Makaha Beach
Park Master Plan

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 10TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 527-6343 • FAX: (808) 523-4054

JEREMY HARRIS
MAYOR

WILLIAM D. BALFOUR, JR.
ACTING DIRECTOR

MICHAEL T. AMII
DEPUTY DIRECTOR

August 26, 1997

Mr. Gary Gill, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

RECEIVED
'97 AUG 26 P4:06
OFC. OF ENVIRONMENTAL QUALITY CONTROL

Dear Mr. Gill:

Subject: Negative Declaration for Makaha Beach Park
Master Plan - Makaha, Oahu, Hawaii
Tax Map Keys 8-4-01:12 and 8-4-02: Por. 47

The City and County of Honolulu, Department of Parks and Recreation, has reviewed the comments received during the 30-day public comment period which began on July 8, 1997. The department has determined that this project will not have significant environmental effect and has issued a negative declaration. Please publish this notice in the September 8, 1997 Environmental Notice.

Enclosed is a completed OEQC Bulletin Publication Form and four copies of the final environmental assessment.

Please have your staff contact Mr. Daniel Takamatsu, Chief of our Facilities Development Division, at 527-6301 if you need further information.

Sincerely,

WILLIAM D. BALFOUR, JR.
Acting Director

WDB:ei

Enclosures

90

1997-09-08-OA-FEA-Makaha Beach Park Master Plan

MAKAHA BEACH PARK
MASTER PLAN
FINAL ENVIRONMENTAL ASSESSMENT

Prepared
for

Department of Parks & Recreation
City & County of Honolulu

By

Pacific Architects, Inc.
2020 S. King Street
Honolulu, HI 96826

August 1997

INTRODUCTION

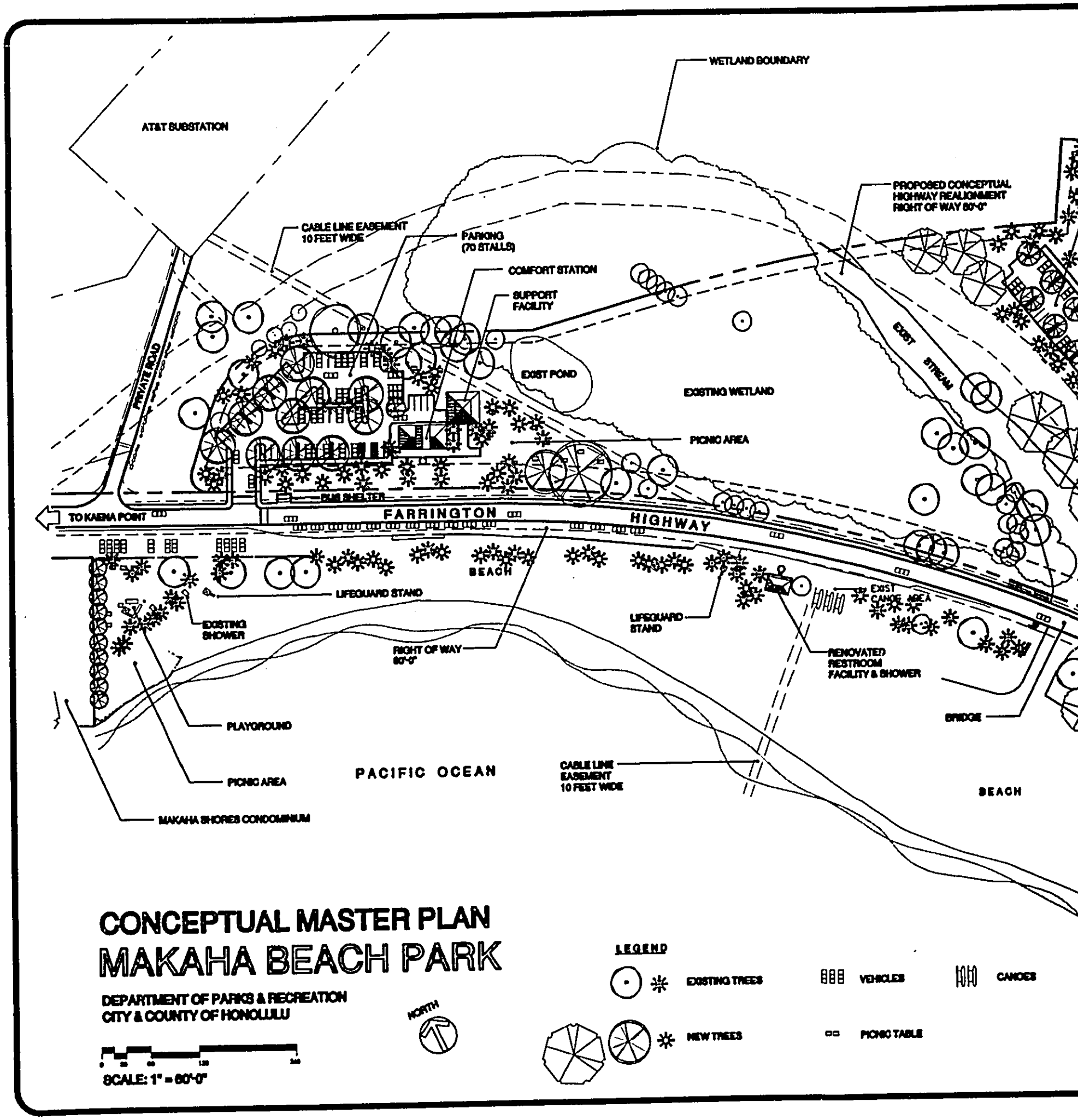
This Final Environmental Assessment documents the anticipated impacts of the proposed master plan at Makaha Beach Park (Figure 1). It is the intent of the City & County of Honolulu Department of Parks and Recreation to propose a master plan for the future development of Makaha Beach Park.

The master plan will provide new comfort stations, parking lots, multi-purpose fields and landscaped picnic areas. The proposed comfort stations are being designed to supplement the existing restroom facility. Additional parking will be provided to alleviate the congestion that occurs during the peak surfing season.

A Draft Detailed Project Report and Environmental Impact Statement was prepared by the US Army Corps of Engineers in November 1985 for the protection of Farrington Highway. The report presented four proposals to preserve the existing shoreline at Makaha Beach Park. The preferred proposal was to realign the existing Farrington Highway towards the mauka side of the proposed project site. This will increase recreational use, expand the beach, provide additional parking, eliminate highway repairs due to the beach erosion and storm waves and insure access in and out of the west end of the island of Oahu.

Based on this recommendation a conceptual study was done with an inland realigned highway to show how it might affect the park (Figure 5). From the conceptual study, the master plan was developed. Should the highway be realigned inland in the future, the current proposed facilities will be minimally be affected. A conceptual highway realignment is indicated on the master plan.

The proposed master plan is not anticipated to generate any significant adverse impacts on the environment. The purpose of this plan is to expand and enhance recreational opportunities at this world renown surfing beach park.



CONCEPTUAL MASTER PLAN
MAKAHA BEACH PARK

DEPARTMENT OF PARKS & RECREATION
CITY & COUNTY OF HONOLULU

SCALE: 1" = 60'-0"

NORTH

LEGEND

EXISTING TREES

NEW TREES

VEHICLES

PICNIC TABLE

CANOES

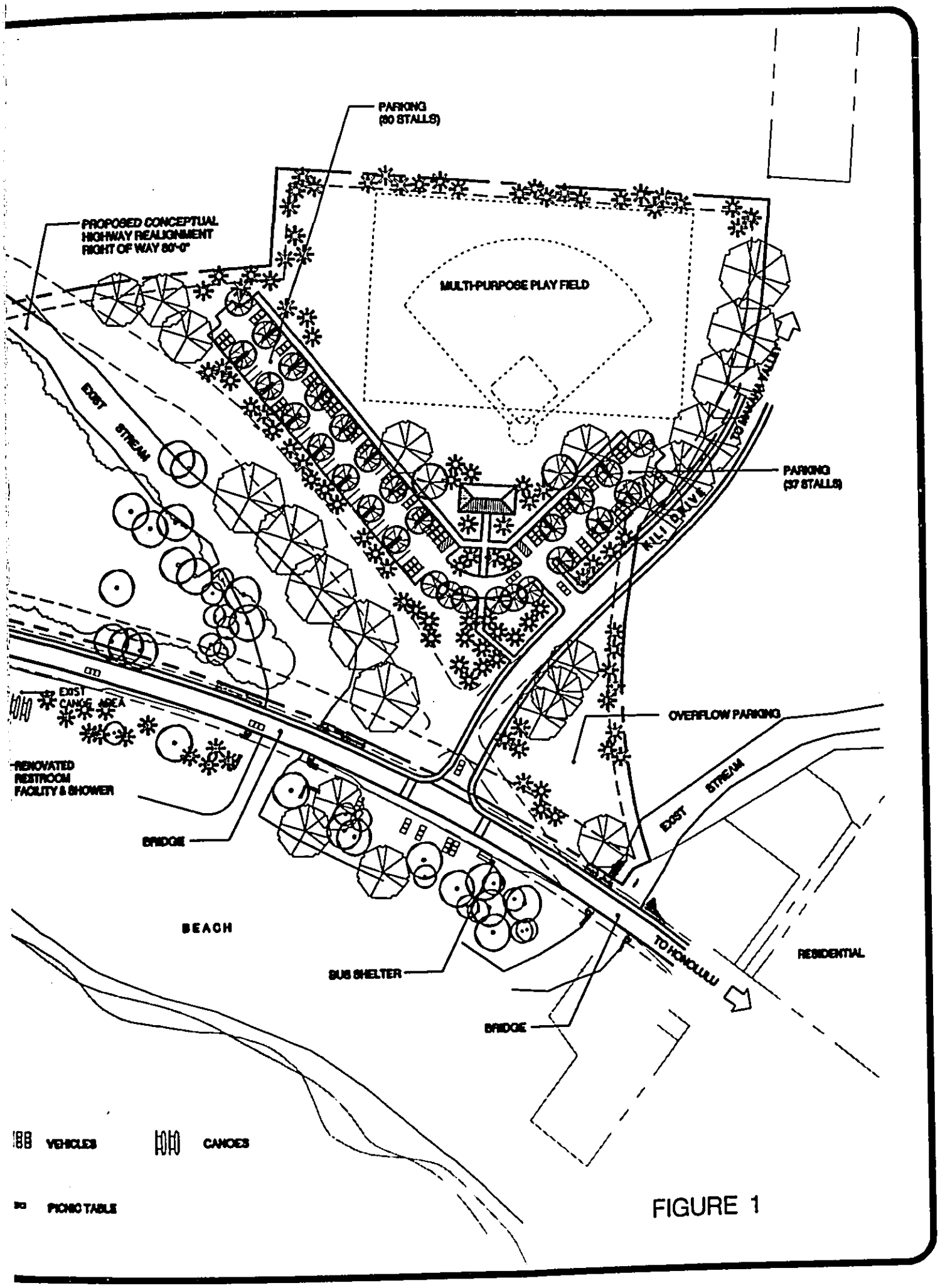

PARKING
(60 STALLS)
PROPOSED CONCEPTUAL
HIGHWAY REALIGNMENT
RIGHT OF WAY 80'-0"
MULTI-PURPOSE PLAY FIELD
EXIST STREAM
PARKING
(37 STALLS)
KILI DRIVE
EXIST
CANOE AREA
OVERFLOW PARKING
RENOVATED
RESTROOM
FACILITY & SHOWER
EXIST STREAM
BRIDGE
BEACH
BUS SHELTER
TO HONOLULU
RESIDENTIAL
BRIDGE
VEHICLES
CANOES
PICNIC TABLE

FIGURE 1

SUMMARY INFORMATION

Project:	Makaha Beach Park Master Plan
Proposing Agency:	Department of Parks & Recreation City & County of Honolulu
Determining Agency:	Department of Parks & Recreation City & County of Honolulu
Location:	Makaha, Oahu, Hawaii
Tax Map Key:	8-4-1: 12 & 8-4-2: 47
Land Owner:	City & County of Honolulu
Area:	Approximately 20.622 acres
State Land Use Designation:	Urban
Development Plan Area:	Waianae
Land Use Map:	Park, Agriculture, Residential
Zoning:	P-2 General Preservation, A-1 Agricultural Land
Existing Use:	Beach Park
Contact Person:	Carl Emura Department of Parks & Recreation City & County of Honolulu 650 South King Street Honolulu, Hawaii 96813 Phone: 527-6315

TABLE OF CONTENTS

LIST OF FIGURES

SECTION 1 DESCRIPTION OF THE PROPOSED ACTION

The Department of Parks and Recreation, City and County of Honolulu and the Makaha Beach Park Advisory Committee has prepared a Makaha Beach Park Master Plan, for park lands located in the ahupua'a of Makaha, Waianae District, Island of Oahu, State of Hawaii (Figure 2). Owned by the City and County of Honolulu, Makaha Beach Park is identified as tax map key 8-4-01: 12 and 8-4-02: 47 with an estimated land area of 20.622 acres. A location map is shown in Figure 3.

A. Purpose and Need

Makaha Beach is a world famous surfing beach. The beach and its waters are also used for activities such as swimming, diving, boogie boarding, body surfing, sunbathing, fishing and canoe racing.

Improvements in the past to Makaha Beach Park have been made without the guidance of a park master plan. Facilities have been built in the areas subject to wave damage and beach erosion. In the early 1960's a caretakers residence/comfort station was built along the shoreline. Since its construction, both beach park and highway facilities has sustained moderate to severe damage due to storm wave action. In 1983, strong waves eroded a 200-foot -wide by 500-foot-wide area of the park, destroying a picnic area, comfort station and Farrington Highway shoulder (Figure 4). The shoulder was repaired and a temporary comfort station was constructed to replace the former comfort station.

The State Department of Transportation and the City and County of Honolulu, Department of Parks and Recreation requested that the US Army Corps of Engineers conduct a shore protection study following this severe damage. In 1985 the US Army Corps of Engineers concluded that Farrington Highway should be realigned further inland to protect the highway from future wave damage. To protect park facilities from beach erosions and storm wave damage, the City acquired additional park properties mauka of Farrington Highway and lobbied the State to fund the relocation of the highway inland. All attempts to have the highway realignment failed.

The community has waited a long time for the temporary comfort station to be replaced with a permanent comfort station. The City has waited for Farrington Highway to be realigned before proceeding with developing a master plan for Makaha Beach Park. It is not likely that the highway will be realigned in the near future and therefore the City has proceeded to develop a master plan with the current highway alignment. It will continue its effort to lobby for the realignment of Farrington Highway further inland to protect the highway from future wave damage, improve safety for its park users and provide better park facilities for this world renown surfing beach park.

B. Planning Goals and Objectives

The Master Plan is based on the following goals and objectives derived from community input gathered at a site visit, a workshop and from comment sheets submitted to the Department of Parks and Recreation.

1. Maintain the unique character of the park while enchancing and expanding the park facilities.

   a. Keep Park in character with the Waianae Coast.
   b. Commemorate the park as a World Class Surfing Beach.
   c. Make use of native plants and trees suitable for this coastal environment.
   d. Select materials that blend in with the existing surroundings.

2. Expand and enhance recreational opportunities for both residents and visitors of all ages and abilities.

   a. Provide a range of passive and active shoreline and non shoreline activities throughout the park.
   b. Provide park facilities and site furnishings that will complement expanded recreational opportunities.
   c. Provide a venue for cultural and recreational activities such as surf meets.

3. Protect and restore some of the cultural resources within and surrounding the park.

   a. Protect Wetland and provide irrigation for new landscape.
   b. Minimize pollution from stream runoff on to the beach and into the ocean.
   c. Restore the flow of water from the mountain side to the pond.
   d. Areas disturbed by construction will be landscaped and properly maintained to keep path of stream to clear to flow.

4. Provide a park setting that is safe and accessible for all people.

   a. Provide a safe access from beach to public facilities.
   b. Site and design facilities to discourage vandalism and other illicit behaviors.
   c. Meet Federal Americans with Disabilities Act.
   d. Provide facilities to ensure the safety of the park users.
   e. Provide bus shelters at bus stops.
   f. A proposal is to secure the comfort station at night and provide lighting for security.

5. Minimize destruction by future natural causes.

   a. Design and site facilities to minimize destruction from natural causes.
   b. Comfort stations to be located on a stable area on the site.

6. Provide improvements to enhance and improve the quality of the park.

   a. Provide a comfort station out of reaches of the surf and fitting for this world class surfing beach.
   b. Provide parking for park users that is safe from traffic and vandalism.
   c. Consider the nearby neighborhood's safety and privacy when expanding and enhancing the park by minimizing conflicts between park users and adjacent condominium dwellers.
   d. Design the park amenities and facilities to be low maintenance and durable.

C. Proposed Facilities and Improvements

The intent of the master plan is to expand and enhance recreational opportunities and to locate facilities in more protected areas of the park. The master plan will serve the local and island wide communities as well as visitors to Oahu.

Improvements made to the park will include new comfort stations, parking lots, recreational facilities and landscaped picnic areas. Construction of the various facilities will be as follows:

Phase 1

The proposed facilities are being designed to provide a permanent comfort station and a paved parking lot. The new comfort station will provide a larger facility to the existing temporary restroom facility located on the beach. The new parking lot will assist in reducing the amount of vehicles parked along Farrington Highway.

The following are spaces located within the proposed comfort station for Phase 1.

1. Comfort Station
   - a. Men's Restroom
   - b. Women's Restroom
   - c. General Utility & Storage Room
   - d. Electrical Closet
   - e. Storage Room

2. Miscellaneous Items
   - a. Drinking Fountains
   - b. Outdoor Shower
   - c. Trash Enclosure
   - d. Picnic Tables

3. Parking lot with approximately 70 stalls including 3 accessible stalls

4. Renovation to existing temporary restroom facility.

Phase 2

Development of the portion of land adjacent to Kili Drive for recreational activities.

