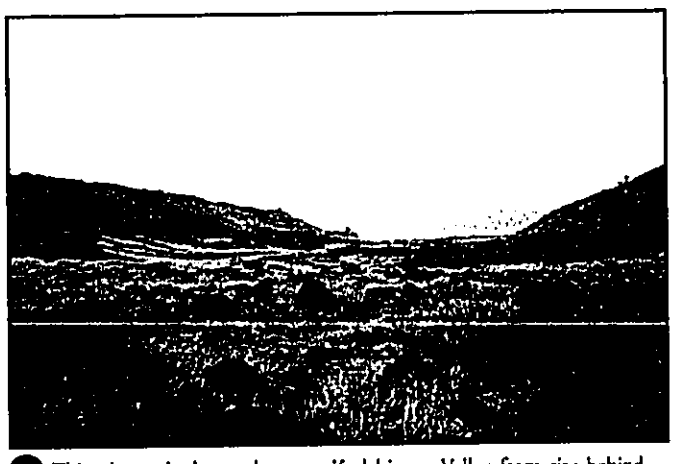


Picture looks east from Kalanianaole Highway in vicinity of the old Wawamalu Bridge.

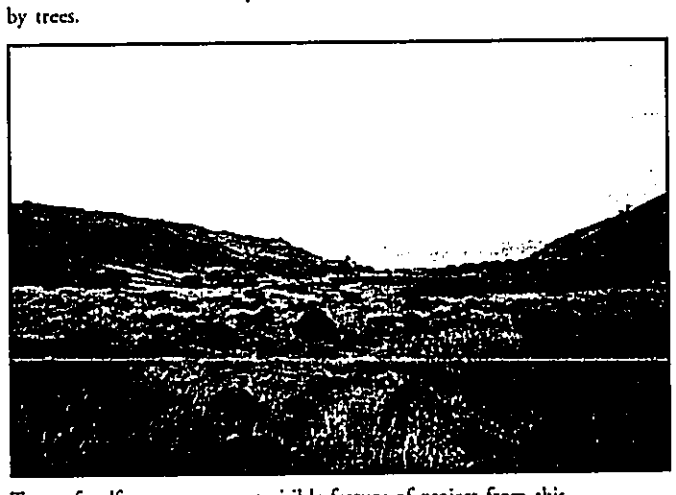


At this point, trees of the golf course become more distinct, but do not interfere with view of Makapu'u Head. Clubhouse is obscured by trees.

Another view along highway look approximately $^1/_4$ mile east of Ha



This picture looks south across Kealakipapa Valley from rise behind Makapu'u Lookout. Viewer must climb this rise from lookout parking lot in order to see project site. No views of project site are available from lookout parking lot.

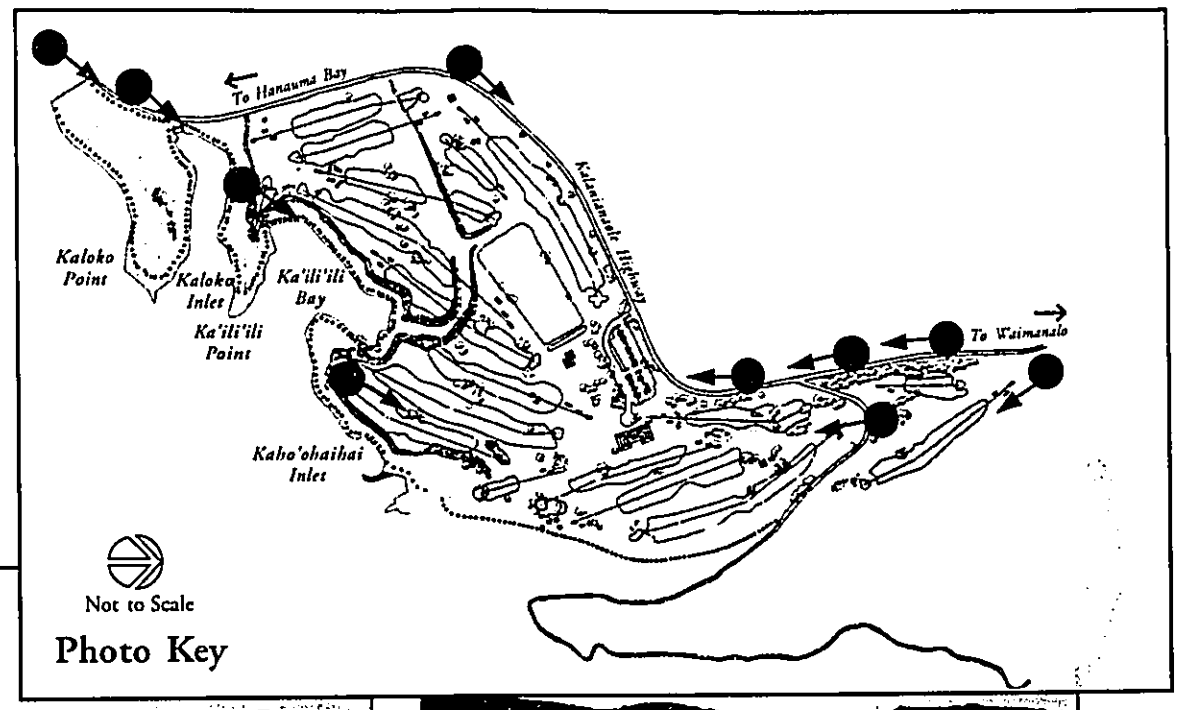


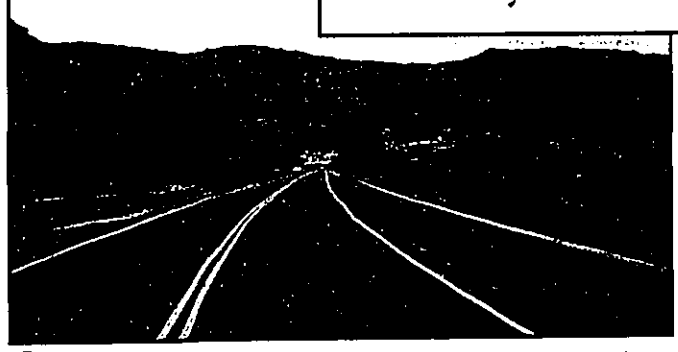
Trees of golf course are most visible feature of project from this vantage point. No structures are visible

View looking south on highway Makapu'u Lookout.

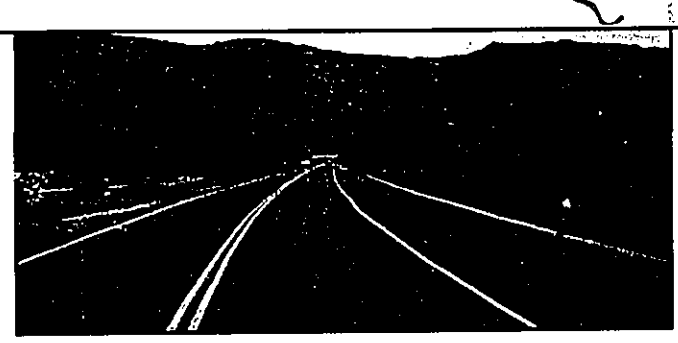
Photographic Visual Analysis

Queen's Beach, Hawaii Kai, Oahu

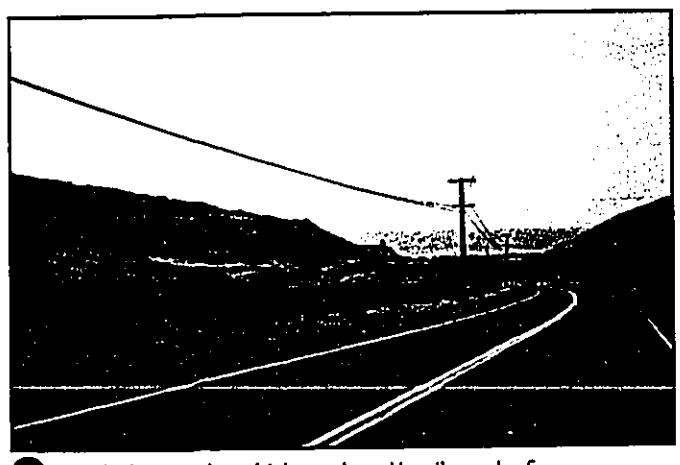




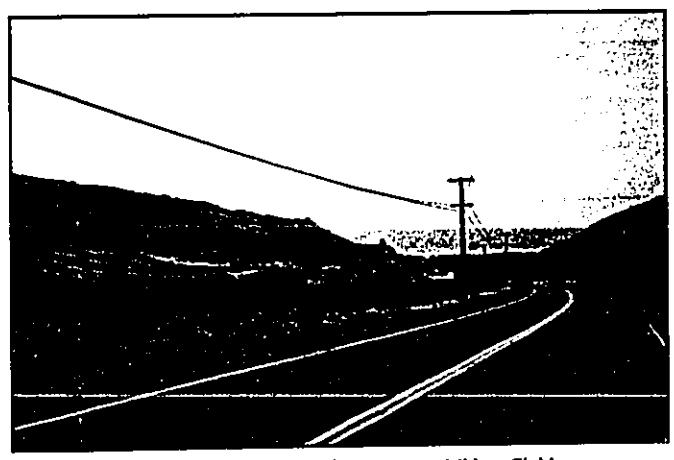
● Another view along highway looking east toward Makapu'u Head, approximately 1/4 mile east of Hawaii Kai Golf Course.



Distant views of Queen's Beach Golf Course are evident with appearance of trees, which maintain low profile against background. No structures are visible.



● View looking south on highway about 1/4 mile south of Makapu'u Lookout.

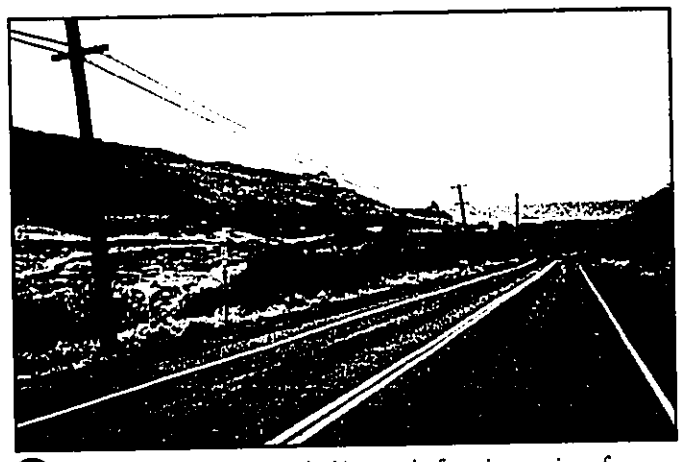


From this vantage point, trees of golf course are visible. Clubhouse can now be seen, partially obscured by trees and other vegetation. View of ocean remains unobstructed.

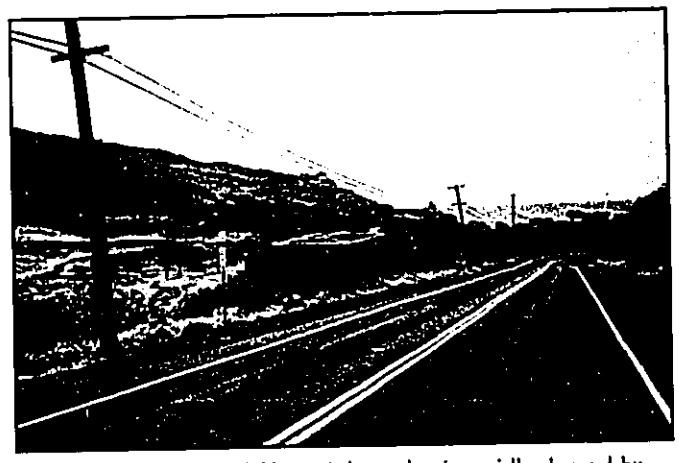
Figure 15

For Kaiser Aluminum & Chemical Corporation
Prepared By Helber Hastert and Fee, Planners

RECEIVED AS FOLLOWS

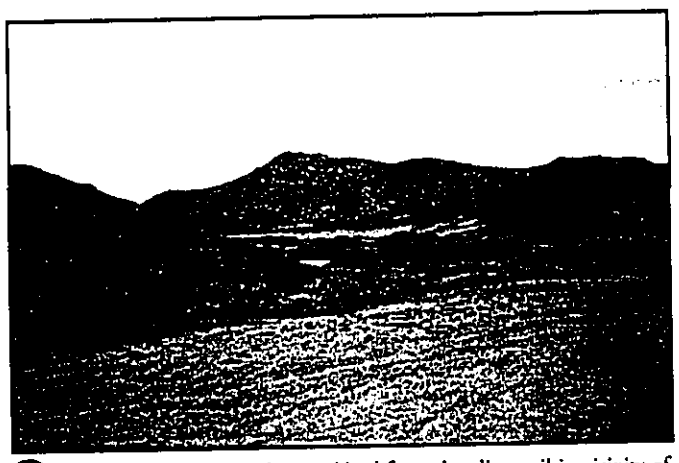


Another view of project site looking south, from intersection of Kalanianaole Highway and Lighthouse Access Road.

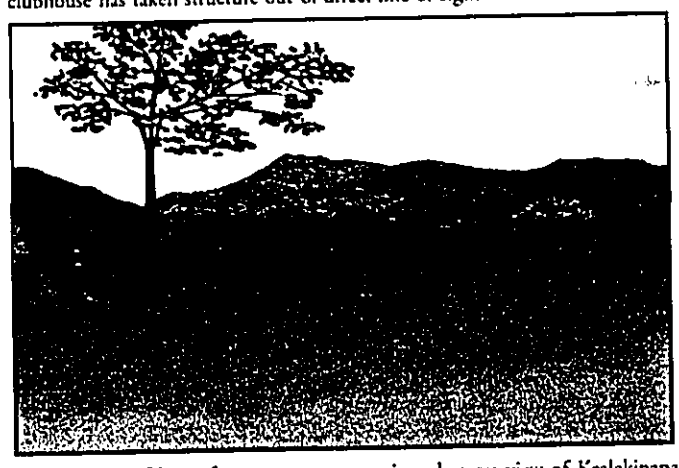


From this viewing point, clubhouse is larger, but is partially obscured by vegetation. Green roof treatment blends clubhouse vegetation. Moving clubhouse has taken structure out of direct line of sight to ocean.

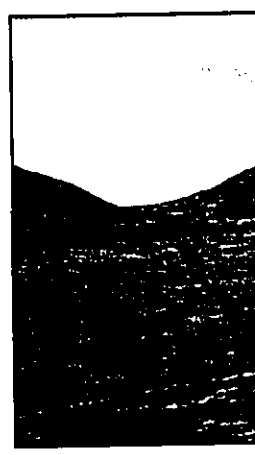
As viewer continues sou
dominates view.



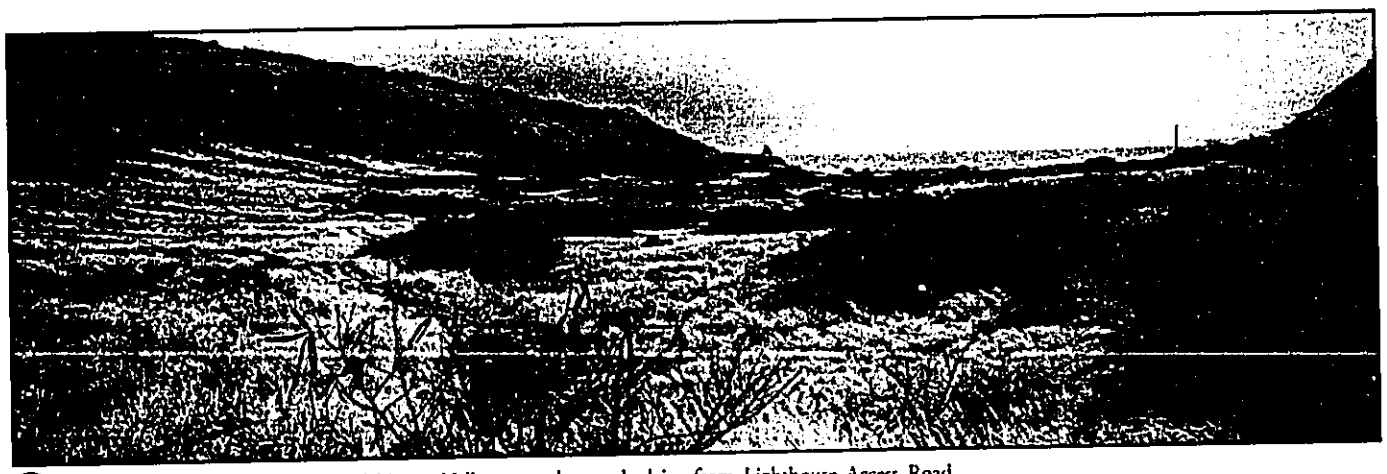
Picture looks toward Makapu'u Head from shoreline trail in vicinity of Ka'ili'ili Bay.



Construction of berm for stormwater retention obscures view of Kealakipapa Valley, but retains view of Makapu'u Head.



View looks across coas
Makapu'u Head.



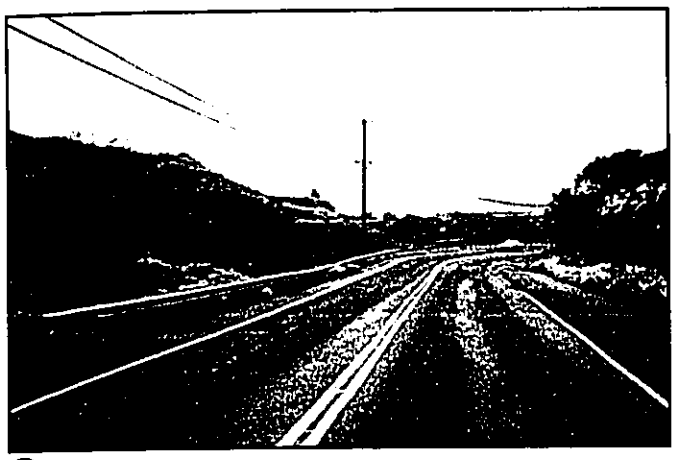
Views look south across lower Kealakipapa Valley toward coastal plain, from Lighthouse Access Road.

Development of golf cours

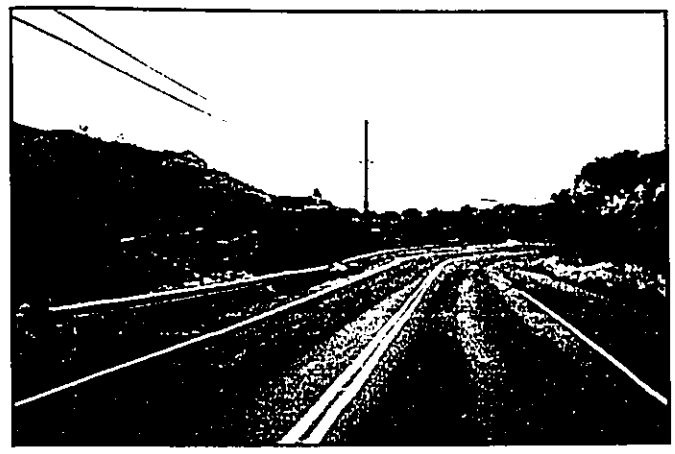
Photographic Visual Analysis

PROPOSED GOLF COURSE

Queen's Beach, Hawaii Kai, Oahu



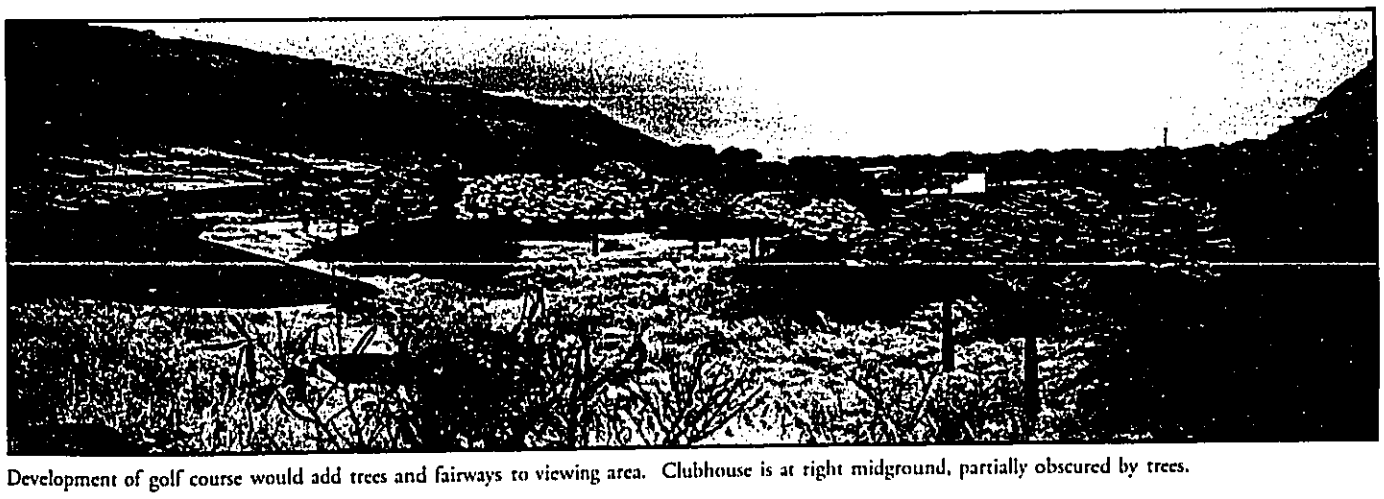
● As viewer continues south, vista of coastal plain, ocean and sky dominates view.



Approaching curve, clubhouse is no longer visible (dashed line indicates clubhouse behind vegetation). Coastal plain and ocean still visible among addition of trees.

● View looks across coastal plain into Kealakipapa Valley and Makapu'u Head.

Construction of berm for stormwater retention partially obscures Kealakipapa Valley but retains view of Makapu'u Head.



Development of golf course would add trees and fairways to viewing area. Clubhouse is at right midground, partially obscured by trees.

Figure 15

For Kaiser Aluminum & Chemical Corporation
Prepared By Helber Hastert and Fee, Planners

consideration. Specifically, Section 25-3.2(c)(4) requires that the City Council shall seek to minimize, where reasonable "Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast."

Vividness. A key element of vividness is the ability of the view to capture the contrast between ocean and landform. The major landform influencing the visual appearance of the project site is Makapu`u Head. The ocean as a viewing object, is visible for only a portion of the drive between Makapu`u Lookout and the Wawamalu Ranch Wall, typified in views 6 and 7 of Figure 15. As can be seen by these simulated views, the building form of the clubhouse, although visible, does not interrupt the relationship between the landform and the ocean. The contrast of color and texture offered by the juxtaposition of the ocean and Makapu`u Head is not affected by the projected view of the clubhouse from Kalanianaole Highway seen in view 6.

From other locations along Kalanianaole Highway, the clubhouse will be visible only for transitory periods or not at all, and will not interrupt views of Makapu`u Head. In terms of texture and color, it is obvious that the landscape will change from a non-managed state to an obviously managed state. However, it is arguable that the change in texture (and color) will not affect the vividness of views of Makapu`u Head and the ocean. According to the description provided by Chu, views of Makapu`u Head and the ocean as one drives by the project site, will still retain a high degree of vividness.

Unity. The key criterion of unity, according to Chu, is the composition and balance between manmade and natural pattern elements. The key elements of the proposed golf course, are the replacement of existing vegetation with managed turfgrasses, and the placement of the clubhouse on the site. Views of the site in general are transitory. Impressions of the project site will certainly change from "wild and rugged" to managed and planned. This reflects the essence of landscape architecture as applied to the design of any golf course, although there are varying degrees of manmade patterns that can be introduced into the golf course landscape plan, both in terms of patterns of planting and the selection of materials to plant. The presence of the clubhouse will likely only be an element of any viewing experience as one drives from Makapu`u Lookout toward the first "S" curve approaching the Hawaii Kai Golf Course, as shown in view 6. As can be seen from this picture, the dominance of the clubhouse is secondary compared to the view of Makapu`u Head and the ocean.

Therefore, the overall visual unity of views affected by the development of the proposed project will still be high.

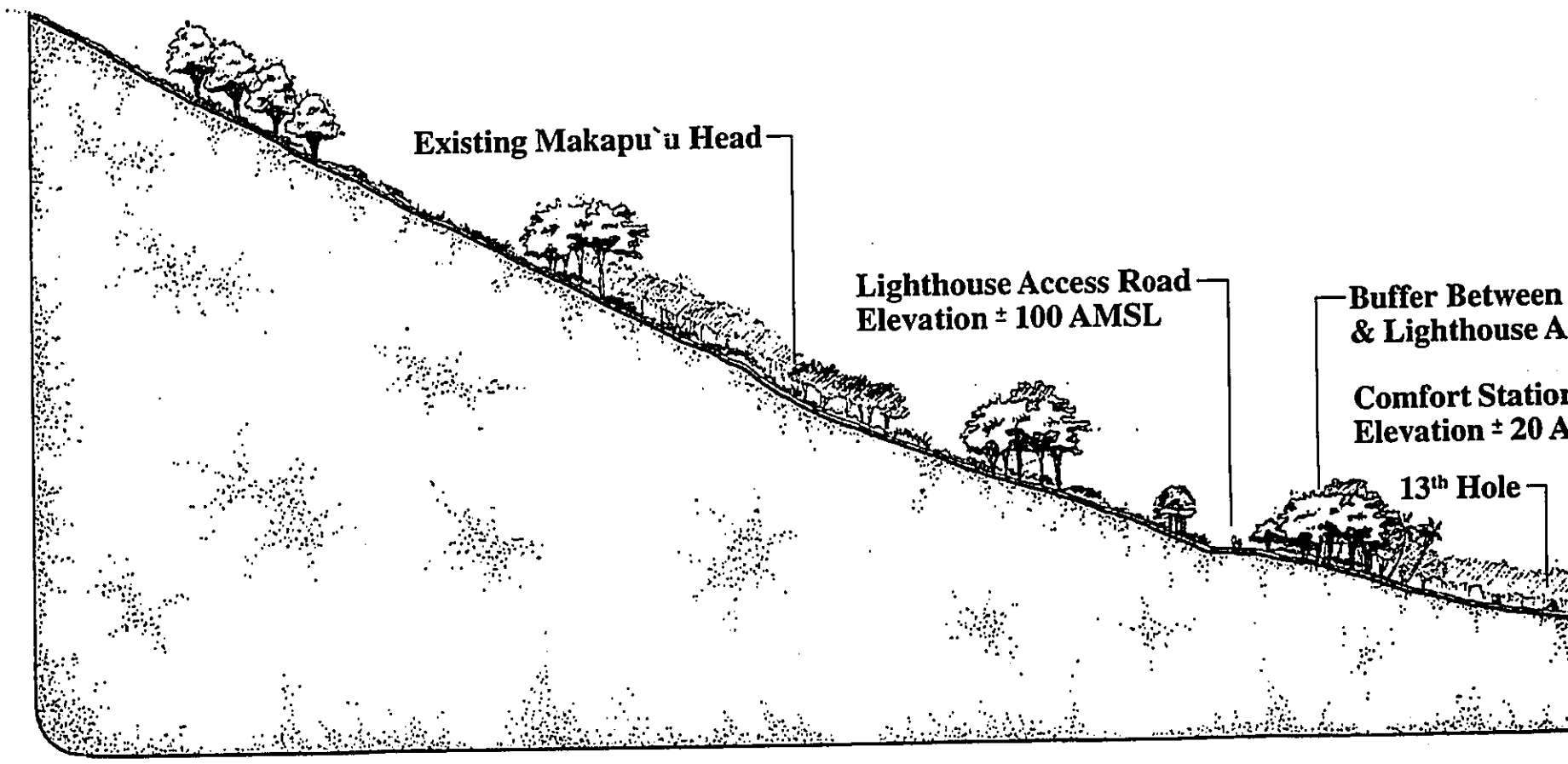
Intactness. According to Chu, in a predominantly natural environment, any imposition of manmade elements would reduce the overall intactness of the view. As described above, the appearance of the project site will certainly change in terms of texture and color. The clubhouse will be visible for a portion of the drive from Makapu`u Lookout to the Wawamalu Ranch Wall. It is arguable that the change in texture and color and the visibility of the clubhouse could affect the intactness of the visual experience. However, the degree of impact is minimal, especially given the regional context of scenic resources that already contain manmade elements, such as the Hawaii Kai Golf Course and Sandy Beach Park. The proposed project would be complementary to these developments, particularly because the open character of the project site would be retained.

Requirements of Chapter 25, ROH. It has been demonstrated that no views toward the sea from Kalanianaole Highway would be affected by the proposed project.

Other Views. Views 8, 9, and 10 depict visual changes to the project site that could be expected as seen from the coastal trail fronting the project site, and from the Lighthouse Access Road, which is used also used by hikers. Views 8 and 9 would be influenced by the construction of the earth berm that is integral to the drainage plan that would retain stormwater on-site during the intense periods of rainfall. Views of the lower portions of Kealakipapa Valley would be obscured by the berm, while views of the upper slopes of Makapu`u Head would remain intact. The primary view along this trail is focused toward the ocean, and not inland.

View 10 is taken along the beginning of the Lighthouse Access Road looking south towards the ocean. this perspective clearly shows that a change in vegetative character would occur. Portions of the clubhouse would also be visible from various points along the road. In this case, the clubhouse is partially obscured by trees.

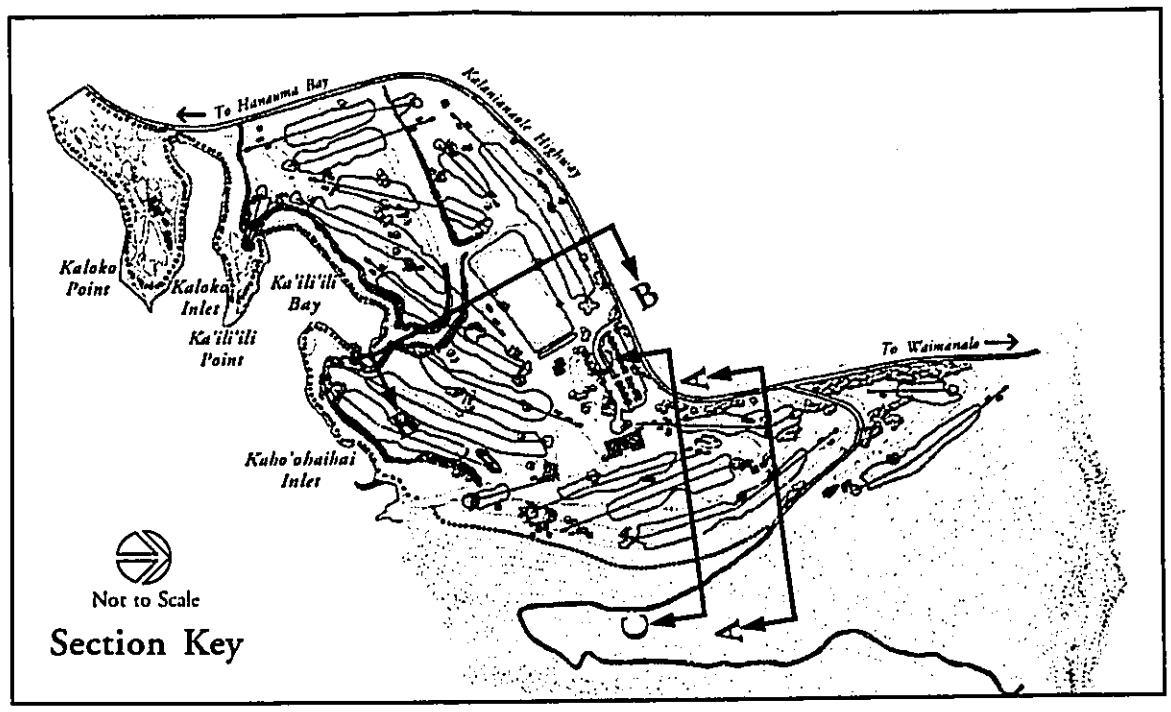
Section Analysis. Three sections of the proposed golf course have been prepared and are shown in Figure 16. The presentation of these sections are illustrative of the spatial relationships between the various elements of the golf course. Of particular importance is the elevation difference between Kalanianaole Highway and the golf course, and the opportunity to provide vegetative buffering between the highway and the golf course, and vegetative screening for the clubhouse. Also, note the separation in elevation and distance



Section A

Sectional Analysis

Queen's Beach, Hawaii Kai, Oahu



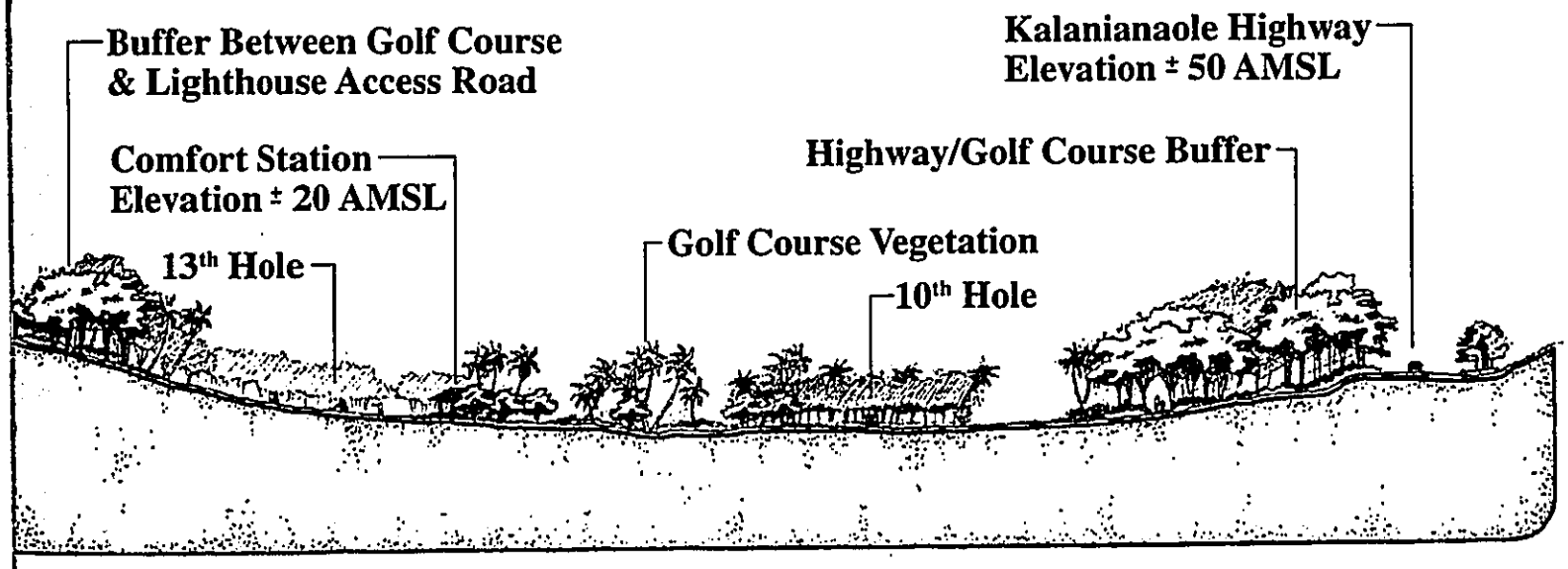
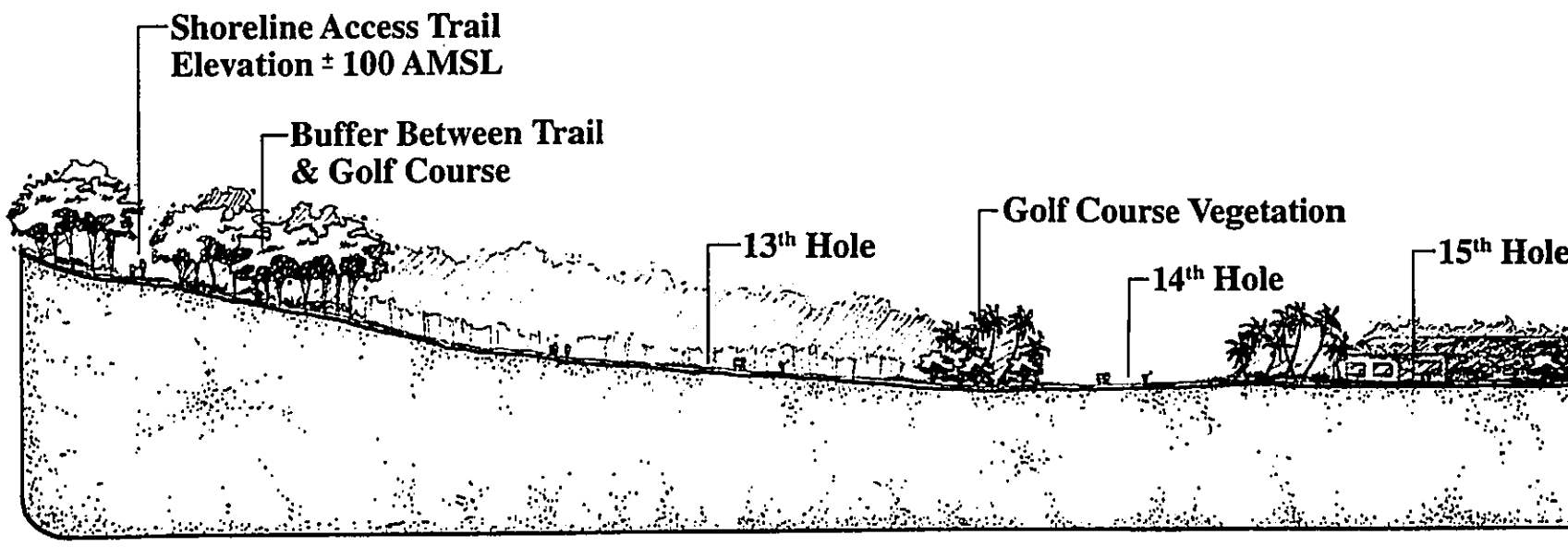
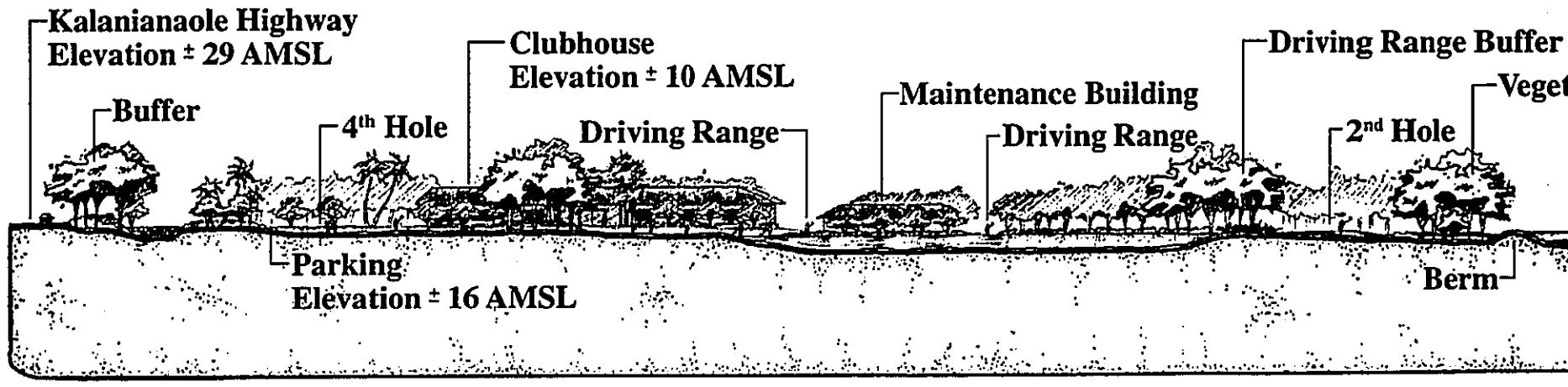


Figure 16

For Kaiser Aluminum & Chemical Corporation
Prepared By Helber Hastert and Fee, Planners



Section C



Section B

Sectional Analysis

Queen's Beach, Hawaii Kai, Oahu

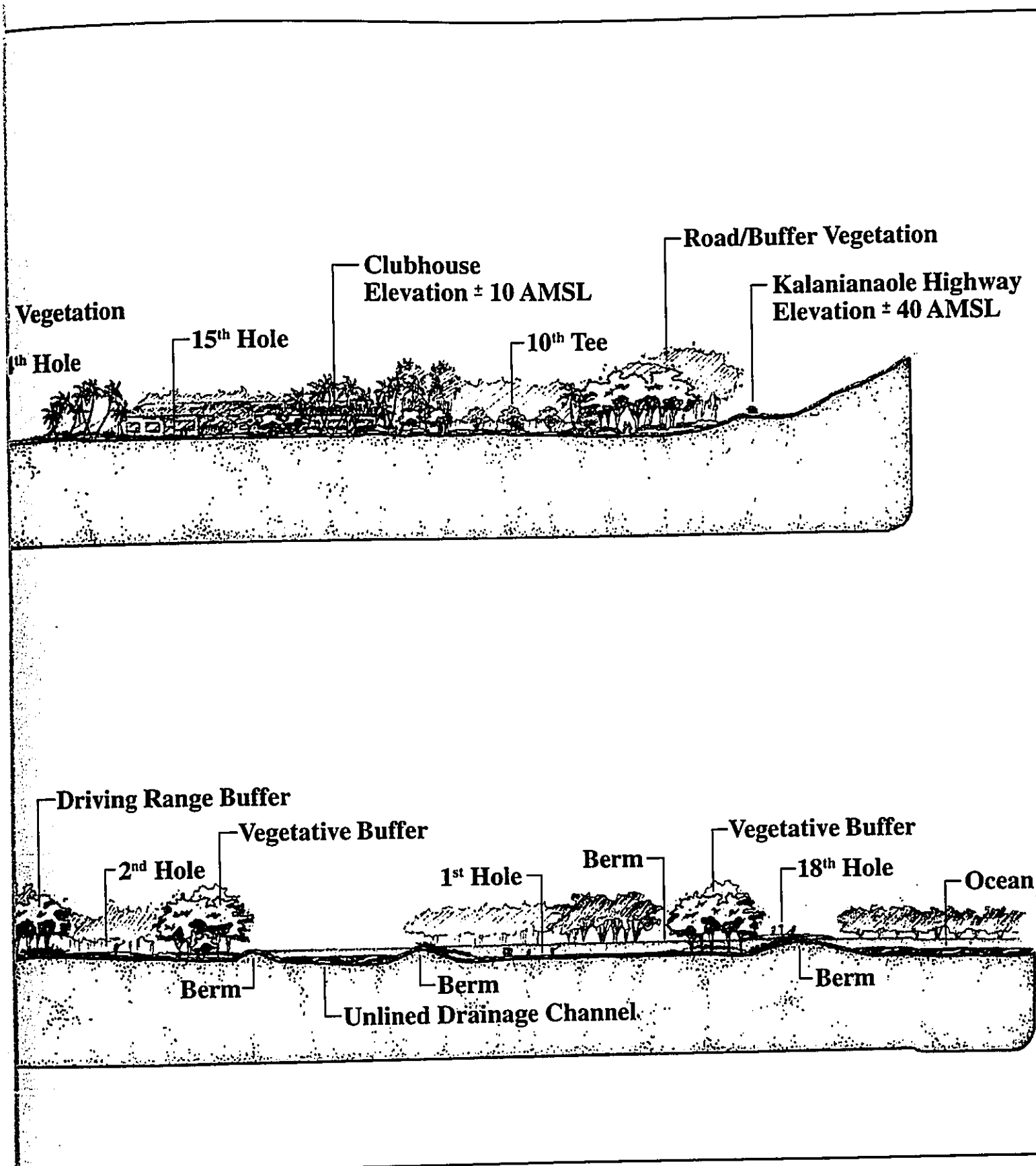


Figure 16

For Kaiser Aluminum & Chemical Corporation
Prepared By Helber Hastert and Fee, Planners

between the Lighthouse Access Road and the 13th hole, and the shoreline access trail and the 13th hole.

Conclusion. Changes to the texture and color of the project site, as embodied by the replacement of existing vegetation, will change its basic appearance. Applying the three elements of "visual quality," even with changes to the vegetation on the project site, visual experience will retain high features of unity and vividness. As documented by using computer simulation techniques, the golf course clubhouse will be visible only for small portions of the driving experience between Makapu`u Lookout and the Wawamalu Ranch Wall, driving in either direction, and will not obstruct views toward the ocean from Kalanianaole Highway.

It is arguable that the change in texture and color could marginally impact the quality of the intactness of the visual experience in the vicinity of the project site. However, taken in a regional context, these impacts are expected to be minor. Further, views of Makapu`u Head will remain unobstructed by any building element proposed as part of the proposed golf course.

4.9.3 Mitigation Measures

The key characteristics of the proposed project that have the opportunity to impact the visual experience enjoyed as one drives between the Wawamalu Ranch Wall and Makapu`u Lookout are the limited visibility of the clubhouse and the change in appearance and color of the vegetation that would be introduced to the project site. As such, the coloring characteristics of these elements need to be considered before final construction. The following measures are recommended to mitigate the appearance of the project:

- The selection of building color, particularly roof treatment should be complementary to the color scheme of dominant views;
- Landscape treatment of the north-facing building walls of the clubhouse should be designed to "soften" the appearance of the building form during the drive south of the Makapu`u Lookout;
- Species of planting materials should be selected to the greatest extent practicable, to complement the existing appearance of the project site, with specific emphasis on native species that would otherwise be found within this region (see Section 4.5); and
- Existing vegetation should be retained wherever possible, including clusters of large kiawe trees on the mauka side of the clubhouse.
- Fairway widths should be minimized, without compromising the playability of the course.

4.10 Historic, Cultural and Archaeological Resources

Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted an archaeological assessment of the project site for this EIS. Their findings are presented below and their full report is attached to this EIS as Appendix H.

4.10.1 Existing Conditions

Historic Overview. Legendary references for the Maunalua-Wawamalu area (which include the project site) are limited, perhaps because the land was rather isolated, and did not offer an abundance of natural resources that would have been conducive to establishment of large populations. Indeed, this is one of the traditions recorded for the area, and is confirmed in the epic account of the journey of Hi`iaka (the youngest sister of the goddess Pele) to and from Kaua`i. During the journey, Hi`iaka twice visited areas associated with the project site, and in both accounts, the difficulty of life and the scarcity of food crops is mentioned (Emerson 1915 and In *Ka Hoku o Hawai`i* 1924-1928 in PHRI, 1996).

McAllister (1933) and Handy (1940) both note that sections of the Wawamalu uplands were known for their sweet potato fields, and that by the late 1700s, sweet potatoes from the area were used as trade for foreign goods. The land itself was awarded to chiefess Kamamalu during the Mahele. Kamamalu was the sister of Kamehameha IV and V, all of whom were grandchildren of Kamehameha I (PHRI, 1996).

In 1856, Kamamalu leased all of the land of Maunalua to William Webster for 30 years. During this time the land was used for cattle pasturage, and the large pond of Ke-ahu-pua-o-Maunalua (the *kuapa* fishpond) was leased for production of fish. After Kamamalu died in 1866, her land passed though a succession of royal hands, until it was included in the holdings of the Princess Bernice Pauahi Bishop Estate, a trust to benefit Hawaiian youth (PHRI, 1996).

Over the years, ranching has been an integral land use of the project site. In 1887, following the establishment of the Bishop Estate, trustee Samuel Damon founded the Maunalua Ranch Company. With his death in 1924, the ranch was gradually dissolved and the lease reverted back to Bishop Estate.

The most recent and best known ranch in the study area was established in 1932 by Alan Davis, a well-known corporate official in Hawaii and long-time head trustee of the Campbell Estate until his death in 1975. Davis took out a 30-year lease for a ranch estate in and around Kaloko on a piece of land known as

Napa`ia. Here he built his home, and the lands comprising his estate he named "Wawamalu" after the village that once existed in the area. Then in April 1946, a tsunami destroyed the ranch (Clark, 1977).

The tsunami scoured the area and very little remained intact except for the ruins of a stone wall which had bordered the ranch at Wawamalu Beach (the Wawamalu Ranch Wall), some barbed wire and the remnants of a salt water swimming pool that had been utilized by the Davis family. The tsunami also destroyed low-lying portions of Kalanianaole Highway but left intact the 1931 Wawamalu Bridge at Kaloko Inlet. Portions of Kalanianaole Highway were realigned in 1947 and 1948, and a new bridge was built mauka of the old Wawamalu Bridge (PHRI, 1996).

Subsequent to the 1946 tsunami, landscape-altering activities occurred at the project site, associated with the plans for development by Hawaii Kai Development Corporation (HKDC), a subsidiary of Kaiser Industries, which received development rights for much of Hawaii kai from KSBE in 1959. In 1960, the Army Corps of Engineers issued permit number 589 to HKDC for construction of a harbor, a 250-foot breakwater and minor dredging. This permit was amended in 1961 for a new alignment to the breakwater, which was then under construction in the area now known as Kaho`ohaihai Inlet (McDermott et. al. 1997)

As part of the work for the harbor, kiawe trees and other vegetation were removed from the area. While dredging was underway for the breakwater offshore, sand was stockpiled on the south side of Kaho`ohaihai Inlet and also mauka of Ka`ili`ili Bay. The mauka portions of Ka`ili`ili Bay were bulldozed and the start of a moat connecting Ka`ili`ili Bay to Kaho`ohaihai Inlet was also bulldozed. In addition, Kaloko Inlet was dredged and cleaned out--both deepened and widened with shaped charges and dragline. Dredged material was stockpiled around Kaloko Inlet (ibid).

Dramatic evidence of the physical alteration that occurred at the project site can be seen in a 1961 aerial photograph taken of the site (Figure 17). This photo was taken during, or soon after, major dredging and grading operations were performed. The coastline has been stripped of vegetation. Kaloko Inlet and Ka`ili`ili Bay were dredged and enlarged. The coastal dune areas of Kaloko, Ka`ili`ili and Kaho`ohaihai were graded and covered with dredge material. The excavation of a channel between Ka`ili`ili Bay and Kaho`ohaihai Inlet was underway. The coastal plain back to the lower portions of the Lighthouse Access Road has been grubbed of nearly all vegetation (the occasional kiawe tree appears as a dot on the landscape). The coastal plain has clearly been graded

1961 Aerial Photograph

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

Figure 17

Source: R.M. Towill Corporation Photo
No. 2226-9V

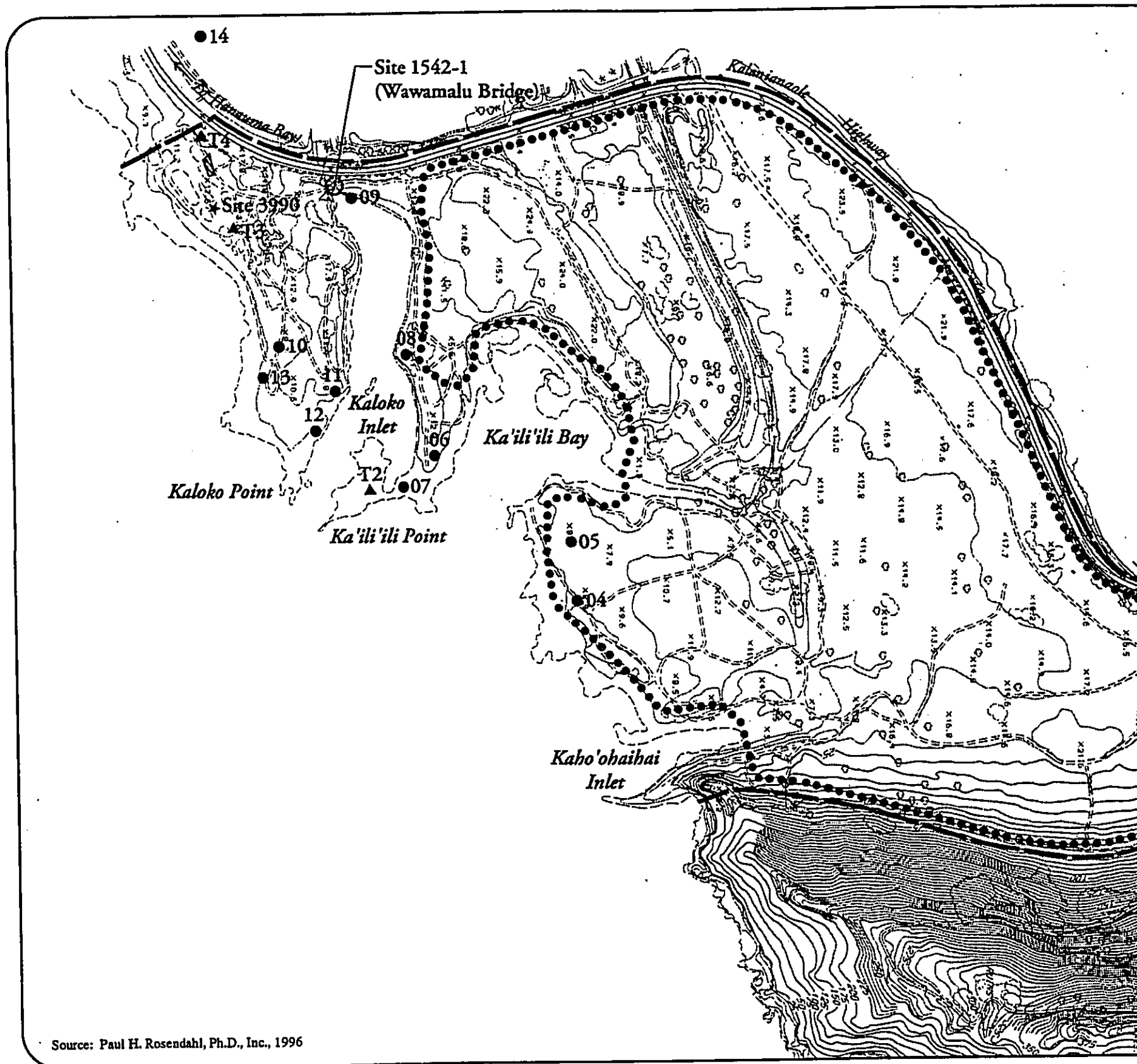
Prepared By Helber Hastert & Fee, Planners

and leveled by bulldozers. All traces of the Kealakipapa Road makai of the Lighthouse Access Road have been removed. Linear bulldozer push piles are visible along with piles of dumped sediment, possibly dredge material. From this photograph, it is clear that there is little chance of archaeological remains within the coastal portions of the project area.

Previous Archaeological Work. There have been numerous archaeological studies undertaken in the Makapu`u-Kealakipapa area of East O`ahu. This includes the work of McAllister (1933), Sterling and Summers (1978), Kelly et al. (1984), Kawachi and Smith (1990), Carpenter (1992), and PHRI (1996). With the exception of McAllister (1933), the other studies were conducted between 1978 and 1996. These studies are particularly relevant to the present project because they were conducted within the Kealakipapa Valley and/or Queen's Beach area. These studies have also provided baseline archaeological data that enables more thorough evaluations of settlement and land use patterns in this portion of O`ahu (PHRI, 1996). Figure 18 identifies all known historic sites in the vicinity of the proposed project.

McAllister's report is important because it documents the landscape before it was impacted by the 1946 tsunami and the development activities which began in 1960. Reports subsequent to McAllister's nearly all note the destruction of archaeological features due to the tsunami and human activity. Recent archaeological assessments have documented that no surface structural remains are within the coastal portions of the project area. Kelly et. al. (1984), in their archaeological assessment specific to the present project area, noted the extreme impact of dredging, grading, bulldozing, and stockpiling. In the upper project area, rock stockpiling and moss rock picking were noted as on-going activities that were destroying the archaeological remains, specifically McAllister's site 3, Kealakipapa Valley Road.

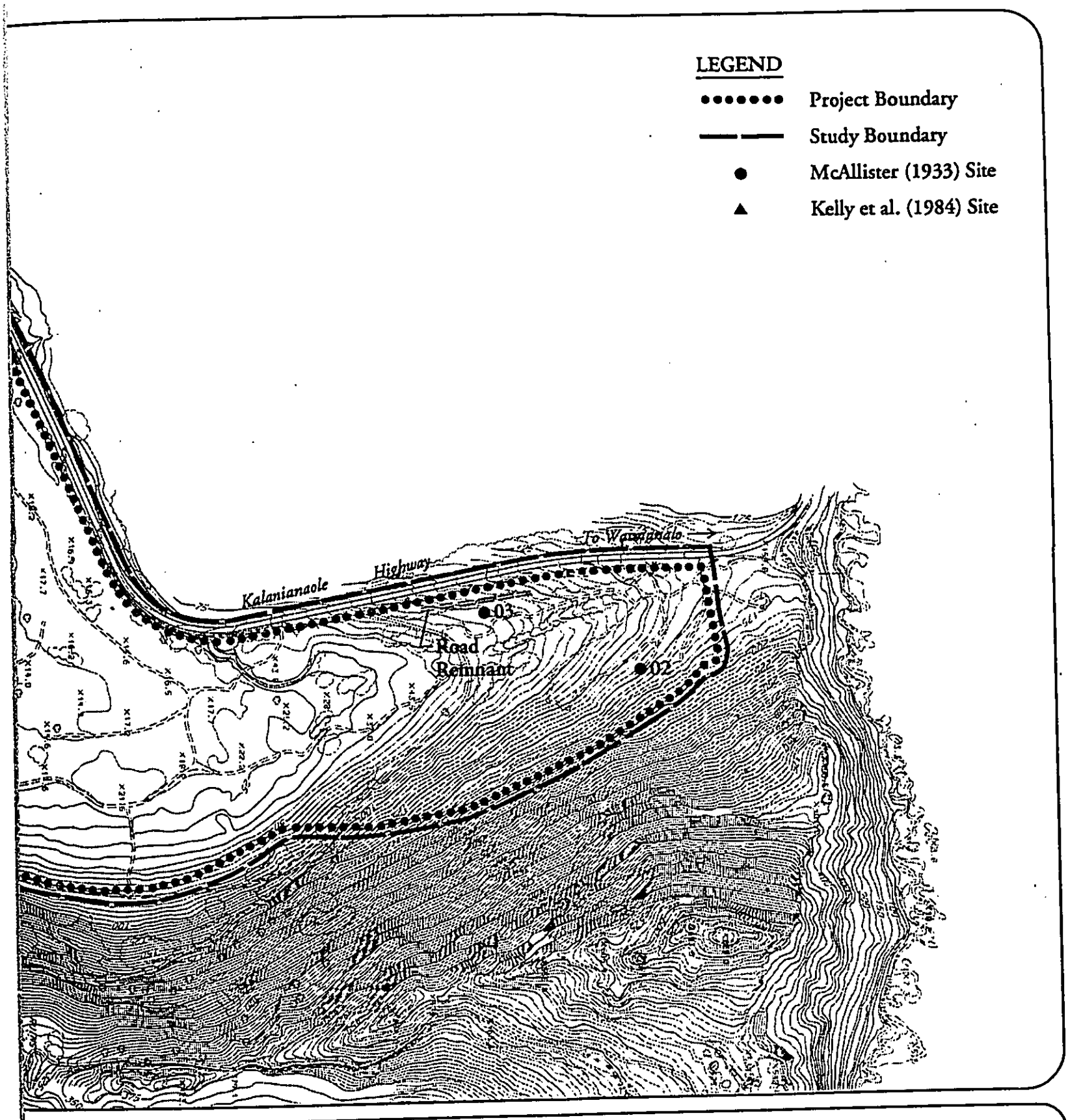
While all of the above studies document prehistoric habitation in the Queen's Beach area, none present age determinations. McAllister identified 12 sites in the general vicinity of the project area, and based on site descriptions, approximately 8 may have been of prehistoric age (Sites 04 through 09 (inclusive), 11, and 12). The sites consisted of crescent shaped walls, house sites, a fishing shrine, a canoe house, and rock shelters. An additional two sites (T1 and T3) were identified by Kelley et al. (1984), and a single burial (Site 3990) was identified by Kawachi and Smith (1990). The two sites identified by Kelley et al. are not located within the project site boundaries and included a rock shelter cave (Site T1) (not shown on Figure 18) on the steep east cliff of Makapu`u Head, and a midden site (Site T3) eroding out of a dune on Queen's Beach. The burial recorded and disinterred by Kawachi and Smith (Site 3990), is



Source: Paul H. Rosendahl, Ph.D., Inc., 1996

Historic Site Locations in the Vicinity of Queen's Beach/Keala

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation



ch/Kealakipapa Valley

Figure 18

Prepared By Helber Hastert and Fee, Planners

also outside the boundaries of the project site. One last site, the trail portion of historic Site 03 (Kealakipapa Valley Road Remnant) located north of the Makapu`u lookout and outside the boundaries of the project site (Carpenter 1992), may represent an earlier prehistoric and/or protohistoric foot trail (PHRI, 1996).

Historic sites were identified in the archaeological study area (larger than the "project site"; includes the beach up to the high water mark and the area south and west of Kaloko Inlet) by McAllister (1933) (Sites 02, 03, 10, and 13) and included a pile of stones, a remnant of Kealakipapa Valley Road, a house site, and an enclosure. The road remnant (Site 03) identified by McAllister (and recorded by Carpenter in 1992) was first recorded in 1851 by surveyor William Webster (Reg. Map 980, State Survey Office) and is within the project site. Kalanianaole Highway, completed in 1932, replaced the older road (PHRI, 1996).

Two of four sites (Sites T2 and T4) were recorded in the study area (but not within the project site) by Kelley et al. (1984). These were the former swimming pool (Site T2) and ranch wall (T4), remnants of the Davis Ranch. A third site recorded by Kelly et al. (1984), the Wawamalu Bridge, was also within the study area, but outside the project site. This site was not assigned a site number (PHRI, 1996).

An assessment, conducted by Paul H. Rosendahl, Ph.D., Inc.(PHRI) in October 1994), located three previously identified sites within the study area[3]. These included the historic road/trail (Site 03) recorded by McAllister, the cultural deposit (Site T3) and 1931 bridge (Assigned PHRI temporary site number 1542-1) recorded by Kelly et al. (1984). No other sites were identified within the study area. Only one of these sites (Site 03) is within the project area.

Inventory Survey. Subsequent to the publication of the DEIS for this project, Cultural Surveys Hawaii completed an inventory survey for the project site (McDermott et. al. 1997). This inventory survey has been accepted by the State Historic Preservation Officer, and is attached to this EIS as Appendix H. Following is a summary of the findings of the inventory survey.

One hundred percent of the project area was covered by systematic pedestrian sweeps during the survey. Previous archaeological investigations of the project area found the greatest number of archaeological features on the coast. Therefore, the entire four-person crew inspected the coastline for signs of

[3] for the purposes of this project, the "study area" subjected to archaeological assessment was larger than the project site; the study area includes the beach up to the high water mark, and the area south and west of Kaloko Inlet

structural remains or other archaeological deposits. Locations which potentially had subsurface deposits were slated for subsurface testing. Seven (7) backhoe trenches were excavated in the project area.

The archaeology that once existed in the coastal portions of the project area was destroyed by the 1946 tsunami and/or the development activities of the 1960's and 1970s. The landscape in this area is dominated by features related to mechanized land modification.

In Kealakipapa Valley, the landscape was also found to have been greatly modified. Bulldozer path and 4-wheel drive road construction and the stockpiling of armor rock have changed the landscape. During the survey field work, no direct evidence of moss rock pickers was observed--but their activities have undoubtedly removed stone from this portion of the project area. The remnant of McAllister's site 3 (Kealakipapa Valley Road) was the single archaeological feature found within the project area. Located between the Lighthouse Access road and the Makapu`u Lookout, it stands out as a cleared area in the surrounding kiawe where only grasses and shrubs grow. Because of the thick vegetation, several hours were spent searching the location of the former roadway. This search did not uncover a single structural remnant of the road; no curbstones, no paving stones, and no "Side rock-walls." It appears that Marion Kelley's fears regarding the activity of moss rock hunters has come to pass; the Kealakipapa Valley Road remnants have been stripped of their stones.

It should be noted that the Kealakipapa Valley Road, with its associated paved and terraces sections, is clearly visible outside the project area where it descends from Makapu`u Lookout to Makapu`u beach. This portion of the road was also investigated during the inventory survey field work (even though it lies outside the project area) and was found to be in the same state of preservation described by Carpenter in 1992.

In the general locality of McAllister's site 2, a few pieces of coral were observed, but these scattered coral fragments were found in many parts of Kealakipapa valley. No traces of McAllister's site 2 are extant.

No subsurface archaeological deposits were encountered during the subsurface testing, which included excavating 7 trenches. Trench 1 was excavated at what was considered the most probable location for McAllister's site 5, on a low bedrock knoll adjacent to Ka`ili`ili Bay. No cultural deposits were found. Trenches 2 through 7 documented the layers of fill material and reworked sediments that were deposited over this portion of the project area. The thickness of this deposit was up to 1.6 meters. Fill material consisted of

terrigenous as well as marine sediment. This fill undoubtedly dates to the grading, dredging, and material stockpiling operations of the 1960s and 1970s. No archaeological deposits are thought to have survived these operations.

Significance. The structural remains of Kealakipapa Valley Road within the project area (previously noted by McAllister, Kelley,, and Carpenter, but not observed by the most recent investigation by PHRI) were not found within the project area during the inventory survey. Although tall, green, vegetation hampered investigation of this site, even several hours of searching did not locate any signs of the paving, curbstones, or "side rock-walls" attributed to the site. It is clear from a chronological analysis of the different descriptions of this site that it has undergone steady destruction over the years. Four-wheel drive roads and moss rock pickers have taken their toll. The former road remnant has become nothing more than a cleared area in the kiawe.

The remains of McAllister's site 3 (State site # 50-80-15-03) were significant under the State and National Registers of Historic Places Criterion D (has yielded or is likely to yield information for research on prehistory or history). The site remnant has been mapped, described, and its location has been plotted. This has recorded all the available information for the site remnant. The site is *therefore considered no longer significant.*

4.10.2 Probable Impacts

Because there are no significant archaeological sites within the project area, no further research is recommended. The project area does not contain archaeological considerations that should influence development.

4.10.3 Mitigation

The following general recommendations are given regarding the structural remains of site 3 that lie north of the project area. These remains will not be impacted by development within the project area and are outside the scope of the current report, however, future investigators should be aware of their presence.

Outside the current project area, site 3 is still visible as a paved and terraced series of four switch backs that descend from Makapu`u Lookout toward Makapu`u Beach (as described and mapped by Carpenter in 1992). At this location the site is still fairly well preserved--not having suffered the degradation of moss rock pickers and armor-rock stockpiling. Because site integrity, including

structural remains, is largely intact, it is here that the site should be preserved as a significant historical resource.

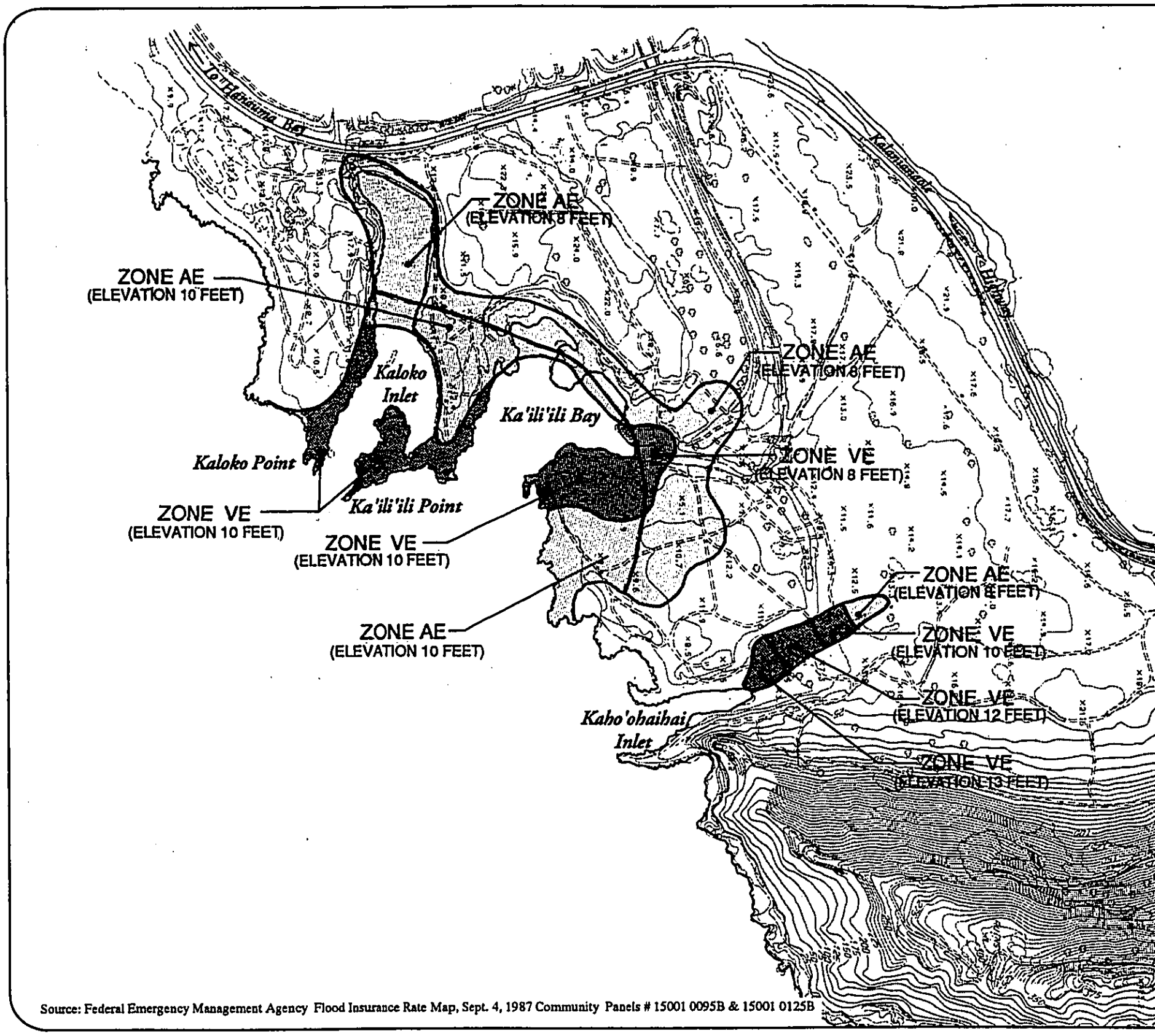
4.11 Flood Hazards

4.11.1 Existing Conditions

Tsunamis are waves generated by seismic activity such as earthquakes and volcanic eruptions, The great period and wave length of tsunami waves preclude their dissipating energy as a breaking surf. Instead they are apt to appear as bores (a tidal flood with a high abrupt front) or as rapidly rising water levels. Most of the destructive tsunamis in the Hawaiian Islands have been generated by earthquakes in South America, Japan, and Alaska. The 100-year tsunami inundation line is based on the National Flood Insurance Rate Maps, where areas designated "AE" and "VE" are subject to inundation. Both these area designations fall within "special flood hazard areas inundated by [the] 100-year flood." Both zones also have base flood elevations determined. Once at the shoreline, tsunamis move inland, generally losing energy to friction and natural obstructions. Based on criteria developed for the Corps of Engineers, it is has been estimated that a 100-year tsunami could wash over 1,200 feet inland in parts of Queen's Beach (U.S. Department of the Army, 1978).

As can be seen in Figure 19, areas of the project site immediately mauka of Kaloko and Kaho`ohaihai Inlets and Ka`ili`ili Bay have been determined to be in the AE and VE zones. Zone VE has an added velocity hazard which is not present in Zone AE. The remainder of the project site has been designated "D," which are "areas in which flood hazards are undetermined." As an added precaution, the State of Hawaii Office of Civil Defense has defined the Tsunami Evacuation Line for the project site to be Kalanianaole Highway. This is the minimum area that should be evacuated in the event of a tsunami.

Ocean waves along the southeastern coast of O`ahu are primarily generated by northeast tradewinds, storms in the southern hemisphere, and local storm systems. Over a nearly horizontal bottom, the height of a wave breaking in shallow water will be roughly 3/4 the water depth. However, rapidly sloping bottoms can produce breaking wave heights in excess of depth (Walker, 1974). Because of the gently sloping stone ocean bottom off-shore from the project site, large breaking storm waves will first break several hundred feet offshore of the site. By the time that a wave's whitewater reaches the shoreline, much of the wave energy will be dissipated. Hence, storm waves have a much smaller potential inundation than do tsunami (VTN Pacific, Inc. 1984).



Source: Federal Emergency Management Agency Flood Insurance Rate Map, Sept. 4, 1987 Community Panels # 15001 0095B & 15001 0125B

Flood Hazards

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

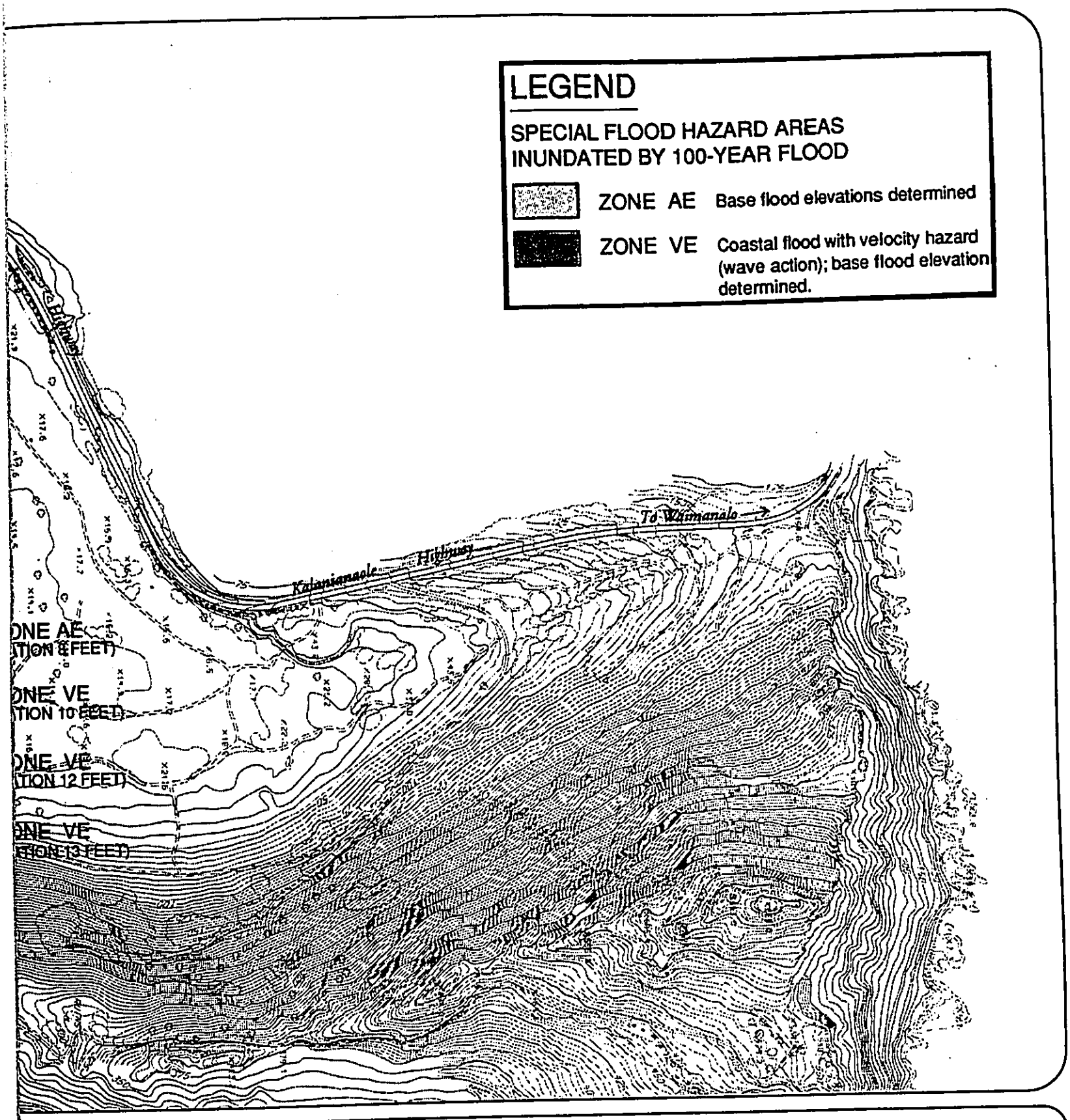


Figure 19

Feet

0 250 500 1000

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4.11.2 Probable Impacts

The clubhouse, which is the structure closest to the shoreline on the project site, is located about 1,500 feet from the shoreline, and is located within Zone D. Areas designated Zone D are areas in which flood hazards are undetermined. Anecdotal information reported by survivors of the April 1, 1946 tsunami indicate that wave run-up reached some distance into Kealakipapa Valley (Clark, 1977). The specific limits of this tsunami, or the predictive limits of the 100-year tsunami have not been determined for this area.

4.11.3 Mitigation

Prior to the issuance of a building permit, appropriate engineering studies will be conducted to determine the exact nature of any flood hazards in this area. Design of the clubhouse would then be influenced by these findings, if necessary and would comply with all provisions of the Flood Hazard regulations contained in the Land Use Ordinance.

4.12 Air Quality

J.W. Morrow, Environmental Management Consultant, conducted an air quality impact report that included the project site for the proposed golf course. Their findings are presented below and their full report is attached to this EIS as Appendix I.

4.12.1 Existing Conditions

There are no permanent air monitoring stations in the Hawaii Kai area. The nearest monitoring stations are at Waikiki and the State Department of Health Building. Monitoring results indicates compliance with all State and Federal air quality standards. Air quality at the project area was expected to be comparable or somewhat better, given the site's more rural location.

4.12.2 Probable Impacts

Short-Term Impacts. The principal source of short-term air quality impacts will be construction activity, including construction vehicle emissions and particulate emissions associated with earth moving operations. The dry climate in the region suggests an increased potential for fugitive dust emissions. Factors favoring good air quality in the vicinity of the project site include good exposure to tradewinds and ample open space. Moreover, except for vehicles travelling

along Kalanianaole Highway, there are no other sources of air pollution in the immediate vicinity.

Operational Period Impacts. Based on typical pesticide use at an 18-hole golf course, the potential for significant airborne concentrations of chemicals is relatively slight, especially in consideration of the dilution factor in application of solutions, the lower level release height, and the coarse spray (droplet size less than 100 microns) that is normally used to assure adequate coverage in the desired area and avoidance of wind drift of applied chemicals. Should a user improperly apply these chemicals under wind conditions which would contribute to the wind drift, there would be an increased possibility of downwind exposure of property and people. In order to assess the possible impact of such an event on humans, a "worst case" dispersion modeling analysis was performed. The results of this modeling indicate low airborne concentrations, and minimal potential impact, suggesting low risk (Morrow, May 1996).

4.12.3 Mitigation

Although modeling of pesticide wind drift under worst case conditions suggests low down-wind concentrations for short duration, the following mitigation measures are suggested to further reduce the potential for impacts associated with pesticide wind-drift.

- full compliance with label use instructions on all pesticides
- use of integrated pest control measures
- minimize pesticide use
- maximize use of non-chemical pest control measures
- use of low-toxicity/nonpersistent chemicals

4.13 Noise

Darby & Associates, conducted a noise assessment study for the proposed golf course. Their findings are presented below and their full report is attached to this EIS as Appendix J.

4.13.1 Existing Conditions

The Noise Assessment found that the project site is currently exposed to low ambient noise levels of approximately 57 dBA. The dominant noise sources include surf along Queen's Beach, traffic along Kalanianaole Highway and occasional distant aircraft flybys.

4.13.2 Probable Impacts

Short-Term Impacts. Development of the Queen's Beach golf course will involve excavation, grading, and the construction of infrastructure and buildings (clubhouse, maintenance shed, etc.). Actual noise profiles generated by these activities will depend on the construction methods employed during each phase of the project. Typical ranges of construction equipment noise will range from less than 60 dBA for pumps and vibrators, to almost 100 dBA for jack hammers and rock drills. Earthmoving equipment, such as bulldozers and diesel powered trucks, will probably be the loudest equipment used during construction. However, because there are no existing residential areas within the area, noise impacts from construction activities are expected to be minimal (Darby & Associates, June, 1996).

Operational Period Impacts. Potential noise sources attributable to the operation of the golf course include the public address system used by the clubhouse to control starts, the mechanical equipment at, and near the clubhouse, and mobile equipment associated with the golf course maintenance activities. Stationary mechanical equipment includes refrigeration and air-conditioning units, pumps, exhaust fans, and other stationary equipment. Equipment associated with the ground maintenance activities include lawn mowers, edgers, garden tractors, leaf blowers, chain saws, etc. Typical A-weighted noise levels at a 50-foot distance for these equipment range from 74 dBA for a lawn mower, to 82 dBA for a chain saw. The nearest noise sensitive area is the proposed residential housing at Queen's Rise, west of the project site. Due to the greater than 500-foot distance between the proposed housing and the clubhouse, the noise generated from the clubhouse should not be objectionable. Noise from ground maintenance equipment, which would be used only during the daytime, would also be attenuated by the long distances and would usually be masked by traffic noise from the intervening Kalanianaole Highway (Darby & Associates, June 1996).

4.13.3 Noise Impacts on the Project

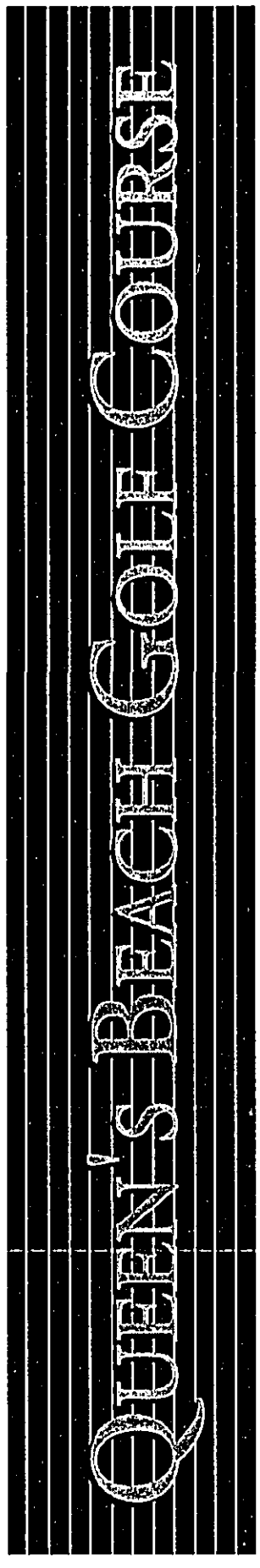
Noise impacts to the clubhouse as a result of surrounding uses, primarily traffic, were calculated. These impacts do not include any noise shielding effects of terrain and roadway elevations. On the basis of this analysis, it is probable that the proposed clubhouse, which is set back from Kalanianaole Highway approximately 400 feet, will be exposed to L_{dn} less than 65 dBA. In accordance with the *American National Standard Sound Level Descriptors for Determination of Compatible Land Use*, the clubhouse is compatible with the

existing outdoor noise environment and requires no special attenuation measures.

4.14 Interrelationships and Cumulative Impact: Physical Environment

The discussion of environmental impacts in Chapter 4 can, for the most part, be characterized as specific to the proposed project site. That is, the potential impacts presented are solely a function of the project site and have little or no relationship to other parcels in the region.

The discussion of scenic resources should be considered in a regional context. The development of a golf course at Queen's Beach will not demonstrably alter the visual experience between Hanauma Bay and the Makapu`u Lookout, as the major landforms will be still be visible, and views to the ocean from the coastal highway will remain intact.



Chapter

5

Assessment of Existing Conditions, Probable Impacts and Mitigation: Socio-Economic Environment

CHAPTER 5
ASSESSMENT OF EXISTING CONDITIONS, PROBABLE IMPACTS AND MITIGATION: SOCIO-ECONOMIC ENVIRONMENT

5.1 Population and Potential Impact on Surrounding Communities

KPMG Peat Marwick, prepared an economic and fiscal impact assessment for the proposed golf course. Their findings relative to population, employment and fiscal impacts are presented in Sections 5.1, 5.2, and 5.3, respectively, and their full report is attached to this EIS as Appendix K.

5.1.1 Existing Conditions

From 1960 to 1994, O`ahu's population grew an average of 1.7% annually from about 500,400 to about 878,000. In comparison, during the same period Hawaii Kai grew over four times as fast, increasing an average of 7.2% annually from approximately 3,400 to about 28,600. The majority of the population growth in Hawaii Kai occurred prior to 1980 due to the limited supply of new residential projects developed in the area in the 1980's and 1990's (KPMG, May 1996).

Selected demographic, educational and occupational characteristics of Hawaii Kai residents in comparison to the island of O`ahu are summarized below:

- Hawaii Kai's population tends to be older in comparison to O`ahu. Residents of Hawaii Kai aged 34 and under represent 44% of the population, while 56% are 35 and older. On the other hand, residents 34 and under on O`ahu represent 53% of the population, while 47% are 35 and older.

- Residents of Hawaii Kai tend to have higher educational levels in comparison to O`ahu. Among persons 25 and over, 92% of Hawaii Kai's population have attained at least their high school diploma, compared to 81% for O`ahu as a whole.

  Additionally 42% of all persons 25 and over residing in Hawaii Kai have attained at least their bachelor's degree, compared to 25% for O`ahu.

- Residents of Hawaii Kai tend to have a higher proportion of executives, managers and professionals in the work force in comparison to O`ahu. Among employed persons 16 and over, Hawaii Kai shows 22% in executive and managerial positions versus 13% for O`ahu, and 19% in professional positions versus 14% for O`ahu.

5.1.2 Probable Impacts

In-migrants are those individuals and their respective dependents that move into the County or State because of development of the project. For the analysis conducted for the proposed golf course, it was assumed that O`ahu's labor force would be sufficient to accommodate the proposed project. This analysis suggests that four (4) cumulative persons would move to O`ahu and the rest of the State, for a total of four (4) new residents added to the total State population as a result of the proposed project (KPMG Peat Marwick, July 1996). The addition of this many new residents to County and State populations is negligible.

5.2 Employment

The development of the proposed golf course will generate short-term employment during the construction phase, and long-term employment in the operation and support of the golf course once it is completed. Direct construction employment would include on-site laborers, operators and craftsmen, as well as professional managerial and clerical workers whose usual place of employment may be elsewhere in the County or State. Other types of direct employment include professional consultants such as architects, engineers and a variety of technical consultants.