1. Multi-Purpose Play Field

2. Parking Lot with approximately 100 stalls

3. Comfort Station
   a. Men's Restroom
   b. Women's Restroom
   c. Maintenance/Utility Storage Room
   d. Electrical Closet

4. Miscellaneous Items
   a. Drinking Fountain
   b. Trash Enclosure
   c. Picnic Benches

D. Economic Characteristics

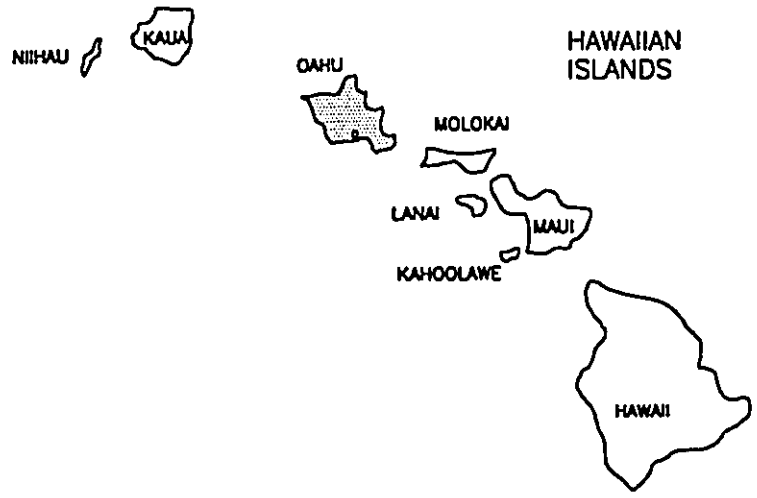
Construction for Phase 1 is approximately 4 to 6 months. Funding for this phase has been allocated. Currently funds are not available for Phase 2 or the implementation of the project. Therefore, the Phase 2 will follow when funding is available.

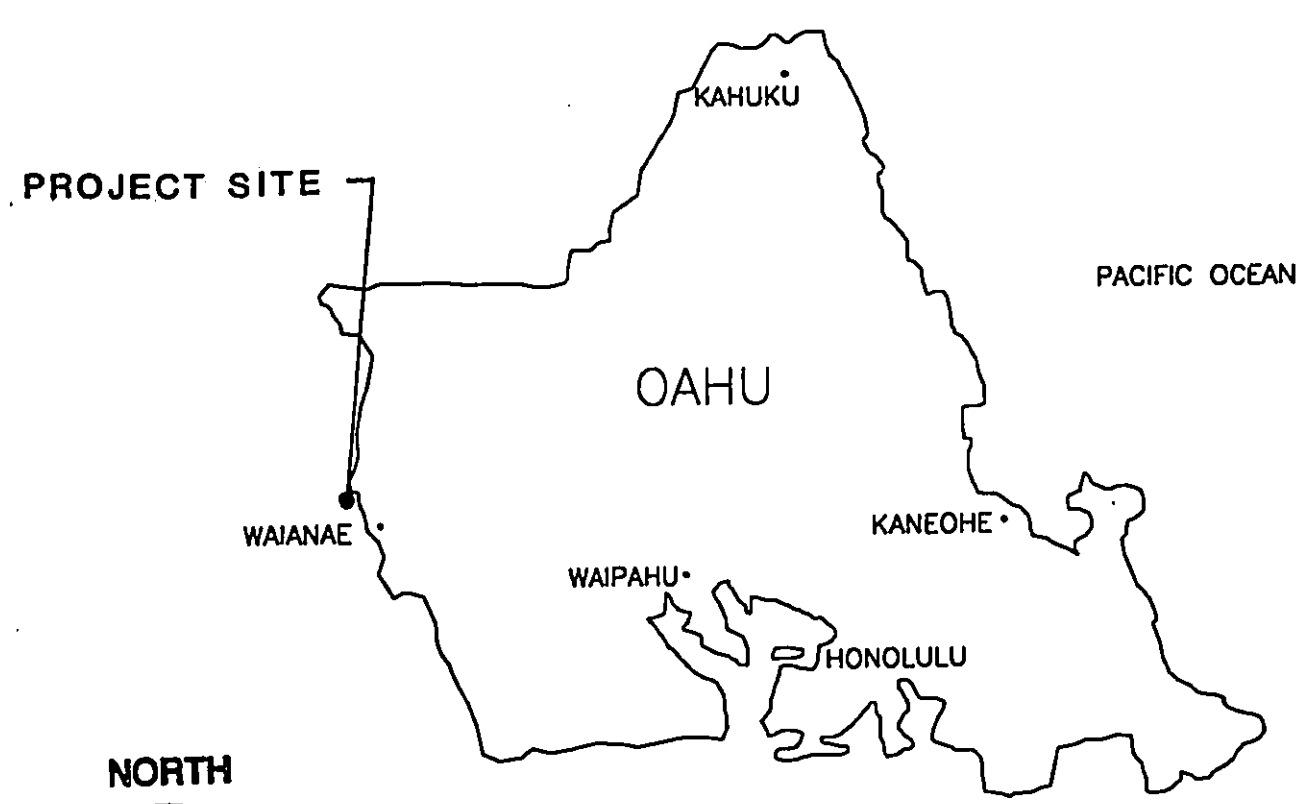
Phase 1:
New Comfort Station, Parking Lot & Renovation of Temporary Comfort Station
Approximate Construction Cost-$675,000

Phase 2:
Recreational Facilities & Parking Lot
Approximate Construction Cost-$2,135,000

Total Cost of development of Makaha Beach Park
Approximate Construction Cost-$2,810,000

Construction of the comfort station and parking lot are proposed for the initial phase of development. A timetable for implementing Phase 1 improvements has been determined for October 1997.

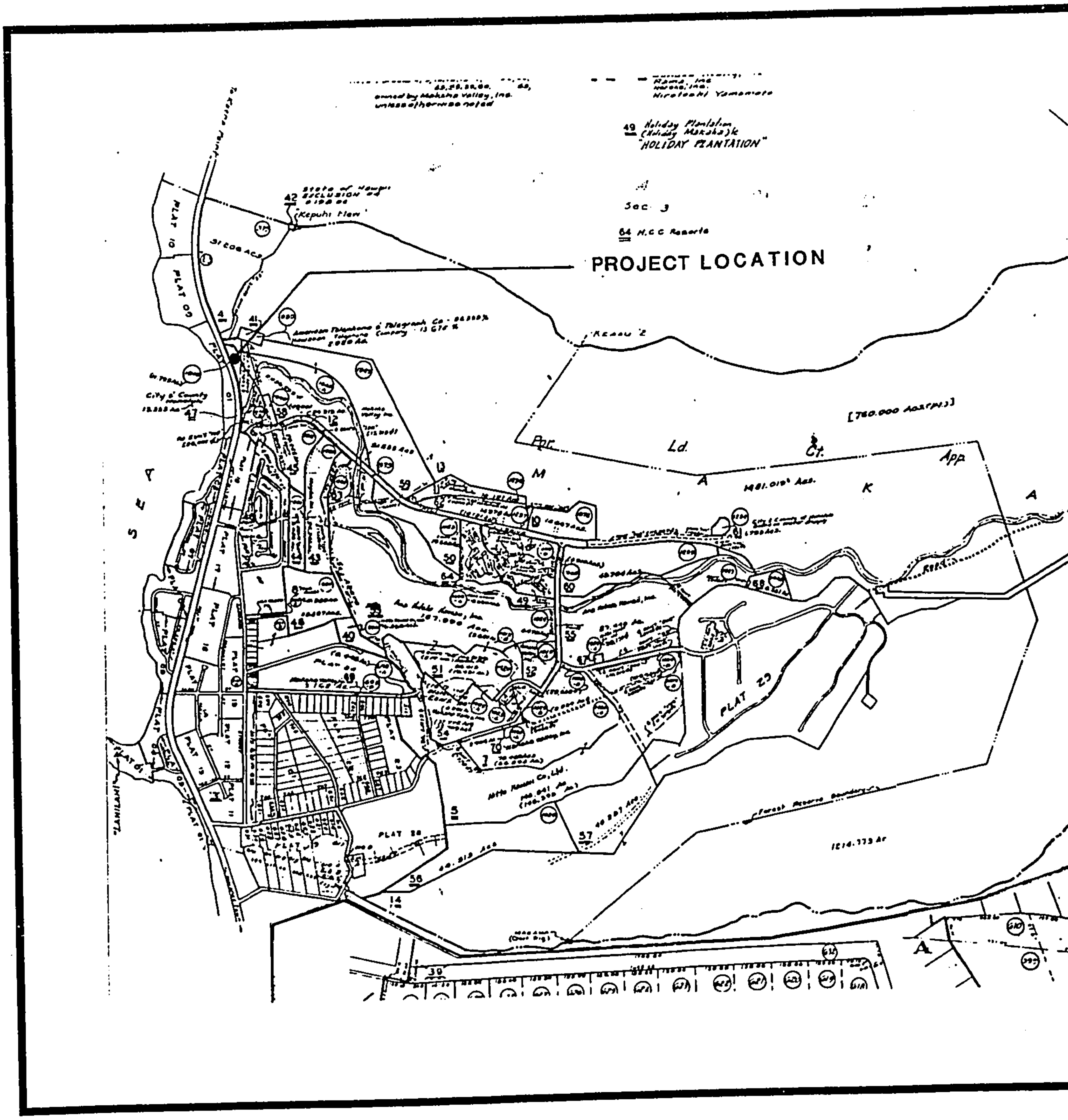


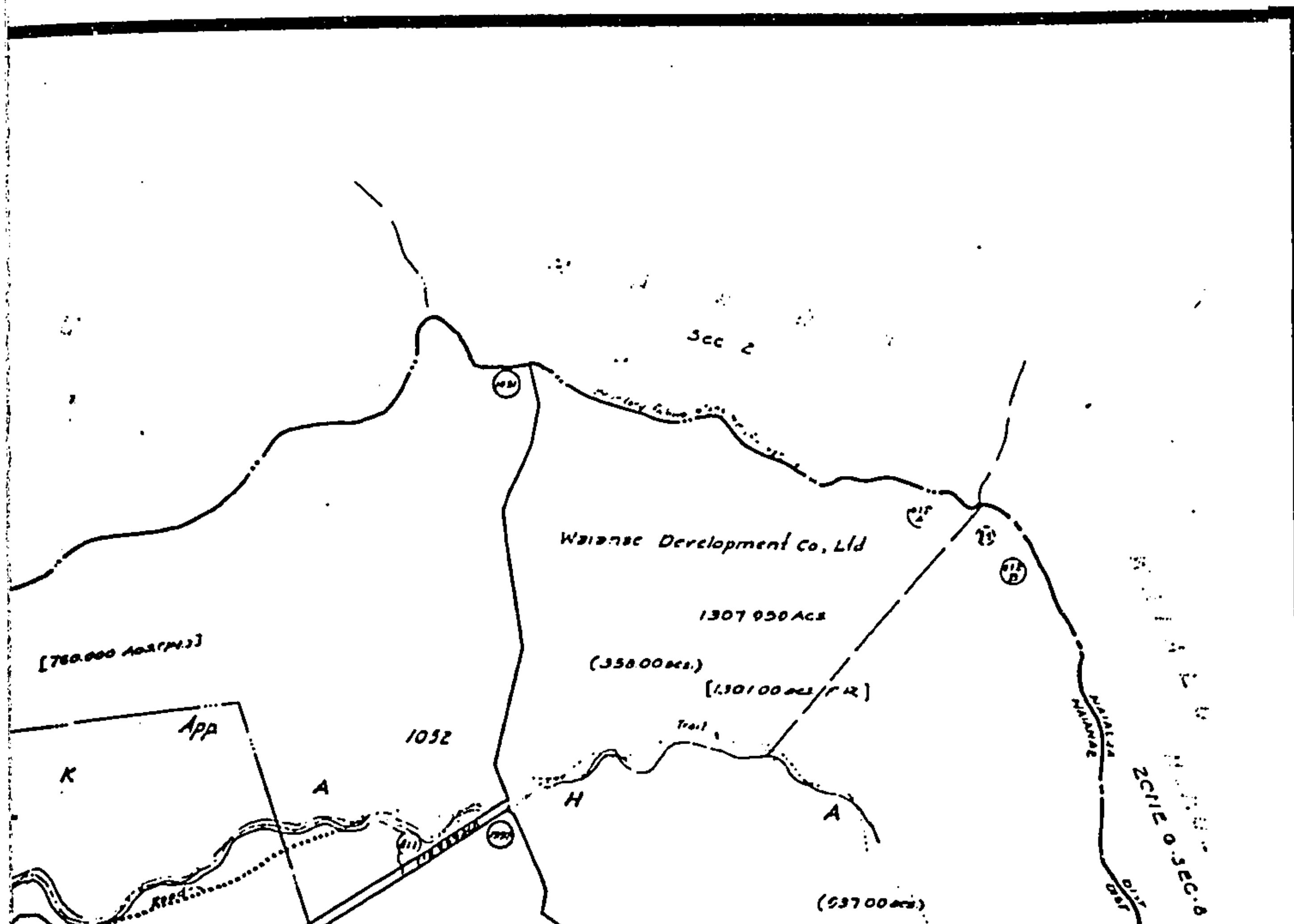


SCALE: NTS

LOCATION MAP

FIGURE 2


PROJECT LOCATION
49 Holiday Plantation
"HOLIDAY PLANTATION"
42 State of Hawaii
Kepuhi Flow
64 H.C.C Resorts
City & County
PLAT 10
PLAT 23
PLAT 26
Forest Reserve Boundary
Lanilani



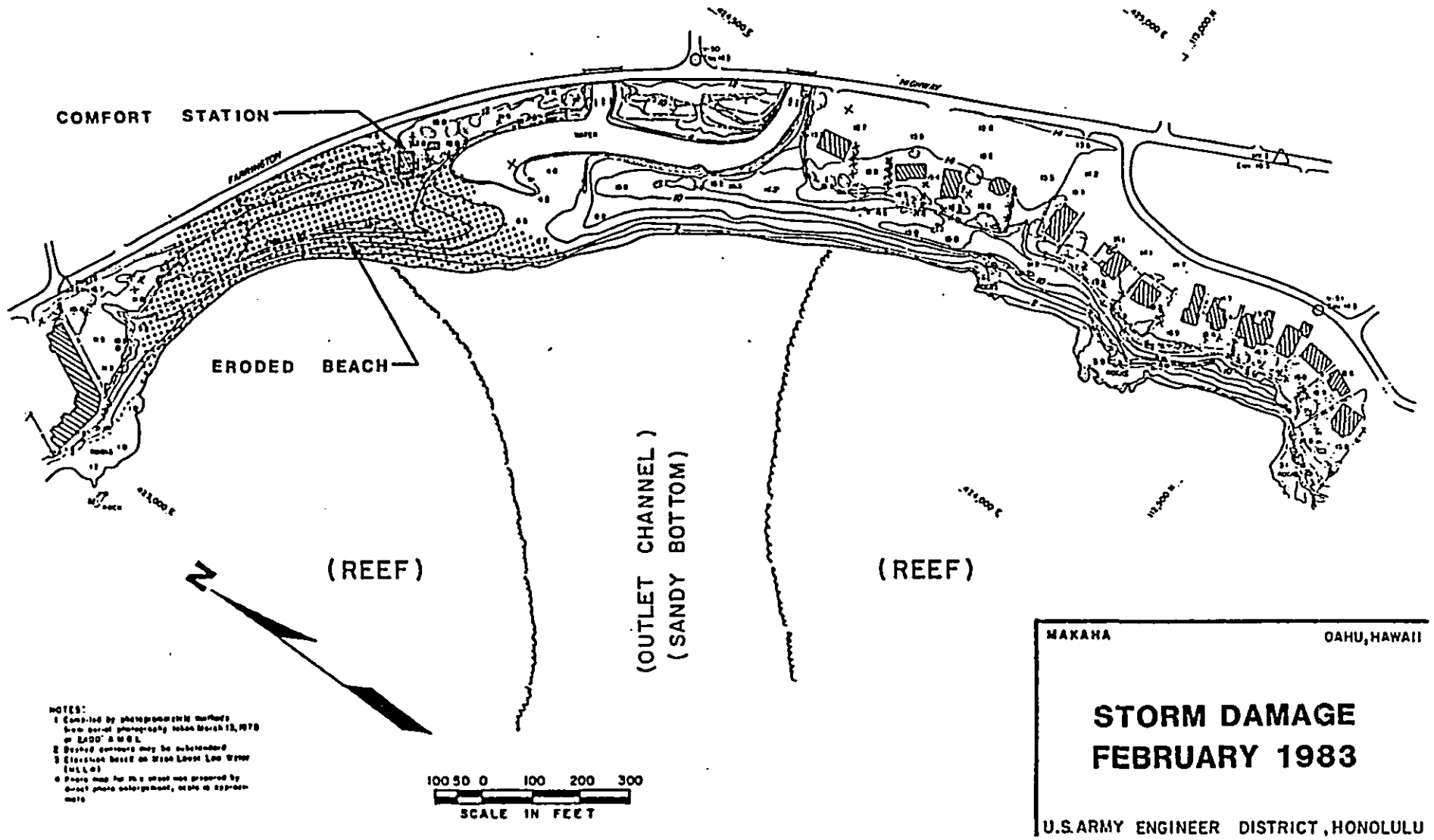
LOCATION & TMK MAP

MAKAHA BEACH PARK

TMK: 8-4-01: 12 AND 8-4-02: 45, 47 & 59

FIGURE 3

SCALE: NTS



MAKAHA OAHU, HAWAII

STORM DAMAGE
FEBRUARY 1983

U.S. ARMY ENGINEER DISTRICT, HONOLULU

FIGURE 4

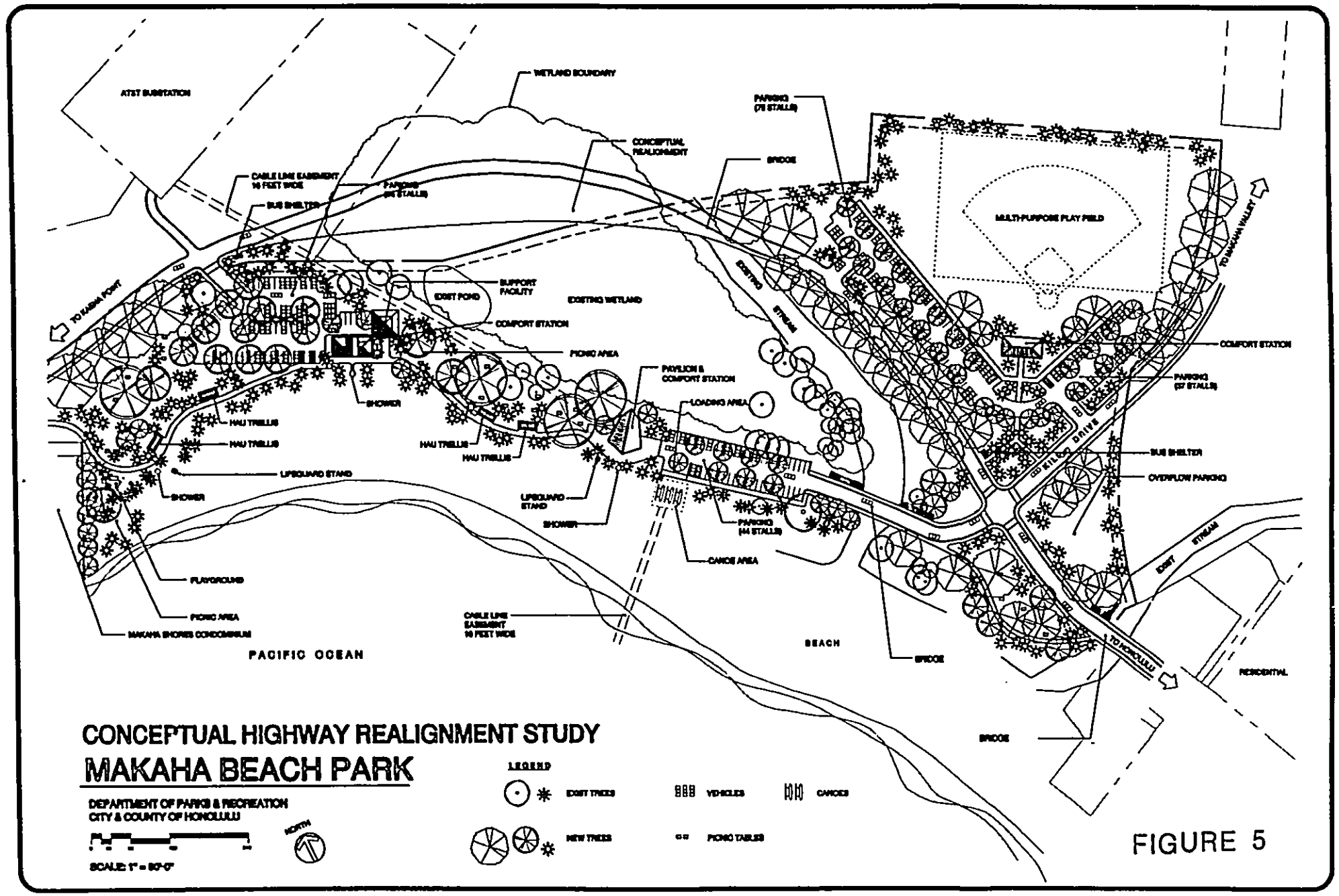

ATST SUBSTATION
WETLAND BOUNDARY
CONCEPTUAL REALIGNMENT
PARKING (78 STALLS)
BRIDGE
CABLE LINE EASEMENT 16 FEET WIDE
PARKING (66 STALLS)
BUS SHELTER
MULTI-PURPOSE PLAY FIELD
TO KAENA POINT
TO WAIANAE VALLEY
EXIST POND
SUPPORT FACILITY
EXISTING WETLAND
EXISTING STREAM
COMFORT STATION
PICNIC AREA
PAVILION & COMFORT STATION
LOADING AREA
SHOWER
HAU TRELLIS
HAU TRELLIS
HAU TRELLIS
HAU TRELLIS
LIFEGUARD STAND
SHOWER
LIFEGUARD STAND
SHOWER
PARKING (44 STALLS)
KILLOO DRIVE
BUS SHELTER
OVERFLOW PARKING
CANOE AREA
EXIST STREAM
PLAYGROUND
PICNIC AREA
MAKAHA SHORES CONDOMINIUM
CABLE LINE EASEMENT 16 FEET WIDE
BEACH
BRIDGE
TO HONOLULU
RESIDENTIAL
BRIDGE
PACIFIC OCEAN
CONCEPTUAL HIGHWAY REALIGNMENT STUDY
MAKAHA BEACH PARK
DEPARTMENT OF PARKS & RECREATION
CITY & COUNTY OF HONOLULU
SCALE: 1" = 80'-0"
NORTH
LEGEND
EXIST TREES
NEW TREES
VEHICLES
PICNIC TABLES
CANOES

FIGURE 5

SECTION 2 DESCRIPTION OF THE AFFECTED ENVIRONMENT

A. Physical Features

Location

Makaha Beach Park is located on the western end of Oahu, along the Leeward Coast, in the Makaha ahupua'a. Farrington Highway bisects the park. The site is internationally known as a world class surfing beach.

Climate

The climate is relatively dry in this area due to the location on the Leeward side of the Waianae Mountain Range. The area receives less than 20 inches (508 mm) of rain annually. Most of the rainfall occur during the winter months between October and March. The project site is relatively hot, with a minimum mean of 60-70 degrees Fahrenheit and a maximum mean of 80-90 degrees Fahrenheit.

Soils

The soil at the project site is classified as a Haleiwa Silty Clay. The surface layer is dark brown Silty clay approximately 17 inches thick. Subsoil and substratum extend to a depth of more than 5 feet and are dark brown and dark yellowish brown Silty clay.

Topography

The topography is relatively flat with the exception of the area toward the AT&T Makaha Cable Station and Wetland. The area adjacent to Farrington Highway is low and will require fill during the construction of the new comfort station & parking lot during Phase 1. An approximate area of 8,750 cubic yrds will be filled fronting Farrington Highway to locate the new comfort station and parking lot on a higher elevation.

Flood Hazard

Based on the Flood Zone Map, TMK 8-4-2: 47 is within Flood Zones A and AE and Makaha Beach Park is within Flood Zones AE and VE. Project will comply with flood requirements of Section 7.10 of the Land Use Ordinance (LUO) Refer to Figure 6.

Water Resources

There are two existing slow running streams which separates from the main Makaha Stream. One stream runs through the existing Wetland and the other runs adjacent to the east side of Kili Drive. The mouth of both streams end at Makaha Beach. Tax Map Key indicates the stream to vary in width and is approximately 10 feet wide. Source of the stream comes from Makaha Valley.

Wetland

Wetland is located within the park. A topography survey plan was submitted to the U.S. Army Corps of Engineers for review. The proposed project for Phase 1 and 2 will not affect this area since the comfort stations and parking lots will not encroach into the Wetland. U.S. Army Corps of Engineers delineated the area considered wetland.

The north end of the wetland has a large pool of open water. The near circular shaped of the pool suggests that the pool is man-made. The U.S. Fish and Wild Life Services National Wetland Inventory maps designate this pool as an excavated palustrine open water habitat.

During construction, Wetlands will be protected by complying with provisions of Hawaii Chapter 11-60.1, "Air Pollution Control", Section 11-60.1-33 on Fugitive Dust.

Flora & Fauna

The wetland area includes Batis maritima, Cynodon dactylon var. maritimus, Penniesetum setosum (or Cenchrus ciliaris), Prosopis pallida (Kiawe), Pluchea symphytifolia, P. indica, Solanum nigrum and Amaranthus viridis. Other trees existing in the park are Cocos nucifera (coconut tree), Hibiscus tiliaceus (Hau), Terminalia catappa (False Kamani) and Pandanus Odoratissimus (Pandanus).

Wild life in the wetland and surrounding areas include the blackcrowned night heron (Nycticorax nycticorax hoactli), cattle egret (Bubulcus ibis), Pacific golden plover (Pluvalis dominica fulva), mynah (Acridotheres tristis), house sparrow (Passer domesticus), barred dove (Geopelia striata striata), mockingbird (Mimus polyglottos), American cardinal (Cardinalis cardinalis), Brazilian cardinal (Paroaria coronata), Japanese white-eye (Zosterops japonica japonica) and Shama trush (Copsychus malabaricus). The standing pools contained mosquito fish (Gambusia affinis) and Sarotherodon mossambica.

Two endangered Hawaiian stilts (Himantopus mexicanus knudseni) were observed by service biologists on July 25, 1997 near the existing pond. Since

construction of the comfort station is not within the area of the pond and Wetland, that area will not be affected. During construction, Wetland will be protected by complying with dust control guidelines.

B. Cultural Features

It is highly unlikely that significant historic sites are present in the project area. If the construction work encounters any historical artifacts or burial remains, the work shall be halted and the contractor shall notify the Department of Land and Natural Resources Historical Preservation Division.

There are two heiaus located in Waianae but are not within the location of the project site. Kaneaki Heiau is located approximately 2.3 miles (3.7 km) inland of the project site. The other major heiau of the region is Ukanepo Heiau located on the west side of Makua Valley, approximately 4.3 miles (6.9 km) away. Refer to Figures 7 and 8 for location of Kaneaki Heiau and Ukanipo Heiau.

A prominent stone known as Pohaku O Kane which was said to be used by cannibals, robbers and murderers to spot their victims in Hawaiian History , is located outside of the park boundaries.

C. Marine Features

Hawaii has four primary wave types, the northeast tradewind waves, south swell, Kona storm waves and North Pacific swell. The North Pacific swell occurs between October and March and is produced by severe winter storms in the Aleutian area and the mid-latitude low pressure areas. Through refraction and diffraction, any north swell approaching Oahu from the west of north will produce surf at Makaha. The north swell waves with periods of 10 to 16 seconds and heights of 5 to 15 feet, break on the reef at Kepuhi Point to the north of Makaha sand channel. South swells, generated by southern hemisphere storms are most prevalent between April and October and are long, low waves and produces moderate surf at both the north and south ends of Makaha Beach. The long, low waves approach from the southeast to the southwest with periods of 12 to 20 seconds with deep water heights of 1 to 6 feet. Kona storms generated by intense winds with locate fronts or low pressure systems generated waves which have periods ranging from 6 to 10 seconds and heights up to 25 feet. These waves generally approach from the southwest.

Mahaka appears to have a yearly cycle of longshore and transport with sand moving from the north end of the beach toward the south during the winter periods of northwest swell and returning to the north end during the summer

periods of south swell, possibly with little change in total sand volume. (Figure 9).

The intertidal habitat is primarily confined to a narrow raised bench along the western edge of the area. The bench supports a variety of algae including palahalaha (Ulva fasciata), hulu'ilio (Giffordia breviarticultata), Padina japonica, Ralfsia pangoensis, kala (Sargasuum echinocarpum), Acanthophora spicifera and Galaxaura fastigiata. The mollusk, pipipi (Nerita picea) and the rock crab, "a'ama" (Grapsus tenuicrustatus) were also identified.

Offshore benthic habitats and fishery resources include the corals, Porites lobata, Pocillopora meandrina, Pavona varians, Montipora ssp.: the algae, Halimeda opuntia, Padina sp., and appoximately 64 fishes including (Myripistis marginatus), aweoaweo (Priacanthus spp.) and blueline snapper (Lutjanus rasmira). The Hawaiian humpback whale and the green sea turtle are also spotted offshore.

D. Public Facilities

There are water and electrical utilities located within the adjacent area which serves the existing temporary restroom facility. Overhead utility poles are located along Farrington Highway on across the beach park. The new comfort station and parking lot will be serviced by these existing utilities.

According to Department of Planning City & County of Honolulu, the Waianae Development Plan Public Facilities shows a symbol for publicly funded sewers system (Makaha Beach Trunk Sewer) within six years. This sewer system is along Farrington Highway which bisects the subject site.

E. Land Use Controls

Land Use Approvals
The proposed project is zoned P-2 and also in partial A-1 zone. (Figure 10).

Special Management Area
The project site is within the Special Management Area (SMA). (Figure 11).

State Land Use Map
The project site is zoned Urban by the State Land Use Map. (Figure 12).

F. Park Use and Activities

Makaha Beach Park is a very popular beach for water related recreation such as swimming, diving boogie boarding, body surfing, sunbathing, fishing (shore casting and netting), boating, canoe racing and big wave surfing. Several surf meets and canoe club events are held annually at Makaha Beach Park. Some surf meets have attracted national television coverage. It is also known to tourist for its natural beauty, pristine beach, clear waters and rural setting.

A small picnic area with a play structure is located at the north end of the park. The north end of the beach is the safest area for young children to swim.

Beach attendance varies throughout the year, with December being the slowest month (1996-approximately 14,000 visitors) and February the busiest month (1996-approximately 51,500 visitors).

G. Roads and Parking

Farrington Highway provides the only main access route to the west end of Oahu. It is a two-lane State Highway with a 22 feet pavement width, a 80 foot wide right-of-way and a posted speed limit of 35 mph through the park.

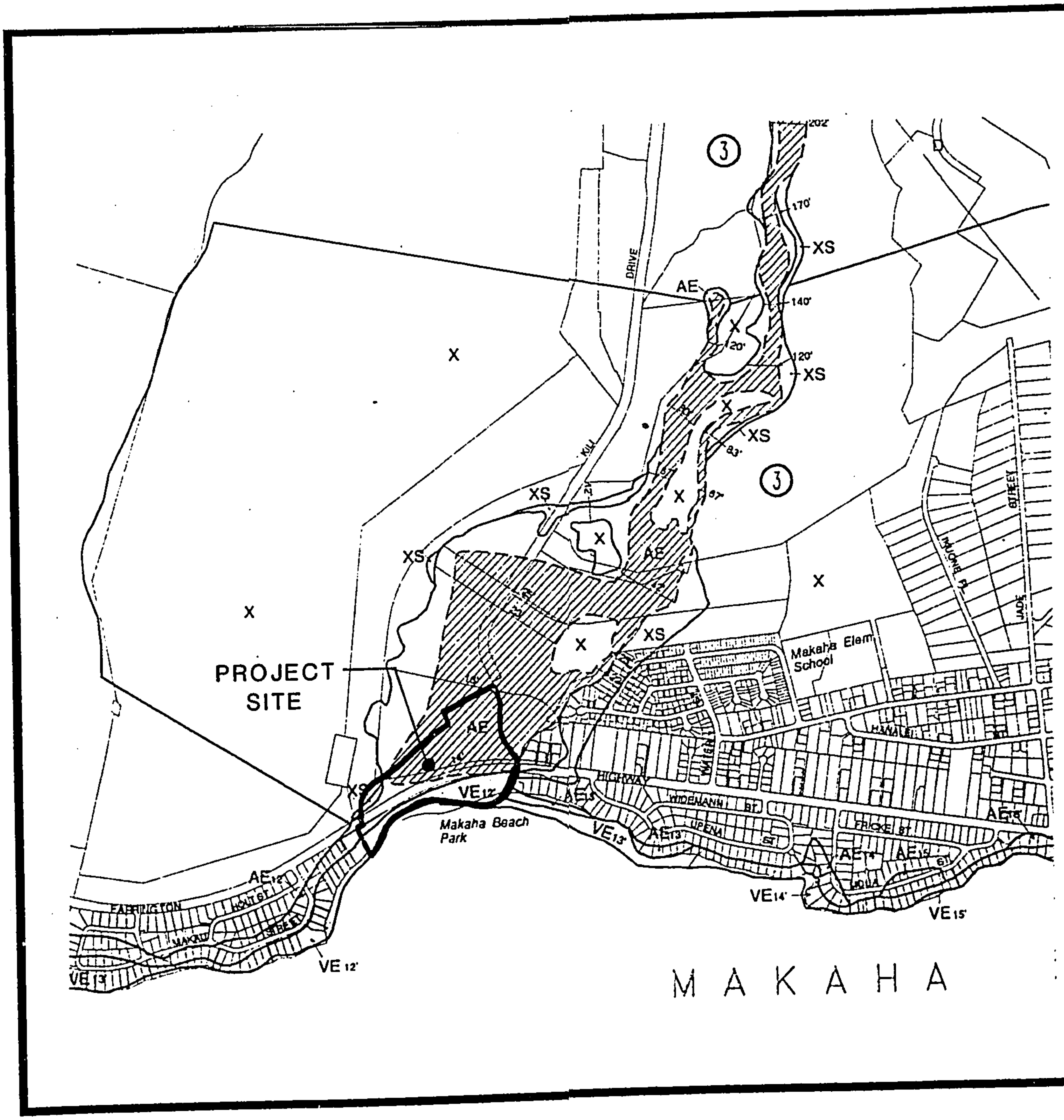
Traffic volumes are heaviest on the weekends and holidays and are increased during the peak surfing season running from January to June.

Crosswalks and bus stops are sporadically located along Farrington Highway. Crosswalks are proposed at Kili Drive and at the entrance of Phase 1 parking lot. An existing Honolulu bound bus stop is located at the south end of the park. A Kaena Point bound bus stop is proposed at the Phase 1 parking lot entrance.

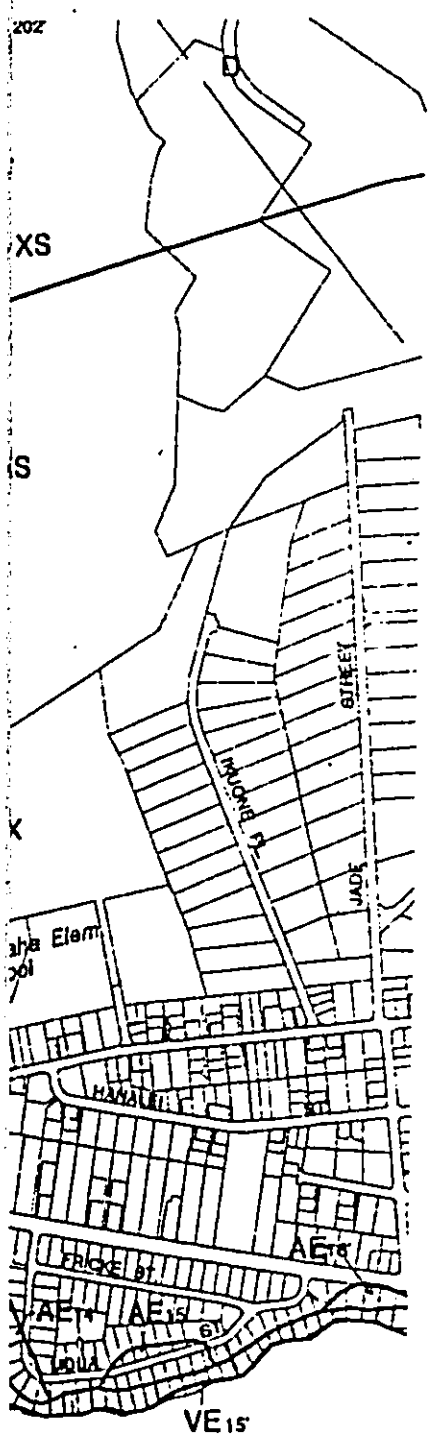
Currently, parking by beachgoers normally occurs along the highway frontage of Makaha Beach and, when conditions are crowded, occurs on the mauka side of Farrington Highway.