5.2.1 Probable Impacts

Construction period. Direct construction employment has been projected on budgeted development costs (approximately $27 million, including the golf course, clubhouse and infrastructure). To estimate direct construction employment due to the golf course, the projected construction budget allocated to labor (estimated at 40%) is divided by the estimated wages (approximately $46,400 in 1995 dollars as published by the Department of Labor and Industrial Relations for 1994 wages and inflated to 1995 dollars based on inflation rates furnished by the Bank of Hawaii) and benefits (estimated at about 35% of wages) for an average construction worker in Honolulu. Thus, the total estimated 1995 wages and benefits of a construction worker in the City and County of Honolulu is estimated at $62,640. Based on these assumptions there would be a total of about 176 estimated direct construction full-time equivalent (FTE) positions for the duration of construction of the golf course (KPMG, July 1996).

Indirect and induced construction employment within other industries on O`ahu and within the State are expected to be stimulated by the direct employment of

construction workers. Indirect and induced employment are estimated based on findings from the "1987 Hawaii State Input-Output model," as provided by the Department of Business, Economic Development and Tourism (DBEDT). This model provides a basis to calculate the indirect and induced jobs created by one direct construction job within Hawaii. Using a multiplier of 1.82 indirect and induced FTE positions for each direct FTE position for construction of the golf course, and a multiplier of 1.60 indirect and induced FTE positions for each direct FTE position for construction of the clubhouse, a total of 315 FTE indirect and induced positions would be created during construction of the golf course and clubhouse (KPMG, July 1996).

This analysis suggests that a total of 491 direct, indirect, and induced FTE positions would be created during the construction period of the golf course. Table 4 reflects the analysis discussed above.

Table 4
Projected Direct, Indirect and Induced Construction Employment

	Development Cost Assumptions	Full-time Equivalent Positions
Direct Construction Employment		
Golf Course	$141,420 per acre	150
Clubhouse	$4,200,000 total	26
Subtotal direct construction employment (rounded)		176
	Indirect and Induced Jobs Multiplier	**Full-time Equivalent Positions**
Indirect and Induced Construction Employment		
Golf Course	1.82 per direct job	273
Clubhouse	1.60 per direct job	42
Subtotal indirect, induced construction employment (rounded)		315
Total direct, indirect, induced construction employment (rounded)		491

Source: KPMG, July 1996

Operational Period. Direct operational employment at the golf course and clubhouse has been estimated at about 30 and 15 FTE positions per year, respectively. These employment estimates are based on interviews with several representative daily-fee and City courses on O`ahu.

Using multipliers provided by DBEDT as a basis for estimating indirect and induced employment generated during the operational period of the golf course, it is estimated that 0.88 and 0.51 indirect and induced FTE positions would be created for each direct FTE position. This translates into 26 and 8 FTE positions for the golf course and clubhouse, respectively and a total of 78 FTE direct, indirect, and induced positions during the operational period of the golf course.

5.3 Fiscal Impacts

5.3.1 Income

Personal incomes of the work force associated with the project (direct, induced and indirect) would peak during the construction years of the project (assumed to be between 1998 and 2000) at about $6 million. After build-out in 2000, on-site direct operational employment would support some $800,000 in annual payroll. Indirect and induced jobs would support another $1 million (KPMG, July 1996)[4].

5.3.2 Public Costs and Revenues

The project will generate revenues for the City and County of Honolulu, primarily from Real Property taxes on developed land and buildings. By project build-out, property tax revenues would climb to about $187,000 annually. The cumulative increases in revenues would reach $2.6 million by 2013.

Revenues will accrue to the State of Hawaii from project construction (excise taxes, corporate income taxes, personal income tax). State revenues associated with construction are projected to reach about $4.8 million over the entire construction period. Thereafter, the golf course will continue to contribute excise taxes and personal income taxes totaling about $3 million dollars to 2013 (KPMG, July 1996).

Because the project will attract so few new residents to the City and County of Honolulu (4), it will have little or no impact on City and County operating costs.

5.4 Market Analysis

A market analysis for the project was prepared by KPMG Peat Marwick (May 1996). This report is included in the EIS as Appendix L.

[4] assumes that indirect and induced jobs average about $28,344 per year, based on island-wide average of all jobs, including government jobs

The objectives of the Market Assessment were to review relevant golf course market conditions and based upon that review, assess the anticipated market support for the proposed golf course at Queen's Beach. In assessing the market demand for the proposed golf course, the facilities and demand characteristics of existing golf courses on O`ahu were reviewed. Other factors contributed to the projected market position of this project. Due to its oceanfront location, the course would provide a picturesque and memorable golf experience that is available at very few daily fee courses.

The proposed golf development is planned to address the strong demand for golf within urban Honolulu from both residents and visitors. The greatest patronage is expected to come from residents of O`ahu's East Honolulu area and Primary Urban Center (PUC). This region includes communities from Hawaii Kai to Pearl City and is within a 45-minute drive from the site.

Key findings of the Market Assessment include:

- Residents represent a significant portion of the rounds generated and are the most likely market for generating golf rounds at the site. The site is conveniently accessible to nearly 55% of O`ahu's population.

- There are no other golf course developments planned for the region.

- There are only four courses open to public play from Hawaii Kai to Pearl City:
  - ◊ Three daily-fee golf courses open to the public in the primary market area, one of which is an executive par-3 course.
  - ◊ One municipal course, the Ala Wai Golf Course, which is extremely busy and is also known as the nation's busiest course.

- The existing courses within the region have generated golf rounds comparable to other daily-fee courses.

- Newly completed and planned courses on Oahu are concentrated in Central O`ahu and within the Ewa Plain. These areas are not conveniently located to urban Honolulu residents.

- The demographics of O`ahu's population, and Hawaii Kai residents in particular, support a strong demand for golf. Residents in the primary market are generally older residents with higher household incomes and have a higher participation rate for golf.

- Oahu visitors generated nearly 30% of all golf rounds. The proposed golf course's proximity to Waikiki and its oceanfront location could make it very popular with O`ahu visitors.

5.4.1 O`ahu Golf Market Overview

Golfer Characteristics. Table 5 compares key demographic attributes of golfers nationally and on O`ahu.

Table 5
Comparative Demographic Characteristics of United States Residents, Golfers in the U.S. and O`ahu Residents

Demographic Attribute	United States General	United States Golfers	O`ahu Residents
Age	35% + between ages of 18-39	50% + between ages of 18-39; those 65 years and older produce highest number of rounds	30% between the ages of 18-39
Household income	38% households with incomes greater than $65,000	46% households with incomes greater than $50,000,	40% of households with incomes greater than 50,000
Occupation level	16% fall into professional managerial occupations	over 40% fall into professional managerial occupations	nearly 25% of population are professionals and/or managers
Educational Attainment	45% show some college education	71% show some college education	53% show some college education

Source: KPMG, May 1996

These numbers show that O`ahu's population mix and national statistics on golfer characteristics indicate that O`ahu residents have a high propensity towards golf.

5.4.2 Market Overview

Hawaii's golf market is comprised of both local residents and visitors to the state. Each of these two main markets can be segmented into more detailed categories, as shown in Table 6.

Table 6
Types of Golfers in Hawaii Golf Market

Local Resident Market	Visitor Market
Local Recreational. These players utilize daily fee and municipal courses, usually as small social golfing clubs or foursomes. These players tend to be flexible in time of play and price sensitive.	***Golf resort guests.*** Golf resort guests can be defined as visitors from out-of-state and local residents staying at resorts that offer hotel or condominium accommodations located around/or associated with a golf course. Access to the course is typically offered along with room accommodations, and green and cart fees are charged according to usage.
Country Club. Country club players consist of upper income residents that hold golf memberships at private clubs. Golfers in this segment have demonstrated a willingness to pay a premium for memberships at private golf country clubs with their various amenities, associated prestige, and playing privileges.	***Free and independent travel golfers (FIT).*** FIT golfers are visitors who are not staying at golf resorts but who independently arrange their own recreational itinerary. FIT golfers generally reserve tee times through guest services at their hotel or through a local golf tour operator.
	Group Travel. Group travel golfers make their recreational, as well as travel and tour arrangements at their point of origin. The majority of group travelers consist of Japanese who book their golf tee times with one of several golf tour operators. This market is less price sensitive than others, and sometimes book reservations several months ahead. Although golf courses have seen a decline in eastbound visitor players, they remain a frequent demand generator for the Oahu golf market.

Source: KPMG, May, 1996

5.4.3 Existing O`ahu Golf Course Overview

O`ahu currently has 36 golf courses, within five different categories of course: (1) daily fee; (2) municipal; (3) resort; (4) military; and (5) private club. Table 7 provides a comparative description of the different kinds of golf courses. The proposed golf course at Queen's Beach will be a daily fee course.

Table 7
Comparative Characteristics of Golf Course Types on O`ahu

Course Type (# on O`ahu)	Course Characteristics				
Daily Fee (11)	Open to the public, with starting times on a first-come, first-served or a telephone reservation basis	Generally designed to be more challenging than municipal courses	Landscaping and maintenance are superior to municipal courses	Levels of play are lower than at municipal course	Overall quality, appearance and maintenance allow for higher green fees
Municipal (5)	Open to the general public w/starting times on a first-come, first-served or a telephone reservation basis	Generally designed to facilitate a quick pace, yet provide a continued challenge for the repeat golfer	Landscaping and maintenance are limited, although some have direct ocean frontage and scenic views	Average rounds played are very high, often exceeding 100,000 per yr.	Clubhouse facilities and course layout are simple and often outdated; geared toward local play, with inexpensive green fees and monthly rates that are subsidized by County.
Resort (5)	Primary use by resort guests and residents, and secondary use by general public.	Design characteristics include: "name" designer; maximized ocean and mountain views; extensive landscaping; oceanfront holes where feasible	Typically owned and managed by subsidiary of owner/developer of resort	Less rounds played on this type of course; tee times typically 8 to 9 minutes apart.	Most expensive green fees
Military (8)	Open to military personnel and retired military personnel on a first-come, first-served basis.	Average rounds played are very high, averaging about 80,000	Inexpensive green fees and monthly rates		
Private Clubs (7)	Generally member-owned, restricted to members and guests.	Designed to promote challenging and exciting play; emphasis on natural viewpoints and extensive landscaping	Local resident members are charged initiation fees, monthly dues, and in some cases, mini-charges to cover operational costs	Attractive clubhouse facilities	

Source: KPMG, May 1996

Golf Courses in Primary Market Area. The primary market area for the proposed golf course at Queen's Beach takes in the area from Hawaii Kai to

Pearl City, and include 55% of O`ahu's population. However, only 10.5 golf courses, or 31% of O`ahu's golf holes are located in the area. Only four of these courses are open to public play, with the rest either being military or private courses. Thus, there is an apparent undersupply of courses in the region, given the area's residents and proximity to Waikiki's visitor population (KPMG, May 1996).

**Planned O`ahu Golf Courses**. Sixteen new golf courses or additions were planned for O`ahu. In addition to the 16 courses, the daily fee Royal Kunia Country Club was recently completed but never opened. The development of the additional 16 courses is uncertain because most of the courses need additional permits and financing is limited or unavailable for construction of new golf courses, especially in less desirable locations (KPMG, May 1996).

Demand for Golf Rounds. Historical data shows that approximately 2,100 annual rounds of golf are played for each 1,000 O`ahu residents. Resident play on O`ahu's East Honolulu to PUC area courses represent only 1,200 annual rounds per 1,000 East Honolulu to PUC area residents. This disparity can be explained by the apparent limited number of courses (10.5) in the area, especially when considering there are only 3.5 courses open to the public. Therefore, much of urban O`ahu's population must travel outside their immediate area in order to vary their course play (KPMG, May 1996).

If conservative assumptions are made about future demand (1,400 to 1,500 resident rounds per 1,000 area residents; visitor demand equals 28% of total rounds), then it is projected that from 970,000 to 1.1 million rounds of golf will be in demand in the market area by the end of 1996. With no new planned additions to the supply of golf courses within O`ahu's East Honolulu to Pearl City area, the region has a limited supply of about 925,000 annual rounds available. At the same time, demand for golf rounds within the region is expected to increase as the population base increases. Thus the primary market area is projected to have an undersupply of rounds that could be satisfied with one additional course until 1997 and 1-2 courses by 1998 (KPMG, May 1996).

5.5 Interrelationships and Cumulative Impact: Socio-Economic Environment

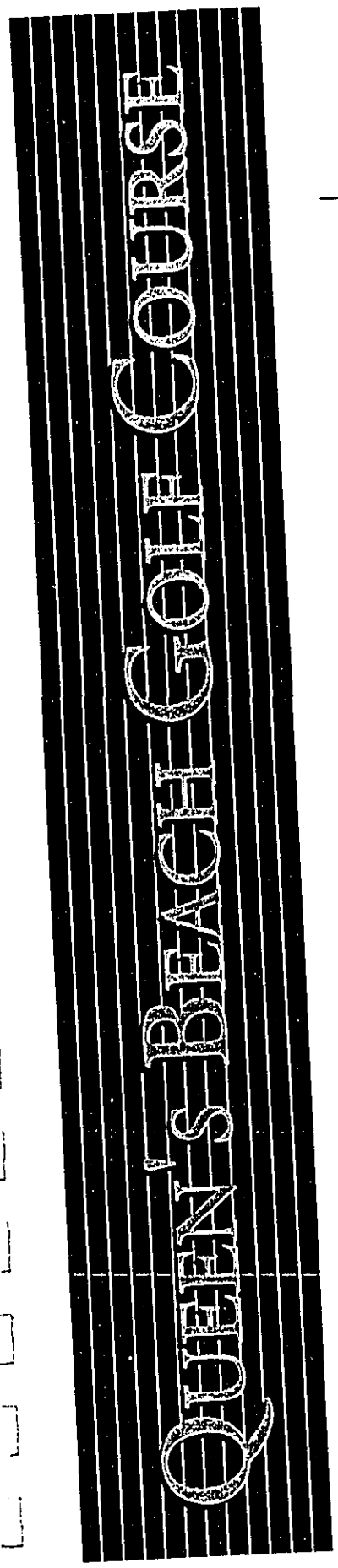
The proposed golf course will have minimal impact on the population in the region, and has been shown to positively contribute to the employment and fiscal and economic health of the county and the state. If other properties in the region are developed, either as a function of existing zoning, or attempts to rezone property similar to zoning proposed by parcels included in the former settlement proposal, the region will experience a large increase in population, over a 20-year period, and will experience positive benefits in employment opportunities

and housing opportunities. While the residential character of the community would remain intact, the number of people in the community would increase.

Chapter

6

Assessment of Existing Conditions, Probable Impacts and Mitigation: Public Facilities and Services



CHAPTER 6
ASSESSMENT OF EXISTING CONDITIONS, PROBABLE IMPACTS AND MITIGATION: PUBLIC FACILITIES AND SERVICES

6.1 Transportation

A Traffic Impact Study was completed that included analysis of the project by Wilbur Smith Associates (June, 1996), and is attached to this EIS as Appendix M. The Traffic Impact Study assessed the potential impacts from the development of 12 parcels located within the Hawaii Kai area, including the proposed golf course. These 12 parcels were the subject of a separate document, an environmental impact report (EIR), which assessed the environmental impacts of the 12 parcels. Although the futures of the 11 parcels are problematic at this point due to the suspension of efforts to settle litigation, traffic is still discussed assuming these projects would be developed. The results of this study are discussed in this EIS in two contexts:

(1) the anticipated traffic impacts of the proposed golf course as a separate project (independent of the status of the other parcels involved in the former proposed settlement of litigation), assuming that projects that have already received land use approvals but have not yet been constructed will be occupied; and

(2) the future travel increases on Kalanianaole Highway in the vicinity of the project site that would likely occur with proposed development of the 12 parcels.

The assessment also assumes a general "background" travel increase in the region. The focus of the analysis in this EIS will remain with relevant stretches of Kalanianaole Highway near the proposed golf course. This is because trips generated to/from the golf course during AM and PM peak hours would be in a "reverse" direction relative to peak traffic conditions to and from Honolulu along the Kalanianaole Highway corridor between Hawaii Kai and Kahala.

Methodology. The Transportation Research Board (TRB), a division of the National Science Foundation, has developed standardized methods for use in evaluating the effectiveness and quality of service for roadways and streets. Different methodologies are available for analyzing traffic signal-controlled intersections and unsignalized intersections, and for rural roadway segments, all of which were used in evaluating present and future conditions for this study. The TRB evaluation methods use a concept known as level-of-service (LOS). This concept describes facility operations on a letter basis from A to F, which signify excellent to unacceptable conditions, respectively. Two of these

methodologies were used for the traffic analysis in the vicinity of the proposed golf course. The rural roadway segment methodology was used for the segment of Kalanianaole Highway which fronts the project site and the unsignalized methodology was used for the Queen's Beach Golf Course driveway/Kalanianaole Highway intersection. The differences in their comparable LOS are shown in Tables 8 and 8. Capacity is estimated based on the facility's physical characteristics (e.g. number of lanes), traffic characteristics (e.g. types of vehicles), and types of traffic controls. The comparisons are frequently referred to as the volume-to capacity (V/C) ratio.

Table 8
Level-of-Service Criteria for Unsignalized Intersections

LOS	Average Stopped Delay (seconds/vehicle)
A	<5.0
B	5.1 - 10.0
C	10.1 - 20.0
D	20.1 - 30.0
E	30.1 - 45. 0
F	>45

Source: Transportation Research Board, Circular 373: Interim Materials on Unsignalized Intersection Capacity, July 1991

Table 9
Level-of-Service Criteria for Two-Lane Rural Highways

LOS	Percent of Time Delay	Maximum V/C Ratio	Maximum Service Flow Rate (pcph)	Description
A	30%	0.15	420	Free flow.
B	45%	0.27	750	Platoons begin to form.
C	60%	0.43	1,200	Traffic flow stable, but long platoons begin to form
D	75%	0.64	1,800	Traffic flow stable, but long platoons begin to combine into longer chains of vehicles and control speeds
E	>75%	1.00	2,800	Platooning intense and speeds become significantly slower
F	--	--	--	Heavily congested with volumes exceeding capacity

Notes: Based on level terrain and zero percent no passing zones as optimum conditions. Actual LOS will depend on terrain, mix of cars, trucks, buses, and line-of-sight, etc.
· Maximum service flow rate represents two-way traffic volumes.
LOS = Level-of-Service
pcph = passenger cars per hour

Source: Wilbur Smith Associates (June, 1996) from Highway Capacity Manual

6.1.1 Existing Conditions

Kalanianaole Highway serves as the transportation spine through the East Honolulu corridor. This highway connects Hawaii Kai, located at the eastern end of East Honolulu, to the H-1 Freeway as well as to the Windward O`ahu area. East of Lunalilo Home Road, Kalanianaole Highway continues as a two-lane highway through eastern Hawaii Kai to Makapu`u Point and into the Windward O`ahu area. No left-turn storage lanes are provided through this segment. Paved shoulders vary in width, with little or no paved shoulder along much of the winding section in the Halona Point (Blowhole) area. Kealahou Street, about one mile west of the project site is a 40-foot wide, two-lane street which provides access to the residential areas within the eastern section of Hawaii Kai. The segment makai of Hawaii Kai Drive which connects to Kalanianaole Highway also serves as part of the local street route through Hawaii Kai for vehicles travelling to/from Windward O`ahu (Wilbur Smith Associates, June 1996).

The two-lane section of Kalanianaole Highway includes several segments with steep grades and restrictive horizontal and vertical curves. Existing conditions were analyzed for traffic through the most restrictive segments, which were the long hill section between Lunalilo Home Road and Hanauma Bay, the winding segment between Hanauma Bay and Sandy Beach (Blowhole segment) and the uphill segment between the Hawaii Kai Golf Course and Makapu`u Lookout. The analysis indicated the following average level-of-service for traffic through these segments, as shown in Table 10.

Table 10
Level-of-Service Along Two-Lane Sections of Kalanianaole Highway

Segment	Level-of-Service	
	Weekday PM Peak Hour	Sunday 12:45 - 1:45 PM
Hanauma Bay Hill	C	E
Blowhole Segment	D	E
Makapuu Lookout	D	E

Source: Wilbur Smith Associates, June, 1996

The levels of service are primarily indicators of travel speeds through these segments. The LOS E conditions in the Sunday afternoon period indicates that vehicles are more likely to be delayed by slower moving vehicles with little

opportunity to pass. Existing traffic volumes in the weekday peak hour use 33 to 37 percent of the roadway capacity, while traffic volumes in the Sunday peak hour use between 59 and 63 percent of the capacity of these roadway segments (Wilbur Smith Associates, June 1996).

6.1.2 Probable Impacts

Future conditions without project. In order to accurately forecast the probable traffic impacts of the proposed golf course on Kalanianaole Highway in the vicinity of the golf course, it is first necessary to establish baseline conditions to compare with the impacts of the project. The baseline forecast reflects future travel increases from; (1) completion and occupancy of projects in Hawaii Kai that are already approved, but unoccupied, (2) construction of additional residential units in areas of East Honolulu outside of Hawaii Kai, and (3) an areawide growth factor (0.35 percent per year) to reflect increased travel to/from existing uses (Wilbur Smith Associates, June, 1996).

With the increases from background traffic growth and the approved Hawaii Kai Developments, the service levels would remain the same in 2017(the horizon year for the traffic study) as for the existing conditions on the three roadway segments included in the analyses. The forecast volumes would use between 37 and 41 percent of the capacity of each roadway segment in the weekday afternoon peak hours. For the Sunday peak hour, the forecast volumes would use 62 to 68 percent of the capacity of the two-lane roadway sections. To put the situation in a different perspective, Table 11 presents the number of vehicles travelling in both lanes of Kalanianaole Highway in both directions during the weekday AM and PM peak periods, and the Sunday PM peak period.[5]

Future Conditions With Project. With the development of the proposed golf course, the service level on all segments would remain unchanged in the year 2017 from the existing conditions analysis. Even though all three segments are presented, this discussion is primarily focused on the Makapu`u Lookout Segment. Table 10 shows the relationship of projected traffic along the segment of Kalanianaole Highway fronting the project, during the AM and PM weekday peak periods, and the Sunday afternoon peak period, and the percentage of vehicular traffic attributable to the proposed golf course.

[5] These sections of Kalanianaole Highway exhibit different peak period profiles from the corridor between Hawaii Kai and Kahala. Instead of peak periods during the weekday commute hours, the peak period occurs during Sunday afternoon, representing recreational travel.

Table 11
Percentage of Traffic Increase Along Kalanianaole Highway Near the Proposed Queen's Beach Golf Course

	# of vehicles without golf course (westbound)	# of vehicles with golf course	% increase	# of vehicles without golf course (eastbound)	# of vehicles with golf course	% increase
Peak Period						
AM Weekday	510	515	1.0	305	341	11.8
PM Weekday	385	387	0.5	435	464	6.6
PM Sunday	549	555	1.1	800	854	6.8

Source: Wilbur Smith Associates, June 1996

As can be seen from Table 11, the highest percentage of increase related to the golf course is eastbound travel during the AM weekday peak period (11.8%). However, this percentage is somewhat misleading, because of the relatively low number of vehicles travelling at that time of day. It is important to remember that the underlying LOS for this highway segment in 2017 would remain unchanged from existing conditions. Regardless of the LOS for the highway, stacking of cars would occur for drivers who wanted to make left-turns: (1) into the golf course access drive coming from Waimanalo, and (2) out of the access drive onto westbound Kalanianaole Highway (Wilbur Smith Associates, June, 1996).

Future Conditions With Project and Build-out of Settlement Parcels (Cumulative Impacts). The traffic associated with the proposed golf course and the build-out of all parcels included in the proposed settlement would reduce the service level on each of the three roadway segments during the weekday afternoon peak hour; from LOS C to D at Hanauma Bay, and from LOS D to E for the Blowhole and Makapu`u Lookout segments. These service levels indicate that vehicle speeds would be controlled by the slowest moving vehicles, and that long platoons would form (Wilbur Smith Associates, June 1996).

The higher traffic volumes on Sunday afternoons would result in all three segments operating at LOS E conditions. The future traffic would amount to approximately 70 to 76 percent of capacity.

6.1.3 Mitigation

Traffic along this segment of Kalanianaole Highway will move smoothly for most periods during the week, including the AM and PM weekday peaks. At LOS D, traffic flow would be stable, with overall speed dictated by long platoons and

chains of vehicles. Only during weekend peaks (Sunday afternoon) would LOS E level be reached. However, these traffic situations ordinarily do not warrant the placement of a traffic signal, because the lowest level of service occurs only during one peak period during the week.

Stacking of cars will occur for vehicles making left-turn movements into and out of the proposed golf course access drive. To minimize delays for vehicles on the highway, and to create safer driving conditions, a left-turn storage land should be provided on Kalanianaole Highway for westbound vehicles coming from Waimanalo turning into the new access roadway. It would be the applicant's responsibility to provide this highway improvement.

Also, adequate sight distance should be provided relative to the horizontal and vertical curves along both roadways.

6.2 Water Supply

6.2.1 Existing Conditions

Potable Water. The water distribution system in the Hawaii Kai area consists of five water service levels, referred to as the "170," "405," "500," "815," and "820" service levels. The "170" service area is the largest and stretches from Portlock to the Hawaii Kai Golf Course, and includes the project site. The "170" system has four storage reservoirs at sites designated as the Koko Head "170," Kaluanui "170," Kamiloiki "170," and the Kalama "170." All except the Koko Head, which has a 1.0 million gallon (MG) capacity, have a 2.0 MG capacity. Total storage capacity of the "170" system is 7.0 MG. The existing water system has a maximum day demand of 6.16 MGD with the critical fire flow of 4,000 gallons per minute (GPM) with 3-hour duration at the Hawaii Kai Town Center Shopping Center. This satisfies the requirements of the Board of Water Supply (Community Planning, 1996).

Existing potable water service to the area which includes the project site consists of a 36-inch transmission line along the mauka side of Kalanianaole Highway, which interconnects the Hawaii Kai and Windward water systems.

Irrigation Water. It is reasonable to expect that a minimum of 700,000 gallons of water per day will be used to irrigate the golf course (Walker, 1995). Presently, it is the policy of the City and County of Honolulu Board of Water Supply (BWS) not to allow the use of potable water for irrigating golf courses. Consequently, the applicant has investigated other means to provide irrigation for the golf course. The most obvious choice to provide this irrigation source is the East

Honolulu Wastewater Treatment Plant (EHWWTP). This facility provides treatment for an average of 3.7 million gallons per day (MGD) of wastewater produced by the Hawaii Kai Community. The WWTP is capable of treating effluent to an R-1 standard [6](Mike Morita, August 2, 1996). Presently, the treated effluent is discharged via an ocean outfall 1,500 feet offshore from Sandy Beach Park in 35 feet of water(see Section 6.3). Therefore, there is sufficient source water available to irrigate the golf course at Queen's Beach.

Effluent sample chemistry was obtained to determine its appropriateness for use on the golf course. Arsenic (As), Cadmium (Cd), Chromium (Cr), Lead (Pb), and Mercury (Hg) were not detected in the samples, while Copper (Cu), Nickel (Ni), Sesium (Se) and Zinc (Zn) were detected but in levels less than the current discharge permit allows. Typical element composition is shown in Table 12:

Table 12
Chemical Effluent Composition for the East Honolulu Wastewater Treatment Plant

Analyte	Concentration (mg/L)
Calcium (Ca)	766-774
Magnesium (Mg)	257-282
Sodium (Na)	983-1186
Potassium (K)	62-70
Chlorine (Cl)	1857-2150
Ammonium (NH_4)	1-23
Nitrate (NH_3)	14-20
Phosphate (PO_4))	1-3
Nickel (Ni)	<0.1
Copper (Cu)	<0.1
Zinc (Zn)	<0.1
Lead (Pb)	<0.1
Cadmium (Cd)	<0.1
pH	6.8-7.4
Salt	3.3 parts per thousand

Source: William J. Walker, April, 1995

[6] R-1 level treatment is a standard used by the State Department of Health (DOH) to qualify how reclaimed water may be applied during irrigation. According to a DOH definition, "R-1 water (significant reduction in viral and bacterial pathogens) means reclaimed water that is at all times oxidized, then filtered, and then exposed after the filtration process..." R-1 water receives a higher level of treatment than R-2 water. The major difference in application between R-1 water and R-2 water is that R-1 water can be applied by means of overhead sprinklers, while R-2 water must rely on subsurface drip irrigation.

The sample analysis demonstrates several important and unexpected results. First, the salt content of the effluent is extremely saline. The high salinity suggests that a salt tolerant turfgrass will be a requirement for at least the fairways (Walker, 1995).

- In addition, the chloride content of the samples sometimes exceeds 2000 mg/l. This is substantially higher than can be tolerated by bermudagrass, a typical turfgrass used to landscape golf courses, particularly the greens. Thus, the irrigation of the greens will require installation of a small desalination plant at the golf course to bring the chloride content to about 800 mg/l, a level that can be tolerated by bermudagrass (Walker, 1995).

Transmission System. Presently, there is no delivery system in place to transmit the treated effluent from Hawaii Kai WWTP to the project site. It will be necessary to construct a pipeline of about 7,200 feet in length from the WWTP to the project site. The pipeline would be placed within the Kalanianaole Highway right-of-way.

6.2.2 Probable Impacts

Potable Water. Potable water will be taken from the BWS transmission system. Existing pipelines are adequate to handle the water needed by the golf course, estimated to be about 35,000 gallons per day (gpd) (Hirota, 1994). The Board of Water Supply has indicated that the developer must obtain a water allocation from Kamehameha Schools Bernice Pauahi Bishop Estate for the project and that the availability of domestic water will be determined when any building permits are submitted for review and approval (Sato, May 10, 1993).

Irrigation Water. Three important assessments with respect to the use of effluent water at the site are required. These are: (1) potential impacts to the soil chemical changes, especially the distribution of Na and Ca on the soil exchange complex; (2) impacts to groundwater from effluent percolate; and (3) impacts to turfgrass species used at the site (Walker, 1995).

Expected changes to soil chemistry were simulated and found not to seriously disturb the Sodium (Na) content of the soils. Thus, soil structure and permeability should remain in a favorable state. Impacts to groundwater are discussed in more detail in Section 4.4. As for the turfgrass species, it will be necessary to desalinate reclaimed water to avoid injuring the bermudagrass. Based on an estimate of five acres for total greens area, this will likely require about 30,000+ gpd of desalinated reclaimed water. The high salt content is not

likely to disturb Zoysiagrass, a turfgrass suitable for fairways that is much more salt tolerant than bermudagrass (Walker, 1995).

Irrigation pipeline. Because the pipeline would be located within an existing highway right-of-way, no ecological impacts would be expected. Impacts to traffic along Kalanianaole Highway are possible during construction.

6.2.3 Mitigation

Because of the requirement to provide two types of irrigation water (reclaimed water for the fairways and tee boxes, and desalinated reclaimed water for the greens), it will be necessary to construct two irrigation systems for the golf course; one for the fairways and one for the greens.

In addition, the Department of Health has promulgated guidelines for using reclaimed water as an irrigation source (Department of Health, November 1993) (see Section 4.4). These guidelines provide controls for the uses and specific requirements for reclaimed water, including; design parameters, approval processes, monitoring plans; and required monitoring reports. These guidelines must be adhered to when using the treated effluent from the East Honolulu Wastewater Treatment Plant.

Impacts to traffic during construction of the transmission system from the EHWWTP to the golf course can be mitigated by appropriate signage, clearly marked construction areas, restriction of work hours to non-peak hours and the assistance of off-duty police officers to control traffic flow.

6.3 Wastewater

6.3.1 Existing Conditions

The existing Hawaii Kai Sewer System can be divided between the Marina Division and the Queen's Beach Division. The Queen's Beach Division includes the area from Kamehame Ridge to Queen's Beach. Untreated wastewater is pumped to the East Honolulu Wastewater Treatment Plant (EHWWTP). This WWTP has a capacity of 5.2 million gallons per day (MGD). Currently, the plant treats an average of 3.7 MGD.

Hawaii Kai WWTP has recently completed a number of improvements that give the plant the capability of a tertiary treatment level (Mike Morita, August 2, 1996). After treatment, effluent is discharged via an ocean outfall, about 3,000 feet offshore from Sandy Beach Park in about 35 feet of water.

The Queen's Beach Division's system consists of three main gravity lines and one force main. The lines culminate at a sewer manhole in the existing Hawaii Kai Golf Course before entering the WWTP. The three main gravity lines are (1) the Kamehame 30-inch line, (2) the Kalama Valley 12-inch line, and (3) the 10- and 18-inch lines that run along Kalanianaole Highway to Wastewater Pump Station #6 (near the golf course). The discharge from Pump Station #6 is pumped approximately 2,200 feet to Kealahou Street where it enters the 24-inch gravity Kalama Valley Sewer line (Community Planning, 1996).

Although the sewage system is privately owned and operated, the State Public Utilities Commission requires that the plant accept any sewage from private or public sources in the approved service area (including the project site) should any wastewater-generating uses be established (Hirota, 1994).

6.3.2 Probable Impacts

The wastewater flows from the proposed golf course are anticipated to be primarily generated from the clubhouse activities. These will include meal preparation, toilets, showers, and laundry area for washing towels. The average daily wastewater flow generated by the golf clubhouse and associated golf course facilities is estimated to be 32,000 gpd and will be typical of domestic wastewater in composition (Hirota, 1994).

The proposed wastewater collection system will utilize gravity sewers that connect to an existing 18-inch line on the property. Wastewater would then flow to Wastewater Pump Station #6, and then would be pumped to the WWTP (Hirota, 1994).

The existing main gravity lines and the Hawaii Kai WWTP are adequately sized to handle the projected wastewater to be generated by the proposed golf course.

6.4 Drainage and Grading

Sam O. Hirota, Inc., prepared a drainage and grading report for this project which describes existing drainage conditions within the tributary area, proposed grading improvements at the golf course (including those related to stormwater management), the probable impacts of grading activities and mitigation measures (best management practices) to minimize impacts related to both construction period activities and golf course operational practices and the effects of stormwater runoff. The findings of this report are attached to this EIS as Appendix N, and are summarized below.

6.4.1 Existing Conditions

Off-site. The tributary area that includes the proposed golf course at Queen's Beach stretches from the Makapu`u Lookout to Kamehame Ridge and encompasses approximately 1,684 acres. (Figure 20). The major improved drainage channels within this drainage area are the Kalama Valley drainage channel and the Golf Course Drainage Channel. Most of the stormwater runoff within the tributary area is directed toward the Golf Course Drainage Channel, a 40-foot wide, concrete-lined, trapezoidal structure, which passes under Kalanianaole Highway and into a 15-foot wide unlined channel which extends into the east finger of Ka`ili`ili Bay (Community Planning, 1996). Runoff from the mauka side of Kalanianaole Highway between the Hawaii Kai Golf Course and the Makapu`u Lookout collects in swales on the mauka edge of the highway and is carried under the road through six inlets and two box culverts. Once makai of the highway, this water flows into the coastal plain toward the ocean. The total calculated runoff quantities (Q) for the 10- and 50-year storm frequencies for the these off-site areas are 1,017 cubic feet per sec (cfs), and 1,423 cfs, respectively.

On-site. The on-site tributary area includes the western flank of Makapu`u Head. Runoff from Makapu`u Head sheet flows down the ridge until it reaches the Lighthouse Access Road. The runoff from this area travels underneath the road through a 4-foot by 4-foot box culvert. Once below the Lighthouse Access Road, the runoff flows across the site in a series of wheel ruts and artificially-created channels. Eventually, after taking one of several paths, the stormwater will eventually outlet into Kaloko Inlet, Ka`ili`ili Bay or Kaho`ohaihai Inlet. The total calculated runoff quantities for the 10-year and 50-year storm frequencies for the on-site drainage areas are 459 cfs and 688 cfs, respectively.

6.4.2 Proposed Improvements

Grading. Grading and earthwork for the proposed golf course will include definition of the greens and tees, the addition of one major detention basin (the driving range), the construction of two irrigation ponds, and the construction of an earth work berm on the makai perimeter of the golf course (Figure 11).

During the first stage of construction, the site will be cleared and grubbed. Boulders will be relocated to he makai perimeter of the site for the earth berm, which will retain stormwater runoff. Once the boulders have been placed, a cement grout will be used to anchor them in place. To provide an anchor for the topsoil, a geotextile material will be placed between the boulders and a layer of

Source: Community Planning, Inc. 1996

Tributary Drainage Area

Queen's Beach, Hawaii Kai, Oahu
Kaiser Aluminum & Chemical Corporation

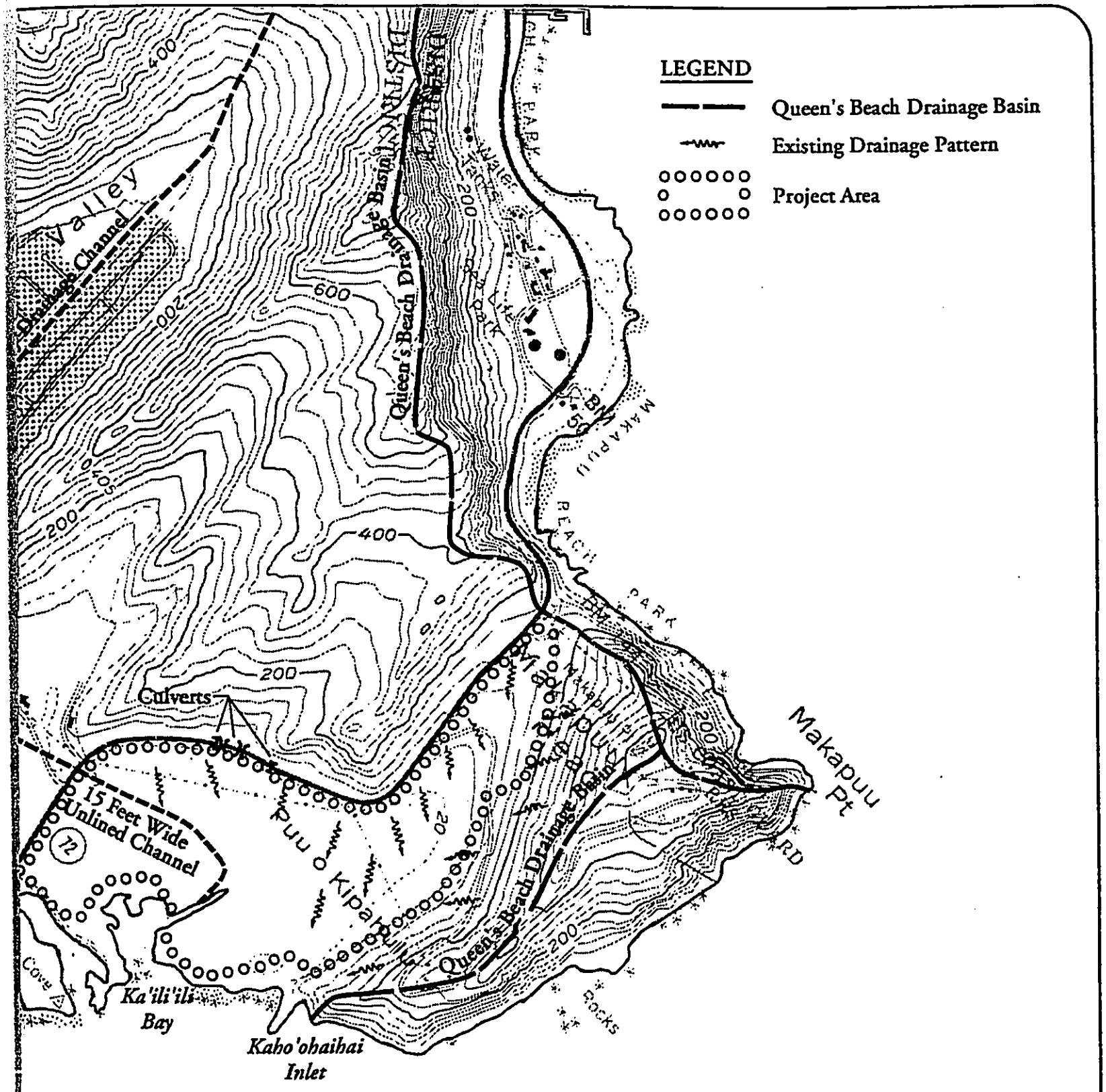


Figure 20

Feet

0 600 1200 2400

Prepared By Helber Hastert and Fee, Planners

topsoil. An erosion control mat will be used to protect the topsoil while the grass is germinating and establishing a root system.

Once the berm has been completed, first phase mass grading will begin in the coastal plain area of the site. The detention basin area will be excavated to reduce the transport of sediment off-site. Included in this area is the clubhouse, maintenance building and parking area, along with the two irrigation ponds. Each of the tees and greens will be defined, along with excavation for the bunkers and swales.

During the second phase, grading will take place in the valley and below the shoreline pedestrian trial on the eastern side of the golf course. Emphasis will be on the definition of the greens and tees and reduction of the cross slopes along the fairways.

In terms of volume of earthwork, the total estimated quantity of excavation is 180,000 cubic yards (cy). The total estimated quantity of embankment is 163,000 cy, leaving a difference of about 17,000 cy which would be spread evenly throughout the course. An additional 40,000 cy of peat and sand will be mixed with native topsoil to improve the condition of the soil for drainage purposes.

Because of the high clay content of the native soils, the footprints for the major structures of the golf course (clubhouse, maintenance building, comfort stations) will need to be excavated approximately 2 feet to provide structural fill.

Drainage. Runoff reaching the site from existing development will continue to travel through the unlined channel which connects to the Golf Course Drainage Channel. Runoff from other off-site locations will be directed into a grass-lined channel. This grass lined channel will connect to the existing unlined channel.

All of the runoff generated from within the project site (including all runoff generated by a storm with a 100-year frequency) would be contained within detention basins and other bunker pits. Fairways within the coastal plain will be crowned with swales on either side, while the fairways located within the valley or contiguous to the pedestrian access trail on the eastern side of the course will have cross slopes that will allow runoff to drain into detention areas.

Runoff will be contained by the berm that is to be constructed on the makai perimeter of the course. The large detention basin located within the driving range, along with low-lying areas near the berm will be drained with the use of weirs. The weirs allow for controlled release of stormwater runoff into the unlined drainage channel, reducing the peak flow during storm events.

6.4.3 Probable Impacts

One measure of impact associated with any development is the relative change in calculated runoff quantities for storm events. The proposed project will reduce calculated runoff quantities generated on-site form 459 cfs to 397 cfs for the 10-year storm, and from 688 cfs to 585 cfs for the 50-year storm, representing a 13% reduction in calculated runoff quantities for both events. This represents a beneficial impact. This reduction is attributable to the elimination of existing bare soil from many areas of the project site, and its replacement with vegetation.

Another possible impact relates to the potential for soil erosion, both during construction and operation of the golf course. During construction activities, soil erosion could result from the exposure of bare soil to the effects of wind and rain, and dust emissions during heavy equipment operation.

Other potential construction-period impacts could occur to important native species or habitats. The three colonies of *Marsilea villosa*, the dense stand on ma`o plants in the southeastern section of the proposed course, and the coastal strand vegetation proximal to the shoreline could be subject to trampling by vehicles and workers, or damage from construct-generated dust or sedimentation. The *Marsilea villosa* could also be susceptible to the interruption of seasonal flooding that seems to be required as part of its reproductive cycle, if drainage patterns are altered and other means are not provided to flood these plants.

The estuaries of the three embayments would be exposed to the effects of increased sedimentation resulting from soil erosion during the construction and operational phases of the golf course.

As discussed in Section 4.3, the majority of the project site consists of Lualualei series soils. While the shrink-swell characteristics of these soils and the clay content in general, are problematic from a drainage perspective, they are not necessarily problematic from a golf course design perspective. The establishment of turf and other landscape features, and the use of an irrigation system will allow watering of soils through the rooting zone of the turf. Soil moisture, to a depth of about one foot, will therefore be increased to near saturation which will eliminate most surface soil cracking impacts.

6.4.4 Mitigation

Considerations to minimize discharge and erosion of the site focus on two objectives: 1) increasing water quality; and 2) minimizing the quantity of water discharged from the site during peak periods of storm events. A series of best management practices (BMPs) are recommended to achieve these objectives as follows:

Construction Period BMPs

1. Construction of the perimeter berm would be the first element of the project. This berm will be located along the makai side of the project site at elevation 12 feet AMSL. It will prevent runoff from leaving the site and will trap sediment.

2. A series of silt fences and berms should be constructed along existing drainage channels to prevent flow from leaving the site in an uncontrolled manner.

3. Construction of sediment traps and barriers in front of and adjacent to the major discharge points of the existing drainage system (Examples of possible sediment reducing systems are illustrated in Appendix C of Appendix N of this EIS).

4. Major construction will take place during drier months. No mass grading will take place during the months December through March. Grading will be implemented in 15-acres sections, with grassing to occur as sections are completed.

5. To further control dust, watering will take place during grading and general construction.

6. Areas of important/endangered species and habitats will be clearly marked so that construction vehicles can easily avoid them.

7. Silt screens, or other similar devices shall be erected in the vicinity of important/endangered species and habitat, as necessary.

Operational Period BMPs

1. Grassing and landscaping of the site.

2. Construction of grassed berm at elevation 12 feet AMSL around the perimeter of the site which will retain runoff on the site.

3. Curb cuts that allow for runoff to travel over grassed or landscaped areas before reaching final destinations.

4. Cleaning of parking lots and roads to reduce sediment load and pollutants.

5. Dry detention basins to trap suspended solids and sediments.

6. Use of grassed swales and retention ponds that increase the time of concentration and detention time.

6.5 Solid Waste

6.5.1 Existing Conditions

In general, solid waste is collected by and disposed off-site by either the City and County of Honolulu, or private refuse companies. The City normally collects solid waste from single-family developments, whereas, refuse from apartment, industrial, and commercial developments is collected by private companies. Refuse from the proposed golf course would be collected by a private company. The primary site of disposal will be the H-Power (Honolulu Program of Waste Energy Recovery) waste-to-energy combuster located at the James Campbell Industrial Park. Ash residue and waste that cannot be processed are then disposed of at the Waimanalo Gulch Landfill in west O`ahu.

6.5.2 Probable Impacts

Based on a rate of 3.37 pounds per person per day (Community Planning, 1996), the proposed golf course at Queen's Beach would produce approximately 1,350 pounds of solid waste each day. In comparison, the existing population of Hawaii Kai generates about 92,445 pounds of solid waste each day[7]. The solid waste generated by the proposed golf course represents about a 1 percent increase over current levels.

6.5.3 Mitigation

Although the solid waste generated by the proposed golf course should have an insignificant impact on existing landfill requirements, there will be additional demands placed on limited space. These demands can be reduced by:

[7] Based on a 1990 census population for Hawaii Kai of 27,432 (Hawaii State Data Book, 1993)

- composting and reuse of green cuttings and paper for landscape conditioner and mulch; and
- recycling of paper, glass, aluminum and ferrous material.

6.6 Schools and Libraries

6.6.1 Existing Conditions

Schools. Hawaii Kai has three elementary schools: Hahaione, Koko Head, and Kamiloiki. Niu Valley Intermediate is only intermediate schools serving the East Honolulu area. Students from Aina Haina to Kalama Valley attend Kaiser High School on Lunalilo Home Road. The statewide population served by the Department of Education (DOE) is expected to grow by about 10% between 1994-1995 and 2000. Enrollments in the Honolulu District are expected to remain stable, while slightly declining enrollments are expected for Hawaii Kai schools. Table 12 shows recent and projected DOE enrollments for the state, the Honolulu District and for East Honolulu Schools (SMS, 1996).

Libraries. The Hawaii Kai Public Library, built in 1973, is a full-service branch with about 80,000 volumes in its collection. Due to State of Hawaii budgetary restrictions, the library's seven current employees do not make a full staff (SMS, 1996).

6.6.2 Probable Impacts

As discussed in Section 5.1, in-migrant population impacts to O'ahu as a result of the proposed golf course are negligible. These observations were validated by the Department of Education's comment letter on the EISPN for the DEIS, wherein the department did not anticipate any impacts to their facilities as a result of the golf course (Suga, April 23, 1996).

Table 13
Recent and Projected Department of Education Enrollments
1994 - 2000

Enrollment Limit	1994	2000 (est.)
Hawaii State Department of Education	181,140	199,982
Honolulu District	34,715	34,623
Hahaione Elementary School	564	530
Kamiloiki Elementary School	595	575
Koko Head Elementary School	388	355
Niu Valley Intermediate School	536	538
Kaiser High School	1,139	1,075

Source: Hawaii Department of Education, 1995

6.7 *Recreational Facilities*

A Social Impact Assessment was completed for the proposed project by SMS Research and Marketing Services, Inc. (August, 1996). The Social Impact Assessment assessed the potential impacts from the development of 12 parcels located within the Hawaii Kai area that are part of a proposed settlement of land use litigation, including the proposed golf course. The Social Impact Assessment included analysis of recreational facilities.

6.7.1 Existing Conditions

Regional Context. Hawaii Kai is a major recreational area on the urban fringe of Honolulu. The City and County of Honolulu acquired 1,275 acres around Koko Head for one dollar from Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE) in 1928 and established Koko Head Regional Park (Belt Collins & Associates, 1992). The park begins at the eastern end of Portlock and stretches along the Kalanianaole Highway northeastwards, terminating at Sandy Beach Park, creating some of the most spectacular recreational resources on O`ahu. Three-quarters of the park is comprised of the volcanic cones of Koko Crater Koko Head. Some 95% of the City's 1,390 acres of developed park and open

space in East Honolulu is actually located in Hawaii Kai. Table 14 lists the various parks within the region, their size and type.

A brief description of various parks and pertinent recreational opportunities available in the region are discussed below.

Hanauma Bay Nature Park. Hanauma Bay is one of the most popular and interesting recreational areas on O`ahu, The naturally protected basin of the reef is an excellent example of the development of a Hawaiian fringing reef and is ideal for viewing reef fishes. In 1967, the DLNR designated 101 acres of the bay's underwater basin as a Marine Life Conservation District and established the Hanauma Bay Underwater State Park. Special controls are maintained to protect this resource, including restrictions on any form of fishing (DLNR, April 1996).

In recent years there have been concerns that the park has been over-used. There have also been concerns about spill-over parking into the residential areas of Portlock and Koko Kai. Beginning in 1990, new controls were established to protect the bay, including closure of the park for a half-day on Wednesdays. Other limits on park use include controls on automobile parking and on the number of commercial vehicles.

Sandy Beach Park. Sandy Beach Park is part of Koko Head Regional Park, and lies east of the Blowhole along Kalanianaole Highway, opposite the East Honolulu Wastewater Treatment Plant. This beach ranks as the second-most popular beach in Hawaii Kai after Hanauma Bay, but caters to a more resident-oriented, less tourist-oriented crowd (SMS, 1996).

Much of the park's popularity is due to a turbulent shorebreak which attract some of the islands most adventurous bodysurfers. There is also some surfing and shorefishing along this section of beach, but swimming is dangerous during high surf because of the manner in which the surf breaks along shore, and strong currents. A grassed field on the eastern side of the park is a popular kite flying venue. On weekends, many Honolulu residents flock to Sandy Beach to sunbathe and relax (DLNR, April 1996).

Wawamalu Beach. Wawamalu Beach is located on City and County property, but is not considered an official "park" because it remains undeveloped. It is located between Kaloko Point and Sandy Beach, and is bordered by Kalanianaole Highway on one side and by a rough lava shelf on the ocean side. The area is named for a Hawaiian fishing village that once stood nearby (Clark, 1977) The beach is good for sunbathing and fishing, while the offshore area

Table 14
City Parks in the Hawaii Kai Area

Park Name	Area (acres)	Type of Park
Koko Head Regional Park	951.4	Regional & Nature Park/Reserve[1]
Koko Crater Botanical Garden	200.0	Botanical[2]
Hanauma Bay Nature Park	50.0	Beach/Shoreline & Nature Park/Reserve[3]
Koko Head District Park	40.0	District[4]
Sandy Beach Park	22.6	Beach/Shoreline & Nature Park/Reserve
Kamiloiki Community Park	18.5	Community[5]
Kamiloiki Neighborhood Park	7.2	Neighborhood[6]
Koko Head Neighborhood Park	6.8	Neighborhood[6]
Hahaione Valley Neighborhood Park	6.2	Neighborhood[6]
Kalama Valley Community Park	6.0	Community[5]
Maunalua Bay Beach Park	5.4	Beach/Shoreline[3]
Hahaione Neighborhood Park	4.1	Neighborhood[6]
Total	1,318.1	

Notes:
[1] Serves entire island or a region of the island, and can include a variety of recreational facilities, cultural, and natural sites.
[2] Developed for patrons' appreciation and education of specific plant types and communities.
[3] Area or site along the shoreline that can include facilities and services for water or shore activities.
[4] From 20 to 25 acres and serves 25,000 people. Facilities can include: play fields, courts, a swimming pool, gym/recreation complex, and passive areas.
[5] Approximately 10 acres and serves about 10,000 people. Facilities may include: a recreation buildings, play fields and courts, and passive areas.
[6] Approximately 6 acres and serves about 5,000 people, often in joint use with an elementary school. Basic facilities include: a children's play area, two basketball and volleyball courts, one or two softball fields, and a comfort station.

Source: Honolulu City and County Department of Parks and Recreation, 1994

offers some surfing opportunities to experienced surfers. Swimming is difficult and dangerous due to strong currents and sharp rocks along the shore. Nevertheless, the beach remains popular because it can be reached by simply pulling off the highway. An unpaved, informal parking area fronting Wawamalu Beach near the remains of the Wawamalu Ranch Wall is used to access the shoreline areas of the project site (DLNR, April 1996).

Queen's Beach. Queen's Beach, which fronts the project site, is also known as Kaloko Beach and lies immediately northeast of Wawamalu Beach. It is not part of the Koko Head Regional Park, because it remains privately owned. As discussed in Section 2.2, this area of the shoreline is primarily used by hikers, fishermen and off-road enthusiasts. Many of the off-road enthusiasts gain access to the shoreline by unauthorized travel across the property owned by KSBE and leased to KACC. Swimming is rare along this portion of the beach

because the shoreline lacks protected areas and there are almost no safe areas to enter the water.

Other Recreational Opportunities in the Region. In addition to the many swimming, surfing, fishing and sunbathing areas located in the beach parks and along other coastal spots, there are other outdoor recreational opportunities in the immediate region. These include the Koko Crater Botanical Gardens, the Hawaii Kai Golf Course, Sea Life Park, and many hikes (Makapu`u Lighthouse, the ridgeline along Koko Head, bench trail around Makapu`u Head, Koko Crater).

6.7.2 Probable Impacts

The most obvious impacts of the proposed golf course relate to the unauthorized use of the project site for off-road vehicle access. The development of a golf course would eliminate this use. Off-road enthusiasts would be forced to other sites for recreation.

The proposed golf course would also alter the hiking experience for users of the Makapu`u Lighthouse access road. The landscaped golf course would appear much different from the current "wild" appearance of Kealakipapa Valley and the coastal plain. Because this element of impact is quite subjective, it is difficult to assess quantifiable impact. It is impossible to predict how many, if any, potential hikers would be dissuaded from hiking this road, if a golf course were part of the landscape. In one sense, the sight and sound of golfers would be less intrusive to hikers than off-road vehicles. Further, Kealakipapa Valley and the Queen's Beach coastline are only visible for about one-half of this hike. Once the road turns north on a switchback near the southern edge of the ridge, Kealakipapa Valley is no longer visible.

A 29-acre area along the western shoreline of the project site (at Kaloko) would remain undeveloped. In addition, a shoreline trail running from Kaloko to Kaho`ohaihai Inlet and a spur trail from the Lighthouse access road to the shoreline trail will be provided. So, pedestrian access for fisherman and hikers will remain guaranteed.

Safety is an additional concern, with a popular hiking trail cutting through a golf course and a shoreline access trail (at a higher elevation) alongside the course. It has been suggested that even if the golf course alignment assures hikers' safety, the presence of the golf course may deter some individuals who would otherwise hike the trail.

Finally, the golf course will provide additional golf opportunities in East Honolulu, for residents of Hawaii and visitors alike. The market assessment (see Section 5.4) makes it clear that demand supports the construction of a course in East Honolulu.

6.7.3 Mitigation

For reasons related to security and the protection and preservation of important coastal strand vegetation, it will be impractical to continue to allow off-road vehicle access to the shoreline through the project site. This impact of the proposed project cannot be mitigated.

The safety of future hikers along trails in the vicinity of the golf course, will be foremost in mind during the final design and layout of the course. Minimum safety distances will be stringently adhered to, and appropriate landscaping will be installed for additional protection.

6.8 Police/Fire and Emergency/Rescue Services

A Social Impact Assessment was completed for the proposed project by SMS Research and Marketing Services, Inc. (August, 1996). The Social Impact Assessment assessed the potential impacts from the development of 12 parcels located within the Hawaii Kai area that are part of a proposed settlement of land use litigation, including the proposed golf course. The Social Impact Assessment included analysis of Police/Fire and Emergency/Rescue Services.

6.8.1 Existing Conditions

Police. Hawaii Kai falls under the jurisdiction of the Honolulu Police Department (HPD) District 7 command, an area stretching from Punahou Street to Makapu`u Point. Hawaii Kai itself has six officers on duty at any given time. A total of 32 officers cover the three watches of a 24-hour period. Present staffing levels are considered adequate, even when a watch operates at 80% of full manpower. (excluding Waikiki) (SMS, 1996).

East Honolulu as a whole has no police facility. Consequently, officers serving in the area operate out of the main station in Honolulu. This poses a response problem to Hawaii Kai crime, particularly during the last few years of the Kalanianaole Highway renovation. HPD has been seeking to establish a substation in East Honolulu for some time. The City has slated development of a 1.5-acre parcel in Aina Haina, which is roughly mid-way along the East Honolulu corridor (SMS, 1996).

Fire Protection. The Hawaii Kai Fire Station, located on Lunalilo Home Road, houses Engine and Ladder Company 34. The Wailupe Fire Station, located about three miles away, is the next nearest station. About nine firefighters per shift are on duty at Hawaii Kai. The Fire Department has a "relocation" protocol for situations when a fire company is responding to a call and cannot answer another one. For example, the Waimanalo Fire Station can cover the Hawaii Kai Fire Station on calls in the Kalama Valley, Sandy Beach, and Hawaii Kai proper areas. Brush and residential fires are of concern, especially in drier areas of Hawaii Kai (SMS, 1996), such as occurs during the summer months at Queen's Beach.

Emergency Services. Medical response services are provided by an Emergency Medical Services (EMS) ambulance located at the Hawaii Kai Fire Station. Staffing was made available on a 24-hour basis as of February 1995. Compared to central areas in Honolulu, Hawaii Kai enjoys a low volume of demand. As of 1993, Hawaii Kai had a "unit hour utilization rate" of .30, while the Honolulu units had rates of .61 to .62 (in effect, the Hawaii Kai ambulance was in use 30% of the time it was manned). In addition, Fire Department personnel are trained to provide basic emergency medical assistance in emergencies until EMS are available. The Wailupe Fire Station also houses an ambulance. Ocean and mountain rescues requiring specialized equipment are generally answered by the Rescue One Unit from Honolulu or a helicopter unit (SMS, 1996)

Continued funding of the Hawaii Kai EMS remains a major issue for the Hawaii Kai community. Due to budgetary considerations of the State of Hawaii, there is uncertainty about the long-term funding of 24-hour service.

6.8.2 Probable Impacts

The proposed project is anticipated to have little or no impact on police, fire and emergency services in the Hawaii Kai area. One beneficial impact would be the reduction of brush fire potential at the proposed golf course because of the irrigated fairways and greens.

6.9 Power, Communications and Civil Defense

6.9.1 Existing Conditions

Electricity. Hawaiian Electric Company (HECO) presently serves the area including the project site with the Queen's Substation, which is located at the end of the improved portion of Mokuhano Street, at the foot of Kalama Valley.

This substation consists of one 10 MVA transformer. This transformer converts 46 kilo-volt (kV) sub-transmission system voltage for distribution to 12 kV. An existing 12 kV power line originates near the Makapu`u Lookout, runs south along Kalanianaole Highway, crosses the property along a dirt road, and terminates near the entry to Hawaii Kai Golf Course. HECO currently has an easement from KSBE for this utility easement. However, the easement agreement stipulates that HECO must relocate the utility line if it hinders future development of the property. KSBE is under no obligation to find another utility easement on the property, unless HECO cannot relocate the lines adjacent to Kalanianaole Highway.

Telephone and Cable Television. The same pole utility line that carries electricity through the project site carries telephone lines for Hawaiian Telephone Company (HTCo.). Cable television service is provided to Hawaii Kai Golf Course.

Civil Defense. There are two civil defense sirens located within the region. One is located at the East Honolulu Wastewater Treatment Plant, approximately 7,500 feet west of the proposed clubhouse site. The second siren is located at Makapu`u Beach Park, approximately 4,500 feet north of the proposed clubhouse site. Both of these sirens have an effective range of about 2,500 feet (Wayne Jones, July 26, 1996).

6.9.2 Probable Impacts

Electricity. HECO will have to relocate the existing utility line that runs through the project site.

Telephone and Cable Television. It is estimated that approximately 60 additional telephone pairs will required for the proposed golf course, with the bulk of the service at the clubhouse. Cable television service will be taken directly from Kalanianaole Highway.

Civil Defense. The proposed clubhouse site would be located outside the effective range of any existing civil defense siren.

6.9.3 Mitigation

In comments submitted for DEIS, the State of Hawaii Department of Defense recommended that the developer of the golf course install two civil defense warning devices. One should be located in the golf course clubhouse parking lot and the second device in the vicinity of Kaloko Inlet.

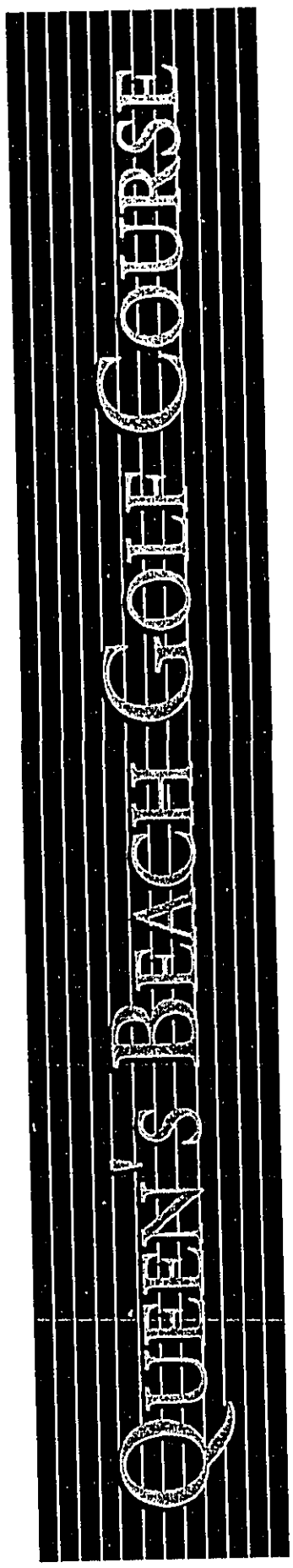
6.10 Interrelationships and Cumulative Impact: Public Facilities and Services

The proposed project will have marginal impacts to the public facilities and services of the region. Even in consideration of the project's impact on the Department of Land and Natural Resource's proposal for the Ka Iwi State Park, most of the existing recreational activities currently pursued at the project site can continue, with the exception of off-road vehicle access. These vehicles would be prohibited from the site in either case.

New projects may be constructed within the tributary drainage area. It is assumed that if such projects are constructed they will comply with new drainage requirements (Ordinance 96-34) which require that there be no increase in peak storm discharge. Therefore, the unlined channel which now empties into Ka`ili`ili Bay will be adequate to convey stormwater to the ocean.

Discussion in this chapter concerning traffic impacts included potential changes attributed to projects formerly included in the settlement proposal.

The East Honolulu Wastewater Treatment Plant is adequately sized to handle additional development within the region, as are domestic water transmission systems. The proposed golf course will not overburden existing domestic water requirements, as the Board of Water Supply has stipulated that any domestic water for the project must come from existing allocations to KSBE.



Chapter

7

Alternatives to the Proposed Action

CHAPTER 7
ALTERNATIVES TO THE PROPOSED ACTION

Alternatives analysis requires that alternatives be explored and evaluated in light of enhancement to environmental quality or the avoidance of adverse effects. The objective of the proposed action is the development of a championship golf course at the project site that would allow the applicant a return on investments made in reasonable expectation that existing land use regulations and court rulings would be fairly applied. As stated previously, the failure of the applicant to achieve land use approvals that would allow the development of a golf course would reopen questions related to the taking of private property without just compensation and inverse condemnation. Nevertheless, because of the existing social and political climate, many in the community believe there are meritorious alternative land uses for the project site. In this context, two alternatives are foremost in the public eye: "no-action" and the development of a State park.

7.1 No-Action

The no-action alternative analyzes the impacts of taking no-action; which for purposes of this EIS simply assumes that a golf course and accessory uses will *not* be constructed on the project site. In the short-term, this means that the physical environment would remain relatively unchanged. Unless the landowner and the lessee took dramatic means to curtail unauthorized 4-wheel drive access to the site, the coastal strand vegetation would be exposed to continued damage and possible destruction. Pedestrian access would continue to and along the shoreline, and the site would retain its existing visual character.

However, the applicant would not be able to recoup investments in the property made in reasonable expectation that existing land use regulations and court rulings would be fairly applied. In this context, the no-action alternative is unacceptable and was rejected.

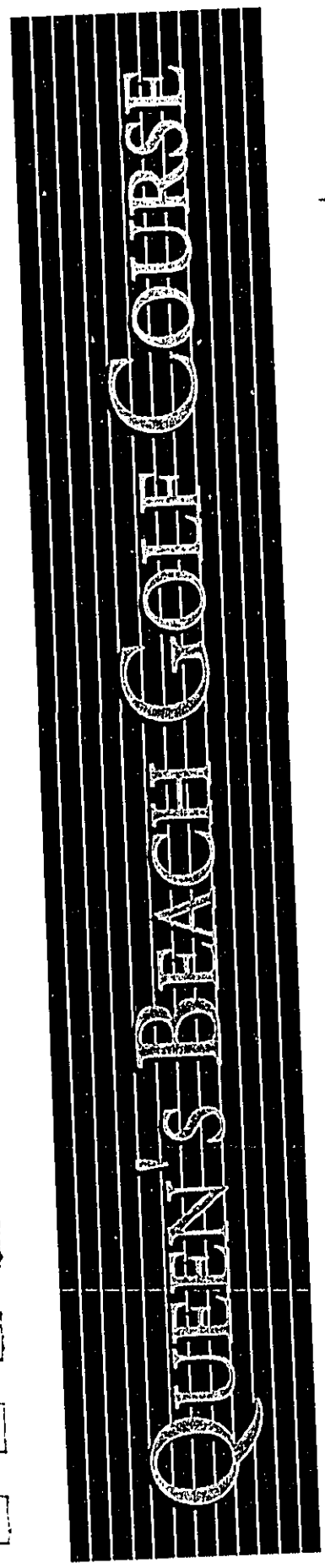
7.2 Development of a State Park Alternative

The State of Hawaii has spent the last eight years, several hundred thousand dollars and countless hours of citizen participation planning for a park that includes the project site. The master plan that was the subject of an EIS (DLNR, 1996) portrays a park that is passive in nature, focusing on the interpretive enjoyment of the project site, with the development of a trail system and more active management of the native flora, among other characteristics. For many in the community, the creation of the Ka Iwi State Park is a logical extension of the

open space park system that begins at Hanauma Bay and presently continues to Wawamalu Beach. There is no question or argument that such a park would be compatible with existing recreational resources.

From an environmental perspective, the park would certainly enhance the site's physical resources and provide a long-term management presence for those resources. There is considerable public support for this proposal to develop a park. On face it is easy to understand why a majority of the community would choose a park over a golf course. However, such a choice must include the impact of fairly compensating the landowner and the applicant for the value of the land and the investments already made in good faith reliance on existing land use designations.

Any analysis of this alternative eventually leads to a discussion of the fair value to be paid by the State to either purchase or condemn the land (or exchange other property). The 1997 State legislature appropriated about $11.4 million to be spent on purchasing the project site. In addition, the State Department of transportation has begun a process to obtain $4.6 million in federal highway funds to help purchase the intended parkland. The federal money would be taken from funds established by the Intermodal Surface Transportation Enhancement Act (ISTEA) in 1991. Unless, and until, there is a firm offer made by appropriate officials that fairly compensates the landowner and the applicant, this alternative does not meet minimum financial objectives. Therefore, under existing circumstances, this alternative has been rejected.



Chapter

8

Irreversible and Irretrievable Commitments of Resources

CHAPTER 8
IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The construction of the proposed project will result in an irreversible and irretrievable commitment of capital, land, labor and energy for the design and development of the project. The commitment of these resources, however, should be evaluated in light of expected benefits to the community from the project.

The development of the golf course will transform the project site from its present undeveloped state to an appearance that suggests deliberate management. Views of the golf course from Kalanianaole Highway and the Makapu`u Lighthouse access road will be different than those of the current landscape, although views toward the ocean and Makapu`u Head will not be interrupted. Further the overall character of the property will still be in open space.

The preservation of coastal strand vegetation, the enhancement of habitat for the *Marsilea villosa*, the endangered Hawaiian water fern, the preservation and enhancement of habitat for the *Gossypium tomentosum*, the Hawaiian cotton plant, the construction of trails for public access, the provision of additional golf opportunities on the site.

The development of a golf course will marginally increase a demand on potable water sources and will contribute to regional demands on wastewater and other infrastructure systems.

The project will not require any new commitment of publicly supported services and facilities that will not be compensated by increases in tax revenues.

Chapter

9

Relationship Between Local Short-Term Uses of the Environment and Maintenance and Enhancement of Long-Term Productivity

CHAPTER 9
RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Long-term trade-offs related to the proposed action are associated with the change in the physical appearance of the site's landscape. Presently, the project area has a "wild" and "rugged" character, even though the predominant vegetation are introduced, rather than native, species. The proposed project will introduce turfgrasses to the fairways and greens, and other landscaping material to the rest of the site. In addition, the construction of a clubhouse will bring a man-made element to the landscape. The selection of native plant species to be used for landscape materials, the retention and expansion of large portions of the Hawaiian cotton plant (*Gossypium tomentosum*) and appropriate use of architectural design and materials for the clubhouse will diminish the perceived visual change of the site.

Also in the long-term, the proposed project will provide an opportunity for native coastal strand vegetation to recover from decades of abuse from off-road vehicles. As stated above, large numbers of the Hawaiian cotton plant will be incorporated into the design of the course, thus preserving a habitat for a native insect (*Rhyncogonus simplex*) that is known to use the plant as habitat. Habitat enhancement will also be provided for the endangered Hawaiian water fern or `ihi`ihi-lau-akea (*Marsilea villosa*) and remnant portions of a historic road in upper Kealakipapa Valley will preserved for interpretive development. Further, access to and along the shoreline will be preserved and maintained. All of these long-term environmental considerations are beneficial.

Other favorable impacts are related to the number of jobs that the golf course will create and the tax revenues to be realized by the State of Hawaii and the City and County of Honolulu. Any short-term construction-related impacts will be mitigated by the enhancement of long-term productivity of the site.

Queen's Beach Golf Course

Chapter
10
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CHAPTER 10
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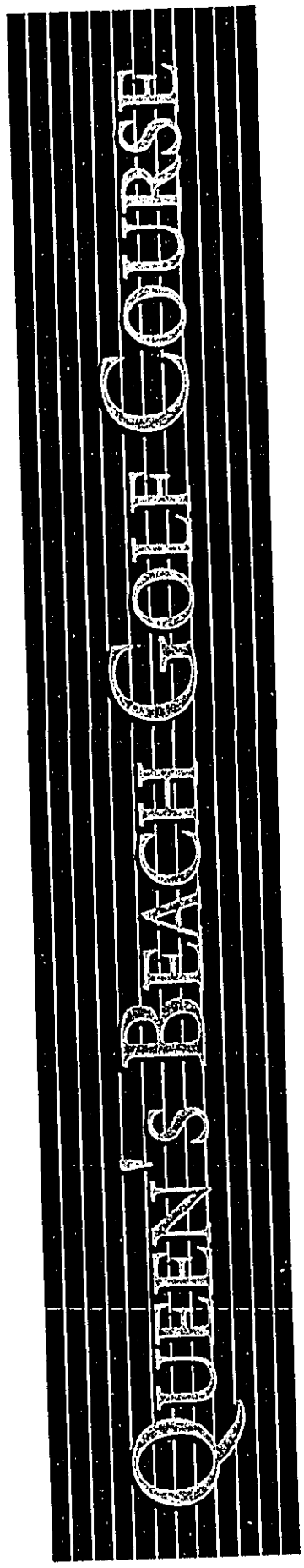


Chapter
11
Preparers of the EIS

CHAPTER 11
PREPARERS OF THE EIS

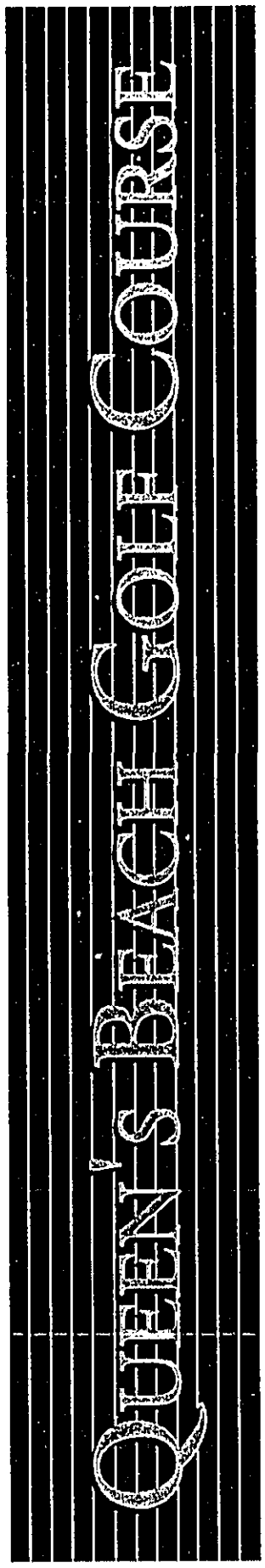
The Queen's Beach Golf Course EIS (August 1996) was prepared for the applicant, Kaiser Aluminum and Chemical Corporation by Helber Hastert & Fee, Planners. The following list identifies individuals and organizations involved in the preparation of this EIS and their respective contributions.

Kaiser Aluminum and Chemical Corporation
Robert Burke, Vice President of Development
Kaiser Center, Inc.

Helber Hastert & Fee, Planners
Mark Hastert, AICP (Principal-in-charge)
Scott Ezer (Project Manager and Principal Author)

Technical Consultants

Consultant	Technical Area
KPMG Peat Marwick	Market Assessment, Economic/Fiscal Impacts
Community Resources, a division of SMS Research & Marketing Services, Inc.	Social Impact Assessment
J.W. Morrow, Environmental Management Consultant	Air Quality
Darby and Associates	Acoustical Engineering
Char & Associates	Botanical Resources/Wetlands Study
Phil Bruner	Terrestrial Fauna
Tom Nance, Water Resources Engineering	Hydrogeology
Marine Research Consultants	Marine Biology
William Walker, Ph.D.	Chemical Risk Assessment
Wilbur Smith Associates	Traffic Impact Study
Sam O. Hirota, Inc.	On-site Civil Engineering
Community Planning, Inc.	Off-site Civil Engineering
Cultural Surveys Hawaii	Archaeology
Steven Montgomery	Entomology



Chapter

12

Consulted Parties and Participants in the DEIS Preparation Process

CHAPTER 12
CONSULTED PARTIES AND PARTICIPANTS IN THE DEIS PREPARATION PROCESS

The City and County of Honolulu Department of Land Utilization (DLU) (accepting authority) determined that the proposed project may have a significant effect on the environment. By letter dated March 25, 1996, DLU notified the Office of Environmental Quality Control (OEQC) that it had determined an EIS was required for the subject project. Notice of this determination was published in the April 8, 1996 edition of *The Environmental Notice* (formerly the *OEQC Bulletin*), commencing a 30-day public review period which ended on May 8, 1996. A copy of the environmental impact statement preparation notice (EISPN) and/or notice of the project was mailed to the agencies and organizations listed below. The list contains parties believed to have an interest in the project.

A total of 30 agencies, organizations or individuals provided written comments on the EISPN. The parties who responded to the EISPN are identified by an asterisk ( ) and their respective comments are reproduced in the following pages, along with response letters to the comments.

Federal Agencies

Naval Base Pearl Harbor
U.S. Army Support Command Hawaii
U.S. Environmental Protection Agency Region IX
U.S. Department of Transportation
- Federal Highway Administration
- Commander, U.S. Coast Guard

U.S. Environmental Protection Agency
U.S. Army Engineering Division, Honolulu
- Department of the Army

Department of the Interior
- Fish and Wildlife Service
- Geological Survey

Department of Agriculture
Department of Commerce, National Oceanic and Atmospheric Administration,
- National Fisheries Service

State Agencies

Kaneohe Regional Library
Pearl City Regional Library
Kauai Regional Library
Kahului Regional Library
Legislative Reference Bureau Library
Aina Haina Public Library
State Main Library
Hilo Regional library
Hawaii Kai Public Library
Kaimuki Regional Library
Hawaii Community Development Authority
Department of Budget and Finance
- Director
- Public Utilities Commission

Department of Business, Economic Development and Tourism
- Director
- Librarian
- Energy Division
- Land Use Commission

Department of Education
Department of Health
- Director
- Office of Environmental Quality Control

Office of Hawaiian Affairs
University of Hawaii
- Water Resources Research Center
- Hamilton Library
- Environmental Center

Department of Transportation
Department of Land and Natural Resources
- Director
- State Historic Preservation Division

Department of Agriculture
Department of Accounting and General Services
- Comptroller
- State Archivist

Housing Finance and Development Corp.
Office of State Planning
Department of Human Services, Hawaii Housing Authority
Department of Defense

State Agencies (continued)

Oahu Metropolitan Planning Organization
State Department of Hawaiian Home Lands

City and County of Honolulu

Hawaii Kai Neighborhood Board #1
Waialae/Kahala Neighborhood Board #3
Waimanalo Neighborhood Board #32
Kuliouou/Kalani Iki Neighborhood Board
Building Department
Department of Parks and Recreation
Police Department
Department of Land Utilization
Board of Water Supply
Planning Department
Department of Public Works
Department of Transportation Services
Oahu Civil Defense Agency
Honolulu Public Transit Authority
Department of Wastewater Management
Department of Human Resources
Fire Department
Department of Housing and Community Development
Municipal Records and Reference Center

Other Agencies, Organizations and Individuals

Aina Haina Community Association
Aina Haina Professional and Businessmen Association
American Lung Association of Hawaii
Hawaii Kai Community Council
Hawaii Kai Marina Community Association
Hawaii Society/The AIA
Hawaii's Thousand Friends
Honolulu Advertiser
Honolulu Star-Bulletin
Ka Iwi Alliance
Koko Isle Homeowner's Association
Land Use Research Foundation
League of Women Voters

Other Agencies, Organizations and Individuals (continued)

Life of the Land
Maunalua Triangle/Koko Kai Community Association
Marina West Community Association
Niu Peninsula Community Association
Outdoor Circle
Portlock Community Association
Save our Surf
Save Sandy Beach
Sierra Club, Hawaii Chapter
Spinnaker Isle Association
Sun Press Newspapers
The Chamber of Commerce of Hawaii
Mr. Thomas Nitta
Ms. Lois McAllister
Ms. Margaret Peg Aurand
Hawaiian Electric Company, Inc.
The Anchorage Community
Councilmember Andrew Mirikatani
Councilmember Rene Mansho
Councilmember John Henry Felix
Councilmember Mufi Hanneman
Councilmember Steve Holmes
Councilmember Duke Bainum
Councilmember John DeSoto
Councilmember Jon Yoshimura
Councilmember Donna Kim
Scenic Hawaii, Inc.
Mr. Bruce I. Fisher
GTE Hawaiian Tel
Senator Whitney Anderson
Senator Donna Ikeda
Senator Matt Matsunaga
Representative Eve Anderson
Representative David Stegmaier
Mr. Douglas T.K. Pang
American Planning Association , Hawaii Chapter
East Honolulu Community Services
Mr. Quincy Kaneshiro
Mr. Robert J. Speck
Mr. Richard T. Tsukamoto

Other Agencies, Organizations and Individuals (continued)

Mr. Charles S. Wallace
Representative Gene Ward
Mr. David J. Wellhouse
Kamilionui Farmers Cooperative
ASLA
Ms. Patricia Tummons
Mr. Robert Fowler
Mr. Alfred Kirchner
Mr. Darrell Large
Mr. Robert E. Clark

96-02766

BENJAMIN J. CAYETANO
GOVERNOR

ESTHER UEDA
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

April 10, 1996

MAY 24

Mr. Patrick T. Onishi, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Onishi:

Subject: Environmental Impact Statement Preparation Notice (EISPN) for the Queen's Beach Golf Course, Queen's Beach, East Honolulu, Oahu, TMK 3-9-11: 3 and por. 2

We have reviewed the EISPN for the subject project transmitted by your letter dated April 5, 1996, and confirm that the project site, as represented on the regional location map, is designated within the State Land Use Urban District.

We suggest that the draft EIS include a map showing the project site in relation to the State Land Use Districts.

We have no further comments to offer at this time. We appreciate the opportunity to comment on this matter.

Should you have any questions, please feel free to call me or Bert Saruwatari of our office at 587-3822.

Sincerely,

ESTHER UEDA
Executive Officer

EU:th

Helber Hastert
Planners

July 8, 1996

Ms. Esther Ueda
Executive Officer
State of Hawaii
Department of Business, Economic Development & Tourism
Land Use Commission
P.O. Box 2359
Honolulu, HI 96804-2359

Dear Ms. Ueda:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 10, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note your suggestion that the DEIS include a map showing the project site in relation to the State Land Use Districts. Since the EISPN contains a map identifying the State Land Use Districts in the immediate vicinity of the project, we assume that you would prefer a map that includes both the extent of the project boundaries and the State Land Use Districts..

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: (808) 545-2055
Facsimile: (808) 545-2050

96-07320

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
JERRY M. MATSUDA
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:
STP 8.7291

April 11, 1996

MAY 9

Mr. Patrick T. Onishi
Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Onishi:

Subject: Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
TMK: 3-9-11: 03, por. 02

Thank you for your transmittal of April 5, 1996, requesting our review of the Environmental Impact Statement Preparation Notice for the proposed Queen's Beach Golf Course.

We note that the report includes a traffic impact study to be prepared for this project. This traffic study should reflect the master plan for the entire area to adequately address the cumulative impacts to the roadway system. We will defer further comment until we have had the opportunity to review the recommendations from the study.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

Helber Hastert
Planners

July 8, 1996

Mr. Kazu Hayashida
Director of Transportation
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Dear Mr. Hayashida:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 11, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note your comment that the traffic impact report to be referenced in the draft environmental impact statement (DEIS) should reflect the master plan for the entire area to adequately address the cumulative impacts to the roadway system and that you will defer further comment until you have the opportunity to review the recommendations of the report.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Governor Center, Makai Tower

733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813

Telephone: 808.545.2055
Facsimile: 808.545.2050

96.02295

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE H425
HONOLULU, HAWAII 96819-1869

JEREMY HARRIS
MAYOR

ANTHONY J. LOPEZ, JR
FIRE CHIEF

ATTILIO K. LEONARDI
FIRE DEPUTY CHIEF

MAY 2 4

April 11, 1996

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: ANTHONY J. LOPEZ, JR., FIRE CHIEF

SUBJECT: PROJECT NAME : QUEEN'S BEACH GOLF COURSE
LOCATION : QUEEN'S BEACH, EAST HONOLULU, O'AHU
TAX MAP KEY : 3-9-11: 03, POR. 02
STAFF PLANNER : ARDIS SHAW-KIM

The Honolulu Fire Department has reviewed the Environmental Impact Statement Preparation Notice for the above-described project.

Future development shall conform to the Fire Codes of the City and County of Honolulu. Specifically, fire apparatus accessibility and on-site fire appliance requirements shall be addressed when plans for the development are finalized. Plans shall be submitted to the Building Department for review and approval.

If you need more information, please contact Battalion Chief Charles Wassman of our Fire Prevention Bureau at 831-7778.

ANTHONY J. LOPEZ, JR.
Fire Chief

AJL/CW:jl

Helber Hastert
Fees

July 8, 1996

Mr. Anthony J. Lopez, Jr., Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka St., Suite H425
Honolulu, HI 96819-1869

Dear Mr. Lopez:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 11, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note your comment that future development shall conform to the Fire Codes of the City and County of Honolulu and that fire apparatus accessibility and on-site appliance requirements be addressed when plans for the development are finalized.

If you have any further questions concerning this project, please call me at 545-2055

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545 2055
Facsimile: 808 545 2050

96-02255

DEPARTMENT OF WASTEWATER MANAGEMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

JEREMY HARRIS
MAYOR

FELIX B. LIMTIACO, P.E.
DIRECTOR
CHERYL K. OKUMA-SEPE, ESQ.
DEPUTY DIRECTOR

MAY 2 4

In reply refer to:
WCC 96-39

April 12, 1996

MEMORANDUM

TO: MR. PATRICK ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: FELIX B. LIMTIACO, DIRECTOR
DEPARTMENT OF WASTEWATER MANAGEMENT

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
CHAPTER 25, ROH, PROJECTS WITHIN THE SPECIAL MANAGEMENT AREA
QUEEN'S BEACH GOLF COURSE
TMK: 3-9-11:03 AND POR. 2

Our response relating to the availability and adequacy of the municipal sewer system for the subject project is as follows:

[ ] Municipal Sewer System Available and Adequate
(This statement shall not be construed as confirmation of sewage capacity reservation. Sewage capacity reservation is contingent on submittal and approval of a "Sewer Connection Application" form.)