On the weekends and during the peak surfing conditions, the highway frontage of Makaha Beach is typically filled with vehicles. This often creates a hazardous condition when vehicles back up into Farrington Highway. On a typical crowded day, it is estimated as much as 70 vehicles park in the frontage area. The new parking areas is intended to alleviate the chaotic situation fronting the beach. The new parking lots will have a single ingress/egress control point

resulting in less hazardous conditions and less traffic disruptions on the highway.



PROJECT
SITE
X
XS
AE
VE 12'
VE 13'
VE 14'
VE 15'
AE 12'
AE 13'
AE 14'
AE 15'
170'
140'
120'
202'
3
DRIVE
HIGHWAY
Makaha Elem
School
Makaha Beach
Park
WIDEMANN ST
UPENA ST
FRICKE ST
HANALEI
FARRINGTON
MAKAHA



A H A

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100–YEAR FLOOD

ZONE A — NO BASE FLOOD ELEVATIONS DETERMINED.

ZONE AE — BASE FLOOD ELEVATIONS DETERMINED.

ZONE AH — FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY AREAS OF PONDING); BASE FLOOD ELEVATIONS DETERMINED.

ZONE AO — FLOOD DEPTHS 1 TO 3 FEET (USUALLY SHEET FLOW ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING VELOCITIES ALSO DETERMINED.

ZONE A99 — TO BE PROTECTED FROM 100 YEAR FLOOD BY FEDERAL FLOOD PROTECTION SYSTEM UNDER CONSTRUCTION; NO BASE ELEVATION DETERMINED.

ZONE V — COASTAL FLOOD WITH VELOCITY HAZARD (WAVE FEDERAL FLOOD PROTECTION SYSTEM UNDER CONSTRUCTION; NO BASE ELEVATION DETERMINED.

ZONE VE — COASTAL FLOOD WITH VELOCITY HAZARD (WAVE ACTION); BASE FLOOD ELEVATIONS DETERMINED.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X — AREAS OF 500 YEAR FLOOD; AREAS OF 100–YEAR FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 100–YEAR FLOOD.

OTHER AREAS

ZONE X — AREAS DETERMINED TO BE OUTSIDE 500–YEAR FLOOD PLAIN.

ZONE D — AREAS IN WHICH FLOOD HAZARDS ARE UNDETERMINED.

NORTH

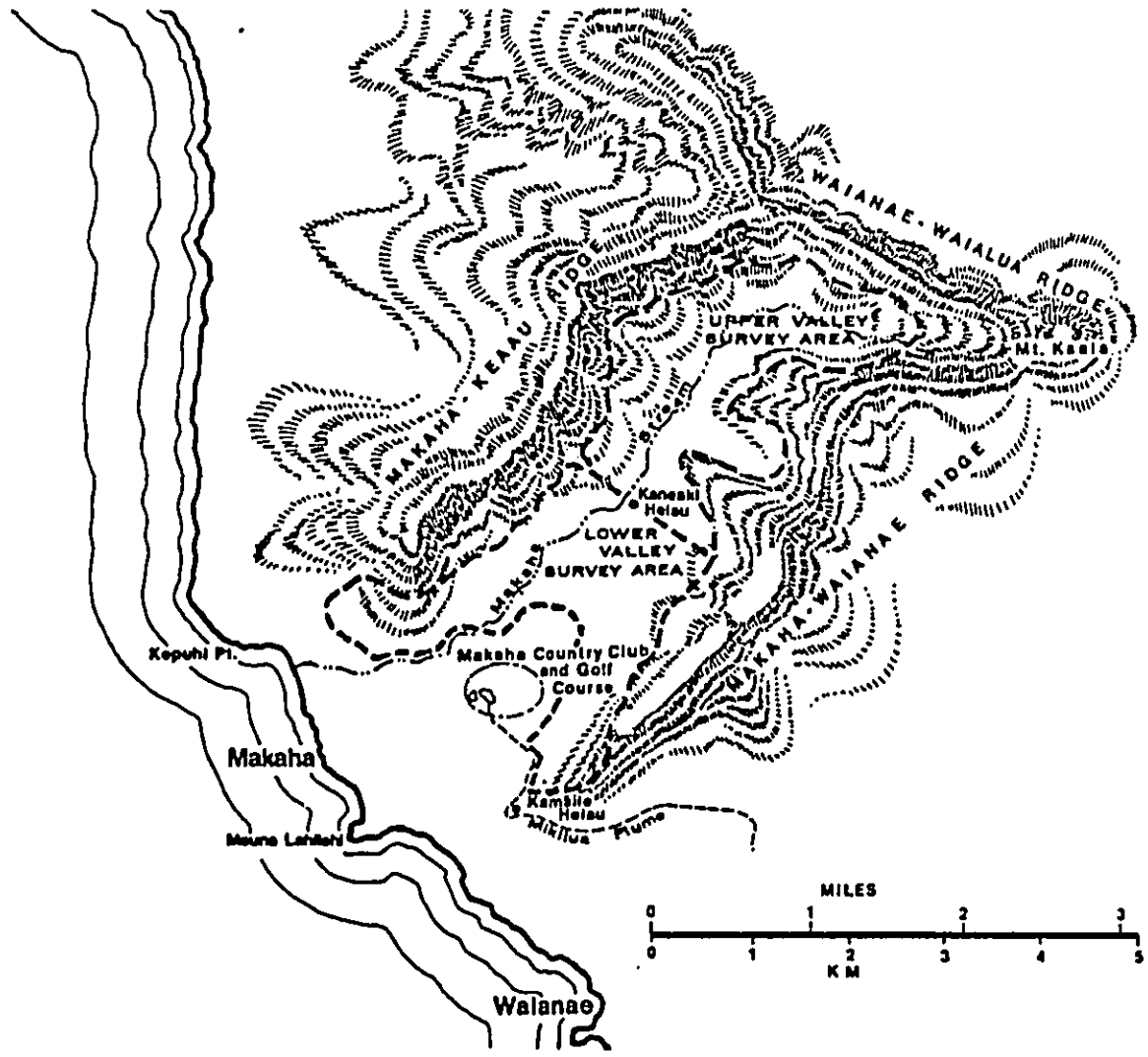
FLOOD ZONE MAP

MAKAHA BEACH PARK

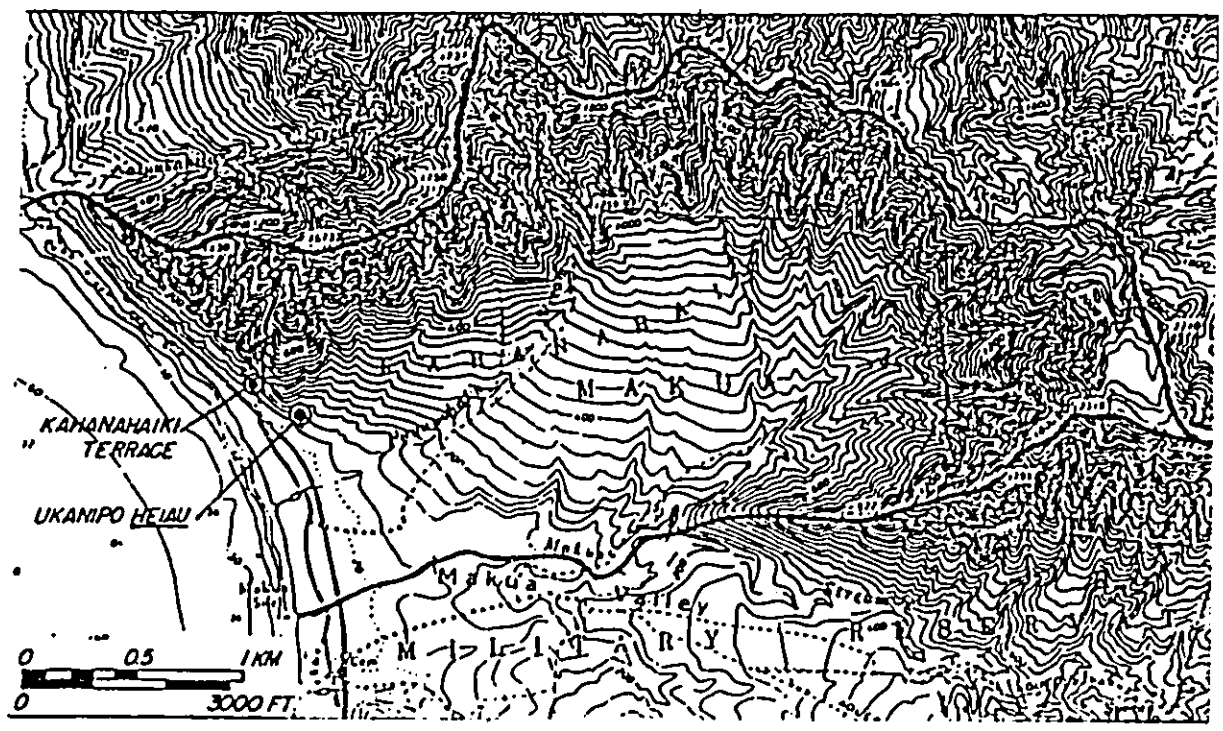
TMK: 8–4–01: 12 AND 8–4–02: 45, 47 & 59

FIGURE 6

SCALE: 1" = 1000'



KANEAKI HEIAU LOCATION MAP FIGURE 7



UKANIPO HEIAU LOCATION MAP FIGURE 8

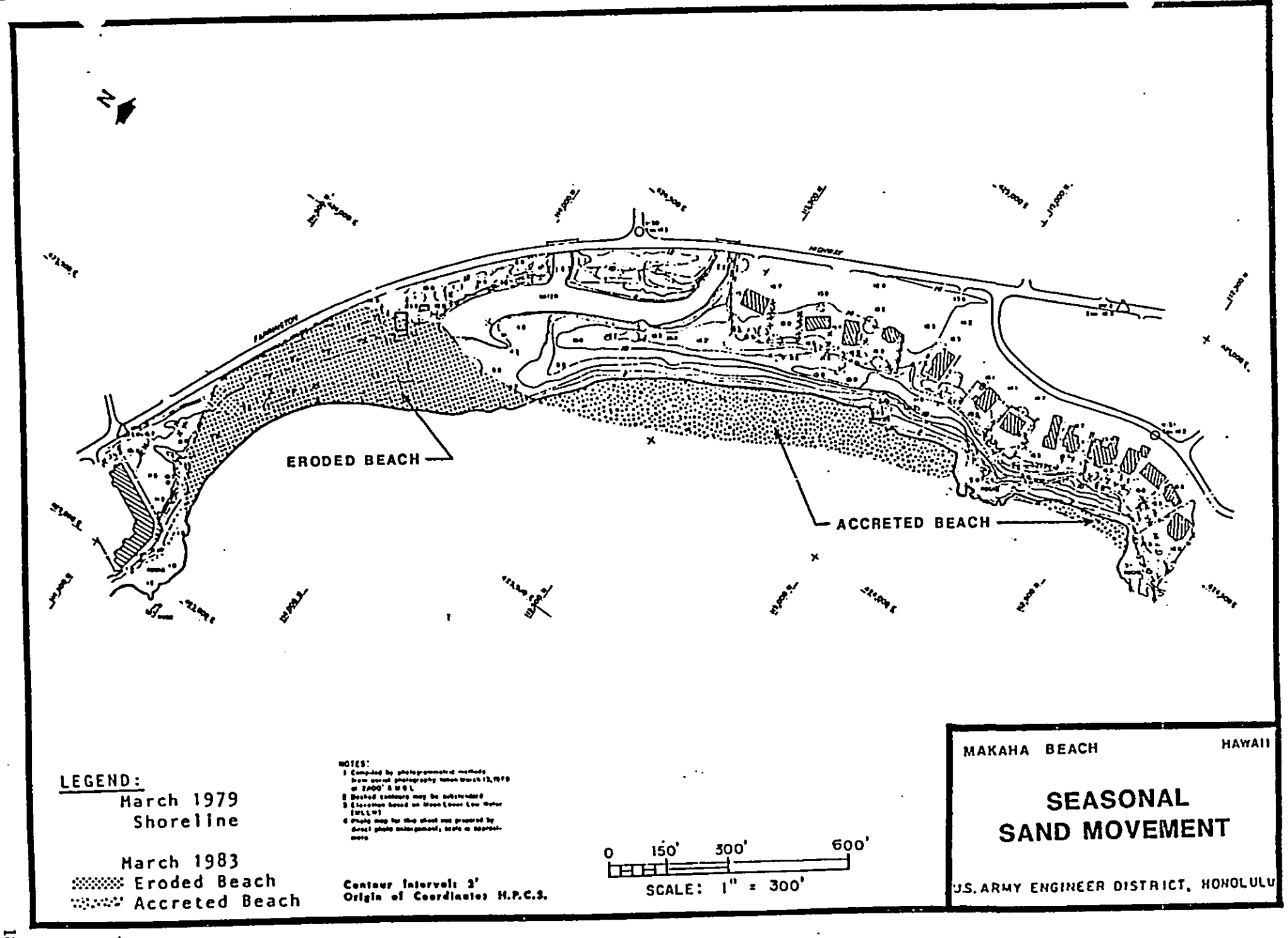
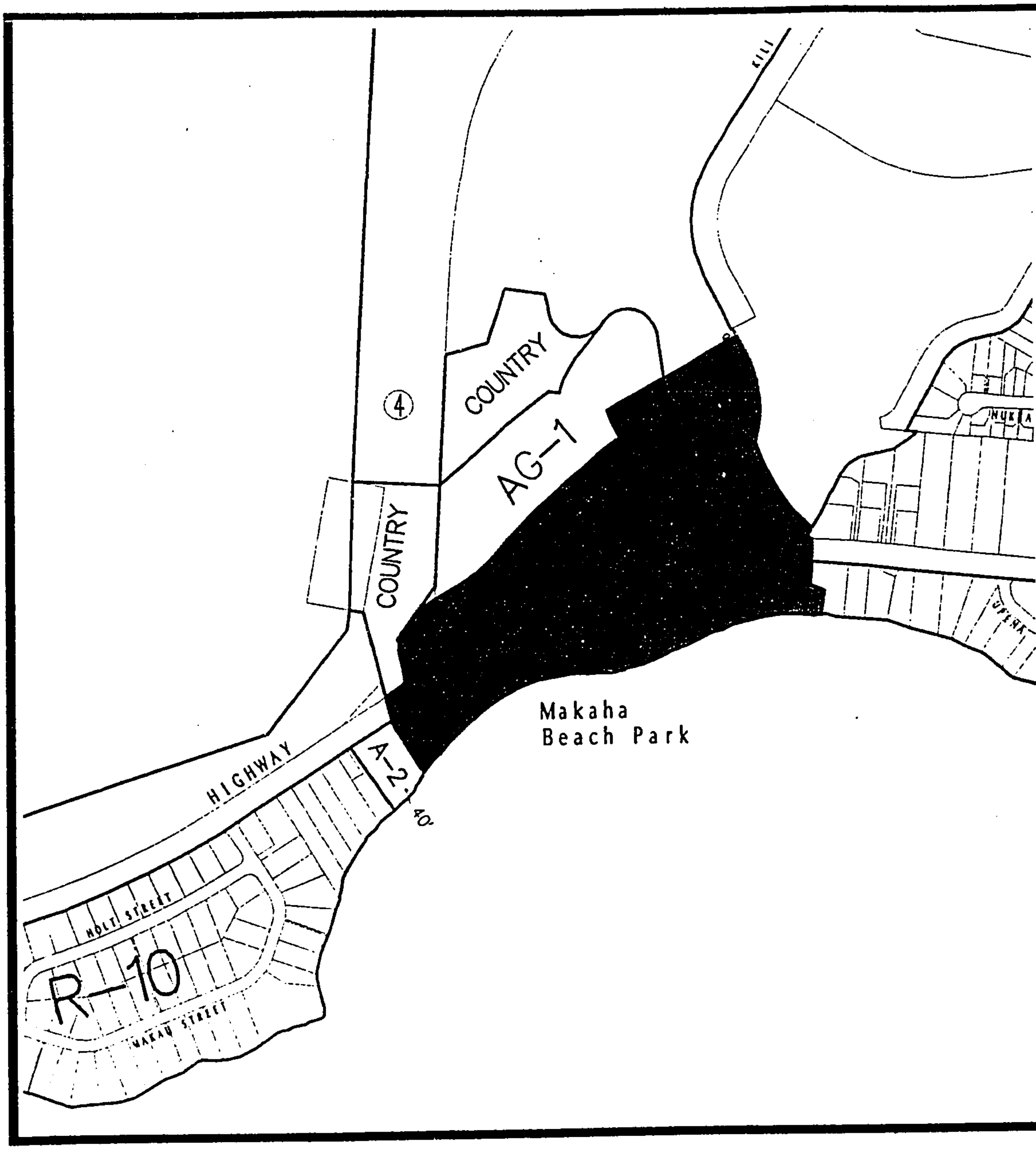

N
ERODED BEACH
ACCRETED BEACH
LEGEND:
March 1979
Shoreline
March 1983
Eroded Beach
Accreted Beach
NOTES:
Contour Interval: 2'
Origin of Coordinates: H.P.C.S.
0 150' 300' 600'
SCALE: 1" = 300'
MAKAHA BEACH
HAWAII
SEASONAL
SAND MOVEMENT
U.S. ARMY ENGINEER DISTRICT, HONOLULU

FIGURE 9



LEGE

THE FO
DEPART
AUGUST

AG-1

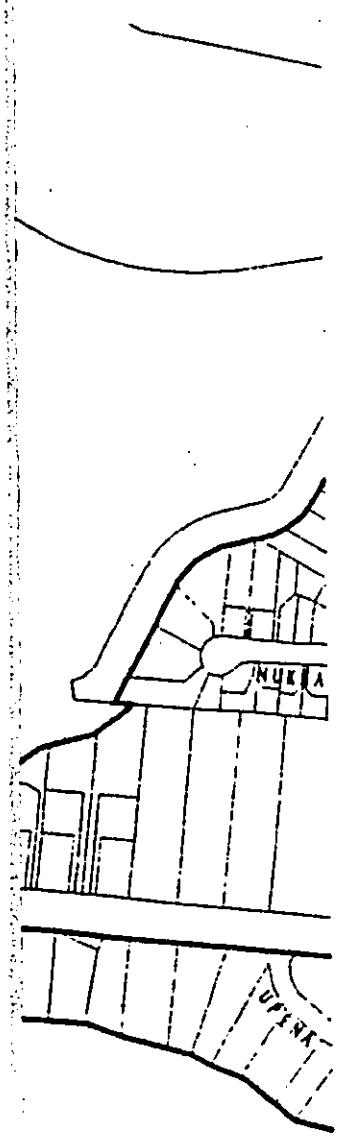
AG-2

COUNT

R-5

R-10

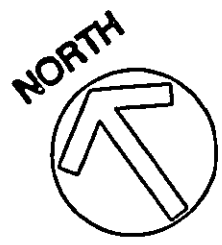
P-2



LEGEND

THE FOLLOWING IS A SUMMARY FROM LAND USE ORDINANCE
DEPARTMENT OF LAND UTILIZATION, CITY & COUNTY OF HONOLULU
AUGUST 1993

AG–1	AGRICULTURAL LAND MORE THAN 5 ACRES IN SIZE
AG–2	AGRICULTURAL LAND LESS THAN 5 ACRES IN SIZE
COUNTRY	AGRICULTURAL ACTIVITIES WITH OPEN SPACE AND RURAL QUALITY OF AGRICULTURAL LANDS IS DESIRED
R–5	RESIDENTIAL DISTRICT WITH AREAS FOR URBAN DEVELOPMENT
R–10	RESIDENTIAL DISTRICT AREAS WITH LARGE DEVELOPMENTS
P–2	PRESERVATION DISTRICT TO PRESERVE AND MANAGE MAJOR OPEN SPACE AND RECREATION LANDS AND LANDS OF SCENIC AND OTHER NATURAL RESOURCE VALUE



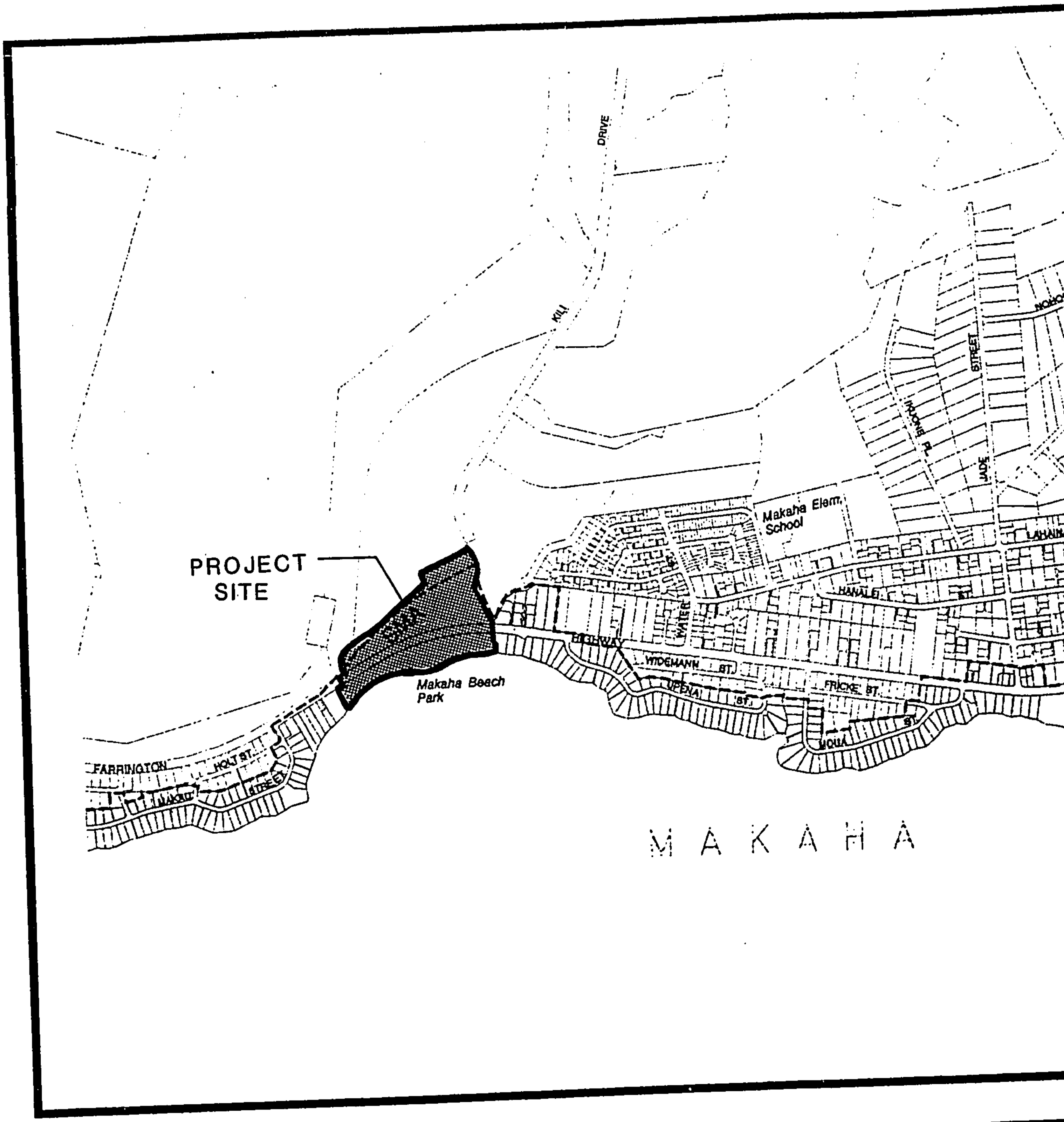
ZONING MAP

MAKAHA BEACH PARK

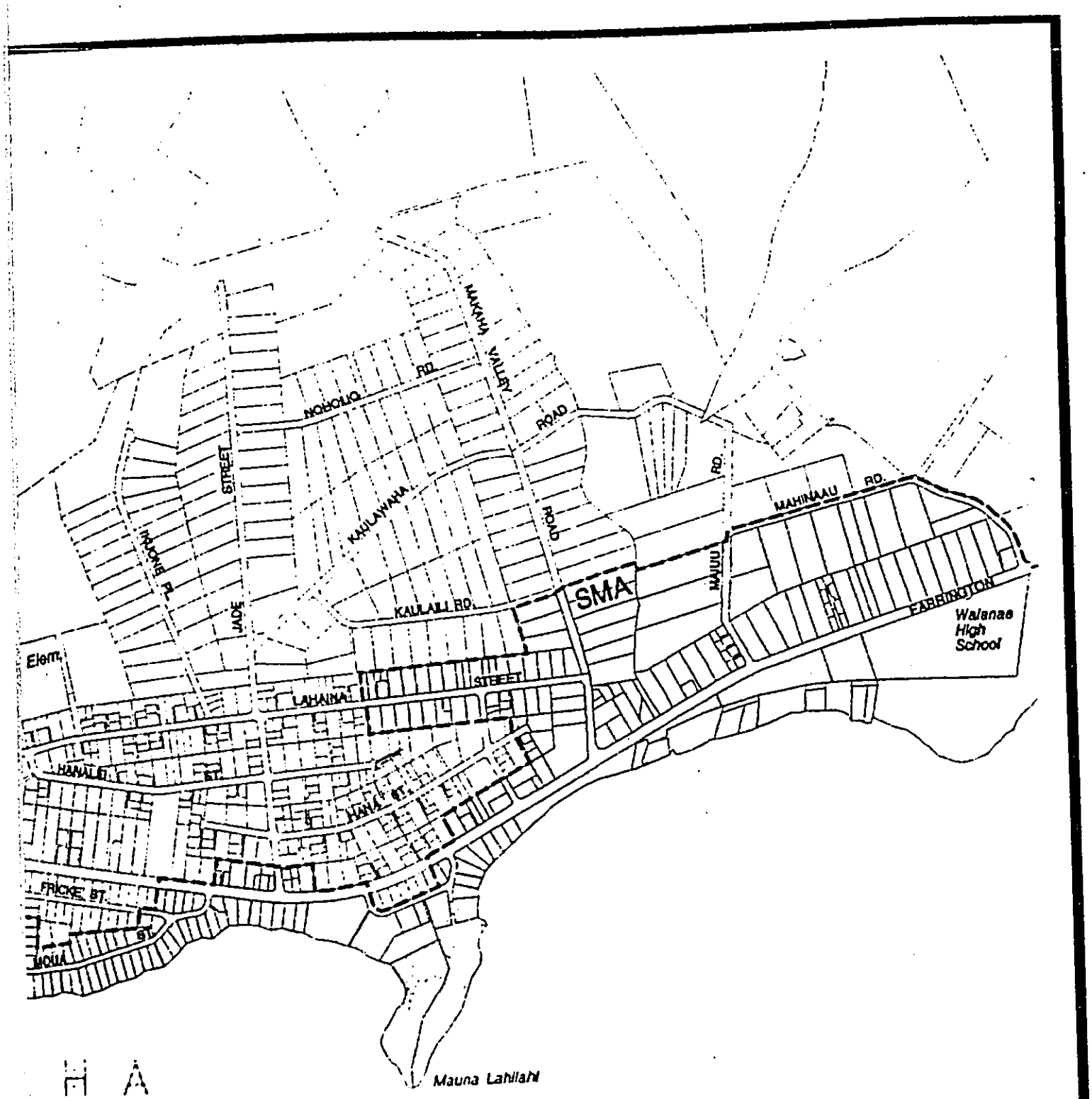
TMK: 8–4–01: 12 AND 8–4–02: 45, 47 & 59

FIGURE 10

SCALE: 1" = 400'



DRIVE
KILI
PROJECT SITE
Makaha Elem. School
Makaha Beach Park
STREET
JADE
LAHAINA
HANALEI
WATER
HIGHWAY
WIDEMANN ST.
UPENA ST.
FRICKE ST.
MOUA
FARRINGTON
HOLT ST.
STREET
MAKAHA



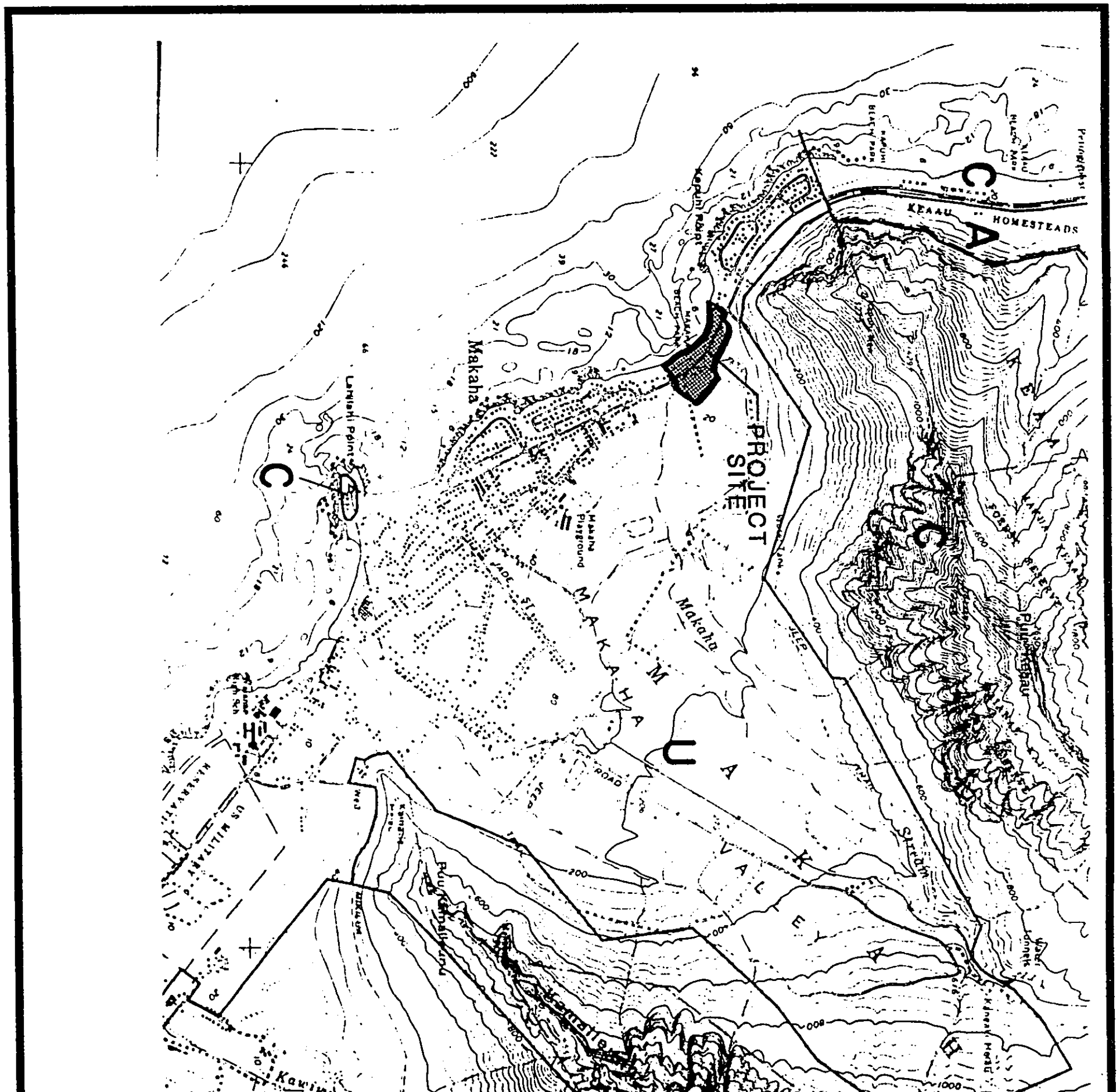
SPECIAL MANAGEMENT AREA

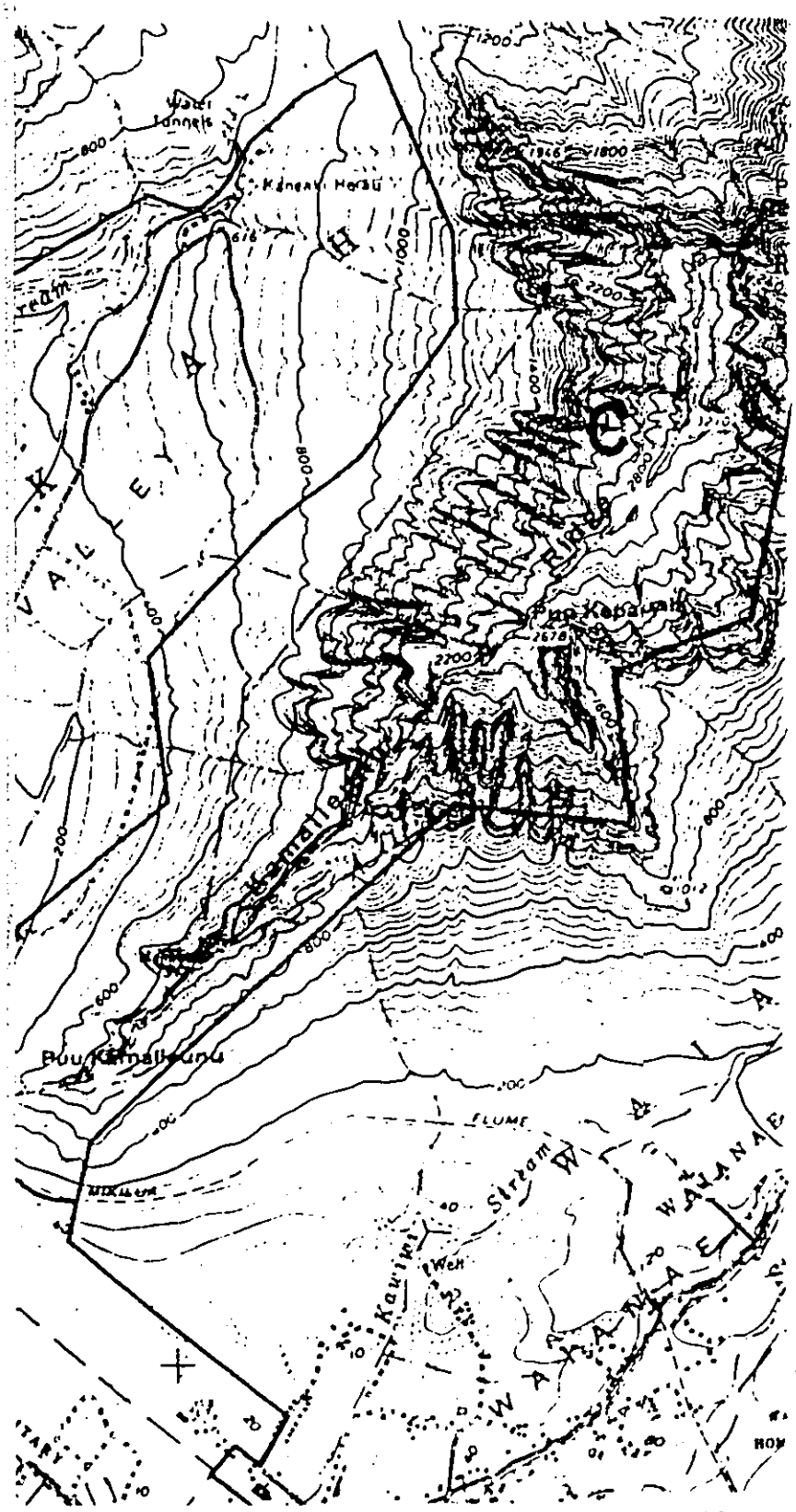
MAKAHA BEACH PARK

TMK: 8-4-01: 12 AND 8-4-02: 45, 47 & 59

FIGURE 11

SCALE: 1" = 1000'


PROJECT SITE
C
A
C
U
H
C
KEAAU HOMESTEADS
KEAAU BEACH PARK
KAPUHI BEACH PARK
Kepuhi Point
MAKAHA BEACH PARK
Puu Kepau
Water Tunnels
Kaneaki Heiau
Water Tanks
Makaha Stream
M A K A H A
V A L L E Y
Makaha Playground
JEEP ROAD
JADE ST
Makaha
Lahilahi Point
Puu Kamaileunu
Waianae High Sch
US MILITARY RESERVATION



STATE LAND USE MAP

LEGEND

A	AGRICULTURE
C	CONSERVATION
U	URBAN

FIGURE 12

SCALE: 1" = 2000'

SECTION 3 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MEASURES TO MITIGATE ADVERSE EFFECTS

A. Description of Assessment

The proposed project will not create any major impact to the site and its surrounding environment for the following reasons:

1. The new comfort stations and parking lots will be constructed on the mauka side of the Farrington Highway. This will minimize damage due to natural causes.

2. The new comfort station will provide restrooms, maintenance and water safety storage room to serve beach users and park staff. The existing temporary restroom facility is unsanitary, vandalized and in poor condition. The existing restroom is inadequate for the number of park users. There are plans to renovate the existing restroom to provide an alternative to crossing the highway to get to the proposed comfort station.