[X] Municipal Sewer System Not Available

[ ] Municipal Sewer System Not Adequate

[ ] Liable for Payment of a Wastewater System Facility Charge

[X] Other: We have no objection to this project. As noted in the subject report, the Hawaii Kai Wastewater Treatment Plant is a privately owned and operated system serving this development.

Contact Person:

Tessa Yuen, Ext. 4956

FELIX B. LIMTIACO
DIRECTOR

6-29-94

Helber Hastert
Planners

July 8, 1996

Mr. Felix B. Limtiaco, Director
Department of Wastewater Management
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. Limtiaco:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 12, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note your comment that connection to a municipal sewer system is not available and that you have no objection to the proposed project.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: (808) 545-2055
Facsimile: (808) 545-2050

96-02299

OAHU CIVIL DEFENSE AGENCY
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE: 523-4121

JEREMY HARRIS
MAYOR

JOSEPH D. REED
ADMINISTRATOR

April 15, 1996

MAY 2 4

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: JOSEPH D. REED, ADMINISTRATOR
OAHU CIVIL DEFENSE AGENCY

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE, CHAPTER 25, ROH, PROJECTS WITHIN THE SPECIAL MANAGEMENT AREA

Thank you for allowing this agency the opportunity to provide comments to the subject project.

Since the entire golf course project is in the tsunami inundation and evacuation zone, as a minimum, it is recommended that the developer install a civil defense warning device in the golf course clubhouse office. This device, a siren simulator, would be activated along with all other indoor and outdoor warning devices whenever the Civil Defense Siren System is activated.

Please contact Mr. Paul Takamiya, Plans and Operations Officer, at 527-5367, should there be questions concerning our comment.

Helber Hastert
Planners

July 8, 1996

Mr. Joseph D. Reed
Administrator
Oahu Civil Defense Agency
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. Reed:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 15, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

You recommend that since the proposed golf course project is in the tsunami inundation and evacuation zone, the developer should install a civil defense warning device in the golf course clubhouse. We believe this recommendation can be incorporated into the review of building permits for the clubhouse, and we will coordinate with your agency at that time.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: (808) 545-2055
Facsimile: (808) 545-2050

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

IN REPLY REFER TO
11010
Ser N4(23)/ 6085
18 Apr 96

1996 APR 19 PM 3:02
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

Mr. Patrick T. Onishi
Director of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

MAY 9

Dear Mr. Onishi:

Subj: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE, QUEEN'S BEACH, OAHU, HAWAII OF MARCH 1996

Thank you for the opportunity of review the Environmental Impact Statement Preparation Notice, Queen's Beach, Oahu, Hawaii of March 1996.

The Navy has no comments to offer at this time and appreciates the opportunity to participate in the review process.

The Navy's point of contact is Mr. Stanford Yuen at 474-0439.

Sincerely,

Stanford B.C. Yuen, P.E.
By direction

Helber Hastert
Planners

July 8, 1996

Mr. Stanford B.C. Yuen,P.E.
Department of the Navy
Commander
Naval Base Pearl Harbor
Box 110
Honolulu, HI 96860-5020

Dear Mr. Yuen:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 18, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note that you have no comments to offer at this time.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee | 733 Bishop Street, Suite 2290 | Telephone: 545-2055
Grosvenor Center, Mauka Tower | Honolulu, Hawaii 96813 | Facsimile: 545-2050

96-02417

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4341 • FAX (808) 527-5857

KENNETH E. SPRAGUE
DIRECTOR AND CHIEF ENGINEER

DARWIN J. HAMAMOTO
DEPUTY DIRECTOR

ENV 96-092

1996 APR 19 AM 7:54
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

April 18, 1996

MAY - 9

MEMORANDUM:

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: for KENNETH E. SPRAGUE
DIRECTOR AND CHIEF ENGINEER

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE (EISPN), QUEEN'S BEACH GOLF COURSE
TMK: 3-9-11:03, POR. 02

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

1. The EISPN should provide a map showing the existing drainage pattern/structure as well as proposed drainage pattern/structure.

2. Provide adequate on-site parking.

3. The EISPN should address water quality including City Council Resolution 94-296 provisions for no increase in peak runoff rates or volume.

4. Address NPDES related permit requirements from the State during construction including dewatering and hydrotesting if there is discharge to State waters; and permits required by the City for storm drain connection, dewatering and hydrotesting, if applicable.

5. Describe best management practices (BMPs) to be implemented during and post-construction to mitigate discharge of pollutants from the site. Discuss proper storage of chemicals, fertilizers, equipment washing, etc.

6. Describe ownership of waterways including lined and unlined channels from Kalanianaole Highway to outlet at Ka'ili'ili Bay, Kaloko and Kaho'ohaihai Inlets, as applicable.

Should you have any questions, please contact Alex Ho, Environmental Engineer, at Local 4150.

Helber Hastert
Planners

July 8, 1996

Mr. Kenneth E. Sprague
Director
Department of Public Works
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, HI 96813

Dear Mr. Sprague:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 18, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

You offer a number a comments in your correspondence. For ease of reference we provide the following responses in the order the subject appears in your letter.

1. **Drainage pattern.** The DEIS will describe existing drainage conditions within the drainage basin affecting the project site and discuss how stormwater runoff generated on-site will be managed.

2. **On-site parking.** The proposed golf course will meet the parking requirements of the Land Use Ordinance (LUO).

3. **Resolution 94-296.** We are aware of the City Council's Resolution (94-296) pertaining to storm water management policies for new developments, and are following the progress of the proposed Ordinance related to it. The DEIS will address these issues in greater detail, where feasible.

4. **National Pollutant Discharge Elimination System (NPDES) Permit.** The DEIS will identify any NPDES permit requirements, if appropriate, and permits required by the City for storm drain connection, if applicable.

5. **Best Management Practices.** Best management practices (BMPs), in the context of an integrated pest management (IPM) plan to mitigate discharge of pollutants from the site, will be discussed in the DEIS, including proper storage of chemicals, fertilizers, etc.

Helber Hastert & Fee | 733 Bishop Street, Suite 2590 | Telephone: 808 545 2055
Grosvenor Center, Mauka Tower | Honolulu, Hawaii 96813 | Facsimile: 808 545 2050

6. **The ownership of waterways.** The DEIS will discuss the ownership of waterways, including lined and unlined channels from Kalanianaole Highway to outlet at Ka'ili'ili Bay, and Kaloko and Kaho'ohaihai Inlets, as applicable

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

96-02536

BENJAMIN J. CAYETANO
GOVERNOR

HERMAN M. AIZAWA, Ph.D.
SUPERINTENDENT

1996 APR 24 PM 3:04

DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

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

MAY - 9

OFFICE OF BUSINESS SERVICES

April 23, 1996

Mr. Patrick T. Onishi, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Onishi:

Subject: Queen's Beach Golf Course, EISPN
Location: Queen's Beach, East Honolulu, Oahu
Tax Map Keys: 3-9-11: 03, por. 02

We have reviewed the subject project and conclude that it will have no impact upon the Department of Education.

Thank you for the opportunity to comment. Should there be any questions, please contact the Facilities Branch at 733-4862.

Sincerely,

Alfred K. Suga
Assistant Superintendent

AKS:hy

cc: H. Aizawa
J. Sosa, HDO

Helber Hastert
Planners

July 8, 1996

Mr. Alfred K. Suga
Assistant Superintendent
Department of Education
P.O. Box 2360
Honolulu, HI 96804

Dear Mr. Suga:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 23, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note that you conclude that the proposed golf course will have no impact upon the Department of Education.

If you have any further questions concerning this project, please call me at 545-2055

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Telephone: 545-2055

96-02592

1996 APR 26 PM 3:39

DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

THE OUTDOOR CIRCLE
1110 University Ave., #406 • Honolulu, HI 96826
Phone: 808-943-9658 Fax: 808-955-7364

April 23, 1996

Mr. Patrick T. Onishi
Director
Department of Land Utilization
650 South King Street
Honolulu, HI 96813

RE: Queen's Beach Golf Course; TMK 3-9-11: 03 por. 02; 96/SMA-024 (ASK)

Dear Mr. Onishi:

Thank you for the opportunity to comment on the above referenced project. We feel that the golf course being proposed by Kaiser Aluminum and Chemical Corporation is not appropriate in the Queen's Beach location. The Outdoor Circle's vision includes parks, paths and bikeways encircling each island in a "lei of green." We will continue to advocate for a coastal park system, with open beach access, to complete this vision.

The negative impact of golf courses on the environment are numerous and The Outdoor Circle has serious concerns with locating a golf course at Queen's Beach. We are sure that when your department reviews the Special Management Area Permit application, all impacts will be carefully considered.

Thank you for including The Outdoor Circle in the review and commenting stage of this project. We look forward to reviewing the Environmental Impact Statement.

Sincerely,

Carolyn Heinrich
President

Mary Steiner
CEO

Helber Hastert
Planners

July 8, 1996

Ms. Carolyn Heinrich, President
Ms. Mary Steiner, CEO
The Outdoor Circle
1110 University Avenue, #406
Honolulu, HI 96826

Dear Mesdames Heinrich and Steiner:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's, O'ahu, Hawai'i

Thank you for your letter dated April 23, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

We note your comments regarding the proposed golf course at Queen's Beach. Specifically, you feel that the proposed golf course is not appropriate in the Queen's Beach location and that the negative impact of the golf courses on the environment are numerous. You also describe the vision of the Outdoor Circle, which includes parks, paths and bikeways in a "lei of green."

We hop your concerns about the "numerous" negative impacts of golf course will be allayed with information contained in the forthcoming DEIS for the project. We also offer that a significant portion of the area in the vicinity of the project (29 acres) will be set aside for park use and protection of native shoreline vegetation and public enjoyment of the shoreline area In addition, pedestrian access along the shoreline will continue.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813
Telephone: (808) 545-2055
Facsimile: (808) 545-2050

96-027651

United States Department of the Interior

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

HWY - 9

April 23, 1996

1996 APR 30 PM 2:43
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

Mr. Patrick T. Onishi
Director of Land Utilization
City and County of Honolulu
Department of Land Utilization
650 South King St.
Honolulu, Hawaii 96813

Dear Mr. Onishi:

Subject: Environmental Impact Statement Preparation Notice
Queen's Beach, Oahu, Hawaii
TMK: 3-9-11: 03, por. 02

The staff of the U.S. Geological Survey, Water Resources Division, Hawaii District, has reviewed the Environmental Impact Statement Preparation Notice, Queen's Beach, and we have no comments to offer at this time.

We are returning the report for your future use. Thank you for allowing us to review the DEIS.

Sincerely,

for William Meyer
District Chief

Enc.

Helber Hastert
Fee

July 8, 1996

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

Dear Mr. Meyer:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 23, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note that you have no comments to offer at this time.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone (808) 545-2055

United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS ECOREGION
300 ALA MOANA BOULEVARD, ROOM 3108
BOX 50088
HONOLULU, HAWAII 96850
PHONE: (808) 541-3441 FAX: (808) 541-3470

APR 25 1996

Mr. Robert Burke
Kaiser Aluminum and Chemical Corporation
c/o Kaiser Center, Inc.
300 Lakeside Drive, Suite 130
Oakland, CA 94612-3534

Re: *Proposed Environmental Impact Statement for Queen's Beach Golf Course, Oahu, Hawaii*
TMK 3-09-11:3, portion 2

Dear Mr. Burke:

The U.S. Fish and Wildlife Service (Service) has reviewed the proposal to prepare an Environmental Impact Statement (EIS) for Queen's Beach Golf Course, Oahu, Hawaii. The accepting authority for the project is the Department of Land Utilization, City and County of Honolulu. The purpose of the project is to build an 18-hole golf course and associated facilities on approximately 67 hectares (166 acres) of privately owned land on the eastern tip of Oahu. The Service offers the following comments for your consideration.

The Service recommends that the EIS describe project-related impacts to fish and wildlife resources, native plants, and sensitive habitats within the project area. Sensitive habitats include ponds, shorelines, jurisdictional wetlands, marine waters, and coral reefs. The EIS should include current surveys and maps of the distribution of native flora, fauna, and habitat types in and around the project area.

In particular, the EIS should address project impacts on endangered and threatened species and migratory birds. Federally listed threatened and endangered species potentially in and around the project area include: the Hawaiian stilt (*Himantopus mexicanus knudseni*), the Hawaiian coot (*Fulica alai*), the green sea turtle (*Chelonia mydas*), the hawksbill turtle (*Eretmochelys imbricata*), and the *Marsilea villosa* fern. The project area also potentially provides habitat for "species of concern" to the Service, formerly referred to as candidate threatened and endangered species. These include: the Hawaiian snout beetle (*Rhyncogonus simplex*), the Hawaiian rhopalid bug (*Ithamar hawaiiensis*), and the Oliarus wild cotton planthopper (*Oliarus discrepans*). An unidentified species of yellow-faced bee (*Nesoprosopis sp.*) was also documented in the area which, depending on the species, may also be a "species of concern." Several species of seabirds and shorebirds, which are protected under the Migratory Bird Treaty Act, also use the area.

The EIS should describe potential environmental impacts caused by construction activity, habitat loss, increased human use, and increased water withdrawals for golf course irrigation. It should also address potential short-term and long-term impacts of fertilizer and pesticide runoff from the golf course on threatened and endangered species, migratory birds, and other marine and terrestrial organisms. Specific concerns about pesticide and fertilizer use include: acute and chronic toxicity to native plants and wildlife, eutrophication of water bodies and alteration of aquatic and marine communities, and accumulation of toxins in biota, water, and sediments. The EIS should include a list of pesticides and fertilizers that would be used, descriptions of application techniques and anticipated amounts to be applied, and an environmental fate and effects model. The model should quantify chemical mobility, persistence, and toxicity to biota, based on the local geology, hydrology, climate, and ecology.

Finally, the EIS should also describe measures to avoid, minimize, or mitigate potential project-related impacts, such as habitat loss, disturbance to wildlife, siltation, water quality degradation, and cumulative ecological impacts of pesticide and fertilizer use. Appropriate baseline and long-term monitoring of environmental impacts of chemical use should be discussed.

The Service appreciates the opportunity to provide comments on the proposed project and we look forward to reviewing the draft EIS. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Chris Swenson at (808) 541-3441.

Sincerely,

Brooks Harper
Field Supervisor
Ecological Services

cc: Scott Ezer, Helber Hastert & Fee
Gary Gill, Office of Environmental Quality Control
John Naughton, National Marine Fisheries Service
Patrick Onishi, City and County of Honolulu, Dept. Of Land Utilization

Helber Hastert
Planners

July 8, 1996

Ms. Brooks Harper, Field Supervisor
Ecological Services
U.S. Department of the Interior
Fish and Wildlife Service
Pacific Islands Ecoregion
300 Ala Moana Blvd., Room 3108
Honolulu, HI 96850

Dear Ms. Harper:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's, O'ahu, Hawai'i

Thank you for your letter dated April 29, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

You recommend that the EIS describe project-related impacts to fish and wildlife resources, native plants, and sensitive habitats within the project area. This information will be documented in the DEIS, including current surveys and maps.

You also recommend that the EIS address project-related impacts on endangered and threatened species and migratory birds. This information will also be documented in the DEIS.

You express specific concerns about pesticides and fertilizers, including: acute and chronic toxicity to native plants and wildlife, eutrophication of water bodies and alteration of aquatic and marine communities, and accumulation of toxins in biota, water and sediments. The DEIS will include reports and analysis that covers these subject areas. We also point out that the DEIS will describe measures to avoid, minimize or mitigate potential project-related impacts, including appropriate monitoring efforts.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545-2055
Facsimile: 808 545-2050

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001

96-02128

William A. Bonnet
Manager
Environmental Department

MAY 9

1996 MAY -2 PM 1:41
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

April 30, 1996

Patrick T. Onishi
Director of Land Utilization
Department of Land Utilization, City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Onishi:

Subject: **Queen's Beach Golf Course**

Thank you for the opportunity to comment on your April 1996 Environmental Impact Statement Preparation Notice for the Queen's Beach Golf Course, as proposed by Kaiser Aluminum & Chemical Corporation. Hawaiian Electric's comments are as follows:

1. Relocation of existing lines may require SMA and/or CDUA permits.

2. Responsibility for securing these permits as well as providing a substitute easement for HECO will be left to the developer.

HECO shall reserve further comments pertaining to the protection of existing powerlines bordering the project area until construction plans are finalized. Our point of contact for this project, and the originator of these comments, is Francis Hirakami (543-7536) Principal Engineer. I suggest your staff and consultants deal directly with Francis to coordinate HECO's continuing input on this project.

Sincerely,

xc. F. Hirakami

Heller Hastert
Planners

July 8, 1996

Mr. William A. Bonnet
Manager
Environmental Department
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Bonnet:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 30, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

Your letter suggests that if existing utility lines need to be relocated, the action may require approvals under the Special Management Area regulations and/or the Conservation District Use regulations and the responsibility for securing these approvals, as well as providing a substitute easement for HECO will be left to the developer. We believe you are misinterpreting your utility easement with Kamehameha Schools Bernice Pauahi Bishop Estate. Section 1.12 of this agreement stipulates that "In the event the Grantors shall subdivide or develop the land through which the Grantee's lines pass...the Grantee will make one relocation of all or any affected portions of its lines...at its expense to a substitute perpetual right of way furnished by the Grantors or to a public road located within reasonable vicinity of the easement granted herein."

Therefore, it is our understanding that HECO will be required to relocate at its own expense. Since plans for the golf course are in a conceptual phase, it is too early to make a determination if an alternate easement could be provided within the Queen's Beach property. It is possible that utilities will need to be relocated close to, or within the right-of-way for, Kalanianaole Highway. As plans for the golf course are finalized we will contact HECO so that you can have sufficient warning to relocate the affected utility lines without any disruption in service to the residents of Oahu.

Heller Hastert & Lee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 545-2055
Facsimile: 545-2050

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

96-02731

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 · AREA CODE (808) 529-3111

JEREMY HARRIS
MAYOR

MICHAEL S. NAKAMURA
CHIEF

HAROLD M. KAWASAKI
LEE DONOHUE
DEPUTY CHIEFS

OUR REFERENCE BS-DL

May 1, 1996

1996 MAY -2 PM 1:50
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

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

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE, CHAPTER 25, ROH PROJECTS WITHIN THE SPECIAL MANAGEMENT AREA

This is in response to your memorandum of April 5, 1996, requesting comments on the subject project for the Queen's Beach Golf Course, file number 96/SMA-024.

This project should have no significant impact on the operations of the Honolulu Police Department.

Thank you for the opportunity to comment.

MICHAEL S. NAKAMURA
Chief of Police

By
EUGENE UEMURA, Assistant Chief
Administrative Bureau

Helber Hastert
Planners

July 8, 1996

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

Dear Mr. Nakamura:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 7, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note that you have no comments to offer at this time.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee | 733 Bishop Street, Suite 2590 | Telephone: (808) 545-2055
Grosvenor Center, Mauka Tower | Honolulu, Hawaii 96813 | Facsimile: (808) 545-2050

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

JEREMY HARRIS
MAYOR

CHERYL D. SOON
CHIEF PLANNING OFFICER

CAROLL TAKAHASHI
DEPUTY CHIEF PLANNING OFFICER

ET 4/96-0827

May 1, 1996

MAY - 6 1996

MEMORANDUM

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: CHERYL D. SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION
NOTICE FOR QUEEN'S BEACH GOLF COURSE, 96/SMA-024

Thank you for giving us the opportunity to review the Environmental Impact Statement Preparation Notice (EISPN) for the proposed Queen's Beach Golf Course. We have reviewed the subject document and offer the following comments:

- The Draft Environmental Impact Statement (DEIS) should include a detailed discussion as to how the proposed project conforms to the City's General Plan, Development Plan Common and Special Provisions.

- Section 3.3 of the EISPN states that the applicant proposes to use treated effluent from the Hawaii Kai Wastewater Treatment Plant (WWTP) for the irrigation of the Golf Course. The DEIS should identify the existing quality of the effluent from the Hawaii Kai WWTP. Based on DOH guidelines for the use of reclaimed water, what quality of reclaimed water is proposed for irrigation of the golf course and what WWTP improvements are needed, if any?

- Section 5.6 of the EISPN indicates that it is possible that wetland conditions may exist within the subject area. The DEIS should identify all potential wetlands within the subject area, potential impacts from golf course development, and proposed mitigative measures.

- The DEIS should provide a full and detailed slope analysis of the project area. This analysis should address the impact of the slope conditions during construction and the hazards of dislodged and falling boulders.

- Figure 4 of the EISPN identifies two sites as public facilities. The DEIS should describe these facilities.

- Figure 4 of the EISPN also identifies a park/open space area adjacent to Kaloko Inlet. The DEIS should discuss in detail specifically what is being proposed and who will own and maintain this area.

- Drainage discussion in the DEIS should be expanded to include the entire drainage basin.

- Figure 10 of the EISPN identifies two proposed park site symbols. The proposed park symbol south of Kaloko Inlet is depicted in the wrong location. The proposed park symbol should be located between Kaloko Inlet and Ka'ili'ili Bay (see attached map).

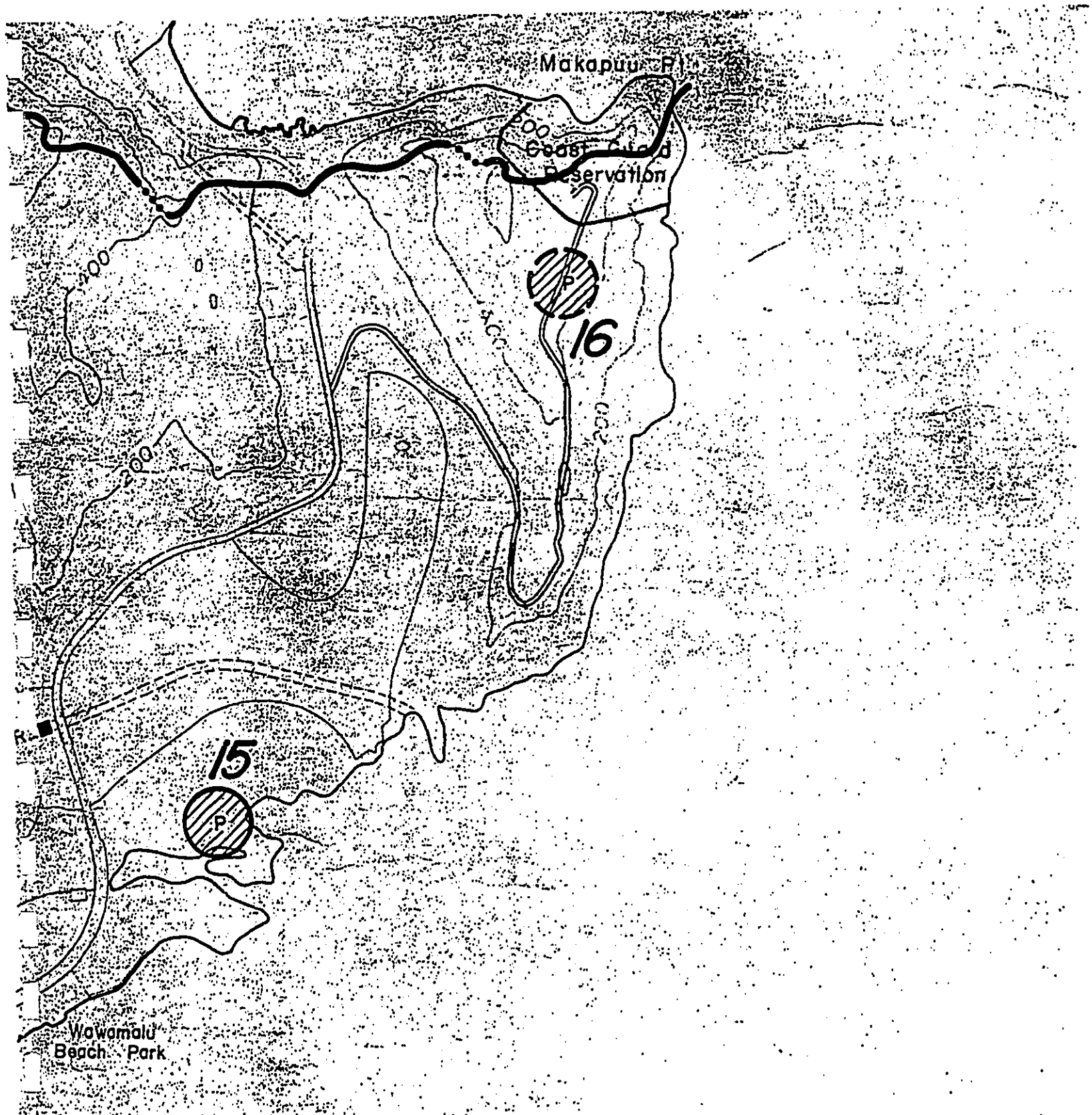
Should you have any questions, please contact Eugene Takahashi of our staff at 527-6022.

Cheryl D. Soon
CHERYL D. SOON
Chief Planning Officer

CDS:lh

cc: Helber Hastert & Fee, Planners
OEQC

Attachment



ORDINANCE NO. 83-6 DATE: MAY 10, 1983

DEVELOPMENT PLAN
PUBLIC FACILITIES MAP

EAST HONOLULU

1000 0 1000 2000

SCALE IN FEET

LEGEND

GOVERNMENT OR PUBLIC UTILITY PROGRAMMED FOR COMMENCEMENT OF LAND ACQUISITION AND/OR CONSTRUCTION (WITHIN 6 YEARS)	GOVERNMENT OR PUBLIC UTILITY PROGRAMMED FOR COMMENCEMENT OF LAND ACQUISITION AND/OR CONSTRUCTION (BEYOND 6 YEARS)	PRIVATE FUNDING (NO TIMING SCHEDULE)
SEWER SYSTEM S——S——S	S——–—S——–—S	S·····S·····S
WATER SYSTEM		

Helber Hastert
Planners

July 9, 1996

Ms Cheryl D. Soon
Chief Planning Officer
Planning Department
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

Dear Ms. Soon:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 1, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

You offer a number of comments in your correspondence. For ease of reference we provide the following responses in the order the subject appears in your letter.

General Plan/Development. The DEIS will include a discussion of the project's conformance to relevant sections of the City's General Plan and Development Plan provisions.

Treated Effluent. The DEIS will identify the existing quality of the effluent from the Hawaii Kai Wastewater Treatment Plant and the relationship of this water to the Department of Health Guidelines for the use of reclaimed water. At this time, no improvements to the wastewater treatment plant are anticipated to accommodate the use of the treated effluent on the proposed golf course.

Wetlands. For your information, following the publication of the EISPN, because of conflicting information found in the recent EIS supporting the Department of Land and Natural Resource's proposal to develop a park at Queen's Beach, we undertook a supplemental study to determine the presence/absence of wetlands on the property. We have received confirmation from the U.S. Army Corps of Engineers that no wetlands exist on the project site. We will include this information in the forthcoming DEIS.

Slope analysis. Slopes on the project site will be discussed in the DEIS in the context of their relationship to the proposed golf course and potential environmental impacts.

Public facilities. The two sites identified as public facilities in Figure 4 of the EISPN were shown to indicate possible facilities that may be developed by the City and County of Honolulu, and are not intended to be included as part of the overall project. To avoid confusion, these facilities will not be referenced in the DEIS.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813
Telephone: 808 545 2055
Facsimile: 808 545 2050

Kaloko 29 acres. The 29 acres shown in Figure 4 were intended to indicate an area that will be set aside for possible development of a park by the City and County of Honolulu. The DEIS will clarify the position of the landowner (Kamehameha Schools Bernice Pauahi Bishop Estate) and the applicant (Kaiser Aluminum and Chemical Corporation) relative to the 29 acres identified to be "set aside" for public use. In general, it is intended that this acreage be left undeveloped for three reasons:

- future development by the City and County of Honolulu as a public park;
- public access to and along the shoreline; and
- protection of important native beach strand vegetation

Neither the landowner nor the applicant intends to develop any facilities in this area, except for portions of a beach trail which will be constructed by the applicant. The exact nature of the City's interest in the property will need to be resolved between the landowner and the City.

Drainage. Discussion of drainage in the DEIS will be expanded to include relevant aspects of the entire drainage basin.

Figure 10. Thank you for pointing out that the proposed park symbol shown in Figure 10 is misplaced. It will be corrected in the DEIS. It will also be noted that the park designation is a general indication that a park should be located in the vicinity and that a site has not yet been determined.

If you have further questions concerning this project, please call be at 545-2055.

Sincerely

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

96-0276

QHK QUINCY H. KANESHIRO, REALTOR

Mr. Patrick T. Onishi
Director of Land Utilization
Department of Land Utilization
650 South King Street
Honolulu, HI 96813

Thursday, May 2, 1996

MAY 9

1996 MAY -3 PM 1:33
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

Re: Comments on Proposed "Queen's Beach Golf Course"
Queen's Beach, East Honolulu, Oahu
TMK: 1-3-9-001-003/002
Hawaii Kai, Honolulu

Dear Mr. Onishi:

Thank you for your letter of April 5, 1996 with enclosure of the "Environmental Impact Statement Preparation Notice" dated March, 1996 for the proposed "Queen's Beach Golf Course."

These are my comments, which may be included in responses for the Special Management Area (SMA) Ordinance (Chapter 25, ROH) and the Coastal Zone Management (CZM) Act (Chapter 205A, HRS) review requirements and for the concerns of all parties regarding this golf course project:

1. The use of this property for a golf course and related activities is acceptable and compatible with the surrounding areas and neighborhood. None of the proposed improvements on this property are so permanent in nature that any possible "reversion" to a less intensive development designation will be economically unfeasible; therefore the area itself is essentially being "preserved" with the development of a golf course.

2. No man-made structures should be constructed above defined lines on Makapu'u Head, as this is a valuable natural "view" resource.

3. The developers and operators of this golf course should be required to use the effluent from the Hawaii Kai Wastewater Treatment Plant for most of the course irrigation. Special equipment may be needed to modify the chemical content of the effluent; however, the public relations benefits could justify any such costs, including the construction of the supply and distribution water lines.

6650 Hawaii Kai Drive, Suite 216, Honolulu, HI 96825-1140 Bus: (808)395-8211 Fax: (808)395-5890

4. A pioneering effort should be made to produce and operate a golf course with innovations such as the lowest possible use of man-made chemical fertilizers, pesticides and weed-killers, coupled with site grading and run-off control to eliminate chemical run-off into the shoreline waters. This effort could extend to modifications to the existing Hawaii Kai Golf Course to eliminate the run-off and siltation which has occurred via the existing drain channels onto the subject property.

5. An greater emphasis should be placed on the increased and easier access which will be created for the general public to the shoreline areas of this property.

6. Kalanianaole Highway should be widened beyond its present 2-lane (1 lane in each direction) condition, particularly at the entrance(s) and exit(s) for this area. On-site parking must be ample, as parking on the shoulders of Kalanianaole Highway will be a undesirable condition. The speed limit on Kalanianaole Highway in this area may have to be reduced from the present 45 miles-per-hour designation to 35 miles-per-hour.

7. As this property has for many years been the stock-piling site for thousands of large boulders from excavation work at other sites in Hawaii Kai, the disposition and handling of these boulders is again a concern.

8. Immediate steps should be taken by the applicants and the landowner(s) to halt the trespassing onto this property with motorized vehicles of any type, to prevent further soil erosion and damage to existing natural features.

Thank you again for this opportunity to comment on this proposed project.

Yours sincerely,

Quincy H. Kaneshiro
Principal Broker
QUINCY H. KANESHIRO, REALTOR
6650 Hawaii Kai Drive, Suite 216
Honolulu, HI 96825-1140
Bus: (808)395-8211

QHK:djas

Helber Hastert
Planners

July 8, 1996

Mr. Quincy H. Kaneshiro
6650 Hawaii Kai Drive, Suite 216
Honolulu, HI 96825-1140

Dear Mr. Kaneshiro:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's, O'ahu, Hawai'i

Thank you for your letter dated May 2, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

In response to your comments, we offer the following responses.

1. **Golf course use.** We note your comment that the golf course is an acceptable and compatible use with the surrounding areas and neighborhood.

2. **Limit man-made structures** No structures will affect views toward Makapu'u Head. The only significant structure associated with the golf course will be the clubhouse, which is proposed to be located at a lower elevation on the property. A complete visual impact analysis will be included in the DEIS.

3. **Effluent use for irrigation.** As planned, the golf course will use treated wastewater from the Hawaii Kai Wastewater Treatment Plant as an irrigation source. However, because of the high salinity of the effluent, it is not suitable for use on saline-sensitive turf used on the greens. Instead, a modest amount of potable water will be used on these areas of the course.

4. **Integrated pest management.** Most new golf courses are now developed and managed with the use of an integrated pest management (IPM) plan. The IPM plan covers such subjects as you suggest; use of chemicals and fertilizers, grading and runoff control, construction practices, etc. An IPM plan is proposed to be included as part of the operations of the Queen's Beach Golf Course and will be discussed in the DEIS.

5. **Shoreline access.** Shoreline access is an integral element of the proposed golf course and will be discussed in the DEIS.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813
Telephone: (808) 545-2055
Facsimile: (808) 545-2050

6. **Traffic and highway improvements.** A traffic impact report is being prepared that includes the anticipated impact associated with the proposed golf course. Any measures to mitigate identified impacts will be discussed in the DEIS.

7. **Boulders.** The applicant intends to incorporate the boulders into the design of the golf course. It may be necessary to move some boulders during site preparation in order to achieve final design objectives. Detailed analysis will not be finished until an application is prepared for a grading permit for the course.

8. Trespassing by motorized vehicles. Trespassing by motorized vehicles has been an on-going concern for the landowner (Kamehameha Schools Bernice Pauahi Bishop Estate) and the lessee (Kaiser Aluminum and Chemical Corporation). Despite efforts to prevent access, people continue to drive off-road vehicles and motor bikes onto the property, contributing to the degradation of native coastal beach strand vegetation. A goal of the proposed golf course is to eliminate such access and restore the beach strand vegetation.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

96-02768

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

JEREMY HARRIS
MAYOR

MAY 9

DONA L. HANAIKE
DIRECTOR

ALVIN K.C. AU
DEPUTY DIRECTOR

May 2, 1996

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: DONA L. HANAIKE, DIRECTOR
DEPARTMENT OF PARKS AND RECREATION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE, CHAPTER 25, ROH, PROJECTS WITHIN THE SPECIAL MANAGEMENT AREA, QUEEN'S BEACH GOLF COURSE
TAX MAP KEY 3-9-11: 03, POR. 02

1996 MAY -3 PM 1:41
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

This responds to the subject Environmental Impact Statement Preparation Notice (EISPN) for the proposed project.

Based on our review of the subject EISPN, we are offering the following comments.

The applicant has stated that public play will be provided on the proposed course at kama'aina rates for Hawaii residents. However, to ensure the allowance of public play on the course, we request that the applicant discuss the matter with our Golf Courses Division.

We request that the issue of ownership as well as responsibility for the maintenance and operation of the proposed set-aside park land be clarified and addressed in the draft EIS.

The current conceptual golf course included in the EISPN document indicates an access trail to the shoreline along the golf course area from the existing United States Coast Guard's access road. The access trail does not indicate any parking areas for vehicles. It would be unreasonable to expect that pedestrians utilizing this access trail would have to park their vehicles near Kalanianaole Highway to access the shoreline.

We Add Quality to Life

In addition, we do not believe that access from the proposed park set-aside lands to the golf course area shoreline is a viable alternative. We would not favor a pedestrian bridge being built across Kaloko Inlet to provide for shoreline access to the golf course area shoreline.

We consider the existing shoreline area between Kaloko Inlet and Kahoohaiahai Inlet to offer valuable ocean-related recreational opportunities. Therefore, we request that a comprehensive shoreline access plan including shoreline pedestrian access alternatives be discussed in the DEIS.

Should you have any questions, please contact Brian Suzuki of our Advance Planning Branch at extension 6316.

For DONA L. HANAIKE
Director

DLH:ei

Helber Hastert
Planners

July 8, 1996

Mr. Quincy H. Kaneshiro
6650 Hawaii Kai Drive, Suite 216
Honolulu, HI 96825-1140

Dear Mr. Kaneshiro:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's, O'ahu, Hawai'i

Thank you for your letter dated May 2, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

In response to your comments, we offer the following responses.

1. **Golf course use.** We note your comment that the golf course is an acceptable and compatible use with the surrounding areas and neighborhood.

2. **Limit man-made structures** No structures will affect views toward Makapu'u Head. The only significant structure associated with the golf course will be the clubhouse, which is proposed to be located at a lower elevation on the property. A complete visual impact analysis will be included in the DEIS.

3. **Effluent use for irrigation.** As planned, the golf course will use treated wastewater from the Hawaii Kai Wastewater Treatment Plant as an irrigation source. However, because of the high salinity of the effluent, it is not suitable for use on saline-sensitive turf used on the greens. Instead, a modest amount of potable water will be used on these areas of the course.

4. **Integrated pest management.** Most new golf courses are now developed and managed with the use of an integrated pest management (IPM) plan. The IPM plan covers such subjects as you suggest; use of chemicals and fertilizers, grading and runoff control, construction practices, etc. An IPM plan is proposed to be included as part of the operations of the Queen's Beach Golf Course and will be discussed in the DEIS.

5. **Shoreline access.** Shoreline access is an integral element of the proposed golf course and will be discussed in the DEIS.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 545-2055
Facsimile: 545-2050

6. **Traffic and highway improvements.** A traffic impact report is being prepared that includes the anticipated impact associated with the proposed golf course. Any measures to mitigate identified impacts will be discussed in the DEIS.

7. **Boulders.** The applicant intends to incorporate the boulders into the design of the golf course. It may be necessary to move some boulders during site preparation in order to achieve final design objectives. Detailed analysis will not be finished until an application is prepared for a grading permit for the course.

8. **Trespassing by motorized vehicles.** Trespassing by motorized vehicles has been an on-going concern for the landowner (Kamehameha Schools Bernice Pauahi Bishop Estate) and the lessee (Kaiser Aluminum and Chemical Corporation). Despite efforts to prevent access, people continue to drive off-road vehicles and motor bikes onto the property, contributing to the degradation of native coastal beach strand vegetation. A goal of the proposed golf course is to eliminate such access and restore the beach strand vegetation.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

96-02834

1996 MAY -7 PM 2:55

DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

SANDY BEACH INITIATIVE COALITION

May 5, 1996

Mr. Patrick T. Onishi, Director
Department of Land Utilization
City and County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

MAY 9

Subject: Environmental Impact Statement Preparation Notice
Chapter 25, ROH
Projects Within the Special Management Area
Queen's Beach Golf Course

Dear Mr. Onishi:

The Ka Iwi coastline from Koko Head to Makapuu is a scenic resource of unique value to Honolulu and Hawaii as a whole. It is the most scenic and last major stretch of accessible, undeveloped coastline on Oahu, and thus is of unique value to Hawaii's residents and visitors. This undeveloped coastline is highly valued as open space and as a recreational resource by residents of the City and County, and is an essential and irreplaceable part of the natural resource base upon which Hawaii's visitor industry has been built. Its importance is recognized in a number of State and County laws and planning documents. The enclosure, which was compiled in March, 1988, cites Hawaii Revised Statutes and City and County ordinances, General Plan, Development Plans and Coastal View Study that collectively emphasize the importance of the coastline. These provisions and documents, and any others that have come into being since 1988, such as the U.S. Department of Interior, National Park Service's Reconnaissance Survey Ka Iwi Shoreline Study and the State's Ka Iwi State Park Master Plan and Environmental Impact Statement, should be consulted for language invoking and/or requiring the protection and preservation of the Ka Iwi coastline for its scenic, natural beauty and as a recreational and open-space resource. In addition, the overwhelming decision by O'ahu voters in the Sandy Beach Initiative election in November, 1988, to preserve the Ka Iwi coastline in open space should be referenced in the EIS.

As you know, there are several developments that are being proposed for East Honolulu by Bishop Estate and developers as part of a Settlement Agreement with the City. In addition to Queen's Beach Golf Course, which is being proposed independently and also as part of the Settlement Agreement, several of the proposed developments under the Settlement Agreement would have an impact on the Ka Iwi coastline, namely, the residential and non-residential developments at Golf Course 2/1A, and the residential developments at Maunawai and Queen's Rise. The cumulative impact of these developments on the Ka Iwi coastline resource should be evaluated as part of the EIS for the Queen's Beach Golf Course.

Sincerely,

Phil Estermann

Phil Estermann

Enclosure

SANDY BEACH INITIATIVE COALITION • P.O. Box 25473 • Hon., HI 96825 •

2

96-02834

1996 MAY -7 PM 2:55

DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

Save Sandy Beach Initiative Coalition
3/28/88

STATE AND CITY PLANNING DOCUMENTS
RELATING TO THE LAND NEAR SANDY BEACH
WHERE A HOUSING DEVELOPMENT IS PROPOSED
("GOLF COURSE 5 and 6")

1. Hawaii Revised Statutes Chapter 226 -- "The Hawaii State Planning Act":

   (a) Planning for the State's physical environment shall be directed toward achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.

   (b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:

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

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

---

2. Hawaii Revised Statutes Chapter 205 -- "The Coastal Zone Management Act":

   A-2(b)(3) Scenic and open space resources (objectives)

   (A) Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

   (c)(3) Scenic and open space resources (policies)

   (A) Identify valued scenic resources in the coastal zone management area.

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

   (5) Economic uses (policies)

   (B) ...coastal dependent development such as harbors and ports, visitor industry facilities, and energy generating facilities...

---

3. "Special Management Area Ordinance for the City and County of Honolulu" -- Chapter 33:

   Section 33-3.2 (Review Guidelines)

   (2) No development shall be approved unless the council has first found that:

   (A) The development will not have any substantial adverse environmental or ecological effect except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interest.

---

3. General Plan for the City and County of Honolulu:

Preamble, page 13:

The natural environment of our island, next to our people, is our greatest asset.

Economic Activity, page 22:

Objective B: To maintain the viability of O'ahu's visitor industry.

Policy 8: Preserve the well-known and widely publicized beauty of O'ahu for visitors as well as residents.

Natural Environment, page 24:

Objective A: To protect and preserve the natural environment of O'ahu.

Objective B: To preserve and enhance the natural monuments and scenic views of O'ahu for the benefit of both residents and visitors.

Policy 2: Protect O'ahu's scenic views, especially those seen from highly developed and heavily travelled areas.

---

4. Development Plan Common Provisions of the City and County of Honolulu:

Section 3(11): Preservation areas include the following types of land:

(b): Lands necessary for the conservation, preservation and enhancement of sites with scenic, historic, archaeologic or ecologic significance.

Section 4 "General Urban Design Priciples and Controls:"

No development shall be permitted that would block important public views...city's mountains, hills, shoreline and streams shall be considered as major scenic, open space and recreational resources...whose function is to provide visual relief and contrast to the built environment...the preservation and enhancement of areas that are well-suited to perform these functions shall be given high priority.

---

5. Development Plan Special Provisions for East Honolulu:

Section 2(1)(b) "Public Views:"

In order to promote pleasing and attractive living environments and panoramic mauka and makai views from public places, views of major landmarks from public places shall be protected whenever possible...important views include, but are not limited to panoramic views of Koko Head, Koko Crater...and Kalanianaole Highway.

---

6. Land Use Ordinance for City and County of Honolulu:

Section 5.10 "Preservation Districts: Purpose and Intent:"

The purpose of the preservation districts is to preserve and manage major open space and recreation lands and lands of scenic and other natural resource value...It is the intent that lands designated urban by the State, but well-suited to the functions of providing visual relief and contrast to the City's built environment or serving as outdoor space for the public's use and enjoyment be zoned P-2 General Preservation District.

---

7. Coastal View Study of City and County of Honolulu:

Section 8.2 "Koko Head Viewshed:"

The Koko Head Viewshed begins at the top of Koko Head (Hanauma Bay) and extends through the Sandy Beach area to Makapu'u. This section has long been recognized for its unique visual and environmental qualities. The serpentine roadway provides an inspiring sequence of viewing angles, capturing the jutting rock formations set in sharp contrast to the turbulent sea. The barren landscape, wind carved cliffs, the imposing coastal land forms of Makape'u Head, Koko Crater and Halona Point, and the long beach frontage at Sandy Beach are primary elements of this visual experience...this roadway view is the crescendo of a continuous visual sequence covering the areas between Hawaii Kai in East Honolulu to the Waimanalo area in Koolaupoko.

Helber Hastert
Planners

July 8, 1996

Mr. Phil Estermann
Sandy Beach Initiative Council
P.O. Box 25473
Honolulu, HI 96825

Dear Mr. Estermann:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 5, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

We note your reference to many studies and public laws and policies that provide guidance on how to manage and regulate public open spaces in general and the Queen's Beach area in particular. Relevant studies, laws and public policies will be identified and discussed in the DEIS. We also note your reference to the "Sandy Beach Initiative" of 1988. Rather than serving as a referendum on the regional coastline, we believe this particular initiative effort asked the voters of Oahu to downzone two specific parcels of land ("Golf Course 5 & 6") that are neither contiguous to Queen's Beach, nor on the coastline.

In addition, you suggest that the EIS for the proposed golf course at Queen's Beach evaluate the cumulative impact on the Ka Iwi coastline of all the developments that are included as part of the proposed settlement of lawsuits involving the City and three major developers. The cumulative impacts of all proposed developments will only be discussed in the context of the impacts anticipated as a result of the golf course. We must disagree with your analysis as this project is for a stand-alone golf course and does not involve any of the other projects. In fact, the purpose of moving forward with a separate application for the golf course, is to protect property interests should a settlement not be reached. Further, a court-ordered environmental document (environmental impact report) will be prepared that provides the information you request.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower

733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813

Telephone 808 545 2055
Facsimile 808 545 2050

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

96-02998

DEPARTMENT OF HUMAN RESOURCES
CITY AND COUNTY OF HONOLULU

STANDARD FINANCE PLAZA
715 SOUTH KING STREET
HONOLULU, HAWAII 96813

MAY 20 1996

JEREMY HARRIS
MAYOR

SALVATORE S. LANZILOTTI, ED.D.
DIRECTOR
Mike Apil
~~ROGER A. GRCO, JR.~~
DEPUTY DIRECTOR

ADMINISTRATION
2ND FLOOR (808) 527-5310
FAX (808) 523-4970

ELDERLY AFFAIRS DIVISION
HONOLULU COMMITTEE ON AGING
5TH FLOOR (808) 523-4781

WORKHAWAII DIVISION
5TH FLOOR (808) 523-4182

SPECIAL PROJECTS SECTION
HONOLULU COUNTY COMMITTEE ON THE STATUS OF WOMEN
MAYOR'S COMMITTEE FOR PERSONS WITH DISABILITIES
MAYOR'S CHILD CARE ADVISORY BOARD
5TH FLOOR (808) 527-6264

May 6, 1996

1996 MAY 14 PM 1:25
CITY & COUNTY OF HONOLULU
DEPT. OF LAND UTILIZATION

MEMORANDUM

TO: PATRICK T. ONISHI, DIRECTOR OF LAND UTILIZATION
DEPARTMENT OF LAND UTILIZATION

FROM: SALVATORE S. LANZILOTTI, Ed.D., DIRECTOR
DEPARTMENT OF HUMAN RESOURCES

SUBJECT: **ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE, CHAPTER 25, ROH, PROJECTS WITHIN THE SPECIAL MANAGEMENT AREA, QUEEN'S BEACH GOLF COURSE, EAST HONOLULU, OAHU, TAX MAP KEY (TMK): 3-9-11: 03, por. 02**

The Department of Human Resources has reviewed the subject matter cited above and offers the following comments:

As we believe that all segments of society, public and private, in a collaborative effort, should contribute their pro rata share in addressing the human, social, and economic service needs of the communities on Oahu, it is the general practice of our department to propose that developers of major residential and/or recreational (*i.e., golf courses*) either:

a. Provide land and funds for the construction of a facility or facilities within the proposed development to house community service projects to include, but not limited to, the following: child care, elderly services, at-risk youth programs and employment training programs among others, or

b. Provide funds to the City for the establishment and/or expansion of social, human, and economic service programs within the project's immediate vicinity for residents affected by the proposed project.

Please be informed that the Department of Human Resources, in coordination with other City agencies, is reviewing the former Hawaii Job Corps site at Koko Head to ascertain potential programs and services that may be located at this site. In so far as the proposed project will also affect East Honolulu residents, though not necessarily addressing their specific recreational, economic, social and other service needs, we recommend that the aforementioned provisions be required of the applicant for this project.

If you have any questions concerning our comments, please direct your inquiries to Mr. Ernie Martin at X-6264.

Thank you for the opportunity to comment on this matter.

SSL:ds

Helber Hastert
Planners

July 8, 1996

Mr. Salvatore S. Lanzilotti, Ed.D., Director
Department of Human Resources
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. Lanzilotti:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 6, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

We note that your comments to Mr. Onishi, Director of the Department of Land Utilization, are structured to suggest that the developer of the proposed golf course should provide land or funds for the provision of social service facilities or programs within the immediate vicinity of the project. While we laud the premise of such a suggestion, we find it difficult to connect such requirements to the golf course. The social impacts of the golf course will be described in the DEIS, and measures to mitigate impacts will be identified at that time.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: (808) 545-2055
Facsimile: (808) 545-2050

LWV

THE LEAGUE
OF WOMEN VOTERS OF HONOLULU
49 S. Hotel Street ■ Room 314 ■ Honolulu, Hawaii 96813

May 6, 1996

Helber, Hastert and Fee
733 Bishop Street, Suite 2590
Honolulu, HI 96813

MAY 7

Attention: Scott Ezer

Thank you for sending us the EIS Preparation Notice for the proposed golf course at Queen's Beach. In recent weeks we have commented on the Queen's Beach area in connection with the proposed Hawaii Kai Settlement Procedure and also as part of the Ka Iwi State Park EIS. Many of the same comments we might make apply to all three.

If the golf course is not approved as a part of the Settlement, we assume that Kaiser will apply for permission to develop one under its present zoning, subject to SMA and Plan Review Use procedures. We are on record as urging public acquisition of the site for use as part of the Ka Iwi Park and must therefore oppose its development as outlined in your Preparation Notice. Should not a "no action" alternative be added?

We think that in Section 6.0, Anticipated Impacts, there should be discussion of the impacts on the future Park from development of a golf course, with all its accessory uses and access facilities, in the heart of it. We have urged that the entire Queen's Beach area, including that which would be developed as a golf course under your proposal, be kept insofar as possible, as an untouched, pristine, wilderness devoted to hiking, bird watching, study of native plants, and other activities which would not disturb it. We feel that a golf course would be incompatible with such uses.

If possible, please keep us on the mailing list to receive the draft and final EIS's and other informational material about the proposal.

Sincerely,
Astrid Monson
Astrid Monson, President

cc/ OEQC
DLU

Helber Hastert
Planners

July 8, 1996

Ms. Astrid Monson
President
League of Women Voters
49 South Hotel Street, Room 314
Honolulu, HI 96813

Dear Ms. Monson:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 6, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

You suggest that if the golf course is not approved as part of the Hawaii Kai Settlement, Kaiser Aluminum and Chemical Corporation will apply for permission to develop a golf course under its present zoning. In fact, the purpose of this EISPN is to support an application for a Special Management Area Use Permit (SMP) for a golf course at Queen's Beach outside the scope of the proposed Hawaii Kai Settlement. We note your preference for the Ka Iwi State Park, as proposed by the Department of Land and Natural Resources. In light of the State's vision for the Queen's Beach parcel, we will include the proposed park as an alternative to the golf course.

The League will continue as a consulted party throughout the EIS review process and will receive copies of both the draft and final EIS as they are distributed. If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545 2055
Facsimile: 808 545 2050

O'AHU GROUP
SIERRA CLUB, HAWAI'I CHAPTER
P.O. Box 2577, Honolulu, Hawaii 96803
Phone: (808) 538-6616

COPY

May 6, 1996

Robert Burke
Kaiser Aluminum and Chemical Corporation
300 Lakeside Drive, Suite 130
Oakland, CA 94612-3534

MAY 8

Dear Mr. Burke,

The O'ahu Group of the Sierra Club has the following comments relating to the Environmental Impact Statement Preparation Notice for a golf course at Queen's Beach:

I. The Applicant's EIS Must Discuss All Related Proposals.

The courts prohibit applicants from segmenting their actions in a manner that avoids comprehensive review. In Hawaii's Thousand Friends v. City and County, 75 Haw 237, the Hawai'i Supreme Court insisted that the cumulative impact of the entire Kailua Beach Park project be reviewed, and not merely a portion of the project. There is a plethora of case law under NEPA forbidding the agency's from reviewing only one in a series of related projects. See, e.g., Kleppe v. Sierra Club, 427 U.S. 390 (1976); City of Tenakee Springs v. Clough, 915 F.2d 1308 (9th Cir. 1990); Sierra Club v. Penfold, 857 F.2d 1307 (9th Cir. 1988).

It is well known that this golf course project is related to the other projects that are the subject of a so-called environmental impact report. This EIS must include an assessment of the impact of all the projects identified in the Hawaii Kai Environmental Impact Report.

II. The Applicant's EIS Must Contain Sufficient Baseline Data.

Because of the golf course's potential impact on water quality, the EIS must contain adequate information on existing water quality. The EIS should measure the existing levels of all the water pollutants identified in the Department of Health's administrative rules § 11-54-04 and all the existing water quality parameters identified in § 11-59-05.2 and 11-54-06. The testing should also measure the existing levels in the water of all pesticides that the applicant plans to use on the golf course. Water quality should be tested a meter off-shore, ten meters off-shore and in the inlets. This baseline data is essential in order to place adequate conditions in any SMA that is granted.

O'AHU GROUP
SIERRA CLUB, HAWAI'I CHAPTER
P.O. Box 2577, Honolulu, Hawaii 96803
Phone: (808) 538-6616

In addition, the applicant should comprehensively inventory corals and marine life in the area.

III. The EIS Must Address Significant Impacts.

The EIS should include a detailed discussion of the project's impacts on historic sites (a parking lot is proposed on top of elements of the Old King's Highway), endangered species and viewplanes.

IV. The EIS Must Correct Inaccurate Statements.

* Page 33 of the EISPN inaccurately states that the distinction between Priority 1 and Priority 2 is that Priority 1 sites are at greater risk and require more immediate protection. The reason for the distinction is stated in the State Land Use District Boundary Review and should be provided in the EIS.

* Page 37 inaccurately states that no money has been appropriated to purchase the property. The Supplemental Budget for this next fiscal year (prepared after the EISPN was prepared) includes funds for the purchase.

We will have further comments on the EIS and the SMA application itself.

Sincerely,

PHILIP D. BOGETTO
Oahu Group Chair,
Hawaii Chapter,
Sierra Club

cc: -Department of Land Utilization
-Helber Hastert & Fee, Planners
-Office of Environmental Quality Control

100% Recycled Paper

Helber Hastert
Planners

July 8, 1996

Mr. Philip D. Bogetto
Oahu Group Chair
Hawaii Chapter
Sierra Club
P.O. Box 2577
Honolulu, HI 96803

Dear Mr. Bogetto:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's, O'ahu, Hawai'i

Thank you for your letter dated May 6, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

You offer a number of comments in your correspondence. For ease of reference we provide the following responses in the order the subject appears in your letter.

1. **EIS must discuss all related proposals.** Your comments here identify court decisions related to environmental documentation and segmenting of projects. You contend that because the golf course is related to other projects that are included in the proposed settlement, this EIS must include an assessment of the impacts of all the projects identified in the Hawaii Kai Environmental Impact Report. We must disagree with your analysis, as this EISPN supports a project for a stand-alone golf course and does not involve any of the other projects. In fact, the purpose of moving forward with a separate application for the golf course, is to protect property interests should a settlement not be reached. Further, a court-ordered environmental document (the EIR) will be prepared that provides the information you request.

2. **Baseline Data.** We concur with your observation that the EIS must contain adequate information on existing water quality, corals and marine life. Such information will be provided in the DEIS.

3. **Significant Impacts.** The DEIS will include a discussion of the project's impacts on historic sites, endangered species and viewplanes.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813
Telephone: [illegible]
Facsimile: [illegible]

96-03896

4. **Supplemental Budget.** As you point out in your letter, the appropriation for funds to purchase Queen's Beach which was included in the Supplemental Budget was made after the EISPN was printed. This information will be included in the DEIS.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

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

JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI
DIRECTOR AND BUILDING SUPERINTENDENT

ISIDRO M. BAQUILAR
DEPUTY DIRECTOR AND BUILDING SUPERINTENDENT

PB 96-265

May 7, 1996

1996 MAY -9 AM 10:09
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

MEMO TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: RANDALL K. FUJIKI
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: QUEEN'S BEACH GOLF COURSE, TMK: 3-9-11:03, POR. 2
ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

We have reviewed the subject document as requested in your transmittal of April 5, 1996.

We have no comments to offer but appreciate the opportunity to review it. Should there be any questions, please have your staff call Douglas Collinson at ext. 6375.

RANDALL K. FUJIKI
Director and Building Superintendent

Heller Hastert
Planners

July 8, 1996

Mr. Randall K. Fujiki
Director and Building Inspector
Building Department
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. ~~Kimtiaco~~ Fujiki

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 7, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note that you have no comments to offer at this time.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee | 733 Bishop Street, Suite 2590 | Telephone: 808 545-2055
Grosvenor Center, Mauka Tower | Honolulu, Hawaii 96813 | Facsimile: 808 545-2050

96-03930

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

'96 MAY 10 PM 1:35
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

MAY 2 0 1996

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY
GILBERT COLOMA-AGARAN

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION DIVISION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

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

May 7, 1996

Patrick T. Onishi, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

LOG NO: 16910
DOC NO: 9604TD24

Dear Mr. Onishi:

SUBJECT: Environmental Impact Statement Preparation Notice (EISPN), Chapter 25, ROH, Projects Environmental Within the Special Management Area
Maunalua, (Waimanalo, Ko`olaupoko), O`ahu
TMK: 3-9-11: por. 2, 3

The EISPN refers to an archaeological assessment prepared by Paul H. Rosendahl, Ph.D., Inc. in 1994, which we have not had the opportunity to review. We will be able to offer comments when we review this report.

If you have any questions please call Tom Dye at 587-0014.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TD:jk

96-03106

1996 MAY 17 AM 7:54

DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

Helber Hastert
Planners

July 8, 1996

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

Dear Mr. Hibbard:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated April 23, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note that your interest in the archaeological assessment prepared by Paul H. Rosendahl, Ph.D., Inc. for the proposed golf course and that you will be able to offer comments after you have reviewed this report. We will look forward to your comments at that time.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee — 733 Bishop Street, Suite 2590 — Telephone 808 545 2055
Grosvenor Center, Mauka Tower — Honolulu, Hawaii 96813 — Facsimile 808 545 2050

University of Hawai'i at Mānoa

Environmental Center
A Unit of Water Resources Research Center
Crawford 317 • 2550 Campus Road • Honolulu, Hawai'i 96822
Telephone: (808) 956-7361 • Facsimile: (808) 956-3980

May 8, 1996
PN: 0088

Ms. Ardis Shaw-Kim
City and County of Honolulu
Department of Land Utilization
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

MAY - 8

Ms. Shaw-Kim:

Environmental Impact Statement Preparation Notice (EISPN)
Queen's Beach Golf Course
Queen's Beach, Oahu

The referenced project is located on a 166-acre parcel at the eastern most point of Oahu in the East Honolulu District and is bounded by the Pacific Ocean on the south, Kalanianaole Highway on the southwest and west, and a scenic lookout overlooking Makapuu Beach Park on the north. The applicant, Kaiser Aluminum and Chemical Corporation, proposes to develop an 18-hole golf course on the property. Accessory golf course facilities include a driving range, clubhouse/pro shop and restaurant, locker rooms, cart barn and parking lot. To the extent possible, the design concept for the golf course intends to integrate existing topography and vegetation. Grading will be kept to a minimum and public access to the shoreline will be preserved via pedestrian trails. No structures, other than connecting bridges and rest rooms, are planned within 400 feet of the shoreline.

This review was completed with the assistance of Sheila Conant, Zoology; Robert Lovich, Zoology; Ira Rohter, Political Science; and Tom Hawley, Environmental Center.

General Comments

Unquestionably preparation of an environmental impact statement (EIS), is legally required for the proposed project. We are aware of the proposed settlement decree between the applicant and the City and County of Honolulu which would bypass environmental disclosure provisions of Chapter 343, HRS. However, we remain categorically opposed to any proposed process or related documentation which limits the ability of the public

to substantively address potential environmental impacts of actions statutorily subject to prescribed, systematic public scrutiny. Preparation of an EIS for this action allows public participation through legally established processes which guarantee public comment and require that comments receive formal responses. We commend the applicant for their decision to pursue a lawful and meaningful environmental review process for the proposed action.

Endangered Flora

Several important issues must be taken into account during the preparation of the draft EIS. The Queen's Beach area is populated by an endemic water fern, *Marsilea villosa*, which is listed among Hawaii's endangered species. The EIS Prep Notice states that populations of this fern were found "in a few deep ruts along two 4-wheel drive roads" (pg. 25), and "in an area now occupied by a drainage ditch" (pg. 25). Our reviewers who examined the site, however, point out that the largest population occurs not in vehicle ruts or a drainage ditch but in a natural depression that is most likely a wetland. The vegetation map on page 26 of the EIS Prep Notice appears to confirm that the larger of two identified *Marsilea villosa* populations occurs in a natural drainage basin. Though we are aware that these populations may have been transplanted, their presence nevertheless underscores the need for an Army Corps of Engineers wetlands modification permit approval. In addition, the proposed action will require a Section 7 consultation with the U.S. Fish and Wildlife Service.

Native Hawaiian Ownership Claims

The draft EIS also must include discussion of Native Hawaiian land ownership claims in the proposed project area. It is important to discuss in detail the issue of ownership and land use in the area from the perspective of all concerned parties, rather than those who simply own or lease various parcels. Given the importance of this part of Oahu to native Hawaiians, the draft EIS should include a detailed description of Native Hawaiian ownership claims in this area.

Thank you for the opportunity to review this document.

Sincerely

John T. Harrison
Environmental Coordinator

cc: OEQC
Roger Fujioka
Kaiser Aluminum and Chemical Corp.
Helber Hastert and Fee, Planners
Sheila Conant
Robert Lovich
Tom Hawley

Helber Hastert
Planners

July 8, 1996

John T. Harrison
Environmental Coordinator
University of Hawa'i at Manoa
Environmental Center
Crawford 317
2550 Campus Road
Honolulu, HI 96822

Dear Mr. Harrison:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 8, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

Comments in your letter were limited to the subject areas of endangered flora and Native Hawaiian claims of ownership. We offer the following responses to your comments.

Endangered Flora. We acknowledge the presence of the endemic water fern, *Marsilea villosa*, which is listed among Hawaii's endangered species. This plant, which occurs seasonally after periods of heavy rain and ponding of water, is located in two distinct locations at Queen's Beach. Whether these locations are old tire ruts or a natural depression, the presence of the *Marsilea* cannot be ignored, and will be thoroughly discussed in the DEIS. Because of claims in other documents about the possibility that these areas could be considered wetlands, we undertook an additional study to determine whether wetland conditions do, in fact, exist at Queen's Beach. The results of this investigation have shown that these areas are not considered wetlands, which has recently been corroborated by the U.S. Army Corps of Engineers. This documentation will be referenced in the DEIS. Appropriate consultation with U.S. Fish and Wildlife Service will be conducted.

Native Hawaiian Ownership Claims. In the recent past, some groups have claimed ownership interest in the former U.S. Coast Guard Facility at Makapu'u Head, although these claims have never been substantiated. As far as Kaiser Aluminum and Chemical Corporation (lessee) and Kamehameha Schools Bernice Pauahi Bishop Estate (landowner) are concerned, title to the area in question can be traced to King Kamehameha I, then passing through various owners before being including in the estate of Princess Bernice

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733 Bishop Street, Suite 2290
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Facsimile: 808 545 2050

Pauahi Bishop. If other parties believe they have ownership interest in the property, the burden of proof showing interest rests with them.

If you have any further questions concerning this project, please call me at 545-2055

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

DEPARTMENT OF TRANSPORTATION SERVICES

CITY AND COUNTY OF HONOLULU

PACIFIC PARK PLAZA
711 KAPIOLANI BOULEVARD, SUITE 1200
HONOLULU, HAWAII 96813

96-02843

CHARLES O. SWANSON
DIRECTOR

1996 MAY -8 AM 8:06
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

4/96-01577R

May 8, 1996

MAY - 9

MEMORANDUM

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF OF LAND UTILIZATION

FROM: CHARLES O. SWANSON, DIRECTOR

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR QUEEN'S BEACH GOLF COURSE

In response to your letter dated April 5, 1996, the subject environmental impact statement preparation notice was reviewed. The vehicular access for the project will be from Kalanianaole Highway, a State Department of Transportation facility. We, therefore, have no objections or comments regarding the transportation or traffic impacts of this project.

Should you have any questions regarding this matter, please contact Faith Miyamoto of the Transportation System Planning Division at Local 6976.

for CHARLES O. SWANSON

Helber Hastert
Planners

July 8, 1996

Mr. Charles O. Swanson
Director
Department of Transportation Services
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. Swanson:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 8, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note your comment that vehicular access for the proposed golf course will be from Kalanianaole Highway, a State Department of Transportation facility, and you have no objections or comments regarding the proposed project.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
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BENJAMIN J. CAYETANO
GOVERNOR

GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

May 8, 1996

Patrick K. Onishi, Director
Department of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Attention: Ardis Shaw-Kim

Dear Mr. Onishi:

RE: Environmental Impact Statement Preparation Notice (EISPN)/SMA for Queen's Beach Golf Course, East Honolulu; TMK 3-9-11: 3 (por. 2)

Analysis of this project needs to be completed according to the guidelines delineated in Chapter 343, Hawaii Revised Statutes. In the draft EIS please include discussion and analysis of the following items, which were missing from this EISPN:

1. If the project site lies within the Shoreline Setback indicate the status of Shoreline Setback Variance application.

2. List agencies consulted before or during the preparation of this document.

3. List and document contacts made with neighbors and/or community groups.

4. A full description of the golf course is needed, including any diagrams or drawings.

5. Discuss construction impacts and any related mitigation measures.

6. List the possible primary and secondary effects this project will have on the community.

7. Discuss impacts on air quality this project is likely to have; discuss impacts this project will have on the area in terms of noise and traffic.

8. Discuss project impacts on the coastal environment, especially the wetlands mentioned in Section 5.8, and any impacts this area, as a flood hazard evacuation area, will have on the project.

9. Discuss project impacts according to the significance criteria listed in HRS Title 11-200-12.

In addition please discuss the following issues:

Old Government Road
The draft EIS must clearly delineate the Old Government Road (Kealakipapa Valley Road remnant) and its relationship to the proposed golf course. The EISPN contends in section 5.7 that the old road lies "outside the boundaries of the project site." To the contrary, we believe that a portion of the historic road remnant lies within the 11th hole of the golf course.

This old Government Road exists on maps of Oahu dating back to at least 1851. It was in regular use through the early part of this century until replaced by the current alignment. We know of no government action that quitclaimed title of the roadway and therefore assume that the roadway remnant and its historic alignment through the project site remain public land under HRS 264-1.

The DEIS should perform a comprehensive historical review of the Old Government Road through the Kealakipapa Valley, survey its alignment and complete a title search to clarify its ownership.

Old Lighthouse Road
The golf course is bisected by the old lighthouse road currently under jurisdiction of the State of Hawaii. The DEIS should clearly define the fee ownership of this roadway and what easements or uses of this land may be required to allow golfers to safely cross the roadway to travel between the tees of the course. Does such activity represent the "use of State or County lands or funds" and therefore qualify as an additional trigger of HRS 343?

Scenic Resources
The EISPN notes that the area contains high value scenic resources. The DEIS should describe and quantify the impacts of the golf course development on this last remaining undeveloped open space on the south shore of the island. What compensation for the irreparable loss of this valuable resource is proposed?

Boulders
The project site has been used to stockpile many large boulders from residential development in the area. What does the applicant plan to do with the existing boulders on site? What impact will the use or movement of these boulders have on scenic views and native flora and fauna in the area?

Irrigation
It is our understanding that the nearby Hawaii Kai Golf Course, despite making a commitment to the contrary, is still dependent upon the Board of Water Supply's potable water system for irrigation. Why has the neighboring golf course been unable to use treated effluent from the Hawaii Kai Sewage Treatment Plant and why will the applicant's golf course be successful when the existing golf course has failed?

If you have any questions, call Nancy Heinrich at 586-4185.

Sincerely,

GARY GILL
Director

c: Scott Ezer
Robert Burke

Helber Hastert
Planners

July 9, 1996

Mr. Gary Gill
Director
State of Hawaii
Office of Environmental Quality Control
220 South King Street, Fourth Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 8, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

You offer a number of comments in your correspondence. For ease of reference we provide the following responses in the order the subject appears in your letter.

1. **Shoreline Setback Variance.** No improvements are being proposed within the shoreline setback area.
2. **Agencies consulted.** A number of studies have been prepared over the last 12 years focusing on the Queen's Beach area including two major documents: *Queen's Beach Park Feasibility Study Phase 1: Site Assessment* (Department of Parks and Recreation, December 1984) and *the Ka Iwi State Park Master Plan and Final Environmental Impact Statement* (Department of Land and Natural Resources, April 1996). As a result, there is a significant volume of background and baseline information available concerning Queen's Beach. Therefore, the only agency consulted during the preparation of the EISPN was the Department of Land Utilization. Over 115 agencies, individuals and organizations received a copy of the EISPN. The distribution list, as well as those consulted parties who provided response to the EISPN will appear in the DEIS along with comment letters and responses to the comments.
3. **Community contacts.** A list of community groups contacted will appear in the DEIS.
4. **Description of the golf course.** The golf course will be described to the maximum extent possible in the DEIS, including any diagrams or drawings.
5. **Construction impacts and mitigation measures.** Construction impacts and appropriate mitigation measures will be discussed in the DEIS.

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Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
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6. **Primary and secondary effects of the project.** The impacts of the project on the community will be discussed in the DEIS.
7. **Air/Noise/Traffic impacts.** These impacts will be discussed in the DEIS.
8. **Impacts on the coastal environment.** Potential impacts to the coastal environment will be discussed in the DEIS. For your information, the possible wetlands discussed in Section 5.8 of the EISPN have recently been determined not to be wetlands by the U.S. Army Corps of Engineers. This documentation will be presented in the DEIS
9. **Significance criteria.** Impacts will be discussed in the context of the criteria listed in HRS Title 11-200-12.
10. **Old Government Road.** The Old Government Road will be discussed in terms of both its relationship to the proposed golf course, and a historical review. Any extant portions of the road will be identified and properly evaluated as historic resources.

    Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE) has indicated that it owns the property in question, and we do not believe that either Kaiser Aluminum and Chemical Corporation or KSBE is under any legal obligation to complete a title search to clarify its ownership.
11. **Old Lighthouse Road.** The fee ownership of the Old Lighthouse Road will be discussed in the DEIS. A full explanation of this road use and its relationship to Chapter 343, HRS, will be presented in the DEIS.
12. **Scenic Resources.** The DEIS will describe the visual impacts of the proposed golf course on existing scenic resources. It is unclear what is meant by the use of the term "compensation." The purpose of the analysis contained in the DEIS is to identify potential impacts and propose measures to mitigate them, as necessary.
13. **Boulders.** The applicant intends to incorporate the boulders into the design of the golf course. It may be necessary to move some boulders during site preparation in order to achieve final design objectives. Detailed analysis will not be finished until application is made for a grading permit for the course. A discussion of the boulders and their relationship to native flora and fauna will be presented in the DEIS.
14. **Irrigation.** We cannot speak for the owners of the Hawaii Kai Golf Course, nor can we speculate about why they have been unable to accept treated wastewater from the Hawaii Kai Sewage Treatment Plant as an irrigation source. A full discussion of the treated wastewater and irrigation plans for the proposed golf course will be included in the DEIS.

If you have further questions concerning this project, please call be at 545-2055

Sincerely

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

BENJAMIN J. CAYETANO
GOVERNOR

SAM CALLEJO
COMPTROLLER

MARY PATRICIA WATERHOUSE
DEPUTY COMPTROLLER

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

LETTER NO (P)1300.6

MAY 10 1996

Mr. Mark R. Willey
Project Manager
CH2M Hill
1585 Kapiolani Blvd., Suite 1420
Honolulu, Hawaii 96814-4530

Dear Mr. Willey:

Subject: Queen's Beach Golf Course
Queen's Beach, East Honolulu, Oahu
Environmental Impact Statement Preparation Notice

Thank you for the opportunity to review the subject document. The proposed project will have no impact on our facilities. Therefore, we have no comments to offer.

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

Very truly yours,

GORDON MATSUOKA
State Public Work Engineer

RY:jy

Helber Hastert
Planners

July 8, 1996

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

Dear Mr. Matsuoka:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 10, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement being prepared.

We note that you have no comments to offer at this time. We should also point out that you inadvertently addressed your comment letter to Mr. Mark Wiley of CH2M Hill.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Grosvenor Center, Mauka Tower

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96-03028

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843
PHONE (808) 527-6180
FAX (808) 533-2714

'96 MAY 15 AM 7:55
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

May 10, 1996

MAY 2 0 1996

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

ATTN: ARDIS SHAW-KIM

FROM: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: YOUR TRANSMITTAL OF APRIL 5, 1996 ON THE ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE (EISPN), CHAPTER 25, ROH, FOR THE PROPOSED QUEEN'S BEACH GOLF COURSE PROJECT, EAST HONOLULU, TMK: 3-9-11: POR. 2, 3

Thank you for the opportunity to review and comment on the EISPN for the proposed golf course project.

We have the following comments to offer:

1. The developer will be required to obtain a water allocation from the Bishop Estate.

2. The availability of domestic water will be determined when the building permit application is submitted for our review and approval. If water is made available, the developer will be required to pay our Water System Facilities Charges for transmission.

3. We have no objections to the proposed use of treated sewage effluent for irrigation of the golf course and associated landscaped areas. The nonpotable irrigation plan is in accordance with our rules and regulations requiring the use of nonpotable water for large landscaped areas if a suitable supply is available.

4. The EIS should address alternatives to using potable water, estimated at 75,000 gpd, to blend and reduce the salinity of the sewage effluent for the irrigation of the golf course greens. The EISPN indicates that if the salinity of treated sewage effluent increases, the irrigation water for the salt-tolerant fairway grasses may also require blending with potable water. Alternatives, with cost analyses, should include desalination and improvements to the Hawaii Kai sewage system to minimize salt water inflow. Reducing the salt water influence to the sewage treatment plant will benefit the existing Hawaii Kai golf course which plans to use reclaimed sewage effluent. Information on the mineral content of the sewage effluent should also be provided.

5. The permitted irrigation application method of R-1 and R-2 water for the golf course should be coordinated with the State Department of Health.

6. The existing water system cannot provide adequate fire protection as required by our water system standards. Therefore, the developer will be required to install a fire hydrant in the vicinity of the proposed golf course. The construction drawings should be submitted for our review and approval.

7. The on-site fire protection should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

8. If a three-inch or larger water meter is required, the construction drawings showing the installation of the meter should also be submitted for our review and approval.

9. Board of Water Supply approved reduced pressure principle backflow prevention assemblies are required to be installed immediately after all domestic water meters serving the facility.

If you have any questions, please contact Barry Usagawa at 527-5235.

Helber Hastert
Planners

July 8, 1996

Mr. Raymond H. Sato
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Dear Mr. Sato:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 10, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

You offer a number a comments in your correspondence. For ease of reference we provide the following responses in the order the subject appears in your letter.

1. **Water allocation**. The developer acknowledges the need to obtain a water allocation from Kamehameha Schools Bernice Pauahi Bishop Estate.

2. **Determination of water availability**. The developer acknowledges that the availability of domestic water will be determined when any building permits are submitted for review and approval. The developer also acknowledges the requirement to pay Water System Facilities Charges for transmission.

3. **Non-potable irrigation plan**. We note you have no objections to the use of treated sewage effluent for irrigation of the golf course and associated landscaped areas.

4. **Alternatives to using potable water**. You suggest that alternatives with cost analyses should be provided, to replace the potential need for additional potable water to blend with treated effluent, if the salinity of the effluent increases beyond the tolerance level of fairway turfgrasses selected for the proposed golf course. We concur that reducing salt water influence to the sewage treatment plant is key to providing acceptable levels of salinity to both the existing Hawaii Kai Golf Course and the proposed golf course at Queen's Beach. Improvements to the sewer lines serving the system or desalinating treated effluent are both reasonable alternatives and will be identified in the DEIS, although we do not intend to provide cost

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Honolulu, Hawaii 96813
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analysis for these alternatives as any improvements to the plant would be the responsibility of its owner. Information on the mineral content of the sewage effluent will be provided in the DEIS.

5. **Irrigation application method**. We are aware of the differing irrigation methods required for R-1 and R-2 water, and will coordinate irrigation plans with the Department of Health at the appropriate time.

6. **Fire hydrant**. We acknowledge the requirement to install a fire hydrant in the vicinity of the proposed golf course and construction drawings will be submitted to the Board of Water Supply (BWS) for review and approval.

7. **On-site fire protection**. On-site fire protection will be coordinated with the Fire Prevention Bureau of the Fire Department.

8. **Water meter**. We acknowledge that if a three-inch or larger water meter is required, construction drawings showing the installation of the meter should be submitted to BWS for review and approval.

9. **Reduced pressure principle backflow prevention assemblies**. We also acknowledge that pressure principle backflow prevention assemblies are required to be installed immediately after domestic water meters are installed.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

96-02957

OFFICE OF STATE PLANNING

Office of the Governor

BENJAMIN J. CAYETANO, Governor

MAILING ADDRESS: P.O. BOX 3540, HONOLULU, HAWAII 96811-3540
STREET ADDRESS: 250 SOUTH HOTEL STREET, 4TH FLOOR
TELEPHONE: (808) 587-2846, 587-2806

FAX: Director's Office 587-2840
Planning Division 587-2824

Ref. No. P-6155

MAY 9

May 8, 1996

1996 MAY -8 AM 11:17
DEPT OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

The Honorable Patrick T. Onishi
Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Onishi:

Subject: Queen's Beach Golf Course Environmental Impact Statement Preparation Notice (EISPN)

We have reviewed the above document and have the following comments on the draft Environmental Impact Statement (EIS).

First, the draft EIS should discuss the compliance of the proposed golf course development with the objectives and policies of the Coastal Zone Management Law, Chapter 205A, HRS. Of particular concern are the impacts the proposed golf course will have on scenic resources, native flora and fauna, wetlands, coastal water quality, recreational, cultural, and historic resources, as well as access to these resources. Compliance with these legal policies are prerequisite to approval of the Special Management Area Permit.

A. Scenic resources. This area is one of the few remaining undeveloped, unurbanized coastlines on Oahu that is accessible to residents and visitors. The draft EIS should include an assessment of the visual impacts on mauka and makai views of the proposed structures and landscaping features, as viewed from different points along Kalanianaole Highway from the Makapuu lookout to Halona Point and from coastal areas. The placement of telephone and other utility lines, overhead or underground, should be carefully considered to avoid adverse impacts. In addition, where adverse impacts are not significant and cannot be avoided, mitigation measures need to be incorporated into the project design and addressed in the draft EIS.

B. Native flora and fauna. The document should identify the flora and fauna on the project site and discuss their values. It should discuss how the siting of clubhouse and ancillary structures and construction activities will avoid adversely impacting important native insect and plant communities in the project area, including the endangered water fern, 'ihi'ihilauakea (*Marsilea villosa*), the native cotton, ma'o (*Gossypium tomentosum*) which supports a rare Hawaiian weevil (*Rhyncogonus simplex*), native coastal strand vegetation, and other endemic insect species of concern to the U.S. Fish and Wildlife Service.

C. Wetlands. It is our understanding that the U.S. Army Corps of Engineers has indicated that conditions may exist for the delineation of jurisdictional wetlands on the project property. A determination of wetlands on the project site should be made; any wetlands identified and their uses fully discussed in the draft EIS. Measures to protect these wetland qualities and functions should also be discussed.

D. Coastal resources and coastal water quality. The draft EIS should identify any proposed landscaping or management activities being considered for those areas of the project abutting intertidal zones or shoreline areas, which may adversely affect beach or coastal processes or artificially fix the shoreline. The quality of coastal waters must be protected or enhanced. In this respect, there should be a comprehensive discussion of the potential impacts and mitigation of stormwater runoff and leaching of pesticides and fertilizers on receiving waters and intertidal areas, both during construction and the operation of the proposed golf course.

E. Recreational, historic, and cultural resources. The proposed golf course will likely impact existing recreational opportunities and cultural activities at Wawamalu Beach, Queen's Beach, Makapuu lighthouse, and the State wayside park at Makapuu. There are also important archaeological sites that will need to be protected and managed (including access for interpretative activities) during the construction and operation of the proposed golf course. These concerns need to be discussed in the draft EIS. The document should indicate the rates and any conditions for public play being considered for the proposed golf course.

F. Access. The document should discuss the dedication of public easements for areas being set aside for public use and for pedestrian access to coastal areas being proposed in the project. Provisions for public parking for participants in recreational and cultural activities at the Makapuu lighthouse, State wayside park, and the trail to Kaho'ohaihai Inlet and the property's northernmost coastal areas should be discussed. The draft EIS should discuss the development and management of the beach park at Wawamalu and pedestrian trail system proposed, the physical relationship, if any, of these proposed public facilities to the proposed golf course, and identify the public cost for developing and managing the beach park and trail system. The draft EIS should also discuss how the proposed project will impact customary and traditional gathering rights of native Hawaiians under Article XII, Section 7, of the Hawaii State Constitution.

Second, the draft EIS should fully identify impacts that the proposed golf course will have on existing infrastructure and any mitigation measures needed, particularly, traffic impacts, potable water, wastewater, and stormwater drainage. The draft EIS should also indicate any civil defense requirements resulting from the project's location within a tsunami inundation area. Furthermore, the draft EIS should specify how the proposed project will address the Department of Health's "Guidelines Applicable to Golf Courses in Hawaii," August 1994 (Version 5), as amended. Specific concerns are identified below:

A. Roads. The draft EIS should discuss the impact of traffic generated by the proposed golf course and the development of the Wawamalu beach park on Kalanianaole Highway, both at the site and along regional corridors. It should also identify any permits, improvements or mitigation measures that will be required, the cost of these improvements, and who will bear the cost.

B. Potable water. The draft EIS should discuss what impact the proposed project will have on current and planned water service capacity for the East Honolulu area. It should also identify under what conditions additional potable water would be required for blending with treated effluent for golf course irrigation and the additional potable water requirements. This additional requirement should be considered in the discussion of potable water supply and service capacity for systems serving the East Honolulu region.

C. Wastewater. The draft EIS should identify what impact the proposed project will have on existing and planned capacity at Hawaii Kai Sewage Treatment Plant, given its current discharge permit limits.

D. Stormwater drainage. The draft EIS should describe what design features, mitigation measures or management practices will be used to minimize the impact of stormwater discharge/drainage from the proposed golf course, as well as drainage from Kalama Valley and the Hawaii Kai Golf Courses that are discharged into the estuaries and nearshore waters at the project site.

Third, the draft EIS should identify and evaluate a range of alternatives, including scaled down clubhouse and support facilities, alternative locations for the clubhouse and support facilities on the project site, siting the golf course clubhouse and support facilities off-site (e.g., mauka of Kalanianaole Highway), and the development of Queen's Beach as a passive, interpretive park.

Finally, the draft EIS should also clarify ownership status of lands underlying the historic road remnant (Site 03 mentioned on page 29 of the EISPN) and the State lighthouse access road, so as to better determine what, if any, impacts the proposed development would have on use of these lands.

Thank you for the opportunity to comment.

Sincerely,

Gregory G.Y. Pai, Ph.D.
Director

Belles Graham Proudfoot & Wilson
Planners

July 8, 1996

Ms. Mary Lou Kobayashi
Planning Program Administrator
Office of Planning
Department of Business, Economic Development & Tourism
P.O. Box 3540
Honolulu, HI 96811-3540

Dear Ms. Kobayashi:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's, O'ahu, Hawai'i

Thank you for your letter dated May 8, 1996 on the above environmental impact statement preparation notice (EISPN) (Ref. No. P-6155). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

You offer a number of comments in your correspondence. For ease of reference we provide the following responses in the order the subject appears in your letter.

Scenic resources. The DEIS will assess visual impacts to mauka and makai views of the proposed project as seen from public viewing areas. As appropriate, mitigation measures will also be discussed. The visual analysis will include the proposed club house and comfort stations. Concerning overhead utility lines, all utility lines for the proposed project will be placed underground. There are existing overhead transmission lines on the property for Hawaiian Electric Company and Hawaiian Telephone. These overhead lines will have to be relocated. A decision concerning the relocation of these lines has not been made. Therefore, it is premature to predict whether the relocated lines will be overhead or underground. In any event, the future location and treatment (overhead vs. underground) is not up to the applicant (Kaiser Aluminum and Chemical Corporation). Discussion on this issue could be part of a future application for a Special Management Area Use Permit made by the utility companies.

Native flora and fauna. The DEIS will provide information, based on recent surveys, that describes important native insect and plant communities found on the project site, including the endangered water fern, 'ihi'ihilauakea (*Marsilea villosa*), the native cotton, ma'o (*Gossypium tomentosum*), the Hawaiian weevil (*Rhycongonus simplex*) and native coastal strand vegetation.

Belles Graham & Lee
Grosvenor Center, Mauka Tower
737 Bishop Street, Suite 2290
Honolulu, Hawaii 96813
Telephone (808) 545-2055
Facsimile (808) 545-2050

Wetlands. For your information, following the publication of the EISPN, because of conflicting information found in the recent EIS supporting the Department of Land and Natural Resource's proposal to develop a park at Queen's Beach, we undertook a supplemental study to determine the presence/absence of wetlands on the property. We recently received confirmation from the U.S. Army Corps of Engineers that no wetlands exist on the project site. We will include this information in the forthcoming DEIS.

Coastal resources and coastal water quality. The DEIS will identify any activities being considered for those areas abutting intertidal or shoreline areas./ There are no aspects of the project that are contemplated within the shoreline setback area, or makai of the shoreline. Therefore, the shoreline would not be artificially fixed. There will also be a comprehensive discussion of the potential impacts of stormwater runoff and leaching of pesticides and fertilizers on receiving waters and intertidal area. Mitigation measures and best management practices will be presented as part of an integrated pest management plan.