3. All public utilities are currently adjacent to the project site or will be provided. A new septic system and leach field will be installed for the comfort stations. The approximate area of the septic tank and leaching field is approximately 75'-0" x 75'-0" (5,625 square feet) and will be located under the new parking lot adjacent to the comfort station.

4. Safety of beach users crossing the highway to get the comfort station from the beach has been a major concern. Traffic warning signs and crosswalks have been suggested and will be coordinated with the State of Hawaii Department of Transportation. Refer to Traffic Assessment Report in the Appendix.

5. Natural resources within and surrounding the park will be protected during construction. The proposed facilities will not impinge on these sensitive areas.

B. Short Term Impacts

From the description of the assessment, no major adverse environmental impacts are anticipated. The proposed project will create only minimal impacts to the site during the construction period, such as noise, dust and minor inconveniences that is expected at a normal construction.

The temporary dust, noise and silting which will occur during the construction will be controlled by application of appropriate pollution control measures such as blanketing the construction area.

Construction will comply with the following items recommending by the Department of Health:

Control of Fugitive Dust: Hawaii Administrative Rules, Chapter 11-60. 1, "Air Pollution Control", Section 11-60.1-33 on fugitive dust.

1. Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment areas of the least impact.

2. Providing an adequate water source at the site prior to startup of construction activities.

3. Landscaping and rapid covering of bare areas, including slopes, starting from initial grading phase.

4. Controlling of dust from shoulders, project entrances and access roads.

5. Providing adequate dust control measures during weekends, after hours and prior to daily start up of construction activities.

6. Controlling of dust from vehicular hauling debris away from the project site.

C. Long Term Impacts

The master plan should not have any adverse effects on the surrounding areas or community. It will not curtail or exclude existing uses. The master plan will expand and enhance recreational opportunities for both residents and visitors of

all ages. It will provide for a range of passive and active shoreline and non shoreline activities throughout the park. Park facilities and site furnishings provided will complement expanded cultural and recreational opportunities.

The comfort stations and additional parking will provide relief for this heavily used park. Septic systems and leach field will be installed for the proposed comfort stations. Solids will be retained in septic tanks and removed on a regularly scheduled basis.

Wetland will be protected and may become an interpretive feature for the park. The master plan's long term impacts will be positive in nature for both the residents and visitors. Activities such as leisure walking, observing natural elements and species will be a feature at the Wetland.

D. Traffic Impacts

In the long term, traffic patterns will change at Makaha Beach Park. New parking areas will be provided for visitors to the park. During the surfing season and competition events, parking will be in high demand. A vacant area located at the corner of Kili Drive and Farrington Highway will serve as an overflow parking area.

During popular surfing meets or community events, traffic monitors may be required of the meet's sponsors by the Department of Parks and Recreation to control ingress and egress from the new parking areas.

A busline runs on Farrington Highway with a Honolulu bound stops at the south end of the park. A Kaena bound stop is proposed at the north end of the park to encourage an alternative mode of transportation.

Beach users may continue to use the right of way along Farrington Highway for parking. The new parking areas will help alleviate the parking along the highway.

The following are several alternatives to facilititate the safe crossing of Farrington Highway:

1. Provide a marked crosswalk adjacent to the parking lot driveway and at Kili Drive for safer crossing.

2. By designating the areas in which pedestrians are expected to cross, thereby reducing the possible locations of pedestrian-vehicle conflicts and providing a clear indication for drivers that pedestrians crossing can be expected.

3. Provide warning signs to supplement markings to improve the visibility of crosswalks.

4. Designate areas to prohibit parking to maintain sight light lines and conflicts between pedestrians and vehicles be implemented where necessary.

5. Provide a fence fronting the new comfort station to direct pedestrians to use the crosswalks.

Other measures that are sometimes used to warn drivers of the presence of pedestrians or roadside hazards include yellow flashing lights, rumble strips (raised pavement markers arranged across the travel lane) and speed humps. If used, a yellow flashing light (beacon) should be installed as part of a warning sign and shall conform with the requirements of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). Rumble strips are often used to warn drivers of a change in speed or other condition: its used in an area where pedestrians may cross could introduce other hazard and is not recommended. Speed humps on a major highway such as Farrington Highway would be inappropriate and is also not recommended.

Note: Refer to Traffic Assessment Report in the Appendix.

SECTION 4 ALTERNATIVES TO THE PROPOSED ACTION

The **No Action** alternative is the only alternative to the proposed action. The Master Plan was formulated from ideas, comments and recommendations from the community and the Makaha Beach Park Advisory Committee. It represents the most desirable park layout in terms of facilities and uses. The Master Plan expands and enhances recreational opportunities for both residents and visitors, minimizes destruction of facilities due to natural causes and protects the existing wetlands.

A no action alternative would leave the mauka parcels undeveloped and unused. Improvements could still be implemented on an ad hoc basis as it has in the past. But the results may be poor siting of facilities, greater development and maintenance cost and a lack of a sense of place. It represents the most desirable park layout in terms of facilities and uses.

SECTION 5 AGENCIES AND ORGANIZATIONS TO BE CONSULTED DURING THE ENVIRONMENTAL ASSESSMENT PROCESS

Federal

United States Army Corps of Engineers
United States Department of Commerce
(National Marine Fisheries Services)
United States Fish and Wild Life
United States Department of Transportation
(Federal Aviation Administration)

State of Hawaii

Department of Accounting & General Services
(Planning Branch)
Department of Agriculture
Department of Business, Economic Development & Tourism
State Historic Preservation Division -DLNR
Department of Health (DOH)
DOH Environmental Management Division
Office of State Planning
Office of Hawaiian Affairs
State of Hawaii Department of Transportation

City & County of Honolulu

Board of Water Supply
Building Department
Department of Planning
Department of Land Utilization
Department of Parks & Recreation (DPR)
Department of Public Works
Department of Transportation Services
DPR Ocean Safety Division
University of Hawaii Water Resources Research Center
University of Hawaii Environmental Health Center
Waianae Neighborhood Board

Private

AT&T Substation Makaha
Makaha Shores Condominium

SECTION 6 DETERMINATION OF SIGNIFICANCE

Chapter 200 (Environmental Impact Statement Rules) of Title 11, Administrative Rules of the State Department of Health, establishes criteria for determining whether an action may have significant effects on the environment (11-200-12). The relationship of the proposed project to these criteria is discussed below.

1. *Would the proposed action result in . . . irrevocable commitment to loss or destruction of any natural or cultural resources?*

   No irrevocable commitment to loss or destruction of any natural or cultural resources would result. The State Historic Preservation indicated that most of the surface area at the existing site had its land surface altered. It is highly unlikely that significant archaeological sites are present in the project area.

2. *Would the proposed action curtail the range of beneficial uses of the environment?*

   The proposed action would not curtail the range of beneficial uses of the environment. The master plan expands and enhances recreational opportunities and will serve the local and island wide communities as well as visitors to Oahu.

3. *Would the proposed action conflict with the state's long term environmental policies or goal and guidelines?*

   The proposed action would not conflict with the state's long term environmental policies or goal and guidelines. The State's environment policies and guidelines are set forth in Chapter 344, Hawaii Revised Statues, "State Environmental Policy". Two broad policies are espoused:

   a. Conservation of natural resources
   b. Enhancement of Quality of Life

   The master plan conforms to these two broad policies. It enhances and expands the park facilities, while it maintains and protects the parks natural resources.

4. *Does the proposed action substantially affect the economic or social welfare of the community or state?*

   The proposed action affects on the economic and social welfare of the community will be positive in nature. The proposed plan will provide short-term employment opportunities for the construction trades during implementation of the plan. Visitors and tourists will benefit from expanded recreational opportunities. The mauka park improvement adjacent to Kili Drive will also service the adjacent residential neighborhood.

5. *Does the proposed action substantially affect public health?*

   No, the proposed action does not adversely affect public health. Noise, dust and minor inconveniences that a normal construction site is expected. Construction will comply with all guidelines recommended by the State of Hawaii Department of Health.

6. *Are substantial secondary impacts, such as population changes or effects on public facilities anticipated.*

   No significant secondary impacts on public facilities are anticipated.

7. *Is substantial degradation of environmental quality anticipated?*

   No substantial degradation of environmental quality is anticipated. Facilities will be located away from areas prone to wave storm.

8. *Does the proposed action involve a commitment to larger actions, or would cumulative impacts result in considerable effects on the environment?*

   The proposed action does not involve a commitment to larger actions. The proposed improvements can exist with or without Farrington Highway being realigned inland. The cumulative impacts will not result in considerable effects on the environment.

9. *Are rare, threatened or endangered species or their habitats affected?*

The existing site is underdeveloped and consists of weeds, Kiawe trees and Koa hale trees. There are no indigenous or protected plant species at the existing project site. No rare, threatened or endangered species or their habitats will be substantially affected by the proposed improvements since construction is not within the Wetland. The Wetland will be protected during construction with a barrier and adjacent areas disturbed by construction will be landscaped and maintained.

10. *Are air quality, water or ambient noise levels detrimentally affected.*

The proposed project will create only minimal impacts to the site during construction period. Noise, some dust and minor inconveniences that a normal construction site create is expected. This may be controlled by application of appropriate pollution control measures such as blanketing the construction area. Construction activities will comply with provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33 on Fugitive Dust and Chapter 11-46, "Community Noise Control."

Would the project affect environmentally sensitive areas, such as flood plains, tsunami zones, erosion-prone areas, geological hazardous lands, estuaries, fresh water or coastal waters?

No environmentally sensitive areas will be affected. Wetland, identified and confirmed by the Department of Army U.S. Army Engineer District, are in proximity of this project site but will not be affected.

The proposed project site is located within the Special Management Area (SMA) and in Flood Zones A (no base flood elevations determined), AE (base flood elevations determined) and VE (coastal flood with velocity hazard, wave hazard and base flood elevations determined). The potential for park damages cannot be avoided given the ocean location.

Construction of facilities and parking lots will be located on higher ground away from the beach. The mauka side site will be at a higher elevation and Farrington Highway will act as barrier from wave storms before striking the new comfort stations and parking lots.

SECTION 7 REFERENCES

Makaha Beach Park Advisory Committee. October 1996 through March 1997 Meeting Notes

US Army Corps of Engineers, November 1985. Makaha Beach Park-Draft Detailed Environmental Project Development Report & Environmental Impact Statement

US Fish & Wildlife Service, December 1984. Draft Coordination Act Report, Makaha Beach Erosion Control Study

APPENDIX

Traffic Assessment Report

Environmental Assessment Distribution List

Letter and Responses

Makaha Stream

TRAFFIC ASSESSMENT REPORT

MAKAHA BEACH PARK

MAKAHA, OAHU, HAWAII

prepared for:

Pacific Architects, Inc.
and
City and County of Honolulu Department of Parks and Recreation

prepared by:

Julian Ng, Incorporated
P. O. Box 816
Kaneohe, Hawaii 96744

August, 1997

Table of Contents

Traffic Assessment Report
Makaha Beach Park
Makaha, Oahu, Hawaii

August, 1997

The City and County of Honolulu Department of Parks and Recreation will be improving facilities at Makaha Beach Park and has prepared a master plan. The park is located in Makaha on the Waianae coast of Oahu and the site is bisected by Farrington Highway. The master plan, which includes development of picnic areas, renovations to existing facilities that have been damaged by storms, and a new multi-purpose play field, was developed around a conceptual proposed realignment of the highway (Exhibit 1). Two off-street parking areas are included in the plan.

This traffic assessment was prepared to identify existing traffic conditions near the park and evaluate the potential impact of development of the park site, including a future condition in which the highway is realigned. Because the park is located near a major highway, several measures which may increase pedestrian safety are also discussed.

This assessment considers three peak hours that are expected to occur on "typical" days, rather than the worst conditions that occur during professional surfing meets in the winter months, since the development of the park site is not expected to significantly affect traffic during those times. Traffic volumes occurring during peak weekday morning and afternoon traffic hours were based on data from traffic counts taken by the City and County Department of Transportation Services or the State Highways Division. Weekend conditions, for which traffic data at the site are not available, were assessed for a peak hour that was estimated from other traffic data.

The site is located northwest of the intersection of Farrington Highway and Kili Drive; the proposed realignment would move the highway in an easterly direction, away from the beach, northward from the vicinity of Kili Drive. With the existing alignment of the highway, a parking lot on the west side of the site would be accessed through a single driveway to Farrington Highway; this parking lot and an adjoining picnic area would be separated from the beach area by the highway.

If the highway is realigned so that this parking and the picnic area are not separated from the beach, a portion of the old highway would serve as part of the access drive and would be connected to the realigned highway as the fourth leg of a new intersection opposite Kili Drive. In both cases, a multi-purpose play field would be located across the highway from the beach. Access to a parking lot with over 100 stalls adjacent to the play field would be through a driveway to Kili Drive.

This assessment uses analyses of future peak hour traffic volumes with the procedures for unsignalized stop-controlled intersections from the *Highway Capacity Manual*[1]. The intersection capacity analysis includes computations of the capacities available for each movement which must stop or yield to other movements at an unsignalized intersection, probabilities of queues forming behind delayed vehicles, and average delays. The delays are related to a level of service (LOS) for each controlled movement. These levels of service are defined using the letters A through F (Level of Service C is generally acceptable for rural intersections while LOS D is acceptable for urban conditions):

LOS	Average delay (seconds)	General Description
A	≤5.0 seconds	little or no delay
B	>5 and ≤10 seconds	short traffic delays
C	>10 and ≤20 seconds	average traffic delays
D	>20 and ≤30 seconds	long traffic delays
E	>30 and ≤45 seconds	very long traffic delays
F	>45 seconds	very long traffic delays

Existing Conditions

The existing beach park consists of small picnic areas, showers, a lifeguard stand, and a restroom building. Because no separate parking lot is provided, cars are parked along the highway. Highest traffic in the area occurs during the winter months when the surf offshore is highest, in particular, during times when professional surfing meets are held at Makaha. The critical location impacted by implementation of the master plan would be the unsignalized intersection of Farrington Highway and Kili Drive.

Farrington Highway is a two-lane highway through the project site. The typical section of the highway east and west of the park includes two 12-foot lanes and paved shoulders at least four feet wide; however, in the vicinity of Kili Drive and the Makaha Beach Park, the highway has 11-foot lanes and minimal shoulders. Wooden bridges cross streambeds on both sides of the Kili Drive intersection. The speed limit on Farrington Highway in the vicinity of Makaha Beach Park is 35 miles per hour.

Kili Drive, which provides a secondary access to Makaha Valley, is an uncurbed, two-lane roadway in the vicinity of Farrington Highway. Kili Drive meets Farrington Highway as the stop-controlled stem of an unsignalized T-intersection.

Traffic data from a 1988 machine count of the northeast and southeast legs of the intersection and a 1995 machine count of Farrington Highway traffic at Makaha Bridge No. 3 are summarized in Table 1.

---

1 Transportation Research Board, National Research Council. *Highway Capacity Manual, Third Edition*, Washington, D.C. 1994.

Table 1
TRAFFIC COUNTS ON FARRINGTON HIGHWAY AND KILI DRIVE

	Farrington Highway westbound	Farrington Highway eastbound
east of Kili Drive (1)		
24-hour count (February 23-24, 1988)	2,432	2,544
AM Peak Hour (7:00 - 8:00 AM)	111	139
PM Peak Hour (4:15 - 5:15 PM)	219	221
Station 15-D, Makaha Bridge #3 (2)		
24-hour count (August 7-8, 1995)	2,824	2,831
AM Peak Hour (8:00 - 9:00 AM)	115	158
PM Peak Hour (3:00 - 4:00 PM)	216	204
	Kili Drive	
	southbound	**northbound**
north of Farrington Highway (1)		
24-hour count (February 23-24, 1988)	580	598
AM Peak Hour (7:00 - 8:00 AM)	37	25
PM Peak Hour (4:15 - 5:15 PM)	46	58

Sources: (1) City and County of Honolulu, Department of Transportation Services.
(2) State Highways Division, Planning Branch.

Table 2 shows the average daily traffic statistics for selected months from a continuous count taken of Farrington Highway at Makaha Bridge #2, located approximately 1½ miles southeast of Kili Drive, for 1994 (the last year in which a complete data set was available). The highest monthly averages occurred in February; the daily volume for Friday in May was the highest entry. The August averages are presented as a comparison since the 1995 counts near Kili Drive were taken in August.

Table 2
TRAFFIC STATISTICS - FARRINGTON HIGHWAY AT MAKAHA BRIDGE #2
Unadjusted Average Daily Traffic Volumes

	Sunday	Monday-Thursday	Friday	Saturday	Average Day
1994	--	--	--	--	19,534
February	19,738	19,686	21,086	20,705	20,039
May	19,521	19,450	21,392	21,028	19,951
August	19,091	18,768	20,329	20,494	19,283

Source: State Highways Division, Planning Branch. *Traffic Summary, Island of Oahu, 1994*

The traffic count data and statistics indicate that the seasonal variation in traffic volumes is approximately 800 vehicles per day. The highest daily volume is about 900 vehicles more than the volume over an average day. Traffic volumes on Farrington Highway near Makaha Beach Park on a Saturday, therefore, are estimated to be 15% higher than weekday volumes. The highest hourly traffic volumes on weekends are expected during the middle of the day, with the peak hourly volume being approximately 10% of the daily volume. Using these parameters, traffic volumes for a weekend peak hour were estimated.

Future Traffic Volumes

The State Highways Division estimates the average daily traffic on segments of highways using traffic count data. Historically, traffic volumes on Farrington Highway near Makaha has not increased. Table 3 shows the estimated average daily traffic volumes (total of both directions) for a 1.06-mile segment of Farrington Highway centered around Kili Drive.

Table 3
TRAFFIC TREND - FARRINGTON HIGHWAY
Water Street to Lawaia Street

Year:	1987	1988	1989	1990	1991	1992	1993	1994	1995
ADT:	6,468	6,343	5,640	6,064	6,187	6,203	5,728	6,703	5,483

(ADT = Average Daily Traffic)

Sources: State Highways Division, Planning Branch. *Traffic Summary, Island of Oahu, 1995* and *Traffic Summary, Island of Oahu, 1990*

The count data presented in Tables 1 and 2 and the average daily traffic estimates presented in Table 3 indicate that traffic volumes in the area are not increasing. Farrington Highway terminates approximately five miles to the northwest and there are no known developments in the area which would generate additional traffic.