Recreational/historic/cultural resources. The DEIS will discuss the proposed golf course in the context of impacts to existing recreational and cultural opportunities. Again, we should emphasize that continued access to the shoreline area will be provided and encouraged. At this time it is premature to discuss specific rates for public play on the proposed course. The applicant is committed to providing kama'aina rates for residents of Hawaii without limitation. Local residents would have the same access to tee times as other golfers, on a first-come first-served basis.

Access. The DEIS will clarify the position of the landowner (Kamehameha Schools Bernice Pauahi Bishop Estate) and the applicant relative to the 29 acres identified to be "set aside" for public use. In general, it is intended that this acreage be left undeveloped for three reasons:

- future development by the City and County of Honolulu as a public park;
- public access to and along the shoreline; and
- protection of important native beach strand vegetation.

Neither the landowner nor the applicant intends to develop any facilities in this area except for a beach trail which will be constructed by the applicant. A second trail will be constructed connecting the lighthouse access road to the Kaho'ohaihai Inlet. It is intended that the City and County of Honolulu take over maintenance of these trails. The exact nature of the City's interest in the property will need to be resolved between the landowner and the City.

Currently, users of the State Wayside Park and the lighthouse road park along Kalanianaole Highway. We expect that this situation will continue. In addition, we expect that users of the future trail to Kaho'ohaihai Inlet would also park along Kalanianaole Highway.

The DEIS will address the issue of traditional native gathering rights under the provisions of Article XII, Section 7 of the Hawaii State Constitution.

Roads. The DEIS will include information relative to the traffic impacts of the proposed golf course on Kalanianaole Highway. However, any impacts associated with a proposed park between Kaloko Inlet and Wawamalu Beach would need to be addressed at the time of its development. It is probable that any such impacts would be negligible given existing traffic patterns in the area. Any improvements or mitigation measures needed as a result of the traffic impact report will be identified in the DEIS. Should mitigation measures be required, the costs to implement them would be borne by the developer.

Potable Water. The DEIS will discuss the project's potable water needs and impact on current and planned water service for the East Honolulu area. In addition, conditions under which additional potable water would be needed to irrigate the golf course will be presented.

Wastewater. Wastewater demand and its impact on the Hawaii Kai Wastewater Treatment Plant will be presented in the DEIS.

Stormwater drainage. The DEIS will include information related to the design features, mitigation measures and management practices that will be used to minimize the impact of stormwater discharge into the embayments and nearshore waters at the project site. Drainage will be discussed in the context of the entire drainage basin. You also suggest that analysis be included for upland areas. If reference here is to other properties within the drainage basin, we must stipulate that we have no control as to how much stormwater is generated as a result of other projects. We do not believe improvements designed for the proposed golf course should assume responsibility for these projects.

Alternatives. The DEIS will include a presentation of reasonable alternatives to the proposed project, including the Department of Land and Natural Resource's proposal to create a State park that includes the project site.

Road ownership. The Old government Road will be discussed in terms of both its relationship to the proposed golf course, and a historical review. Any remaining portions of the road will be identified and properly evaluated as historic resources. Kamehameha

Schools Bernice Pauahi Bishop Estate (KSBE) has indicated that it owns the property in question, and we do not believe that either Kaiser Aluminum and Chemical Corporation or KSBE is under any legal obligation to complete a title search to clarify its ownership.

A full explanation of the ownership and use of the lighthouse access road and its relationship to Chapter 343, HR will be presented in the DEIS.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

96-03239

BENJAMIN J. CAYETANO
GOVERNOR

MAY 23 1996

ROY S. OSHIRO
EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
677 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813
FAX (808) 587-0600

96:PPE/1890

May 16, 1996

Mr. Patrick T. Onishi
Director
Department of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Onishi:

Re: Environmental Impact Statement Preparation Notice for Queen's Beach Golf Course

We have reviewed the subject EISPN and have no specific comments to make on the proposed Queen's Beach Golf Course.

However, as this project is part of an overall master plan for the Hawaii Kai region, our previous comments on the environmental impact report preparation notice for the Hawaii Kai region are applicable. That is, Policies A(3) and B(3) of the State Housing Functional Plan seek to ensure that housing projects and projects which impact housing provide a fair share/adequate amount of affordable homeownership and rental housing opportunities. This should be addressed in the EISPN.

Thank you for the opportunity to comment.

Sincerely,

Roy S. Oshiro
Executive Director

Post-it® Fax Note 7671	Date 5-23-96	# of pages ▶ 1
To Mr. Scott Ezer	From Ardis Shaw-Kim	
Co./Dept. Helber Hastert	Co. DLU	
Phone #	Phone # 527-5349	
Fax # 545-2050	Fax #	

Helber Hastert
Planners

July 8, 1996

Mr. Roy S. Oshiro
Executive Director
State of Hawaii
Department of Budget and Finance
Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, HI 96813

Dear Mr. Oshiro:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 16, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

We note that you have no specific comments on the proposed golf course. We also note that you have reiterated your comments relative to the overall settlement proposed for all the Hawaii Kai properties identified in the previously circulated environmental impact reported (dated January 1996). Specifically, you suggest that policies of the State Housing Functional Plan related to the provision of fair share/adequate amounts of affordable homeownership and rental housing opportunities be discussed in the DEIS. We point out that these issues are not pertinent to the discussion of the objectives and guidelines of either Chapter 205A, HRS or Chapter 25, Revised Ordinances of Honolulu (ROH), particularly since the EIS in question only involves the golf course. In any event, appropriate State policies related to the proposed golf course will be discussed the DEIS.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Governor Cayetano Makai Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: (808) 545-2055
Facsimile: (808) 545-2050

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 8TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4427 • FAX: (808) 527-5488

JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES, JR.
DEPUTY DIRECTOR

May 16, 1996

Mr. Scott Ezer
Helber Hastert and Fee Planners
733 Bishop Street, Ste. 2590
Honolulu, Hawaii 96813

Dear Mr. Ezer:

Subject: Queen's Beach Golf Course

This is in response to the request for comments on the Queen's Beach Golf Course Environmental Impact Statement Preparation Notice.

The property is one of the twelve parcels involved in the proposed settlement for litigation concerning properties in the Hawaii Kai region featured in the Hawaii Kai Environmental Impact Report Preparation Notice.

The proposed lawsuit settlement seeks to delete the affordable housing requirements of the unilateral agreement under Ordinance 86-88 and release the developer from requirements mandated under the affordable housing plan. We strongly disagree and insist that the affordable housing component be retained. We believe that all income groups must be integrated into residential neighborhoods to achieve sound community development. We recommend that a minimum of 30 percent of the total residential units proposed for development be available to households below 120 percent of median income as follows: 10 percent for families below 80 percent of the median income and 20 percent for families between 80 and 120 percent of the median income. We are open to discuss an in-kind substitution of cash or land in lieu of the affordable housing units. In addition, the developer should provide for special needs housing units, such as group homes, to be dispersed throughout the Hawaii Kai community.

We also request that the environmental impact report include comprehensive economic analysis valuing the concessions of the City versus the "loss" incurred by the land owners. This analysis is essential to any review of the proposed settlement.

Please have the developer contact our Housing Development Division at 523-4624 for further discussion of our affordable housing requirements. The Department would also like to be afforded an opportunity to review the Draft Environmental Impact Report.

Thank you for the opportunity to comment.

Sincerely,

ROLAND D. LIBBY, JR.
Director

cc: Mr. Patrick Onishi, Department of Land Utilization

Helber Hastert
Planners

July 8, 1996

Mr. Roland D. Libby, Jr.
Director
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, HI 96813

Dear Mr. Libby:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 16, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

We note your comment letter is identical to your letter of March 20, 1996 submitted to Mr. William Wanket concerning the environmental impact report preparation notice (EIRPN) (dated January 1996) which covers the twelve separate projects involving the proposed settlement. These comments are related to a unilateral agreement (Ordinance 86-88) affecting other properties in the settlement and affordable housing requirements that are unrelated to the proposed golf course. Therefore, we believe the comments are directed at the proposed settlement and they are not pertinent to the EISPN which was the subject of the notice of availability circulated on April 5 by Mr. Onishi.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

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Grosvenor Center, Mauka Tower
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DEPARTMENT OF LAND UTILIZATION

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 523-4432

JEREMY HARRIS
MAYOR

PATRICK T. ONISHI
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

96/SMA-024(ASK)

May 23, 1996

MAY 24

Mr. Scott Ezer
Helber Hastert & Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Ezer:

Environmental Impact Statement Preparation Notice (EISPN)
Queens Beach Golf Course
Tax Map Keys: 3-9-11: 03, por. 02

We are transmitting our comments and copies of those received during the 30-day public comment period relating to the above-referenced project.

Provisions of Chapter 25, Revised Ordinances of Honolulu (ROH) require that you respond in writing to these and any other comments which were received during the comment period which began with the publication of the EISPN in The Environmental Notice on March 8, 1996.

Our comments on the EISPN are as follows:

1. Master Plan

The location of the comfort stations mentioned in Section 3.4 "Water Disposal" on page 15 should be shown on the Conceptual Golf Course Plan.

We understand that the structures identified as "public facilities" on the Conceptual Golf Course Plan are not part of the proposed project. As such, they should not be shown on the Plan.

The concept of a "links" type of golf course should be clarified. Describe how this differs from the traditional golf course design.

2. Public Access

Page 9 of the EISPN indicates that the 29 acres of land on the western side of Kaloko Inlet will be set aside as park land for use by the general public. The Draft Environmental Impact Statement (DEIS) should clarify the term "set aside". Does this mean fee dedication to the City? If dedication to the City for public park use is contemplated, we recommend that you contact the City Department of Parks and Recreation to initiate development planning.

Page 9 of the EISPN indicates that a "second trail to the ocean would be provided along the existing lighthouse access road...". While we welcome the public beach access which is being proposed near the Kahoohaihai Inlet, the DEIS should expand on the following relative to this proposed trail:

- Is this trail intended to be open to the public?
- How will users gain access to the trail?

Page 9 of the EISPN indicates that pedestrian trails to and along the ocean will be provided. The DEIS should describe in detail how the access will be provided given the existing inlets and drainage ditches. Will bridges be provided? Will the pedestrian access be located seaward of the shoreline or on the privately owned property?

3. Views

According to the 1987 Coastal View Study, the Koko Head viewshed which includes the project area offers a vivid and intact visual experience. The DEIS should assess visual impacts to mauka and makai views of the proposed project as seen from public viewing areas, including the highway, lookouts and shoreline area. Mitigation measures should be discussed.

The DEIS should describe the potential impact of overhead utility lines and other proposed structures, including the club house and comfort stations.

4. Grading and Drainage

The DEIS should describe proposed grading and anticipated impacts. Construction impacts and proposed mitigation measures should be described.

If possible, preliminary grading plans should be provided as part of the Special Management Area Use Permit (SMP).

Page 16 of the EISPN notes that naturally occurring soils are either extremely rocky or clay-like, and deposited materials include boulders, soils and dredged material. The DEIS must discuss the types of alterations, soil amendments and fill required to render the site developable for a golf course. What type of soil amendment and in what volumes, if any, will be added to the area?

Will there be any alterations, including grubbing or landscaping, within the 40-foot shoreline setback area?

5. Drainage

The DEIS should describe how drainage patterns will be altered by the proposal. How will the proposal alter the characteristics of stormwater runoff?

We generally encourage measures to retain and detain stormwater runoff on site, as this practice can reduce impacts to coastal waters.

We understand that stormwater currently percolates on site or sheet flows to low areas. The DEIS should explain the types of drainage facilities that will be installed on the project site and how these will change drainage patterns. The DEIS should describe design features, mitigation measures or management practices that will be used to minimize the impact of stormwater discharge/drainage for the proposed golf course, as well as drainage from upland areas.

6. Water Quality

The DEIS should assess potential impacts to water resources, including surface, coastal and ground water. This discussion should address the potential impacts of stormwater runoff, irrigation and leaching. Both construction and operation phases of the project must be addressed.

Existing drainage ways, streams and wetlands should be identified. Potential impacts to these features and any coastal resources they support should be disclosed in the DEIS. Mitigation measures should be described in the DEIS.

We recommend that wetland determination by the U.S. Army Corps be made prior to finalizing the DEIS; delineated wetlands should be identified in the DEIS.

7. Non-potable Water

What type of infrastructure will be needed to transmit treated effluent from the Hawaii Kai Wastewater Treatment Plant to the Queen's Beach Golf Course? If possible, the approximate location, size and type of effluent holding ponds should be described.

Will the required volume and quality of effluent be available to the golf course project?

The DEIS should identify alternatives to the use of effluent should the volume or quality be lacking.

8. Wastewater

The DEIS should identify the infrastructure needed to accommodate the projected wastewater flows. What impact will the increased flows have on the Hawaii Kai Treatment Plant, its treatment capacity and discharge volumes?

9. Archaeological

Page 31 of the EISPN states that subsurface cultural or agricultural resources are likely to be found within the inland area or in the existing stand of beach vegetation. The DEIS should describe potential impacts and proposed mitigation to these resources.

10. Coastal Ecosystems

The DEIS should identify endangered species or "species of concern" that may exist on the site; the potential project-related impacts to these species; and proposed mitigation.

Should you have any questions regarding the above, please contact Ardis Shaw-Kim of our staff at 527-5349.

Very truly yours,

PATRICK T. ONISHI
Director of Land Utilization

PTO:am
Encl.
cc: Office of Environmental Quality Control

A:queen1.ass
O:queen1.ask

Heller Hastert
Planners

July 8, 1996

Mr. Patrick T. Onishi, Director
Department of Land Utilization
650 South King Street, 7th Floor
Honolulu, HI 96813

Dear Mr. Onishi:

Environmental Impact Statement Preparation Notice
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated May 23, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the draft environmental impact statement (DEIS) being prepared.

You offer a number a comments in your correspondence. For ease of reference we provide the following responses in the order the subject appears in your letter.

1. **Master Plan**

Comfort stations. The Conceptual Golf Course Plan will be amended to identify the location of the two comfort stations mentioned in Section 3.4 of the EISPN.

Public facilities. You are correct in your understanding that the public facilities shown on the Conceptual Golf Course Plan are not part of the proposed project. Consequently, they will be deleted from the plan.

"Links" golf course. The DEIS will include a more complete description of the design approach for the proposed golf course.

2. **Public Access**

Kaloko 29 acres. The DEIS will clarify the position of the landowner (Kamehameha Schools Bernice Pauahi Bishop Estate) and the applicant (Kaiser Aluminum and Chemical Corporation) relative to the 29 acres identified to be "set aside" for public use. In general, it is intended that this acreage be left undeveloped for three reasons:

- future development by the City and County of Honolulu as a public park;
- public access to and along the shoreline; and
- protection of important native beach strand vegetation.

Neither the landowner nor the applicant intends to develop any facilities in this area, except for portions of a beach trail which will be constructed by the applicant. The exact

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nature of the City's interest in the property will need to be resolved between the landowner and the City.

Second beach trail. This trail is intended to be open to the public. Access to this trail would branch off from the lighthouse access road.

Beach trail access. The DEIS will describe the beach trail system in more detail.

3. **Views**

Visual assessment. The DEIS will assess visual impacts to mauka and makai views of the proposed project as seen from public viewing areas. As appropriate, mitigation measures will also be discussed. The visual analysis will include the proposed club house and comfort stations. Concerning overhead utility lines, all utility lines for the proposed project will be placed underground. There are existing overhead utility lines on the property for Hawaiian Electric Company and Hawaiian Telephone. These lines will have to be relocated. A decision as to whether these lines will be overhead or underground is not up to the landowner or the applicant.

4. **Grading and Drainage**

Proposed grading. The DEIS will describe proposed grading and impacts in general terms. More detailed grading plans will be prepared in conjunction with the application for a grading permit.

Soil alterations/amendments/fill. The exact nature of soil alterations, amendments and fill required to construct the golf course will not be determined until a more detailed grading plan is developed for the grading permit. As with any project of this scale, shaping of the course will require earth movement. Soil from one area may be used in another area of the course. However, until a more detailed grading plan is prepared, these questions cannot be answered.

Shoreline setback area. At this time, no work is proposed within the shoreline setback area.

5. **Drainage**

Drainage patterns. The DEIS will discuss drainage in general terms. Included in this discussion will be design features, mitigation measures or management practices that will be used to minimize the impact of stormwater discharge/drainage for the proposed golf course.

You also suggest that analysis be included for upland areas. If reference here is to other properties within the drainage basin, we must stipulate that we have no control as to how much stormwater is generated as a result of other projects. We do not believe improvements designed for the proposed golf course should assume responsibility for these projects.

6. Water Quality

Impacts to water resources. The DEIS will discuss potential impacts to water resources, including surface, coastal and ground water.

Drainage ways/streams/wetlands. Any such features on the project site will be identified and assessed for potential impacts and appropriate mitigation measures.

Wetland determination. At this time, we assume you are in receipt of a copy of a letter from the U.S. Army Corps of Engineers (COE) which concludes that no wetlands are present on the project site. We appreciate the time that Ardis Shaw-Kim of your staff spent in the field with our botanist (Winona Char) and representatives of the U.S. Fish and Wildlife Service and the COE. The correspondence from the COE will be referenced in the DEIS.

7. Non-potable water

Necessary infrastructure. The infrastructure necessary to transmit treated effluent from the Hawaii Kai Wastewater Treatment Plant to the proposed golf course will described in the DEIS.

Volume of effluent. The volume and quality of the treated effluent required for irrigation will be discussed in the DEIS.

Alternatives to effluent. There is only one viable alternative to the complete replacement of treated effluent as a source of irrigation: domestic potable water. The conditions under which this scenario would be realized will be discussed in the DEIS.

8. Wastewater

Infrastructure. The DEIS will discuss the infrastructure needed to accommodate projected wastewater flows from the project and its impact on the Hawaii Kai Wastewater Treatment Plant.

9. Archaeology

Subsurface cultural deposits. Page 31 of the EISPN refers to "cultural or agricultural deposits" that may remain intact within inland areas. The DEIS will have a full description of all known archaeological and cultural resources that have been identified within the project site, as well as potential impacts and proposed mitigation measures for these resources.

10. Coastal ecosystems

Important species. The DEIS will include a full discussion of all important species known at the project site and how the proposed project may impact these species Appropriate mitigation measures will also be discussed.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, KACC
Rochelle Arquette, KSBE

Chapter

13

Consulted Parties and Participants in the Final EIS Preparation Process

CHAPTER 13
CONSULTED PARTIES AND PARTICIPANTS IN THE FINAL EIS PREPARATION PROCESS

Notice of the availability of the Draft Environmental Impact Statement was published in the October 8 edition of *The Environmental*, commencing a 45-day public review period which ended on November 23, 1996. A copy of the draft environmental impact statement (DEIS) was mailed to the agencies and organizations listed below. The list contains parties believed to have an interest in the project.

A total of 42 agencies, organizations or individuals provided written comments on the DEIS. The parties who responded to the EISPN are identified by an asterisk (*) and their respective comments are reproduced in the following pages, along with response letters to the comments.

Federal Agencies

Naval Base Pearl Harbor*
U.S. Army Support Command Hawaii
U.S. Environmental Protection Agency Region IX
U.S. Department of Transportation
- Federal Highway Administration
- Commander, U.S. Coast Guard

U.S. Environmental Protection Agency
U.S. Army Engineering Division, Honolulu
- Department of the Army*

Department of the Interior
- Fish and Wildlife Service*
- Geological Survey*

Department of Agriculture*
Department of Commerce, National Oceanic and Atmospheric Administration,
- National Fisheries Service

State Agencies

Kaneohe Regional Library
Pearl City Regional Library
Kauai Regional Library
Kahului Regional Library
Legislative Reference Bureau Library
Aina Haina Public Library
State Main Library
Hilo Regional library
Hawaii Kai Public Library
Kaimuki Regional Library
Hawaii Community Development Authority
Department of Budget and Finance
- Director
- Public Utilities Commission
- Housing Finance and Development Corporation*

Department of Business, Economic Development and Tourism
- Director
- Librarian
- Energy Division
- Land Use Commission *

Department of Education *
Department of Health
- Director*
- Office of Environmental Quality Control *

Office of Hawaiian Affairs
University of Hawaii
- Water Resources Research Center
- Hamilton Library
- Environmental Center*

Department of Transportation
Department of Land and Natural Resources
- Director*
- State Historic Preservation Division *

Department of Agriculture
Department of Accounting and General Services*
- Comptroller
- State Archivist

Office of State Planning *
Department of Human Services, Hawaii Housing Authority
Department of Defense*

Hawaii Air National Guard*

State Agencies (continued)

Oahu Metropolitan Planning Organization
State Department of Hawaiian Home Lands

City and County of Honolulu

Hawaii Kai Neighborhood Board #1*
Waialae/Kahala Neighborhood Board #3
Waimanalo Neighborhood Board #32*
Kuliouou/Kalani Iki Neighborhood Board
Building Department *
Department of Parks and Recreation *
Police Department *
Department of Land Utilization*
Board of Water Supply *
Planning Department *
Department of Public Works*
Department of Transportation Services *
Oahu Civil Defense Agency
Honolulu Public Transit Authority*
Department of Wastewater Management *
Department of Human Resources
Fire Department *
Department of Housing and Community Development *
Municipal Records and Reference Center

Other Agencies, Organizations and Individuals

Aina Haina Community Association
Aina Haina Professional and Businessmen Association
American Lung Association of Hawaii
Hawaii Kai Community Council
Hawaii Kai Marina Community Association
Hawaii Society/The AIA
Hawaii's Thousand Friends*
Honolulu Advertiser
Honolulu Star-Bulletin
Ka Iwi Alliance*
Koko Isle Homeowner's Association
Land Use Research Foundation

Other Agencies, Organizations and Individuals (continued)

League of Women Voters *
Life of the Land
Maunalua Triangle/Koko Kai Community Association
Marina West Community Association
Niu Peninsula Community Association
Outdoor Circle *
Portlock Community Association
Save our Surf
Save Sandy Beach
Sierra Club, Hawaii Chapter*
Spinnaker Isle Association
Sun Press Newspapers
The Chamber of Commerce of Hawaii
Mr. Thomas Nitta
Ms. Lois McAllister
Ms. Margaret Peg Aurand
Hawaiian Electric Company, Inc.
The Anchorage Community
Councilmember Andrew Mirikatani
Councilmember Rene Mansho
Councilmember John Henry Felix
Councilmember Mufi Hanneman
Councilmember Steve Holmes
Councilmember Duke Bainum
Councilmember John DeSoto
Councilmember Jon Yoshimura
Councilmember Donna Kim
Scenic Hawaii, Inc.*
Mr. Bruce I. Fisher
GTE Hawaiian Tel
Senator Whitney Anderson
Senator Donna Ikeda
Senator Matt Matsunaga
Representative Eve Anderson
Representative David Stegmaier
Mr. Douglas T.K. Pang
American Planning Association , Hawaii Chapter
East Honolulu Community Services*
Mr. Quincy Kaneshiro
Mr. Robert J. Speck

Other Agencies, Organizations and Individuals (continued)

Ms. Linda W.L. Starr*
Ms. Theresa Cabrera*
Mr. Warner Kimo Sutton*
Mr. Richard T. Tsukamoto
Mr. William Bailey*
Mr. Charles S. Wallace
Representative Gene Ward
Mr. David J. Wellhouse
Kamilionui Farmers Cooperative
ASLA
Ms. Patricia Tummons
Mr. Robert Fowler*
Mr. Alfred Kirchner
Mr. Darrell Large
Mr. Robert E. Clark
Mr. James Marcus*
Mr. Aaron Ishii
Mr. Richard Miller
Mr. Kem Lowrey
Ms. Piilani Kaopuiki

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
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JEREMY HARRIS
MAYOR

PATRICK T. ONISHI
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

96/SMA-024(ASK)

December 2, 1996

Mr. Scott Ezer
Helber Hastert & Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Dear Mr. Ezer:

Draft Environmental Impact Statement (EIS)
Queen's Beach Golf Course
Tax Map Keys: 3-9-11: 03, por. 02

We are transmitting our comments and copies of those received during the 45-day public comment period relating to the above-referenced project.

Provisions of Chapter 25, Revised Ordinances of Honolulu (ROH) require that you respond in writing to these and any other comments which were received during the comment period which began with the publication of a notice of availability of the Draft EIS in the Environmental Notice on October 8, 1996.

Our comments on the Draft EIS are as follows:

1. Master Plan

Will any of the facilities be used at night and what type of lighting will be installed?

The shoreline access trail, referred to on page 6-19 of the Draft EIS, should be shown on the Master Plan.

It is the opinion of the Department of Parks and Recreation (DPR) that parking along Kalanianaole Highway to gain access to the shoreline via the proposed access trail along the U.S. Coast Guard's access road is unreasonable. We suggest that alternative parking arrangements be discussed.

2. Coastal Ecosystems

Section 4.5.3 of the Draft EIS states that "Areas which support high concentrations of native species will need to be preserved and managed". In addition to preservation of the *Marsilea villosa*, recommendations found on page 4-22 call for preservation of the area with a high density of *Ha'o*. Although the *Ha'o* is not endangered, its protection is important in part because the Hawaiian snout beetle, a "species of concern", is limited to this host plant.

Page 4-21 of the Draft EIS indicates that coastal strand vegetation will be left intact.

The Final EIS should provide some idea of the location and total area that will be set aside for preservation. Areas proposed for preservation should be on the Master Plan.

We also suggest that other elements of a preservation plan be discussed to better establish the viability of the proposed mitigation.

3. Public Access

It is unclear as to what is intended for the 29-acre area that is identified as a "future park" on Figure 6.

The Environmental Impact Statement Preparation Notice (EISPN) (page 9) states that this area "...will be set aside as park land for use by the general public".

Page 6-19 of the Draft EIS notes that "A 29-acre area...would be set aside for **possible future park use...**". The footnote states in part "This means that the property will remain undeveloped". We can only interpret this to mean that any **future use**, including development of a public park, would be possible.

Page 3-12 of the Draft EIS states that the 29 acres will be set aside for "...possible future development by the City and County of Honolulu", and yet elsewhere it is noted that "There have been no formal discussions involving the landowner, lessee and the City and County of Honolulu regarding the future use of this 29-acre area". While it is generally recognized that the shoreline offers valuable ocean-related recreational opportunities, the feasibility of public park use should be discussed, at least preliminarily, with the DPR before environmental documents can realistically present this as a future park area.

It is not sufficient to cite the grading ordinance as mitigation for storm water impacts, siltation, flood and pollution control. Specific best management practices and a description of how they will be implemented on this site must be described.

The Draft EIS assumes that there will be no change in storm runoff after development of the golf course, except for the clubhouse area (Section 6.4.2). This statement must be supported.

7. Drainage

The Final EIS should describe how drainage patterns will be altered by the proposal. How will the proposal alter the characteristics of storm water runoff?

The Draft EIS notes that most of the storm water runoff within the tributary area is directed to a 15-foot wide unlined channel which extends into the east finger of Ka'ili'ili Bay. Other off-site runoff flows to the site via six inlets and two box culverts along Kalanianaole Highway. In reviewing 1967 aerial photos, we note what appears to be a drainage ditch which cuts across the property toward Ka'ili'ili Bay. Although this feature is mentioned on page 6-12 of the Draft EIS, its effect on drainage patterns is not clearly shown in Figure 16 (due perhaps to the small scale of the figure).

This ditch (if it still exists) and other open drainage ways should be identified and their function described in the Final EIS. The location of the 70-foot wide drainage easement and 200-foot wide overflow channel mentioned on page 6.12 of the Draft EIS should be shown on maps to be included with the Final EIS. The Final EIS must disclose how changes in contours might alter these drainage patterns.

The Hawaii Kai Properties Draft EIR indicates that storm water runoff from proposed upland development will be directed to the Kalama Valley Drainage Channel. This channel empties into a major concrete-lined channel which leads to an unlined stream channel on the Queen's Beach site before overflowing into the ocean. Drainage, and the impacts of storm water discharge to water quality and coastal ecosystems, should be discussed in the context of cumulative impacts. Storm water runoff from the proposed golf course should be placed in the context of storm water runoff from the tributary area.

The Final EIS should identify the location of this drainage way. The cumulative impacts of the storm water runoff from the golf course and proposed future urban runoff should be included in the Final EIS.

Changes in the drainage patterns could potentially impact the ability of *Marsilea villosa* to thrive. This consideration should not be overlooked in developing plans for grading and drainage.

Section 4.2.2 states that "Some areas of the site will be adjusted to provide depressions and water features to collect storm water runoff, thereby reducing runoff and erosion". We generally encourage measures to retain and detain storm water runoff on-site, as this practice can reduce impacts to coastal waters. The features mentioned in Section 4.2.2 should be identified on a preliminary drainage plan to be included with the Final EIS.

We understand that storm water currently percolates on-site or sheet flows to low areas. The Final EIS should explain the types of drainage facilities that will be installed on the project site and how these will change drainage patterns. The Final EIS should describe design features, mitigation measures or management practices that will be used to minimize the impact of storm water discharge/drainage for the proposed golf course, as well as drainage from upland areas.

8. Non-potable Water

Page 13 of the EISPN indicates that irrigation water will be pumped to "a holding pond (or ponds)". If this is still part of the proposal, the approximate location, size and type of effluent holding ponds should be described. These ponds should be shown on the Five-Year Master Plan.

9. Archaeological Resources

The Draft EIS states that it is possible that unknown and undiscovered intact cultural or agricultural deposits still remain in some areas of the project site (page 4-40) and that an inventory survey be conducted prior to construction. We recommend that the survey be conducted and included in the Final EIS so that existing resources and potential impacts can be more fully described.

Should you have any questions regarding the above, please contact Ardis Shaw-Kim of our staff at 527-5349.

Very truly yours,

PATRICK T. ONISHI
Director of Land Utilization

PTO:am
Encls.

cc: Office of Environmental Quality Control
Department of Parks and Recreation

A:queen2.ast
G:queen2.ask

The Final EIS should identify the location of this drainage way. The cumulative impacts of the storm water runoff from the golf course and proposed future urban runoff should be included in the Final EIS.

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Should you have any questions regarding the above, please contact Ardis Shaw-Kim of our staff at 527-5349.

Very truly yours,

PATRICK T. ONISHI
Director of Land Utilization

PTO:am
Encls.

cc: Office of Environmental Quality Control
Department of Parks and Recreation

A:queen2.ess
G:queen2.ask

Heller Hastert
Hawaii

October 1 , 1997

Ms. Jan Naoe Sullivan, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Ms. Sullivan:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for the letter dated December 2, 1996 on the above draft environmental impact statement (DEIS). the letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to your comments in the order they appear in your letter.

Master Plan

Lighting. Neither the golf course nor the driving range will be used at night. It is probable that the clubhouse will be open into the early evening hours to accommodate golfers who finish their rounds at the end of the day. Therefore, the parking lot will need to be lighted, as will the area around the clubhouse and the maintenance shed. Lighting for these two buildings, as well as lighting for the clubhouse, would be for security reasons.

Shoreline Trail. The shoreline access trail will be shown on the Master Plan.

Alternative Parking for the Coast Guard Access Road. We note your comment that it is the opinion Department of Parks and Recreation (DPR) that current parking arrangements (along Kalanianaole Highway) for hikers on the Coast Guard Access Road are unreasonable, and that you suggest that alternative parking arrangements be discussed. We also note that we received similar comments from others, including the Department of Land and Natural Resources (DLNR).

In regard to alternative parking arrangements, we point out that the City and County currently owns TMK 3-9-11:6 (the Makapu'u Lookout), which is about 28,000 square feet in area. Assuming a rough estimate of 350 square feet per parking space (including aisles), it is possible to develop up to about 80 parking stalls at the Makapu'u Lookout. As we

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suggested to DLNR, a spur trail could then be constructed to connect this parking lot with the Coast Guard Access Road, above the proposed golf course. Not only would this eliminate parking problems for hikers, it would also improve existing unreasonable and unsafe parking conditions at the Makapu'u Lookout.

Coastal Ecosystems

The FEIS will identify the existing areas of high density for the ma'o plant, incorporating the information shown in Figure 2 of Appendix D, the botanical survey conducted by Char & Associates. According to this graphic, the land area comprising the high density of ma'o totals approximately 3.5 acres. The layout of the 16th, 17th and 18th holes will be adjusted and included in the FEIS, to retain as much of this area of ma'o intact as possible. In addition, land contiguous to the high density area, between the holes, will be planted with new ma'o to provide a larger habitat for this plant. According to Winona Char, the ma'o is relatively easy to cultivate and is currently used as landscape material at the Honolulu Zoo, Foster Botanical Garden, the Waikiki Aquarium, and at residences throughout Oahu. It is important that new ma'o be contiguous to existing plants, to allow the Hawaii snout beetle (*Rhyncogonus simplex*) the opportunity to reach them, because the beetle is flightless.

Public Access

In order to clarify the status of the 29 acres west of Kaloko Inlet, we will remove it from the Master Plan, as it is not the intent of the applicant to develop a park, or anything else, at this location. The discussion of a park at Kaloko was an integral element of the negotiations for the settlement process, which has since been terminated by the City Council (Resolution 97-09). If, at any point in the future, the City and County (or the State) wishes to develop a park at this location, we would encourage City (and/or State) officials to contact representatives of Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE) and Kaiser Aluminum and Chemical Corporation (KACC) to begin discussions regarding a "friendly" condemnation of the acreage. The FEIS will only refer to this area as the 29 acres of land west of Kaloko Inlet that will remain undeveloped.

Shoreline Access

As stated above, the FEIS will include a more detailed description of the pedestrian trails to and along the ocean. The existing Wawamalu Bridge would provide access across Kaloko Inlet. A second bridge would need to be constructed at the makai end of the drainage channel that empties into the eastern end of Ka'ili'ili Bay. This bridge would be constructed

and maintained by the applicant. Portions of the trail would be makai of the shoreline, dependent on the location of the shoreline.

In regard to alternative parking for the Coast Guard Access Road, we refer you to our response under "Master Plan," above.

Views

The FEIS will include additional visual analysis of the proposed golf course, as suggested and clarified in your letter of February 14. We will include a computer simulation of the vegetation changes in the golf course from additional vantage points. These will be found in Figure 15 of the FEIS. We will also include section views from some selected points, to indicate relative relationships between structures, the highway and other landforms. These section views will be found in Figure 16 of the FEIS.

Grading and Drainage

Your comment letter of December 2, 1996, and subsequent letter of February 14, 1997, outlined the information you wanted to be included in the FEIS. As a result of your comments, as well as similar comments from others, we asked Sam O. Hirota, Inc. to prepare a drainage and grading report for the proposed golf course that responds to your concerns. This report has been prepared and will be attached to the FEIS as Appendix N. The findings of the report will be summarized in Sections 4.2 and 6.4 of the FEIS.

Non-potable Water

Figure 6, which represents the conceptual golf course plan and 5-year master plan, will be amended in the FEIS to include two irrigation ponds that would store reclaimed water. One pond, between the 15th and the 18th holes would store approximately 3.9 million gallons of reclaimed water and encompasses 1.7 acres of the site. The second pond is located between the 4th, 7th, and 8th holes and would store approximately 2.4 million gallons of reclaimed water and encompasses 1.2 acres of the site. Typically, both ponds would have an average depth of 8 feet. A fabric-reinforced thermoplastic liner would be places on the bottom of both ponds covering a layer of sand on soil. Boulders would be placed at the pond edges to prevent erosion.

Archaeological Resources

An archaeological inventory survey was conducted at Queen's Beach by Cultural Surveys Hawaii and reviewed and accepted by the State Historic Preservation Officer. On the basis of this survey, which will be discussed in Section 4.10 of the FEIS and included as Appendix H, no additional archaeological sites or archaeological deposits were identified. The survey included a 100% coverage of the project site and excavation of several trenches. Interestingly, no physical evidence of the old "King's Highway" was found on the project site. The apparent absence of this road remnant can probably be attributed to the removal of rocks by moss rock gatherers, as was observed by Marion Kelley in 1984. All available information was documented for this site remnant and it is considered no longer significant.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer

Scott Ezer
Senior Associate

cc: Robert Burke, KACC

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 8TH FLOOR • HONOLULU, HAWAII 96813
PHONE (808) 523-4427 • FAX (808) 527-5896

RECEIVE
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JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR

ROBERT AGRES JR.
DEPUTY DIRECTOR

November 22, 1996

MEMORANDUM

TO: Patrick Onishi, Director
Department of Land Utilization

ATTENTION: Ardis Shaw-Kim

FROM: Roland D. Libby, Jr., Director

SUBJECT: Queen's Beach Golf Course

This is in response to the request for comments on the Queen's Beach Golf Course Draft Environmental Impact Statement (DEIS). The DEIS describes and assesses a proposal for the development of an 18-hole golf course, clubhouse and accessory facilities on 129 acres of land located at TMK 3-9-11:3 por. 2.

The property is one of several parcels involved in the proposed settlement for litigation concerning properties in the Hawaii Kai region. The Queen's Beach Golf Course is being proposed independently and also as part of the settlement agreement. The developer has stated that it is moving forward with a separate application for the golf course to protect property interests should a settlement not be reached.

There exist outstanding commitments to deliver affordable housing in connection with properties involved in the settlement. We referred to these requirements in our previous review of the Environmental Impact Statement Preparation Notice and stated that these affordable housing components should be retained. In response, the preparer stated that the Department's comments related to a unilateral agreement (Ordinance 86-88) affecting other properties in the settlement and were unrelated to the proposed golf course.

We understand how one could conclude, on face value, that the Unilateral Agreement for other properties is unrelated to the golf course proposal. However, we view the proposal as one component in the applicants' overall strategy to gain entitlements for property in the Hawaii Kai community. Therefore, when the decision-makers consider whether this application should be granted, we think the respective developers' lack of performance on promises for other areas of the community is relevant to this proposal.

ROLAND D. LIBBY
Director

cc: Kaiser Aluminum and Chemical Corporation
Helber Hastert & Fee, Planners

Helber Hastert
Planners

October 1, 1997

Mr. Robert Agres Jr., Director
Department of Housing and Community Development
City and County of Honolulu
650 south King Street
Honolulu, Hi 96813

Dear Mr. Agres:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for the letter dated November 22, 1996 on the above draft environmental impact statement (DEIS). the letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

The comments in your November 22 letter pertain exclusively to outstanding commitments to deliver affordable housing in connection with other properties that were involved in the proposed settlement for litigation of several parcels in the Hawaii Kai region, one of which was the Queen's Beach property. The letter stated that because the settlement was perceived as one project, the failure of other landowners/applicants to comply with affordable housing requirements should be considered in the context of the individual request for the golf course.

Recent action by the City Council (Resolution 97-09) to terminate the settlement process makes this argument moot, since the Queen's Beach golf course is no longer connected in any way to other proposed developments. Therefore, affordable housing requirements are not appropriate in the context of the request for a Special Management Area Use Permit or a Plan Review Use Permit.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Governor Cotter, Makai Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545-2055
Facsimile: 808 545-2050

HAWAII KAI NEIGHBORHOOD BOARD NO. 1

c/o NEIGHBORHOOD COMMISSION • CITY HALL, ROOM 406 • HONOLULU, HAWAII 96813

November 20, 1996

RECEIVED
NOV 2 0 1996
HELBER HASTERT & FEE
PLANNERS

Department of Land Utilization
Honolulu Municipal Building
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Attn: Ardis Shaw-Kim
Subject: Comments on Draft Environmental Impact Statement - Queen's Beach, O'ahu, Hawaii

Dear Ms. Shaw-Kim,

The Hawaii Kai Neighborhood Board submits the following comments on the subject E.I.S.

CHAPTER 1: Paragraph 1.3; Page 1-5:
Management plan for areas containing the Marsilea Fern should include consideration of flooding which is necessary for its reproduction and avoidance of pollution of that storm water.

Paragraph 1.3, Page 1-6:
With respect to "Terrestrial Fauna," what agency will be responsible for monitoring contaminants and siltation.

Paragraph 1.3, Page 1-10:
What will be the source at the required potable water - Bishop allocation?

Zoysiagrass is mentioned here under "water supply" and in Chapter 4; pp 4-4.2. Bermuda grass is mentioned. If one is best identify it and the fertilizer and pesticides to be used.

Paragraph 1.3, Page 1-10:
In the "Recreational Facilities" section safety of hikers is discussed. Failure to ensure safety could result in litigation.

Paragraph 1.5, Page 1-13:
There is too much editorializing in the section dealing with Ka Iwi Park. The discussion should end with the third sentence.

CHAPTER 2: Paragraph 2.5, Page 2-5
The Lighthouse Access Road runs between the northern two holes and the rest of the proposed golf course. A clear statement should be included with respect to ensuring the safety of those using the road. Additionally, if the road is to continue in use provision should be made for safe parking for those using the road.

CHAPTER 3: Paragraph 3,2,1, Page 3-5:
The "Discussion" portion of Section 226-13(b)(3) should include a commitment to use

the "Best management practices---"

Paragraph 3.2-5, Page 3-12:
The park suggested for the 29 acres between Wawamalu Beach and Kaloko Inlet should be developed to City standards by the Kaiser Aluminum & Chemical Corporation and land deeded to the City by the landowner. This should be covered by a unilateral agreements at the time Kaiser is given approval to proceed. Additionally provisions should be made for parking for visitors to this proposed park.

CHAPTER 4: Paragraph 4-2.2, Page 4-2:
Does the Department of Public Works have the expertise to determine the effects of storm water collection basins on endangered species?

Paragraph 4.4.1, Page 4-9:
Although the area "off Queen's Beach is not particularly rich", it is used for educational walks by the Waikiki Aquarium and other groups and is of interest to biologists.

Paragraph 4.43, Page 4-9:
Is the "proposed" TMS the one that shall be implemented? What grass is contemplated in this system?

CHAPTER 4: Paragraph 4-10.3, Page 4-41:
If the remnant portion of the old "King's Highway is to be preserved, what provisions will be made for public access and parking?

CHAPTER 6: Paragraph 6-5.3, Page 6-14:
This paragraph contains language "These demands can be reduced by —". Other chapter sections dealing with mitigation measure use "could" or "should" or other similar conditional verbage. This should be replaced by "will" or "shall".

Paragraph 6.1.3, Page 6-6:
Reference is made to "a left hand storage lane". Clarification is required as to financial responsibility for this task.

Very Truly Yours,

Robert Fowler

Robert Fowler
Chair, Planning & Zoning Committee
Hawaii Kai Neighborhood Board

DEPARTMENT OF LAND UTILIZATION
MS. ARDIS SHAW-KIM
QUEEN'S BEACH GOLF COURSE, DRAFT EIS
PAGE 3

cc: Kaiser Aluminum and Chemical Corporation
c/o Kaiser Center, Inc.
300 Lakeside Drive, Suite 130
Oakland, California 94612-3534
Attn: Robert Burke

Herbert Hastert and Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Attn: Scott Ezer

Heller Hastert
Planners

October 1, 1997

Mr. Robert Fowler
Chair, Planning & Zoning Committee
Hawaii Kai Neighborhood Board
c/o Neighborhood Commission
City Hall, Room 400
Honolulu, HI 96813

Dear Mr. Fowler:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 20, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared. Text in italics represents your comments. Text below the italicized sections indicate our responses.

For your ease of reference we will respond to your comments in the order they appear in your letter.

1. *Management plan for areas containing the Marsilea Fern should include consideration of flooding which is necessary for its reproduction and avoidance of pollution of that storm water.*

   The relationship between the reproductive cycle of the *Marsilea villosa* and seasonal flooding is clearly recognized. Any management plan adopted for the *Marsilea villosa* must include provisions to provide for seasonal flooding. Final details related to a management plan will be carefully discussed with the U.S. Fish and Wildlife Service.

2. *With respect to "Terrestrial Fauna," what agency will be responsible for monitoring contaminants and siltation.*

   Ordinarily, any requirements related to water quality monitoring programs include the Department of Health as the responsible agency.

3. *What will be the source of the required potable water - Bishop allocation?*

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Telephone 808 545 2055
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The Board of Water Supply has informed Kaiser Aluminum and Chemical Corporation (KACC) that any potable water required for the proposed project would have to be drawn against allocations granted to Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE). However, it should be noted that in the context of the section you have offered comments on, KACC now plans to obtain less saline reclaimed water to blend with treated effluent from a package desalination plant that will be installed for the golf course on-site.

4. *Zoysiagrass is mentioned here under "water supply" and in Chapter 4; pp. 4-4.2 Bermudagrass is mentioned. If one is best identify it and the fertilizer and pesticides to be used.*

   Two turfgrass species will be used at the golf course. The language in this section of the DEIS (p. 1-10, Water Supply) clearly states that bermudagrass will be used on the greens and other turfgrasses, including zoysiagrass, which tolerate higher salinity levels, will be used elsewhere on the course (fairways and tee boxes).

   Table 1 on page 4-12 of the DEIS lists the probable pesticides to be used at the Queen's Beach Golf Course. These include: chlorpyrifos, chlorothalonil, 2,4-D, and dicamba (MSMA is listed along with these pesticides, but in a footnote comment accompanying Table 1, is not recommended for use due to high persistence of the compound and to the toxicity and potential health impacts of the breakdown products which include inorganic Arsenic).

5. *In the "Recreational Facilities" section safety of the hikers is discussed. Failure to ensure safety could result in litigation.*

   The applicant is aware of the need to carefully design the final layout of the golf course in regard to hiker safety. Safety distance relationships, difference in elevation between the hiking trail and the fairways, barrier landscaping, low fencing where appropriate, and fairway alignment, will all be considered during final design. In fact, as a result of the many comments we received on this subject, we have reconfigured the 1st, 2nd, 3rd, 17th and 18th holes to provide a greater separation distance from the shoreline. These changes will be reflected in a revised Figure 6 in the FEIS.

6. *There is too much editorializing in the section dealing with Ka Iwi Park. The discussion should end with the third sentence.*

The sentences identified as "editorial" describe the financial circumstances surrounding the possible condemnation of the project site to implement the Ka Iwi State Park, as proposed by the Department of Land and Natural Resources. They are merely statement of facts.

7. *The Lighthouse Access Road runs between the northern two holes and the rest of the proposed golf course. A clear statement should be included with respect to ensuring the safety of those using the road. Additionally, if the road is to continue in use provision should be made for safe parking for those using the road.*

Similar to the response to comment #5, above, the applicant is aware of the need to provide adequate safety precautions for those individuals who use the access road. It may be necessary to erect a low fence along the road mauka of the 13th hole. At this time, the applicant has no plans to provide additional parking for hikers in the vicinity of the access road.

8. *The "Discussion" portion of Section 226-13(b)(3) should include a commitment to use the "Best management practices---"*

The "Discussion" portion of this section will be amended to reflect a commitment to use "best management practices" that include the ability to reduce or eliminate negative impacts to groundwater resources.

9. *The park suggested for the 29 acres between Wawamalu Beach and Kaloko Inlet should be developed to City standards by the Kaiser Aluminum and Chemical Corporation and land deeded to the City by the landowner. This should be covered by a unilateral agreement at the time Kaiser is given approval to proceed. Additionally, provisions should be made for parking for visitors to this proposed park.*

We have received several comments concerning the status of the 29 acres on the west side of Kaloko Inlet. In order to clearly define the project that is the subject of the EIS, the FEIS will not include a reference to a proposed or future park at Kaloko. The applicant and the landowner do not intend to develop this area, either as a park or as part of the golf course. Access along the shoreline will be allowed for pedestrians through this area, but no parking or other park-related facilities will be constructed by the applicant.

10. *Does the Department of Public Works have the expertise to determine the effects of storm water collection basins on endangered species?*

We cannot speak for the Director of the Department of Public Works (DPW) However, ordinarily, DPW reviews plans for collection basins to ensure they are constructed according to recognized standards that will minimize flooding and impacts due to siltation. Other agencies, such as the U.S. Fish and Wildlife Service, the Division of Forestry and Wildlife (DLNR) and the U.S. Army Corps of Engineers have more expertise in assessing issues related to endangered species

11. *Although the area "off Queen's Beach is not particularly rich," it is used for educational walks by the Waikiki Aquarium and other groups and is of interest to biologists.*

The phrase referenced in your comment is included in the DEIS as a descriptor of the reef fish community structure, and was not meant to imply that the shoreline area lacked biological richness or importance. In fact, the discussion in Section 4.5 describes the area along the shoreline as dominated by native species. It is no wonder that the Waikiki Aquarium and other groups use this stretch of shoreline for educational walks. And, they will be able to continue doing so after the golf course is constructed.

12. *Is the "proposed" TMS the one that shall be implemented? What grass is contemplated in this system?*

The discussion in this section of the DEIS provides the framework to develop a TMS that is tailored specifically for the Queen's Beach site. As discussed in #4, above, bermudagrass is planned for the greens, and a salt-tolerant turfgrass, such as zoysiagrass, is planned for the fairways and tee boxes.

13. *If the remnant portion of the "Old King's Highway" is to be preserved, what provisions will be made for public access and parking?*

An archaeological inventory survey for the project site was recently completed and accepted by the State Historic Preservation Officer. One of the purposes of the survey was to determine the significance of the historic sites found on the property. The inventory survey, prepared by Cultural Surveys Hawaii, concluded that this road remnant has undergone steady deterioration over the years, to the point that no physical structure of road remains. Apparently, as feared by Marion Kelley in 1984,

moss-rock pickers have removed the rocks that made up the road. Cultural Surveys Hawaii has determined, and the State Historic Preservation Officer has agreed, that the site is no longer significant.

14. *This paragraph contains language "These demands can reduced by—." Other chapter sections dealing with mitigation measure use "could" or "should" or other similar conditional verbiage. This should be replaced by "will" or "shall."*

The main purpose of the EIS is to identify potential environmental impacts associated with the proposed project and suggest measures to mitigate these impacts. It is up to the approving agency (in this case the Department of Land Utilization) to determine the appropriateness of the suggested mitigation measures and require their application.

15. *Reference is made to a "left hand storage lane." Clarification is required as to financial responsibility for this task.*

The financial responsibility to construct a left turn storage lane for the golf course will be borne solely by the applicant.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

EAST HONOLULU COMMUNITY SERVICES, INC.

November 18, 1996

Ms. Ardis Shaw-Kim
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Re: **Queen's Beach Golf Course**
Draft Environmental Impact Statement (DEIS)

Dear Ms. Shaw-Kim:

Following is our response to the subject DEIS.

The DEIS makes references to the Hawaii Kai Wastewater Treatment Plant in Chapters 1 and 6. It should have referenced the East Honolulu Wastewater Treatment Plant.

On page 6-7, top paragraph, the 3.7 MGD of wastewater produced includes Kuliouou and Paiko. The ocean outfall effluent discharge is about 1,500 ft. offshore from Sandy Beach. The 3,000 ft. distance is also incorrectly mentioned in the last paragraph of page 6-9.

Very truly yours,

Michael M. Morita
Senior Project Manager

MMM:bri

cc: Robert Burke
Scott Ezer

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Helber Hastert
Planners

October 1, 1997

Mr. Michael M. Morita
Senior Project Manager
East Honolulu Services, Inc.
P.O. Box 25007
6600 Kalanianaole Highway, Suite 300
Honolulu, HI 96825

Dear Mr. Morita:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 18, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

You note that references in the DEIS to the Hawaii Kai Wastewater Treatment Plant should be changed to the East Honolulu Wastewater Treatment Plant. These revisions will be included in the FEIS.

You also note that the average 3.7 MGD of wastewater produced includes Kuliouou and Paiko and that the ocean outfall discharge is about 1,500 feet offshore from Sandy Beach instead of the 3,000 feet distance mentioned in the DEIS. These changes will also be included in the FEIS.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke
Jan Sullivan

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545-2055
Facsimile: 808 545-2050

Scott Ezer
Holbar Hastert & Fee
Fx: 545-2050

Dear Mr. Ezer,
Following is a copy of a letter I've sent to Kaiser Aluminum & Chemical Corp.

James Marcus
41-882 Laumilo St.
Waimanalo, HI 96795
(808) 259-9081

Mr. Robert Burke
Kaiser Aluminum and Chemical Corp.
c/o Kaiser Center Inc.
300 Lakeside Dr.
Oakland, CA 94612-3534
(510) 271-6155
Fx: 271 6103

11/5/96

RE: Queen's Beach (Ka Iwi coastline) Golf Course Proposal
Honolulu, Hawaii

Dear Sirs,

Do you need to hear from one more frustrated soul about your totally self centered and myopic outlook in proposing development of this incredibly beautiful place? You already know all the arguments against development here. You have heard them from every corner: The neighborhoods of Waimanalo and Hawaii Kai, the voting population of greater Honolulu, The State Department of Land & Natural resources, the Governor of Hawaii, The United States National Park Service, many local as well as national environmental organizations, and, I'm sure, many individuals as well.

Your greed and chosen predisposition towards your "sacred" property rights has completely blinded you from seeking simply fair and just action.

You, as well as the property owners, are already wealthy beyond belief. Yet you remain ravenous, to the disregard of all else; the beauty, the cry of the people, the judgement of many diverse collectively representative agencies and offices, and reasonable financial settlements. It is disgusting as well as shameful.

The reasons for not having a golf course are many. Among them:

The sheer beauty of some of the last wild and rugged coastline on Oahu. A "planned and managed" replacement would be a comparative natural disaster; an obvious visual monster in the midst of scenic majesty.

Golf is a sport requiring comparatively exorbitant amounts of space. This is a small island, with all space, but lovely open space in particular, being in short supply. This given, it does not seem fair or reasonable to devote so much of a resource in short supply to the enjoyment of so few members of the population, especially in a location with such remarkable natural splendor as this.

And, we already have a golf course there, just across the highway! and others nearby as well, in Waimanalo, Kahala, several in Kailua... do we have to have them everywhere?

Golf courses need tremendous amounts of water. Hawaii Kai is hot and dry, and Oahu's overall water needs go up annually. There IS a limit. Is this the time, place, or specific use for which we wish to devote this precious resource? (again, for the benefit of so few)

Lastly, but surely not least significantly, pollution and run-off. The pesticides and fertilizers needed by golf courses simply don't agree with other living things: reefs, in particular, and most other sea creatures as well. Where will all the run-off go, into the ocean? Or, perhaps, over to Kaiser's nearby "prize" waste water treatment plant across from Sandy Beach Park, where raw sewage spills and releases have occurred since its inception?

You know all this; but you go on, like a bully with a big stick. Perhaps, from the likes of Kaiser Development we should expect no better; but, from Bishop Estate....for shame!!

James Marcus

cc: City & County of Honolulu, Dept of Land Utilization;
Helber Hastert & Fee, planners;
Office of Environmental Quality Control

Helber Hastert
Planners

October 1, 1997

Mr. James Marcus
41-882 Laumilo St.
Waimanalo, HI 96795

Dear Mr. Marcus:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 5, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

It appears that your comments are not specifically related to information contained in the DEIS. Rather, you offer general comments that relate to the philosophical merits of building a golf course at the Queen's Beach site.

You suggest that the applicant is motivated by greed and does not seek fair and just action. The issue at hand is whether the government of the City and County of Honolulu has prevented the applicant (and Kamehameha Schools Bernice Pauahi Bishop Estate, the landowner) from exercising development rights that had been in place for almost 20 years, before the property was downzoned in 1983. Court decisions have ruled on this question by indicating that the landowner still has an economically viable use of property, namely a golf course. Kaiser Aluminum and Chemical Corporation is following the principles of judicial decisions by asking the City and County of Honolulu for entitlements for a golf course, a use that the City and County has indicated to the courts is a reasonable use of the property. We regret that you feel actions taken by the landowner and the applicant are unfair.

We acknowledge that the appearance of the site will change. Visual aesthetics are a matter of individual preference. With the exception of a narrow band along the shoreline, most of the vegetation on the site is introduced, or non-native. Landscaping for the golf course would include a significant presence of native species, and hopefully would help the course blend with existing conditions.

You question the appropriateness of using a precious resource (water) to irrigate the proposed golf course. The DEIS clearly indicates that the majority of irrigation water for the golf course will be reclaimed wastewater from the East Honolulu Wastewater Treatment Plant. This water will be used on the fairways and the tee boxes. Irrigation water

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for the greens will be a blend of reclaimed wastewater and desalinated reclaimed wastewater. No potable water will be used to irrigate the golf course.

Finally, you raise concerns about the potential impacts of leached pesticides and fertilizers applied to the golf course, and storm water run-off. We are equally concerned about protecting our important marine resources from the impacts of urban development. To this end, Kaiser Aluminum and Chemical Corporation authorized the preparation of three studies for the EIS that focused on these very issues. These are: *Potential Impact on Groundwater of the Proposed Golf Course at Queen's Beach, Oahu, Hawaii* (Tom Nance Water Resource Engineering); *Baseline Survey of Water Quality and Marine Community Structure in the Vicinity of the Proposed Queen's Beach Golf Course, Oahu, Hawaii* (Marine Research Consultants); and *Geochemistry, Soil Chemistry and Potential Chemical Impacts from Construction and Maintenance of a Proposed Golf Course: Queen's Beach, Oahu, Hawaii* (William J. Walker, Ph D.). The results of these studies are described in the DEIS and are included in full as appendices to the DEIS. The result of these studies indicate that if the golf course is properly managed, there is a negligible threat to marine resources.

As for storm water runoff, the course will be designed to retain runoff onsite during 100-year storm events.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT AND FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke
Jan Sullivan

United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS ECOREGION
300 ALA MOANA BOULEVARD, ROOM 3108
BOX 50088
HONOLULU, HAWAII 96850
PHONE: (808) 541-3441 FAX: (808) 541-3470

NOV 22 1996

Ms. Ardis Shaw-Kim
Department of Land Utilization
Honolulu Municipal Building
650 South King Street, 7th floor
Honolulu, HI 96813

Re: *Draft Environmental Impact Statement for Queen's Beach Golf Course, Oahu, Hawaii*
TMK 3-09-11:3, portion 2

Dear Ms. Shaw-Kim:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Impact Statement (DEIS) for Queen's Beach Golf Course, Oahu, Hawaii. The accepting authority for the project is the Department of Land Utilization, City and County of Honolulu. The purpose of the project is to build an 18-hole golf course and associated facilities on approximately 67 hectares (166 acres) of privately owned land on the eastern tip of Oahu. The Service offers the following comments for your consideration.

The Service is concerned with potential impacts on Federally listed threatened and endangered species in and around the project area, including: the Hawaiian stilt (*Himantopus mexicanus knudseni*), the Hawaiian coot (*Fulica alai*), the green sea turtle (*Chelonia mydas*); the hawksbill turtle (*Eretmochelys imbricata*), and the *Marsilea villosa* fern. The project area also potentially provides habitat for "species of concern" to the Service, formerly referred to as candidate threatened and endangered species. These include: the Hawaiian snout beetle (*Rhyncogonus simplex*), the Hawaiian rhopalid bug (*Ithamar hawaiiensis*), and the Oliarus wild cotton planthopper (*Oliarus discrepans*). An unidentified species of yellow-faced bee (*Nesoprosopis* sp.) was also documented in the area which, depending on the species, may also be a "species of concern." Several species of seabirds and shorebirds, which are protected under the Migratory Bird Treaty Act, also use the area. The area also contains rare coastal plant communities, which should be conserved to the greatest degree possible.

The Service has the following concerns about the proposed Queen's Beach Golf Course:

- The DEIS does not contain an ecological or human health risk assessment quantifying risk to sensitive wildlife, marine organisms, and humans exposed to pesticides running off into coastal and marine areas. Bioconcentration of contaminants in exposed organisms and edible fish is not addressed.

- The Marine Research Consultants report does not adequately address impacts to water quality in the inlets and bays downslope of the proposed golf course. While contaminants may be dispersed in the open water relatively quickly, significant impacts to biota, sediments, and water quality may occur in semi-enclosed water bodies that will be directly receiving the golf course runoff.

- Because the actual drainage system for the golf course has not yet been designed, it is difficult to determine whether the location of culverts, swales, or piping could channel contaminants into sensitive or poorly flushed coastal areas.

- The report by Dr. Walker lists five "potential pesticides" that might be used on the golf course. However, because there is no guarantee of which pesticides will actually be used, it is not possible to accurately predict the actual environmental impacts of pesticide runoff.

- The DEIS does not the address cumulative impacts of construction activities, water withdrawals, pesticide and fertilizer runoff, and siltation resulting from all ongoing and proposed activities in the Queen's Beach drainage area. The DEIS should account for and estimate environmental effects of runoff from the community in Kalama Valley, the Hawaii Kai Golf Course, the Hawaii Kai sewage treatment plant, the proposed housing projects north of the highway, and the proposed Queen's Beach Golf Course. Disregarding the contaminants from the surrounding area will provide a misleading picture of what will actually be occurring in the environment once the golf course is built.

- The Service is particularly concerned that the remaining *Marsilea villosa* ferns be fully protected, especially since we understand that a fire last summer destroyed many of the *Marsilea* plants on the property.

- The DEIS states that all native vegetation, including the *Marsilea*, will be preserved to the greatest extent possible, consistent with the design needs of the golf course. The Service requests that the health and well-being of all native plants in the project area be monitored for an extended period after the project is completed, and that the monitoring data be shared with the Service. If data indicates any problems attributable to human use or golf course maintenance, management actions should be taken to maintain the health of the native plant communities.

- The DEIS lacks a description of the nature and scope of the long-term contaminant monitoring program that should be instituted following development. The description of the program should specify what type of data will be collected, how often it will be collected, who will collect it, how the program will be funded, and how the data will be interpreted and used to guide and modify management actions. The Service requests that contaminant monitoring data be sent to our Honolulu office.

The Service appreciates the opportunity to provide comments on the DEIS and we look forward to working with you on future projects. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Chris Swenson at (808) 541-3441.

Sincerely,

Brooks Harper

Brooks Harper
Field Supervisor
Ecological Services

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Scott Ezer, Helber Hastert & Fee
Gary Gill, Office of Environmental Quality Control
John Naughton, National Marine Fisheries Service

96-07351

1996 OCT 10 PM 2 14

DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Blvd, Room 3108
P.O. Box 50088
Honolulu, HI 96850
phone: 808-541-3441; fax: 808-541-3470

OCT 09 1996

In Reply Refer To: CAR/CS

Ms. Cheryl D. Soon
Chief Planning Officer
Planning Dept., City and County of Honolulu
650 S. King St., 8th floor
Honolulu, HI 96813-3017

Re: Review of subconsultant studies (Baseline Survey of Water Quality and Marine Community Structure in the Vicinity of the Proposed Queen's Beach Golf Course, Oahu, Hawaii; Botanical Survey: Kamilo Ridge Project Site; Botanical Resources Study: Marina 4B Parcel; Botanical Resources Study: Marina 1 and Strip 1 Project Site; Botanical Survey: Queen's Rise Project Site; Botanical Survey: Mauuwai Project Site; Botanical Survey: Kamilonui 2 Project Site; Botanical Survey: Kamilonui 1 Project Site)

Dear Ms. Soon:

The U.S. Fish and Wildlife Service (Service) has received your letter of September 11, 1996, requesting comments on the above subconsultant studies conducted for the Hawaii Kai Draft Environmental Impact Report (DEIR). According to previous correspondence with this office, the proposed project involves developing 12 parcels of private land in Hawaii Kai as residential and commercial areas, including a business park, an inn, and a golf course. The DEIR is intended to serve in lieu of all planning, zoning, and Special Management Area Use permit applications and for procedures normally carried out by the City for discretionary land use approvals. Based on your request the Service offers the following comments for your consideration.

The Water Quality and Marine Community Structure report adequately describes the marine biotic community and the existing nutrient levels in ocean water and groundwater at Queen's Beach. However, the Service has identified five fundamental problems with the report:

- The report doesn't adequately support its conclusion that there will be no adverse environmental effects associated with the future golf course;

Review of subconsultant studies
Hawaii Kai DEIR
Oahu, Hawaii

- The report does not contain any baseline data on current pesticide concentrations in water, marine sediments, or marine organisms, even though these data are crucial for detecting future adverse effects associated with the golf course;
- The report does not address potential cumulative impacts to the marine environment resulting from the proposed golf course, the existing golf course and residential areas, and the proposed construction of new Hawaii Kai residential areas;
- The report does not consider water quality in Kaloko Inlet to be a substantive issue, even though water quality is already poor, will probably be further degraded by the golf course, and the inlet is heavily used by fish, federally protected bird species, subsistence fishermen, and recreational swimmers; and
- The report does not adequately describe the long-term monitoring program that will allow determination of potential environmental effects and information on how the data presented in the report will be integrated into such a program.

The Service notes that we did not receive a copy of the report entitled "Assessment of Impacts to Water Quality and Marine Community Structure in the Vicinity of Proposed Developments in Hawaii Kai" by Marine Research Consultants and, therefore, will provide comments on this survey during the DEIR review process.

Based on a review of the above botanical reports and The Nature Conservancy's Hawaii Natural Heritage Program maps, there are no endangered or threatened plant species within the project areas. However, nehe (*Lipochaeta lobata*), a plant found on the Queen's Rise, Mauuwai and Kamilonui 2 project sites is considered globally imperilled by the Heritage Program. The Service concurs with the botanical consultant's recommendations that on sloping lands, areas cleared of vegetation should be revegetated as soon as possible to prevent soil loss through erosion. The Service strongly encourages the use of native lowland plants for landscaping the common areas. Horticulturists familiar with using native plants for landscaping should be contacted for planting material and cultivation requirements.

It appears that avifaunal or other vertebrate or invertebrate surveys were not conducted for the above-named parcels, except for Queen's Beach, as the Service was not asked to comment on reports on these natural resources. The Service notes that the state endangered pueo or short-eared owl (*Asio flammeus sandwichensis*) has been reported from the Mauuwai project site area. While the federally endangered 'ope'ape'a or Hawaiian hoary bat (*Lasiurus cinereus semotus*) is not known from these project sites, it has been reported from Kalama, the valley adjacent to the Mauuwai project site.

Review of subconsultant studies
Hawaii Kai DEIR
Oahu, Hawaii

The Service appreciates the opportunity to provide comments during the early phases of this project, and we look forward to reviewing the DEIR. If you have any questions regarding these comments, please contact Program Leader for Wetlands, Ms. Karen Evans or Botanist Christa Russell by telephone at 808/541-3441 or by facsimile transmission at 808/541-3470.

Sincerely,

Karen A. Evans

for Brooks Harper
Field Supervisor
Ecological Services

cc: William E. Wanket, Inc.
Department of Land Utilization

Heller Hastert
Planners

October 1, 1997

Mr. Brooks Harper
Field Supervisor
Ecological Services
United States Department of the Interior
Fish and Wildlife Service
300 Ala Moana Blvd., Room 3108
Box 50088
Honolulu, HI 96850

Dear Mr. Harper

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 22, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference, we will respond to your comments in the order they appear in your letter.

We forwarded your letter to Dr. William Walker, author of *Geochemistry, Soil Chemistry and Potential Chemical Impacts from Construction and Maintenance of a Proposed golf Course at Queen's Beach* (Appendix C of the DEIS). In regard to your concerns about ecological health risk, Dr. Walker responded as follows:

"There are potentially three exposure pathways for contact with applied pesticides at the site. These are: (1) through impact and mixing with groundwater bearing pesticide leachate, (2) surface water runoff containing pesticide residue; and (3) air-borne pesticide produced from improper spraying operations or from volatilization of pesticides after application to turfgrass surfaces. The potential impact from each process is discussed below.

Toxicity of Pesticide in Runoff and Groundwater Leachate

"Pesticide impact to groundwater and surface water is expected to occur only when highly water soluble pesticides, in large amounts, are used at the site. As discussed previously, the soils are relatively impermeable, except when dry which produces significant cracks or macropores for preferential flow paths. Simulations of pesticide leaching on site soils suggest that little if any pesticide will escape by this mechanism. This is especially true after construction of the course has occurred since subsurface drains, contours, and establishment of turf will all work to prevent

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significant subsurface loss of pesticides. Surface water runoff is expected to be contained by designing and constructing berms and using contours to effectively contain all surface and stormwater flow and the routing the effluent to treatment plant sewer systems. However, it may be instructive to examine the potential subsurface loss under both normal and worst case scenarios and then compare this loss to levels considered protective of ecological health.

"For this comparison, the leachate concentrations observed in the columns studies were used as the potential concentrations in groundwater. It should be noted that the column studies were conducted in a worst case scenario, wherein a large amount (about 1 year's worth) of pesticide was added in a single dose followed by rain. In fact, this scenario should never occur. To evaluate more normal pesticide applications, a second calculation was done to determine the expected leachate and runoff concentrations expected if pesticide application occurred in smaller amounts (about 0.16kg/ha) over several time intervals throughout the year (each month). These values were then compared to all known acute and chronic toxicity levels obtained through the AQUIRE toxicity databases (USEPA). The results are presented below.

"Summary of Toxicity Tests for Selected Pesticides and Toxicity Ranking

Chemical	Species Class	Toxicity Test	Range of Conc. for Effect to Occur (ug/L)	Observed Conc. in Leachate (ug/L) if a 1 year application applied at single time (worst case)1	Observed Conc. in Runoff (ug/L) if 1 year application applied at single time (worst case)	Expected Risk	Observed Conc. in Leachate if applied once each month (normal)2	Observed Conc. in Runoff if applied once each month (normal)	Expected Risk
Dicamba	Bird	LC50	>4640	3-16	625	low risk	0.3 - 1.3	52	low risk
	Bird	LD50	>2,510			low risk			low risk
	Mammal	LD50	757			high risk due to runoff			moderate risk
	Crustacea	LC50	>3,900			low risk			low risk
	Amphibia	LC50	106,000			low risk			low risk
	Fish	LC50	>28,000			low risk			low risk
2,4-D ester	Aquatic inverte-brates	POP	1000	1.3 - 3.2	1.71	low risk	0.1-0.3	0.14	low risk
	Crustacea	LC50	>440			moderate risk			low risk
	Fish	LC50	>303			moderate risk			low risk
	Insect	LC50	>1600			low risk			low risk

Summary of Toxicity Tests for Selected Pesticides and Toxicity Ranking (cont'd)

	Bird	LC50	> 5000			low risk			low risk
	Mammal	LC50	>380			moderate risk			low risk
MSMA	Fish	LC50	>1200	3.2	0.05	low risk	0.3	nd	low risk
	Crustacea	LC50	>39,000			low risk			low risk
	Mammal	LC50	>20,000			low risk			low risk
Chemical	Species Class	Toxicity Test	Range of Conc. for Effect to Occur (ug/L)	Observed Conc. in Leachate (ug/L) if a 1 year application applied at single time (worst case)1	Observed Conc. in Runoff (ug/L) if 1 year application applied at single time (worst case)	Expected Risk	Observed Conc. in Leachate if applied once each month (normal)2	Observed Conc. in Runoff if applied once each month (normal)	Expected Risk
Chlorpyrifos	Crustacea	LC50	>0.01	nd	1	high risk	nd	0.01	moderate risk
	Fish	LC50	>0.1			high risk			moderate risk
	Insect	LC50	>0.01			high risk			high risk (target organism)
	Mollusk	LC50	>800			moderate risk			low risk
Chlorthalonil	Mammal	LC50	310	nd	1.29	moderate risk	nd	0.1	low risk
	Fish	LC50	8-170			high risk			moderate risk
	Insect	LC50	>1,800			low risk			low risk
	Mollusks	LC50	>9,000			low risk			low risk
	Amphibia	LC50	160			moderate risk			low risk
	Crustacea	LC50	>140			moderate risk			low risk

LC50= Median lethal concentration required to kill 50% of a population.
LD50=Median lethal concentration required to kill 50% of a population when administered through injection or diet.
nd=not detectable
[1]Worst case is application of approximately 2kg/ha (a year's application) at a single dose followed immediately by rainfall.
[2] Normal application is about 0.16 kg/ha applied 10 to 12 times per year.

"The results of this simplistic analysis indicate that under the worst case scenario of a large, one-time application followed by rain, the most problematic pesticides will be those with solubility characteristics, such as Dicamba, that can readily impact surface water and the insecticides, chlorpyriphos and chlorthalonil, that have inherently high toxicity characteristics for non-target

organisms. As noted in the Table, application of pesticides at normal rates of less than 0.16 kg/ha per month, will result in only low to moderate risk at worst."

In addition, Dr. Walker has further recommended that leachate at the golf course be collected by a series of collection drains that would allow the leachate to be filtered and recycled:

"One of the alternatives that could be implemented at the site to ease the demand for both treated and potable water would be to design and construct either (1) a water treatment plant to service effluent water from the golf course or (2) a small treatment contactor placed off of each green. These treatment plants would then allow for a closed loop approach to water use. The basic design would be as follows.

"For a single treatment system:

1.) Fairways and greens would be constructed using subsurface drain systems as described earlier. Each fairway and green would be tied to a main drain system that would lead to an equalization tank of approximately 1000 gallons in capacity.

2.) Irrigation water that percolates through the fairways and greens would be collected by the subsurface drains and routed to the main drain. Surface and stormwater runoff would be captured with appropriate use of French drains, containment walls and berms to prevent surface water from leaving the course. This water would also be routed to the equalization tank.

3.) Water from the equalization tank would be pumped via 8-inch piping to a sand filter to remove suspended material and then through a sock filter to remove small suspended particles. The sand filter bed dimensions would be approximately 3'x8' with a bed depth of 3 ft.

4.) After leaving the sand filter, water would then route to a series of contactors containing either multi-media (iron oxide zerovalent iron, granular activated carbon, and sand) or simply granular activated carbon (GAC).

5.) The GAC will remove organic residues such as pesticides and ammonia. Once through the system, the water will be pumped to a holding pond (or water hazard) for re-introduction to the irrigation system.

6.) A system of this type can easily be constructed to handle 200 gallons per minute.

"For a set of treatment contactors at each green:

1.) The drainage system for each green and fairway would be constructed as described before except that the main drain would service only a single green-fairway combination.

2.) Water collected by the drain would be passed through a GAC contactor near the green. Once through the contactor, the cleaned water would then be collected in a surge sump for redistribution on the rough or fairway."

Such a system could drastically reduce any potential for pesticides from reaching groundwater.

You suggest that it is not possible to accurately predict the actual impacts of pesticide runoff because only five "potential pesticides" were studied. We infer that you believe only tests that sample every conceivable pesticide would serve as a valid indicator of potential impacts. We believe that Dr. Walker has followed appropriate scientific protocol in designing and carrying out his tests. We also believe his results are instructive for understanding the chemical and physical properties of the native soil on the site and how fertilizers and pesticides will behave once added to them

In regard to cumulative impacts, action by the Honolulu City Council in January of this year (Resolution 97-09) stopped City participation in the proposed settlement of litigation. In effect, the future of the other projects that were part of the settlement is unknown. Because of the possibility of additional litigation, it could be many years before these properties are ready for development, if at all. Therefore, the inclusion of these projects as contributing to future impacts is not reasonable at this time.

Information on drainage that will be presented in Section 6.4 of the FEIS will account for stormwater runoff from existing developments affecting the tributary area. Because many reviewers expressed concern about drainage and grading issues, we asked Sam O. Hirota, Inc. to prepare a grading and drainage report for inclusion in the FEIS. The results of this investigation will be summarized in Sections 4.2 and 6.4 of FEIS, and will be attached as an appendix to the FEIS (Appendix N).

We share your concern that the remaining *Marsilea villosa* ferns be fully protected. We expect, and would welcome, the City Council adopting a condition of approval for the Special Management Area Use Permit (SMP) for the golf course that requires the preparation of a botanical management plan for the *Marsilea villosa*. We would also expect and welcome your participation in the formulation of such a plan.

Dr. Walker also outlined the elements of a contaminant monitoring program, as follows:

"The required elements are described below.

"*Baseline Water Quality*: Before construction of the course (and required by permitting agencies), an initial baseline survey of surface water and groundwater will need to be conducted in the area. The monitoring points will include:

"1.) Three shallow groundwater wells installed along the shoreline. One located at the entrance to Ka'ili'ili Bay, one at the entrance to Kaho'ohaihai Inlet, and one near Kaloko Inlet.

"2.) Three shallow groundwater wells installed upgradient from the shoreline in the approximate locations of the entrance to the concrete overflow channel, one north of the channel off-set from the highway and one near the center of the property due west of the Kaho'ohaihai Inlet. These three wells should serve to characterize groundwater entering the property and possibly influenced by the developed areas west of Queen's Beach.

"3.) Surface water sampling locations should be selected to obtain ambient incoming storm and surface water onto the property. Suggested sampling locations would include the concrete overflow channel, the entrance to Kaloko Inlet, the entrance to Ka'ili'ili Bay, and the entrance to Kaho'ohaihai Inlet. Additional sampling points may include runoff channels from Makapu'u Lookout and several adjacent to the highway in order to assess the contribution of traffic to ambient surface water quality.

"The groundwater wells should be sampled quarterly while the surface sampling points should be monitored on an event basis through at least 3 storms sufficient to produce runoff such that some initial water quality characterization can be made representative of background. Samples collected under these conditions should be analyzed for:

Analyte	Groundwater	Surface water
pH	yes	yes
General Minerals (Ca, Mg, Na, K, Alkalinity, SO4, NO3, PO4, Cl)	yes	yes
Salinity	yes	optional
Metals (As, Cd, Cr, Cu, Pb, Zn)	yes	yes
Conductivity	yes	yes
pH	yes	not applicable
Oil and grease	yes	yes
Suspended solids	yes	yes
Pesticides	yes	yes

Monitoring During Construction and Operation of Golf Course

"Sampling of groundwater wells and surface water must be conducted during operation and construction activities at the site. Samples should be collected at the same locations as described before. For groundwater sampling, the quarterly monitoring will be sufficient to assess potential impacts from the golf course, especially if a thorough baseline study has been conducted to establish pre-construction and operation conditions. Surface water samples should also be collected during events that produce runoff in order to track chemical loadings to inlets and open ocean water. This will require sampling at each event until it can be established that the course or certain sampling points are not contributing significant chemistry to samples collected during these events. This type of program will most likely be required by permitting agencies anyway. The same analytes as described previously should be determined in each sample until it can be demonstrated otherwise. Pesticide analysis should be limited to those used on the course including any known hazardous metabolites. It may also be wise to determine pesticide use at adjacent courses, such that disputes arising over chemical loading can be settled based on the use, timing and analysis of well water samples strategically located over the area.

"Air samples should also be collected at the time of application of pesticide. Air samplers should be placed down-wind of application areas. Protocols for this analysis should be coordinated with State protocols and experts.

Monitoring Program Cost and Sampling Responsibility

"The cost of the program should be borne by the developers/owners as part of normal operations. Sampling should be conducted by a contractor with sampling and sample handling expertise. Splits of all samples should be made available to State and local authorities upon request.

Monitoring Program Data Analysis and Use

"The monitoring program should provide the cornerstone of a sound chemical management system for the golf course. The establishment of baseline conditions should represent the target for chemical impacts in that any increase above baseline should be cause for concern. Once background conditions have been established, all chemical data collected as part of the on-going program should be compared to baseline conditions and to State water quality standards. Data entered should be automatically compared to these levels such that violations can be flagged immediately. To make the program responsive, short turn-around times from the certified lab used for chemical analysis should be requested (7-day maximum).

"If increases in baseline chemistry are noted, then management must alter practices to ensure that the trend is reversed. For example, an increase in groundwater nitrate would signal that application timing or amount of nitrogen fertilizers is excessive. This data, coupled with records

of application conditions, would be used to alter application rates or timing. All corrective actions should be noted. A temporary increase in well water and surface water sampling should be conducted until the success of the corrective action can be demonstrated."

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

United States Department of the Interior

U.S. GEOLOGICAL SURVEY

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

October 11, 1996

Ms. Ardis Shaw-Kim
City and County of Honolulu
Department of Land Utilization
650 South King St., 7th Floor
Honolulu, Hawai'i 96813

Dear Ms. Shaw-Kim:

Subject: Queen's Beach Golf Course
Draft Environmental Impact Statement
Queen's Beach, O'ahu, Hawai'i

The staff of the U.S. Geological Survey, Water Resources Division, Hawaii District has reviewed the Draft Environmental Impact Statement, and we have no comments to offer at this time.

We are returning the report for your future use. Thank you for allowing us to review the DEIS.

Sincerely,

William Meyer
District Chief

Enc.

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Scott Ezer, Helber Hastert and Fee, Planners

Helber Hastert
Planners

October 1, 1997

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

Dear Mr. Meyer:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated October 11, 1996 on the above draft environmental impact statement (DEIS). Your letter will be included in the final environmental impact statement (FEIS) being prepared.

We note that you have no comments to offer at this time.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC

Helber Hastert & Fee
Grosvenor Center, Mauka Tower

733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Telephone 808 545-2055
Facsimile 808 545-2050

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

Planning and Operations Division

October 31, 1996

Ms. Ardis Shaw-Kim
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Ms. Shaw-Kim:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement (DEIS) for the Queen's Beach Golf Course, Oahu (TMK 3-9-11: 03 and por. 02). The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

a. Page 4-23 correctly states that a June 1996 site visit resulted in concurrence that wetlands do not exist in the tire ruts at the base of Kealakipapa Valley. However, for clarification and correctness, we note that page 4-22 references the Corps' 1989 Wetland Delineation Manual. The correct reference is the Corps' 1987 Delineation Manual (title sheet enclosed). In addition, correct definitions of the three diagnostic wetland characteristics (enclosed) should be substituted for those on page 4-22. Finally, the June 1996 site visit was conducted by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service. Should you require additional information or clarification on the foregoing, please contact Ms. Kathy Dadey at 438-9258 (extension 15) and refer to file number 950010102.

b. The flood hazard information provided on page 4-41 of the DEIS is correct.

Sincerely,

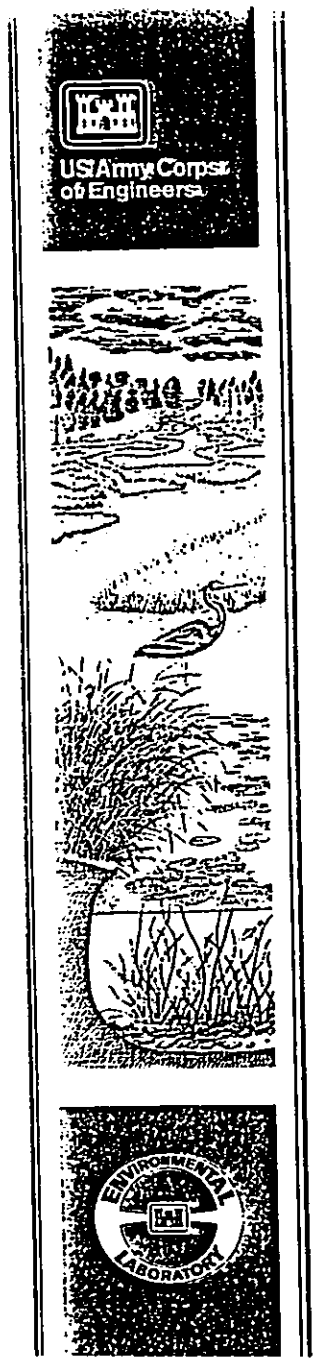
/s/
Lawrence O. Muraoka, P.E.
Acting Chief, Planning
and Operations Division

Enclosures

Copies Furnished:

Mr. Robert Burke
Kaiser Aluminum and Chemical Corporation
300 Lakeside Drive, Suite 130
Oakland, California 94612-3534

Mr. Scott Ezer
Helber Hastert & Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813



WETLANDS RESEARCH PROGRAM

TECHNICAL REPORT Y-87-1

CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL

by

Environmental Laboratory

DEPARTMENT OF THE ARMY
Waterways Experiment Station, Corps of Engineers
PO Box 631, Vicksburg, Mississippi 39180-0631

January 1987
Final Report

Prepared for DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Washington, DC 20314-1000

ENCL

PART II: TECHNICAL GUIDELINES

24. The interaction of hydrology, vegetation, and soil results in the development of characteristics unique to wetlands. Therefore, the following technical guideline for wetlands is based on these three parameters, and diagnostic environmental characteristics used in applying the technical guideline are represented by various indicators of these parameters.

25. Because wetlands may be bordered by both wetter areas (aquatic habitats) and by drier areas (nonwetlands), guidelines are presented for wetlands, deepwater aquatic habitats, and nonwetlands. However, procedures for applying the technical guidelines for deepwater aquatic habitats and nonwetlands are not included in the manual.

Wetlands

26. The following definition, diagnostic environmental characteristics, and technical approach comprise a guideline for the identification and delineation of wetlands:

a. Definition. The CE (Federal Register 1982) and the EPA (Federal Register 1980) jointly define wetlands as: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

b. Diagnostic environmental characteristics. Wetlands have the following general diagnostic environmental characteristics:

(1) Vegetation. The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described in a above. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions.* Indicators of vegetation associated with wetlands are listed in paragraph 35.

(2) Soil. Soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions. Indicators of soils developed under reducing conditions are listed in paragraphs 44 and 45.

(3) Hydrology. The area is inundated either permanently or periodically at mean water depths ≤6.6 ft, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.* Indicators of hydrologic conditions that occur in wetlands are listed in paragraph 49.

c. Technical approach for the identification and delineation of wetlands. Except in certain situations defined in this manual, evidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland determination.

* Species (e.g. *Acer rubrum*) having broad ecological tolerances occur in both wetlands and nonwetlands.

ENCL 2

Deepwater Aquatic Habitats

27. The following definition, diagnostic environmental characteristics, and technical approach comprise a guideline for deepwater aquatic habitats:

a. Definition. Deepwater aquatic habitats are areas that are permanently inundated at mean annual water depths >6.6 ft or permanently inundated areas ≤6.6 ft in depth that do not support rooted-emergent or woody plant species.**

b. Diagnostic environmental characteristics. Deepwater aquatic habitats have the following diagnostic environmental characteristics:

(1) Vegetation. No rooted-emergent or woody plant species are present in these permanently inundated areas.

(2) Soil. The substrate technically is not defined as a soil if the mean water depth is >6.6 ft or if it will not support rooted emergent or woody plants.

(3) Hydrology. The area is permanently inundated at mean water depths >6.6 ft.

c. Technical approach for the identification and delineation of deepwater aquatic habitats. When any one of the diagnostic characteristics identified in b above is present, the area is a deepwater aquatic habitat.

* The period of inundation or soil saturation varies according to the hydrologic/soil moisture regime and occurs in both tidal and nontidal situations.