In order to conservatively address future conditions, the estimates of future peak hour traffic, or traffic assignments, at the intersection of Farrington Highway and Kili Drive were made for a 10% increase over the counted volumes. The assignments without any additional traffic due to the park are shown in Exhibit 2 for the existing highway (T-intersection) and for a realigned highway (cross-intersection). The analyses of unsignalized intersections show peak hour conditions that are Level of Service A or B.

Traffic Analyses of Project Impacts

The implementation of the park master plan could be expected to increase traffic volumes in the area by attracting new users. While the repair and replacement of damaged facilities along the beach will have minimal impact to traffic, new uses, such as the picnic area and multi-purpose play field mauka of Farrington Highway would bring additional people and vehicles to the area.

Because there are no reliable factors for estimating traffic impacts of public beach parks, the potential impact of the project was estimated by assuming a complete turnover of all of the parking stalls during the PM Peak Hour and the Weekend Peak Hour; in the AM Peak Hour, when park use is considerably less, volumes were estimated to be one-third of the PM Peak Hour. These estimates are thought to be conservative, since most park users will remain at the park for more than one hour.

The additional traffic during the PM and Weekend peak hours would be 70 vehicles per hour in each direction to and from the west parking lot and 120 vehicles per hour to and from the east (Kili Drive) parking lot. Ninety percent of the traffic generated by the east parking lot was assumed to also use the intersection of Farrington Highway and Kili Drive. Exhibit 3 shows the traffic assignments with the addition of project traffic. The increased traffic at the unsignalized intersection would change peak hour conditions to Level of Service C or better. Table 4 summarizes the findings of the unsignalized intersection analyses for the existing highway alignment. Table 5 shows the findings for an unsignalized intersection with a realigned highway.

Table 4
INTERSECTION CONDITIONS
Existing Highway Alignment

	Without Project		With Project	
Unsignalized Intersection Analyses	Average Delay	LOS	Average Delay	LOS
Farrington Highway at Kili Drive - eastbound left turn				
AM Peak Hour	2.4 sec.	A	2.6 sec.	A
PM Peak Hour	2.7 sec.	A	3.3 sec.	A
Weekend Peak Hour	3.1 sec.	A	3.8 sec.	A
Kili Drive at Farrington Highway - southbound shared lane				
AM Peak Hour	4.6 sec.	A	5.1 sec.	B
PM Peak Hour	6.0 sec.	B	11.5 sec.	C
Weekend Peak Hour	5.6 sec.	B	16.3 sec.	C

Table 5
INTERSECTION CONDITIONS
Realigned Highway

Unsignalized Intersection Analyses	Without Project		With Project	
	Average Delay	LOS	Average Delay	LOS
Farrington Highway at Kili Drive - eastbound left turn				
AM Peak Hour	2.3 sec.	A	2.4 sec.	A
PM Peak Hour	2.7 sec.	A	3.0 sec.	A
Weekend Peak Hour	3.0 sec.	A	3.5 sec.	A
Farrington Highway at Kili Drive - westbound left turn				
AM Peak Hour	2.4 sec.	A	2.5 sec.	A
PM Peak Hour	2.6 sec.	A	2.8 sec.	A
Weekend Peak Hour	2.9 sec.	A	3.2 sec.	A
Kili Drive at Farrington Highway - southbound shared lane				
AM Peak Hour	4.8 sec.	A	5.6 sec.	B
PM Peak Hour	6.2 sec.	B	14.6 sec.	C
Weekend Peak Hour	6.8 sec.	B	24.5 sec.	D
Kili Drive at Farrington Highway - northbound shared lane				
AM Peak Hour	3.8 sec.	A	4.2 sec.	A
PM Peak Hour	4.2 sec.	A	5.3 sec.	B
Weekend Peak Hour	5.7 sec.	B	11.4 sec.	C

Other Project Impacts and Possible Mitigation Measures

The implementation of the park master plan can be expected to increase the number of pedestrians crossing the highway. Several alternatives to facilitate the safe crossing of the highway were considered.

A marked crosswalk near the parking lot driveway and at Kili Drive would provide a safer crossing by designating the areas in which pedestrians are expected to cross, thereby reducing the possible locations of pedestrian-vehicle conflicts and providing a clear indication for drivers that pedestrian crossings can be expected. Warning signs could be used to supplement pavement markings to improve the visibility of any crosswalks. Parking prohibitions to maintain sight lines and to minimize conflicts between pedestrians and vehicles should be implemented where necessary.

Marked crosswalks, however, are effective only if they are properly used by pedestrians; in areas where crosswalks are marked but are not used properly, increased hazards could result due to complacency on the part of drivers or pedestrians. Fencing along the boundary between the park and highway right-of-way with openings only at crosswalks or driveways, could be used to discourage unintended pedestrian crossings.

A grade-separated pedestrian crossing, such as an overpass or underpass, would physically separate vehicular traffic from pedestrians crossing the highway. The design of either structure would comply with accessibility standards, and approach ramps on both sides would be necessary. Many users may not use the grade separation, since it will involve longer walking distances to cross the narrow highway. Measures to discourage random crossings, as discussed above in conjunction with marked crosswalks, should be implemented if a grade separation is provided. Since the park creates the need for the grade separation, its cost and maintenance will be the responsibility of the park operator.

The installation of a traffic signal would not likely be warranted. Before a traffic signal system is installed, a comprehensive investigation of traffic conditions is required, using traffic data (not projections) and physical characteristics to determine if a traffic signal is needed. Traffic volumes, pedestrian volumes, accident history, or peak hour delays are used to determine if any of eleven warrants, or minimum conditions, in the *Manual on Uniform Traffic Control Devices for Streets and Highways*[2] (*MUTCD*) would be met. The *MUTCD* states that "signals should not be installed unless one or more of the(se) warrants are met. The satisfaction of a warrant or warrants is not in itself justification for a signal."

One of the warrants, for minimum pedestrian volume, requires a pedestrian volume of 190 or more during any one hour or 100 or more for each of any four hours of an average day; during the same period, "there shall be less than 60 gaps per hour in the traffic stream of adequate length for pedestrians to cross" the roadway. While the second part of the first condition (100 or more pedestrians for each of four hours) could likely be met, the number of gaps appears to exceed 60 per hour, even for the peak weekend hour. A gap of nine seconds would be necessary to cross the highway, based on the existing 11-foot lanes and allowing 2 feet of clearance on each side, and a walking speed of 3 feet per second. By applying the unsignalized intersection analysis with this gap and a highway volume of 895 vehicles per hour, the number of gaps ("capacity" in the analysis) was determined to be 70 in the peak hour. The narrow roadway and relatively low volume of highway traffic indicate that satisfaction of this warrant would be unlikely.

---

2 U. S. Department of Transportation, Federal Highway Administration. *Manual on Uniform Traffic Control Devices for Streets and Highways*, Washington, D.C. 1988, and as amended.

The highest vehicular volumes would occur at the intersection of Farrington Highway and Kili Drive. The warrants for minimum vehicular volumes include minimum volumes for eight hours, four hours, and for one peak hour; in most cases, the peak hour warrant is the first warrant that is met. The peak hour warrant is satisfied when the plotted point representing the vehicular volumes on intersecting streets falls above the applicable curve (in this case, the "1 LANE & 1 LANE" curve). As shown in Exhibit 4, the plotted points for future conditions all fall below the curve and the peak hour vehicular warrant would not be satisfied.

The eight-hour warrant for minimum vehicular volumes requires a minimum volume of 150 vehicles per hour approaching on a minor street for each of eight hours of an average day. The existing volume on Kili Drive, estimated to be 700 vehicles per day approaching the intersection (based on 115% of the 1988 count), is far less than the 1,200 vehicles required for eight hours of an average day. Again, the warrant is not likely to be satisfied. A second eight-hour warrant applies where the major street flow is heavy; a minimum volume of 750 vehicles per hour (both directions) on the major street for each of eight hours of an average day is required. The existing volume on the highway, estimated at less than 7,000 vehicles per day (see Table 3), make it unlikely that there could be 750 vehicles per hour for the eight highest hours (total of 6,000 vehicles in eight hours). This warrant is also unlikely to be met.

The preliminary traffic signal warrant evaluation discussed above has been based on estimates of traffic volumes on Farrington Highway. While the preliminary evaluation indicates that satisfaction of a traffic signal warrant is unlikely, additional studies, including traffic counts or other observations, may be necessary to provide sufficient data to conclude whether signals are warranted.

Lowering of the speed limit on Farrington Highway would probably not result in lower speeds through the area, since drivers will continue to drive at a "comfortable" speed; unless enforcement of a lower speed limit can be maintained, it will not be effective. Warning signs, with advisory speed plates showing a lower speed, may be a better alternative (see Exhibit 5). The design of any park improvements should include an evaluation of the signing and pavement markings along the highway.

Other measures that are sometimes used to warn drivers of the presence of pedestrians or roadside hazards include yellow flashing lights, rumble strips (raised pavement markers arranged across the travel lane), and speed humps. If used, a yellow flashing light (beacon) should be installed as part of a warning sign and shall conform with the requirements of the MUTCD. Rumble strips are often used to warn drivers of a change in speed or other condition; their use in an area where pedestrians may cross could introduce other hazards and is not recommended. Speed humps on a major highway such as Farrington Highway would be inappropriate and are also not recommended.

In conclusion, the only measures which may be appropriate are related to improving pedestrian crossing of the highway. This improvement could include a pedestrian overpass providing marked crosswalks near the west parking lot and at the Kili Drive intersection. The crosswalks should be clearly marked and located so that drivers have a unobstructed view of pedestrians entering the roadway, and pedestrians should have a clear view of oncoming traffic; parking near the crosswalk may need to be prohibited. Other measures to encourage the use of the crosswalks, such as fencing, should be provided. Warning signs and flashing beacons to alert drivers of the crosswalk should be installed.

Conclusions

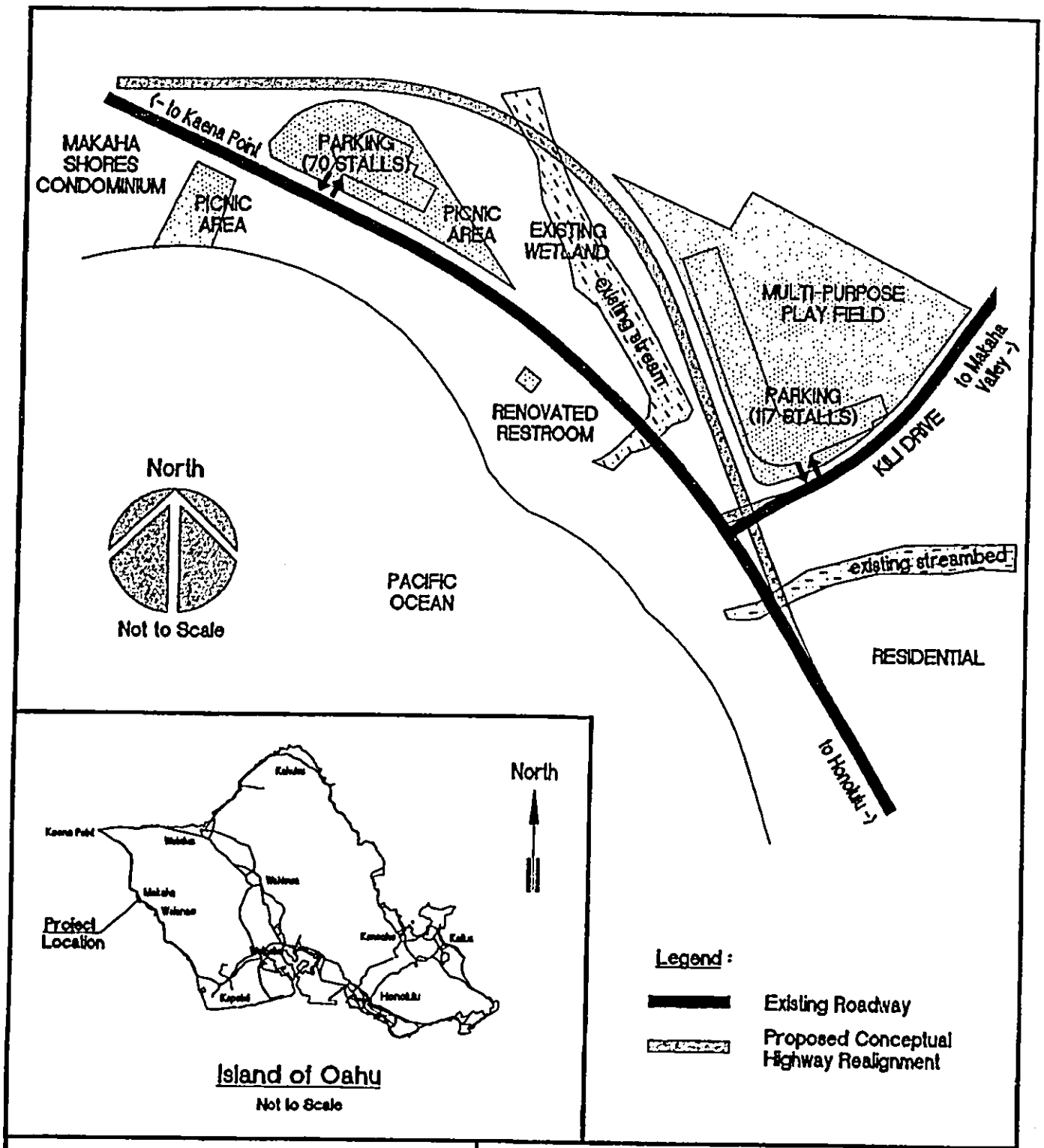
The traffic assessment has found that the development of the proposed project will have a minimal impact on traffic conditions. The plan will add off-street parking and any additional traffic due to new uses could be accommodated by the existing roadways and unsignalized intersections at acceptable levels of service. The assessment also found that an unsignalized intersection with Kili Drive would also be adequate if Farrington Highway were realigned.

The proposed project, however, will increase the volume of pedestrians crossing Farrington Highway. Although the highway is only two lanes wide and traffic volumes are relatively low, there will be increased conflicts between vehicles and pedestrians. A grade-separated pedestrian crossing, such as an overpass or an underpass, should be considered. If infeasible or unacceptable, a marked crosswalk should be placed near the driveway to the beach parking lot.

A preliminary evaluation of traffic signal warrants, or the minimum conditions which need to be exceeded for the installation of traffic signals, indicate traffic signals would not be warranted.

Crosswalks at the Kili Drive intersection with Farrington Highway should also be marked. Clear marking of crosswalks, along with measures to encourage their use and to alert drivers of their locations, should be provided. Fencing to discourage random crossing of the highway and warning signs and beacons should be evaluated during the design of improvements to the park.