** Areas ≤6.6 ft mean annual depth that support only submergent aquatic plants are vegetated shallows, not wetlands.

Helber Hastert
Planners

October 1, 1997

Mr. Lawrence O. Muraoka, P.E.
Acting Chief, Planning and Operations Division
Department of the Army
Pacific Ocean Division
Corps of Engineers
Fort Shafter, HI 96858-5440

Dear Mr. Muraoka:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated October 31, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

We appreciate the information you provided which clarified the correct reference to the Corps' 1987 Wetland Delineation Manual and definitions for the three diagnostic wetland characteristics. The final EIS will be amended to include these corrections.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Governor Cartes, Makai Tower

733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Telephone 808 545 2055
Facsimile 808 545 2050

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE H425
HONOLULU, HAWAII 96819-1869

JEREMY HARRIS
MAYOR

ANTHONY J. LOPEZ JR.
FIRE CHIEF

ATTILIO K. LEONARDI
FIRE DEPUTY CHIEF

October 10, 1996

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

ATTENTION: ARDIS SHAW-KIM

FROM: ANTHONY J. LOPEZ, JR., FIRE CHIEF

SUBJECT: QUEEN'S BEACH GOLF COURSE
EAST HONOLULU, OAHU
TAX MAP KEY NUMBER: 3-9-11: 03, POR. 02

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

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

Should you have any questions, please call Assistant Chief Arthur Ugalde of our Administrative Services Bureau at 831-7774.

ANTHONY J. LOPEZ, JR.
Fire Chief

AJL/MPN:ma

cc: Kaiser Aluminum and Chemical Corporation
Helber Hastert & Fee, Planners

Helber Hastert
Planners

October 1, 1997

Mr. Anthony J. Lopez, Jr., Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, HI 96819-1869

Dear Chief Lopez:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated October 10, 1996 on the above draft environmental impact statement (DEIS). Your letter will be included in the final environmental impact statement (FEIS) being prepared.

We note that you foresee no adverse impact in Fire Department facilities or services. We also acknowledge that access for fire apparatus, water supply and building construction shall be in conformance to existing codes and standards.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Patrick Onishi, DLU
Robert Burke, KACC
Rochelle Arquette, KSBE

Helber Hastert & Fee
Governor Cartes, Makai Tower

745 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Telephone 808 545 2055
Facsimile 808 545 2050

BENJAMIN J. CAYETANO
GOVERNOR

RECEIVED
NOV 15 1996
HELBER HASTERT & FEE PLANNERS

ROY S. OSHIRO
EXECUTIVE DIRECTOR

IN REPLY REFER TO

STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
677 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813
FAX (808) 587-0600

96:PPE/4062

November 8, 1996

Ms. Ardis Shaw-Kim
Department of Land Utilization
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Ms. Shaw-Kim:

Re: Draft Environmental Impact Statement for Queen's Beach Golf Course

We have reviewed the subject DEIS and have no specific comments to make on the proposed Queen's Beach Golf Course.

The DEIS states that there would be a negligible increase in population related to the development of this project (four persons). Thus, our previous concerns on the environmental impact report preparation notice for the Hawaii Kai region are not applicable as additional housing would not be necessary.

Thank you for the opportunity to comment.

Sincerely,

Roy S. Oshiro
Executive Director

c: Robert Burke, Kaiser Aluminum
Scott Ezer, Helber Hastert & Fee

HFDC

Helber Hastert
Planners

October 1, 1997

Mr. Roy S. Oshiro
Executive Director
Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, HI 96813

Dear Mr. Oshiro:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 8, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

We note that you your previous concerns regarding additional housing are no longer applicable as related to the proposed Queen's Beach Golf Course.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Grosvenor Center, Makai Tower

733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Telephone: 808 545 2055
Facsimile: 808 545 2050

DEPARTMENT OF WASTEWATER MANAGEMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 527-6663 • FAX: (808) 527-6675

JEREMY HARRIS
MAYOR

FELIX B. LIMTIACO, P.E.
DIRECTOR

CHERYL K. OKUMA-SEPE, ESQ.
DEPUTY DIRECTOR

In reply refer to:
WCC 96-114

October 10, 1996

MEMORANDUM

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

ATTN: MS. ARDIS SHAW-KIM

FROM: FELIX B. LIMTIACO, DIRECTOR
DEPARTMENT OF WASTEWATER MANAGEMENT

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
QUEEN'S BEACH GOLF COURSE
TMK: 3-9-011: 003, POR. 002

The municipal sewer system is not available to accommodate this project. As noted in the subject report, the Hawaii Kai Wastewater Treatment Plant is a privately owned and operated system serving this development.

If you have any questions, please contact Ms. Tessa Yuen of the Service Control Branch at 523-4956.

FELIX B. LIMTIACO
Director

cc: Office of Environmental Quality Control
Robert Burke, Kaiser Aluminum and Chemical Corporation
Scott Ezer, Helbert Hastert & Fee, Planners

Helber Hastert
Planners

October 1, 1997

Mr. Kenneth E. Sprague, Ph.D., Director
Department of Wastewater Management
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. Sprague:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for the letter dated October 10, 1996 on the above draft environmental impact statement (DEIS). The letter will be included in the final environmental impact statement (FEIS) being prepared.

We note the comment that connection to a municipal sewer system is not available and that the East Honolulu Wastewater Treatment Plant is a privately owned and operated system serving the development.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Jan Sullivan, DLU
Robert Burke, KACC

Helber Hastert & Fee
Genesmen Center, Makai Tower

733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813

Telephone 808 545-2055
Facsimile 808 545-2050

96-076335

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET, 2ND FLOOR • HONOLULU, HAWAII 96813
PHONE (808) 523-4384 • FAX (808) 523-4567

JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI
DIRECTOR AND BUILDING SUPERINTENDENT

ISIDRO M. BAQUILAR
DEPUTY DIRECTOR AND BUILDING SUPERINTENDENT

PB 96-629

October 21, 1996

1996 OCT 23 AM 11:48
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

MEMO TO: PATRICK ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

ATTN: ARDIS SHAW-KIM

FROM: RANDALL K. FUJIKI
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: QUEEN'S BEACH GOLF COURSE
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
TAX MAP KEY: 3-9-11:03, POR. 02
EAST HONOLULU, OAHU, HAWAII

This is in response to your request to review the subject material.

We have no comments to offer but appreciate the opportunity to review the subject document.

Should there be any questions, please contact Douglas Collinson at 527-6375.

RANDALL K. FUJIKI
Director and Building Superintendent

cc: Office of Environmental Quality Control
Kaiser Aluminum and Chemical Corp.
(Attn: Robert Burke)
Helber Hastert & Fee, Planners
(Attn: Scott Ezer)

Heller Hastert
Planners

October 1, 1997

Mr. Randall K. Fujiki
Director and Building Inspector
Building Department
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. Fujiki:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated October 21, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the final environmental impact statement (FEIS) being prepared.

We note that you have no comments to offer at this time.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Jan Sullivan, DLU
Robert Burke, KACC

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545-2055
Facsimile 808 545-2050

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

JEREMY HARRIS
MAYOR

KENNETH E. SPRAGUE
DIRECTOR AND CHIEF ENGINEER

GARRIN J. HAMAMOTO
DEPUTY DIRECTOR

RECEIVED
OCT 23
HELBER HASTERT & FEE
PLANNERS

ENV 96-264

October 21, 1996

MEMORANDUM:

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

ATTENTION: ARDIS SHAW-KIM

FROM: for KENNETH E. SPRAGUE
DIRECTOR AND CHIEF ENGINEER

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
QUEEN'S BEACH GOLF COURSE
TMK: 3-9-11: 03, POR. 02

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

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

2. Page 2-5: Drainage Easement D-8 and the flowage easement shown on Fig. 5 are directed towards Kaho'ohaihai Inlet, but the narrative describes existing flow as towards Ka'ili'ili Bay.

3. Page 4-16, "Potential Impacts Related to Sediments": Narrative states that "porous nature of soil ground cover is such that sheet flow carrying suspended sediment toward the ocean would be expected to be relatively small." However, the portion of the property through which the main drainage traverses is classified as Lualualei Clay (40 inch thickness) which has low permeability according to a statement on page 4-4 of the DEIS. In addition, the sump area downstream of the concrete area is a "pond of standing water" (page 4-7). So, an explanation to resolve this discrepancy is needed.

4. Page 4-17, "Mitigation":

The following should be made as conditions for SMA approval:

a. Runoff from the parking area should be directed towards planted area prior to piping or other lined conveyance.

b. Provisions should be made for pre-treatment or other mitigative measures for equipment washwater (carts, maintenance vehicles) prior to discharging to the drainage system.

Should you have any questions, please contact Mr. Alex Ho, Environmental Engineer, at 523-4150.

cc: OEQC
Kaiser Aluminum & Chemical Corp.
Helber Hastert & Fee, Planners

Helber Hastert
Planners

October 1, 1997

Mr. Jonathan K. Shimada, Ph.D., Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Dr. Shimada:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for the letter dated October 21, 1996 on the above draft environmental impact statement (DEIS). The letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to the comments in the order they appear in the letter.

1. The letter requested that a drainage report should be submitted to the Drainage Section, Division of Engineering, for review and approval. As a result of this request, and similar comments from others, we asked Sam O. Hirota, Inc. to prepare a grading and drainage report for inclusion in the FEIS. This report will be summarized in Sections 4.2 and 6.4 of the FEIS, and included in the FEIS as Appendix N.

2. The letter correctly noted that the Drainage Easement D-8 and the flowage easement shown on Figure 5 are directed towards Kaho'ohaihai Inlet, but existing flow enters Ka'ili'ili Bay.

3. A more complete description of the behavior of stormwater runoff will be included in Section 6.4 of the FEIS. Once construction of the golf course is complete, the property will have been graded and bermed to capture all surface water and suspended sediment. It is important to note, that the establishment of turfgrass in fairways, tees, and greens will all but reduce the sediment and erosive transport of particles from the soils surface. The most extensive sedimentation at the site is actually occurring under present day conditions wherein no controls are in place to reduce erosive loss and sediment transport. The establishment of turfgrass on site will act as a natural means of reducing sediment transport, since surface water will rarely encounter bare soil surfaces. To further improve soil porosity, a mixture of peat and sand will be added to fairway areas.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813
Telephone: 808 545 2055
Facsimile: 808 545 2050

Drainage on the green areas will also be improved as a result of construction design. Green construction begins with stripping and stockpiling of topsoil in the proposed green area. Next the subgrade is constructed by either cutting into the grade on sloped areas, or building up the grade in lower areas. After the subgrade has been placed, the subsurface drain is placed within the subgrade. The system is designed such that water will not have to travel more than 10 feet to reach a drain line. Typically, the system consists of 15- to 20-foot lateral spacing of drain lines in either a herringbone or gridiron arrangement. The drain lines are 3 to 4 inches in diameter and of clay tile, concrete, or flexible slit plastic.

A 0.5- to 1-inch layer of gravel is placed in the bottom of the drainage trench before the drain lines are put down. On completion of the drainage line, the area is backfilled with several inches of gravel, then a layer of coarse sand (about 1 inch) and finally the root zone mix which is a combination of peat and sand. In this way all flow through the green is directed to the drains, typically preventing any water flow below the subgrade. Preferential flow in this design is now controlled and used to direct water out of the greens. Bunkers are drained similarly and connect with a main drain line just off the green apron.

As for the sump area downstream of the existing concrete area mentioned on page 7 of the DEIS, it is probable that the ponding of water occurs due to poor maintenance of the drainage channel, which is frequently choked with vegetation.

4. We have no problem with the recommended conditions of approval to be attached to the Special Management Area Use Permit, which would require that runoff from the parking area be directed towards planted areas prior to piping to other lined conveyances and provisions for pre-treatment for equipment washwater prior to discharging to the drainage system.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Jan Sullivan, DLU
Robert Burke, KACC

BENJAMIN J. CAYETANO
GOVERNOR

ESTHER UEDA
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

October 22, 1996

Mr. Patrick T. Onishi, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Attention: Ms. Ardis Shaw-Kim

Dear Mr. Onishi:

Subject: Queen's Beach Golf Course - Draft Environmental Impact Statement

We have reviewed the subject Draft Environmental Impact Statement ("DEIS"), received by our office on October 8, 1996, and have the following comments to offer:

1) We confirm that the subject parcel, consisting of approximately 166 acres, and further identified as TMK: 3-9-11: por. 2, and 3, is within the State Land Use Urban District.

The subject parcel has been within the Urban District since 1962, when temporary district boundaries were implemented, and in 1964 when the official State Land Use District Boundaries were adopted.

2) As stated on page 3-10 of the DEIS, we confirm that the State Land Use District Boundary Review - Oahu (1992), prepared by the Office of State Planning (now known as Office of Planning), included a "Priority 2" recommendation to reclassify approximately 418 acres of land from the Urban District to the Conservation District at Queen's Beach and Sandy Beach.

The area recommended for reclassification includes the approximately 166 acre area that is the subject of the DEIS.

3) While the State Land Use District Boundary Review - Oahu (1992) states that the Office of Planning will likely petition the Land Use Commission for those lands that are recommended as "Priority 1" reclassifications, it does not preclude the Office of Planning, nor any other governmental agency, from filing a petition with the Land Use Commission to reclassify the lands under the Queen's Beach and Sandy Beach recommendation.

4) While the footnote on page 3-10 of the DEIS states that no work is in progress to prepare a new 5-year boundary review report, we wish to point out that pursuant to Hawai'i Revised Statutes section 205-18, the Office of Planning is required to undertake a review of the classification and districting of all lands in the State.

We note that Act 299, Session Laws of Hawai'i 1996, also changed references in Hawai'i Revised Statutes from the Office of State Planning to its current name. However, the Act did not remove the statutory requirements from the Office of Planning.

5) We suggest that Figure 7 of the DEIS include a source note as to the Urban/Conservation district boundary depicted on the figure. We note that the figure is not a reproduction of the Official State Land Use District Boundary Maps, but appears to be a representation of the Urban/Conservation district boundary superimposed upon a map of the area.

Review of our Boundary Interpretation files show that boundary interpretations were done for the mauka boundary (where it meets Kalanianaole Highway) and for the makai boundary (where it meets the ocean). The boundary line between the mauka and makai points have not been the subject of a boundary interpretation, although a boundary interpretation was recently completed for the Environmental Impact Report (Boundary Interpretation No. 96-11), which generally depicts the proposed development in the Hawaii Kai area, and includes the subject property.

We have no further comments to offer at this time.

Thank you for the opportunity to provide comments on the Draft Environmental Impact Statement.

If you have any questions in regards to this matter, please feel free to contact me or Leo Asuncion of my staff at 587-3822.

Sincerely,

ESTHER UEDA
Executive Officer

EU:ch

cc: OEQC
Mr. Robert Burke
Mr. Scott Ezer

Heller Hastert
Planners

October 1, 1997

Ms. Esther Ueda, Executive Officer
State of Hawaii
Department of Business, Economic Development & Tourism
Land Use Commission
P.O. Box 2359
650 South King Street
Honolulu, HI 96804-2359

Dear Ms. Ueda:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated October 22, 1996 on the above environmental impact statement preparation notice (EISPN). Your letter will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference, we will respond to your comments in the order they appear in your letter.

1. We note that you confirm the subject parcel lies within the State Land Use Urban District.

2. We acknowledge your confirmation of a "Priority 2" recommendation to reclassify the project site to the State Land Use Conservation District.

3. We understand that a "Priority 2" recommendation does not preclude the Office of Planning, nor any other government agency, from filing a petition with the Land Use Commission to reclassify the project site to the State Land Use Conservation District.

4. The footnote on page 3-10 did not intend to suggest that the Office of Planning was absolved of the responsibility to prepare a new 5-year boundary review. We merely wished to point out that at the present time, no such review was actually under way.

5. We will include a source note in the Final EIS as to the Urban/Conservation district boundary depicted in Figure 7 (the Department of Land Utilization).

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733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545-2055
Facsimile 808 545-2050

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Jan Sullivan, DLU
Robert Burke, KACC

USDA

United States
Department of
Agriculture

Natural
Resources
Conservation
Service

P.O. Box 50004
Honolulu, HI
96850

Our People...Our Islands...In Harmony

November 19, 1996

Ms. Ardis Shaw-Kim
Department of Land Utilization
Honolulu Municipal Building
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Ms. Kim:

Subject: Draft Environmental Impact Statement (DEIS) - Queen's Beach Golf Course - East Honolulu, HI

We have reviewed the above-mentioned document and offer the following comments:

Most of the proposed golf course has Lualualei soils (LuA and LPE) and Rockland (rRK) that have severe limitations for golf fairways.

Lualualei soils have clays that are very sticky and very plastic when wet, and very hard when dry. They have a high shrink-swell potential that causes the soil to shrink and have wide surface cracks when dry. About half of the area is extremely stony due to naturally occurring stones or because of stockpiling of stones and boulders from other areas. Rockland is very shallow to bedrock, and outcrops are common.

A severe rating means the soil has one or more properties unfavorable for golf fairways. Major soils reclamation will be needed such as removal of stones, and filling with favorable soil. Intensive maintenance may be needed on the cart paths because Lualualei soils are unstable.

We thank you for the opportunity to review this document.

Sincerely,

KENNETH M. KANESHIRO
State Conservationist

Helber Hastert
Planners

October 1, 1997

Mr. Kenneth M. Kaneshiro
State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
P.O. Box 50004
Fort Shafter, HI 96850

Dear Mr. Kaneshiro:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 19, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

You note that the presence of Lualualei soils (LuA) and Rockland (rRK) at the project site could have severe limitations for golf fairways. You are particularly concerned about the shrink-swell potential that causes the soil to shrink and have wide surface cracks when dry.

While the shrink-swell characteristic of the soils, and the clay content in general, are problematic from a drainage perspective at present, they are not necessarily problematic for golf course design. The establishment of turf and the use of an irrigation system will allow watering of soils through the rooting zone of the turf. Soil moisture, to a depth of about one foot, will therefore be increased to near saturation which, in effect, will eliminate most surface soil cracking. To increase playability, especially in the low lying soils of this area, fairway construction would include the use of a modified backfill where excavated topsoils can be mixed with sand and peat to provide a layer of more uniform and predictable drainage characteristics.

In regard to the boulders and other rock outcrops found on the project site, the boulders will be relocated to the makai perimeter of the site for construction of an earth berm, which will retain stormwater runoff and serve as protection for the site. Once the boulders have been placed, a cementatious grout will be used to anchor them in place. A geotextile material will be placed between the boulders and a layer of topsoil. (An erosion

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control mat will be used to protect the topsoil while vegetation is germinating and establishing a root system).

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

96-01654

BENJAMIN J. CAYETANO
GOVERNOR

SAM CALLEJO
COMPTROLLER

MARY PATRICIA WATERHOUSE
DEPUTY COMPTROLLER

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

LETTER NO (P)1642.6

OCT 24 1996

1996 OCT 25 AM 7:58
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

Department of Land Utilization
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Attention: Ms. Ardis Shaw-Kim

Gentlemen:

Subject: Queen's Beach Golf Course
Queen's Beach, East Honolulu, Oahu
Draft Environmental Impact Statement

Thank you for the opportunity to review the subject document. The proposed project will have no impact on our facilities. Therefore, we have no comments to offer.

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

Very truly yours,

GORDON MATSUOKA
State Public Works Engineer

RY:jy
cc: Kaiser Aluminum and Chemical Corporation
Helber Hastert & Fee, Planners
OEQC

Heller Hastert
Planners

October 1, 1997

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

Dear Mr. Matsuoka:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated October 24, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

We note that you have no comments to offer on the proposed Queen's Beach Golf Course.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Heller Hastert & Fee
Grosvenor Center, Mauka Tower
737 Bishop Street, Suite 2780
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THE OUTDOOR CIRCLE
1110 University Ave., #406 • Honolulu, HI 96826
Phone: 808-943-9658 Fax: 808-955-7364

November 21, 1996

Department of Land Utilization
Honolulu Municipal Building
650 South King Street, 7th Floor
Honolulu, HI 96813
Attn.: Ardis Shaw-Kim

RE: Queens Beach Golf Course
Island Oahu, East Honolulu
TMK: 3-9-11:03 por 02

Dear Mr. Shaw-Kim:

The Outdoor Circle has been working to "keep Hawai'i clean, green, and beautiful" for more than 80 years. Our long term vision includes having each island surrounded in a "lei of green." However, we see this green as public open space for the use of all, not as a golf course, for the exclusive use of just a few.

Thank you for the opportunity to review the above referenced Draft Environmental Impact Statement (DEIS). Included in our response are specific concerns which we feel must be thoroughly addressed, or the Final Environmental Impact Statement (FEIS) must be rejected.

Permits:
A key permit is missing from the list of required permits,. The construction of this golf course should require a National Pollutant Discharge Elimination System Permit (NPDES) from the State Department of Health. This general permit is needed for storm water discharge from construction sites greater than five acres. The proposed Queens Beach Golf Course exceeds this requirement.

Visual Impacts:
The existing conditions of the Ka Iwi coastline include a coastal zone, a valley, a rocky headland and a coastal bench trail. The proposed Queens Beach Golf Course features an 18 hole championship course, a club house, parking for 250 vehicles, a seven acre driving range, and a one story maintenance facility of about 7500 square feet. We strongly disagree with the DEIS which claims that views toward the sea from Kalanianaole Highway will not be disrupted.

It is impossible to discuss the visual impacts of this project until the location of the clubhouse, the maintenance facility and the comfort stations have been situated. If the locations are changed from what is in the DEIS, the visual impacts could change significantly, requiring a supplemental EIS.

In addition, without a landscaping plan, making the claim that landscaping will mitigate the visual effect of the buildings is ridiculous. A completed landscaping plan, based on the final location of the buildings, prior to acceptance of the FEIS is essential.

Clearly, any buildings on the site will interrupt the relationship between the land and the ocean. This needs to be noted, addressed honestly, and dealt with in the FEIS.

Runoff:
Real concerns about golf course operations have increased dramatically in the last several years. The application of pesticides and fertilizers will result in considerable runoff to our ground water and the near shore line, thus impacting the marine environment. The DEIS does not discuss the potential dramatic impact of this runoff on our coastal waters. It is not plausible to determine pesticide use for Queens Beach based on the Hawaii Kai Golf Course. Proposed for the course are many native species. This course will have a very different look and will therefore require special care. Will different pesticides be required? To ensure the health of the endangered and native species of both plants and insects, shouldn't alternatives be reviewed prior to acceptance of the FEIS?

The DEIS calls for "normal" precautionary measures to be taken during construction to minimize runoff. Given the delicate environment at Queens Beach, those measures should be listed. More information needs to be provided regarding normal operational procedures for the golf course, as well as the way the developers plan to minimize the adverse impacts to marine life. In addition measures must be taken to ensure that the bird habitat is preserved prior to the approval of the DEIS. We would like to know what mitigation will be used to protect native wildlife and habitat offshore.

We have questions concerning the lack of information given regarding the Integrated Pest Management Plan proposed in the DEIS. It is stated that this plan will be used to protect coastal water quality and will minimize erosion. Details about the specific plan are missing. Before the environmental impact statement is finalized, we would like to know more about the extent and implementation of this plan.

Flora
Plans call to "incorporate native plants into the landscape design..." In addition, a buffer zone will be used so as not to disturb the roots of both the native, and rare plants during construction. The DEIS claims that off-road vehicles threaten native species, and that they will be better protected

by the golf course. Why not keep the off-road vehicles out now? The Outdoor Circle has extensive experience in protecting flora from construction projects. How will the construction vehicles operate around the buffer zone?

Again, it is difficult to discuss impacts from construction until the design of the golf course is complete. This must be done in the FEIS.

Water supply:
The DEIS states that existing lines will carry potable water to the Queens Beach Golf Course. However, to transmit the effluent needed for course irrigation, a transmission system is going to be built along the right-of-way on Kalanianaole Highway. The FEIS should discuss traffic impacts (and others) during construction. It should also address the cost of this system, and who is responsible for paying for it.

Public Access:
The need for public access is essential. Although a shoreline trail is provided, parking is not. The developer should be required to provide plenty of public parking, comfort stations and public entries along the coast. The entire coastline must be accessible to the public, without fear of errant golf balls.

Alternatives:
The scenic qualities of the Queens Beach region are greatly enhanced by extensive and continuous open space. In keeping with our long-term vision, The Outdoor Circle strongly supports the development of the state park alternative. We feel that no action to develop the golf course should be taken until a decision has been made regarding Ka Iwi Park. We do not think a golf course is complementary to the park, as was stated in the DEIS.

In addition, the construction of Queens Beach Golf Course should be consistent with the City and County of Honolulu's General Plan. With an existing golf course across the highway, we question the need for an additional course. Can our island sustain yet another golf course, given the numbers that have recently gone into bankruptcy? A review of golf course development across the State shows that these facilities do not stand alone. In order to sustain them, housing, restaurants and stores are developed on their perimeters. Further development surrounding the proposed course might create another discrepancy with the City's Development Plan.

Since this project is part of the larger settlement agreement with the City, we believe this DEIS should evaluate the cumulative impact of the developments on the Ka Iwi coastline.

Other:
If this project is accepted, all power and utilities in the area must be relocated underground. This is not dealt with in the DEIS.

The Queens Beach Golf Course Draft Environmental Impact Statement offers many recommendations for mitigation of the environmental impacts. This is troublesome. We should be given assurances and not recommendations. In addition, there are many examples of previous golf course development projects where construction was never completed. We recommend requiring a large performance bond to cover the cost of environmental litigation in case of financial collapse, halfway through the project.

Thank you for the opportunity to comment.

Sincerely,

Mary Steiner
CEO

Carolyn Heinrich
President

cc: Office of Environmental Quality Control, Gary Gill
Kaiser Aluminum and Chemical Corporation, Robert Burke
Helbert Hastert & Fee, Planners, Scott Ezer

Helbert Hastert
Planners

October 1, 1997

Ms. Mary Steiner, CEO
Ms. Carolyn Heinrich, President
The Outdoor Circle
1110 University Avenue, #406
Honolulu, HI 96826

Dear Mesdames Steiner and Heinrich:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 21, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to your comments in the order they appear in your letter.

Permits

The need for a National Pollutant Discharge Elimination System (NPDES) permit will be identified in Section 1.7 of the FEIS.

Visual Impacts

We note that you strongly disagree with the claim that views toward the sea from Kalanianaole Highway will not be disrupted, and that you feel it is impossible to discuss the visual impacts of this project until the location of the clubhouse, the maintenance facility and the comfort stations have been situated. Many reviewers of the DEIS suggested that additional visual analysis be conducted and included in the FEIS. There was particular interest in providing alternate locations for the clubhouse that might reduce the exposure of the clubhouse to motorists travelling south on Kalanianaole Highway, away from the Makapu'u Lookout.

First, the purpose of the EIS process is allow for review of available information so that project impacts can be presented and analyzed, and, in turn, the project can be adjusted to mitigate these impacts. In the case of visual impacts, the information provided in the DEIS left many readers with the observation that the proposed location of the clubhouse created an unacceptable visual impact for motorists travelling south on Kalanianaole Highway, away from the Makapu'u Lookout. The FEIS will supplement the computer/photographic

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Governor Center, Makai Tower | Honolulu, Hawaii 96813 | Facsimile: 808 545-2050

simulations found in Figure 13 of the DEIS (Figure 15 of the FEIS) by moving the clubhouse to the north, further removed from the line-of-sight on Kalanianaole Highway. The axis of the clubhouse will also be shifted, reducing the building face visible to motorists. The written analysis in Section 4.9 of the FEIS will be revised accordingly.

You also suggest that without a landscaping plan, we cannot claim that landscape treatment will mitigate the visual impacts of the clubhouse. We disagree with your assessment. The graphic simulation that will be added to the FEIS will include landscape and exterior finish treatment, and will demonstrate the effect that such treatment can have. This demonstration can be effective to support a condition of approval requiring certain types of treatment for landscaping or exterior finishes. In this context, we suggest that the EIS process has been quite successful.

Runoff

In response to your comments on runoff, and many similar comments from other reviewers, we asked Sam O. Hirota, Inc. to prepare a grading and drainage report for the proposed golf course. The findings of this report will be summarized in Sections 4.2 and 6.4 of the FEIS, and the entire report will be attached to the FEIS as Appendix N. In general, runoff will be contained on the site by an earthen berm that is to be constructed. During the first stage of construction, boulders now scattered throughout the site will be relocated to the makai perimeter of the site for use in the construction of the earth berm. Once the boulders have been placed, a cementatious grout will be used to anchor them in place. A geotextile material will be placed between the boulders and a layer of topsoil. (An erosion control mat will be used to protect the topsoil while vegetation is germinating and establishing a root system.)

Runoff would be contained within detention basins designed as part of the golf course and bunker pits. Fairways within the coastal plain would be crowned with swales on either side, while the fairways located within the valley area will have cross slopes that would allow runoff to drain into detention areas. The large detention basin defined by the driving range, along with low lying areas near the berm, will be drained with the use of weirs. The weirs would allow for controlled release of stormwater runoff, reducing the peak flow during storm events.

In regard to pesticide use, it is plausible to use the Hawaii Kai Golf Course as a guide for the proposed Queen's Beach Course. Because the Hawaii Kai Course is located within the same micro-climate, conditions experienced there can be used to help predict conditions at the Queen's Beach Course.

Best management practices (BMPs) to be employed during the construction phase of the course include the following:

- construction of the perimeter berm will begin immediately to prevent runoff from leaving the site and trap sediment both during and after construction;
- a series of silt fences and berms will be constructed along existing drainage channels to prevent runoff from leaving the site in an uncontrolled manner;
- sediment traps and barriers will be constructed in front of and adjacent to major discharge points of the existing drainage system;
- major construction will take place only during the dry period of the spring and summer months, and will be implemented in 15-acre sections, with grassing to occur as sections are completed; and
- to further control dust, watering will take place during grading and general construction.

Permanent erosion control measures will be also be incorporated into the design of the course, as follows:

- grassing and landscaping of the site would improve existing conditions which have large amounts of bare soil (predominantly off-road vehicle trails) exposed to the effects of rain and runoff;
- construction of a grassed berm on the makai perimeter of the project site which will retain runoff on the site and allow for a timed release of stormwater, after sediments have settled;
- curb cuts that would allow for runoff to travel over grassed or landscaped areas ;
- cleaning of parking lots and roads to reduce sediment load and pollutants;
- construction of detention basins as part of course design (such as the 7-acre driving range area) to trap suspended solids and sediment; and
- use of grassed swales and detention ponds that increase the time of concentration and detention.

These design elements would all be incorporated into the Integrated Pest Management Plan (IPM). Other features of the IPM would include a pesticide monitoring plan that would track the chemical profile of groundwater, a chemical handling and use plan to guide the use application and disposal of pesticides, among others. A full IPM plan would be developed after permitting, and would be reviewed by DLU and other appropriate agencies.

Flora

Both the landowner and the lessee have tried repeatedly to prevent off-road vehicles from using the property as an access point. We believe that development of the proposed golf course with the presence of 24-hour security will eliminate use of the property by off-road vehicles. The development of a botanical management plan will determine how important flora will be protected from construction activities. It is probable that shade-cloth barriers can act as silt screens to prevent dust and soil particles from impacting these plants.

Water Supply

Section 6.2.2 of the DEIS acknowledges that traffic impacts would be associated with the construction of a transmission line between the East Honolulu Wastewater Treatment Plant and the proposed golf course. The DEIS also suggests measures such as appropriate warning signage, clearly marked construction areas, restriction of work to non-peak hours, and the assistance of off-duty police officers to control traffic flow which would mitigate these impacts

The developer would be responsible for the entire cost of installing the transmission line.

Public Access

At present, there is a large informal parking area on the eastern end of Wawamalu Beach that provides parking for those who wish to enjoy the coastline along the project site. This arrangement seems to adequately handle parking demand. The applicant and the landowner believe that if restrooms and other public facilities are to be provided in this area, they should be provided on public land. This would eliminate any liability issues to the landowner and the applicant related to these facilities. It would be incumbent on the City and County, or the State of Hawaii, to purchase the necessary land to facilitate the development of these facilities.

In regard to your concerns about exposure to errant golf balls, we have considered the safety issues related to hikers and the proximity of the golf course. We believe you are referring specifically to the greens of the 1st, 10th, 17th, and 16th holes, and the fairways of the 12th and 13th holes. We have re-examined the layout of hole nos. 1, 16, and 17, and Figure 6 now shows them set back further from the shoreline area.

The public's use of the Coast Guard Access Road will not be impacted or interrupted by the development of the Queen's Beach Golf Course. The layout of the 10th, 12th, and 13th

holes have golfers hitting either toward the access road or parallel to it. The green of the 10th hole is downwind and about 200 feet south of the access road. The 12th hole runs roughly parallel to the access road, with a separation of between 300 and 500 feet between the road and the green. The fairway for the 13th hole also runs parallel to the access road, with a separation distance between the centerline of the fairway and the access road varying between about 175 feet near the tee box and 250 feet toward the middle length of the fairway. In addition, there is an elevation separation of about 40 to 70 feet between the fairway of the 13th hole and the access road which adds to the separation between golfers and hikers. It is possible that a low fence or net (7 to 8 feet) might be required near the tee box of the 13th hole along the access road to protect hikers from golfers who "hook" their tee shots.

Alternatives

We recognize your support of the development of the Ka Iwi State Park, that would include the project site. We must take exception to your expressed hope that no action should be taken to develop the golf course until a decision has been made regarding Ka Iwi Park. We realize that there have been various ideas considered to finance the acquisition or condemnation of the Queen's Beach property. None have yet resulted in a transaction to effectuate a change in ownership. How long must the landowners and the applicant wait for government officials to produce a fair offer for the property? It would not be in the best interest of either the landowner or the lessee to abandon development plans while various government entities determine whether to purchase the project sit, and at what price.

You question the consistency of the Queen's Beach Golf Course with the City and County of Honolulu General Plan. Section 3.3.2 of the DEIS contains a discussion of the proposed golf course with respect to the General Plan, and has determined that the project is consistent with the General Plan.

Your letter suggests that the proximity of the existing Hawaii Kai Golf Course across Kalanianaole Highway satisfies the market demand for rounds of golf in the region. The analysis conducted by KPMG Peat Marwick, and included in the DEIS as Appendix L, and summarized in Section 5.4, shows that there is a market demand for another course in the region. Your letter also suggests that golf courses are not economically viable unless they are built as amenities to other development, such as housing, restaurants or commercial development. In large measure, this situation was created by the remarkable rise in value for golf course properties that occurred in Hawaii during the 1980's and early 1990's. The cost of land acquisition, construction and the added burden of exorbitant impact fees created a financial environment within which it was virtually impossible to pay down debt for stand-

alone golf courses. Therefore, they became amenities to larger developments. In regard to the Queen's Beach Golf Course, no other uses will be built surrounding the golf course.

Many reviewers have suggested that the DEIS should evaluate the cumulative impacts of the 12 developments that were part of the larger settlement agreement. Recent action by the City Council (Resolution 97-09) terminated the settlement agreement. As a result, the future of these projects is undetermined, particularly because unsettled litigation will affect what happens to these properties. Consequently, the discussion of cumulative impacts is moot.

Other

All utilities related to the project will be placed underground. However, should it be necessary to relocate existing power and telephone lines from easements on the project site, it is not up to the applicant or the landowner as to whether utility companies will underground these lines.

You also expressed some concern that the DEIS presents recommendations for mitigation measures rather than assurances. The environmental impact statement process does not result in the granting of any entitlements. Rather, the process is designed to develop as much information about a particular project, so decision-makers can make informed decisions, including what kinds of conditions or mitigation measures should be attached to entitlements. As such, the EIS as a document cannot assure that any specific mitigation measure will be required as part of the entitlement process.

Sincerely,

HELBER, HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY
GILBERT COLOMA-AGARAN

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION DIVISION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

October 31, 1996

RECEIVED
NOV - 1 1996
HELBER HASTERT & FEE PLANNERS

Ardis Shaw-Kim
Department of Land Utilization
Honolulu Municipal Building
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

LOG NO: 18395
DOC NO: 9610TD15

Dear Ms. Shaw-Kim:

SUBJECT: Chapter 6E-42 Review--Draft Environmental Impact Statement (DEIS), Queen's Beach Golf Course
TMK: 3-9-11: 3, por. 2

Thank you for the opportunity to review this DEIS, which describes plans for a golf course on approximately 166 acres of undeveloped land. We concur with the recommendation in the DEIS that an historic sites inventory survey be conducted prior to the commencement of any construction activity. The provisional significance determinations provided in the archaeological assessment included as Appendix H of the DEIS cannot be reviewed until more final proposals are offered in the inventory survey report. We look forward to reviewing the inventory survey report and will offer comments on the significance of sites and proposed mitigation at that time.

If you have any questions please call Tom Dye at 587-0014.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TD:jk

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation, c/o Kaiser Center, Inc., 300 Lakeside Drive, Suite 130, Oakland, CA 94612-3534
Scott Ezer, Helber Hastert & Fee, Planners, 733 Bishop Street, Suite 2590, Honolulu, Hawaii 96813
Dean Y. Uchida, Administrator, Land Division, DLNR

Helber Hastert
Planners

October 1, 1997

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

Dear Mr. Hibbard:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated October 31, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

Your comments were restricted to concurrence with our observation for the need to prepare an inventory survey for the proposed project. Since that time, Cultural Surveys Hawaii did prepare an archaeological inventory survey which was accepted by your office by letter dated June 23, 1997 (LOG NO: 19574; DOC NO: 9705EJ25). The inventory survey will be included in the FEIS as Appendix H.

Sincerely,

HELBER, HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Governor Center, Makai Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545-2055
Facsimile 808 545-2050

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
PACIFIC PARK PLAZA
711 KAPIOLANI BOULEVARD SUITE 1200
HONOLULU, HAWAII 96813

JEREMY HARRIS
MAYOR

CHARLES O. SWANSON
DIRECTOR

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HELBER HASTERT & FEE PLANNERS

November 20, 1996

10/96-04643R

MEMORANDUM

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

ATTN: ARDIS SHAW-KIM

FROM: CHARLES O. SWANSON, DIRECTOR

SUBJECT: QUEEN'S BEACH GOLF COURSE DRAFT ENVIRONMENTAL IMPACT STATEMENT

Thank you for providing us with the opportunity to review the subject document. We do not have any comments to offer regarding the transportation or traffic impacts of the project.

Should you have any questions regarding this matter, please contact Faith Miyamoto of the Transportation System Planning Division at Local 6976.

for K. Yamamoto
CHARLES O. SWANSON

cc: Mr. Robert Burke,
Kaiser Aluminum and Chemical Corp.
Mr. Scott Ezer,
Helber Hastert & Fee
Office of Environmental Quality Control

Helber Hastert
Planners

October 1, 1997

Ms. Cheryl D. Soon, AICP
Director
Department of Transportation Services
City and County of Honolulu
Pacific Park Plaza
711 Kapiolani Boulevard, Suite 1200
Honolulu, HI 96813

Dear Ms. Soon:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for the letter dated November 20, 1996 on the above draft environmental impact statement (DEIS). The letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

We note that there no comments to offer regarding the transportation or traffic impacts of the project.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545-2055
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If we lose the beauty of our shoreline...
we lose what it means
to live in Hawaii.

Ka Iwi Action Council

November 21, 1996

[redacted]

RECEIVED
NOV 25 1996
HELBER HASTERT & FEE
PLANNERS

Patrick Onishi
Department of Land Utilization
650 S. King St., 7th Floor
Honolulu, HI 96813

Dear Mr. Onishi:

The Ka Iwi Action Council feels strongly that the DEIS for the Queen's Beach golf course submitted by Kaiser Aluminum and Chemical Corporation is inadequate in its treatment of the issues raised by comments to the EISPN and in the provision of information required for a proper consideration of a Special Management Area permit. We urge you as Director of DLU to reject the FEIS if it does not fully address the issues that we raise below and that other members of the public raised in comments to the EISPN and the DEIS.

4.4 Pesticides
The authors claim that the quantities of pesticide and herbicide applied will not likely affect the marine environment. However, there are no figures given for the anticipated quantities of pesticide and herbicide. Therefore, there is no basis for substantiating this assertion. We are directed to Appendix C for a recommended Turf management Plan. However this plan only makes the most general recommendations and does not commit the developers or managers to any specific plan.

--We need to know:
1. That MSMA will not be applied. Authors *recommend* that it not be applied.
2. That Dicamba will not be used. Authors state that concentrations of Dicamba in runoff would be high. (p. 4-16) They indicate that careful management of Dicamba is required. (p. 4-13) However, there is no detailed plan for Dicamba if it is used.
3. The specific plan for use of chemicals.
4. What would be the effect of runoff on marine life? The assertion that the levels of pesticide in runoff fall below levels allowable for drinking water does not address this question.
5. What would be the effect of the more than twofold increase in ground water discharge to the shoreline?

6. Will the developers bring in topsoil? We don't know. There is no discussion of this except in the appendix prepared by William Walker.
   --If topsoil is to be brought in the FEIS should assess the effect of topsoil addition with regard to sedimentation of coastal water. We are particularly concerned about this issue given the experience at the Manele golf course where a broken irrigation line caused imported topsoil to wash into the water resulting in significant sedimentation.
7. If they bring in topsoil will they use a fumigant and what impact will that have on flora, insects, birds, and marine life?
   Appendix C suggests that if topsoil is brought in a fumigant may be needed. Additionally, Walker suggests that a pre-emergent pesticide may be necessary during construction. At the same time he warns that this practice should be avoided. We wonder will the developers do what they may need to do, or will they not do what they may need to do?

4.5 Flora
The DEIS recognizes the existence of three populations of the endangered endemic water fern *Marsilea villosa* and notes that few sites left in the Hawaiian Islands support such large numbers of the native ma'o as are found at Queen's Beach. The authors offer only token preservation of these native species as mitigation.

They recommend that the three areas containing *Marsilea villosa* be managed as a preserve and that a large portion of the area with a high density of ma'o be left intact. They also suggest using native plants in landscaping. The DEIS does not state what percentage or how many acres of the native plants will be protected on site.

The project area totals approximately 166 acres. Of that, about 120 acres will be turf grass. Additional acreage will support a parking lot, clubhouse, maintenance building and two comfort stations. This leaves very little acreage for the landscaping and preservation of the *Marsilea* and ma'o.

--To assess the sufficiency of this mitigation, the FEIS must describe specific acreage to be set aside for preservation.

The authors wholly fail to address the question of what effect an environment of greatly increased irrigation and nutrient application as well as pesticide use will have upon the (remaining) native plants which are adapted to local climatic and soil conditions.
--These issues must be addressed.

4.7 Insects
The project site provides evidence of the presence of the *Rhyncogonus simplex* which may be dependent upon a single host plant, the ma'o. The authors offer to protect *rhyncogonus simplex* by preserving its habitat. However, as indicated above, there is not any commitment to preservation of a specific amount of habitat.

The authors also propose creating a buffer zone to protect the insect from pesticides and fertilizer. There is no information regarding the size of a sufficient buffer zone.

--The FEIS must provide specific information regarding habitat preservation and buffer zones in order to evaluate the sufficiency of the protection.

4.9 Scenic Resources
The analysis of vividness, unity and intactness provides an interesting "artistic" view of the envisioned changes in landscape.

However, this analysis obscures the significant visual impact - the placement of a strong human imprint upon a landscape that is otherwise wild and rugged in the most extreme sense. This coastline displays in rare form the awesome force of volcanics and the breathtaking beauty of the ocean. One hundred and twenty acres of turf grass is a visual violation of the existing landscape.

4.10 Historic, Cultural and Archaeological Resources
The developers must be required to perform an inventory survey prior to the FEIS and include this in the FEIS. See Hui Alaloa, 68 Haw. 137.

4.12 Air Quality
To mitigate potential impact of pesticide wind-drift, the authors recommend among other things: minimizing pesticide use and using low-toxicity/nonpersistent chemicals. Again, we are given no determination of what chemicals will be used and in what quantities.

--The FEIS must set out a specific use plan.

5.4 Market Analysis
The authors define a market area stretching from Pearl City to Hawaii Kai and find an apparent undersupply of golf courses in this region. There are 10.5 courses in the designated region with four of these open to public play.

They fail to point out that there are 5 courses within ten miles of the proposed golf course and that two of the four public courses sit across the highway from the proposed golf course. Clearly, there is not an undersupply of golf courses in the area surrounding Hawaii Kai.

5.5 Cumulative Impact: Socio-Economic Environment
The authors predict positive benefits in employment and housing opportunities as a result of a large population increase that would come with development under the settlement agreement.

They do not address the concomitant need for increased public facilities and services such as schools, roadways, recreational resources and water resources. Nor do they address the negative impacts of the loss of more open space.

Hawaii Administration Rule 11-200-2 defines cumulative impact as
> the impact on the environment which results from the incremental impact of the action when added to their past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions.

HAR 11-200-17 requires an EIS to discuss "significant beneficial and adverse impacts (including cumulative impacts and secondary impacts)."

--Under existing law, the developers must include in the FEIS consideration of the cumulative impact of this golf course and the developments proposed in the settlement agreement with city council.

6.1 Transportation
As mitigation for increased traffic resulting from the golf course and the settlement developments the DEIS suggests:
(a) a left-turn storage lane for accessing the golf course from west-bound traffic, and
(b) provision of adequate sight distance relative to road curves.

The developers make no commitment to fund these improvements.
--The FEIS must address the funding of these improvements.

6.2 Water Supply
The Board of Water Supply policy is to not allow the use of potable water for irrigating golf courses. The DEIS has set out no rationale for a change in this policy as regards the proposed golf course.

--The FEIS should set out the impacts upon the rest of the community if the golf course is allowed 35,000 gallons per day of drinking water.

--The FEIS should also set out the cumulative impact upon the water supply of the related developments in the settlement package.

6.3 Wastewater
6.4 Drainage
6.5 Solid Waste
--The FEIS must set out the cumulative impact upon the wastewater, drainage and solid waste disposal systems of the settlement agreement developments along with the golf course.

6.6 Schools and Libraries
6.8 Police/Fire and Emergency/Rescue Services
6.9 Power, Communications and Civil Defense
--The FEIS must address the impact of additional population resulting from all of the proposed developments upon the existing facilities and services.

Alternatives to the Proposed Action
The authors fail to adequately explore alternatives to the golf course proposal.
Possible alternatives include:
1. Development of a fee based nature park.
2. A public-private partnership in a nature park and educational site.
3. Development of a golf course that truly incorporates native plants and that operates without use of pesticides and fertilizers. This could be a truly pioneering and novel attraction.

Chapter 9
The characterization of the proposed change in the physical appearance of Queen's Beach as a short-term trade-off is grossly inappropriate.
The effect upon appearance is long-term and to the extent that existing flora is removed it is probably irrevocable.

In closing, we request that you require the authors of the DEIS to prepare a FEIS that adequately addresses the many concerns raised by members of the public who responded to the EISPN and who will respond to the DEIS. We further urge you again to reject a FEIS that does not fully respond to these comments.

Sincerely,

Teresa McHugh

Teresa McHugh

Heller Hastert
Planners

October 1, 1997

Ms. Teresa McHugh
Ka Iwi Action Council
56 Nawiliwili St.
Honolulu, HI 96825

Dear Ms. McHugh:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 21, 1996 on the above draft environmental impact statement (DEIS). Your letter will be included in the final environmental impact statement (FEIS) being prepared

For your ease of reference we will respond to your comments in the order they appear in your letter.

Pesticides

Dr. William Walker of Environmental Chemistry, (author of Appendix C of the DEIS), agrees that MSMA should not be used at the project site. If regulating authorities agree with this recommendation it can be incorporated as a condition of approval for the Special Management Area Use Permit. As for Dicamba, it is recommended that it be considered for use based on the following considerations. It is highly water soluble and under poor management conditions could pose a threat to surface and groundwater. These conditions would include excessive application rates and or application with excessive surface water which exceeds the infiltration capacity of the soils, and application immediately prior to a storm capable of producing runoff.

On the other hand, Dicamba has many characteristics that make its use attractive, especially at this location. For instance, it is highly water soluble, but occurrence of high rainfall at the site is not common, thus making surface water runoff an exceptional event. This, coupled with a very short half-life (11 days) suggests that it is not persistent, and if applied under dry conditions will be degraded before any trace of the material can be made available for leaching or surface water runoff. In addition, Dicamba has a lower toxicity rating than many other herbicides that could be used at the site The key to its use, therefore, is a management issue.

To a large degree, the use, application and disposal of pesticides is a regulated activity. As such, chemical handling must be done in accordance with State and Federal regulatory requirements. All facilities listed as users of hazardous chemicals are subject to audit and inspection of records and facilities. The basic chemical handling practice at the course includes:

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- Construction of appropriate containment buildings for pesticides and fertilizers. The buildings should have bermed (lipped) concrete or other impervious floors for collection and containment of any chemical spills. Waste chemicals must be stored in State-supplied containers and shipped for disposal according to local regulations. The chemicals themselves have label instructions regarding compatibility with other chemicals and proper storage temperatures.
- Training of personnel handling and applying chemicals. These training programs should be required of all personnel connected with chemical use and planning. Training should be recommended or conducted by Extension Specialists at the University of Hawaii (Department of Agriculture Biochemistry (808) 948-8352). Refresher courses and appropriate OSHA courses should be required as well.
- Tracking of inventory and application of chemicals on an as-used basis This will serve to record all chemical use at the course and serve as a means of accounting for all chemicals purchased by the course. In addition, the golf course superintendent can determine monthly and annual use of each chemical for determining the efficiency of chemical use at the course and for comparing to monitoring data of water within the course.
- Each chemical has specific warnings on the label concerning the toxicity, storage requirements and application instructions. These instructions must be followed. Specific warnings about use near waterways and drainages must be especially noted and followed.
- For the most part, pesticide application should be done as "spot" applications by hand sprayers to the affected area only which reduce the environmental load in the area. Application should occur within the thatch zone directly to avoid large volatile losses or drift with wind. Thatch injection will eliminate much of the potential wind-borne loss.
- Following application, some watering should occur to ensure that the pesticide will not volatilize. Excess watering should not be done.
- The course must use "close-looped" mixing and applying devices to prevent spills.
- Target rates of pesticide applications must be done with guidance from the University of Hawaii Extension Specialists.

Many reviewers of the DEIS requested that a grading and drainage report be included in the FEIS. As a result, Sam O. Hirota, Inc. did prepare a grading and drainage report that will be summarized in Section 4.2 and 6.4 of the FEIS, and will be attached to the FEIS as an appendix (Appendix N). One of the key elements of the drainage and grading plan is the construction of an earthen berm along the makai portion of the project site that will effectively prevent stormwater runoff from directly reaching the ocean. The berm will act in conjunction with a system that will include grassed swales that direct runoff, retention basins designed as part of the golf course, and weirs to control the rate of discharge, after stormwater has settled its sediment load.

In terms of the two-fold increase in groundwater discharge to the shoreline, Tom Nance Water Resource Engineering (Appendix A of the DEIS) assessed the potential impacts to the nearshore

marine environment as a result of discharged nutrients. According to Nance, the nutrient loading as a result of the proposed project would be very minor.

Some fill materials, mainly sand and peat for fairway and green construction will be necessary. However no fumigation of these materials will be required. The course design would include mixing or blending of these materials with graded topsoil excavated during grading and contouring operations. As an erosion control measure, for both construction and operational periods for the golf course, a system consisting of an earthen berm at the makai end of the project site, retention ponds included in course design, and weirs to control discharge of stormwater, stormwater runoff will be retained on-site until sediments have settled out.

Flora

Several reviewers raised questions related to the preservation of the ma'o and the *Marsilea villosa*. In regard to the ma'o, Char & Associates recommends that all or a large portion of the area identified with a high density of ma'o should be left intact. The area of high density of ma'o is shown in Figure 2 of the botanical survey prepared by Char & Associates (Appendix D of the DEIS). This area is approximately 3.5 acres in size, and is located in the southeast portion of the project site in the vicinity of the congruence of the 15th, 16th, and 17th holes. The FEIS will be amended to provide a figure showing where the area of high density ma'o is relative to the golf course layout (Figure 14 in the FEIS).

In order to preserve as much of this area as possible, the layout of the holes listed above have been reconfigured, which will preserve at least 2.5 acres of the original dense habitat. In addition, there is an opportunity to add area beyond the 3.5 acres, by cultivating ma'o plants in the rough between these holes. Winona Char, of Char & Associates, has pointed out that ma'o is relatively easy to cultivate and can be found at the Honolulu Zoo, Foster Botanical Garden, the Waikiki Aquarium and residences throughout Oahu.

The entirety of the three *Marsilea villosa* colonies will be preserved intact, and a preservation plan will be developed in cooperation with the U.S. Fish and Wildlife Service. We expect, and encourage, that the requirement to prepare a preservation plan will be added as a condition of approval to the Special Management Area Use Permit.

Your reference to 120 acres that will be planted in turf grass is taken directly from the DEIS. We would like to clarify that this number was a worst-case scenario used by our consultants to estimate impacts related to the application of pesticides and fertilizers. The actual acreage of planted turfgrass will be closer to 90 acres.

Cumulative Impact

The termination of the consideration of the settlement agreement by the Honolulu City Council (Resolution 97-09) has rendered the discussion of cumulative impacts from the remaining 11 projects included in the agreement as moot. The long-term probability that any of these projects is implemented cannot be determined, because of the threat of continued litigation. This response should be considered applicable to all comments related to cumulative impacts.

Transportation

Section 6.1 of the FEIS will clarify that it is the applicant's responsibility to fund construction of the highway improvements identified in the DEIS.

Water Supply

As a result of comments from several reviewers, we have given careful consideration to desalinating reclaimed water from the East Honolulu Wastewater Treatment Plant for use on the greens, and now intend to install a small desalination plant at the golf course. Thus, no potable water will be required to provide water of adequate quality for the bermuda grass to be used on the greens. Section 6.2 of the FEIS will be amended accordingly.

As documented in the DEIS, the Board of Water Supply has stipulated that any domestic water needed to support the golf course must be taken from any allocation given to Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE). Since such an allocation would already be approved by the Board of Water Supply and the State Commission on Water Resources, impacts would be restricted to projects proposed by KSBE.

Alternatives to the Proposed Action

Chapter 7 of DEIS includes a discussion of the Ka Iwi Park Master Plan as an alternative to the proposed project. This alternative embodies your suggestions for a wilderness park and an educational center. It is difficult to appreciate how a private park that charges fees could be profitable in this location, when similar outdoor experiences exist in nearby locations that are free. Another issue related to fees is how to control access. How would it be possible to restrict access along the shoreline and require shoreline visitors to pay admission?

We did not ignore the consideration of this alternative, and made a point to ensure that a description of the Ka Iwi Park Master Plan, which was the subject of its own EIS and did not include provisions for admission fees, was included in the DEIS.

Prohibiting the use of any pesticides or fertilizers is contrary to the needs of proper course management. Certainly every effort should be made to limit their application only when needed. The development of a management plan specifically for the Queen's Beach Course will provide a basis to control the application of these chemicals.

Chapter 9

The FEIS will be amended to characterize the physical changes to the project site as long-term in nature. Describing long-term changes related to loss of flora as irrevocable is not accurate. As described in the DEIS, and clarified in this letter, the ma'o population will be preserved and enhanced. Closure of the shoreline area to vehicular traffic will allow the beach strand community to recover, and the three existing colonies of *Marsilea villosa* will be managed and preserved. To the greatest extent possible, existing trees will be retained, and other native species will be used in the overall landscape plan for the project. Yes, other flora will be removed and replanted with turfgrass. But native species that otherwise would be subject to destruction will be protected and enhanced.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

November 15, 1996

Mr. Patrick Onishi, Director
Department of Land Utilization
City and County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

RE: Draft Environmental Impact Statement
Queen's Beach Golf Course

Thank you for the opportunity to review the Environmental Impact Statement for the proposed Queen's Beach Golf Course. I have reviewed the document and offer the following comments:

1. **Irretrievable loss of koa haole/ma'o (Hawaiian cotton) shrubland and possible rare beetle habitat:** The botanical survey included as an appendix (Char & Associates 1995) cites that "the koa haole/ma'o shrubland covers the most area on the project site." In addition, the survey states that because "there are few sites left in the Hawaiian Islands which support such large numbers of Hawaiian cotton. . .all or a large portion of the site with a high density of ma'o should be left in tact." This recommendation should be carefully considered as the Hawaiian Snout Beetle *(Rhynocognus simplex)*, listed by U.S. Fish and Wildlife as a "species of concern," is flightless and limited to its prime host plant, ma'o. The insect survey demonstrates the presence of the rare beetle within the ma'o shrubland, but at very low numbers. As shown in *Figure 6: Conceptual Golf Course Plan*, the entire golf course appears to be planned on existing ma'o shrubland. Mitigation measures include preserving areas with a high density of ma'o. However, these preservation areas have not been delineated. Furthermore, it seems doubtful that a significant portion of ma'o shrubland will persist since potential impacts include "large-scale grubbing, grading, and planting of turfgrass not currently found on the site" for approximately "120 of the 166 acres," or three-quarters of the project site. Based on this projection, it appears that a significant portion of ma'o shrubland will be extirpated. This has not been plainly stated, nor has the EIS addressed these realistic potential impacts.

2. **Mitigation measures for rare coastal dry plant communities:** As stated in the botanical survey (Char and Associates 1995), "the coastal dry plant community types are considered rare and locally distributed with existing conditions making them vulnerable to extinction range-wide." The vulnerability of these plant communities has not been mentioned in the *Flora: Existing Conditions* portion of the EIS. No attempt has been made to include mitigation measures for these species that will potentially undergo impacts due to construction occurring on adjacent areas. These issues need to be addressed in the Final EIS.

3. **Mitigation measures for endangered *Marsilia villosa*:** The EIS does state that a Management Plan for *M. villosa* is underway. However, the plan should be reviewed and approved by FWS *prior* to the commencement of construction activities and included in the Final EIS as mitigation measures. Presumably, if the Management Plan is to be based primarily on FWS' *M. villosa* Recovery Plan as stated, it should address how the proposed project will assist in the species' recovery. As it stands, it is questionable that the construction of high-traffic areas such as the Club House, Driving Range & 10th hole (as indicated in Figure 6) would assist in the recovery of the species.

4. **Terrestrial fauna survey:** The EIS states that "no suitable habitat exists for any rare wildlife." As demonstrated by the surveys contained in the EIS, there exists *substantial* habitat for rare wildlife. According to the terrestrial fauna survey (Bruner 1994), endangered fauna has been documented on the property by the surveyor in previous visits. These include the endangered Black-necked stilt and Hawaiian Coot. Though not documented in this survey, Hawaii's only native mammal, the Hawaiian Hoary Bat, is also endangered and is known from coastal koa-haole communities. According to the surveyor, the bat, whose "distribution and behavior are extremely

limited," could "potentially occur at this site." Impacts to these species and respective mitigation measures need to be discussed.

In conclusion, all biological surveys contained within the EIS as appendices state that Queen's Beach provides a variety of habitats for rare native species, and recommend that the area should be preserved to the fullest extent possible. Nowhere are preservation areas clearly designated in the conceptual plans, nor are realistic impacts to these communities fully addressed. There needs to be a practical discussion of these issues incorporated within the Final EIS.

Thank you for the opportunity to comment.

Sincerely,

Melissa Dumaran
Natural Resource Manager
Hawaii Army National Guard

cc: Scott Ezer, Helber Hasert & Fee
Robert Burke, KACC
Office of Environmental Quality Control

1

Helber Hastert
Planners

October 1, 1997

Ms. Melissa Dumaran
Natural Resource Manager
Hawaii Army National Guard
3949 Diamond Head Road
Honolulu, HI 96816

Dear Ms. Dumaran:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 20, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact (FEIS) statement being prepared.

For your ease of reference we will respond to your questions in the order they appear in your letter.

1. *Irretrievable loss of koa haole/ma'o (Hawaiian cotton) shrubland and possible rare beetle habitat.*

The language you refer to in the botanical survey prepared by Char & Associates clearly states that "All or a large portion of the site identified in Figure 2 with a high density (emphasis added) of ma'o should be left intact." The reference to "Figure 2" is taken directly from Char & Associates' report on page 16. Figure 2 is the figure at the end of the report included in Appendix D, and not included in the main body of the DEIS. We can certainly understand any confusion that may have resulted concerning the location and size of the high density ma'o because this figure was not reproduced in the main body of the DEIS.

A new figure will be added to the Final EIS (Figure 14) that clearly delimits the high density area. For your information, this area encompasses approximately 3.5 acres, and a large portion can be preserved. In fact, the area can be expanded by germinating seeds from existing plants, and incorporating the ma'o plant into the rough area of the course that is contiguous to the existing acreage. We do not believe this will be a problem, as the ma'o is cultivated easily, and can be found in such locations as the Honolulu Zoo, Foster Botanical Garden, the Waikiki Aquarium and residences throughout Oahu.

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The estimated 120 acres of turfgrass referred to in your letter was used by our environmental chemist (Dr. William Walker) in his study to determine the effects of pesticide and fertilizer application to the golf course, as a worst case scenario. In fact, the actual area of turf grass on the golf course will more likely be in the 90-acre size. All references to 120 acres will be amended in the Final EIS.

2. *Mitigation measures for rare coastal dry plant communities.*

The FEIS will be amended to include a clearer discussion of the vulnerability of the coastal strand communities and the mitigation measures necessary to protect them. Char & Associates specifically mentions a "boardwalk or something similar to control pedestrian traffic." As for construction-related impacts, Section 4.5 of the FEIS will also be amended to indicate that no construction vehicles will be allowed in these areas, and where necessary, dust screens shall be erected during periods of grading, grubbing and shaping.

3. *Mitigation measures for endangered Marsilea villosa.*

The applicant is committed to the protection and preservation of existing colonies of *Marsilea villosa* on the project site, and the development of an acceptable management plan, working closely with the U.S. Fish and Wildlife Service. Typically, the development of such management plans are attached as conditions of approval to any entitlements that are granted (in this case the Special Management Area Use Permit), rather than being completed for a FEIS. The language of the condition can be explicitly worded to make clear that no grading or building permits for the golf course can be issued until a suitable management plan is developed.

4. *Terrestrial fauna survey.*

Section 4.8 of the FEIS will be amended to include a fuller description of the mangrove estuaries and coastal shoreline areas that are suitable habitat for rare and endangered wildlife (particularly the endangered Black-necked Stilt and Hawaiian Coot) and migratory shorebirds, the potential impacts to these habitat, and possible mitigation measures. It should be emphasized there will be no development within these areas.

As for the Hawaiian Hoary Bat, development of a golf course would not necessarily remove foraging habitat for this endangered species. Bruner notes that they forage for insects at dusk and are known to roost solitarily in trees. They occur in upland forests as well as in coastal habitats, although they have not been seen at the project site. A

recent inquiry to the Nature Conservancy of Hawaii documents one recording of the Hawaiian Hoary Bat in Kalama Valley, approximately one mile to the west of the project site.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

96-083490

To: City & County of Honolulu
Department of Land Utilization

From: William Bailey. 2161 Puna St., Honolulu 96817
595-8272 shanti@lava.net

'96 NOV 22 PM 4 10

DEPT OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

Re: Queen's Beach Golf Course

How many golf courses can we afford on this island, in terms of land use, water use, and pesticide runoff? It seems to me that the proposed course woud extract a high price from the general public for the benefit of the relatively few who would use the facility, and that the land could be better used for park area that would be accessible to all and less environmentally damaging.

Sincerely,

William Bailey

cc.: Kaiser Aluminum and Chemical Corporation, applicant.

1

Helber Hastert
Planners

October 1, 1997

Mr. William Bailey
2161 Puna St.
Honolulu, HI 96817

Dear Mr. Bailey:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter on the above draft environmental impact statement (DEIS), which was received by the Department of Land Utilization on November 22, 1996. Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

Your letter offers no specific comments on the above DEIS. Rather, you suggest that the property could better be used for park area that would be accessible to all. As you may be aware, the State of Hawaii Department of Land and Natural Resources has proposed to develop a park on the site of the proposed Queen's Beach Golf Course. However, the property is privately-owned (Kamehameha Schools Bernice Pauahi Bishop Estate) and leased (Kaiser Aluminum and Chemical Corporation). If the State of Hawaii wishes to implement their plans for a park, then the landowner and the lessee will have to be fairly compensated for their interest in the property.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Grosvenor Center, Mauka Tower

733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Telephone: (808) 545-2055
Facsimile: (808) 545-2050

HAWAII'S THOUSAND FRIENDS

Ke aloha o ko kākou 'āina, 'O ia ka mana kū pa'a. Pāpaono ka 'āina, Māpaono ka po'e.
The Love of our land, is the power for us to stand fast. Rare is the land, many are the people.

November 18, 1996

Kaiser Aluminum and Chemical Corporation
c/o Kaiser Center, Inc.
300 Lakeside Drive, Suite 130
Oakland, California 94512-3534

RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT - QUEEN'S BEACH
September 1996

While Kaiser Aluminum and Chemical Corporation (KACC) may wish to segregate the many proposed projects and not look at, consider or address cumulative impacts in this DEIS that position is incorrect. The Coastal Zone Act Reauthorization amendments of 1990 states, "Cumulative effects are the changes attributable to the collective effect of numerous activities which may or may not be related to one another. Although the impact of a particular land or water use may constitute a minor change in itself, the combined effect of numerous such piecemeal changes can result in a major change in coastal ecosystems. This is the most insidious and intractable management issue facing today's coastal managers." Since Hawaii voluntarily became a Coastal Zone Management (CZM) state in 1978 its laws, rules and procedures must meet basic CZM Act guidelines.

Under Hawaii Administrative Rules TITLE II Chapter 200 Section §11-200-2, "Cumulative impact" means the impact on the environment which results from the incremental impact of the action when added to other past, present,and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative

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impacts can result from individually minor but collectively significant actions taking place over a period of time."

The applicant cannot create the EIR process outside of the normal EIS process that, in their words, addresses cumulative impacts while ignoring established laws and processes.

The following are specific comments on the DEIS.

PUBLIC ACCESS TO THE LIGHTHOUSE

1. What is meant by "any and all", "...covenants, restrictions, reservations, conditions, and agreements of record"? Do any of these apply to private use of the State owned road to the lighthouse and King's Highway? (emphasis added)
2. Enforceable conditions must be established and arrangements made for public access on both the roadway to the lighthouse and the King's Highway prior to acceptance of the DEIS or any approvals are granted.
3. How would existing easements impact and/or affect the proposed golf course? What are the terms of the easements and who are the parties involved? Agreements must be established for continued use, if needed, of existing and future easements prior to acceptance of this DEIS or any approvals are granted.

FIGURE 5 PAGE 2-6

1. The single dark perforated line is not identified. What is it and what is its purpose? Is it the fourth easement which is not identified in this sketch?

FIGURE 6 PAGE 2-8

1. Why was the single dark perforated line shown in Figure 5 eliminated from this sketch?
2. It appears that only one drainage easement is shown. Which easement is it and why were the others eliminated?
3. What is the long area with trees shown between holes 7 and 6 and ending at Ka'ili'ili Bay? What happened to easements D-7 and D-8? What approvals and/or agreements must be gathered before easements D-7 and D-8 can be eliminated?
4. How many bridges will be constructed over the long area with

trees? How many culverts will be constructed within the same area? Dimensions and designs of the bridges and culverts must be determined and provided for public and agency review before this DEIS is accepted or any approvals are granted.

5. Will this "long area" serve as drainage for the golf course? Whether there is adequate drainage capacity for this project in combination with existing capacity must be determined before this DEIS is accepted or any approvals are granted.

2.3 - PROJECT DESCRIPTION

1. What percentage of boulders will be retained and what percentage will be removed? Boulder removal represents massive disturbance to the land so these figures must receive public and agency review before the DEIS is accepted or any approvals are given.

2. If boulders are removed where will they be taken and for what purpose? Impacts on the existing flora, fauna and coastal zone from massive boulder removal must be determined and receive public and agency review before this DEIS is accepted .

3. How much and what type of soil will be brought in? Will soil be used to cover the boulders? If so what will be the finished height? Where will the soil come from? A soil import and boulder removal plan must developed in order to evaluate impacts to the natural terrain and natural environment. This plan must be available to the public and agencies for review before the DEIS is accepted and any approvals are granted.

4. When boulders are removed how will "existing drainage patterns" be impacted? What drainage alternatives are being proposed? Any changes to existing drainage patterns and drainage alternatives must be made available to the public and agencies for review before the DEIS is accepted and any approvals are granted.

5. A Plant Protection Plan must be created which identifies; areas where boulders will be retained, areas where boulders will be removed, what "beneficial impact", if any, these areas will have on preserving large portions of the Hawaiian cotton plant or ma`o, how incorporating the cotton plant into the golf course design will help preserve the plant(s) and how the plant(s) will not be negatively impacted by human and cart traffic, pesticide, herbicide runoff and spray.

To protect these fragile plants from human and cart traffic, fertilizer, pesticide and herbicide runoff buffer zones of 200 feet must be placed around each individual plant and plant colony. This Plan must be available for public and agency review before this DEIS is accepted and any approvals granted.

6. The DEIS states that the clubhouse will be 25 feet maximum height above existing grade. What is existing grade and how will "existing grade" be determined? Will existing grade be from the tops of the boulders (plus top soil) or will the boulders be removed? How much soil will be brought in to reach the "existing grade"? Since the clubhouse height will interfere with the view plains it is extremely important that these questions be answered, a clubhouse site plan (drawn to scale on the correct topography and at finished grade) be made available for public and agency review before this DEIS is accepted and any approvals granted

7. The DEIS only suggests "several" bridges will be built but does not list the number, location, and dimensions or impacts from the bridges and culverts. Before the DEIS is accepted or any approvals are granted the number, location, dimensions and impacts from bridge and culvert construction, placement and use must be identified and submitted for public and agency review.

8. What is the height of the maintenance buildings and comfort stations? What will be the finished grade with they be built at? Before the DEIS is accepted or any approvals are granted a schematic drawing of all accessory structures at the proper grade and height must be submitted for public and agency review.

9. What is the depth of the gravel, course sand, seed bed and top soil? Is the depth calculated from on top of the boulders? In order to accurately calculate the depth of materials to be used in creating the golf course these factors must be established and made available for public and agency review before the DEIS is accepted and any approvals are granted.

10. How will the public be protected from errant golf balls and collisions with golf carts? A Public Safety Plan to address this and other safety concerns must be established and made available for public and agency review before the DEIS is accepted and any approvals are granted.

11. It has been shown that stand alone golf courses are not economically feasible. Before this wilderness area is drastically changed in preparation of a golf course a financial plan showing that this project

will be economically viable must be established and made available for public review before the DEIS is accepted or any approvals are granted.

CHAPTER 4 - ASSESSMENT OF EXISTING CONDITIONS, PROBABLE IMPACTS AND MITIGATION: PHYSICAL ENVIRONMENT

4.2.2 Probable Impacts

1. How is the existing topographic profile to be maintained when the area consists of imported boulders which will either be filled with soil or removed?

2. What does the statement "Some areas of the site will be adjusted to provide for depressions and water features...." mean?

3. To state that only the Department of Public Works will review the final grading plans negates one of the main purposes of an EIS which is to seek input from a variety of sources. If the final grading plan is something other than what is presented in section 6.4, which is extremely brief and sketchy, then respondents are denied an opportunity to comment on impacts to the ecosystem and the environment. The final drainage plan, if different from the one in the DEIS, must be made available for public and agency review prior to DEIS acceptance.

4.3. Geology and Soils

4.3.1 Existing Conditions

1. How many times did Environmental Chemistry visit the site to do soil borings and sample collections? How many soil tests and analysis did Environmental Chemistry conduct?

2. While Jaucas sand soil is identified as "predominate at the site" Figure 11 does not identify any area containing JaC sand. Were soil tests and analysis done for all types of soils, just certain types or none at all. Why this conflict between text and graphics? This inconsistency needs to be correctly answered before the DEIS is accepted.

4. Page 4-3 purports to evaluate "existing soils" and "soils predominate at the site" yet on page 4-4 Jaucas sand(JaC) is not considered further. The reason given is "Because the proposed golf course is composed of extremely small amounts of this soil, it is not considered further". While this soil is predominate on-site why is it not further evaluated? Does this mean that since existing on-site soil won't be used for the golf course it isn't evaluated for other characteristics? Does it mean that all soil and sand used for the golf course will be imported?

5. Rock Land(rRK) is said to cover between 25% and 90% of the surface. Why such a wide spread? A more exact percentage must be provided in the FEIS. What percentage of the on-site rock land was brought in from outside the area and what percentage of rock land is indigenous? While it may be true that "rock outcrops" with "very shallow soils" are "commonly used for urban development" there does not appear to be any connection between the current created rock land and natural rock outcrop. What is the point that is being made?

The existing types of "rock land", imported and indigenous, must be identified and evaluated separately since both have different components.

6. Included in mapping of Koko silt loam(KsB) "were small eroded spots, small nearly level areas, and small areas that have buried profile". These "mapped" areas must be identified in the FEIS? The FEIS must contain a definition and explanation of "buried profile" ?

7. Lualualei clay(LuA), with a high shrink swell potential, underlies a major portion of the golf course. Shrink and swell soils offer opportunities for more aggressive leaching yet this was not discussed in the DEIS. This concern plus preventive measures to counter the negative impacts of shrink and swell soils must be included in the FEIS.

8. Preventative measures proposed for the areas consisting of moderate to severe erosion hazard sites needs to be included in the FEIS.

9. Page 4-4 states, "The two Lualualei series soils cover about 90% of the area comprising the project site" yet Figure 11 shows a great percentage of the project site identified as Stockpiled Boulders (overlaying other soil types). The "other soil types" need to be identified and made available for public and agency review prior to acceptance of the DEIS and any permits granted.

10. What is meant by "may enhance surface runoff transport processes"?

4.4 Hydrogeology and Nearshore Marine Resources

REEF FISH COMMUNITY STRUCTURE

1. How many days were fish surveys conducted?

2. What fish population"appears to be affected by a significant amount of fishing"? How was this conclusion reached? Where is the data to show that over fishing exists or that it is a problem? These questions need to be answered with substantiating data and included in the FEIS.

3. It was interesting to note that only four fish were identified in the "food fish" category. Data substantiating the assertion that since the "food fish" were small and limited in number, that is an indication of pressure from fishing. What criteria was used to establish the "food fish" category? What criteria and baseline data was used to determine the negative impact from fishing? How many fish counts were done? Over what length of time? This data must be included in the FEIS.

The omission of Kole, Ma'l'l'l, Lau'l papa, Umaumale, Hinalea, Triggerfish, and the prized Manini as "food fish" shows little knowledge of the eating habits of Hawaii's local citizens. These fish as well as sea urchins are eaten by local residents. The conclusion by Marine Research Consultants(MRC) that these fish are the most abundant negates the previous statement of over fishing.

SEDIMENT QUALITY IN ESTUARIES

1. Since Organochlorine, Chlordane, Dasanit, Diazinon, Heptachlor Epozide and Isofenphos are used on the Hawaii Kai golf course were tests conducted to determine to what extent these chemicals currently exist in water ways, streams, and coastal ecosystem? If so what were the results, if not why? Tests must be done which evaluate impacts from additional chemical loading should the golf course be permitted. Results and substantiating data from these tests must be included in the FEIS.

2. Since Hawaii Kai Golf Course is an older course were DDT, arsenic, cadmium, chromium, copper, lead, mercury, and zinc tested for? Tests must be conduced to measure the amounts and impacts from these chemicals.

3. Chlorpyrifos, Chlorothalonil, 2,3-D, and Dicamba are pesticides known to contaminate groundwater. Where tests conducted for these plus the chemicals used on the Hawaii Kai golf course?

4. Was the EPA's criteria for protecting aquatic life from the effects of chlorpyrifos used in MRC's testing?

5. What measures are being recommended to prevent pesticides from reaching the groundwater? Should pesticides reach the groundwater what mechanisms are being proposed to clean up the groundwater and prevent transport to the ocean?

6. The solubility component of the pesticides being considered for use at Queen's Beach must be identified in the FEIS.

7. Since MRC analyzed the sediment for pesticides used by the

Hawaii Kai Golf Course, a list of chemicals tested for should be included in the FEIS.

FERTILIZER

1. How often during the four week period was the experiment site watered? How often was fertilizer applied during the experiment period? Were other chemicals applied to the experiment site during the four weeks? What type of soil was used and what was the depth?

2. How are the results of a four week experiment representative of years of applying chemicals?

3. What are the components of the sandy mixture used for the greens? Will the mixture be imported or used from on-site resources? If imported where will it come from? How much sandy mixture is needed for the construction of the greens? Will this same sandy mixture be used in constructing other aspects of the golf course? What is the impact on the existing ecology from imported sand?

4. If the golf course is built to U.S Golf Association standards of 93% sand with a maximum of 3% silt and 5% clay with an infiltration rate of at least 2 inches per hour? Were test conducted on soils meeting U.S. Golf Association standards?

PESTICIDES

1. What is mean by "with other appropriate information"?

2. The trade names for the "many" pesticides containing 2,4-D must be listed and made available fore public and agency review before the DEIS is accepted.

3. Since MSMA is not recommended for use in Hawaii, per Table 1, why is it listed as a "Probable" pesticide to be used?

4. If Chlorpyrifos reaches surface waters it can cause significant damage to the aquatic ecosystem. What will be done to prevent Chlorpyrifos groundwater concentrations from being transported to surface water?

5. What is the half-life of "Probable" pesticides to be used at Queen's beach? What is the partitioning coefficient ration of the "Probable" pesticides? This information must be made available for public and agency review before the DEIS is accepted and any approvals granted.

6. Since drainage from the proposed golf course will be into the

coastal ecosystem were any tests done to evaluate the oral toxicity of the "Probable" pesticides?

7. The organic matter content of the soils must be examined and included in the FEIS.

8. Besides the "storm event" experiments must be conducted to evaluate the cumulative impact of pesticides with results and substantiating data included in the FEIS.

9. Why is 2,4-D being recommend for use when studies of Kansas farmers who applied 2,4-D for weed control as often as three times a year, have a high incidence of lymphatic cancers? New research shows that 2,4-D is acutely and chronically toxic to the human nervous system, is a carcinogen and adversely affects reproduction. Any chemicals in which 2,4-D is a component should be banned from use in this sensitive area.

12. Why is chlorothalonil being recommended for use when the EPA has classified it as a probable human carcinogen? For protection of the publics health chlorothalonil should not be permitted to be used on this or any golf course in Hawaii.

13. A 1991 U.S. General Accounting Office report stated that both chlorothalonil and 2,4-D are known to be capable of contaminating groundwater. Why are they being recommended for use on this project?

IMPACT TO GROUNDWATER

1. None of the proposed golf course construction layers; turf, seed bed, course sand, gravel, perforated drainage pipe and natural soil offers any protection from leaching. A "thatch layer" would offer some protection from chemical leaching. Why isn't a "thatch layer" being recommended?

2. Is Walker saying that only 140,000 gpd will be used or needed for irrigation of the 120-acre golf course? This seems like such a small amount of water. The method(s) used to determine the "balance" figure that will be lost to evapotranspiration should be included in the FEIS.

3. How was the conclusion of doubling the amount of groundwater discharging into the coastal zone reached?

4. What chemicals to be used on the golf course consist of the components listed in Table 6 and in what quantities?

5. While the groundwater may not be used for drinking or irrigation it is clearly a transport mechanism and as shown in the

PESTICIDE section some highly toxic chemicals could be transported to the shoreline. What mechanisms are being put in place to prevent such transport?

6. What research and data was used to reach the conclusion that "It has not been found necessary to utilize substantial quantities of pesticides on golf courses in Hawaii, and only very small applications of herbicides are periodically made to the greens"? What constitutes "substantial quantities" and "very small applications"? Data supporting this contention must be made available for public and agency review before the DEIS is accepted.

These are interesting statements in light of an EPA survey that found that golf courses applied an average of over three and a half pounds of herbicides per acre per year, a similar amount of fungicides, and about two and a half pounds of insecticides per acre per year. Total pesticide use was over nine pounds per acre.

7. What would constitute a "noticeable effect"?

8. What is the basis and data that verifies that the percolate would be undetectable and have no impact on the marine environment"?

IMPACTS ATTRIBUTABLE TO RUNOFF

1. Given the ground saturation from a 100-year event why weren't chemicals below 2.5 inches of soil/thatch considered as contributing to runoff?

2. What other chemicals besides nitrate and ammonium were tested for ?

3. How large was the plot being tested? What was the amount of each chemical used to equal "one-years worth of pesticide"?

4. Since it has already been determined that the groundwater beneath the Queen's beach area is not potable why was the EPA standard for drinking water use?

5. Were tests conducted that determined that one part per million concentrate of Dicamba does not present a problem to the aquatic community.

POTENTIAL IMPACTS RELATED TO SEDIMENTATION

1. Given the massive earth moving, boulder and soil removal, importing of soil and sand (approximately 540-,000 tons are needed for one 18-hole golf course equaling 29,000-35,000 diesel dump trucks), land

sculpturing, infrastructure development (drainage, roads, etc.), building construction (clubhouse, maintenance building, two comfort stations), and landscaping it is ridiculous to say that there will be "little potential for significant input of sediment to the marine environment". Figure 6 shows that the golf course will be built close to the shoreline thus there will be continual impacts to the marine environment from runoff and wind-borne sedimentation . Studies must be conducted on the impacts to the coastal environment from this massive earth moving and construction and made available for public and agency review before the DEIS is accepted and any approvals granted.

4.4.3 Mitigation

1. What constitutes "a magnitude sufficient to cause changes in biological community structure"? Results and data used to determine that this massive earth moving and land reconfiguration would not change the marine ecosystem needs to be made available for public and agency review before the DEIS is accepted.

2. These three phrases "normal precautionary measures", "operational procedures", and "predicted guidelines" need to defined and how these activities will prevent adverse impacts to the marine environment needs to be made available for public and agency review before the DEIS is accepted and any approvals granted.

3. What constitutes an "unexpected event"?

4. The development of a permanent groundwater monitoring system and monitoring schedule are mandatory Department of Health requirements. This schedule must be made available for public and agency review prior to acceptance of the DEIS and any approvals granted.

5. Since much of the site is covered with boulders how can the golf course be designed for minimal site disturbance? What "natural landscape elements" are being considered for reshaping?

6. What is considered an "appropriate turfgrass"? The data used in defining the "appropriate turfgrass"must be included in the final FEIS.

4.5 FLORA

1. While this section identifies the native components as being impacted by the golf course development nothing is said about how grading, grubbing, golf course construction can be prevented from impacting these sensitive areas. Mitigative measures that will prevent

negative impacts need to be identified.

2. Since native plant species are abundant why weren't protective buffers recommended? Since this is one of the few sites left which support large numbers of ma`o why isn't avoidance of these sensitive areas one of the recommendations? A 200 foot buffer must be placed around all remain ma`o plants in order to protect them from human and chemical impacts. A plan must be devised showing how these plants will be protected and made available for public and agency review before the DEIS is accepted.

• Preservation of Marsilea and Propagation of a Management Plan

1. How are the three areas containing `ihi`ihi-lau-akea, which appear to be within the golf course area, to be protected from pesticide and other chemical runoff? How are they to be protected during construction? If the plants are located among the boulders how will they be protected from either boulder removal or soil placement on top and around the boulders? A 200 foot buffer must be placed around all `ihi`ihi-lau-akea plants. A boulder removal plan showing how the plants will be protected must be created and made available for public and agency review before the DEIS is accepted.

• Preservation of the Area with High Ma`o Density

1. What "large portion" is being recommended for protection? Why aren't all native plant areas being recommended for protection and preservation? After all only 120 acres of the 160 acres are to be developed for the golf course.

•Use of Native Plants in Landscaping

1. Can the native plants just be taken for landscape use or is there a proper protocol to go through before native species can just be yanked from their natural setting? Isn't this especially true for the endangered `ihi`ihi-lau-akea?

4.6 Wetlands

1. Were only the three sites containing the `ihi`ihi-laau-akea evaluated as wetlands or were other sites investigated?

4.7 Insects

1. How would the Hawaiian Snout Beetle, listed as a "species of concern", be impacted by the removal of some or all of the ma`o plants? Impacts to the Beetle must be investigated and plans formulated to protect the Beetle and its habitat. These plans must be made available for public and agency review before the DEIS is accepted or any approvals granted.

2. It is recommended that patches of ma'o plants in the eastern boulder fields be preserved in place. How will this be accomplished since the boulders either have to be removed or covered with dirt?

3. Besides the recommended buffer zone how will the ma`o plants be protected from chemicals both on the ground and in the air? Air born chemicals are especially troublesome since particles can travel up to two miles.

4.8 Terrestrial Fauna

4.8.2 Probable Impacts and 4.8.3 Mitigation

1. What mitigative measures are proposed should chemical contamination show up in the estuaries and near shore waters?

3 How would a buffer of dense tall trees and brush protect the estuaries and endangered species from errant golf balls and from golfers looking for their balls?

4.9 Scenic Resources

1. The DEIS has not looked at the cumulative impacts of their proposed project until now where they wish to look at scenic resources in a regional context. Why are regional cumulative impacts only being considered in this section? A Regional Plan should be developed that evaluates all cumulative impacts on this site as well as all development proposals for the Sandy Beach areas. The Regional Plan should be made available for public and agency review before this DEIS is accepted.

2. In Figure 13 all the pictures show the clubhouse snuggled into the existing terrain so as not to, in the words of the DEIS, "interrupt the relationship between landform and the ocean". This representation is misleading and incomplete. There is no mention of what the finished grade, elevation or topography of the clubhouse site will be. Will boulders be removed and the area cleared to the original topography or will the boulders remain and material brought in to level the unnatural terrain?

3. These same pictures depict the clubhouse nestled into existing vegetation. This is deceptive since the existing topography will be drastically changed and removed.

4. The DEIS did not consider individual and cumulative visual impacts of the restrooms, maintenance and other ancillary buildings on the view plain. This information, with buildings shown at the proper scale and elevation, must be prepared and available for public and agency review before the DEIS is accepted..

5. While the project site may retain "high features of unity and vividness" if built, the DEIS does not evaluate the visual difference and impact of going from a natural setting to one that is manipulated and manicured. Such an analysis must be done and available for public and agency review before the DEIS is accepted.

6. While the DEIS suggests a color scheme complementary to the dominant view it does not state what the dominate view(s) will be once the topography is changed.

7. Surely there must be an architectural rendering and site plan for the clubhouse and surrounding area. In order to comprehensively evaluate any impacts from the clubhouse and surrounding area the rendering and site plan must be available for public and agency review before the DEIS is accepted. A landscape section should be included in the plan showing types, heights, and vegetation placement

4.10 Historic, Cultural and Archaeological Resources

1. The findings on page 4-36 that historic Site 03 is "outside the boundaries of the project site" are inconsistent with the findings on page 4-38 that Site 03 "is within the project area". Any trails associated with access the trail/Old "Kings Highway" must be identified.

2. Since the trail/Old "Kings Highway" is state property what arrangements have been made for public access and use?

3. Other than to mention Hi`iaka's journey and visit to the area the DEIS does not discuss legends or chants of the area. The DEIS further fails to provide the cultural connection between the sites, legends and chants, It is insufficient to just identify sites and not place them in a cultural context.

4. The FEIS must discuss the cumulative impacts the project will have on this cultural district as well as impacts to individual sites.

5. While Figure 14 identifies sites 05, 04 and 02 as being within

the project boundaries there is no explanation of what they are, their relationship to the area or cultural context. Such as Site 02 is only identified as "a pile of rocks". What is Site 02?

6. There is no mention of cultural activities that have and continue to be practiced today.

7. What is the difference between Project Area and Project Boundary? If Sites 02, 05 and 04 are shown within the Project Boundary why won't they be impacted by the proposed development?

8. While Site 03 is assessed as significant the site is identified as being in the vicinity of proposed golf course hole #11 and thus "accommodated within the design of the proposed golf course". Site 03, the old "Kings Highway", is public property it cannot/should not be incorporated into a private use. Instead provisions must be made for public access and use.

9. Exclusion of the Hawaiian fishing village at Wawamalu shows a lack of cultural interconnection.

10. A cultural context plan must be developed for the entire area showing the cultural connection of the trail/Old "Kings Highway" including its boundaries, Wawamalu fishing village, other archaeological sites, chants, legends, cultural activities of the past and those that occur today. This plan must be made available for public and review before the DEIS is accepted and any approvals granted.

4.11 Flood Hazards

1. This section is incomplete as it only addressed the placement of the clubhouse in relation to flood hazards and tsunamis. What about the golfers and grounds keepers? They are susceptible to injury or death from floods and tsunamis yet no consideration was given to their safety.

2. Should the city grant permits for this project will the City be liable for any injures due to floods/tsunamis?

3. Figure 15 shows a significant amount of the golf course within a flood zone. Should a flood or tsunami occur what impacts will the rain soaked and possibly dislodged manicured pesticide laden turf have on the near shore waters?

4.12 Air Quality

1. With the nearest air monitoring stations in Waikiki and downtown Honolulu how can adequate air quality be evaluated from that

distance? What methods were used to determine that "Monitoring results indicates compliance with all State and Federal air quality standards"?

2. Procedures to be used in clean up of air born chemicals in the near shore waters needs to be included in the FEIS.

4. An analysis of the cumulative impacts to the aquatic ecosystem from air born pesticides, fertilizers, and herbicides needs to be completed and included in the FEIS.

4.13 Noise

1. This section does not discuss the effects of construction and operational noises on people at the beach or hiking. The area now offers a quiet wilderness experience but once construction begins that quiet will be gone. A noise study must be done to evaluate impacts to and effects on humans and the aquatic community. This study must be available for public and agency review before the DEIS is accepted and any approvals granted.

4.14 Interrelationships and Cumulative Impact: Physical Environment

1. Since Chapter 343 is the state's legal environmental review process under which environmental conditions and impacts are assessed to not discuss cumulative impacts within this process skirts the law. To say that cumulative impacts will only be addressed in a non-state or legally recognized process is deceptive.

2. Cumulative impacts from storm water runoff, air quality, noise, traffic, and water quality from all proposed projects within the area must be assessed and available for public and agency review before the DEIS is accepted and any approvals granted.

Chapter 5- ASSESSMENT OF EXISTING CONDITIONS, PROBABLE IMPACTS AND MITIGATION: SOCIO-ECONOMIC ENVIRONMENT

5.1 Population and Potential Impact on Surrounding Communities

1. Out of 78 positions only 23 will be full time? Why so few full time employees? The types of positions and the pay scale for those positions must be included in the FEIS. What company offered benefits will the full time/part time workers receive? Will all employees, including construction companies and employees, be Hawaii citizens?

5.3.2 Public Costs and Revenues

1. This section fails to discuss cumulative impacts from increased car and bus traffic from this project and all other proposed projects. This section fails to discuss costs to the public for future road widening, road improvements and road maintenance.

2. Costs to the public for environmental clean up from chemical spills and ground water contamination must be available for public and agency review before the DEIS is accepted and approvals granted.

5.4.1 O`ahu Golf Market Overview

1. What will the daily fee be? What will the country club membership be for local residents? Out of state members? What will the percentage of memberships for local residents compared to out-of-state members be? How many memberships will be sold?

2. How many golf tournaments will be held at the golf course? How many spectators, golfers and their assistants are expected at each tournament? How many parking stalls will be provided at the golf course? Will there be adequate on-site parking for people attending or affiliated with the tournaments? How many rounds of golf will be played per day? How many tee times will be set aside for non-member Hawaii residents, Hawaii club members, foreign club members and foreign non-member players? What are the golf course and club hours?

3. Will the driving range be open at night? What will the hours be? Will the driving range be lite? If so, how many poles will be used? How many lights will be on each pole and what will be the wattage of each bulb? A study on the impact of night lighting on the surrounding community and night flying seabirds must be conducted and made available for public and agency review before the DEIS is accepted or approvals granted.

4. How many people are expected to just visit the club house for lunch or other activities and not play golf per day? How many people are expected to play golf per day? What are the hours of the clubhouse? Will the clubhouse or another on-site facility be available fore banquets and other activities?

5.5 Interrelationships and Cumulative Impact: Socio-Economic Environment

1. While the DEIS addresses the wants of the golfing community nothing is said about the hikers, swimmers, snorkeling, picnicking and fishermen who will be displaced if the golf course is developed. There is no sound data to show that the golf course will have "minimal impact on the population in the region". This is just an assumption. A social impact analysis must be conducted to show impacts to the human population when displaced from natural areas. The analysis must provide data showing the extent to which this area is used now and by whom and what those displace by the golf course will do and where they will go. This analysis must be available for public and agency review before the DEIS is accepted and approvals granted.

2. While earlier sections stated that this DEIS wouldn't address interrelationships and cumulative impacts Section 5.5 now says that the "region will experience a large increase in population" and "housing opportunities". Up until now the reader is advised only to consider the proposed Queen's Beach golf course project in this DEIS. What is it? It can't be both ways. Therefore, the FEIS must address the cumulative impacts from **all** proposed developments within the area including but not limited to traffic, sewage capacity, water quality, water availability, view plains, accessibility to coastal recreational areas, public access to cultural areas and the lighthouse, and costs to the public for new or improved public facilities.

3. The DEIS does not discuss the compatibility of very different recreational activities. Is golf compatible with hikers and ocean recreation activities? If these activities are not compatible, and the golf course approved, then the stage is set for some major social conflicts.

Chapter 6 - ASSESSMENT OF EXISTING CONDITIONS, PROBABLE IMPACTS AND MITIGATION: PUBLIC FACILITIES AND SERVICES

1. What is the difference between the "segment of Kalanianaole Highway which fronts the project site" and Queen's Beach Golf Course? Why were two different methodologies used for the same project?

2 It is our understanding that the newly completed segment of Kalanianaole Highway is at capacity so how is it possible that this and other proposed projects will not exceed the capacity of this corridor?

6.2 Water Supply

1. Is there adequate potable water within the surrounding area to provide for this project without transporting water from out of district? Or will potable water be imported to accommodate this and other projects?

2. Is the 36-inch transmission line sufficient or will larger lines need to be installed? If new lines are necessary for potable water and fire protection who will pay the installation costs?

3. While we advocate the reuse of wastewater the fact is that while capable of treating effluent to an R-1 standard the Hawaii Kai Wastewater Treatment Plant does not treat to R-1. Therefore, until it does, and arrangements are made to transfer, at no cost to the taxpayers, treated effluent to the golf course site - there is no water available for irrigation of a golf course.

4. Without any firm agreement or commitment from the Hawaii Kai Wastewater Treatment Plant it is premature to discuss the use of effluent. If and when R-1 treated effluent is available for irrigation we recommend that a separate EIS be prepared. Instead of just relying on this currently unavailable source alternatives should be explored and made available for public and agency review before the DEIS is accepted and approvals granted.

5. The assertion that it is necessary to blend potable water with R-1 treated effluent at a 50/50 ration is absurd. The Department of Health approves of the use of R-2 water for golf courses and there are dozens of golf courses that use R-2 water without any concerns.

6. The FEIS must have a section on the type of irrigation system(s) to be used - underground or sprinkler with explanations of why those systems were chosen. This information is vital to evaluate water evaporation, ground absorption, and water quantity.

7. The fact that the effluent is to salty, from saltwater infiltration into sewage lines, for golf course irrigation is not the public's problem. These are concerns between two private entities and the public should not have to sacrifice public water for golf course irrigation.

8. A water supply plan must be put together to deal with all the issues surrounding the availability of water for golf course irrigation. The water supply plan must address potable and non-potable water issues such as; availability, hook up schedules, the availability of treated

effluent for irrigation, wastewater disposal etc. in a comprehensive manner and be available for public and agency review before the DEIS is accepted and approvals granted.

6.3 Wastewater

1. While the main gravity lines and the Hawaii Kai WWTP may be "adequately sized" to handle the wastewater from this project the cumulative impact on the sewage treatment plant and the receiving ocean waters from this and other projects has not been evaluate? Can the plant efficiently handle all proposed and currently approved projects? If projects come on-line before the golf course is ready to hook up and the treatment plant does not have adequate capacity to accept the golf course hook up how will wastewater be treated?

2. One conclusion in the BASELINE SURVEY OF WATER QUALITY AND MARINE COMMUNITY STRUCTURE IN THE VICINITY OF THE PROPOSED QUEEN'S BEACH GOLF COURSE report was that due to "saline infiltration of leaky gravity collection lines", "irrigation of the greens will require an equal blend of effluent and drinking water to achieve an acceptable salinity. While "leaky gravity collection lines" may be a problem, it is the problem of the privately owned Hawaii Kai Sewage Treatment Plant and one that they are responsible for fixing.

For many years it has been the policy of the Board of Water Supply to not approve use of potable water for golf course irrigation. In support of BWS's position and protection of Hawaii's finite potable supply the use of treated effluent should be required for irrigation. It is not the public's problem that the Hawaii Kai Sewage Treatment Plant's collection lines "leak". It is the public's concern that potable water be preserved for human needs.

6.4 Drainage

1. Who owns all the channels and waterways? Who is responsible for maintenance? Will the existing channels and waterways be altered in any way?

2. This section neglects to mention that the creation of a contoured manicured grassed area will present a smoother surface over which water will flow. The current situation of many boulders absorbs rain thus lessening impacts to the receiving coastal area. A sheet flow study for the golf course and surrounding areas must be done and available

for public and agency review before the DEIS is approved and permits granted.

3. This section neglects to mention that currently the only water in the area comes from rain. There is currently no irrigation occurring so the incidences of, non-culvert related, runoff only comes from rain. The golf course will be irrigated with approximately 700,000gpd, this is a dramatic change from what presently occurs.

6.7 Recreational Facilities

1. The set-aside of 29 acres for a "potential" park is meaningless when compared to the existing expansive wilderness experience the area now offers.

2. A wilderness experience is not compatible with the more refined golf course environment. Therefore, it is highly probable that current users of the shoreline and trails will avoid the area if a golf course is built. In addition, the configuration of the golf course in relation to the trails and coastal area makes public access dangerous due to errant golf balls.

3. According to the 1990 State Recreation functional Plan Technical Reference Document and State Comprehensive Outdoor Recreation Plan (SCORP) golf is played by only 6% to 8% of the population of East Honolulu. Other districts range from 15% to 33%. But by far the greatest outdoor activities are camping, shore fishing and diving/snorkeling and beach activity at 67%.

This proposal golf course proposal would be satisfying a small percentage of the population to the detriment of majority. The State's public trust responsibility would dictate that the public need is to great to allow private use for a minority to over ride the good of the majority.

Chapter 7 - ALTERNATIVES TO THE PROPOSED ACTION

1. Nowhere does it say that a land owner is assured the "highest and best use" of property. It is disheartening to see that the either all or nothing alternative prevails since no one is assured of the highest and best use, what ever that means, use of their property.

2. The DEIS did not even consider the possibility of developing an educational/cultural wilderness park to which a reasonable admission could be charged.

3. A serious Alternatives Plan must be developed and made available for public and agency review before the DEIS is accepted and approvals granted.

Chapter 8 - IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

We couldn't agree with you more that a golf course would put irreversible and irretrievable commitments on the natural resources of the area. Once natural resources, flora and fauna, cultural and archaeological sites are destroyed it is cost prohibitive if not impossible to recreate them or bring them back. For these reasons any development must be compatible with the area in which it is built.

The BASELINE SURVEY OF WATER QUALITY AND MARINE COMMUNITY STRUCTURE IN THE VICINITY OF THE PROPOSED QUEEN'S BEACH GOLF COURSE

1. The report states, "With the golf course developed at full maturity, discharge of NO(3) will only increase by about 10% over the present situation." What is meant by "present situation"? Does the 10% refer to per day, per month, or per year? The report did not say when "full maturity" would be reached or what constituted full maturity, so how was this calculation reached?

2. While the BSWQMCS report states, "It has not been found necessary to utilize substantial quantities of pesticides on golf courses in Hawaii, and only very small applications of herbicides are periodically made to the greens." no substantiating data was provided to back up this assertion.

On the contrary the opposite has been found the norm. A study conducted by New York's Attorney General found that, "golf courses in the Long Island area annually used more than 50,000 pounds of pesticides, or about 18 pounds per treated acre. That is nearly seven times as much as farmers dump per treated acre." New York experiences cold weather which cuts back on the need for pesticides and herbicides, while in Hawaii our warm weather requires chemical use year-round.

A major resort in South Kohala resort applies fertilizer to the golf course fairways every 6 weeks, to the greens and tees every 4 weeks. Herbicides are applied to the golf course perimeter every 4 months with spot sprays as needed. Insecticides are applied to the greens and tees 2 to

3 times a year.

A management plan to include a pesticide, fertilizer, herbicide, insecticide and irrigation applications calendar must be provided for public and agency review prior to acceptance of the DEIS and granting of any permits. The plan must include a map showing the perimeter area of application. This is critical since the course is along the shoreline and could effect human health as well as the aquatic ecosystem.

3. There is wide spread concern for the effects of toxic chemical use on golf courses as revealed by a recent study funded by the Golf Superintendents Association of America. The study noted an alarmingly high rate of cancer deaths among its former members and that it would be "a prudent strategy" for superintendents to "minimize their exposure potential to pesticides". If pesticide use is a concern to humans have the impacts to the aquatic ecosystem been appropriately evaluated?

4. There was no mention of volatile pesticides and pesticides attached to dust particles moving upslope and deposited as rainfall on mauka lands. Herbicides have been found falling from the skies in over 23 midwestern and northeastern states and in parts of Canada. Hawaii's moisture from massive irrigation plus ocean moisture is carried mauka each day. Because of this concern a field study must be conducted of air patterns, and moist and dry deposition as sources of pesticide residues, and impacts to human and aquatic health.

5. While the report concludes that the "Potential for negative alternation to marine ecosystems owing to pesticides and herbicides also seems nil" it fails to mention the high incidence of fish carrying ciguarteria toxin, high percentage of fish with tumors in areas associated with chemical runoff, and the high percentage of green sea turtles with tumors. While there may not be scientific data it does not mean that the use of pesticides should be totally unrestricted, unmonitored as assumed to have no negative impact.

6. Dioxin is a known component of the herbicide 2,4-D. Dioxins produce characteristic toxic effects; cancer, birth defects, and reproductive effects. Because of these effects 2,4-D should be banned for use in this sensitive area. As recommended in the DEIS the use of MSMA (which contains arsenic) should also be banned from use. Chlorpyrifos, impairs nervous system function and Dicamba is toxic to fetus and "widely recognized as a potential threat to groundwater"(GSCPCI section

3.5). Therefore, these chemicals should also be banned from use.

GEOCHEMISTRY, SOIL CHEMISTRY AND POTENTIAL CHEMICAL IMPACTS FROM CONSTRUCTION AND MAINTENANCE OFA PROPOSED GOLF COURSE: QUEEN'S BEACH, OAHU, HAWAII(GSCPCI)

1. Section 3.5 notes that "thatch" "provided a significant sink for pesticide and clearly prevents significant downward migration of all the pesticides." To prevent downward migration a thatch layer must be required.

2. The study notes that, "wind erosion is a severe hazard where vegetation has been removed" so a grading, grubbing, vegetation removal and replanting plan must contain timelines identifying when vegetation removal and replanting activities will occur in order to prevent severe erosion.

3. While the study identified pesticide characteristics, decomposition and persistence it failed to consider cumulative impacts to the coastal ecosystem from use of all chemicals combined and over long periods of time. Given that the Hawaii Kai Golf Course uses these same chemicals including MSMA, the collective impacts from the Hawaii Kai course and the proposed golf course must be evaluated for cumulative impacts to the coastal ecosystem.

4. With a minimum of 700,000 gallons of water per day needed to irrigate the golf course it must be determined that the Hawaii Kai Sewage Treatment Plan has the capacity to deliver that amount of appropriately treated effluent. A written agreement verifying that 700,000 gallons of treated effluent is available for the Queen's Beach golf course must be signed and available fore public and agency review before the DEIS is accepted or any approvals are given.

5. Section 8.4 interestingly notes, "If fertilization of turfgrass at the site does pose a threat to surface water and groundwater quality....". It was our impression that the purpose of these extensive tests and studies was to point out any negative impacts to the environment and provide answers and solutions before a project is developed and the use occurring. If pesticide, fertilizer and herbicide use has not been proven safe for public health and the environment then questionable chemicals or practices should not be used in this project.

6. As recommended in this study Dicamba can pose problems "in terms of groundwater leaching and surface runoff potential" therefore it

is recommended that Dicamba must be used only under arid conditions and where no rain is predicted. How this would be monitored is unclear.

7. We concur with this studies recommendation that, "Immediate coverage of bare soil surfaces by seeding with turfgrass or placement of sod..." This wording as well as recommendations in section 10.5.3 should be incorporated into a timeline, as recommended above.

8. Section 10.5.3 recommends that "golf courses also should be constructed to minimize disturbance of vegetation in the vicinity of drainage ditches or stream banks". In keeping with that recommendation, a blueprint showing all waterways and their relation to the golf course should be produced for public and agency review prior to acceptance of the DEIS and granting of any approvals.

In keeping with previous recommendation of the Office of Planning, 100 foot buffers should be placed on either side of streams and waterways.

9. Soil moisture sensing devices, and a properly designed and programmed irrigation system that will conserve water must be included in the golf course design. Identification of these devices and designs must be made available to the public and agencies before acceptance of the DEIS.

10. Pesticide movement via surface water runoff must be further evaluated for impacts to the coastal ecosystem.

In conclusion:

1. No development of golf course greens or fairways should be allowed within 1000 feet of the publicly owned shoreline.
2. Cart paths should be constructed of permeable material, be no wider than 8-feet, placed on pilings from edge of floodplain to edge of floodplain.
3. All streams should be bridged, not placed in culverts.
4. A detailed analysis must be made of each impact associated with the golf course to determine if the degree of impact will exceed the species' level of tolerance.
5. An underdrain system should be installed beneath any portion of the fairways, greens, or tees which are sited on coarse-textured soils to collect fertilizer and pesticide contaminated leachate.
6. Ponds should not be located on an intermittent or perennial stream.

7. Monitoring should begin one-year prior to the construction of a golf course and continue through out the life of the course. Ground and surface water should be analyzed quarterly for ammonia, nitrate, and pesticides. Fish tissues should be examined once a year for pesticides used on the course which have a potential to bioaccumulate. Establish a groundwater monitoring program for existing wells, wetlands.
8. Waterways located on-site should be left in natural unaltered state.
9. Having a construction monitoring plan is critical because earth-work involved in channelization causes sever damage to aquatic ecosystems, aquatic organisms and their habitat is destroyed.
10. Provide barriers between grading, filling, construction. Trees and tall shrubs must be provided to protect waterways from heating due to sunlight, and as well as continuous strips of vegetation adjoining waterways to provide valuable habitat for birds, mammals and other wildlife.
11. Since birds and waterfowl are the most frequent victims of turfgrass pesticides a bird monitoring program must be implemented.
12. Any pollutants must be captured before entering a stream or coastal zone.
13. An underground storage tank protection plan must be devised to guard against rupture, leakage and threats from flooding.

APPLICABLE PUBLIC POLICIES, OBJECTIVES AND PLANS

COASTAL ZONE MANAGEMENT ACT OF 1972
TITLE III - MANAGEMENT OF THE COASTAL ZONE
§1452 Congressional declaration of policy.

The Congress finds and declares that it is the national policy ; to preserve, protect, develop with proper environmental safeguards, and where possible, to restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations.

This policy recognizes the nations and states Public Trust responsibilities to protect coastal resources for future generations. Continual permitting of development along Hawaii's coastal areas decreases public access,

albeit not directly but in subtle ways, and increases private use, pollution and the eventual need for some sort of shoreline hardening to protect private investments.

§1453 Definitions

(18) The term "special area management plan" means a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of land and waters. . .

As set forth in this definition a project within the SMA should be coastal dependent. The Queen's Beach golf course and ancillary structures are not coastal dependent. Therefore, the coastal resources should not be subjected to additional development and pollution pressures.

COASTAL WATER QUALITY

The waters off Queen's Beach are of an excellent quality and have been designated as Class A. Class A waters are defined in HAR §11-54-03

It is the objective of Class A waters that their use for recreational purposes and aesthetic enjoyment be protected. Any other use shall be permitted as long as it is compatible with the protection and propagation of fish,shellfish and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class.

The proposed golf course complex is not dependent water dependent for recreational purposes nor is it compatible with the protection and propagation of fish, shellfish, wildlife. As designed all drainage from the golf course will go untreated into Class A waters including pollution laden surface water runoff.

CHAPTER 205 A-2 Coastal zone Management program; objectives and policies.

RECREATIONAL RESOURCES

OBJECTIVE: Provide coastal recreational opportunities accessible to the public.

POLICIES:

1. *Protect coastal resources uniquely suited for recreational activities that cannot be provided in other areas.*
2. *Require replacement of coastal resources having significant recreational value, including but not limited to surfing sites and sandy beaches, when such resources will be unavoidably damaged by development....*
3. *Provide and manage adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value.*
4. *Provide an adequate supply of shoreline parks and other recreational facilities suitable for public recreation.*
5. *Encourage expanded public recreational use of county, State, and federally owned or controlled shoreline lands and waters having recreational value.*
6. *Adopt water quality standards and regulating point and nonpoint sources of pollution to protect and where feasible, restore the recreational value of coastal waters.*
7. *Develop new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, artificial reefs for surfing and fishing.*
8. *Encourage reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions.....*

The ocean fronting Queen' beach is classified as Class A waters, the highest water quality in the state. The development of a golf course is not shoreline dependent so these pristine waters should not be subjected to development pressures. In its present undeveloped state the coastline offers a quiet wilderness experience of fishing, hiking, swimming, snorkeling, walking along the shore, food gathering, opihi picking, diving, picnicking, sunbathing, and whale watching in close to urban development.

Queen's Beach has been identified by the Department of Land and Natural Resources as the site for the Ka Iwi State Park.

HISTORIC RESOURCES
OBJECTIVE: Protect, preserve, and where desirable, restore those natural and man made historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

POLICY
1. *Identify and analyze significant archaeological resources.*
2. *Maximize information retention through preservation of remains and artifacts or salvage operations.*
3. *Support state goals for protection, restoration, interpretation, and display of historic resources.*

While individual archaeological sites have been identified the DEIS is incomplete in that it does not discuss the area in a cultural context. Individual site evaluations may not appear that important but once described through legends and history the complex could prove quite significant. If a golf course is permitted this opportunity is lost forever. The route of the state owned old Kings Highway must be preserved, irregardless of whether the actual rock foundation exists or not, in total because it is a public trust asset. Our childrens' children must have the opportunity to walk where their ancestors walked, to feel their heritage under their feet.

SCENIC AND OPEN SPACE RESOURCES
OBJECTIVE: Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

POLICY
1. *Identify valued scenic resources in the coastal zone management area.*
2. *Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline.*
3. *Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources*
4. *Encourage those developments which are not coastal dependent to*

locate in inland areas.

The Ka Iwi shoreline, which includes Queen's beach, has been identified in many forums as a valued scenic resource. The latest recognition is the Ka Iwi State Park Master Plan which recognized this area for its variety of panoramic views. The Sandy Beach initiative culminated in an over whelming vote for protection of this coastline. From Haunama Bay to and including Queen's beach the view makai of Kalanianaole Highway is wild and rugged, development of a golf course complex at Queen's beach would create an urban setting. The golf course complex is not coastal dependent so in keeping with the objectives of Chapter 205A the complex should seek out a more appropriate setting.

COASTAL ECOSYSTEMS
OBJECTIVE: Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.

POLICY
1. *Improve the technical basis for natural resource management*
2. *Preserve valuable coastal ecosystems of significant biological or economic importance.*
3. *Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses...*
4. *Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards*

Within this area plant and animal species must be considered and protected as an ecosystem and not just considered in isolation of the entire system and the interconnection of the system. Waters off Queen's beach are Class A waters, the highest and most protective designation in the state. Placement of a non-coastal dependent golf course in this area further exposes the coastal ecosystem to intrusive pesticides, fertilizers, herbicides, insecticides, and other chemicals in violation of HAR §11-54-03 and state water quality standards.

ECONOMIC USES
OBJECTIVE: Provide public or private facilities and improvements important to the State's economy in suitable locations.

POLICIES
1. *Concentrate in appropriate areas the location of coastal dependent development necessary to the State's economy.*
2. *Insure that coastal dependent development such as harbors and ports, visitor industry facilities, and energy generating facilities are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area.*
3. *Direct the location and expansion of coastal dependent development to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas...*

Development of this golf course is not coastal dependent, not consistent with water quality, and shuts out all possibilities for coastal dependent economic ventures.

COASTAL HAZARD
OBJECTIVE: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, and subsidence.

POLICY
1. *Develop and communicate adequate information on storm wave, tsunami, flood, erosion, and subsidence hazard*
2. *Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard*
3. *Ensure that developments comply with requirements of Federal Flood Insurance Program*
4. *Prevent coastal flooding from inland projects*

While the DEIS speaks of protection of the clubhouse from tsunami or flooding there is no mention of the safety of golfers. The State Office of Civil Defense has defined the Tsunami Evacuation Line as Kalanianaole

Highway. Since this encompasses the entire project area development of a golf course complex at this site appears to violate provisions of Coastal Zone Management law.

MANAGING DEVELOPMENT
OBJECTIVE: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

POLICY
1. *Effectively utilize and implement existing laws to the maximum extent possible in managing present and future coastal zone development.*
2. *Facilitate timely processing of application for development permits and resolve overlapping or conflicting permit requirements*
3. *Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the general public to facilitate public participation in the planning review process.*

The short term impacts from the development of a golf course complex in this sensitive area will be from massive earthmoving, soil erosion, point and non-point pollution. Long term impacts will be pesticide, herbicide, fungicide, insecticide runoff into Class A waters, introduction of non-native grasses into a specialized ecosystem,pressure for future golf course facility expansion and additional non-golf course related development.

SPECIAL MANAGEMENT AREAS
§205A-21 Findings and purposes.
(2) No development shall be approved unless the authority has first found:
(a) That the development will not have any substantial adverse environmental or ecological effect, except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health, safety, or compelling public interests. Such adverse effects shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself

might not have a substantial adverse effect, and the elimination planning options.

There is no compelling public interest, public health or safety issue that out weighs the adverse environmental impacts that will be created by development of the proposed golf course. The public interest is in preservation and protection of this culturally significant ecologically sensitive area from the cumulative and secondary impacts of this massive golf course development for present and future generations.

HAWAII STATE CONSTITUTION

ARTICLE XI, Section 1.

For the benefit of present and future generations, the state and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including land, water, air, minerals and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of self-sufficiency of the State.

All public natural resources are held in trust by the State for the benefit of the people.

The Hawaii State Constitution recognizes the trustee responsibilities of the State to conserve and protect natural beauty and resources for future generations. The public, who are the beneficiaries of the trust, has the right to expect that their natural assets will be preserved for present and future generations.

PUBLIC TRUST DOCTRINE

The Public Trust Doctrine is an ancient code that guarantees all people fundamental rights to the use and enjoyment of commonly owned natural resources. Over the years courts have expanded the trust responsibilities to include streams, underground waters, beach access and habitat for birds and marine life.

In Hawaii the public trust concept has existed since pre-contact where all land belonged to the ruling ali`i, though it was not his own property but belonged to the chiefs and the people in common. Today Public Trust responsibilities are in the State Constitution which reads,

"The State has an obligation to protect, control and regulate the use of Hawaii's water resources for the benefit of its people", and that "Each person has the right to a clean and healthful environment, ...including ...conservation, protection and enhancement of natural resources. ...."

HAWAII STATE PLAN

Section 226-11 Objectives and policies for the physical environment-land-based, shoreline and marine based resources.

(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:

1. *Prudent use of Hawaii's land-based, shoreline, and marine resources.*
2. *Effective protection of Hawaii's unique and fragile environmental resources.*

All golf course culverts and ditches, point and non-point pollution will drain into Class A waters. This drainage pattern as well as the massive earthmoving required to develop a golf course will not protect Hawaii's fragile flora and fauna resources.

(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of the State to:

1. *Exercise an overall conservation ethic in the use of Hawaii's natural resources.*
2. *Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.*
3. *Take into account the physical attributes of areas when planning and designing activities and facilities.*
4. *Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.*
5. *Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions*
6. *Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.*

7. *Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion*
8. *Pursue compatible relationships among activities, facilities and natural resources.*
9. *Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.*

Development of a golf course complex, with all the required massive earthmoving and chemical use, adjacent to Class A waters and on land containing threatened flora and fauna does not offer protection for rare plants or pristine ocean waters. A golf course is not ocean dependent therefore there is no compatible relationship with the natural resources.

Section 226-12 Objectives and policies for the physical environment-scenic, natural beauty, and historic resources.
(a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty,and multi-cultural/historical resources.

(b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:
1 *Promote the preservation and restoration of significant natural and historic resources.*
2. *Provide incentives to maintain and enhance historic, cultural, and scenic amenities*
3. *Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.*
4. *Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.*
5. *Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage*
6. *Encourage the design of developments and activities that complement the natural beauty of the islands*

The Sandy Beach Initiative, the State Ka Iwi State Park Master Plan, and the City Coastal View Study have recognized this coastline, from Koko Head Crater to Makapu`u, as having unique visual and environmental qualities. The archaeological sites including remnants of the old King's Highway have not been put into a cultural context. New sites were discovered as recently as 1984 so what other sites remain hidden is unknown. Development of a golf course could erase forever any change of discovering more archaeological history of this place.

Section 226-13 Objectives and policies for the physical environment-land, air and water quality.
a. Planning for the States physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives.
1. *Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources*
2. *Foster educational activities that promote a better understanding of Hawaii's limited environmental resources.*

Allowing a golf course complex with it's chemical laden greens, fairways and landscaping will only harm the adjacent Class A waters, not improve water quality. The undeveloped Queen's beach area offers a great opportunity to educate the public, school children and visitors about Hawaii's unique and fragile ecosystems and flora and fauna.

b. To achieve the land, air, and water quality objectives, it shall be the policy of this State to:
1. *Foster educational activities that promote a better understanding of Hawaii's limited environmental resources*
2. *Promote the proper management of Hawaii's land and water resources*
3. *Promote effective measures to achieve desired quality in Hawaii's surface, ground and coastal waters*
4. *Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people*
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

6. *Encourage design and construction practices that enhance the physical qualities of Hawaii's communities*
7. *Encourage urban developments in close proximity to existing services and facilities*
8. *Foster recognition of the importance and value of the land, air, and water resources to Hawaii's people,their cultures, and visitors.*

This golf course will require massive amounts of pesticides, fertilizers, herbicides, and fungicides to maintain greens, fairways and landscaping. These chemicals could reach the Class A waters via leaching into the groundwater and/or by surface runoff. Other than the Hawaii Kai golf course across the street there are no other urban developments in close proximity to existing services and facilities.

Section 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. To achieve the leisure objective, it shall be the policy of this State to:

1. *Foster and preserve Hawaii's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.*
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.*
3. *Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities...*
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.*
5. *Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources*

6. *Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs*
7. *Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawaii's people*
8. *Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.*
9. *Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawaii's population to participate in the creative arts.*
10. *Assure adequate access to significant natural and cultural resources in public ownership.*

The Queens beach area offers many recreational opportunities: swimming, pole fishing, diving, snorkeling, hiking, whale watching and sunbathing. It offers the cultural practice of gathering. Because of the many vistas and natural resources the area offers many educational opportunities.

STATE FUNCTIONAL PLANS

RECREATION

ISSUE AREA I. OCEAN AND SHORELINE RECREATION

Objectives, policies, and actions

Objective I-A: Address the problem of saturation of the capacity of beach parks and nearshore waters.

Policy I-A(1): Acquire additional beach parkland and rights-of-way to remaining undeveloped shorelines to provide increased capacity for future public recreational use.

Implementing Action I-A(1)a: acquire beaches in the following areas: Oahu - Queens Beach.*

As recommended a golf course complex should not be developed at Queen's beach but the area should be developed into the Ka Iwi State Park.

ISSUE AREA III. PUBLIC ACCESS TO SHORELINE AND UPLAND RECREATION AREAS

Loss of public access due to development. Access issues become critical as more lands are developed for resorts, subdivisions, and golf courses.

Objective III-A: Prevent the loss of access to shoreline and upland recreation areas due to new developments.

Policy III-A(1): Require the land use permit applicants to fully address the impact of their projects on trails and public access.

Objective III-D: Acquire, develop, and manage additional public accessways.

Policy III-D(1): Give priority to acquiring public access to selected shoreline and mauka recreation areas.

Mauka and shoreline access will be hampered by the development of a golf course because of errant golf balls and incompatible uses.

ISSUE AREA; IV. RESOURCE CONSERVATION AND MANAGEMENT

Objective IV-B: Prevent degradation of the marine environment.

Policy IV.B(1): Enhance water quality to provide high-quality ocean recreation opportunities.

The waters off the coast of Queen's beach classified Class A, the highest water quality classification in the State. A golf course with its extensive use of chemicals and manicured grounds immediately mauka of the coastline puts these pristine waters in jeopardy of sever pollution.

TOURISM

ISSUE AREA III: ENVIRONMENTAL RESOURCES AND CULTURAL HERITAGE

Objective III.A: Enhancement of respect and regard for the fragile resources which comprise Hawaii's natural and cultural environment. Increase preservation and maintenance efforts.

Policy III.A.1 Assist in preserving and maintaining recreational resources.

Policy III.A.(2): Assist in preserving, perpetuating and interpreting cultural, historic and archaeological resources.

To preserve the fragile natural resources, Class A waters and cultural environment a golf course complex should not be built at Queen's beach.

GENERAL PLAN

ECONOMIC ACTIVITY

Objective B - To maintain the viability of Oahu's visitor industry

Policy 8 - Preserve the well-know and widely publicized beauty of Oahu for visitors as well as residents.

The Ka Iwi coastline from Koko Head Crater to Makapu`u has been declared a unique and significant landscape. The visitor and residents alike is offered an uninterrupted view of a rugged natural coastline. Scenic vistas like these are what people come to Hawaii to see.

NATURAL ENVIRONMENT

Objective A - To protect and preserve the natural environment

Policy 1 - To protect Oahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.

Policy 8 - Protect plants, birds, and other animals that are unique to the state of Hawaii and the island of Oahu.

Objective B - To preserve and enhance the natural monuments and scenic views of Oahu for the benefit of both residents and visitors.

Policy 1 - Protect the island's well-know resources; its mountains and craters; forests and watershed areas; marshes, rivers....

Placement of a golf course complex, with its extensive use of chemicals and massive earthmoving needed to change the topography, on land containing rare plants and animals and adjacent to Class A waters does not offer protection to the flora and fauna of the area.

CULTURE AND RECREATION

Objective B - To protect Oahu's cultural, historic, architectural, and archaeological resources.

Policy 3 - Cooperate with the State and Federal governments in developing and implementing a comprehensive preservation program for social, cultural, historic, architectural, and archaeological resources.

Objective D - To provide a wide range of recreational facilities and services that are readily available to all residents of Oahu.

Policy 8- Encourage ocean and water-oriented recreation activities that do not adversely impact on the natural environment.

The rich cultural heritage of the area could be preserved through an interpretive program in conjunction with ecologically sensitive recreational activities.

Heller Hastert
Planners

October 1, 1997

Ms. Donna Wong, Executive Director
Hawaii's Thousand Friends
305 Hahani Street, Room 282
Kailua, HI 96734

Dear Ms. Wong:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 18, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference, we will respond to your comments in the order they appear in your letter.

Cumulative Impacts

As you are now probably aware, the Honolulu City Council took action in January of this year (Resolution 97-09) to terminate consideration of the proposed settlement referred to in the DEIS. In regard to cumulative impacts, since City Council's termination of discussion on the settlement, the future of the other 11 projects is questionable, and there is no connection of these projects to the proposed Queen's Beach Golf Course. Therefore, there is no compelling reason to consider these projects in the context of cumulative impacts and the Queen's Beach Golf Course.

Public Access to the Lighthouse

The reference to "any and all..covenants, restrictions, reservations, conditions, and agreements of record" relate to the original conveyance of the property in 1916 by the Trustees of the Bishop Estate to the U.S. Government. Under this conveyance, the Bishop Estate retained the right to use the land as a roadway. U.S. Government conveyance to the State of Hawaii included the rights of the Bishop Estate to continue the right to use the property as a roadway. The King's Highway was not the subject of this conveyance. However, the Bishop Estate owns this property, as well.

The need for conditions to enforce public access for the Lighthouse Access Road may not be necessary because it is owned by the State of Hawaii. Conditions relating to public

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access along the so-called "King's Highway" are infeasible, because the property is owned by the Bishop Estate.

Your reference to existing easements is unclear. Easements affecting the property are discussed in Chapter 2 of the DEIS. The one easement that would be affected by the proposed golf course is Easement "A," which is in favor of Hawaiian Electric Company. Stipulations of this easement allow the landowner to displace the easement in the event of development of the property, requiring "relocation of all or any affected portions of its (HECo) lines...at its expense to a substitute perpetual right of way furnished by the Grantors or to a public road located within reasonable vicinity of the easement granted herein."

Figure 5

We assume your reference to the "single dark perforated line" indicates the line to the west of the leader line identifying a "Flowage Easement." This line marks the western boundary of a flowage easement in favor of the City and County of Honolulu for the purposes of stormwater spillover from Easement D-7.

Figure 6

This figure depicts the conceptual plan for the golf course and does not include any overlay information, such as the easements shown in Figure 5. The "long area" with trees shown which you refer to depicts the existing drainage channel that allows existing storm water runoff, which originates as far away as Kalama Valley, to reach the ocean. For most of its length, this drainage channel follows the boundaries of Easement D-8. However, near the end of its length, it turns toward the ocean and empties into the eastern end of Ka'ili'ili Bay, outside of this easement.

Easements D-7 and D-8 are still valid, and there are no plans to discontinue them. It is probable that 5 bridges will be needed to cross this drainage channel in order to provide access for golf carts. No culverts are planned within this area. Bridge design will be a matter of proper engineering and would be reviewed by jurisdictional agencies at the appropriate time.

Many reviewers asked questions related to grading and drainage for the proposed project. As a result, we asked Sam O. Hirota, Inc. to prepare a grading and drainage report. The findings of this report will be summarized in Sections 4.2 and 6.4 of the FEIS. The full

report will be attached to the FEIS as an appendix (Appendix N). Included in the report is a full description of how stormwater runoff will be handled.

Project Description (Section 2.3)

According to the grading and drainage report prepared by Sam O. Hirota, Inc. (see above), most of the boulders located on the project site will be used to construct an earthen berm on the makai edge of the property. This berm, in conjunction with detention basins designed as part of the golf course, and weirs to control the rate of stormwater discharge after settlement has occurred, serve as the foundation of the drainage plan for the project.

The report also calculates the amount of excavation and embankment work that would be required to implement the proposed grading scheme. Under this proposal, there would be 180,000 cubic yards (cy) of excavation and 163,000 cy of embankment. This would require approximately 17,000 cy of excess soil material to be spread over the course, which would be equal to about 0.83 inches. In addition, about 40,000 cy of a soil amendment (sand and peat) would be mixed with native soil to improve porosity.

Section 4.5 of the FEIS will clarify the location of the area containing a high density of ma'o. This information is currently found in Figure 2 of the Botanical Survey conducted by Char & Associates (Appendix D of the DEIS). For your information, the total area of this dense stand of ma'o is approximately 3.5 acres. The layout of the 15th, 16th, and 17th holes will be reconfigured to retain as much of this area as possible. Figure 6 in the FEIS will be amended to reflect these changes. In addition, new areas of dense ma'o will be planted contiguous to existing populations to provide a larger community of this species. According to Winona Char of Char & Associates, ma'o is relatively easy to cultivate, and can be found growing at the Honolulu Zoo, Foster Botanical Garden, the Waikiki Aquarium and at many residences throughout Oahu. The FEIS will include new figures indicating where these areas would be located.

It is customary for mitigation and preservation plans to be prepared after the issuance of the SMP and prior to the issuance of any grading or building permits, consistent with conditions of approval that are attached to the SMP. However, we can say that a 200-foot buffer zone around each individual plant and colony is unnecessary and excessive.

The DEIS stipulates that the clubhouse will be a maximum of 25 feet above existing grade. Under the provisions of Section 3.60 of the Land Use Ordinance, height is measured from existing or finish grade, whichever is lower. So, even if finish grade were to be above existing grade, the overall building height could be no higher than 25 feet above existing

grade. The DEIS does contain a site plan for the clubhouse drawn to scale on correct topography. Final finish grades will not be determined until a final grading permit is approved by the Department of Public Works, subsequent to approval of the Special Management Area Use Permit, but prior to the issuance of any building or grading permits.

A total of about 6 bridges will need to be constructed in association with the proposed golf course. All bridges will cross the unlined drainage channel. One bridge will be needed at the makai end of the drainage channel (mauka of the 40-foot shoreline setback) and will require a Department of the Army Permit (under the provisions of Section 10 of the River and Harbors Act). The remaining 5 bridges will be constructed to allow golf carts to cross the unlined drainage channel between hole nos. 8 and 7, 7 and 5, 5 and 3, 3 and 2, and 2 and 1. The exact locations for these bridges have not been determined. Detailed plans identifying culvert locations for the entire course will not be developed until final grading plans are submitted for a grading permit.

The height of the maintenance buildings and comfort stations would be no higher than 15 feet.

You ask what the overall depth of the various layers of the course would be (gravel, coarse sand, seed bed and top soil). The overall depth of the top soil would be approximately nine inches, with three inches comprised of the peat and sand amendment. On the fairways, no other layers would be added.

In regard to your concerns about exposure to errant golf balls, we have considered the safety issues related to hikers and the proximity of the golf course. We believe you are referring specifically to the greens of the 1st, 10th, 16th, and 17th holes, and the fairways of the 12th and 13th holes. We have re-examined the layout of the 1st, 16th, and 17th holes, and Figure 6 in the FEIS will show them set back further from the shoreline area.

The public's use of the Coast Guard Access Road will not be impacted or interrupted by the development of the Queen's Beach Golf Course. The layout of the 10th, 12th, and 13th holes have golfers hitting either toward the access road or parallel to it. The green of 10th hole is downwind (tradewind conditions) and about 200 feet south of the access road. The 12th hole runs roughly parallel to the access road, with a separation of between 300 and 500 feet between the road and the green. The fairway for the 13th hole also runs parallel to the access road, with a separation distance between the centerline of the fairway and the access road varying between about 175 feet near the tee box and 250 feet toward the middle length of the fairway. In addition, there is an elevation separation of about 40 to 70 feet between the 13th hole and the access road which adds to the separation between

golfers and hikers. It is possible that a low fence or net (7 to 8 feet) might be required near the tee box of the 13th hole along the access road to protect hikers from golfers who "hook" their tee shots.

In regard to conflicts between hikers and golf carts along the access road, there will be one point of crossing to accommodate golfers travelling between the 10th and 11th holes and the 12th and 13th holes. This point of crossing will either be a clearly marked "crosswalk" for the golf carts with stop signs on either side of the access road, or an underpass below the roadway. In either case, the safety of pedestrians would take first priority.

Your letter also suggests that golf courses are not economically viable unless they are built as amenities to other development, such as housing, restaurants or commercial development. In large measure, this situation was created by the remarkable rise in value for golf course properties that occurred in Hawaii during the 1980's and early 1990's. The cost of land acquisition, construction and the added burden of exorbitant impact fees created a financial environment within which it was virtually impossible to pay down debt for stand-alone golf courses. Therefore, they became amenities to larger developments. In regard to the Queen's Beach Golf Course, no other uses will be built surrounding the golf course.

Chapter 4 - Assessment of Existing Conditions, Probable Impacts and Mitigation: Physical Environment

4.2.2 Probable Impacts

As discussed earlier, a grading and drainage reported prepared by Sam O. Hirota, Inc., will be included in the FEIS. The report may be read in its entirety (as attached within Appendix N of the FEIS). In a brief answer to your questions here, most of the boulders now found on the project site will be recycled by using them to construct an earthen berm at the makai edge of the project site. This berm would prevent stormwater runoff from directly reaching the ocean before it has settled sediments. The berm, in conjunction with retention basins designed as part of the golf course, and weirs, would also regulate the rate of stormwater discharge.

4.3 Geology and Soils

Environmental Chemistry conducted one site visit over the course of three days in October 1994. Six (6) soil samples were collected. At each sample location, a 6-inch bucket auger was used to obtain samples to a depth of approximately 3 feet in each location. Soil samples

used for the assessment of chemical impact were limited to the Lualualei soil series since these soils cover about 90% of the area that is available for golf course development.

Jaucas soils are identified as being in the area, however, they only comprise soils on the far western side of the property, and do not include areas that will occupy the proposed golf course. Section 4.3 of the FEIS will be amended to clarify this situation

You express concern about the inexact language that describes the surface area of Rock Land (rRK) soil, and suggest that these outcrops were brought to the property from off-site. The description of Rock Land that characterizes the surface of these soils is taken from the U.S. Department of Agriculture Soil Conservation Service. This is a generic description of a soil type that is found throughout the state. Further, there is no connection between Rock Land as a soils type and the existence of boulders that have been deposited on the project site. In some areas, boulders have been deposited and overlay Rock Land soil. The "rock outcrops" pre-exist the deposition of boulders. The boulders are not a soil type, and do not effect the chemical characteristics or properties of the soil types

The reference to "mapping" in the DEIS is a generic mapping of Koko silt loams throughout the Hawaii, and is not a specific reference to the project site.

You express concern about the shrink swell potential of Lualualei clay (LuA) soils and the likelihood they will influence a higher volume of leaching on the golf course. We assume you are referring to the cracking of dried Lualualei soils that occurs after the soil has been subjected to significant rainfall, and ponding of water for long periods, as can be found at the project site. First, most areas of the golf course will be planted in turfgrass, thereby limiting the exposure of the soil to the direct effects of wind and sun. Second, the fairways, tee boxes and greens will be irrigated on a regular schedule that will eliminate the saturation and drying cycles that create cracking.

Similar to our response above concerning Rock Land soils, the presence of boulders on any part of the project site does not eliminate the existence of underlying soil types. It is possible, therefore, to have boulders on any part of the project sit atop other soil types. The "other soil types" in this case are the soil types identified in Figure 11 of the DEIS. The hatched area of Figure 11 merely identifies those areas where deposited boulders are most prevalent.

The reference to enhancement of surface runoff transport processes suggests increased potential for runoff if the soil is exposed.

4.4 Hydrogeology and Nearshore Marine Resources

Reef Fish Community Structure. The survey conducted by MRC took place on one day. Standard survey techniques, including the establishment of transects and survey quadrants and methods of quantitative assessment of reef fish community structure were used for the survey.

Your comments suggest that you are unwilling to accept that certain species of fish are suffering from over-fishing. The species mentioned in MRC's report as "food fish" included jacks (ulua, *Caranx melamphysgus*), parrotfishes (uhu, *Scarus spp.*), goatfishes (weke, *Parupaneus spp.* and *Mulloidichthys spp.*), and emperorfish (mu, *Monotaxis grandoculis*). These types of fish are generally recognized as species most sought after by recreational fishermen and divers. In addition to being represented in low numbers, the observed fish were small and actively avoided divers. Taking all these factors into consideration, MRC concluded that these species were under pressure from fishing.

As for other species of fish being "food fish," certainly many species of fish are consumed by Hawaii's local citizens. Not categorizing them as food fish in the MRC does not mean to take away from their use by local families. This, however, does not negate the observation that other species are being over-fished.

Sediment Quality in Estuaries. Results from the sampling of sediments in Kaloko and Kaho'ohaihai Inlets and Ka'ili'ili Bay are included in Appendix B of the DEIS. Sediments were sent to Associated Laboratories in Orange, California (Lab No. LL350-04) for analysis. Thirty-eight (38) different pesticides were screened during analysis, including many you question as to being included in the test. The purpose of the tests were to determine if pesticide residues were present in sediments to determine baseline conditions. Pesticides tested included all the pesticides recommended by Environmental Chemistry for use at Queen's Beach (MSMA is not recommended for use at Queen's Beach). Even if pesticides were detected in the sediments (and none were), the tests would not be able to identify the source of their use. By establishing baseline conditions, it will then be possible to determine if any pesticides used at the Queen's Beach Golf Course are reaching these waterways.

In terms of methods being suggested to prevent pesticides from reaching groundwater, Environmental Chemistry has recommended bringing a "closed-loop" approach to irrigation, which would recapture leachate, transmit it to a treatment facility, and then have it available for reuse, using one of two approaches, as follows:

"(1) a water treatment plant to service effluent water from the golf course or (2) a small treatment contactor placed off of each green. These treatment plants would then allow for a closed loop approach to water use. The basic design would be as follows.

"For a single treatment system:

"1.) Fairways and greens would be constructed using subsurface drain systems as described earlier. Each fairway and green would be tied to a main drain system that would lead to an equalization tank of approximately 1000 gallons in capacity.

"2.) Irrigation water that percolates through the fairways and greens would be collected by the subsurface drains and routed to the main drain. Surface and stormwater runoff would be captured with appropriate use of French drains, containment walls and berms to prevent surface water from leaving the course. This water would also be routed to the equalization tank.

"3.) Water from the equalization tank would be pumped via 8-inch piping to a sand filter to remove suspended material and then through a sock filter to remove small suspended particles. The sand filter bed dimensions would be approximately 3'x8' with a bed depth of 3 ft.

"4.) After leaving the sand filter, water would then route to a series of contactors containing either multi-media (iron oxide zero valent iron, granular activated carbon, and sand) or simply granular activated carbon (GAC).

"5.) The GAC will remove organic residues such as pesticides and ammonia. Once through the system, the water will be pumped to a holding pond (or water hazard) for re-introduction to the irrigation system.

"6.) A system of this type can easily be constructed to handle 200 gallons per minute.

"For a set of treatment contactors at each green:

"1.) The drainage system for each green and fairway would be constructed as described before except that the main drain would service only a single green-fairway combination.

"2.) Water collected by the drain would be passed through a GAC contactor near the green. Once through the contactor, the cleaned water would then be collected in a surge sump for redistribution on the rough or fairway."

Fertilizer. During the percolate tests, each column was watered once. A reservoir of water equal to the proportionate 100-year storm event was placed above each column and allowed to gravity flow onto the column. The reservoirs were emptied as quickly as the soil could absorb the water. This occurred between 2 and 7 days. Fertilizer and pesticides were added only once at the beginning of each test (fertilizer and pesticides were added to separate columns). Soils taken from the site (Lualualei clay) were used in all of the tests. Each column was 6 inches in diameter and 10 inches deep.

The use of these percolate tests are important tools to understand the behavior and fate of chemicals at the project site because the tests involve the use of soils from the site, and are not predicated on modeling. Using data developed by the chemical profile of the soil, its adsorptive characteristics, and the physical properties of the chemicals themselves, it is possible to more accurately predict the behavior and fate of those chemicals in the soil over a period of time.

Green construction begins with stripping and stockpiling of topsoil in the proposed green area. next the subgrade is constructed by either cutting into the grade on sloped areas, or building the grade in lower areas. After the subgrade has been placed, the subsurface drain is placed within the subgrade. The system is designed such that water will not have to travel more than 10 feet to reach a drain line. Typically the system consists of 15- to 20-foot lateral spacing of drain lines in either a herringbone or gridiron arrangement. The drain lines are 3 to 4 inches in diameter and of clay tile, concrete, or flexible slit plastic.

A 0.5 to 1 inch layer of gravel is placed in the bottom of the drainage trench before the drain lines are put down. On completion of the drainage line, the area is backfilled with several inches of gravel, then a layer of coarse sand (about 1 inch) and finally the root zone mix which is a combination of peat and sand. In this way all flow through the green is directed to the drains typically preventing any water flow below the subgrade. Preferential flow in this design is now controlled and used to direct water out of the greens. Bunkers are drained similarly and connect with a main drain line just off the green apron. These construction methods meet U.S. Golf Association standards.

Sand will be imported from off-site, as will be the peat. A combination of sand and peat (about 40,000 cubic yards) will be added to the topsoil for the fairways and tees to improve porosity of the soil.

Pesticides. The term "with other appropriate information" will be deleted from the FEIS. Following are some trade names for 2,4-D:

Formula 40
Weedone 638
Dacamine 4D
Envert 171
Weedone 170
Aqua Kleen
Weedone LV4
Weedone LV6
Weedone CB
Crossbow
Weedmaster
Esteron 99
Landmaster BW
Landmaster II
Rescue
Butyrac
Butyrac 200
Weedar 64
Tordon RTU

A footnote for Table 1 clarifies that MSMA is not recommended for use in Hawaii. This is primarily a function of longer persistence of the pesticide after its application and the toxicity of its by-products once it has begun to degrade. It is included in Table 1 because it is such a common pesticide used on many golf courses and was included in the analysis conducted by Dr. Walker.

In answer to your question regarding effects to sediments in estuaries, above, we described a "closed-loop" system that would be implemented as part of the design of the golf course (see "Sediment Quality in Estuaries" above). This design element, in conjunction with the prudent use of the pesticide (low dosage, spot application, no application before storm events) will work to prevent Chlorpyrifos from reaching groundwater through leaching, and from reaching ocean water as a constituent of surface water runoff.

The half-life of pesticides discussed in the DEIS are as follows:

Dicamba	10 days
2,4-D	7 days
Chlorthalonil	7 days

Chlorpyrifos	20 days
MSMA	1000 days

A full chemical profile of the soils found at the golf course are presented in pages 4-4 through 4-6 of Dr. Walker's report which appears as Appendix C in the DEIS. These chemical profiles are based on analysis conducted on soil samples taken from the site specifically for the preparation of this EIS.

You ask several questions related to human exposure to some of the pesticides for use on the proposed golf course, and the wisdom of their use if these chemicals have been shown to cause health problems. Specifically, you mention "studies" that have been performed showing that 2,4-D, and chlorothalonil have carcinogenic effects on humans. Without any understanding of the circumstances surrounding the studies, it is difficult to comment on the relationship of their use in the studies, and their probable use at Queen's Beach.

First, it must be understood that pesticides, by their very nature are toxic, and should be applied only by those licensed to do so, and under the directions listed on the label. It should also be noted that these chemicals are still approved for use by the EPA. With the use of proper equipment, in reasonable dosages (by label instructions), and spot applications, the opportunity for human health risk is low. In addition, these two chemicals have a relatively short half-life (see above) and decompose quickly.

Impact to Groundwater. You suggest that none of the golf course construction layers offers any protection from leaching. In fact, the DEIS stipulates that in tests conducted using soils taken from the project site, greater than 90% of the pesticide applied to test columns remained in the upper 2.5 inches of the Lualualei soil, which also contained thatch from the turfgrass. As described in a footnote on page 4-12 of the DEIS, thatch is the partly decayed layer of leaves, stems, and other organic material between the growing vegetation and the soil. A thatch layer occurs naturally, and has been included in the analysis of impacts related to pesticides.

The addition of 140,000 gallons to the groundwater discharge is not the total volume of irrigation water to be applied to the golf course. The 140,000 gallons is the predicted volume that will not be taken up by the plants or lost to evaporation (otherwise referred to as evapotranspiration). Walker used evapotranspiration rates calculated elsewhere in the region to estimate the total amount of irrigation water that reaches groundwater.

Measurements recorded by Tom Nance Water Resources Engineering during field work for their study (Appendix A of the DEIS), allowed estimation of existing groundwater discharge along the shoreline in the project area.

You ask what mechanisms would be put in place to prevent transport of pesticides to ocean water via groundwater. First, prudent use of chemicals will significantly reduce any chances of pesticides reaching groundwater. This means that chemicals should not be applied at excessive rates and should not be used prior to major storm events. Other alternatives that could be implemented at the golf course involve a closed-loop approach to irrigation (see "Sediment Quality in Estuaries" above)

The basis of statements concerning the fate of pesticides are the result of the percolate studies conducted by Dr. Walker and reported in Appendix C of the DEIS

Impact Attributable to Runoff. According to Dr. Walker's report, chemical residue below 2.5 inches would not mix with incoming rainfall to produce runoff. In regard to chemicals tested for, you ask which chemicals were tested for other than nitrate and ammonium. These two chemicals are the basic units of fertilizer applied to the test plots. Their presence in percolate would indicate leaching through the soil column. There was no reason to test for other chemicals (fertilizers) because no others were applied. Tests were conducted for pesticides that were applied to other test columns.

Each column contained 2 kilograms (kg) (about 4.5 lbs) of soil. Each column was 6 inches in diameter and 10 inches deep. Approximately 3.5 milligrams of each pesticide was added to each column after mixing with water. The formulations were sprayed onto the surface of the column, and then irrigation with water was started.

The reason for using the EPA standard for drinking water is specifically because it provides a comparison related to human health. If constituents in the groundwater meet human health standards for drinking water (according to EPA), it would be safe for human contact (groundwater at the site would not meet standards related to salinity).

Tests were not conducted that determined health risks of certain concentrations of Dicamba (one part per million) to the aquatic community. Dr. Walker's tests did measure the concentration of Dicamba present in the column percolate at regular intervals during the test.

Potential Impacts Related to Sedimentation. In the grading and drainage report prepared by Sam O. Hirota, Inc. (that will be attached to the FEIS as Appendix N), it was reported

that no additional soil will be needed to be imported to project site. Approximately 40,000 cubic yards of soil amendments would be imported to the site (peat and sand) to improve the porosity of native topsoil. As discussed in prior answers concerning the grading and drainage plan, an earthen berm would be constructed at the makai edge of the project site to contain stormwater runoff on-site, in conjunction with detention basins and weirs (to regulate discharge). It is not "ridiculous" to believe that these measures, along with providing a vegetated surface (instead of bare soil, as is the case for significant sections of the existing project site) can significantly decrease input of sediment to the shoreline.

4.4.3 Mitigation

The grading and drainage report (and Sections 4.2 and 6.4 of the FEIS) will identify best management practices (BMPs) that would be utilized during construction and operation of the golf course

An "unexpected event" would be an unanticipated storm event.

The requirement of a ground water monitoring program by the Department of Health is recognized by the applicant. It is assumed that the Special Management Area Use Permit (SMP) will contain language stipulating the frequency of monitoring reports.

An "appropriate" turfgrass is one which is salt tolerant. Two species under consideration for the Queen's Beach course are Zoysia and Paspalum.

4.5 Flora

A botanical management plan will be developed in close cooperation with the U.S. Fish and Wildlife Service. A key element of this plan will be to mitigate potential impacts that could result from construction activities. It is common practice to devise these plans after a Special Management Area Use Permit is approved, and before any grading or building permits are issued. Your suggestion of a 200-foot buffer around all remaining ma'o plants is both unreasonable and unnecessary. According to Winona Char, of Char & Associates, the ma'o plant is easily cultivated and can be found in landscaping at the Waikiki Aquarium, the Honolulu Zoo, Foster Botanical Garden and private gardens all over Oahu.

In regard to the 'ihi'ihi-lau-akea (*Marsilea villosa* or Hawaiian water fern), each of the three existing colonies are in areas devoid of boulders. The botanical management plan will also provide guidelines for the protection of the Hawaiian water fern. The area of high density of ma'o plants that is referenced in the DEIS is identified in Figure 2 of Appendix D,

the Botanical Survey prepared by Char & Associates. Because we received so many comments from reviewers asking that this information be provided in the FEIS (Figure 14), a new figure will be prepared identifying this area. For your information, this area constitutes approximately 3.5 acres The configuration of the 15th, 16th, and 17th holes, will be adjusted to accommodate as much of this area as possible without disturbance. In addition, other areas between these holes, and other areas of the golf course, particularly the rough areas, can be planted with new ma'o plants. It is important for the denser areas of ma'o to have new plants cultivated contiguous to existing plants, because the Hawaiian snout beetle (*Rhyncogonus simplex*) is a flightless insect and must migrate to new areas on the ground. As discussed above, the ma'o is relatively easy to cultivate and can be found in gardens all over Oahu.

Your reference to a figure of 120 acres to be developed as main portions of the golf course is taken directly from the text of the DEIS This amount of ground turf was estimated by Dr. Walker, as a worst-case amount of turfgrass on the course. Actual acreage will be more in the 90-100 acre range, depending on final design of the width and length of fairways.

Our recommendation of planting native species does not include "yanking" them from their natural setting. There are many nurseries on Oahu that sell native plants which are not endangered. In fact, the only endangered plant species at the project site is the *Marsilea villosa*. Interestingly, the only reason this plant can be found at Queen's Beach, is because someone "yanked" it from a large colony at Koko Head and transplanted it in Kealakipapa Valley.

4.6 Wetlands

Only the three sites containing the Marsilea villosa were formally evaluated as potential wetland sites.

4.7 Insects

By way of clarification, there will be no removal of all ma'o plants. As recommended by Char & Associates, and discussed above, a significant portion of the dense area of ma'o plants in the southeastern portion of the project site will be retained In this area it will be possible to retain existing boulders in place, without soil addition In regard to impacts affecting the Hawaiian snout beetle (*Rhyncogonus simplex*), the DEIS clearly stipulates that patches of ma'o, especially in the eastern boulder fields, should be preserved in place. This mitigation measure is consistent with the recommended mitigation measures for the ma'o itself. It has also been recommended to avoid pesticide applications directly in the area of

the ma'o plants, to avoid inadvertent destruction any Hawaiian snout beetles. Ordinarily, pesticides are not applied to rough areas of the course (where the ma'o will be located). By use of hand applicators to localized infestations of pests, volatilization of pesticides can be significantly reduced, thereby reducing the potential impact to the beetles.

4.8 Terrestrial Fauna

As suggested in the DEIS, a water quality monitoring plan is recommended for the proposed golf course. As with other management plans recommended as part of the DEIS, the water quality monitoring plan would be developed after the Special Management Area Use Permit is granted, but prior to the issuance of any grading or building permits, which is common practice. This plan would be developed in cooperation with the State Department of Health and would include provisions for mitigative actions should chemical contamination related to the operation of the golf course show up in the estuaries or nearshore waters.

A combination of vegetative buffer, and adequate distance separation from the greens of the 1st, 16th, and 17th holes and the shoreline areas will protect both terrestrial fauna and members of the public. In this regard, the configuration of these holes will be reconfigured to provide additional spatial separation between the greens and shoreline areas, and Figure 6 of the FEIS will be amended accordingly.

4.9 Scenic Resources

A discussion of regional scenic values was presented in the DEIS to provide a context for the relationship of the project site to the region as a whole. Physical changes to the project site should be considered not only in how the characteristics of the project site change, but also how the regional visual experience must be considered. The applicant cannot be responsible for preparing a Regional Scenic Resource Plan, because such a plan implies that regulatory mechanisms would be imposed related to the plan. As for any discussion of cumulative impacts within the region, recent action by the Honolulu City Council (Resolution 97-09) has terminated the consideration of the proposed settlement agreement by that body. Therefore, the status of the other projects that were part of the agreement is in doubt, particularly because other legal action by other parties may be forthcoming.

We disagree that the characterization of the clubhouse nestled into the topography and surrounded by vegetation is deceiving. Final architectural and landscape treatment of the clubhouse, and other buildings, will be an integral element of mitigation measures proposed in the DEIS and subject to final review by the Department of Land Utilization (DLU),

should recommended mitigation measures be adopted as conditions of approval by the Honolulu City Council. The depiction of the clubhouse as attempting to blend in with its physical surroundings is an honest one.

Boulders would need to be removed in the vicinity of the clubhouse and the parking lot, so finish grade would closely resemble the grade immediately below the boulders. In regard to your concern about the impacts of all buildings at the proposed golf course, Figure 13 will be amended in the FEIS (new Figure 15) to include these other facilities. Also, in response to other reviewer's comments, the clubhouse will be moved, as an alternative, approximately 200 feet to the north, to move the majority of the building profile out of the direct line of sight of motorists travelling toward Sandy Beach from the Makapu'u Lookout. Also, to the extent possible, the change in the overall physical appearance of the site will be simulated to show proposed fairways, and other "managed" areas

The preparation of a landscape plan should be a condition of approval for the Special Management Area Use Permit, subject to the approval of the DLU.

4.10 Historic, Cultural and Archaeological Resources

The reference on page 4-36 that Site 03 is outside the boundaries of the project site, refers to the trail portion of the former "King's Highway" that traverses the cliff beyond the Makapu'u Lookout, clearly beyond the project boundaries. Research conducted for this EIS, and in response to other reviewers contentions that the right-of-way for the former "King's Highway" belongs to the State of Hawaii, have proved without merit.

The text of any EIS should be considered as a summary of environmental data, particularly data that is based on other primary research conducted for the document. In the case of this project, there is a wealth of background information and current research efforts that need to be addressed in the body of the EIS. By necessity, other information is attached as appendices to the EIS for those reviewers who wish to consult primary documents. Such is the case with respect to the legends and other cultural documentation for the project site and the region pertinent to the project site. Section 4.10 of the FEIS will be significantly rewritten to reflect the results of an inventory survey that was conducted subsequent to the completion of the DEIS, and accepted by the State Historic Preservation Officer. The major differences between the DEIS and the FEIS is the recognition that Site 03, the former "King's Highway" has no physical evidence remaining of its existence within the project site, and is no longer considered significant.

Sites 02, 04 and 05, are sites associated with the survey work performed by McAllister in 1930. As coastal sites, Sites 04 and 05 are assumed to have been destroyed by the tsunami of 1946, as they have not been relocated since McAllister's original work. Site 02, also located by McAllister, was merely a pile of rocks, including coral fragments, back in 1930. As of today, this pile of rocks has disappeared, most likely the target of moss rock hunters, as suggested by Marion Kelley in 1984.

We do not understand your statement that "exclusion of the Hawaiian fishing village at Wawamalu shows a lack of cultural interconnection." In fact, page 4-36 of the DEIS does make reference to the village that once existed in the area. No other physical evidence can be found at the project site.

4.11 Flood Hazards

Flood hazard regulations are intended to control development in flood hazard areas to minimize loss of life and property as a result of flood events. Loss of life is considered primarily a function of habitation of structures within flood hazard areas. In regard to individuals who either would work or patronize the golf course, their safety would be protected by the installation of two sirens and siren support infrastructure, as recommended by the State of Hawaii Vice Director of Civil Defense in his comment letter of November 21, 1996 concerning the DEIS.

Your question related to the impacts on nearshore waters from the dislodgment of turf "laden" with pesticides, assumes that pesticides would have just been applied to the turf, without migrating through the thatch layer and into the soil below. The chance of such an occurrence is remote, although possible.

4.12 Air Quality

The use of air monitoring stations in Waikiki and downtown Honolulu are used strictly as indicators of typical air quality in urban environments, primarily related to exposure to the impacts associated with emissions from vehicles. The air quality in the vicinity of the project is much better because of the much lower traffic rates and the effects of local wind patterns.

As discussed in the air quality study prepared for this project, and appended to the DEIS (Appendix K, page 29), the potential for significant airborne concentrations of pesticides is relatively slight when one considers the dilution factor in application solutions, the low level release height of the chemicals and the coarse spray (droplet size > 100 microns) that is normally used to assure adequate coverage in the desired area and avoidance of drift.

4.13 Noise

Because the construction-related impacts are considered to be short-term, noise impacts to beachgoers and hikers are not considered significant. They are certainly unavoidable if construction of a golf course is to proceed. As far as operational impacts of the golf course are concerned, the greatest source of noise would be from ground maintenance equipment, primarily mowers. Ordinarily, mowers are sent onto the course as early as 6:00 a.m., in order to be finished with mowing activities before golfers would reach the 10th hole, which would be about 9:00 a.m. Greens may be mowed 5 or 6 times per week, with fairways mowed only 3 times per week. Therefore, exposure to noise from mowers would be limited to the early morning hours on certain days of the week. This does not constitute a significant diminution of experience for beachgoers and hikers, and would certainly be an improvement over existing conditions (both noise and safety) for beachgoers and hikers who would otherwise be exposed to motorcross bikes.

4.14 Interrelationships and Cumulative Impact: Physical Environment

See response to question on cumulative impacts on page 1.

Chapter 5 Assessment of Existing Conditions, Probable Impacts and Mitigation: Socio-Economic Environment

It is not uncommon for job positions at golf courses to be part-time. Many of the jobs are associated with the clubhouse and restaurant, which have periods of the day with higher peak use. Of the 78 full time equivalent (FTE) jobs mentioned in your letter, only 45 would be directly associated with the golf course (as discussed in Section 5.2.1 of the DEIS). Of these 45 jobs, 30 would be with the golf course and 15 would be with the clubhouse. Typical jobs would include the golf pro, course manager, groundskeepers, waiters/waitresses, maintenance workers, etc. The balance of the 33 jobs would be indirect and induced jobs that would be created elsewhere in the Hawaii economy as a result of the golf course.

Specific pay scales and benefits can not be determined at this time, as they would depend on the practices of the management company hired for the golf course. Estimates used for the DEIS were provided by KPMG Peat Marwick, based on interviews with managers at existing courses on Oahu.

At this point, we cannot determine whether all employees, including construction companies employees, will be Hawaii citizens.

5.3.2 Public Costs and Revenues

The only costs associated with road improvements attributable to the proposed golf course would be for the construction of a left-turn storage lane for access to the golf course. The full cost of building these improvements would be borne by the developer.

In regard to your concern about environmental clean-up, we would first say that the probability of such an event occurring are remote. In the event that contamination could be attributed to negligent activities at the golf course, we would expect the golf course to absorb costs related to clean-up.

5.4.1 O'ahu Golf Market Overview

The daily fee for the golf course has not been determined, and will be a function of market conditions at the time the golf course opens. The golf course, as stipulated in the DEIS, will be a private course open for public play. It will not be a membership course.

You ask whether tournaments will be played at the golf course. Since the course will not be of championship caliber (it will be a regulation course), it is doubtful that tournaments will be held here.

It is probable that up to 60,000 rounds of golf will be played at the course annually. This would mean an average of 143 rounds per day, although during periods, as many as 220-240 rounds could be accommodated per day (assuming foursomes tee off at 7 minute intervals between 7:00 a.m. and 2:00 p.m.). All tee times would be on a first-come, first-served basis.

The driving range will not be open at night. Outside visitors may stop at the clubhouse for lunch, or other casual dining experiences during other times of the day, although the primary purpose of the clubhouse restaurant will be to serve golfers. The clubhouse will not be open for other activities.

5.5 Interrelationships and Cumulative Impact: Socio-Economic Environment

You assume that those using the project area will be displaced. This is not true. Hikers, beachgoers, fishermen, surfers, picnickers, and others using the shoreline and the

Lighthouse Access Road, will still be able to enjoy use of these areas. The only group that would be directly displaced would be motorcross bikers, who now enjoy unauthorized use of the project site.

As noted in answer to your questions about Section 4.1.4, recent action by the Honolulu City Council has rendered discussion of the cumulative impacts associated with the 11 other projects in the proposed settlement moot. The status of all these projects are questionable, particularly in light of impending resumption of legal action.

In regard to your question concerning the compatibility of golf with hiking and other recreational activities, previous section have identified course design modifications to ensure the safety of hikers and those seeking ocean access. Therefore, we do not see this as a basis form "major social conflicts."

Chapter 6: Assessment of Existing Conditions, Probable Impacts and Mitigation: Public Facilities and Services

The difference between the "segment of Kalanianaole Highway which fronts the project site" and the "Queen's Beach Golf Course" refers to the stretch of highway along the entire project versus the "T" intersection that would be created with the entry drive to the golf course clubhouse.

You suggest that it is your understanding that the newly constructed segment of Kalanianaole Highway is at capacity. We are unclear as to the source of your information. The traffic impact study conducted by Wilbur Smith Associates (Appendix M of the DEIS) reports that key Kalanianaole Highway intersections west of Hawaii Kai all operate at acceptable levels. In regard to the proposed golf course at Queen's Beach, any traffic generated by the facility would be in the reverse direction of peak hour flows on Kalanianaole Highway, thereby not contributing to peak hour demand.

6.2 Water Supply

The Board of Water Supply has indicated that potable water for the proposed project must be taken from the allocation of water for Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE).

The existing 36-inch transmission line is adequate to handle future flows for potable water at the Queen's Beach Golf Course.

You erroneously imply that R-2 water cannot be used to irrigate golf courses. In fact, golf courses all over Hawaii are presently being irrigated with R-2 reclaimed water. In 1993, the Department of Health adopted guidelines for the reuse of wastewater, including R-2 water. Any transmission of reclaimed water to the golf course will be implemented and paid for by the applicant.

You assert that the necessity to blend potable water with treated effluent is absurd. Obviously, you missed the point made in the DEIS that wastewater treated at the East Hawaii Wastewater Treatment Plant has a high level of salinity. This condition is a result of salt water intrusion into the aging transmission system in the lower portions of Hawaii Kai. In fact, the salinity is so high, it would adversely impact the bermuda grass that is used for the greens (other salt tolerant turfgrasses do not perform better than the bermuda). As a result, we proposed to blend potable water with irrigation water designated for the greens to reduce its salinity. At this time we have had the opportunity to conduct additional research, and intend to desalinate the reclaimed water and blend it with regular reclaimed water to a level suitable for use on the bermuda grass. It is anticipated the golf course will be irrigated with a sprinkler head system.

6.3 Wastewater

As discussed above, the termination of the settlement agreement by the City Council (Resolution 97-09) has rendered the consideration of the 11 other projects that were part of the settlement as moot. Nevertheless, the publication of the draft Environmental Impact Report associated with the proposed settlement, made it clear that the East Honolulu Wastewater Treatment Plant could handle the sewage generated by all projects. The operators of the sewage treatment plant conduct quarterly water quality monitoring tests that are submitted to the Department of Health, to ensure that the plant is operating efficiently.

Other comments in this section have already been covered in previous discussion concerning irrigation water.

6.4 Drainage

Kamehameha Schools Bernice Pauahi Bishop Estate owns the channels and waterways. The City and County of Honolulu is responsible for maintaining the channel. These features of the site will not be altered.

This section of the FEIS will be rewritten to incorporate the findings of the Hirota report, including how runoff will be directed, stored and released.

6.7 Recreational Facilities

You suggest that leaving 29 acres at Kaloko Point in open-space is meaningless when compared to the existing expansive wilderness experience the area now offers. One must consider the context of the 29 acres at Kaloko with the rest of the property. The predominant recreation activities at Queen's Beach occur along the shoreline area. The 29 acres in question will connect to access across the entire shoreline fronting the property, allowing recreational activities along the shoreline to continue. The remainder of the property is used for unauthorized access by off-road vehicles and motorcross bikes, which contribute to the destruction of native plant habitats and erosion. The use of this portion of the property can hardly be described as a wilderness experience.

The configuration of the 1st, 17th and 18th hole has been changed allowing for a greater setback from the shoreline area.

The public's use of the Coast Guard Access Road will not be impacted or interrupted by the development of the Queen's Beach Golf Course. The layout of the 10th, 12th, and 13th holes have golfers hitting either toward the access road or parallel to it. The green of the 10th hole is downwind (tradewind conditions) and about 200 feet south of the access road. Hole no. 12 runs roughly parallel to the access road, with a separation of between 300 and 500 feet between the road and the green. The fairway for the 13th hole also runs parallel to the access road, with a separation distance between the centerline of the fairway and the access road varying between about 175 feet near the tee box and 250 feet toward the middle length of the fairway. In addition, there is an elevation separation of about 40 to 70 feet between the fairway of the 13th hole and the access road which adds to the separation between golfers and hikers. It is possible that a low fence or net (7 to 8 feet) might be required near the tee box of 13th hole along the access road to protect hikers from golfers who "hook" their tee shots.

In regards to conflicts between hikers and golf carts along the access road, there will be one point of crossing to accommodate golfers travelling between the 10th and 11th holes and the 12th and 13th holes. This point of crossing will either be a clearly marked "crosswalk" for the golf carts with stop signs on either side of the access road, or an underpass below the roadway. In either case, the safety of pedestrians would take first priority.

In response to your statement, "the State's public trust responsibility would dictate that the public need is too great to allow private use for a minority to override the good of the majority," if the State, in fact, agrees with that position, it would follow accepted procedures to acquire the property for public use.

Chapter 7 Alternatives to the Proposed Action

We are certainly aware that property owners are not assured of the "highest and best use" of property. In fact, the key legal issue underlying recent court decisions affecting the Queen's Beach focuses on the ability of the landowner and lessees to establish a viable economic use on the property. In arguments supporting the decision to downzone the property, attorneys for the City and County of Honolulu stipulated that the landowner and the lessee were left with a viable economic use, namely a golf course. At this time, the landowner and the lessee are acting within the direction provided by the court.

In regard to discussing an alternative of developing and educational/cultural wilderness park, the alternative of developing such a use by the Department of Land and Natural Resources is described in DEIS, although it is assumed no fee would be charged for admission by the State of Hawaii. Such a use would not be economically viable for the applicant.

Chapter 8 Irreversible and Irretrievable Commitments of Resources

Contrary to your suggestion, no cultural or archaeological sites will be destroyed, as a result of the proposed golf course. A recent archaeological inventory survey (which will be included in the FEIS and discussed in Section 4.10) concluded that no significant cultural sites remain within the project boundaries. This includes the former remnant of the old "King's Highway," which has apparently been dismantled by moss rock gatherers. Also, important habitats for endangered and important native species will be enhanced, not destroyed. We fully agree that any development of this site must be compatible with the area in which it is built.

Baseline Survey of Water Quality and Marine Community Structure in the Vicinity of the Proposed Queen's Beach Golf Course

1. You ask for clarification of two terms: "present situation" and "full maturity." "Present situation" refers to existing conditions, meaning the present chemical and physical profile of groundwater and marine water. "Full maturity" refers to the point in time when the golf course is considered past its "grow-in" phase, with application rates for fertilizers reaching

more stable conditions. The reference to "10% increase" is linked to the daily volume of NO_3^- that would discharge along the project shoreline.

2. This assertion is based on the author's knowledge of and experience with dozens of golf courses in Hawaii.

You site a study based on experience in Long Island, New York, which concludes that over 50,000 lbs of pesticides are used on golf courses in that region Using the figure you provide of 18 pounds per treated acre, it is assumed that the number of courses involved approximate 25-30. In fact, Walker estimates that the Queen's Beach golf course would use a maximum of about 180 pounds of pesticides per year, and is much more likely to use only 45 pounds of pesticides per year. We agree that a management plan that includes pesticide use must be developed for the Queen's Beach golf course. We believe the appropriate timing for this plan would be prior to the issuance of any grading or building permits.

3. Impacts to aquatic ecosystems have been evaluated and will be included in Section 4.4 of the FEIS.

4. It is recommended that application of pesticides should be done, for the most part, as "spot" applications by hand sprayers to the affected area only, which reduces the environmental load in that area. Application should occur within the thatch zone directly to avoid large volatile losses or drift with wind. Thatch injection will eliminate much of the potential wind-borne loss.

5. You suggest that the DEIS provides "totally unrestricted, unmonitored" use of pesticides. On the contrary, we have been careful to note that pesticide application needs to be administered according to a management plan that would minimize its use, in conjunction with a monitoring program that can detect their presence in groundwater if misused.

6. Dr. Walker has reviewed your letter and suggests that 2,4-D is a low-risk pesticide, as long as it is applied in normal quantities (following label specifications).

Geochemistry, Soil Chemistry and Potential Chemical Impacts from Construction and maintenance of a Proposed Golf Course: Queen's Beach, Oahu, Hawaii

1. A thatch layer is a natural occurring aspect of any golf course. It is the partly decayed layer of leaves, stems, etc., between growing vegetation and the soil (see page 4-12 of the DEIS). As such, it does not need to be "required," it will form naturally.

2. As identified by Hirota, major construction will only take place during the dry period of the spring and summer months. Grading will be implemented in 15-acre sections, with grassing to occur as each sections is completed. To further control dust, watering will take place during grading and general construction.

3. Sediment analysis conducted by Marine Research Consultants in Kaloko and Kaho'ohaihai Inlets and Ka'ili'ili Bay did not detect any evidence of such contaminants. Future groundwater and marine water monitoring will be conducted to detect any chemicals leaching from the golf course into groundwater or marine water.

4. Presently, the East Honolulu Wastewater Treatment Plant treats an average of 3.7 million gallons of wastewater per day and discharges a similar volume via ocean outfall. There are no other users of reclaimed water in the area. Hence, the wastewater treatment plant has adequate supply of reclaimed water to serve the Queen's Beach Golf Course.

5. Your letter points to language in Section 8.4 of Walker's report suggesting that fertilization of turfgrass could pose a threat to surface water and groundwater quality. Unfortunately, you have taken this statement out of context from the rest of Walker's report. It is important to note that Walker's results were derived under "worst case scenario" conditions; a year's worth of fertilizer was applied to a test column of turf and soil, and then subjected to the equivalent of a 100-year storm event. Even under these circumstances, Walker concluded that all observed maximum concentrations of nitrate and ammonium are well below acceptable Environmental Protection Agency drinking water standards.

6. The use of Dicamba under appropriate conditions would be included as part of the management plan for the golf course. It is assumed that the golf course superintendent would be responsible for administering the requirements of the management, as well as ensuring that all chemicals are applied according to label instructions.

7. The final wording of any conditions attached to the SMP would be up to the City Council.

8. According to Sam O. Hirota, Inc., a series of fences and berms constructed along existing drainage channels will be used to prevent flow from leaving the site in an uncontrolled manner during construction. A berm would also be constructed on the north side of the channel to prevent flow into the channel during operation of the golf course.

9. It is anticipated that soil moisture sensing devices and a computer-controlled irrigation system will be installed as part of the golf course management system. At this time, it is to too soon to identify specific devices and designs.

10. Section 4.4 of the FEIS will be revised to include updated information relating to the toxicity of pesticides in stormwater runoff.

Applicable Public Policies, Objectives and Plans

This section of your letter presents policies, objectives, and plans from many sources, including the federal Coastal Zone Management Act, the State Coastal Zone Management Act, the Hawaii State Plan, various State Functional Plans, the Hawaii State Constitution, and the County General Plan. You cite sections of these documents to support the following claims about the proposed golf course at Queen's Beach:

- the project is not coastal dependent and should not be permitted,
- all drainage will flow untreated into Class A waters, "the highest water quality in the state",
- the location of the project is inappropriate because it is not visually compatible with its surroundings;
- coastal ecosystems will be exposed to intrusive pesticides and fertilizers;
- no protection is offered to golfers exposed to tsunami risks;
- non-native grasses will be introduced into a specialized ecosystem;
- massive earth movement threatens fragile flora and fauna;
- the area offers many educational opportunities that will be threatened;
- the Ka Iwi State Park should be developed instead of the proposed golf course; and
- mauka and shoreline access will be hampered.

We must note that these comments are not directed at any specific discussion contained in the draft EIS. Rather, they are presented in support of arguments by the reviewer that favor denial of the request for the proposed golf course. Responses to the issues covered in this discussion can be found throughout this letter, and have also been treated within the DEIS. However, some key points are relevant to repeat.

The DEIS recognizes that the proposed golf course is not coastal dependent. However, there are numerous golf courses throughout the state that are located adjacent to the shoreline and which have received Special Management Area Use Permits. Furthermore, the zoning laws of the City and County of Honolulu recognize golf courses as a permitted use within the P-2 General Preservation District. The City and County made similar arguments

to the U.S. Supreme Court when rationalizing that the downzoning of the property in 1983 did not constitute a taking of private property without just compensation, because the property could still be developed with an economically viable use, allowed by underlying zoning.

The discussion in Section 4.4 of the FEIS will be amended to indicate that the design of the golf course will include subsurface drains below the greens and fairways that will collect irrigation percolate for filtering, most probably by a granular activated carbon (GAC) filter, that would remove organic residues such as pesticides and ammonia. This cleaned water would then be collected in a surge sump for redistribution on the golf course. This will virtually eliminate any percolate from reaching groundwater or marine waters.

The use of other management practices, such as spot application of pesticides injected into the thatch layer, prohibition of application in advance of anticipated storm events, and consultation with the University of Hawaii Agricultural Extension agents, will all contribute to minimize use of pesticides in general, and ensure that they do not reach unintended biological receptors. These assertions are made with the support of studies and evaluations that have been conducted using accepted scientific protocol, with soil taken from the project site.

We have consistently maintained that the physical appearance of the project will change. We have not attempted to lead anyone to believe that this will not be the case. Existing wild vegetation will be replaced by turfgrass that is different in color and texture from current conditions. However, it is unfair and incorrect to characterize the majority of Kealakipapa Valley as a specialized ecosystem that cannot tolerate the introduction of "non-native grasses." The overwhelming majority of most of the project site is covered by introduced, exotic species. There are non-coastal areas that contain significant examples of native species, most notably the three colonies of *Marsilea villosa* (Hawaiian water fern), and the dense stand of about 3.5 acres of the ma'o or Hawaiian Cotton Plant (*Gossypium tomentosum*). These areas have been identified and will be protected. It is also planned to use the ma'o plant as a landscape treatment throughout the course. The rich coastal strand vegetation will not be touched, and should improve as a result of the development of the property as unauthorized access to the shoreline by off-road vehicles is discontinued.

The opportunity to use the coastline as a living laboratory for educational purposes will not be prevented. Continued access to and along the shoreline will be guaranteed and welcomed. As a result of comments received during review of the DEIS, several holes of the golf course have been realigned, to provide a greater setback from the shoreline to ensure the safety of all coastal visitors.

The State Department of Defense has recommended that two civil defense sirens be installed on the project site. This will ensure that employees and patrons of the golf course receive adequate warning of any impending tsunami event, just as other residents and visitors throughout the state who live, work and play within areas affected by tsunamis.

We understand the goal of Hawaii's Thousand Friends, and other community groups, to make the Ka Iwi State Park a reality. However, no matter how much the citizenry of Hawaii is opposed to a golf course at Queen's Beach, it remains for the State of Hawaii and/or the City and County of Honolulu (or some other entity) to fairly compensate the landowner and lessee, through either condemnation actions, purchase or land exchange, before that can occur.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

BENJAMIN J. CAYETANO
GOVERNOR

GARY GAL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

November 22, 1996

Mr. Patrick Onishi, Director
Department of Land Utilization
650 South King Street
Honolulu, Hawaii 96813

Attention: Ardis Shaw-Kim

Dear Mr. Onishi:

Subject: Draft Environmental Impact Statement (DEIS) for Queen's Beach Golf Course

We have reviewed the Queen's Beach Golf Course Draft Environmental Impact Statement and have the following concerns and questions:

1. Cumulative Impacts

In the preface of the DEIS, the authors refer to a proposed settlement agreement with the City. One element of the proposed settlement agreement is the development of more than 300 homes on the ridges above the golf course. The housing would be on land owned by the golf course developer.

State EIS rules require that a project be studied in relationship to known or anticipated developments in the region (HAR 11-200-17(g)&(i)). While we are aware of the "two tracks" this developer is attempting to follow to secure development rights for the golf course, the omission of any discussion of this housing project and its related cumulative impacts is a clear violation of the law.

The Final EIS should disclose in detail the cumulative impacts caused by the proposed golf course and any known and anticipated developments in the region.

2. Complete Disclosure

An Environmental Impact Statement should contain complete information and final, not preliminary or draft reports and

studies. Therefore, in the FEIS please include the final grading plan, archeological studies and plans to preserve and protect the rare and endangered plant and animal species.

Each of these final studies is required to assess the significance of any impacts on water quality, native species and historic resources of the proposed project. Incomplete disclosure in the FEIS will make it improper to accept the final document and subject the project to needless lawsuits.

3. Unresolved Issues

The DEIS lists two unresolved issues: the possibility of implementing the Ka Iwi State Park plan and the 29-acre "set aside" of some land at Wawamalu to the public. It occurs to us that there is a great deal more unresolved about this project than those two issues. One such issue is the ownership of King's Highway. The complete list of unresolved issues should be included. The FEIS must also discuss how such issues will be resolved prior to building the golf course.

4. Water Quality/Use

The DEIS studies the run-off generated on site but does not consider in detail how it will handle the polluted run-off that enters the site from the concrete-lined drainage ditch. The DEIS also discloses that 90% of the golf course site is made up of clay soils. This implies that the lands in the area are highly impermeable and run-off channeled to the site will likely reach the ocean without percolating into the water table. How will the course be designed to retain and or detain the run-off on site to preserve the water quality of the near shore waters along the Ka Iwi coast?

Also, no provisions have been made in the design of the golf course to accommodate the polluted run-off from any future mauka residential development. Any urban development on Mauwai Valley and Queen's Rise will drain into the golf course. Since the golf course developer himself plans to develop the mauka housing, it is clearly his responsibility to assess the drainage of such a development and its relationship to the golf course and water quality.

The final EIS must clearly address the design issues relating to accepting polluted run off from the Kalama Valley area

through the concrete ditch and any Hauka development as well as waters generated from the golf course itself.

The DEIS brushed aside OEQC's concerns about the use of sewage effluent for irrigation raised in our comment letter on the EIS Preparation Notice. The fact remains that the neighboring golf course has been unable to use effluent from the nearby treatment plant as irrigation water for its course. Any claim that the Queen's Beach Golf Course can do what an existing golf course cannot requires detailed analysis to be credible.

Precisely what "salt tolerant" turf grass is to be used? Has such a turf been successfully used in climate similar to the proposed golf course and in similar clay soils? Will the course operator guarantee that the "blending" of potable water with effluent will not exceed the ratios disclosed in the DEIS? Can the developer guarantee that the course will never use more than 35,000 gallons per day of potable water for human consumption and 30,000 gallons per day for irrigation? The history of golf course development in Hawaii is littered with empty promises. How can this proposal guarantee a better track record?

6. Native Species (Plants and Animals)

The plan to protect and enhance the habitat for the rare Ma'o and endangered Ihi'ihilauakea is general and lacks credibility. The DEIS defers to a later point in time the details of exactly how a "large area with a high density of ma'o" (p. 4-22) will be retained in a golf course that is already less than standard size and designed in a compact configuration.

It is impossible to assess the possible success of any plan to protect the Ma'o habitat without reviewing a detailed and comprehensive plan. Such a plan must be incorporated into the Final EIS to assess the significance of the golf courses impact on rare native species.

Specific management measures to protect the habitat of the native Ma'o and Ihi'ihilauakea need to be defined in the final study.

Specific study of the possible impacts on species listed in the comment letter submitted by Brooks Harper of the U.S. Fish and Wildlife Service should be included in the final EIS.

7. Archeological Studies

Use of preliminary and draft archeological studies as the basis of acceptance of a Final Environmental Impact Statement is improper. The DEIS calls for a complete inventory survey to be performed (p. 4-40). Such a study should be performed and its final findings incorporated into the FEIS.

8. Views

The DEIS states (p. 4-33) that the view study "clearly demonstrated that no views toward the sea from Kalanianaole Highway would be affected" by the golf course development. While view quality is highly subjective, such a broad and categorical statement is clearly wrong. The golf course will change the nature of the view. The visual impression of Makapu'u head today is one of an undeveloped and wild natural area untouched by human development.

If one were to build just one small fast food restaurant within the scenic view of the Grand Canyon, the landmark would unquestionably be altered. Similarly, regardless of the size, color, placement and landscaping of the golf course clubhouse and related facilities, they will be visible, and the nature and quality of the views along the coastline and to the sea will be irretrievably altered.

The FEIS should more carefully state the visual impacts of this proposed development on this, the last remaining undeveloped open space on the south shore of Oahu.

9. Alternatives

The DEIS does not completely consider alternatives to the proposed golf course. The existing use, that of a storage yard for large boulders extracted from nearby residential development is in fact, an economic use of the property. The Governor has suggested publicly that the proposed golf course be moved back from the shoreline. This alternative has not been addressed although it is clearly known to the proposers. A nature center, botanical park, campground, science learning center or the like all seem to be reasonable alternatives for such a remarkable location yet nothing but a golf course is proposed. With the growing interest in eco-tourism worldwide, the ample supply of golf courses on the island, and Hawaii seeking to diversify its tourism niche, why has the proposer not considered these other options?

10. Irreversible Commitment of Resources

The DEIS statement on irreversible commitment of resources is wholly inadequate (p. 8-1). No mention is made that one of the few remaining native ma'o ecosystems will be permanently altered. The native vegetation on the proposed golf course site are unique in all the world and would be lost to a planted and managed system of exotic turf grass should the project be built.

No mention is made as well of the fact that the site constitutes the last remaining undeveloped coastal region on the island. The rare beauty of the Ka Iwi coast is acknowledged by the writers. The value of open and wild spaces is understood to support not only unique plant and animal species but to provide needed spiritual recreation for humans as well. The fact that these elements will be sacrificed forever for the short term profits of a land developer and the past time of a few golfers is not addressed. These points should be addressed in the final EIS.

11. Community Presentations

The DEIS lists a number of community groups that have received presentations including information on the golf course plan. We suspect that this list may be those groups addressed by consultants for the proponents of the "settlement agreement" between the city and the land owners in the Hawaii Kai area. If this is so, little if any information regarding the impacts of the golf course is presented at these meetings. In fact, the Queen's Beach Golf Course is usually dismissed by presenters as likely to be excluded from the proposed "settlement agreement" and therefore not presented at all.

Please clarify the scope and nature of the information presented to community groups listed in the DEIS (p. 13-1) and any other groups contacted before the publishing of the final EIS.

12. Permits Required

The DEIS does not list Clean Water Act permits among the permits that must be acquired by the proposer. Are NPDES and Section 401 and/or 404 of the Clean Water Act permits

required? Will any stream alteration permit be needed to alter the drainage way that delivers regular flow of water to the site?

13. Old Government Road Ownership

As we discussed in our previous comment letter, it is quite likely that the State of Hawaii owns the alignment of the historic "King's Highway". This old government road was owned by the Kingdom, Republic and Territory of Hawaii. There is no record that it was ever deeded to the surrounding landowner. Case law and past practice suggest, therefore, that the State of Hawaii has legal claim to a significant portion of the proposed golf course site. This claim cannot be simply brushed aside as the DEIS attempts to do. The developers should meet with representatives of the State to discuss and attempt to resolve the conflicting land claims over the area. The result of this meeting or series of meetings should be disclosed in the FEIS.

14. Mitigation Measures

The EIS rules as amended (HAR 11-200-17(b)(3)) require that all mitigation measures proposed in the document be clearly stated in the summary section. Please assure that this rule is followed in the final document. The DEIS lists the "possible" set aside of 29 acres at Wawamalu as a measure that may mitigate the loss of the entire site as public open space. Under what conditions will the land be set aside. Will it be dedicated to the public (city or state) in fee without covenants and restrictions? If restrictions on the land are anticipated as a condition of its dedication to the public, please list them. This information must be disclosed to judge the value of the mitigation measure proposed.

15. Public Access

The DEIS does not adequately address the project's impacts on public access along the Light House Road. Currently hikers, whale watchers, cyclists and many others park along the highway shoulder and walk up this public road to the top of Makapu'u Head. How will the public's use of the Light House Road be affected by the golf course development? The DEIS mentions "minimum safety" (p. 1-12) distances being maintained but does not define these measures. What conflicts between public pedestrians and private golf carts are anticipated along the road?

Thank you for allowing us to review and comment on the Queen's Beach Golf Course DEIS. If there are any questions, please call Mr. Jeyan Thirugnanam at 586-4185.

Sincerely,

Gary Gill, Director
Office of Environmental Quality Control

Heller Hastert
Davis

October 1, 1997

Mr. Gary Gill, Director
State of Hawaii
Office of Environmental Quality Control
235 South Beretania Street
State Office Tower
Suite 702
Honolulu, HI 96813

Dear Mr. Gill:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 22, 1996 on the above draft environmental impact statement (DEIS). Your letter will be included in the final environmental impact statement (FEIS) being prepared

For your ease of reference we will respond to your comments in the order they appear in your letter.

Cumulative Impacts

As you are now probably aware, the Honolulu City Council took action in January of this year (Resolution 97-09) to terminate consideration of the proposed settlement referred to in the DEIS. However, before discussing the relationship of this action to any treatment of cumulative impacts in the FEIS, we must clarify that Kaiser Aluminum and Chemical Corporation (KACC) is not the owner of Mauuwai Ridge and Queen's Rise, nor is it the proposed developer of over 300 homes on these two parcels. Rather, Maunalua Associates, Inc., is the entity with the ownership and development rights for these parcels.

In regard to cumulative impacts, since City Council's termination of discussion on the settlement, the future of the other 11 projects is questionable, and there is no connection of these projects to the proposed Queen's Beach Golf Course. Therefore, there is no compelling reason to consider these projects in the context of cumulative impacts and the Queen's Beach Golf Course.

Heller Hastert & Davis
Grosvenor Center, Mauka Tower
737 Bishop Street, Suite 2290
Honolulu, Hawaii 96813
Telephone: 808 545 2055
Facsimile: 808 545 2050

Complete Disclosure

The FEIS will include more complete studies related to grading and drainage, and an archaeological inventory survey. However, final plans to preserve and protect the rare and endangered species affected by the proposed project will not be included in the FEIS. These plans are customarily prepared after the Special Management Area Use permit (SMP) has been granted, but prior to the issuance of any building or grading permits, as would be required by conditions attached to the SMP. We would expect, and encourage, such conditions to include the cooperation of appropriate agencies with jurisdiction over these species.

Unresolved Issues

Further research has clarified your question regarding the ownership of the old "King's Highway." We have been assured by the Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE) that they are the lawful owners of the property, including the area you refer to as the King's Highway. We have also researched this issue at the State Department of Land and Natural Resources with similar results. As for resolution of the implementation of the Ka Iwi State Park Master Plan, the issue will remain unresolved unless, and until, the State of Hawaii and/or the City and County of Honolulu condemn or purchase the property.

We would also clarify the status of the 29 acres of land to the west of Kaloko Inlet. Because of confusion related to the probability of a public park in this location, and the entity responsible for its implementation, any reference to the 29 acres will be simply in the context of open space. The landowner (KSBE) and the applicant (Kaiser Aluminum and Chemical Corporation) have no intention of developing this area. Responsibility for development of a park at Kaloko will rest with either the State of Hawaii (if the Ka Iwi Park Master Plan is implemented) or with the City and County of Honolulu, should either entity wish to purchase or condemn the property.

Water Quality/Use

Discussion included in this section of your letter incorrectly assumes that Kaiser Aluminum and Chemical Corporation (KACC) is the owner and developer of Mauuwai Ridge and Queen's Rise. As we point out above, this is not the case. Also, statements in this section suggest that run-off from the concrete-lined drainage channel that enters the unlined drainage channel on the property is polluted. Chemical analysis of sediments taken from Ka'ili'ili Bay (and included in the DEIS in Appendix B) do not substantiate this claim. In regard to accommodating runoff from elsewhere in the drainage basin, the existing drainage

system adequately accommodates design storm water runoff. Any future development in the drainage basin must comply with newly-adopted rules administered by the Department of Public Works which require no increase in peak discharge volume from new projects (Ordinance No. 96-34). This would require that new developments construct retention basins that would release storm water runoff at levels equal to or less than existing conditions.

Since the publication of the DEIS, and as the result of many comments received asking for a more detailed description of grading and drainage improvements for the golf course, we asked Sam O. Hirota, Inc. to prepare a grading and drainage report. The results of their work will be found in Appendix N of the FEIS, and will be summarized in Sections 4.2 and 6.4 of the FEIS

You claim we brushed aside your concern's about the use of reclaimed water raised in your comments on the EIS Preparation Notice. You suggest that because the existing courses at Hawaii Kai cannot except effluent from the East Honolulu Wastewater Treatment Plant, it is not conceivable that the proposed course at Queen's Beach could.

We cannot answer for the operational conditions at the existing Hawaii Kai courses, but it is entirely conceivable that current salinity levels of the effluent produced by the East Honolulu Wastewater Treatment Plant (EHWWTP) are unacceptable for the bermuda grass on those courses. Recognition of this problem allows the Queen's Beach course to select from several salt-tolerant turfgrasses (Zoysiagrass and Seashore Paspalum, among others) that would tolerate the brackish quality of the reclaimed water. As a result of comments received on the DEIS by others, we have taken a serious look at the potential for desalination of the reclaimed water to allow irrigation of bermuda grass on the greens of the course. We have determined that this is a viable alternative and will commit to the use of this technology as an irrigation source for these areas of the course.

As you can appreciate, the estimate of 35,000 gallons per day (gpd) of domestic water is just what is implied; an estimate. Can we guarantee that usage will never exceed 35,000 gpd? Of course not. However, we believe this is a reasonable estimate of the average daily domestics consumption for the golf course.

Native Species (Plants and Animals)

Section 4.5 of the FEIS will clarify the location of the area containing a high density of ma'o. This information is currently found in Figure 2 of the Botanical Survey conducted by Char & Associates (Appendix D of the DEIS). For your information, the total area of this dense stand of ma'o is approximately 3.5 acres. The layout of the 15th, 16th, and 17th holes will be reconfigured to retain as much of this area as possible. In addition, new areas of dense ma'o would be planted contiguous to existing populations to provide a larger community of this species. According to Winona Char of Char & Associates, ma'o is relatively easy to cultivate, and can be found growing at the Honolulu Zoo, Foster Botanical Garden, the Waikiki Aquarium and at many residences throughout Oahu. The FEIS will include new figures indicating where these areas would be located.

Similar to our response under "Complete Disclosure," above, it is customary for mitigation and preservation plans to be prepared after the issuance of the SMP and prior to the issuance of any grading or building permits, consistent with conditions of approval that are attached to the SMP.

The FEIS will include responses to the issues raised by the U.S. Fish and Wildlife Service.

Archaeological Studies

The results of a complete archaeological inventory survey will be included in the FEIS.

Views

We have been careful to acknowledge that no matter how a golf course is developed at Queen's Beach, the visual appearance of the project site will change. This is unavoidable. At the suggestion of several reviewers, additional visual analysis will be included in the FEIS.

Alternatives

We appreciate Governor Cayetano's interest in the outcome of this development proposal, and are sympathetic to his suggestion that the golf course be moved further back from the shoreline. In fact, Figure 6 in the FEIS will show we have adjusted the layout of the 1st, 17th and 18th holes to create more of a buffer between the golf course and the shoreline area. However, we question whether this effort will satisfy those members of the community who are opposed to the golf course under any circumstances.

You suggest that the DEIS did not consider the alternatives of a nature center, botanical park, campground, science learning center or the like. In fact, the DEIS discusses the Ka Iwi Park Master Plan as an alternative to the proposed action, which has been rejected by the applicant.

Irreversible Commitment of Resources

An assumption is made by the reviewer that the alteration of the ma'o ecosystem will be inherently negative. There is no consideration that the population of ma'o plants could actually be enhanced or expanded, particularly if the ma'o is purposefully used as landscaping material in the rough areas of the course. Further, the applicant is committed to preserving and enhancing the three colonies of *Marsilea villosa* now found on the project site. For the most part, a majority of the remainder of the project site is dominated by introduced species. In this context, we do not agree that the golf course will create an irreversible commitment of resources. In terms of recognition of the physical changes to the project site, Chapter 8 of the DEIS clearly states that the "development of the golf course will transform the project site from its present undeveloped state to an appearance that suggests deliberate management." Opportunities for use of the shoreline area for spiritual recreation will not be lost.

Communit; Presentations

You correctly observe that the list of community groups that have received presentations concerning the proposed Queen's Beach golf course are those groups addressed by representatives of the parties that were seeking to resolve litigation with the City and County of Honolulu.

Permits Required

Section 1.7 of the FEIS will be amended to reflect permits required under the National Pollutant Discharge Elimination System.

Old Government Road Ownership

Contrary to your assertion that the DEIS has brushed aside claims that the State of Hawaii is the legal owner of the "Old Government Road," and as explained in "Unresolved Issues," above, we have conducted our own research, including records at the Department of Land and Natural Resources. On this basis, we can find no information to support your claim.

Mitigation Measures

Your letter states that the "DEIS lists the "possible" set aside of 29 acres at Wawamalu as a measure that may mitigate the loss of the entire site as public open space." This is not accurate. The status of the 29 acres at Kaloko (not Wawamalu) is never tied to the project as a mitigation measure for the loss of open space, public, or otherwise. The 29 acres has been represented as being set aside for a possible park to be developed by a public entity (such as the State Department of Land and Natural Resources and/or the City Department of Parks and Recreation).

Further, you incorrectly state that the entire site is public open space and infer that the proposed project will somehow eliminate this open space. Until the State of Hawaii and/or the City and County of Honolulu purchase or condemn the project site, it remains privately owned, and therefore, private open space. The development of a golf course at the project site will alter the appearance of this private open space, but it will not result in its loss. We believe that the discussion in "Unresolved Issues," above, clarifies the status of this 29 acres relative to the project.

Public Access

The public's use of the Coast Guard Access Road will not be impacted or interrupted by the development of the Queen's Beach Golf Course. The layout of the 10th, 12th, and 13th holes have golfers hitting either toward the access road or parallel to it. The green of the 10th hole is downwind (tradewind conditions) and about 200 feet south of the access road. The 12th hole runs roughly parallel to the access road, with a separation of between 300 and 500 feet between the road and the green. The fairway for the 13th hole also runs parallel to the access road, with a separation distance between the centerline of the fairway and the access road varying between about 175 feet near the tee box and 250 feet toward the middle length of the fairway. In addition, there is an elevation separation of about 40 to 70 feet between the fairway of the 13th hole and the access road which adds to the separation between golfers and hikers. It is possible that a low fence or net (7 to 8 feet) might be required near the tee box of the 13th hole along the access road to protect hikers from golfers who "hook" their tee shots.

In regards to conflicts between hikers and golf carts along the access road, there will be one point of crossing to accommodate golfers travelling between the 10th and 11th holes and the 12th and 13th holes. This point of crossing will either be a clearly marked "crosswalk"

for the golf carts with stop signs on either side of the access road, or an underpass below the roadway. In either case, the safety of pedestrians would take first priority.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

WAIMANALO NEIGHBORHOOD BOARD NO. 32

c/o NEIGHBORHOOD COMMISSION • CITY HALL, ROOM 400 • HONOLULU, HAWAII 96813

RECEIVED
NOV 25 1996
HELBER HASTERT & FEE PLANNERS

November 22, 1996

RE: Queen's Beach Golf Course (Special Management Area)
District: Honolulu
TMK: 3-9-11:03, por. 02

Applicant: Kaiser Aluminum and Chemical Corporation
c/o Kaiser Center, Inc.
300 Lakeside Drive, Suite 130
Oakland, California 94612-3534
Contact: Robert Burke (510-271-6155)

Consultant: Helber Hastert & Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Contact: Scott Ezer (545-2055)
Fax: 545-2050

Accepting Authority:
City and County of Honolulu
Department of Land Utilization
650 South King Street, 7th Floor
Honolulu, Hawaii 96813
Contact: Ardis Shaw-Kim (527-5349)
Fax: 527-6743

Office of Environmental Quality Control
State of Hawaii Department of Health
235 South Berctania Room 702
Honolulu, Hawaii 96813.
586-4185
Fax: 586-4186

To all concerned parties:

At its November 4, 1996 meeting, the Waimanalo Neighborhood Board passed a motion to raise the following comments on the Draft Environmental Impact Statement for Queen's Beach Golf Course.

General Concerns:
- The use of the land as a golf course will be a permanent and irretrievable loss of a valuable resource to the region, the state and the nation. A National Park Service Reconnaissance of the Ka Iwi Shoreline found the area to be of national significance because of its unique geological conditions and to a lesser extent, its cultural significance.
- The use of the site as a golf course will deprive the public of the right to enjoyment of an area frequented by hikers. The Coast Guard Trail borders on the site and views from the trail will be seriously altered from natural vistas to views of a manicured greens and fairways.
- The site is exposed to strong steady gusts of wind and may not be suitable for a golf course. There is a likelihood of balls straying off the course and possibly interfering with hikers on the Coast Guard Trail and with motorists on Kalanianaole Highway.

Physical Concerns
- Several native species have habitats in the area. Although the DEIS addresses these species, it is questioned if they would be permitted to thrive beyond their present extent. A golf course would unnaturally restrict the area in which these species would be able to propagate. Native species include:

Ma'o, Hawaiian cotton (*Gossypium tomentosum*): "There are few sites left in the Hawaiian Islands which support such large numbers of ma'o." [4-19] It is the board's concern that this Hawaiian plant be protected.
'Ihi'ihi-lau-akea, an endemic water fern (*Marsilea villosa*) is found in a few isolated spots on the site. It is the board's concern that this Hawaiian plant be protected.
The Hawaiian Snout Beetle (Ryncogonus simplex) is found in areas with ma'o. The US Fish and Wildlife Service list it as a species of concern. Given the use of pesticides at golf courses, it may not find a suitable home if a golf course were developed.
- The physical presence of a clubhouse with a 10,000 square foot footprint will alter the appearance of the site. A structure this size could be 100 feet on each side, and up to 25 feet high. Even with partial masking of the building as described in the DEIS, the mind is adept at connecting the dots and 'seeing' the whole when only parts are visible.
- Traffic along Kalanianaole Highway is moving at approximately 50 mph. Until the recent intersection improvements, left turns onto or from Kealahou Street were very difficult and dangerous. The location of the entrance to the golf course is near a curve in the road increasing the difficulty.

Socio-Economic Concerns:
- Although the DEIS addressed the presence of other golf courses from Hawaii Kai to Pearl City, it does not address the impact on Windward golf courses, particularly the Olomana Golf Links in Waimanalo, the second closest golf course to the site. It is probable that a golf course at Queen's Beach would be in competition with Olomana.

Native Hawaiian Cultural Concerns:
- This concern goes far beyond the existance of archaeological remains. The concern, though not presented in the DEIS, is undeniably evident to who so ever visits the site. The *mana* of the area is powerful and is not to be trivialized by a golf course. The strength that comes from the site is restorative, and this can be vouched for by hikers, surfers and fisherman who frequent the area.

Thank you for the opportunity to present our concerns.

Sincerely,

Gregory Field

Gregory Field
Chair
Waimanalo Neighborhood Board

Heller Hastert
Planners

October 1, 1997

Mr. Gregory Field, Chair
Waimanalo Neighborhood Board No. 32
c/o Neighborhood Commission
City Hall, Room 400
Honolulu, HI 96813

Dear Mr. Field:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 22, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference, we will respond to your comments in the order they appear in your letter.

General Concerns

1. *The use of the land as a golf course will be a permanent and irretrievable loss of a valuable resource to the region, the state and the nation. A National Park Service Reconnaissance of the Ka Iwi Shoreline found the area to be of national significance because of its unique geological conditions and to a lesser extent, its cultural significance.*

   You correctly note that the National Park Service found the Queen's Beach site to be of national significance because it is part of an area (the Koko Rift Unit from Hanauma Bay to Makapu'u) that contains significant examples of the works of volcanism and the effects of wind and water on the forms of the land. However, national significance is but one of three criteria that must be met to qualify as an addition to the national park system. The other two criteria are suitability and feasibility. As stated in Section 3.1.1 of the DEIS, the Koko Rift unit did not meet the criteria for suitability, primarily because it is, for the most part, protected and managed for public use by other entities, with the exception of the private lands which comprise the project site. As for suitability, the Koko Rift unit would be a feasible addition to the national parks system only if management authority over the public lands and waters were transferred to the NPS and adequate private lands

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could be acquired at reasonable cost or through other means, such as exchange, easements, or long-term, renewable leases.

2. *The use of the site as a golf course will deprive the public of the right to enjoyment of an area frequented by hikers. The Coast Guard Trail borders on the site and views from the trail will be seriously altered from natural vistas to views of a manicured greens and fairways.*

   Hikers will not lose the right of entry to the Lighthouse Access Road they presently enjoy. Admittedly, the visual nature of the project site will change. A question remains as to the degree that a golf course will negatively impact the experience of walking to the Makapu'u Lighthouse. However, the public's "right" to enjoy the views of "natural" vistas certainly must be balanced against the landowner's and lessee's right to expect that the opportunities provided by the underlying zoning of the property cannot and should not be taken away. Everyone must understand that if the government decides to prevent this use of the project site, the landowner and the lessee must be compensated for this lost opportunity.

3. *The site is exposed to strong steady gusts of wind and may not be suitable for a golf course.*

   The project site is exposed to the effects of steady tradewinds. Rather than rendering the area unsuitable for a golf course, we believe it will make the golfing experience more challenging.

4. *There is a likelihood of balls straying off the course and possibly interfering with hikers on the Coast Guard Trail and with motorists on Kalanianaole Highway.*

   The public's use of the Coast Guard Access Road will not be impacted or interrupted by the development of the Queen's Beach Golf Course. The layout of the 10th, 12th, and 13th holes have golfers hitting either toward the access road or parallel to it. The green of hole no. 10 is downwind (tradewind conditions) and about 200 feet south of the access road. The 12th hole runs roughly parallel to the access road, with a separation of between 300 and 500 feet between the road and the green. The fairway for the 13th hole also runs parallel to the access road, with a separation distance between the centerline of the fairway and the access road varying between about 175 feet near the tee box and 250 feet toward the middle length of the fairway. In addition, there is an elevation separation of about 40 to 70 feet between

the fairway of the 13th hole and the access road which adds to the separation between golfers and hikers. It is possible that a low fence or net (7 to 8 feet) might be required near the tee box of the 13th hole along the access road to protect hikers from golfers who "hook" their tee shots.

In regards to conflicts between hikers and golf carts along the access road, there will be one point of crossing to accommodate golfers travelling between the 10th and 11th holes and the 12th and 13th holes. This point of crossing will either be a clearly marked "crosswalk" for the golf carts with stop signs on either side of the access road, or an underpass below the roadway. In either case, the safety of pedestrians would take first priority.

As for possible impact along Kalanianaole Highway, four holes run roughly parallel to the highway; 8, 9, 10, and 11. The centerlines of these fairways are between 175 and 200 feet from the property line marking the edge of the right-of-way for the highway, and golfers (right-handed) will be teeing off such that only a "hooked" shot will be travelling in the direction of the highway (hooked shots are much less frequent than sliced shots, which travel in the opposite direction). With appropriate landscaping, motorists should not be impacted.

Physical Concerns

1. *Several native species have habitats in the area. Although the DEIS addresses these species, it is questioned if they would be permitted to thrive beyond their present extent. A golf course would unnaturally restrict the area in which these species would be able to propagate. Native species include Ma'o, Hawaiian Cotton (Gossypium tomentosum), 'Ihi'ihi-lau-akea (Marsilea Villosa), Hawaiian Snout Beetle (Rhyncogonus simplex).*

   According to Winona Char of Char & Associates, the ma'o is relatively easy to propagate, and in fact, is grown at the Honolulu Zoo, the Waikiki Aquarium, Foster Botanical Garden, and many homes throughout Oahu. We recognize that many plants will be lost as a result of the development of the golf course. However, the area where the densest growth of ma'o occurs (in the southeast section of the property) will be designed to keep as much of this area intact as possible. There is also opportunity to plant additional ma'o contiguous to this area. This is important

because, the Hawaiian Snout Beetle is flightless and must be able to walk to new habitat.

A management plan for the *Marsilea villosa* will be developed in cooperation with the U.S. Fish and Wildlife Service, which has recently published a final *Recovery Plan for Marsilea Villosa.*

2. *The physical presence of a clubhouse with a 10,000 square foot footprint will alter the appearance of the site. A structure of this size could be 100 feet on each side, and up to 25 feet high. Even with partial masking of the building as described in the DEIS, the mind is adept at connecting the dots and 'seeing' the whole when only parts are visible.*

   It will be impossible to completely mask a building of this size. The challenge facing site planners, architects and landscape architects will be to design the clubhouse to blend in with the physical environment as much as possible. The selection of appropriate exterior finishes, including materials and color, and the design of an effective landscape plan will be able to significantly soften the appearance of this building. As a result of comments received during the DEIS review process, an alternative location has been found for the clubhouse, approximately 200 feet north of where it is shown in Figure 6 of the DEIS. This change in location will take the clubhouse out of the direct line of sight for motorists travelling south on Kalanianaole Highway in the vicinity of the Makapu'u Lookout. Figure 13 will be revised in the FEIS (and will appear as Figure 15) to reflect this change.

3. *Traffic along Kalanianaole Highway is moving at approximately 50 mph. Until the recent intersection improvements, left turns onto or from Kealahou Street were very difficult and dangerous. The location of the entrance to the golf course is near a curve in the road increasing difficulty.*

   Any improvements to this area of Kalanianaole Highway must be designed in strict accordance with traffic engineering requirements, and must be approved by the State Department of Transportation.

Socio-Economic Concerns

1. *Although the DEIS addressed the presence of other golf courses from Hawaii Kai*

to Pearl City, it does not address the impact on Windward golf courses, particularly the Olomana Golf Links in Waimanalo, the second closest golf course to the site. It is probable that a golf course at Queen's Beach would be in competition with Olomana.

The rationale for selecting golf courses from Hawaii Kai to Pearl City relates to the primary market for eventual users of the Queen's Beach Golf Course. The analysis of these courses included existing and future demand for additional rounds of golf within the market area. After a careful review, it was determined that demand for an additional golf course within the market area would be supported by the development of a course at Queen's Beach. It is possible that a new golf course at Queen's Beach could draw a percentage of golfers who would otherwise be attracted to the Olomana course. However, the choice of location of play should be left to the individual golfer, based on selection criteria such as proximity, price, and enjoyment of experience.

Native Hawaiian Cultural Concerns

1. *This concern goes far beyond the existence of archaeological remains. The concern, though not presented in the DEIS, is undeniably evident to who so ever visits the site. The mana of the area is powerful and not to be trivialized by a golf course. The strength that comes from the site is restorative, and this can be vouched for by hikers, surfers and fishermen who frequent the area.*

The requirements of state law, both statutory and case law, require that cultural concerns of Native Hawaiians be considered for new developments. These requirements include the preparation of archaeological studies. The results of an archaeological inventory survey will be included in the FEIS. For your information, no extant historic sites remain on the project site, including the site known as the "King's Highway." No physical evidence of this site could be found, and the site is no longer considered significant. These findings have been accepted by the State Historic Preservation Officer.

Access to and along the shoreline will remain intact. Access to the Makapu'u Lighthouse will also remain uninterrupted. A golf course will certainly alter the character of the landscape. But, will this alteration destroy the enjoyment of other benefits, restorative and otherwise, that would still be part of a shoreline or hiking experience in the future? For some, the answer may be yes. However, unless, and until, the State of Hawaii or the City and County of Honolulu come forward to

purchase or condemn the property, then the landowner and the lessee are entitled to the enjoyment of certain rights, including development rights under existing laws.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

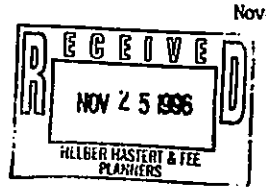
cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

copy 1

THE LEAGUE
OF WOMEN VOTERS OF HONOLULU

November 17, 1996

Department of Land Utilization
Honolulu Municipal Building
650 S. King Street, 7th Floor
Honolulu, Hawaii 96813



Attn: Ardis Shaw-Kim

Dear Ms. Shaw-Kim:

We have reviewed the DEIS for a golf course at Queen's Beach. Our general position on this project was outlined in our letter of May 6, 1996, in which we suggested that a "no action" alternative be included, and also the impact of the proposed golf course on the Ka Iwi Park plan. These two points are included in the DEIS in Chapter 7 and in Chapter 3, Sec. 3.2.6.

We believe that the "no action" alternative, as described in Chapter 7, is inadvisable and unrealistic from the point of view of both the land-owner/developer and the community-at-large. The site is a unique natural resource which should not be allowed to deteriorate or be neglected. Either the public should purchase it for public use, or the owner/developer should be able to use it for a legal use.

As we stated on May 6, we support use of the site as an integral part of Ka Iwi park. We believe this will involve public acquisition. Sec. 3.2.6. of the DEIS states that "neither the proposed park nor the proposed golf course can be implemented without eliminating the other." We agree. We also agree with the statement that "in order for the development of a park to proceed the land must either be condemned or purchased by the State of Hawaii."

The Honolulu City Council recently approved amending the East Honolulu Development Plan public facilities map to include the park, and as the DEIS indicates on p. 3-19, the State Legislature has already approved money to purchase the land for a public park.

The DEIS understandably claims that the proposed golf course would have a number of favorable environmental impacts which would be consistent with various State and Oahu planning and zoning regulations. This may be true, but so would the park alternative. The fact that the zoning (P-2) allows golf courses is subordinate, in our opinion, to a determination of which possible P-2 use is more in the public interest. The basic issue is whether the subject lands shall be available in perpetuity for general public use or be restricted to private use on a membership or fee basis.

In the DEIS it is concluded (p. 1-13) that "the proposed action. . . was deemed to be the preferred alternative for the applicant." Perhaps so, but in our opinion from the point of view of the long-term benefits to the public, designating this site for the perpetual use and enjoyment of the general population and visitors, at either no charge or a nominal user fee to maintain the park, far outweighs the claimed benefits its use as a private golf course, at a substantial fee, would create. These costs, too, have an economic impact on the community.

Sincerely,

Astrid Monson

Astrid Monson, President

49 S. Hotel Street, Room 314, Honolulu, Hawaii 96813 Telephone: (808)531-7448 / 537-6267

Helber Hastert & Fee
Planners

October 1, 1997

Ms. Astrid Monson, President
The League of Women Voters
49 South Hotel Street, Room 314
Honolulu, HI 96813

Dear Ms. Monson:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 17, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared

In general, your letter offers observations concerning the social, political and legal contexts within which a decision on the status of Queen's Beach must be made. You accurately note that the "no action" alternative is inadvisable and unrealistic from the point of view of both the land owner/developer and the community. You also correctly observe that the public should purchase the land for public use or the owner/developer should be able to use it for a legal use. We would hope that the entire community could appreciate your understanding of the situation.

The balance of your letter makes several arguments in favor of a decision to create a park at Queen's Beach, and does not include specific comments on the DEIS. While we may not agree with your preferred use for the property, we encourage you to continue to present your views during any public hearings on the matter.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
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BENJAMIN J. CAYETANO
GOVERNOR

MAJOR GENERAL EDWARD V. RICHARDSON
DIRECTOR OF CIVIL DEFENSE

ROY C. PRICE, SR.
VICE DIRECTOR OF CIVIL DEFENSE

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

PHONE (808) 733-4300
FAX (808) 733-4287

November 21, 1996

TO: Department of Land Utilization
City and County of Honolulu
650 So. King Street
Honolulu, Hawaii 96813

ATTENTION: Ms. Ardis Shaw-Kim

FROM: Roy C. Price, Sr.
Vice Director of Civil Defense

SUBJECT: QUEEN'S BEACH GOLF COURSE, OAHU HAWAII DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

We appreciate this opportunity to comment on the DEIS' Chapter 25, Revised Ordinances of Honolulu (ROH), "Shoreline Management" projects within the Special Management Area (SMA), approximately 166 acres at Queen's Beach/Kealakipapa Valley, Makapuu, Oahu, Hawaii, TMK: 3-09-11:3, portion 2.

State Civil Defense (SCD) requests that the applicants provide the following infrastructure improvement for the purchase and installation of two 115 dB solar powered sirens and siren support infrastructure. The first sign should be placed in the parking lot of the Kaloko Point Park parking lot, and the second alongside Kalanianaole Highway at approximately the middle of the golf course parking lot. These sirens require a 100-foot radius buffer zone in which there are no residential buildings. A complete siren installation consists of a siren, a siren pole and appropriate grounding. The siren location and the estimated coverage areas are shown in red on Figure 6, Conceptual Gold Course Plan/5-Year Master Plan, Proposed Golf Course. At the present time, SCD does not have siren coverage in the proposed development area.

Chapter 4: ASSESSMENT OF EXISTING CONDITIONS, PROBABLE IMPACTS AND MITIGATION: PHYSICAL ENVIRONMENT, paragraphs 4.1 and 4.2., **Climate** and **Topography**, address temperature, rainfall and wind within four topographic regions and elevations from sea level to 669 feet Mean

Sea Level (MSL), and slopes of five percent or less to 360 percent, respectively. While a precaution regarding tsunami evacuation zones is addressed in paragraph 4.11, **Flood Hazard**, the impact of orographic/terrain amplification of winds associated with tropical cyclones--tropical storm/hurricane force winds and the torrential rainfall associated with tropical cyclones need to be evaluated further. Based on this evaluation, facilities could be favorably sited, designed and constructed to resist the potentially destructive winds of tropical cyclones. The properly designed and constructed structures and facilities could then be surveyed for use as public shelters in disasters.

Our SCD planners and technicians are available to discuss this further if there is a requirement. Please have your staff call Mr. Mel Nishihara of my staff at 733-4300.

Enc.

c: Mr. Gary Gill
Office of Environmental Quality Control
Department of Health

Mr. Robert Burke
Kaiser Aluminum and Chemical Corporation
c/o Kaiser Center, Inc.
300 Lakeside Drive, Suite 130
Oakland, California 94612-3534

Mr. Scott Ezer
Helber Hastert & Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Helber Hastert
Planners

October 1, 1997

Mr. Roy C. Price, Sr.
Vice Director Civil Defense
State of Hawaii
Department of Defense
Office of the Director of Civil Defense
3949 Diamond Head Road
Honolulu, HI 96816-4495

Dear Mr. Price:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 21, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

We note your request that the applicant provide for the purchase and installation of two 115 dB solar powered sirens and siren support infrastructure. We also note your suggested locations for these facilities. The first location suggested is "in the parking lot of the Kaloko Point Park." While we are not opposed to having a siren in this location, we should clarify the status of this area. Many readers of the DEIS assumed that a park was either part of the overall project, or that the land was being set aside for future park development by the City and County of Honolulu. At this time, there is no plan to develop a park in this location by either the landowner (Kamehameha Schools Bernice Pauahi Bishop Estate) or the applicant (Kaiser Aluminum and Chemical Corporation). Also, there is no agreement, formal or otherwise, between the City and County and the landowner/applicant. Therefore, there will be no references to a park in this area in the FEIS.

We also note your observation that facilities could be favorably sited, designed and constructed to resist the potentially destructive winds of tropical cyclones. All building plans for structures associated with the proposed golf course will meet appropriate structural design requirements of the building code for the City and County of Honolulu.

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Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545-2055
Facsimile 808 545-2050

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

LAWRENCE MIKE
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD

November 12, 1996

96-063A

Mr. Patrick Onishi, Director
Department of Land Utilization
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Onishi:

Subject: Draft Environmental Impact Statement (DEIS)
Queen's Beach Golf Course
East Honolulu, Oahu
TMK: 3-9-11:3, por. of 2

Thank you for allowing us to review and comment on the subject document. Our comments on the EIS Preparation Notice (EISPN) were not received by your office in time to be included in the DEIS. Because of this, we are attaching those comments (attachment 1), dated July 3, 1996, for the record. We have the following additional comments to make at this time:

Wastewater

Wastewater treatment and disposal has been adequately addressed in the subject document. However, the use of reclaimed water for irrigation purposes has not been completely addressed. Use of reclaimed must conform to the Department's guidelines entitled "Guidelines for the Treatment and Use of Reclaimed Water", November 22, 1993. We reserve the right to review the detailed wastewater plans for conformance to applicable rules and guidelines.

Should you have any questions on this matter, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4294.

General

Please find attached (Attachment #2) the latest version (Version 5, dated August 1994) of the Department of Health's "Guidelines Applicable to Golf Courses in Hawaii."

Sincerely,

BRUCE S. ANDERSON, Ph.D.
Deputy Director of Environmental Health

Attachments

c: WWB
SDWB
PRC
CWB
OEQC
Kaiser Aluminum & Chemical Corporation
Helbert Hastert & Fee

ATTACHMENT 1

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

LAWRENCE MIKE
DIRECTOR OF HEALTH

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

In reply, please refer to

July 3, 1996

96-063/epo

Mr. Patrick Onishi, Director
Department of Land Utilization
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Onishi:

Subject: Environmental Impact Statement Preparation Notice for
Projects within the Special Management Area
Queen's Beach Golf Course
East Honolulu, Oahu
TMK: 3-9-11: 3, por. 2

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

Wastewater

The proposed golf course is located approximately 15 miles from downtown Honolulu on the eastern most point of Oahu in the East Honolulu District. The subject project is located below the Underground Injection Control (UIC) Line and in the critical wastewater disposal area as determined by the Oahu Wastewater Advisory Committee. No new cesspools will be allowed in the subject area.

At this time, we have no objections to the proposed golf course, provided that all wastewater generated is transmitted to the Hawaii Kai Wastewater Treatment Plant for treatment and disposal. We also strongly support the use of the treated effluent from the Hawaii Kai Wastewater Treatment Plant for irrigation of the golf course fairways. As part of any effluent reuse project, we will require that both the treatment plant, and the golf course meet the applicable requirements of our current effluent reuse guidelines. One requirement is that an effluent reuse management plan detailing the areas to be irrigated, the application rates and the methodology of water application must be submitted for review.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems."

Should you have any questions, please contact Mr. Tomas See or Ms. Lori Kajiwara of the Wastewater Branch at 586-4294.

Polluted Runoff Control (Nonpoint Source Pollution)

The State has developed "Hawaii's Coastal Nonpoint Pollution Control Program" draft management plan. This draft management plan addresses the proper planning, design, and use of Best Management Practices to substantially reduce polluted runoff generated by golf course development and operations. Please refer to the draft management plan (Pages III-137 to III-142) for golf course management measures. The draft management plan can be obtained from the Office of State Planning, Coastal Zone Management Program (587-2875).

The following are suggested management measures to consider.

1. Develop and implement grading and site preparation plans to:

   a) Design and install a combination of management and physical practices to settle solids and associated pollutants in runoff from heavy rains and/or from wind;
   b) Prevent erosion and retain sediment onsite, to the extent practicable, during and after construction;
   c) Protect areas that provide important water quality benefits and/or are environmentally sensitive ecosystems;
   d) Avoid construction, to extent practicable, in areas that are susceptible to erosion and sediment loss;
   e) Protect the natural integrity of waterbodies and natural drainage systems by establishing streamside buffers; and
   f) Follow, to the extent practicable, the amended U.S. Golfing Association (USGA) guidelines for the construction of greens.

2. Develop nutrient management guidelines appropriate to Hawaii for qualified superintendents to implement so that nutrients are applied at rates necessary to establish and maintain vegetation without causing leaching into ground and surface waters.

3. Develop and implement an integrated pest management plan. Follow the Environmental Protection Agency (EPA) guidelines for the proper storage and disposal of pesticides.

4. Develop and implement irrigation management practices to match the water needs of the turf.

If you have any questions on this matter, please call Randy Rush of the Environmental Planning Office at 586-7550.

Drinking Water

1. Hawaii Administration Rules, Title 11, Chapter 11-20, "Rules Relating to Potable Water Systems," Section 11-20-30 requires that new or substantially modified distribution systems for public water systems be approved by the Director of Health. However, since the proposed water system is under the jurisdiction of the city and County of Honolulu, the Honolulu Board of Water Supply will be responsible for the review and approval of the plans.

2. The draft Environmental Impact Statement (EIS) also indicates that the proposed development will require ~~75,000~~ 30,000 gallons of potable water per day for blending with the treated effluent. The potable and nonpotable water systems must be carefully designed and operated to prevent cross-connections and backflow conditions. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow preventers to avoid contaminating the potable water supply. In addition, all nonpotable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption of nonpotable water.

If you should have any questions on this matter, please contact Ms. Queenie Tan of the Safe Drinking Water Branch at 586-4258.

Water Pollution

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

1. Storm water discharges relating to construction activities for projects equal to or greater than five acres;

2. Storm water discharges from industrial activities;

3. Construction dewatering activities;

4. Cooling water discharges less than one million gallons;

5. Hydrotesting water.

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

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

Sincerely,

Bruce S. Anderson

BRUCE S. ANDERSON, Ph.D.
Deputy Director for Environmental Health

c: EPO (PRC)
CWB
SDWB
WWB

ATTACHMENT 2

STATE OF HAWAII
DEPARTMENT OF HEALTH

August, 1994 (Version 5)

GUIDELINES APPLICABLE TO GOLF COURSES IN HAWAII

In order to assure that environmental quality is promoted, protected and enhanced, the State Department of Health (DOH) recommends the following for all golf courses in Hawaii. The owner/operator must also comply with all applicable DOH rules.

1. Baseline groundwater quality and, if appropriate, coastal water quality should be established.

2. The owner/operator should establish a groundwater and, if appropriate, a coastal water monitoring plan. The groundwater and coastal water monitoring plans should minimally describe the following components:

   a. A routine monitoring schedule of at least once every six (6) months for the first three (3) years of operation and once a year thereafter, or more frequently in the event that the monitoring data indicates a need for more frequent monitoring.

   b. Compounds which should be tested for include compounds associated with fertilizers, biocides, and effluent irrigation. These data should be permanently retained by the golf course and submitted periodically to the State DOH and the Planning Department of the county in which the golf course is being proposed. These data should be provided both in detail and in summary format and should relate to the baseline data and to adverse impact levels.

   c. If the monitoring data indicate increased levels of a contaminate associated with golf course maintence activities that poses, or may pose, a threat to public health or the environment, the owner should immediately inform the State Department of Health and the County Planning Department. Subsequently, the owner must mitigate any adverse effects caused by the contamination.

3. If a wastewater treatment works with effluent reuse becomes the choice of wastewater disposal, then the owner/developer and all subsequent owners should develop and adhere to a wastewater reuse plan which should incorporate the provisions of the Department of Health's Guidelines for the Treatment and Use of Reclaimed Water, developed by the Wastewater Branch and dated November 22, 1993. A copy of the guidelines may be obtained by contacting the Wastewater Branch at 586-4294.

4. Above ground storage tanks for storing petroleum products for fueling golf carts, maintenance vehicles, and emergency power generators should be used rather than underground storage tanks (USTs). USTs may pose a potential risk to the groundwater and should not be encouraged.

5. Buildings designed to house fertilizers and biocides should be bermed to a height sufficient to contain a catastrophic leak of all fluid containers. It is also recommended that the floor of this room be made waterproof so that all leaks can be contained within the structure in order to facilitate a cleanup.

6. A golf course maintenance plan should be prepared and implemented with regards to the use of fertilizers and biocides as well as an irrigation schedule. This maintenance plan should be based on operational practices that would minimize or prevent environmental pollution, including, but not limited to, pratices that are taught at the certification school of the National Association of Golf Course Superintendants.

7. Every effort should be made to minimize the amount of noise from golf course maintenance activities. Essential maintenance activities (e.g., mowing of greens and fairways) should be conducted at times that do not disturb nearby residents.

8. Solid waste should be managed in a manner that does not create a nuisance. Whenever possible, composting of green wastes for subsequent use as a soil conditioner or mulching material is encouraged. The composting and reuse should be confined to the golf course property to eliminate the necessity for offsite transport of the raw or processed material. In addition, during construction the developer should utilize locally-produced compost and soil amendments whenever available.

9. Pesticides and other agricultural chemicals should be applied in a manner that prevents the offsite drift of spray material. The State Department of Agriculture should be consulted in this regard.

10. To avoid soil runoff during construction, the developer should consult with the U.S. Department of Agriculture, Soil Conservation Service to assure that best management practices are utilized.

If there are any questions regarding the guidelines recommended above, please contact the Environmental Planning Office at 586-4337. We appreciate your cooperation in preserving and protecting environmental quality in Hawaii.

Contact People at the Department of Health for Information Regarding the Guidelines for Golf Course Development in Hawaii

Subject	Contact Person/Phone No.
1. Groundwater Quality & Management Plans	Chauncey Hew--Safe Drinking Water Branch 586-4258
2. Drainage Drywells	Chauncey Hew--Safe Drinking Water Branch 586-4258
3. Coastal Water Quality & Monitoring Plans	Denis Lau--Clean Water Branch 586-4309
4. NPDES Permit	Denis Lau--Clean Water Brnach 586-4309
5. Maintenance Plan	Chauncey Hew--Safe Drinking Water Branch 586-4258
6. Wastewater Reuse Plan	Harold Yee--Wastewater Branch 586-4294
7. Composting Green Waste	John Harder--Office of Solid Waste Management 586-4240
8. Noise from Maintenance Activities	Jerry Haruno-- Noise & Radiation Branch 586-4700
9. Underground Storage Tanks	Steven Chang--Solid Hazardous Waste Branch 586-4226

Other Contact People

Subject	Contact Person/Phone No.
1. Runoff During Construction	U.S. Department of Agriculture, Soil Conservation Services 541-2600
1. The Application Pesticides & other Agricultural Chemicals	State Department of Agriculture 973-9403

Heller Hastert
Planners

October 1, 1997

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

Dear Dr. Anderson:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 12, 1996 on the above draft environmental impact statement (DEIS), which included a letter dated July 3, 1996 commenting on the Environmental Impact Statement Preparation Notice (EISPN) which preceded the DEIS. Your letters and this response will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to your comments in the order they appear in your letters, beginning with the letter of November 12.

Wastewater

We note that you reserve the right to review detailed wastewater plans for conformance to applicable rules and regulations.

We also note that you will require that the East Honolulu Wastewater Treatment Plant and the Queen's Beach Golf Course meet the applicable effluent reuse guidelines, including the preparation of an effluent reuse management plan detailing the areas of the course to be irrigated by reclaimed water, the application rates and the methodology of water application.

In addition, we acknowledge that all wastewater plans must conform to applicable provisions of the Department's Administrative Rules, Chapter 11-62, "Wastewater Systems."

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Telephone 808 545 2055
Facsimile 808 545 2050

Polluted Runoff Control (Nonpoint Source Pollution)

We appreciate your reference to the draft management plan which addresses the proper planning, design, and use of Best Management Practices to substantially reduce polluted runoff generated by golf course development and operations (*Hawaii's Coastal Nonpoint Pollution Control Program*). The list of suggested management measures provided in your letter of July 3 is an excellent beginning to ensure that any potential impacts associated with the proposed golf course will be substantially reduced or eliminated.

Drinking Water

We note your comment that the Honolulu Board of Water Supply will be responsible for review and approval of plans for the potable water system. You also point out some of the design considerations that must be followed when a potable and non-potable system are closely linked.

Water Pollution

We acknowledge the requirement for a National Pollutant Discharge Elimination System (NPDES) permit when there are storm water discharges relating to construction activities for projects equal to or greater than five acres.

Sincerely,

HELBER, HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

BENJAMIN J. CAYETANO
GOVERNOR
SELBY F. NAYA
DIRECTOR
RICK EGGED
DIRECTOR, OFFICE OF PLANNING

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

OFFICE OF PLANNING
No. 1 Capitol District Building, 250 South Hotel Street, 4th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 3540, Honolulu, Hawaii 96811-3540

Telephone: (808) 587-2846
Fax: (808) 587-2848

Ref. No. P-6386

November 22, 1996

Mr. Patrick T. Onishi
Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Onishi:

Subject: Draft Environmental Impact Statement
Queen's Beach Golf Course, Oahu, Hawaii

We have reviewed the subject draft environmental impact statement (DEIS) and offer the following comments. We should emphasize that these comments are provided primarily to address aspects of the DEIS, and do not represent our position on the special management area use permit application. We should also note that the State is continuing to explore options for acquiring the project site for the development of a passive park.

There are a number of areas where the final environmental impact statement (FEIS) should provide additional information and mitigation measures to assist decision makers in evaluating this project. The FEIS should provide information on the following:

1. *Site design and grading requirements*. The DEIS states the conceptual plan is subject to design changes and a grading plan is to be prepared once the special management area use permit is approved. However, information on the final design and layout of the golf course and its accessory facilities and attendant grading requirements is vital to the meaningful evaluation of potential project impacts on scenic values, native vegetation and dependent insect species, estuarine and nearshore habitats and water quality, stormwater drainage, and public access. Therefore, a conceptual grading plan would be helpful.

2. *Visual impacts*. The proposed golf course would result in the irretrievable loss of the rugged, undeveloped scenic experience now offered at this site, which provides visual relief and a rich contrast to Honolulu's urban landscape for residents and visitors alike. Just as the DEIS examined the visual impacts of the clubhouse, it would also be beneficial if simulation analysis were applied to illustrate how the color, texture, and vegetative cover of the existing landscape would be changed by development of the golf course itself. It would also help to clarify whether the clubhouse is anticipated to be one or two-levels above finished grade as viewed from the highway and the ocean.

3. *Preservation of ma'o (Hawaiian cotton) stands.* The DEIS makes reference to areas of high-density ma'o. It would be helpful to show in the body of the FEIS a map of ma'o densities in relation to the golf course layout, since the preservation of these areas and protection of the *Rhyncogonus simplex* weevil are identified as priorities in the DEIS. In the existing layout, six holes, the driving range, clubhouse, and ancillary facilities lie entirely within the koa-haole/ma'o shrubland area and eight other holes lie partially within this vegetative area. How will ma'o stands be effectively preserved and what mitigation measures are anticipated to be used to protect them from errant golf balls, trampling, and golf carts?

4. *Protection of waterbird and shorebird habitat.* A map of the golf course and the mangrove and estuarine areas that were identified as foraging and resting habitat for native waterbirds in the avifaunal survey conducted should be provided in the body of the FEIS. This would help to identify areas of likely disturbance from golf course activity and public access along the shoreline, and to pinpoint where specific mitigation measures may be needed, e.g., appropriate physical setbacks for holes in this area and other design considerations.

5. *Public access.* The DEIS does not indicate whether any additional government permits may be required for the pedestrian footbridges that are to provide continuous lateral access along the shoreline, nor is it clear in the text who will be developing the footbridges identified in the conceptual plan. The FEIS should clarify these issues.

   The DEIS does not adequately address the impacts that golf course use on the site will have on parking and related traffic safety issues for recreational users of the shoreline areas and Makapu'u Head, particularly on weekends; the FEIS should discuss this more fully and identify mitigation measures as needed.

6. The FEIS should also identify any traditional Hawaiian practices and gathering rights associated with the project area.

7. *Slope and soil conditions.* Given the steeper slopes and the soil types found along the portion of the course flanking Makapuu Head, discussion of the potential effects of developing holes and mitigation required in this area would be useful, in particular, for holes 12, 13, and 16.

8. *Stormwater runoff into embayments and estuaries.* In the sections discussing probable impacts and mitigation for drainage, reference is made primarily to on-site runoff. Clarification is needed in the FEIS as to whether storm runoff from the 1,684-acre Queen's Beach drainage basin discharged onto the project site is to be accommodated by proposed golf course drainage improvements.

9. *Water and wastewater capacity.* It would aid decision making if the FEIS discussed the water and wastewater requirements of the project with respect to other approved or planned allotments of capacity at the Hawaii Kai Wastewater Treatment Plant and the water sources supplying the Hawaii Kai and Windward water systems.

10. The FEIS should also clarify whether tournament play is anticipated and if the clubhouse facility is to be open for non-golf related activities and functions, such as

fine dining, wedding receptions, conferences, etc. If so, it would be helpful to indicate what impacts tournament play might have on traffic and parking for players and spectators, and to identify the impacts of non-golf use of the facility.

11. *Socioeconomic impacts.* It would also be helpful to provide a breakdown by occupational skill level, and where possible, wage/salary rates, of the short-term and permanent direct full-time equivalent positions anticipated to be created by the project.

12. *Consideration of alternatives and other mitigation measures.* The FEIS should identify and examine a number of alternatives to reduce or mitigate project impact on scenic resources and site usage. These alternatives might include: (1) consideration of a smaller course, like an executive par 3 course, which might allow for greater setbacks from the shoreline area and avoidance of the development of holes on steeper portions of the project area; (2) incorporating maintenance facility requirements in the clubhouse facility to minimize man-made elements and use less land area; and (3) relocating the clubhouse along Kalanianaole Highway west of its current location to remove it from the viewplane of the ocean as one travels toward Hawaii Kai from Makapuu Lookout.

13. Chapter 3, "Relationship of the Proposed Project to Existing Public Plans, Policies and Controls," should include a discussion of the project with respect to the *Hawai'i Ocean Resources Management Plan.*

14. Items for correction or revision in the FEIS:

    a. Page 3-7—the State Functional Plans are approved by the governor, not the legislature.
    b. Figure 11, Soils Map—the legend refers to "Jaucas Sand," but this soil type does not appear on the map.

Thank you for the opportunity to comment.

Sincerely,

Rick Egged
Director
Office of Planning

cc: Mr. Gary Gill, Office of Environmental Quality Control
Mr. Robert Burke, Kaiser Aluminum and Chemical Corporation
Mr. Scott Ezer, Helber Hastert & Fee, Planners

Heller Hastert
Planners

October 1, 1997

Mr. Rick Egged, Director
Office of Planning
Department of Business, Economic Development & Tourism
No. 1 Capitol District Building
250 South Hotel Street, 4th Floor
Honolulu, HI 96813

Dear Mr. Egged:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 22, 1996 on the above draft environmental impact statement (DEIS). Your letter will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to your comments in the order they appear in your letter.

Site design and grading requirements

Your comments concerning grading requirements echoed those of many reviewers of the DEIS. As a result, the civil engineering firm of Sam O. Hirota, Inc. was retained to prepare a drainage and grading report for the proposed golf course. This report will be summarized in Sections 4.2 and 6.4 of the FEIS, as appropriate, and will be attached as Appendix N to the FEIS, in full.

Visual impacts

As requested by many reviewers, Section 4.9 and Figure 15 of the FEIS will include additional photographic simulation of the proposed golf course, depicting the vegetative changes that would occur as a result of the development of the proposed golf course. For clarification, the clubhouse is anticipated to be 1.5 stories above finished grade as viewed from the highway and the ocean. One-half story would be excavated below finish grade to accommodate cart storage.

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Preservation of ma'o (Hawaiian cotton) stands

Because so many other reviewers asked similar questions related to the ma'o, the FEIS will be amended to include a figure that identifies the area where a high density of ma'o plants exist. The DEIS does contain this information, but it is included as Figure 2 of the botanical survey prepared by Char & Associates (Appendix D). For your information, this area comprises approximately 3.5 acres. In order to preserve and enhance this habitat, the layout of the 16th, 17th, and 18th holes will be reconfigured to retain as much of this area as possible. In addition, the area of dense ma'o will be expanded in contiguous areas by the cultivation of more plants. Winona Char, of Char & Associates, has reported that the ma'o is relatively easy to cultivate. In fact, it can now be found in such places as the Honolulu Zoo, Foster Botanical Garden, the Waikiki Aquarium, and residences throughout Oahu. It is important that the dense area expansion be contiguous to the existing area, to allow the Hawaiian snout beetle (*Rhyncogonus simplex*) to migrate to new plants, because the insect is flightless.

Protection of waterbird and shorebird habitat

Section 4.8 of the FEIS will include information regarding the location of the mangrove and estuarine areas in its description of the existing environment (Fauna). In addition, the location of the 1st, 17th, and 18th holes will be reconfigured to provide additional separation with the shoreline area.

Public Access

A Department of Army Permit (Section 10 of the River and Harbors Act) will be needed to construct the pedestrian footbridge required to provide continuous lateral access along the shoreline. Section 1.7 of the FEIS will be amended to reflect this requirement. This footbridge will be constructed by the applicant.

As proposed, the development of the golf course will not alter existing parking conditions for users of the shoreline areas and Makapu'u Head. Parking would continue to occur along the shoulder of Kalanianaole Highway for people using the Coast Guard Access Road. Users of the shoreline area between Wawamalu Beach and Kaho'ohaihai Inlet would continue to park in an informal parking area at the eastern end of Wawamalu Beach.

Hawaiian practices and gathering rights

To date, no traditional Hawaiian practices or gathering rights have been identified associated with the project area. It should be emphasized that access to and along the shoreline will be maintained. If such practices are identified applicable laws will be followed.

Slope and soil conditions

The slope of the 12th, 13th, and 16th holes are within ranges that allow for simple design and construction methods. The fairway of the 12th hole has a cross slope of about 20%, while the 13th and 16th holes have cross slopes of about 10%. These slopes are well within acceptable limits for fairway design. Problems with soil porosity will be mitigated by mixing an amendment consisting of sand and peat. Drainage will be handled via grassed swales and on-site retention ponds and an earthen berm system and weirs to control discharge volume, so that sediments in stormwater will have settled before discharge. A complete description of the proposed golf course grading and drainage will be found in a grading and drainage report prepared for the FEIS by Sam O. Hirota, Inc. This report will be summarized in Sections 4.2 and 6.4 of the FEIS, and attached to the FEIS as Appendix N.

Stormwater runoff into embayments

At the present time, most of the off-site stormwater runoff that reaches the project site is conveyed by the lined drainage channel that empties into an unlined drainage channel in the vicinity of the Hawaii Kai Golf Course. In addition to this unlined drainage channel, there is a flowage easement makai of the unlined channel that is intended to accommodate overflow stormwater runoff, should that occur. With the passage of Ordinance 96-34 by the City Council in 1996, new projects are required to regulate the release of increases in stormwater runoff generated by development, so that there is no net increase in peak flow. In other words, stormwater must be retained on-site and released such that there is no increase in the volume of stormwater reaching receiving waters at any given time.

Grading and drainage improvements for the golf course will be designed to accommodate the stormwater generated on-site, and by the culverts which empty into the project site from undeveloped areas across Kalanianaole Highway.

Water and Wastewater Capacity

At the present time, the design capacity of the East Honolulu Wastewater Treatment Plant (EHWWTP) is 5.2 million gallons per day (mgd). As recently reported in the Draft

Environmental Impact Report prepared in association with the ill-fated settlement agreement, the EHWWTP is capable of handling all wastewater flows that would have been generated by all the projects included in the proposed settlement agreement.

As for domestic water requirements, the Board of Water Supply has indicated that any domestic water needed for the proposed golf course (primarily for the clubhouse and associated uses) would have to come from allotments already given to Kamehameha Schools Bernice Pauahi Bishop Estate.

Tournament Play

Because the length of the proposed golf course is not of championship caliber, it is doubtful that any Professional Golfer Association tournament would occur at Queen's Beach. It is possible that local tournaments could be hosted at Queen's Beach. At present, the clubhouse is considered to be accessory to the golf course, and would not be used for non-golf activities.

Socio-economic impacts

Appendix K of the DEIS contains the Economic and Fiscal Impact Assessment for the proposed golf course. Exhibit 2-G of this report includes information related to construction (short-term) and permanent direct (operational) full-time equivalent (FTE) jobs that would be created by the project. These wages were derived from statistics reported in the *1994 Employment and Payrolls in Hawaii*, published by the Department of Labor and Industrial Relations, and from interviews with management at daily fee golf courses and representatives of City golf courses. Wages are not broken down by occupational skill level. It is important to note however, that wages at the clubhouse do not reflect income related to tips or sales commissions. This would affect those employees working in the restaurant and pro shop, who can significantly increase their income from these sources

Consideration of alternatives and other mitigation measures

The design of the clubhouse already incorporates using the ground floor/basement area for the storage of golf carts. This design element was considered primarily to reduce the size of the maintenance facility needed for the storage of mowers, tractors, fertilizer and other chemicals and equipment, which really need to be stored in a building separate from the clubhouse.

In regard to moving the clubhouse for reasons related to visual impacts, other reviewers have made similar comments. Therefore, Section 4.9 of the FEIS will include additional visual analysis which includes moving the clubhouse to the north, out of the view channel when travelling south on Kalanianaole Highway from Makapu'u Lookout.

It is true that an executive golf course would occupy less land area than the proposed course, which could result in greater setbacks from the shoreline. However, we believe that the existing design for the golf course provide adequate setbacks. Further, the demand for play on executive courses is not as great as regulation courses and with the Hawaii Kai Executive Course so close to the project site, there is sufficient supply to meet current demand.

Hawaii Ocean Resources Management Plan

A discussion of this document will be included in Section 3.2 of the FEIS.

Items for correction

References to the State functional plans will be corrected in the FEIS to reflect their approval by the governor, not the legislature.

Figure 11 of the DEIS (Figure 12 of the FEIS) will be amended to accurately reflect soils types .

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

ENVIRONMENTAL CENTER
University of Hawaii • 2550 Campus Road • Crawford Hall 317 • Honolulu, Hawaii 96822
Telephone: (808) 956-7361
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FAX TRANSMITTAL

DATE: November 22, 1996

TO: Scott Ezer, Helber Hastert & Fee, Planners

FAX NO. 545-2050

FROM: John T. Harrison

No. of pages: 12 (including this page)

Review of DEIS
Queen's Beach Golf Course

University of Hawai'i at Mānoa

Environmental Center
A Unit of Water Resources Research Center
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November 22, 1996
RE:0676

Mr. Robert Burke
Kaiser Aluminum and Chemical Corporation
c/o Kaiser Center, Inc.
300 Lakeside Drive, Suite 130
Oakland, California 94612-3534

Dear Mr. Burke:

Draft Environmental Impact Statement (EIS)
Queen's Beach Golf Course
(Special Management Area)
Hawaii Kai, Oahu

The applicant, Kaiser Aluminum and Chemical Corporation, proposes to develop an 18-hole golf course on the 166-acre property located on the eastern most point of Oahu. The property is bounded by the Pacific Ocean on the south, Kalanianaole Highway on the west and southwest, and the scenic lookout over Makapu'u Beach Park on the north. Additional facilities include a driving range, a clubhouse/pro shop and restaurant, locker rooms, a cart barn, and a parking lot. Although the course will be privately owned, the applicant will provide for public play. Approximately 29 acres on the western side of Kaloko Inlet will be set aside as park land for future public use. The project site is part of the area affected by the proposed court settlement of eight land use disputes in Hawaii Kai between the City and County of Honolulu and the following landowners: (1) Maunalua Associates, Inc. (MAI), (2) Kaiser Aluminum and Chemical Corporation (KACC), and (3) Kamehameha Schools Bishop Estate (KSBE). The golf course development described in this draft Environmental Impact Statement (EIS) has been concurrently proposed as part of a larger development project in accordance with the court settlement process.

We reviewed this draft EIS with the assistance of Paul Ekern, Emeritus, Agronomy and Soils Science; Andy Tomlinson, Geography; Kem Lowry and graduate students from course 740, Urban and Regional Planning; Theresa Cabrera, Zoology; and Jackie Miller and Paul Berkowitz of the Environmental Center.

General Comments

As noted in our comments on the Queen's Beach EIS Preparation Notice, we take strong exception to the procedural elements of the proposed settlement decree. Far from constituting the substantive equivalent of the established HRS 343 EIS process as claimed by the applicants, the alternative EIR fails in a number of areas to match the deliberative standards of the established process. Furthermore, embedded approvals under the settlement decree process seriously compromise regulatory protections afforded under existing law. As a consequence of these flaws, the alternative planning process constitutes a travesty of due process, and adoption of such procedures, in our considered opinion, effectively will create a precedent which henceforth renders meaningless established land use planning and management policies and legal provisions statewide.

The applicants are explicit in their intent:

> ***...the purpose of moving forward with a separate application for the golf course, is to protect property interests should a settlement not be reached.*** (Response by the consultant to comment letter from Mr. Phil Esterman.)

They further state their intent to pursue additional legal recourse on 4th Amendment grounds should "entitlements for a golf course at Queen's Beach" be denied by the Honolulu City Council. Clearly, further litigation on this question is highly probable, and foremost among the issues to be contested will be the due process concerns which we have raised, as well as detailed analysis of the validity of the applicants' "entitlements" and the nature of the claimed property interests. Thus, careful evaluation of environmental issues attendant on implementation of this project is essential, for even if, as the applicants claim, the City and County has affirmed the appropriateness of a golf course on this parcel in terms of zoning criteria, no "entitlement" in terms of environmental concerns is inherently implied or conveyed, and the project must be critically evaluated on its merits prior to any development approval.

Segmentation

With the outcome of the settlement process unknown, the proposed golf course at Queen's Beach may or may not be part of a larger development project. According to Section 11-200-7 of the Hawaii Administrative Rules (HAR), the following rules apply to multiple or phased applicant actions:

A group of actions proposed by an agency or applicant shall be treated as a single action when:
(1) The component actions are phases or increments of a larger total undertaking;
(2) An individual project is a necessary precedent for a larger project;
(3) An individual project represents a commitment to a larger project; or

(4) The actions in question are essentially identical and a single statement will adequately address the impacts of each individual action and those of the group of actions as a whole.

In light of the applicant's intent to develop a sizable area around Queen's Beach and the proposed settlement process which supports the possibility of further development by the applicant, it seems inappropriate for KACC to handle the golf course as a single action and not as a component or phase of a "larger total undertaking." Although the recently released Environmental Impact Report (EIR) evaluates the environmental impacts of developing the entire region, this EIR does not follow established legal guidelines for environmental review. Consequently the document does not provide the same content as a legitimate Chapter 343, Hawaii Revised Statutes (HRS) document, nor does it follow the proper procedure which binds the applicant to respond to public comments. Given the lack of legal basis for the EIR and its inability to provide effective environmental review, our reviewers do not believe the EIR is a suitable replacement for a Chapter 343 EIS. Therefore it seems necessary for the current Queen's Beach EIS, which describes only one increment of a potentially larger undertaking, to assess the environmental consequences of the entire development plan. Anything short of such an assessment would be a violation of Section 11-200-7, HAR.

Cumulative Impacts

According to Section 11-200-19 HAR, which regulates EIS style, the preparers of EISs must "ensure that the statement remains an essentially self-contained document, capable of being understood by the reader without the need for undue cross-reference." In terms of physical impacts (p. 4-46), socio-economic impacts (p. 5-9), and infrastructure impacts (p.6-23), the Queen's Beach EIS makes no effort to assess cumulative impacts in this document. Instead the Queen's Beach document refers the reader to the recently released EIR for a detailed discussion of the proposed action's cumulative effects. In addition to violating the letter of the law, the suggested cross-reference violates the spirit of the law which attempts to "ensure that environmental concerns are given appropriate consideration in decision making (Section 11-200-1)." It seems unlikely that environmental concerns can be adequately weighted when critical information on the proposed action's cumulative impact is unavailable in the EIS. Since the content requirements (Section 11-200-17, HAR) for draft impact statements explicitly require an evaluation of cumulative impacts, the Queen's Beach EIS should contain this information. It is both inappropriate and illegal to refer to the EIR under these circumstances.

Consistency With Land Use Plans and Policies

Pursuant to Section 11-200-17, the Queen's Beach EIS must discuss how the proposed action conforms or conflicts with approved or proposed land use plans, policies, and controls. Furthermore, "[w]here a conflict or inconsistency exists, the statement shall describe the extent to which the agency or applicant has reconciled its proposed action with the plan, policy, or control, and the reasons why

the agency or applicant has decided to proceed, notwithstanding the absence of full reconciliation." Chapter 3 of the EIS makes an attempt to reconcile the proposed action with various plans and policies; however, our reviewers question the degree to which the proposed action follows these plans and policies, as well as the degree to which the proposed mitigation reconciles areas of conflict. Most importantly we are concerned about whether the proposed action follows State and County guidelines for issuing Special Management Area (SMA) permits, namely Section 205A-26, HRS and Section 25-3.2, Revised Ordinances of Honolulu (ROH).

In general, our reviewers regarded the proposed action as an inappropriate use of the project site. Several of our reviewers noted that Chapter 205A "encourage[s] those developments which are not coastal dependent to locate in inland areas." By all accounts, golf courses are not coastal dependent. More specifically, our reviewers raised the following concerns with regard to the SMA permit:

A. Access

According to Section 25-3.2(a)(1), adequate access must be provided to publicly owned or used beaches, recreation areas, and natural reserves. In this regard, the proposed action needs to include more detailed mitigation plans to address at least two issues: public access and Native Hawaiian access. Currently hikers, fishermen, beachgoers, surfers, and divers use the coastal area within and around the project site. Although the proposed action includes a provision for two access trails, ease of coastal access to some areas appears to be substantially reduced. For surfers, divers, fishermen, and other beachgoers who carry a lot of equipment, longer walks are a potentially critical deterrent to recreational use. The document should discuss how much further the public will need to walk in order to access popular recreation areas. Our reviewers were also concerned about the safety of those using the access trails. What precautions will be taken to ensure that errant golf balls do not endanger people on their way to the beach? We also recommend the construction of a parking lot and rest room facility for those wishing to use the coastline. Finally, although the draft EIS states that 29 acres of shoreline property will be set aside for a public park, the owner of the land, Bishop Estate, has yet to dedicate this land to park use. Thus the land cannot be considered a viable public access easement at this time. When does the applicant expect to dedicate and convert this 29-acre parcel into park? Will the park be developed at the applicant's expense? A plan of implementation for the 29-acre public park should be presented.

In terms of Native Hawaiian rights, the document remains silent. These rights are readily distinguishable from the rights of the general public and require additional consideration. In a 1995 Hawaii Supreme Court case, Public Access Shoreline Hawaii v. Hawaii County Planning Commission, the ruling requires the Hawaii Planning Commission to consider Native Hawaiian traditional and customary rights in the county SMA permitting process. Thus the Queen's Beach EIS must be amended to describe how Native Hawaiians will be accommodated by the proposed golf course.

B. Wildlife Issues

Two parts of the County's ordinances address coastal wildlife. First, Section 25-3.2(a)(2) provides for "adequately and properly located public recreation areas and wildlife preserves." Second, Section 25-3.2(b)(1) stipulates that no development shall be approved by the City Council unless it "will not have any substantial, adverse environmental or ecological effect except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interest." Our reviewers raised several concerns regarding the adequacy of the golf course location as well as the likelihood for substantial, adverse ecological impacts. The following issues were of particular concern to our reviewers: the koa haole/ma'o (Hawaiian cotton) shrubland and beetle habitat, the endangered *Marsilea villosa* (Hawaiian water fern), other endangered species, the coastal strand vegetation, and possible wetlands.

As stated in the botanical survey, koa haole/ma'o shrubland covers most of the project area. Additionally, the study notes that because few sites in Hawaii support such large numbers of cotton, "all or a large portion of the site with a high density of ma'o should be left in tact." This recommendation should be taken seriously since the Hawaiian snout beetle *(Rhyncogonus simplex)*, a U.S. Fish and Wildlife "species of concern", is limited to its prime host, ma'o. The EIS' insect survey demonstrated the presence of the rare beetle, but at low numbers. Given that the proposed action includes "large-scale grubbing, grading, and planting of turfgrass" for approximately 120 of the 166 acres, it appears questionable whether large areas of ma'o can be left in tact. The draft EIS does not disclose how much ma'o will be preserved or how it will be distributed. These questions are crucial in determining the future viability of the beetle and must be answered before moving forward with the SMA permit. Finally our reviewers question the ability of the developer to isolate the beetle's native plant habitat from the adjoining golf course. Will the applicant provide adequate buffers between the golf course and the ma'o/beetle preserves? Will these preserved ma'o areas be viable in the midst of pesticides, herbicides, fungicides, and trace metals from effluent irrigation? Will the beetle and its host plant be able to thrive and reproduce in small colonies? The applicant needs to put forth a more detailed management plan which answers these questions.

Most of the same issues apply to the Hawaiian water fern. Although the applicant has agreed to preserve three "pocket" colonies of *M. Villosa*, the locations of these colonies are in heavily traveled areas near the tenth hole and clubhouse. Once again we question the ability of the applicant to isolate the endangered plants from applied chemicals and the ability of the species to thrive and perhaps recover in such small areas. One of our reviewers suggested that all three colonies should be maintained within the same preserve area to enhance recovery potential. Another suggestion was to redesign the golf course to provide more area for the endangered fern.

Other endangered species have the potential to be adversely affected by the proposed action. As noted in Appendix G, resident endangered waterbirds include the Black-necked Stilt (*Himantopus mexicanus knudseni*) and the Hawaiian coot (*Fulcia alai*). The mangrove estuaries and coastal strand vegetation represent foraging and nesting sites for both waterbirds and migratory birds To preserve this critical habitat, our reviewers suggested several additional mitigation measures: (1) a larger coastal setback to widen the buffer zone between the golf course and shoreline, (2) a landscaping plan to increase the effectiveness of the buffer zone, (3) quarterly water quality monitoring, (4) an adequately described pest management plan, and (5) boardwalks and signs to control pedestrian traffic near rich coastal strand vegetation. Although the document mentions water quality monitoring and pest management, the plans are not sufficiently described. These plans must include details on when and where these activities will occur.

Appendix G, the Avifaunal and Feral Mammal Survey, also notes that Hawaii's only native mammal, the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), "potentially could occur at this site." Given that unconfirmed reports of bats have been made in the vicinity (see the Natural Diversity Database maintained by the Nature Conservancy's Hawaii Heritage Program), it seems inadequate to conduct a faunal survey without the use of standard bat detecting equipment such as bat detectors or night vision goggles. The "Study Methods" section does not mention either of these two pieces of equipment. One of our reviewers noted that on the Big Island large numbers of bats forage for insects over similar koa haole habitat. Since the Hawaiian Hoary Bat is a federally endangered species, we recommend conducting a proper survey for bats between the months of August and December, when coastal and lowland observations are most frequent.

In the Botanical Survey (Appendix D), the consultant makes the following statement about a portion of the coastal strand vegetation: "[t]hese coastal dry plant community types are considered rare and locally distributed with existing conditions making them vulnerable to extinction range-wide." In spite of this assessment, the Flora section (4.5) of draft EIS makes little reference to this strand of vegetation and contains no mitigation measures related to it. Proper mitigation measures, such as the ones recommended above to preserve the endangered waterbird habitat, must be described before the issuance of an SMA permit.

Although the draft EIS concludes that no wetlands occur on the project site, one of our reviewers noted the discrepancy between the Army Corps of Engineers definition and the Fish and Wildlife definition of a wetland. Are any portions of the project site considered wetlands by the U.S. Fish and Wildlife Service? Could the survey's findings have been biased by the time of year that the study was conducted? Is it possible that the site is a seasonal wetland? The validity of these concerns is reinforced by the Ka Iwi Park Master Plan which has proposed a wetlands restoration area between the 10th hole and the clubhouse. Presumably the restoration area is located at the site of a formerly existing or currently degraded wetland. Although the site apparently fails to meet the Army Corps technical definition of a wetland based on the lack of hydric soils, our reviewers still raised concerns

about the presence of wetland vegetation assemblages. These vegetation assemblages, not the hydric soils, are after all widely regarded as the wetland element most worthy of protection.

C. Water Resources

Section 25-3.2(a)(4) requires coastal development to have minimum adverse effects on water resources. As proposed, the golf course does not appear to minimize these impacts. Furthermore many of the assumptions with regard to water resources are questionable according to our reviewers. First, the 700,000 gallon/day irrigation figure may be disputed on several counts. Most importantly the draft EIS does not discuss the uniformity of application factor which may be as high as 50% in high wind conditions. In other words, when winds are high, at least twice the water application is required. In light of the increased wind velocity around island corners and from inter-island channels, this factor must be considered at Queen's Beach. The Koko Head area in particular has been cited as a prime example of a severe environment (see Ramage, et. Al. 1979 UHMET 79-15, p. 50). High wind also (1) enhances salt spray which directly damages vegetation structure and corrodes material , and (2) increases evapotranspiration from the grass. One of our reviewers suggested using windbreaks to mitigate these problems as well as reduce golfing hazards Since an unknown salt load from both sea spray and irrigation must be flushed from the area, additional irrigation must be programmed periodically. Lastly, the pan evaporation factors of 1.34 and 1.44 for green and fairway use may be a bit on the high side since leeward sites with strong positive advection have factors for sod use of 1.2. Ramage (1979) notes that the upward adjustment might be justified as a consequence of high winds. In summary, our reviewers dispute the 700,000 gallon/day figure, mainly on the basis on the uniformity factor. It is important to note that if more irrigation is applied, the anticipated percolation of herbicides and fertilizers is likely to increase.

On a policy level, our reviewers strongly support the City and County of Honolulu Board of Water Supply's objective to disallow potable water use for golf course irrigation. To comply with this objective, perhaps the applicant will need to consider an alternative species of grass which has greater salt tolerance. Although wastewater reuse has been discussed extensively on the island of Oahu, the fact remains that it has been implemented rarely. Typically wastewater reuse has been plagued by an assortment of issues including human health, aquifer contamination, cost of transmission lines and other system components, fees charged, and purveyor identification. In the Queen's Beach draft EIS, these critical issues were not discussed in any detail. Before the City issues an SMA permit, the applicant needs to resolve these issues and present a complete plan for implementation of wastewater reuse.

D. Marine Environment

According to Section 25-3.3(c)(5) the City shall seek to limit any development which adversely affects water quality, potential fisheries and fishing grounds, and wildlife habitats. The proposed project raises several concerns in this regard due to increases in surface runoff, groundwater discharge,

and solute discharge. First, given the likelihood that the golf course will require substantially more irrigation than estimated, the balance of chemicals percolating into the ground will be altered. This factor needs to be acknowledged and the potential impacts must be assessed

Second, the draft EIS does not account for the problem of shrinkage cracks on drying soil Since the irrigation interval on the fairways will almost certainly be stretched to the point where cracking occurs, percolation of effluent will be rapidly increased through the soil profile (see Miller, et. al., 1988, Water Resources Research Center TR 178). As noted in the following papers, the type of vertisols found at the project site are particularly prone to cracking and churning:

1. El Swaify, S.A. et. al 1970. Effects of absorbed cations on physical properties of tropical red earths and tropical black earths. *Journal of Soil Science* 21:188-198.
2. Sinanuwong, S. And El Swaify, S A. 1974. Predicting exchangeable sodium ratios in tropical vertisols. *Soil Science Society American Proceedings* 38:732-737.

Consequently the potential effects of fairway cracking on solute transport may be far more significant than originally estimated and must be evaluated, as these solutes may readily find their way into the groundwater and ocean. We were disturbed to see that the document made no reference to a series of papers which examined effluent irrigation and solute percolation using field lysimeters (see Water Resources Research Center TR 94, 111, and 141).

Third, although the document focuses on how solute and nutrient transport might affect water quality, our reviewers also had some concerns about how increased groundwater discharge will affect the marine environment. How will Ka'ili'ili Bay, a breeding grounds and protected habitat for several fish species, and other nearshore areas be affected by an increase in groundwater discharge from 110,000 to 250,000 gallons per day (gpd)? Fourth, with the potential for development mauka of Queen's Beach, cumulative impacts from surface runoff and sedimentation could be significant. Our reviewers were especially concerned with surface runoff and sediment transport during construction, as well as urban runoff from the golf course parking lot and roads As documented in the case of the Ala Wai Canal, a major source of toxic contaminants can be attributed to cars, tires, gasoline, and brake fluid. To minimize the above concerns, we recommended the following mitigations: (1) permanent meandering drainage ways and detention basins, (2) silt traps, mesh curtains, and berms to trap sediment during construction, (3) regular cleaning and disposal of parking lot pollutants, (4) increased setbacks with landscaping buffers to isolate the coast from upland hazards, and (5) an extensive groundwater monitoring program.

E. Flood Hazards

Section 25-3.2(a)(4) ROH requires alterations to existing land forms to minimize the danger of flooding. Portions of holes 1, 3, 4, 16, 17, and 18 have been determined to be in the tsunami

inundation zone, as designated by National Flood Insurance Maps (p 4-41,42). In order to reduce the potential threat to public safety, one of our reviewers suggested an increased setback for areas located within the tsunami inundation zone. Furthermore, the applicant should be required to purchase adequate flood insurance and indemnify the County, State, and Federal governments against future claims for destruction of golf course property due to flood related hazards.

F. Coastal Views

Section 25-3.2(c)(4) requires developers to minimize any development which substantially interferes or detracts from the ocean views from the nearest state highway. As stated in the draft EIS, "[t]he physical beauty of the shoreline stretching from Hanauma Bay to Makapu'u Head is an internationally recognized resource for the State of Hawaii (p. 3-4)." Two recent efforts reinforce this point. First, in the early 1990s the National Park Service considered making the area into national park land. Second, in 1996 the State of Hawaii proposed Ka Iwi Park which encompasses all of the Queen's Beach area. The region's arid landscape and rugged coastline have combined to create a unique visual experience not found anywhere else. In granting an SMA permit, the City must consider how a well manicured, green golf course will influence the overall character and color of the Queen's Beach area. In general, our reviewers believe that the proposed golf course would significantly alter the character of the region and strongly detract from the area's stark natural beauty. These impacts would affect both highway users and beachgoers. Reluctantly, one of our reviewers suggested that if the golf course were permitted, the applicant should have to landscape the course with native species which complement the existing appearance of Queen's Beach. In this event, the applicant should submit a complete landscaping plan to the City and public for review

G. Historic Sites

As stated earlier, Section 25-3.2(b)(1) seeks to permit development only if substantial environmental effects are not present or are minimized. In terms of impact on historical sites, the proposed project could be designed better. Section 4.10 makes the following claim (p 4-40):

> ***Only one historic site (Site 03) has been identified within the project area. This site, a remnant portion of the old "King's Highway," is in the vicinity of golf course hole #11. Ground disturbance in the area of this historic site could damage its condition.***

To mitigate these potential effects, the developer has offered to conduct an inventory before construction and to restore part of the site. Our reviewers suggested that the developer could mitigate the environmental effects more effectively by redesigning the golf course such that the old "King's Highway" does not fall beneath the 11th hole. Furthermore, one of our reviewers suggested that the

site should be fully restored to its original character at the applicant's expense. This process should be done in the presence of experts to ensure that the area's cultural integrity is maintained

H. Compatibility with Land Use Plans

Pursuant to Section 25-3.2(b)(3) ROH, development within the SMA should be consistent with the county general plan, development plans, and zoning. Although the golf course is consistent with the City and County's Preservation zoning, the construction of the Queen's Beach golf course will result in an irreversible and irretrievable commitment of land. While the applicant claims public benefits including enhanced shoreline access, a 29-acre park, and the preservation of an endangered native plant, these claims are of questionable validity. Moreover, the proposed golf course is inconsistent with the recent Department of Land and Natural Resource (DLNR) proposal for Ka Iwi Park. As proposed, the Ka Iwi State Park would encompass 354 acres including Queen's Beach. To improve the compatibility of the proposed action with the DLNR plan, our reviewers recommended (1) dedicating a larger portion of Queen's Beach to park land, (2) narrowing the fairways, and (3) removing the driving range from the plan

Miscellaneous Issues

Our reviewers raised a couple of miscellaneous issues. First, one of them pointed out that the number of traffic accidents which have occurred at the intersection of Queen's Gate access road and Kalanianaole suggest that a traffic light is necessary even without the proposed action. Did the applicant consider installing a traffic signal based on accident rates or only on level of service? Does the applicant intend to pay for the proposed road improvements? Second, one reviewer suggested that the golf course establish a composting program for biodegradable waste and a recycling program for paper, glass, and ferrous metals. This program would reduce waste and perhaps pay for itself someday.

Conclusion

In conclusion, we consider it unacceptable for the applicant to justify the construction of an 18-hole golf course solely on the basis of zoning criteria. Although the City and County's Preservation zoning permits a golf course as a legitimate land use, the environmental guidelines and regulations set forth in Section 25-3.2 ROH suggest that the proposed golf course is inappropriate in the Special Management Area at Queen's Beach. Across a wide-range of issues including public access, endangered species, critical habitat, water resources, the marine environment, flood hazards, coastal views, and compatibilty, the proposed golf couse seems to violate the Section 25-3.2 provisions for development within the SMA. Furthermore, as a draft EIS the document fails to meet legal requirements by segmenting the proposed action from Kaiser Aluminum's larger intentions and by

neglecting to consider cumulative impacts. Thus we strongly recommend denying the SMA permit and rejecting the incomplete draft EIS.

Thank you for the opportunity to comment.

Sincerely,

John T. Harrison
Environmental Coordinator

cc. OEQC
Roger Fujioka
Ardis Shaw-Kim
Scott Ezer
Paul Ekern
Andy Tomlinson
Kem Lowry
Theresa Cabrera
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Heller Hastert
Planners

October 1, 1997

Mr. John T. Harrison
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Dear Mr. Harrison:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 22, 1996 on the above draft environmental impact statement (DEIS). Your letter will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to your comments in the order they appear in your letter.

General Comments

For the present, your concerns related to the procedural elements of the proposed settlement decree have been rendered moot by the recent action of the City Council to discontinue efforts at settlement (Resolution 97-09).

Other comments in this section are addressed to the need for appropriate disclosure of information related to the environmental elements of the proposed project and the analysis of this information, and the requirement to balance rights of use as articulated in zoning regulations. We recognize that use rights affecting the Queen's Beach property are contingent on meeting appropriate environmental concerns. We have never suggested that use rights exist outside the scope of environmental compliance, and we are aware of our responsibilities to comply with these requirements.

Segmentation

Again, the City Council's recent decision to discontinue the settlement process has left the 11 other projects which were part of the settlement decree without any immediate future, and will cause these projects, if they are revived, to proceed as individual projects. Therefore, there is no

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longer any argument necessary to consider the Queen's Beach Golf Course as part of a larger whole, in any context.

Cumulative Impacts

As you are now probably aware, the Honolulu City Council took action in January of this year (Resolution 97-09) to terminate consideration of the proposed settlement referred to in the DEIS. In regard to cumulative impacts, since City Council's termination of discussion on the settlement, the future of the other 11 projects is questionable, and there is no connection of these projects to the proposed Queen's Beach Golf Course. Therefore, there is no compelling reason to consider these projects in the context of cumulative impacts and the Queen's Beach Golf Course.

Consistency with Land Use Plans and Policies

You have expressed concern about whether the proposed project follows State and County guidelines for issuing Special Management Area Use Permits, namely Section 205A-26, HRS, and Section 25-3.2 ROH. Both of these legislative rules are discussed in Chapter 3 of the DEIS, as you correctly point out in your letter. However, other than suggesting that your "reviewers question the degree to which the proposed action follows these plans and policies, as well as the degree to which the proposed mitigation reconciles areas of conflict," your letter offers no specific comments on this chapter. Understandably, we believe that with appropriate mitigation and conditions of approval, the proposed project can be consistent with these guidelines.

Your reviewers also regard the proposed action as an inappropriate use of the project site, because it is not coastal dependent. We cannot argue that a golf course does not have to be located within the Special Management Area (SMA). There are many golf courses on Oahu that are located outside the SMA. However, there are numerous courses that are located in the SMA, and which have received approvals under its rules and regulations. To single the Queen's Beach Golf Course out as unworthy of an SMP because it is not coastal dependent would be arbitrary and capricious. Moreover, the applicant is seeking to construct a golf course at Queen's Beach precisely because the City and County of Honolulu has indicated that a golf course is appropriate there, particularly in the context of issues related to the taking of private property without fair compensation.

Access

Your letter indicates some concern about the reduction in ease of access to the shoreline area. The change in method of access relates primarily to the impending enforcement of prohibition of unauthorized vehicular access across the Queen's Beach project site. This issue of vehicular access has ramifications beyond the length of time necessary to traverse trails on foot. There is a

recognized need to deter vehicular access for the same reasons that similar policies have been implemented at Kaena Point. Namely, a valued coastal habitat is under threat of destruction by off-road vehicles.

Access to the shoreline will not be eliminated. Will the requirement for pedestrian access deter some from using the Queen's Beach coastline? Possibly. The trade-off in this instance is the protection of coastal habitat.

You also recommend the construction of a parking lot and rest room facility for those wishing to use the coastline. Because of questions from many reviewers of the DEIS, we need to clarify the status of the 29 acres at Kaloko. It has not been the landowner's or the applicant's intent to consider this area of the property for development. It would be up to the City and County (or the State of Hawaii) to plan and implement a park at Kaloko, including funds necessary to acquire the property. Consequently, the FEIS will have no references to a proposed park at Kaloko, and a park should not be considered as part of the overall project.

We have considered the safety issues related to hikers and the proximity of the golf course. We believe you are referring specifically to the 1st, 10th, 13th, 16th, and 17th holes. We have re-examined the layout of these holes and Figure 6 now shows them set back further from the shoreline area (where appropriate). In other circumstances the distance of separation of the greens from the trail, taken in conjunction with the grade separation between the green and the hole, should provide adequate safety distance for hikers. Landscaping, in the form of trees and shrubs, will also provide a buffer for hikers.

In regard to Native Hawaiian gathering rights, we are well aware of the recent Hawaii Supreme Court Decision addressing traditional and customary rights. In addition to ensuring continued access to and along the shoreline, the applicant intends to comply with all applicable laws relating to Native Hawaiian rights.

Wildlife Issues

A number of reviewers expressed similar concerns related to the preservation of the koa haole/ma'o shrubland. In its report on a botanical survey at Queen's Beach (Appendix D of the DEIS), Char & Associates recommends that "all or a large portion of the site identified in Figure 2 with a high density of ma'o should be left intact." The reference to Figure 2 directs the reader to an exhibit attached to Char & Associates' report, which identifies the area with a high density of ma'o as being in the southeast portion of the project site, comprising approximately 3.5 acres. The FEIS will be amended to include a graphic representation of where this area is in relation to the golf course layout.

It should be noted that the ma'o plant is widely cultivated, including locations such as the Honolulu Zoo, Foster Botanical Garden, the Waikiki Aquarium and residences throughout Oahu.. This is not to suggest the Hawaiian snout beetle (*Rhyncogonus simplex*) would find its way to these locations. Rather, it suggests that this area of the project site can be configured in such a manner that the majority of the existing dense area of ma'o can be preserved, and contiguous areas could be cultivated with ma'o, as rough areas of the course, in the hope that the beetle would be attracted to these new areas as well. It is important that new areas of ma'o be contiguous to existing plants, because the beetle is flightless, and must walk to new habitat. It will be possible, therefore, to ensure that there will be no net loss of dense ma'o habitat. In fact, additional acreage of dense ma'o can, and will, be created as part of the landscape design for the course. Matters relating to the management of this habitat will be developed in cooperation with the U.S. Fish and Wildlife Service, once a permit is granted for the golf course. Such a requirement (the development of an adequate management plan) should be incorporated as a condition of approval for the golf course, with grading and building permits withheld until a management plan is developed.

You correctly acknowledge that the applicant is committed to preserving the three colonies of the endangered fern, *Marsilea villosa*. The long-range objective of the U.S. Fish and Wildlife Service (USFWS) is to de-list this species. Initial goals, as articulated by the USFWS, are to stabilize existing colonies and provide management that would allow the colonies to thrive, and possibly expand. The applicant is committed to working with the USFWS to achieve these objectives at Queen's Beach. It would be expected that approval of the Special Management Area Use Permit would include a condition requiring the development of a *Marsilea villosa* management plan, in cooperation with USFWS, before the issuance of any grading or building permits.

We note your reference to the mangrove estuaries as important nesting and foraging habitat for both waterbirds and migratory birds. This characteristic of the adjacent shoreline area will be described in Section 4.8 of the final EIS and will include several of the mitigation measures you discuss in your letter. Similar to other management plans, a detailed water quality monitoring plan and integrated pest management plan would be developed as a condition of approval for the Special Management Area Permit.

In consideration of the Hawaiian hoary bat, the essence of your comments focus on the acceptability of an avifaunal and feral mammal survey conducted by Mr. Philip Bruner for the DEIS. Specifically, you suggest that Mr. Bruner's methodology is flawed because he failed to assess the presence/absence of the Hawaiian hoary bat (*Lasirius cinerus semotus*), a listed endangered species, at the proposed project site. The inference we draw from your comment is that the construction of a golf course at Queen's Beach would deprive the bat of foraging habitat, similar to habitat where other bats have been observed on the Big Island. You further suggest

that a survey be conducted between the months of August and December using appropriate field equipment designed to detect the Hawaiian hoary bat.

Mr. Bruner has had an opportunity to review your comments and does not believe that such a survey would significantly contribute to the analysis of the overall impacts of the proposed golf course for the following reasons:

1. The construction of a golf course will not necessarily decrease available foraging habitat for the Hawaiian hoary bat at Queen's Beach. Since these mammals feed on flying insects, it is reasonable to assume that there would be as many flying insects present in the area after the construction of the golf course as there are today.

2. Arguments suggesting that the presence of the bats are inhibited in urban environments are flawed, because the bat has been sighted in urban areas, particularly in the vicinity of lights that attract large numbers of insects. Further, the construction of a golf course at Queen's Beach would leave the site in open space.

3. Resting habitat would not necessarily be reduced if a majority of the large trees found at the site are retained, as is presently planned.

4. Actual numbers of sightings on Oahu have been low compared to sightings on other islands (primarily Kauai and the Big Island). This suggests the actual numbers of bats residing on Oahu is smaller than these other islands. These variances in population distribution cannot be attributed solely to the different characteristics of urban development on respective islands.

5. It is probable that the results of a survey conducted specifically for the Hawaiian hoary bat, over a number of consecutive nights would be inconclusive. That is, there could be no sightings, but does that obviate the possible presence of individual bats at the site or in the region? The answer to this question is, of course, no.

Mr. Bruner accurately acknowledges the possible presence of the Hawaiian hoary bat in the area. We hope to clarify by this letter, that impacts to the species as a result of the proposed golf course are negligible. He has rightfully acknowledged the possible presence of the bat in the region, but also does not anticipate negative impacts to the bat as a result of the proposed golf course.

Finally, you suggest that the U.S. Fish and Wildlife Service might consider areas of the project site wetlands that were not considered wetlands by the Army Corps of Engineers. For your information, a site visit was conducted on May 24, 1996, which included several representatives of the U.S. Fish and Wildlife Service. At the time of the survey, *Marsilea villosa* was present. At

no time, has USFWS suggested that wetlands are present, and they have been furnished with the findings of the Army Corps of Engineers.

Water Resources

You suggest that our estimate of an average of 700,000 gallons per day (gpd) of irrigation water use is not accurate. This estimate is based on local climate, pan evaporation factors, and comparative use at the adjacent Hawaii Kai Golf Course. In addition, the irrigated area of the golf course will be approximately 90-100 acres, a relatively modest area. We are quite comfortable with this estimate, and see no reason to change at this time.

In regard to salt spray affecting the golf course, a salt-tolerant turfgrass (either Zoysia or Paspalum), would be planted and is more suited to saline environments. Therefore salt spray would not be a problem for this species. Other landscape materials will be selected for their suitability to the microclimate at the project site, including native species. These species would also be suited to tolerate salt spray.

You suggest that wastewater reuse has been typically "plagued by an assortment of issues". Many users of reclaimed water have not experienced the problems you allude to in your letter. In addition, as you are aware, the State Department of Health has adopted broad guidelines for the use of reclaimed water throughout the state, and would have review authority over the design of the system used at Queen's Beach. The adoption of these guidelines, taken in conjunction with the fact that the East Honolulu Wastewater treatment plant will be providing R-1 water to the golf course, suggest that issues such as those identified in your letter would not be significant.

We recognize your support of the Board of Water Supply's policy to disallow the use of potable water for golf course irrigation. On the basis of your comments, and similar comments made by other reviewers, we have revised our method of blending the brackish water from the wastewater treatment plant. Instead of seeking domestic water from the Board of Water Supply, the golf course will be equipped with a small desalinization plant to reduce the salinity of irrigation water that would be needed for the greens only.

Marine Environment

You raise several concerns in this section of your letter. With respect to irrigation volume, we have already stated that we are comfortable with the estimate of an average of 700,000 gpd needed for irrigation of the course. As for a problem related to shrinkage cracks on drying soil, we asked Dr. William Walker to review your comments, and the publications you noted in your letter. Dr. Walker responded to this point by writing:

> *"After reviewing the papers and documents suggested by the Center, it is clear that increased subsurface transport could occur under conditions of significant soil cracking. Rapid movement of water through soil macropores and restricted regions is described as preferential flow. Unfortunately, most transport equations and models are deterministic and do not account for spatial variability of flux, hydraulic properties, preferential flow patterns and drainage in field and turfgrass systems. As a result, it is virtually impossible to predict the effect on solute/chemical transport.*
>
> *While the shrink-swell characteristics of the soils and clay content in general are problematic from a drainage perspective at present, they are not necessarily problematic from a golf course design perspective. For example, pesticide and fertilizer use will be exclusively on tees, fairways and greens, with the most intensive use on the high maintenance greens. In addition, the establishment of turf and use of an irrigation system will allow watering of soils through the rooting zone of the turf. Soil moisture, to a depth of about 1 foot, will therefore, be increased to near saturation which in effect will eliminate most surface soil cracking."*

You also suggest that solute and nutrient transport might affect water quality in the marine environment, particularly as it relates to the increase in groundwater discharge from about 110,000 gpd to 250,000 gpd. In their report attached to the DEIS (Appendix A), Tom Nance Water Resources Engineering addresses this issue and does not believe it to be a problem (page 23).

You also raise legitimate concerns about the impacts from surface runoff and sedimentation, especially during construction of the course. As a result of these comments, and similar comments from other reviewers, we asked Sam O. Hirota, Inc. to prepare a grading and drainage report for inclusion in the FEIS. This report will be summarized in Sections 4.2 and 6.4 of the FEIS, and attached to the FEIS as Appendix N. Many of the mitigation measures suggested in your letter have also been recommended by Sam O. Hirota, Inc. and Dr. Walker. Of particular note, a major component of the grading and drainage report calls for the construction of a berm around the makai perimeter of the golf course to prevent stormwater water runoff from reaching the ocean before settlement has occurred. A system comprised of the berm, detention basins designed into the golf course, and weirs to control the rate of discharge after settlement, will control impacts related to stormwater. Other recommendations include silt traps, the regular cleaning and disposal of parking lot pollutants and a groundwater monitoring program are all features of the applicant's proposal.

Flood Hazards

The purposes of the flood hazard regulations are to protect life and property and reduce public costs for flood control. Locating portions of the golf course within tsunami inundation areas is not contrary to these regulations. In their comment letter on the DEIS, the State Department of Defense recommends the installation of a siren and siren support infrastructure within the project site. This would provide sufficient warning for golfers, employees, and others using the shoreline area at Queen's Beach, to evacuate to safe zones. Increased setbacks are not needed to increase public safety.

We note your suggestion that the applicant should be required to purchase adequate flood insurance and indemnify the County, State and Federal governments against future claims for destruction of golf course property due to flood related hazards. All necessary flood hazard insurance will be purchased for the project.

Coastal Views

We agree with the suggestion by one of your reviewers that if the golf course is permitted, the course should be landscaped with native species which complement the existing appearance of Queen's Beach. Ironically, a large portion of the project site is dominated by introduced species. We would also support a condition of approval that requires the preparation of a landscape plan prior to the issuance of a grading or building permit.

Historic Sites

In the course of conducting an archaeological inventory survey for the FEIS, it was determined that there is no remnant physical structure from that portion of the "King's Highway" that was last identified by Marion Kelley in 1984. At that time, Ms. Kelley recognized: "What little that remains of this old stone-paved roadway is in danger of completely disappearing, as moss-rock collectors have been observed removing selected rocks from the area." This portion of the road remnant has become nothing more than a cleared area in a kiawe thicket, and is therefore considered no longer significant, according to analysis contained in an archaeological inventory survey prepared for the FEIS, and accepted by the State Historic Preservation Officer. This site remnant has been mapped, described, and plotted, and no further research is recommended. It should be remembered that this site extends beyond the boundaries of the project site and is visible as a paved and terraced series of four switchbacks that descend from the Makapu'u Lookout toward Makapu'u Beach Park. Because site integrity has been preserved in the area beyond the project site, it is at this location that the historic site should be preserved as a significant historical resource.

Compatibility with Land Use Plans

The singular issue which pervades any analysis related to the implementation of the State's Ka Iwi Park Master Plan, concerns the ability of the State (and/or the City and County of Honolulu) to fairly compensate the landowner and the applicant for the condemnation of private property. The City and County of Honolulu has long argued that prior actions which downzoned the project site to Preservation District zoning left the landowner with a viable economic use of the property; namely a golf course. Any attempt to reduce the size of the golf course, or eliminate traditional amenities associated with a golf course, dilutes the economic viability of the course.

Miscellaneous Issues

One of your reviewers raised a question concerning the need for a traffic signal at the T-intersection of Kalanianaole Highway and Kealahou Street. Apparently this question was asked prior to the installation of a traffic signal and left-turn storage lanes at this intersection (completed in 1996). The State Department of Transportation was the agency responsible for installing these improvements. As for the road improvements that would be required specifically for the proposed golf course, the applicant will absorb all costs related to these improvements.

Your suggestion to establish a composting program for biodegradable waste and a recycling program for other trash is a good one.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Jan Sullivan, DLU
Robert Burke, KACC

Bailey ☎ 596-595-8272 11/22/96 4:13 PM 1/1

To: City & County of Honolulu
Department of Land Utilization

From: William Bailey. 2161 Puna St., Honolulu 96817
595-8272 shanti@lava.net

Re: Queen's Beach Golf Course

How many golf courses can we afford on this island, in terms of land use, water use, and pesticide runoff? It seems to me that the proposed course woud extract a high price from the general public for the benefit of the relatively few who would use the facility, and that the land could be better used for park area that would be accessible to all and less environmentally damaging.

Sincerely,

William Bailey

cc.: Kaiser Aluminum and Chemical Corporation, applicant.

Helber Hastert
Planners

October 1, 1997

Mr. William Bailey
2161 Puna St.
Honolulu, HI 96817

Dear Mr. Bailey:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter on the above draft environmental impact statement (DEIS), which was received by the Department of Land Utilization on November 22, 1996. Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

Your letter offers no specific comments on the above DEIS. Rather, you suggest that the property could better be used for park area that would be accessible to all. As you may be aware, the State of Hawaii Department of Land and Natural Resources has proposed to develop a park on the site of the proposed Queen's Beach Golf Course. However, the property is privately-owned (Kamehameha Schools Bernice Pauahi Bishop Estate) and leased (Kaiser Aluminum and Chemical Corporation). If the State of Hawaii wishes to implement their plans for a park, then the landowner and the lessee will have to be fairly compensated for their interest in the property.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Grosvenor Center, Makai Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545 2055
Facsimile: 808 545 2050

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

JEREMY HARRIS
MAYOR

CHERYL D. SOON
CHIEF PLANNING OFFICER

CAROLL TAKAHASHI
DEPUTY CHIEF PLANNING OFFICER

ET 10/96-2016

November 22, 1996

RECEIVED
NOV 26 1996
HELBER HASTERT & FEE
PLANNERS

MEMORANDUM

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: CHERYL D. SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR QUEEN'S BEACH GOLF COURSE

Thank you for giving us the opportunity to review the Draft Environmental Impact Statement (DEIS) for the proposed Queen's Beach Golf Course. We have reviewed the subject document and offer the following comments:

- The Final Environmental Impact Statement (FEIS) should include a detailed discussion as to how the proposed project conforms to Section 24-1.15 (Golf Course Development) of the City's Development Plan Common Provisions.

- Figure 5 of the DEIS shows the City and County drainage easements (D-7 and D-8) extending in an easterly direction from Kalanianaole Highway to Kaho'ohaihai Inlet. Figure 6 of the DEIS indicates that the drainage alignment will be from Kalanianaole Highway to Ka'ili'ili Bay. If the existing drainage easement would need to be relocated, the FEIS should clarify if this relocated easement would be granted to the City. As the drainage outlet for the region, how will the proposed Golf Course address stormwater runoff from the drainage basin? In your comments to the Department of Land Utilization, the letter states, "We do not believe improvements designed for the proposed golf course should assume responsibility for these (upland) projects." The EIS should include a discussion with DPW on this subject.

- The consultants July 8, 1996, response letter to the Board of Water Supply (BWS) indicated that alternatives to using potable water for the irrigation of the Golf Course will be included in the FEIS. We were unable to find any discussion on these alternatives and recommend that a discussion on the alternatives be included in the FEIS.

- The layout of the proposed golf course should reflect the mitigation measures to preserve the endangered Marsilea Villosa fern and the Ma'o (Hawaiian cotton) plant.

- Pursuant to the 1992 City Charter Amendments, the Planning Department is in the process of revising the East Honolulu Development Plan. The revision process will consider alternative land use scenarios within the East Honolulu Development Plan area.

- On November 13, 1996, the Honolulu City Council adopted Resolution 96-54 CD1, FD1 requesting the Chief Planning Officer process a Development Plan Public Facilities Map (DPPFM) amendment for the proposed Ka Iwi Shoreline Park and the Golf Course 5 & 6 parcels.

Should you have any questions, please contact Eugene Takahashi of our staff at 527-6022.

Cheryl D. Soon

CHERYL D. SOON
Chief Planning Officer

CDS:lh

cc: Helber Hastert & Fee, Planners
OEQC

Heller Hastert
Planners

October 1, 1997

Mr. Patrick T. Onishi
Chief Planning Officer
Planning Department
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. Onishi:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for the letter dated November 22, 1996 on the above draft environmental impact statement (DEIS). The letter will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to the comments in the order they appear in your letter.

Development Plan Common Provisions

Section 24-1.15 (Golf Course Development) of the City's Development Plan Common Provisions is intended to be applied to golf course projects that require a development plan amendment. The project in question already has an appropriate development plan designation, and, therefore, need not comply with these provisions. However, this question notwithstanding, the essence of the information requested under Section 24-1.15 replicates the information required by an environmental impact statement, particularly as it applies to golf courses in the Special Management Use Area. For this reason, we believe the EIS is consistent with the requirements of Section 24-1.15 without assigning a specific section of the EIS to duplicate information already contained in the EIS.

Drainage

Section 2.2 of the DEIS discusses easements D-7 and D-8 in some detail. As was correctly observed, the existing drainage channel does stay within the boundaries of these easements for approximately 1,500 feet. At this point the drainage channel veers south, outside of easement D-8, and empties into the eastern end of Ka`ili`ili Bay. In response to the comment on drainage, and similar comments from many other reviewers, we asked Sam O. Hirota, Inc. to prepare a grading and drainage report for inclusion in the FEIS. The findings

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of this report will be summarized in Sections 4.2 and 6.4 of the FEIS and will attached as an appendix to the FEIS (Appendix N).

Potable Water Alternatives for Irrigation

The FEIS will include a discussion of desalination as an alternative to the use of potable water to blend with saline reclaimed water to reduce the salinity of the reclaimed water so it can be used to irrigate the turfgrass that will be used on the greens. Approximately 15,000 gallons of "fresh" water will be used for this purpose. The source water for desalination would be the reclaimed water from the East Honolulu Wastewater Treatment Plant, which now has a salinity ranging between about 1,550 and 2,000 parts per million (ppm) chloride.

Marsilea Villosa

A figure will be added to the FEIS indicating where the existing dense stands of ma'o are located. Char & Associates recommends that all or a large portion of the area with a high density of ma'o should be left intact. The area identified as having a high density of ma'o occupies about 3.5 acres of land in the southeast section of the project site. By reconfiguring the layout of hole nos. 15, 16, and 17, a large portion of the dense ma'o can be retained intact, and a significant area of new ma'o can be added contiguous to the existing by planting new plants. Although ma'o is not found in large numbers in the wild, it has been successfully cultivated in places such as the Honolulu Zoo, Foster Botanical Garden, the Waikiki Aquarium, and residences throughout Oahu.

East Honolulu Development Plan Revision

We acknowledge your comment that the East Honolulu Development Plan is now being revised.

City Council Resolution 96-54

Since we received your letter, and subsequent to the adoption of Resolution 96-54, the City Council adopted Ordinance 97-23 (Effective date: May 16, 1997), which adds the entire project site as a park, publicly funded, site determined, within six years.

Helber Hastert
Planners

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Jan Sullivan, DLU
Robert Burke, KACC

O'AHU GROUP
SIERRA CLUB, HAWAI'I CHAPTER
P.O. Box 2522, Honolulu, Hawaii 96803
Phone: (808) 535-0641

October 23, 1996

Patrick Onishi
Department of Land Utilization
650 S. King St 7th Floor
Honolulu, HI 96813

Dear Mr. Onishi,

The O'ahu Group of the Sierra Club is disappointed that you accepted the draft environmental impact statement for the proposed golf course at Queen's Beach. We would like to remind you that as Director of DLU, you have the responsibility to assess the project's impacts and not merely rubber stamp the documents submitted by the applicant. It is particularly important that the FEIS be complete since it will be relied upon in making the decision on the SMA permit application. The Hawaii Supreme Court has ruled that the determination regarding the significance of effects must be made by the county and may not be left to the applicants. Hui Alaloa v. Planning Commission, 68 Haw 135, 137 (1985).

Chapter 25 of the Revised Ordinances of Honolulu places the responsibility on the director's -- and not the applicant's -- shoulders to make this assessment. Earlier this year, Circuit Judge Riki May Amano overturned Hawaii County's decision on a 343 document, ruling that

> By not reviewing the FEA in its entirety for consideration of the sum effects on the quality of the environment, and by improperly relying on the representations of the FEA preparer, the County's Public Works Department abdicated its statutorily mandated review responsibilities.

(Civ. No. 95-14, July 8, 1996).

We ask then that any FEIS that is submitted be rejected unless the issues discussed below are properly addressed. Furthermore, we request that you instruct the applicant to specifically address the points we raise in a response letter and not simply say that the EIS addresses the issue or refer to the section in which the issue is mentioned. Most importantly, you should exercise your discretion and insist that the applicant fully assess the alternatives that we discuss in the last section below.

Attached to this letter you will find a document that explains that EISes prepared pursuant to the SMA permit process in Honolulu must comply procedurally and in substance with chapter 343 and its rules.

I. Proposed Mitigation Measures

The applicant should identify all proposed mitigation measures in a consolidated list. These measures should be written in plain language that is easily enforceable when incorporated into a permit. It is unacceptable, for example, to list as a mitigation measure that "apply pesticides only when and where necessary" since such language is open to far too much interpretation and completely unenforceable. Specific requirements that "MSMA and Dicamba shall not be used" (4-13; 4-16) should be incorporated into the mitigation measures as it is more meaningful than "pesticides that minimize pollution potential should be selected."

II. Historic, Cultural and Archaeological Resources

In the Hui Alaloa case, the Maui Planning Commission conditioned SMA permits to CAH and Kaluakoi

> upon retention of a qualified archaeologist to conduct a further survey and excavation of the area and to "prepare a written report to maximize information retention through preservation or salvage of significant archaeological sites and to provide a plan for protecting, restoring, interpreting, and displaying historical resources either preserved on or salvaged from the subject areas." Under D&O, CAH 56(a)(iii), CAH's archaeologist is to determine the significance of various archaeological sites. In addition, CAH and Kaluakoi are required to "eliminate all grading or construction impact on any significant archaeological sites prior to salvage and preservation." 68 Haw. 137

The Supreme Court vacated the permits since the findings relative to the historical and archaeological resources

> must first be made before a SMA permit can be issued.
>
> We hold that a imposing these self-serving conditions without requiring a hearing to review the additional study and survey by the commission is in error. The determination whether the development complies with the policies and objectives of the CZMA regarding historical and archaeological significance was, in essence, left to the applicant's contrary to the statutory command governing the issuance of SMA permits. Id.

Nevertheless, the applicant fails to provide a full survey of historical sites. Instead, the applicant recommends a future high intensity ground survey of the entire project area as well as future subsurface testing: "It is recommended that an inventory survey be conducted at the project site prior to the commencement of any construction activity." (p. 4-40) This work must be completed and presented in the FEIS. The City must reject any FEIS that fails to include this information.

III. Flood Hazard

Before rendering a decision on the SMA permit application, the City must first find that the project is consistent with the objectives and policies of HRS Chapter 205A. One of these objectives is to prevent coastal hazards such as flooding. Therefore, the exact nature of flooding hazards must be determined before an SMA permit can be issued. The declaration that future studies will be conducted (p. 4-43) is inappropriate.

IV. Runoff

* An erosion control and grading plan for the construction of the golf course should be prepared before any decision on the SMA is granted. Preparation of such a plan after the granting of an SMP reduces public participation in the SMA process. Only by proper public review of such a plan through the SMA process and the incorporating appropriate conditions in a SMP can water quality be protected.

* The City Department of Public Works and the Office of State Planning specifically asked for a description of the best management practices to be used to reduce runoff. The DEIS does not adequately discuss these BMPs. The DEIS must provide specific, enforceable BMPs including an implementation schedule.

* The DEIS states that percolation from the golf course would more than double the amount of groundwater discharging along the shoreline. Nowhere does the DEIS indicate what impact this addition of freshwater will have on nearby corals.

* Nor does the DEIS assess the cumulative impact on coastal waters, marine life and corals of increased pesticide runoff, increased fertilizer runoff and nutrient-rich sewage effluent runoff. The DEIS predicts a significant ten percent increase in total nitrate-nitrogen discharge, but it does not include in this estimate the fact that the irrigation water will be re-used sewage effluent. In fact, the DEIS calls for further study of the impacts of sewage effluent re-use on the golf course (p. 6-8). The EIS must assess the cumulative impacts on all these resources.

* It is disappointing that so few water quality standards were measured to establish a baseline. We specifically requested that the pollutants identified in HAR 11-54-04 be measured. Why were they not? DLU should insist on inclusion of this information in the FEIS.

* It is curious that the applicant concludes that since maximum concentrations of nitrate and ammonium are below EPA drinking water standards, water quality will not be affected. The EIS must explore what impact these increased concentrations of nitrate and ammonium will have on marine life.

V. Views

It is preposterous to claim that "it has been clearly demonstrated that no views toward the sea from Kalanianaole Highway would be affected by the proposed project." DLU cannot allow the applicant to maintain such falsehoods in the FEIS. The applicant's conclusion is based on a computer-enhanced photograph from three specific locations -- completely ignoring the remaindor of the area. A photograph taken just fifty feet down Kalanianaole Highway from site 2 would clearly demonstrate that the clubhouse will obscure the view of the ocean. Moreover, from the site the applicant has chosen, the clubhouse would clearly detract from the vividness, unity and intactness of the area. The computer-enhanced photo shows that the clubhouse interrupts the relationship between the landform and the ocean.

Similarly, if a photograph was taken 25 feet from site 1, it would reveal the devastating visual impact of the clubhouse.

The 10,000 square foot, 25 foot-high clubhouse will reach 39 feet above sea level. The clubhouse, maintenance facility and the comfort stations will interfere with views of the ocean.

The City cannot assess the impact on scenic resources unless the applicant fully discloses the nature of the project. To do so, the applicant must submit a final design before the SMA is considered. The applicant must include the landscaping plan for the course. And the applicant must disclose exactly how far the clubhouse is from the road. Such information will better enable the City and the public to assess the impact on viewplanes.

VI. Availability of Fresh Water

The U.S. Fish and Wildlife Service and the Office of State Planning specifically asked what the impact would be of increased water withdrawals. The DEIS completely failed to address this issue. The sustainable yield from our aquifer is limited. It is not sufficient to say that the developer must obtain a water allocation from Bishop Estate. What projects will not receive water in the future because water is being consumed by the golf course? What is the long-term impact?

VII. Noise

The nearest noise sensitive area is not the proposed housing development on Queen's Rise. It is the hiking trail that the public, in search of serene wilderness, uses to get away from crowded Honolulu. This trail goes right through this new noisy area. Please fully asses the impacts to those of use who use this public trail.

VIII Cumulative Impacts

Hawaii Administration Rules 11-200-2 defines cumulative impact as

> the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions.

HAR 11-200-17 requires that an EIS discuss "significant beneficial and adverse impacts (including cumulative impacts and secondary impacts)."

A reasonable foreseeable future action is the action proposed by the applicant involving large scale development in East Honolulu, including the development of the adjacent rises. It is not sufficient to study these impacts in a document that is not prepared pursuant to chapter 343. Therefore, the applicant must re-write this DEIS to include a discussion of the cumulative impacts of the projects that the applicant is currently proposing to the City Council. The consultant has inappropriately dismissed our concerns as well as that of the Sandy Beach Initiative Coalition.

IX. Other Issues

Who owns the waterways and channels?

Why is there no analysis of the impacts on seabirds as requested by US Fish and Wildlife?

Figure 7 and Figure 6 suggest that the project juts in Ka'ili'ili Bay. In fact, it crosses into the ocean. If so, this project needs a shoreline setback variance as well as a shoreline certification.

How can anyone judge the impacts of moving the boulders if this information is not discussed in the EIS? If any boulders will be moved, that plan must be fully presented in the EIS along with all the associated impacts.

X. Alternatives

Hawaii Administrative Rule 11-200-14 requires that agencies accepting EISes "shall assure an early open forum for discussion of adverse effects and available alternatives." It is unfortunate that the applicant has not seriously considered alternatives. It is disturbing that DLU has allowed this failure to explore realistic alternatives. We can suggest several that are worthy of study:

* Create a private wilderness park and charge fees for the use of the park. The experience at Hanauma Bay demonstrates that the public is willing to pay a small fee to enjoy nature's wonders.

* Develop an outdoor education center for students at Kamehameha Schools and other schools to explore Hawaii's coastal environment. Hundreds of successful and profitable outdoor education centers can be found across the mainland.

* Explore the option of a golf course that does not serve food or alcohol; that does not use pesticides or fertilizers; and that has a clubhouse no larger than the one found at the City's Kahuku golf course.

Please insist that the applicant explore these alternatives.

Finally, we request that your staff carefully examine all the comment letters received after the preparation notice and this DEIS to ensure that each specific concern is satisfactorily addressed. It appears to us that the consultant has failed to address a substantial number of concerns raised in the consultation process.

We may be providing further comments before the comment deadline and will be providing specific comments regarding this project's failure to meet the policies and objectives of HRS chapter 205A at a later date.

Sincerely,

Philip Bogetto

encl

Helber Hastert
Planners

October 1, 1997

Mr. Philip Bogetto
O'ahu Group
Sierra Club, Hawai'i Chapter
P.O. Box 2577
Honolulu, HI 96803

Dear Mr. Bogetto

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated October 23, 1996 on the above draft environmental impact statement (DEIS) Your letter will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to your comments in the order they appear in your letter.

Proposed Mitigation Measures

Section 1.3 of the DEIS contains a summary of probable impacts and mitigation measures, as required by HAR §11-200-17(a). It is intended, and encouraged, that all mitigation measures listed in the FEIS be incorporated into the Special Management Area Use Permit (SMP) as conditions of approval. The jurisdictional agency (in this case the Department of Land Utilization) has the responsibility of reviewing the FEIS and determining the acceptability of the proposed mitigation measures and amending or modifying those listed in the FEIS, or suggesting additional measures that should be attached as conditions to the SMP. The City Council is the final decision-maker on the applicability of conditions that are attached to an approved SMP.

If the language of any mitigation measure in the FEIS is deemed unacceptable to either DLU or the City Council, we would expect changes in language. In regards to your specific comment that it is unacceptable to list as a mitigation measure to "apply pesticides only when and where necessary," we respectfully disagree. The decision to apply any pesticide is made by qualified individuals responsible for the maintenance of the course. Circumstances will dictate when application is appropriate, such as the type of infestation, the location of the infestation, the severity of infestation, climatic conditions, and toxicity level of the pesticide. It would be impossible to devise a single mitigation measure that would cover all scenarios regarding these situations.

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The FEIS will specifically state that MSMA shall not be used on the golf course.

Historic, Cultural and Archaeological Resources

Section 4.10 of the FEIS will be amended to include the results of a recently completed archaeological inventory survey conducted at the project site, and reviewed and accepted by the State Historic Preservation Officer.

Flood Hazard

As stipulated in Section 4.11 of the DEIS, the Flood Insurance Rate Maps (FIRM) prepared for the area that includes the project site have identified areas adjacent to the shoreline that would be inundated during the 100-year tsunami event. The rest of the project area is in Flood Zone D, which means that flood hazards have not been determined. It is probable that some of this area is also susceptible to flooding from tsunami events. However, the provisions of the Flood Hazard Regulations of the Land Use Ordinance require that before a structure located in Zone D receives a building permit, the plans must be designed and certified by a registered professional architect or engineer that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of the flood hazard regulations. These requirements do not need to precede the approval of an SMP.

Runoff

As a result of your comments requesting a grading plan, and similar comments received from other reviewers, we asked Sam O. Hirota, Inc. to prepare a grading and drainage report for inclusion in the FEIS. The findings of this report will be summarized in Sections 4.2 and 6.4 of the FEIS, and the full report will be attached to FEIS as an appendix (Appendix N). Best management practices during the construction and operational phases of the golf course are included in this report.

Appendix B of the DEIS (*Baseline Survey of Water Quality and Marine Community Structure and Baseline Pesticide Sampling*) prepared by Marine Research Consultants (MRC), analyzes the anticipated changes to the nearshore marine environment as a result of groundwater inputs by the golf course. Presently the gradient of salinity in Kaloko Inlet reaches oceanic salinity (34.5 parts per thousand [ppt]) about 230 meters inland from the open ocean. According to MRC, increasing the percolation to groundwater could result in a salinity depression in the landward part of Kaloko Inlet from about 33.5 ppt to about 31.5

ppt (about 6%). Should the mixing of groundwater and ocean water occur at the same ratio as during baseline conditions, Kaloko Inlet water should reach oceanic salinity at approximately 150 feet from the shoreline. By the time groundwater in Kaloko reaches the shoreline and enters the open ocean, it will be of oceanic salinity regardless of whether the golf course is in operation or not.

MRC also concludes, in reference to your claim that a 10% increase in total nitrate-nitrogen concentration would have harmful effects, that a change of the input of 10% measured in the inlet will have virtually no detectable effect on the composition of the marine environment, or even of Kaloko Inlet. Since baseline measurements already include existing inputs, cumulative effects have been considered.

MRC measured water quality constituents that included the 10 specific criteria designated for open coastal waters in Chapter 11-54-6 of the Water Quality Standards, Department of Health, State of Hawaii. These measurements are consistent with accepted protocol for studies of this type.

Views

Many reviewers requested that additional visual analysis be conducted and included in the FEIS. In addition to selecting more vantage points from which to address this issue, the FEIS will include photo and computer simulation documentation related to moving the clubhouse about 200 feet to the north The change in location for the clubhouse will move the majority of the clubhouse profile out of the line-of-sight of motorists travelling south away from the Makapu'u Lookout. These simulations will also add landscape treatment and building coloration treatment that would reduce the visibility of this structure.

Your suggestion that the comfort stations will interfere with views of the ocean is erroneous, and will be documented in the FEIS, as will any impact associated with the maintenance building.

We also take exception to your request that a final architectural design of the clubhouse be submitted before the SMP is considered. These plans are never required until after an SMP has been issued, and are fully reviewed by the staff of the Department of Land Utilization, which includes design professionals.

Availability of Fresh Water

Any withdrawals of potable water for use at the golf course must be credited against allocations for the Kamehameha Schools Bernice Pauahi Bishop Estate (KSBE) that have already been approved, as stipulated by the City and County of Honolulu Board of Water Supply. Any projects impacted as a result would be those proposed by KSBE.

Noise

In response to your comment regarding the noise impacts from the golf course on hikers, we assume that your concern is related to the operation of mechanical mowers. It might be helpful if you understood the operational practices of golf course maintenance. Mowing usually commences at first light (or earlier), often at or before 6:00 AM, and is concluded within three hours or so. Not all portions of the course are mowed every day. Fairways are usually mowed about three times per week, with greens being mowed every day. Therefore, the opportunity for exposure to mower noise is limited to a few hours per day, hours during which the trail would get the least amount of use. Further, because of the freshness of the trade winds which characterize the area, the noise of mowers reaching the trail would be impacted by the noise of the wind rustling the vegetation on the trail. Finally, the noise level of the mowers themselves reach about 60-70 dBA, measured at 50 feet from the mower. Because the trails are separated from the fairways by a minimum of 175 feet, the sound level on the trails would be attenuated by distance. So, the combination of mowing hours, frequency of mowing, presence of wind, and actual noise level of the machines, all contribute to a marginal impact on hikers.

Cumulative Impacts

Your comments relating to cumulative impacts have emphasized language regarding "reasonably foreseeable actions." Before addressing this question, we would point out that you have incorrectly assumed that the applicant (Kaiser Aluminum and Chemical Corporation) is the entity responsible for proposing development of the "adjacent rises" (Mauuwai Ridge and Queen's Rise). Instead, Maunalua Associates, Inc. is the entity that has proposed to develop these areas, in the context of the proposed settlement that was recently terminated by the Honolulu City Council (Res. 97-09).

Because the City Council decided to terminate the settlement process, it is impossible to determine when, if ever, the development of these areas, in addition to all 11 other projects in the settlement process, might occur. For this reason, they need not be included in any

discussion of cumulative impacts for the proposed golf course. The Department of Land Utilization is in agreement with this assessment.

Other Issues

Ownership of waterways and channels

Kamehameha Schools Bernice Pauahi Bishop Estate is the owner of all inland waterways and channels.

Impacts on seabirds

Impacts to seabirds will be discussed in Section 4.8 of the FEIS.

Figures 6 and 7

We fail to see how the representations of Figures 6 and 7 indicate that the project juts into Ka`ili`ili Bay. If your reference is to the pedestrian bridge that crosses the drainage channel, we assure you that this bridge will be located at least 40 feet mauka of the certified shoreline.

Boulders

In response to questions from many reviewers concerning impacts related to grading and drainage, we asked Sam O. Hirota, Inc. to prepare a grading and drainage report for inclusion in the FEIS. Among the many subjects reported on, the disposition of the boulders found on the project site is covered in this report. For your information, the boulders will remain on the site and will be used to create an earthen berm on the makai portion of the project site as a component of other design features to control the release of stormwater runoff during major events, until after sediments have settled. Discharge volume would also be controlled using a system of weirs.

Alternatives

Chapter 7 of DEIS includes a discussion of the Ka Iwi Park Master Plan as an alternative to the proposed project. This alternative embodies your suggestions for a wilderness park and an educational center. It is difficult to appreciate how a private park that charges fees could be profitable in this location, when similar experiences exist in nearby locations that are free. Another issue related to fees is how to control access. How would it be possible to restrict

Helber Hastert
Fee

access along the shoreline and require shoreline visitors to pay admission? Other than these logistical problems, such a use would not be profitable enough, if at all.

We did not ignore the consideration of this alternative, and made a point to ensure that a description of the Ka Iwi Park Master Plan, which was the subject of its own EIS and did not include provisions for admission fees, was included in the DEIS.

The suggestion to exclude food and liquor sales fails to appreciate customary accessory uses found at a golf course and does not merit serious consideration. Prohibiting the use of any pesticides or fertilizers is contrary to the needs of proper course management. Certainly every effort should be made to limit their application only when needed. The development of a management plan specifically for the Queen's Beach Course will provide a basis to reduce the application of these chemicals. The preliminary design for the clubhouse at Queen's Beach is a modest one. It is not appropriate to compare the City's golf course at Kahuku, which only has 9 holes and a limited patronship, to a full 18-hole course such as the one proposed at Queen's Beach.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

November 20, 1996

'96 NOV 22 PM 1 11
DEPT OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

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

RE: Queen's Beach Golf Course (Special Management Area Permit)

Dear Mr. Onishi,

My name is Linda W.L. Starr. I have lived in Wailupe Valley for over thirty-five years, and have been active on the Kuliouou-Kalani Iki, Neighborhood Board #2 as its Transportation chairperson for around eight years.

The purpose for this letter is to ask that you do not grant a Special Management Area (SMA) Permit to the "Applicant," Kaiser Aluminum and Chemical Corporation (Kaiser Center Incorporated).

The Applicant has submitted their "draft environmental impact statement" (DEIS) to the Office of Environmental Quality Control for review and comments, and needs this permit to proceed.

As I understand, this 166 acre property is currently zoned "P-2." A "Golf Course" is a permitted use for this zoning designation.

By definition, a "golf course" is an area of land where the game of golf can be played, and it typically has from 9 to 18 holes on the course. A driving range, a clubhouse, a golf Pro shop, locker rooms, golf-carts and barn, parking lot, and restaurant are "accessory facilities." These are commonly used, but not essential facilities associated with a golf course.

My point here is, if the Applicant had only wanted to develop a restaurant with a parking lot, that project would not be permissible in this "P-2" preservation zoned area.

The operations of a restaurant involves the accumulation of cooking grease and the storage of food waste for around three to four days each week. The area where the Applicant is proposing to situate this restaurant and parking lot is near a dangerous curve on the hill. The highway near this site is not lite at nights at the time when club members would be using this restaurant for dinners.

According to the Applicant, the restaurant (and club house) would be lower than the existing highway roadway, and that its height of around twenty-five feet above grade would not mar the shoreline scenic view of the driving public for "a very long time." I feel that any amount of time that the coastal scenic view is blocked by this large building is too long.

This entire project is subject to flooding, and is in the Civil Defense designated tsunami inundation zone. Normally, for multi-storied structures in an tsunami inundation zone, people would be directed to the third floor, but the proposed club house and restaurant would be only two stories tall. The DEIS does address a possible evacuation scenario, but I question if it would be adequate. The last devastating tsunami in this area was over fifty years ago, and according to experts, East Honolulu's shorelines can experience another one in the near future.

The proposed project has plans to construct restroom facilities within 400 feet of the shoreline. This would include the installation and maintenance of a sewer line which could have the potential to crack and leak its waste material into the ocean.

The Applicant says that they intend "to integrate existing topography and vegetation," and that "grading is planned to be kept to a minimum with turf-grasses and other landscaping species selected to complement the dry-land environment."

The proposed area is very arid. I feel that the Applicant did not adequately address watering and fertilizing needs for the landscape. It did not adequately identify sources of water for the restrooms, club house, and restaurant.

As permitted by the current zoning, the Applicant should be allowed to design and develop a golf coarse, and only a golf course.

The "approximately 29 acres on the western side of Kaloko Inlet" should be part of this golf course, and swapped with approximately 29 acres of shoreline to be set aside and designated for use by the general public.

Should you have any question concerning the contents of this letter that asks you to deny the Special Management Area Permit for the Applicant, please feel free to call me at 373-9327, or you may reach me at: P.O. Box 240310; Honolulu, Hawaii 96824-0310.

Sincerely,

Linda W. L. Starr

Linda W.L. Starr

Heller Hastert
Planners

October 1, 1997

Ms. Linda W.L. Starr
P.O. Box 240310
Honolulu, HI 96824-0310

Dear Ms. Starr:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 20, 1996 on the above draft environmental impact statement (DEIS). Your letter will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to your comments in the order they appear in your letter.

Restaurants as an Accessory Use to a Golf Course

You suggest that a restaurant is an inappropriate accessory use in the P-2 General Preservation District. Restaurants are traditional accessory uses for golf courses, which are allowed as principal uses in the underlying zoning district. Food and beverage services are a necessary part of meeting golfers needs and expectations and help to make the golf operations economically viable. It would be considered arbitrary and capricious action to disallow a traditional accessory use, when other similar facilities have been allowed at other golf courses.

Traffic Safety

You note that the area where the "restaurant" and parking lot are to be located is near a dangerous curve and has no street lights, which could create dangerous traffic conditions for "club members" who would be using the restaurant for evening dining. First, to clarify the use of this facility, it is not solely a restaurant; it is a clubhouse which will contain locker rooms, a pro shop, offices and a dining facility. It will be privately owned but open to the public. Regarding issues of traffic safety, the project is being reviewed by the City Department of Transportation Services and the State Department of Transportation. Final access plans must be approved by these agencies, including the proposal to construct a left-turn storage lane into the project for vehicles coming from the Waimanalo direction.

Heller Hastert & Lee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone 808 545 2055
Facsimile 808 545 2050

Views

Several reviewers expressed concerns about the visual impact of the clubhouse when driving toward Sandy Beach from the Makapu'u Lookout. The computer model presented as view #2 in Figure 13 of the DEIS accurately portrays a view which offers a clear view of the ocean from the highway. As a result of other comments received, we have provided an alternate location of the clubhouse approximately 200 feet to the north, which moves the clubhouse out of a direct line with the centerline of Kalanianaole Highway. Moving the clubhouse also aligns the long axis of the building closer to parallel with the highway, thus presenting a narrower building face to the viewer, further reducing its impact. This alternate view is presented in the FEIS, along with simulated landscaping to soften the appearance of the clubhouse.

Flooding

We would qualify your statement that the entire project is subject to flooding. Portions of the project area along the shoreline have been determined to be susceptible to flooding from tsunami events, with base flood elevations identified. The rest of the project area is in Flood Zone D, which means that flood hazards have not been determined. It is probable that some of this area is also susceptible to flooding from tsunami events. Before a structure receives a building permit, the plans must be designed and certified by a registered professional architect or engineer that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of the flood hazard regulations. This need not be done before a Special Management Area Use Permit has been approved.

Restroom Facilities

Figure 6 of the DEIS identifies two comfort stations for the golf course; one is proposed between the 8th green and 9th tee, and the second is proposed between the 14th green and 15th tee. These comfort stations are located approximately 1,500 feet and 2,000 feet, respectively, from the shoreline. Regardless of their location, the installation of a sewer line to transmit wastewater to the East Honolulu Wastewater Treatment Plant would be a requirement.

Water Resources

The irrigation needs of the golf course were carefully examined using pan evaporation estimates, weather information, and water usage from the Hawaii Kai Golf Course. We believe that estimates of average use for the proposed course of about 700,000 gallons per day are reasonable. The source of this irrigation water would be the East Honolulu Wastewater Treatment Plant, which currently produces an average of 3.7 million gallons of effluent per day, more than sufficient to supply the needs of the proposed Queen's Beach Golf Course and the two Hawaii Kai courses, if necessary.

The Board of Water Supply has indicated that any domestic water for the restrooms, clubhouse and restaurant would need to come out of domestic allocations for Kamehameha Schools Bernice Pauahi Bishop Estate.

Current Zoning

You suggest that under the provisions of the underlying zoning the applicant should only be allowed to develop a golf course at the project site. We assume this comment is related to your earlier comment questioning the need for a restaurant. We would remind you that accessory uses are permitted for any development in any zoning district. The clubhouse, which includes a dining facility, meets the definition of an accessory use found in the Land Use Ordinance.

29 Acres at Kaloko

First, we would clarify that the 29 acres on the western side of Kaloko Inlet was never intended to be developed as a park by the landowner or the applicant. We specifically designed a conceptual layout for the Queen's Beach Golf Course that left the 29 acres intact. We believe that this area is particularly important as a habitat for beach and dune vegetation. Also, because it is contiguous to Wawamalu Beach, it offers the easiest access for the public. It is doubtful that "swapping" this 29 acres, with similar-sized beachfront area elsewhere on the project site, would result in a more efficient use of land area, or a more environmentally-sensitive design. If a park were to be developed here, it would be incumbent upon the State of Hawaii or the City and County of Honolulu to assume that responsibility and purchase the property at fair market value.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Jan Sullivan, DLU
Robert Burke, KACC

96-09297

UNIVERSITY OF HAWAII
DEPARTMENT OF ZOOLOGY

'96 NOV 22 PM 1 08
DEPT OF LAND UTILIZATION
CITY & COUNTY OF HONOLUL

November 17, 1996

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

Dear Mr. Onishi:

RE: DRAFT EIS FOR QUEEN'S BEACH GOLF COURSE

I recently reviewed the Draft Environmental Impact Statement for the Queen's Beach Golf Course. Although, a survey was conducted for birds and feral mammals (see Avifaunal and Feral Mammal Survey, Appendix G), no survey was conducted to assess whether Hawaii's only native terrestrial mammal is present at the site. This is a glaring omission given that the Hawaiian hoary bat *Lasiurus cinereus semotus* is listed as federally endangered and according to the biological surveyor, Mr. Phillip Bruner, it "potentially could occur at this site." Furthermore, unconfirmed reports of bats have been made in the vicinity (see the Natural Diversity Database maintained by The Nature Conservancy's Hawaii Heritage Program).

Although Mr. Bruner commented that "no native mammals were found on the survey," it is clear that he was not attempting to conduct a thorough survey for bats. At least, he did not mention in his "Study Methods" the utilization of standard bat detecting equipment, such as bat detectors or night vision goggles. These are necessary for detecting bats after sunset. Hawaiian hoary bats not only "forage for flying insects at dusk" as Mr. Bruner states, but they continue to be active (though probably to a lesser degree) throughout the night (see Cabrera 1995, Jacobs 1993, Reynolds et al. 1994).[1]

I would like to add that even though this coastal area is dominated by the non-native koa haole (*Leucaena leucocephala*), it may still be valuable habitat to the bat. I frequently see large numbers of bats (10+) foraging for insects over this type of habitat at Puu Honua o Honaunau National

[1] Cabrera, T.A. 1995. A survey of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) at Hakalau Forest National Wildlife Refuge, Island of Hawaii. Progress report prepared for Department of Land and Natural Resources, Natural Area Reserves System, Honolulu, HI by Department of Zoology, University of Hawaii, Honolulu, HI. 12 pp.

Jacobs, D.S. 1993. Character release in the endangered Hawaiian hoary bat, *Lasiurus cinereus semotus*. Ph.D. dissertation, University of Hawaii, Honolulu. 134 pp.

Reynolds, M.H., Ritchotte, G.L., Viggiano, A., Dwyer, J.K., Neilsen, B.M. and Jacobi, J.D. 1994. Surveys on the distribution and abundance of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the vicinity of proposed geothermal project subzones in the District of Puna, Hawaii. Final report prepared for Hawaii Geothermal Project, Environmental Impact Statement, U.S. Department of Energy, Oak Ridge, TN, by U.S. Fish and Wildlife Service, Hawaii Field Station, Hawaii National Park, HI. 33 pp.

2538 THE MALL • HONOLULU, HAWAII • 96822
PHONE: 808 956-4717 • FAX: 808 956-9812

Historical Park (The City of Refuge) on the Island of Hawaii. A survey of the koa haole shrubland, as well as the adjacent shoreline, is advised. Moreover, I recommend that this survey be conducted sometime between August and December, when coastal and lowland observations of the Hawaiian hoary bat are more frequent (at least on the Island of Hawaii). Indeed, most of the Heritage Program's records of bats on Oahu are from the late summer and fall months.

Sincerely,

Theresa Cabrera

Theresa Cabrera
Graduate Research Assistant

Helber Hastert
Planners

October 1, 1997

Ms. Theresa Cabrera
2538 The Mall
Honolulu, HI 96822

Dear Ms. Cabrera:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 17, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

The essence of your comments focus on the acceptability of an avifaunal and feral mammal survey conducted by Mr. Philip Bruner for the above DEIS. Specifically, you suggest that Mr. Bruner's methodology is flawed because he failed to assess the presence/absence of the Hawaiian hoary bat (*Lasirius cinerus semotus*), a listed endangered species, at the proposed project site. The inference we draw from your comment is that the construction of a golf course at Queen's Beach would deprive the bat of foraging habitat, similar to habitat where you have observed other bats on the Big Island. You further suggest that a survey be conducted between the months of August and December using appropriate field equipment designed to detect the Hawaiian hoary bat.

Mr. Bruner has had an opportunity to review your comments and does not believe that such a survey would significantly contribute to the analysis of the overall impacts of the proposed golf course for the following reasons:

1. The construction of a golf course will not necessarily decrease available foraging habitat for the Hawaiian hoary bat at Queen's Beach. Since these mammals feed on flying insects, it is reasonable to assume that there would be as many flying insects present in the area after the construction of the golf course as there are today.

2. Arguments suggesting that the presence of the bats are inhibited in urban environments are flawed, because the bat has been sighted in urban areas, particularly in the vicinity of lights that attract large numbers of insects. Further, the construction of a golf course at Queen's Beach would leave the site in open space.

3. Resting habitat would not necessarily be reduced if a majority of the large trees found at the site are retained, as is presently planned.

Helber Hastert & Fee | 733 Bishop Street, Suite 2590 | Telephone 808 545-2055
Governor Center, Makai Tower | Honolulu, Hawaii 96813 | Facsimile 808 545-2050

4. Actual numbers of sightings on Oahu have been low compared to sightings on other islands (primarily Kauai and the Big Island). This suggests the actual numbers of bats residing on Oahu is smaller than these other islands. These variances in population distribution cannot be attributed solely to the different characteristics of urban development on respective islands.

5. It is probable that the results of a survey conducted specifically for the Hawaiian hoary bat, over a number of consecutive nights would be inconclusive. That is, there could be no sightings, but does that obviate the possible presence of individual bats at the site or in the region? The answer to this question is, of course, no

Mr. Bruner accurately acknowledges the possible presence of the Hawaiian hoary bat in the area. We hope to clarify by this letter, that impacts to the species as a result of the proposed golf course are negligible. He has rightfully acknowledged the possible presence of the bat in the region, but also does not anticipate negative impacts to the bat as a result of the proposed golf course.

If you have any further questions concerning this project, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Jan Sullivan, DLU
Robert Burke, KACC

96-08268 F

'96 NOV 22 PM 12 25

DEPT OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

Patrick Onishi
City and County of Honolulu
Department of Land Utilization
Director
650 S. King St. 7th Floor
Honolulu, Hi. 96813

November 21 1996
Kimo Sutton
1442 Laamia St.
Honolulu, Hi. 96821

Dear Mr. Onishi,

I am writing you in response to the draft EIS for Queen's Beach. I suggest you reject this poor attempt at a part truthful document. I will ask the Mayor to direct you not to accept this information, and find your own assessment of the project's impacts.

Warner Kimo Sutton
Vice-Chair N.B.#2

Helber Hastert
Planners

October 1, 1997

Mr. Warner Kimo Sutton
1442 Laamia Street
Honolulu, HI 96821

Dear Mr. Sutton:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 21, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

We note that you were displeased with the submitted DEIS, but did not offer any specific comments on the document Therefore, we are unale to address them at this time.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Grosvenor Center, Mauka Tower

733 Bishop Street, Suite 2290
Honolulu, Hawaii 96813

Telephone 808 545 2055
Facsimile 808 545 2050

96-01330

BENJAMIN J CAYETANO
GOVERNOR OF HAWAII

MICHAEL D WILSON
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY
GILBERT S COLOMA-AGARAN

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT
WATER RESOURCE MANAGEMENT

'96 NOV 21 AM 8 38 STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DEPT OF LAND UTILIZATION P.O. BOX 621
CITY & COUNTY OF HONOLULU HONOLULU, HAWAII 96809

November 18, 1996

Ref:CCQBGC39.11R
LD-NAV

Honorable Patrick T. Onishi, Director
Director of Land Utilization
City and County of Honolulu
Honolulu Municipal Building
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Onishi:

SUBJECT: Draft Environmental Impact Statement Preparation Notice
Applicant: Kaiser Aluminum and Chemical
Project: Queens Beach Golf Course, East Honolulu, Oahu, Hawaii Tax Map Key: 3-9-11: 3, por. 2.

Thank you for allowing us the opportunity to review and comment on the subject matter. We have the following comments.

1. **Division of State Parks:**

   a) As indicated in the subject DEIS this project includes a portion of the land being proposed for Ka Iwi State Park in an April, 1996 master plan and approved EIS.

   b) Our main concern with the subject document is that the existing traffic/parking concerns related to the U. S. Coast Guard Access Road and Makapuu Lookout are not addressed and if the existing golf course plan was implemented the solutions to this problem proposed in the State Park plan would not be feasible.

   c) The existing State Park problem is that there is no off road parking for the significant numbers of visitors now hiking on the U. S. Coast Guard Access Road. The intersection of the access road to Kalanianaole Highway is also poor and needs to be relocated further north where the adjoining land is level with the highway. The parking area at Makapuu Lookout is also inadequate both in size and access to the highway.

   d) We strongly recommend that the northern end of the golf course be redesigned. This could eliminate the public access road through the golf course and allow sufficient space for off street parking for park users from a safe entrance to Kalanianaole highway.

   e) Much of the shoreline buffer between the golf course and shoreline itself is very narrow. Additional space would allow a landscape buffer between the golf course and the public area, as well as, space for picnicking or rest areas with ocean views.

   f) The need for a siltation basin in the drainage channel should be addressed.

2. **Land Division, Planning and Technical Services:**

   a) The project may cause adverse environmental impacts to nearshore marine environment. To control Non-point sources of pollution, the Draft Environmental Impact Statement should disclose and discuss a detailed **Best Management Practices Plan (BMP)** for construction, operation and long-term maintenance of the project.

   b) Golf courses are not an allowed use within the Conservation District. The golf course layout design should not include areas zoned Conservation.

3. **Land Division, Oahu District Land Office:**

   a) Hawaii Kai is still a developing area with limited water sources. The project impact on other utilities appears to be minimal at this time. However, we are concerned as to how the proposed golf course will contribute to the Hawaii-Kai communities such as Kalama Valley and the ongoing Kamehame Ridge Subdivision as to offering their facilities to the public for community and educational purposes and activities.

4. **Division of Aquatic Resources:**

Mitigation measures have been proposed by the applicant for the extensive golf course development that would prevent or minimize most impacts adverse to aquatic resources values and coastal resources. However, the mitigation measures described by the applicant (Ordinance No. 96-34 on p. 1-11) and the comprehensive monitoring plan as recommended by the applicant's consultant in Appendix C, 10.4, should be made mandatory conditions for the permit approval.

5. **State Historic Preservation Division:**

a) We concur with the recommendation in the DEIS that a historic sites inventory survey be conducted prior to the commencement of any construction activity.

b) The provisional significance determinations provided in the archaeological assessment included as Appendix H of the DEIS cannot be reviewed until more final proposals are offered in the inventory report. We look forward to reviewing the inventory survey report and will offer comments on the significance of sites and proposed mitigation at that time.

The Department of Land and Natural Resources has no other comments to offer on the subject matter at this time.

Should you have any questions, please feel free to contact Nick Vaccaro at 587-0438.

Aloha,

MICHAEL D. WILSON
Chairperson

C: Michael H. Nekoba
Colbert M. Matsumoto
Oahu District Land Office

Heller Hastert
Planners

October 1, 1997

Mr. Michael D. Wilson, Chairperson
Board of Land and Natural Resources
State of Hawaii Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Wilson:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 18, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to your comments, by the appropriate division of your department, in the order the comments appear in your letter.

Division of State Parks

Coast Guard Access Road/Parking. The Division of State Parks suggests that the layout of the northern portion of the golf course be redesigned to accommodate a new access road/parking layout similar to that proposed in the Ka Iwi Park Master Plan. The access road layout and parking areas identified as the recommended plan in the Ka Iwi Park Master Plan would displace the 11th and 12th holes. There would not be sufficient area south of the relocated roadway to accommodate these two holes. Therefore, you are correct when you assert that the parking/access solution proposed as part of the park would not be feasible if the golf course were built. Another solution to the problem might be to improve and expand the existing parking area adjacent to the Makapu'u Lookout, and construct a connector trail from this parking area to the Coast Guard Access Road, above the proposed golf course. This parcel (about 28,000 square feet) is owned by the City and County of Honolulu, and could accommodate as many as 80 parking spaces.

Shoreline Buffer. As a result of your comment, and issues related to the preservation of the Hawaiian Cotton Plant (ma'o), we have reviewed the proposed layout of the golf course, particularly in the shoreline area around the 1st, 17th, and 18th holes. Consequently, these holes have been setback between 150 and 200 feet further from the shoreline, as will be shown on revised Figure 6 in the FEIS.

Heller Hastert & Fee | 733 Bishop Street, Suite 2590 | Telephone 808 545-2055
Grosvenor Center, Mauka Tower | Honolulu, Hawaii 96813 | Facsimile 808 545-2050

Siltation Basin. Since the publication of the DEIS, a grading and drainage report has been prepared by Sam O. Hirota, Inc. that will be summarized in Sections 4.2 and 6.4 of the FEIS. The report will also be attached to the FEIS as an appendix (Appendix N). Several features of the grading plan for the course are designed to deal with siltation considerations. First, the entire makai perimeter of the project site will be protected by an earthen berm that will prevent runoff from reaching the ocean directly. Grassed swales along the course will direct runoff to detention basins that will allow runoff to settle out suspended sediments. Weirs located along the berm will allow slow release of discharge after settlement has occurred.

Land Division, Planning and Technical Services

Best Management Practices. The FEIS will include discussion of best management practices for both construction and operational phases of the golf course, as identified in the Hirota report and summarized in Sections 4.2 and 6.4 of the FEIS.

Conservation District. We are aware that the State Conservation District is adjacent to the 6th hole, and do not intend for any portion of the course to encroach into the district.

Land Division, Oahu District Land Office

Public Use of Facilities for Community and Educational Purposes. The golf course would be open to the public for play on the course. The shoreline area would remain accessible to all users, including fishermen, surfers, hikers and others, via two trails at either end of the property. Shoreline areas are utilized by many groups for educational hikes. These opportunities would continue after construction of the golf course.

Division of Aquatic Resources

Conditions of Approval. We agree that the mitigation measures suggested in the DEIS (p.1-11 and Section 10.4 Appendix C) should be made mandatory conditions for the approval of the Special Management Area Use Permit. The final decision concerning permit conditions would be in the hands of the City Council, which is the approving body for the permits.

State Historic Preservation Division

An archaeological inventory has been prepared for the proposed golf course and accepted by the State Historic Preservation Officer (letter dated June 23, 1997; LOG NO: 19574; DOC NO: 9705EJ25).

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

96-07715

BENJAMIN J. CAYETANO
GOVERNOR

1996 OCT 30 AM 8:13
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

HERMAN M. AIZAWA, Ph.D.
SUPERINTENDENT

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

OFFICE OF THE SUPERINTENDENT

October 25, 1996

Ms. Ardis Shaw-Kim
Department of Land Utilization
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Ms. Shaw-Kim:

SUBJECT: Draft Environmental Impact Statement (DEIS)
Queen's Beach Golf Course

The Department of Education has reviewed the subject draft environmental impact statement and we have no comment on the proposed golf course at Queen's Beach.

Thank you for the opportunity to respond.

Sincerely,

Herman M. Aizawa, Ph.D.
Superintendent

HMA:hy

cc: A. Suga, OBS
J. Sosa, HDO

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

Helber Hastert
Homes

October 1, 1997

Mr. Herman Aizawa, Ph.D.
Superintendent
State of Hawaii
Department of Education
P.O. Box 2360
Honolulu, HI 96804

Dear Mr. Aizawa:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated October 25, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared

We note that you have reviewed the DEIS and have no comments

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Grosvenor Center, Mauka Tower

733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813

Telephone: (808) 545-2055
Facsimile: (808) 545-2050

96-07790

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

JEREMY HARRIS
MAYOR

DONA L. HANAIKE
DIRECTOR

ALVIN K.C. AU
DEPUTY DIRECTOR

96 OCT 30 PM 1:13

October 25, 1996

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: DONA L. HANAIKE, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR THE QUEEN'S BEACH GOLF COURSE
TAX MAP KEY 3-9-011:003 AND 3-9-011:002 (POR.)

Thank you for the opportunity to review the DEIS for the proposed Queen's Beach Golf Course project.

Based upon the information presented in the DEIS, we have determined that the proposed project will have no significant adverse impact on the City's recreational resources.

Should you have any questions or comments, please contact Terry Hildebrand of our Advance Planning Branch at extension 4246.

DONA L. HANAIKE
Director

DLH:ei

Helber Hastert
Planners

October 1, 1997

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

Dear Mr. D'Araujo:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for the letter dated October 25, 1996 on the above draft environmental impact statement (DEIS). The letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

We note that based on the information presented in the DEIS, the Department has determined that the proposed project will have no significant adverse impact on the City's recreational resources.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545 2055
Facsimile: 808 545 2050

96-0/329

HONOLULU PUBLIC TRANSIT AUTHORITY
CITY AND COUNTY OF HONOLULU
PACIFIC PARK PLAZA, SUITE 275
711 KAPIOLANI BOULEVARD • HONOLULU, HAWAII 96813
PHONE (808) 527-6850 • FAX: (808) 596-2380

JEREMY HARRIS
MAYOR

October 7, 1996

BOARD OF DIRECTORS
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1996 OCT -9 PM 2:04
DEPT. OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

MEMORANDUM

TO: PATRICK ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

ATTN: ARDIS SHAW-KIM

FROM: HOWARD K. TAKARA, ACTING EXECUTIVE DIRECTOR
HONOLULU PUBLIC TRANSIT AUTHORITY

SUBJECT: QUEEN'S BEACH GOLF COURSE DEIS

We have reviewed the Draft Environmental Impact Statement (DEIS) for the Queen's Beach Golf Course Project and have no comments at this time.

HOWARD K. TAKARA

Helber Hastert
Planners

October 1, 1997

Mr. Howard Takara, Executive Director
Honolulu Public Transit Authority
City and County of Honolulu
Pacific Park Plaza, Suite 275
711 Kapiolani Blvd.
Honolulu, HI 96813

Dear Mr. Takara:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated October 7, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

We note that you have no comments on the DEIS at this time.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: (808) 545-2055
Facsimile: (808) 545-2050

FROM : PACIFIC ATELIER Int'l PHONE NO. : 4808 533 3677 Nov. 20 1996 01:34PM P02

'96 NOV 20 PM 4 18

DEPT OF LAND UTILIZATION
CITY & COUNTY OF HONOLULU

SCENIC HAWAII, INC.

P.O. Box 10100 • Honolulu, Hawaii 96816

November 15, 1996

via facsimile

Mrs. Ardis Shaw-Kim
Department of Land Utilization
650 South King Street, Seventh Floor
Honolulu, Hawaii 96813

Dear Mrs. Shaw-Kim:

It is the position of Scenic Hawai'i that if the development takes place as proposed on the south (makai) side of Kalanianaole Highway as proposed in the September, 1996 Draft Environmental Impact Statement (DEIS) for the Queen's Beach Golf Course, that all alterations to the existing landscape be designed to keep the visual impact on views from approaching traffic to a minimum. We also want to stress that the wild and pristine nature of the environment of the area is a very rare and valuable scenic resource on this increasingly urbanized island. The preservation of this resource is vital to the health of our visitor industry as well as the quality of life for Oahu's permanent residents.

Scenic Hawai'i would like to comment on specific items in the DEIS proposal to clarify our position:

1. While it appears that the elevation of the proposed clubhouse is lower than that of Kalanianaole Highway, its location in line of the straight downhill run of the highway from the Makapuu Lookout places it in plain view during the entire decent when traveling towards Sandy Beach. Relocating it off this access would minimize its exposure.

2. The manicured quality of the typical golf course landscape would contrast and adversely distract from the "wild and pristine" quality of the surrounding area. It is recommended that a sufficient buffer of indigenous, unirrigated vegetation be left between the highway and the golf course and driving range to soften the stark contrast between the existing dry and scrubby terrain and the lush, irrigated landscaping.

3. Because of the very windy conditions throughout the development area, we question the viability of a golf course operation. However, we would like to suggest using plants characterstic of the area (i.e. kiawe, ilima, naupaka etc.) whenever possible in the landscape design to further preserve the area's unique scenic quality.

In summary, Scenic Hawai'i would prefer that the existing magnificont views of mountains and ocean in this area be preserved to the fullest extent possible.

Sincerely,

Elizabeth F Crocker

Mrs. Betty Crocker
President

Mr. Dean M. Shibuya
1st Vice President

Helber Hastert
Planners

October 1, 1997

Mrs. Betty Crocker, President
Mr. Dean Shibuya, 1st Vice President
Scenic Hawaii, Inc.
P.O. Box 10100
Honolulu, HI 96816

Dear Mrs. Crocker and Mr. Shibuya:

Draft Environmental Impact Statement
Queen's Bench Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated November 15, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to your comments in the order they appear in your letter.

1. ***Alternate clubhouse location.*** The FEIS includes a new location for the clubhouse, shifting the building approximately 200 feet to the north, in an attempt to move as much of the building face out of the line of sight when travelling south, away from the Makapu'u Lookout. As can be seen in the FEIS, the results indicate that a significant portion of the building has been moved out of the line of sight of motorists. In addition, the use of landscape treatment further reduces the visibility of the building.

2. ***Landscape buffer along Kalanianaole Highway.*** We do not wish to engage in a discussion related to the merits of using the term "pristine" when describing the project site. However, as we explain in the DEIS, the appearance of the project site has been altered many times since the late 19th century. Despite the intrusion and influence of human activities, Queen's Beach and Kealakipapa Valley remain in open space, dominated by scrub vegetation. The construction of the golf course will leave the project site primarily in open space. You suggest that a typical golf course has a manicured appearance. We cannot argue that the overall appearance of the property will change. With the preservation of as many existing trees as possible, the planting of indigenous species, and keeping the width of fairways to a minimum, we believe we can mitigate the change in appearance. We also would retain the existing vegetative buffer which exists alongside a significant extent of the highway, and extend this buffer to areas not presently covered.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545-2055
Facsimile: 808 545-2050

3. ***Landscape materials.*** As discussed above, we believe it is important to use as many plants as landscape material for the golf course that are characteristic of the area. This would reduce irrigation requirements, and save on maintenance costs, because these plants would tend to be healthier in their "normal" environment. Such a plan is heartily endorsed by the botanical consultant retained to survey the project site.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

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

IN REPLY REFER TO
5090P.1
Ser N42(23)/ 6495
02 Dec 96

Ms. Ardis Shaw-Kim
Department of Land Utilization
City and County of Honolulu
Honolulu Municipal Building
650 South King Street, Seventh Floor
Honolulu, HI 96813

RECEIVED
DEC - 4 1996
HELBER HASTERT & FEE PLANNERS

Dear Ms. Shaw-Kim:

Subj: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS), QUEEN'S BEACH

Thank you for the opportunity to review the DEIS for the Queen's Beach Golf Course of September 1996.

The Navy has no comment to offer at this time and appreciates the opportunity to participate in your review process.

The Navy's point of contact is Mr. Stanford Yuen at 474-0439.

Sincerely,

Stanford B.C. Yuen, P.E.
By direction

Copy to:
Mr. Scott Ezer
Helber Hastert & Fee, Planners
733 Bishop Street, Suite 2590
Honolulu, HI 96813

Helber Hastert
Planners

October 1, 1997

Mr. Stanford B.C. Yuen, P.E.
Department of the Navy
Commander
Naval Base Pearl Harbor
Box 110
Pearl Harbor, HI 96860-5020

Dear Mr. Yuen:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated December 2, 1996 on the above draft environmental impact statement (DEIS) Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

We note that you have reviewed the DEIS and have no comments.

If you have any further questions, please call me at 545-2055.

Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization

Helber Hastert & Fee
Grosvenor Center, Makai Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545-2055
Facsimile: 808 545-2050

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

COPY

RECEIVED
DEC 12 1996

December 10, 1996

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

ATTN: ARDIS SHAW-KIM

FROM: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT, CHAPTER 25, ROH, FOR THE PROPOSED QUEEN'S BEACH GOLF COURSE PROJECT, EAST HONOLULU, TMK: 3-9-11: PORTION 02, 03

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement (DEIS) for the proposed golf course project.

Our previous comments of May 10, 1996, on the Environmental Impact Statement Preparation Notice are still applicable and included in Chapter 12 of the DEIS. In addition, we have the following comments to offer:

1. The consultant should verify whether the sewage effluent has chlorine or chloride concentrations of approximately 2,000 milligrams per liter (mg/l) as indicated in Table II on page 6-7.

2. The DEIS indicates that the chloride concentration of the treated sewage effluent will likely require lowering from 2,000 mg/l to 800 mg/l as stated on page 6-8 to accommodate the bermuda grass. At these concentrations, the blending ratio of lower chloride water to treated sewage effluent is not 50/50 and requires reevaluation.

3. The document should address alternatives to blending potable water with reclaimed sewage effluent for irrigation purposes that we had indicated in our previous comments. Reclaimed sewage effluent should be the primary nonpotable source for the golf course irrigation. A full discussion should be included describing on-site desalination systems and off-site sewage system improvements to minimize salt water inflow to the sewage system. Potable water from our system will not be available for irrigation of the golf course. To lower the chloride the developer should consider desalinating the sewage effluent.

4. Our previous comment on the inadequacy of the off-site water system to provide fire protection was not incorporated in the DEIS. The developer is required to install a fire hydrant and submit construction drawings for the installation for our review and approval. On page 6-6, the adequacy of the fire flow at the Hawaii Kai Town Center does not apply to the fire protection requirements for the golf course.

If you have any questions, please contact Barry Usagawa at 527-5235.

cc: Kaiser Aluminum and Chemical Corporation
Helber Hastert and Fee, Planners
Office of Environmental Quality Control

Helber Hastert
Planners

October 1, 1997

Mr. Raymond H. Sato
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96813

Dear Mr. Sato:

Draft Environmental Impact Statement
Queen's Beach Golf Course
Queen's Beach, O'ahu, Hawai'i

Thank you for your letter dated December 10, 1996 on the above draft environmental impact statement (DEIS). Your letter and this response will be included in the final environmental impact statement (FEIS) being prepared.

For your ease of reference we will respond to your comments in the order they appear in your letter.

1. *Chloride vs. Chlorine.* The FEIS will be amended to correctly reference chloride.

2. *Blending ratio.* We have determined that the actual chloride content of the reclaimed water varies between about 1,550 mg/l and 2,000 mg/l. The DEIS incorrectly suggests that about 30,000 gallons per day (gpd) of potable water would be needed to blend with the reclaimed water to obtain irrigation water of sufficient quality to use on bermuda grass. Instead, the 30,000 gpd represents the total irrigation required for the greens, which translates into a requirement of about 15,000 gpd to blend, assuming a blending ratio of 50/50. If the blending ratio increases to 60/40, an additional 3,000 gpd would be required to dilute the salinity of the reclaimed water. Therefore, the incremental impacts of adjusting the blending ratio are not significant. Section 6.2 of the FEIS will be amended to reflect this correction.

3. *Potable water blending alternatives.* The FEIS will include a discussion of on-site desalination systems to obtain the necessary water quality to use on the greens. The assumption will be that the reclaimed water will provide the source for desalination. As a result, reclaimed water will continue to be the primary source for golf course irrigation. It is not practical to include a complete discussion of off-site sewage system improvements that would reduce the chloride content of the reclaimed water.

Helber Hastert & Fee
Grosvenor Center, Mauka Tower
733 Bishop Street, Suite 2590
Honolulu, Hawaii 96813
Telephone: 808 545 2055
Facsimile: 808 545 2050

It is most probable that the high chloride content is due to the intrusion of sea water in those portions of the wastewater transmission system close to the shoreline. Some of these transmission lines are near 30+ years old and are cracked, allowing sea water intrusion. It is not economically practical for the applicant to assume responsibility for fixing this system.

4. *Fire protection*. We note your comment that the developer would be required to install a fire hydrant and submit construction drawings for the review and approval of the Board of Water Supply. We believe this requirement can be attached as a condition of approval to the Special Management Area Use Permit.

If you have any further questions, please call me at 545-2055.

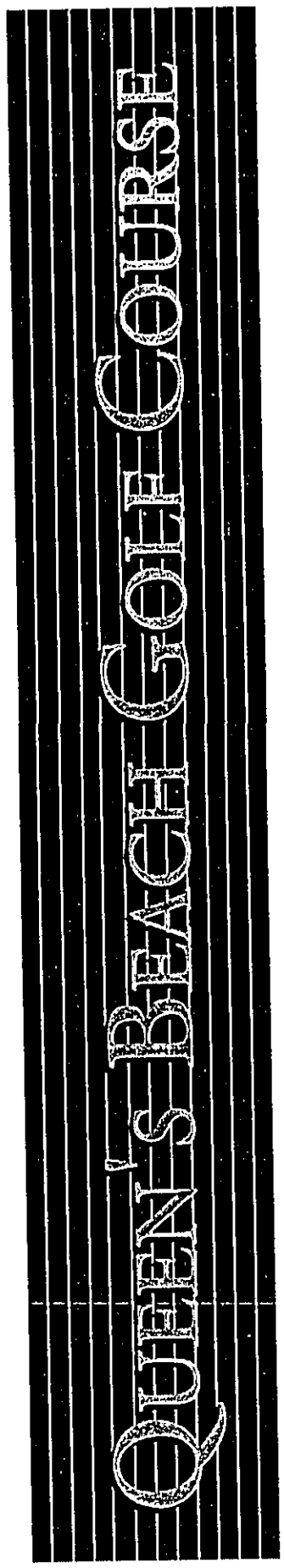
Sincerely,

HELBER HASTERT & FEE, Planners

Scott Ezer

Scott Ezer
Senior Associate

cc: Robert Burke, Kaiser Aluminum and Chemical Corporation
Jan Sullivan, Department of Land Utilization



Chapter
14

Community Organizations Contacted

CHAPTER 14
COMMUNITY ORGANIZATIONS CONTACTED

As of the publication of the EIS, the following list of community groups have received presentations that have included information about the proposed golf course at Queen's Beach.

Hawaii Kai Rotary Club
Hawaii Kai Neighborhood Board
Kuliouou-Kalani-Iki Neighborhood Board
Waimanalo Neighborhood Board
Maunalua Triangle-Koko Kai Community Association
Mariner's Cove Association
Hawaii Kai Marina Association
Palolo Community Council
Spinnaker Isle Homeowners Association
Waialae-Kahala Neighborhood Board
Queen's Gate Community Association
Laulima Community Association
McCully/Moiliili Neighborhood Board
Waipahu Cosmopolitan Association
East Honolulu Rotary
Mariner's Ridge Homeowner & Maintenance Associations
Whitmore Village Senior Club
Makiki Neighborhood Board
Liliha/Kapalama Neighborhood Board
Kaimuki Neighborhood Board
Ala Moana/Kakaako Neighborhood Board
Koolauloa Neighborhood Board
Kane`ohe Neighborhood Board
Waipahu Neighborhood Board
Wahiawa Neighborhood Board
Kalihi/Palama Neighborhood Board