* * *

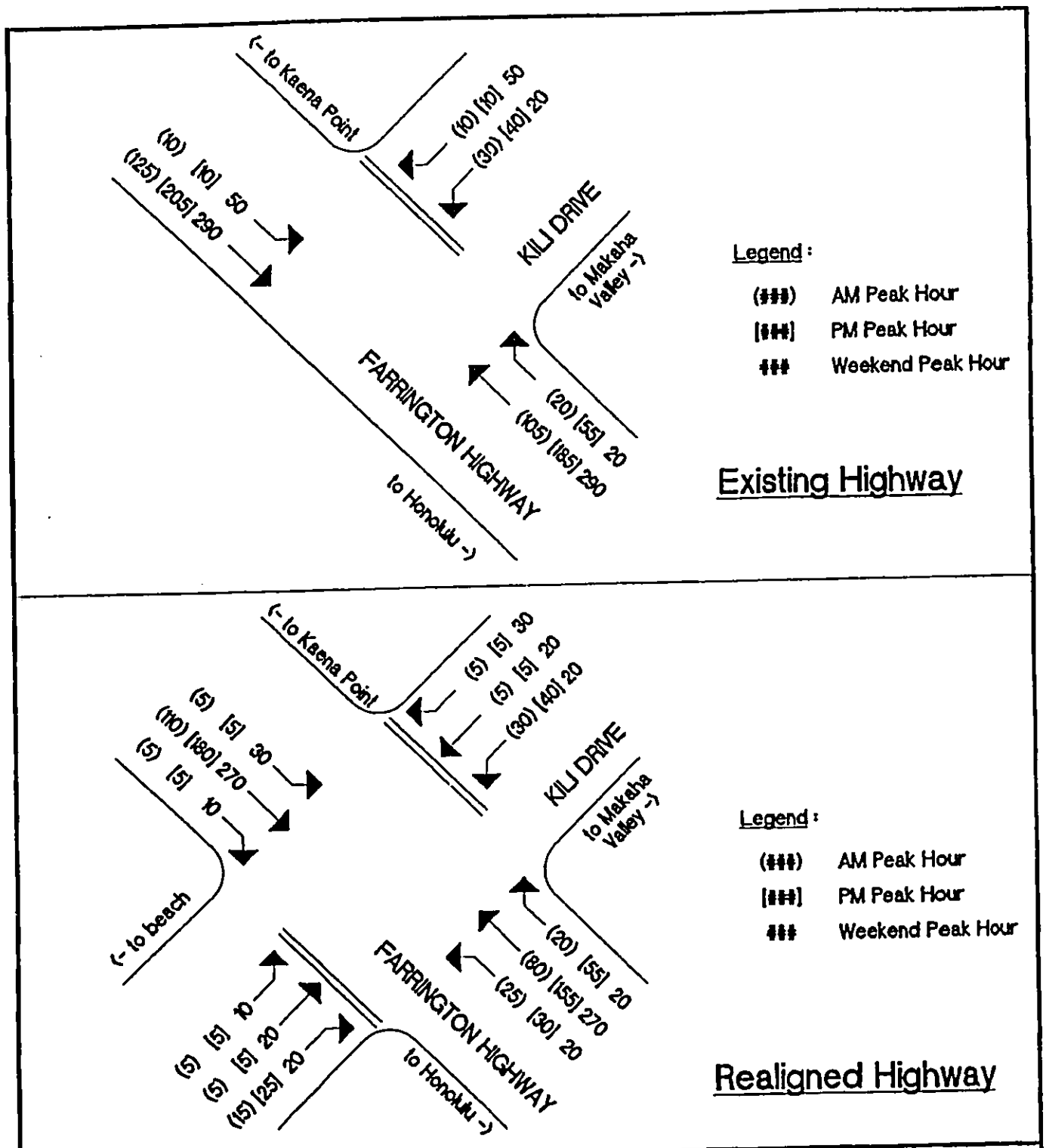


Traffic Assessment
Makaha Beach Park Master Plan
Makaha, Oahu

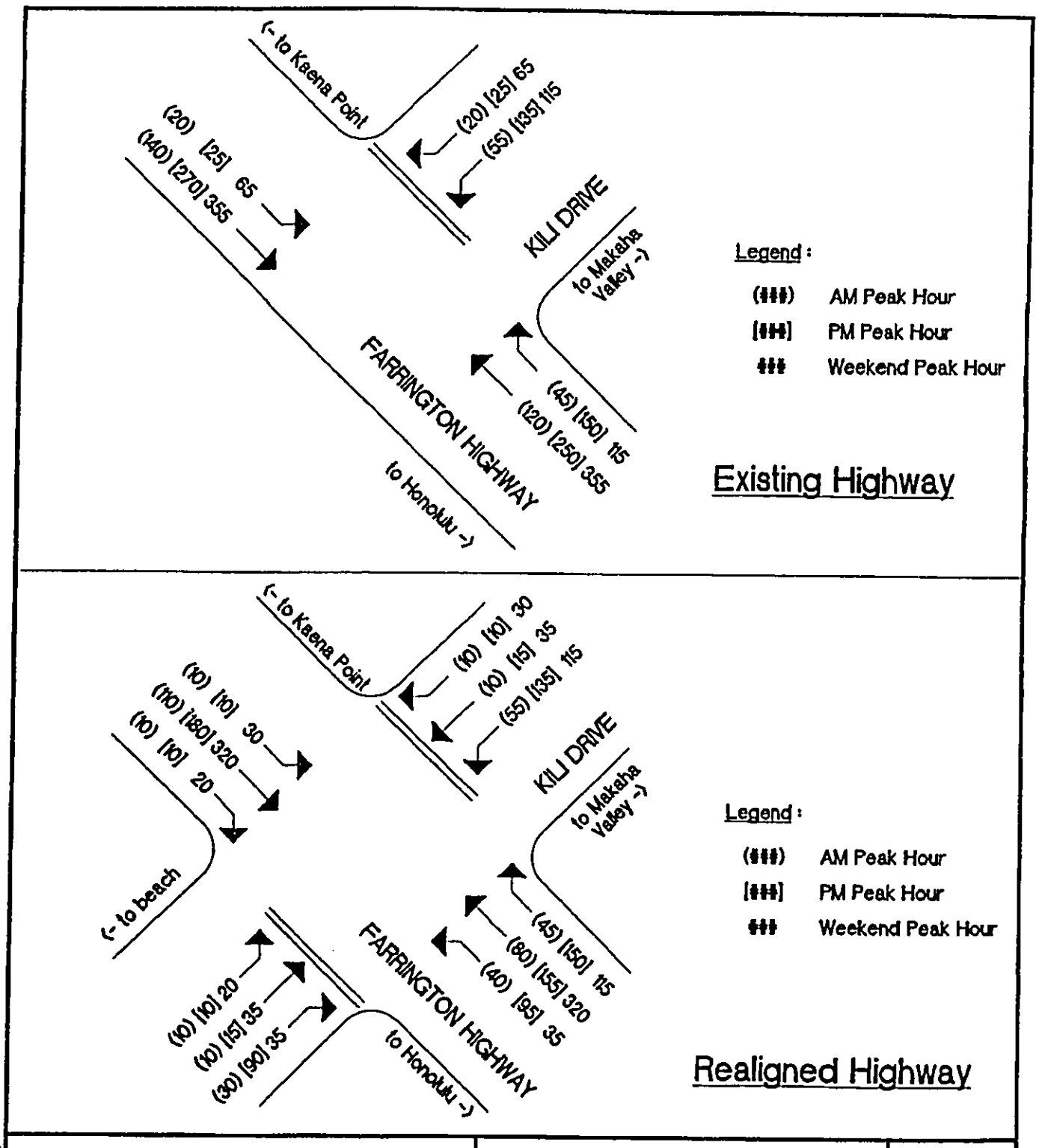
Project Location and Site Plan

prepared by: Julian Ng, Inc. August, 1997

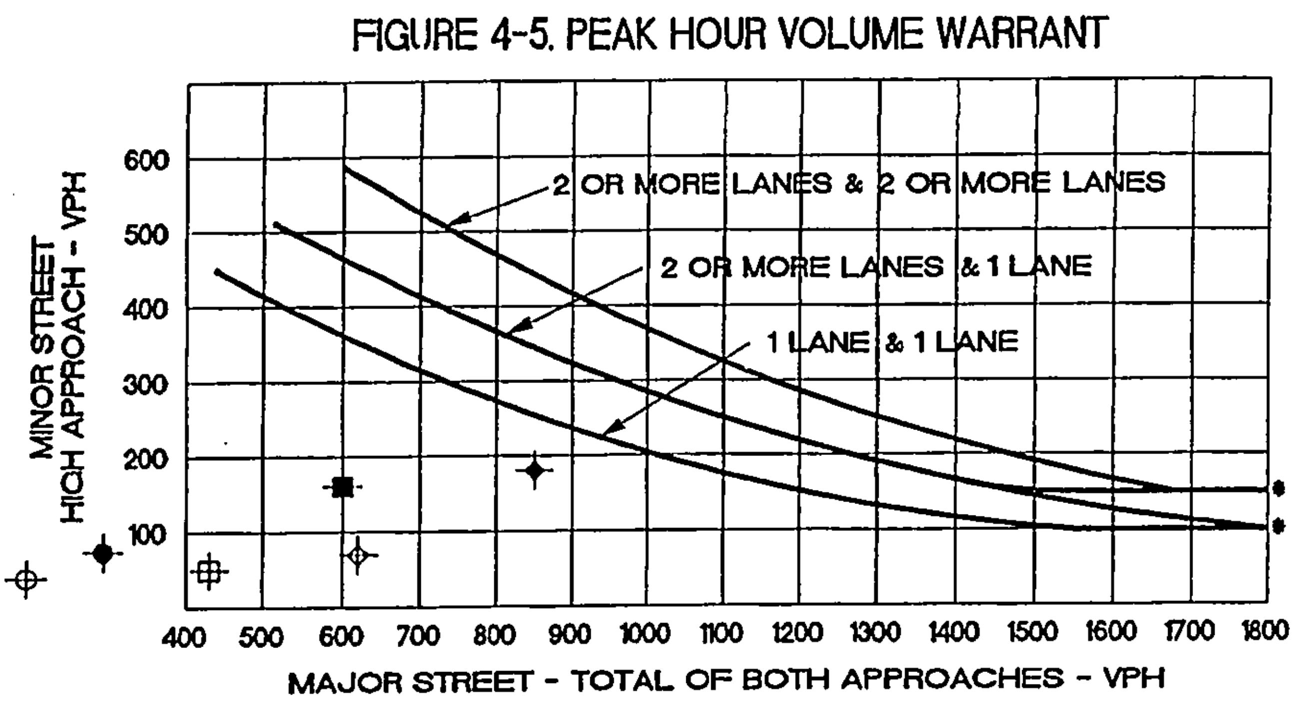
Exhibit 1



Traffic Assessment Makaha Beach Park Master Plan Makaha, Oahu	**Traffic Assignments Without Project** prepared by: Julian Ng, Inc. August, 1997	Exhibit 2



Traffic Assessment Makaha Beach Park Master Plan Makaha, Oahu	**Traffic Assignments With Project Traffic** prepared by: Julian Ng, Inc. August, 1997	Exhibit 3



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

LEGEND

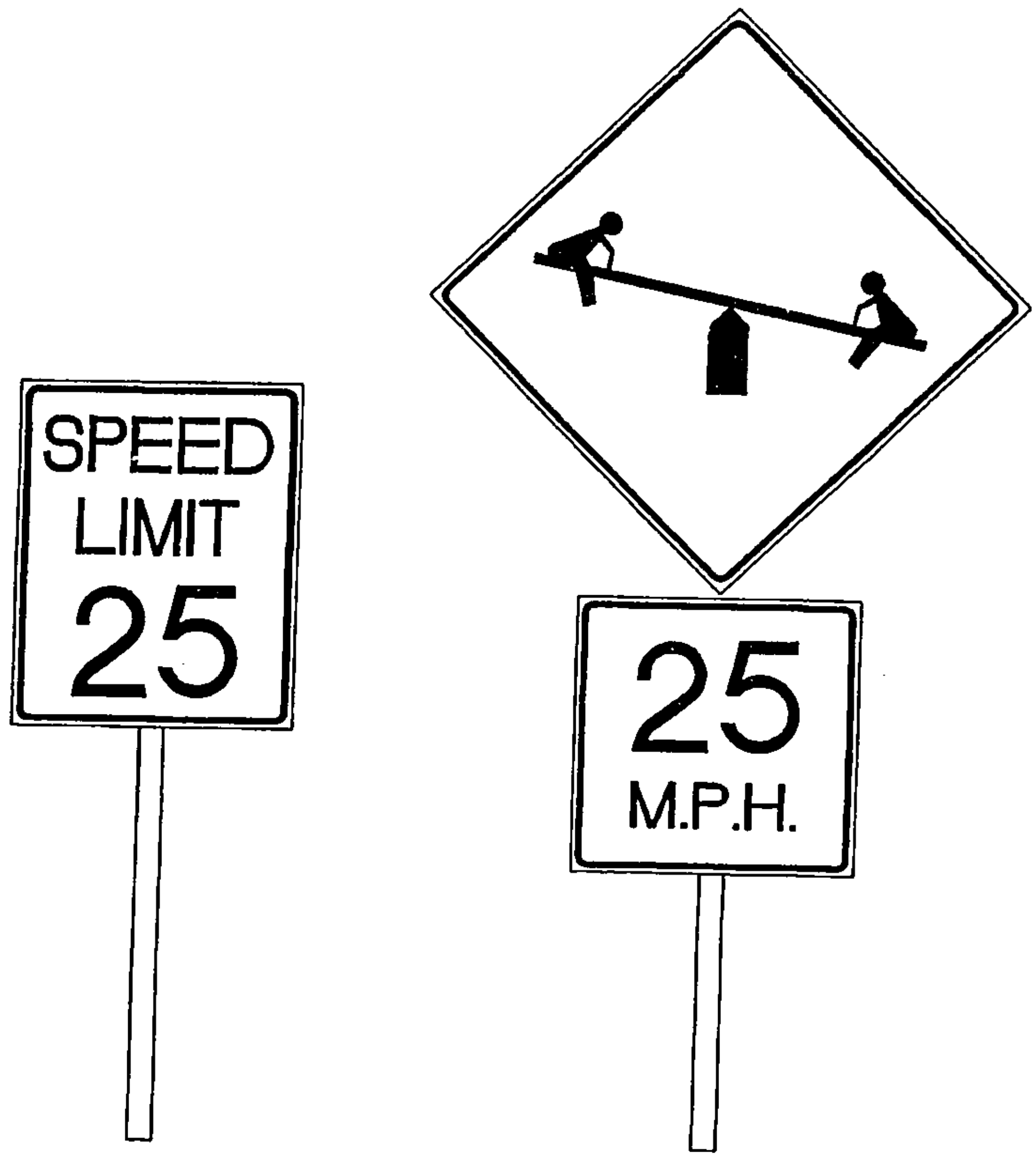
Farrington Highway & Kii Drive

WITHOUT PROJECT		WITH PROJECT
-ɸ-	AM PEAK HOUR	◆
-⊞-	PM PEAK HOUR	■
-✧-	WEEKEND PEAK HOUR	✦

Notes: Signal warrant curves from *Manual on Uniform Traffic Control Devices for Streets and Highways*, published by Federal Highway Administration, 1988 Edition, Figure 4-5

Traffic signal is warranted if plotted point is above the applicable curve.

Traffic Assessment Makaha Beach Park Master Plan Makaha, Oahu	Signal Warrant Evaluation Peak Hour Traffic prepared by: Julian Ng, Inc. August, 1997	Exhibit 4



Speed Limit Sign

Warning Sign

Traffic Assessment Makaha Beach Park Master Plan Makaha, Oahu	Speed Sign Alternatives prepared by: Julian Ng, Inc. August, 1997	Exhibit 5

MAKAHA BEACH PARK
NEW COMFORT STATION & MASTER PLAN

ENVIRONMENTAL ASSESSMENT DISTRIBUTION LIST

- FEDERAL

AGENCY	PHONE/FAX	DATE EA REPORT MAILED	DATE EA RESPONSE RECEIVED	REMARKS
U.S. Army Corps of Engineers Pacific Ocean Division, Building 320 Fort Shafter, HI 96858 Attention: Mr. Alan Chin-Chief	(P) 438-6974	6/25/97	7/11/97	Refer to comments on letter dated July 10, 1997. A response letter to agency's comments was mailed on July 16, 1997.
U.S. Department of Commerce National Marine Fisheries Service Pacific Area Office 2570 Dole Street Honolulu, HI 96822 Attention: Mr. John Naughton	(P) 943-1221 (F) 943-1290	6/25/97	NONE	NO RESPONSE LETTER RECEIVED
U.S. Department of the Interior Fish and Wildlife Services 300 Ala Moana Boulevard Honolulu, HI 96825 Attention: Ms. Phyllis Ha	(P) 541-1201 (F) 541-1216	6/25/97	8/6/97	Refer to comments on letter dated August 5, 1997. Letter by Brooks Harper, Field Supervisor Ecological Services.
U.S. Department of Transportation Federal Aviation Administration 300 Ala Moana Boulevard Honolulu, HI 96825 Attention: Ms. Darice Young	(P) 541-1238 (F) 541-3462	6/25/97	7/7/97	The Federal Aviation Administration has no objections or comments on the proposed project. Refer to letter dated July 2, 1997.

MAKAHA BEACH PARK
NEW COMFORT STATION & MASTER PLAN

- **STATE OF HAWAII**

AGENCY	PHONE/FAX	DATE EA REPORT MAILED	DATE EA RESPONSE RECEIVED	REMARKS
Department of Agriculture 1428 South King Street Honolulu, HI 96814 Attention: Mr. James Nakatane, Chairperson	(P) 973-9600 (F) 973-9613	6/25/97	NONE	NO RESPONSE LETTER RECEIVED
Department of Business, Economic Development & Tourism PO Box 2359 Honolulu, HI 96804 Attention: Dr. Seiji Naya, Director	(P) 586-2335 (F) 586-2377	6/25/97	7/10/97	There are no comments or concerns. Refer to letter dated July 7, 1997.
State Historic Preservation Division Department of Land and Natural Resources 33 South King Street, 6th Floor Honolulu, HI 96813 Attention: Mr. Muffet Jourdane	(P) 587-0047 (F) 587-0018	6/25/97	NONE	NO RESPONSE LETTER RECEIVED
Department of Health 1251 Punchbowl Street Honolulu, HI 96813 Attention: Mr. Bruce Anderson	(P) 586-4400 (F) 586-4444	6/25/97	8/4/97	For comments, refer to letter dated July 29, 1997.

AGENCY	PHONE/FAX	DATE EA REPORT MAILED	DATE EA REPONSE RECEIVED	REMARKS
Department of Health Environmental Management Division 919 Ala Moana Boulevard Suite 300 Honolulu, HI 96813 Attention: Mr. Thomas Arizumi	(P) 586-4304 (F) 586-4352	6/25/97	NONE	NO RESPONSE LETTER RECEIVED
Office of Hawaiian Affairs 711 Kapiolani Boulevard, Suite 500 Honolulu, HI 96813 Attention: Mr. Louis Manrique	(P) 594-1888 (F) 594-1865	6/25/97	8/4/97	Sent an additional copy as requested by Mr. Manrique on July 11, 1997. Refer to letter dated July 15, 1997.
State of Hawaii Department of Transportation 869 Punchbowl Street Honolulu, HI 96813 Attention: Mr. Kazu Hayashida	(P) 587-2150	6/25/97	8/12/97	Refer to letter dated August 11, 1997 for comments to be included in the final environmental assesssment report.
Department of Accounting & General Services Planning Branch, Room 430 1151 Punchbowl Street Honolulu, HI 96813 Attention: Mr. Ralph Morita	(P) 586-0486 (F) 586-0482	6/26/97 Hand Delivered	8/4/97	No comment to report. Refer to letter dated August 1, 1997 by Mr. Gordon Matsuoka.
State of Hawaii Office of Environmental Quality Control 235 S. Beretania Street, Suite 702 Honolulu, Hawaii 96813 Attention: Mr. Gary Gill	(P) 586-4185 (F) 586-4186	6/25/97 Hand Delivered	8/8/97	Refert to letter dated August 7, 1997 for comments.

MAKAHA BEACH PARK
NEW COMFORT STATION & MASTER PLAN

- CITY & COUNTY OF HONOLULU

AGENCY	PHONE/FAX	DATE EA REPORT MAILED	DATE EA RESPONSE RECEIVED	REMARKS
Board of Water Supply 630 South Beretania Street Honolulu, HI 96813 Attention: Mr. Raymond Sato	(P) 527-6180 (F) 533-2714	6/25/97	8/6/97	Refer to letter dated July 31, 1997 for comments.
Building Department 650 South King Street Honolulu, HI 96813 Attention: Director	(P) 527-6339 (F) 523-4567	6/25/97	NONE	NO RESPONSE LETTER RECEIVED
Department of Planning 650 South King Street Honolulu, HI 96813 Attention: Mr. Patrick T. Onishi, AIA	(P) 523-4713 (F) 523-4950	6/25/97	8/4/97	Offered addition information and has no objections to the proposed project. Refer to letter dated July 31, 1997.
Department of Land Utilization 650 South King Street Honolulu, HI 96813 Attention: Mr. Art Shallacombe	(P) 523-4077 (F) 527-6743	6/26/97 Hand Delivered w/ SMA Application	7/28/97	Refer to letter dated 7/25/97 for comments from agency.
Department of Parks & Recreation 650 South King Street Honolulu, HI 96813 Attention: Mr. Daniel Takamatsu	(P) 527-6301 (F) 523-4767	6/25/97 Hand Delivered	NONE	NO RESPONSE LETTER RECEIVED
Department of Public Works 650 South King Street 11th Floor Honolulu, HI 96813 Attention: Dr. Jonathan K. Shimata	(P) 523-4341 (F) 527-5857	6/25/97	7/18/97	Received comments regarding road condition at Kili Drive and drainage at site. Refer to letter dated July 16, 1997.

AGENCY	PHONE/FAX	DATE EA REPORT MAILED	DATE EA RESPONSE RECEIVED	REMARKS
Department of Transportation Services 650 South King Street Honolulu, HI 96813 Attention: Mr. Cheryl Soon	(P) 523-4529 (F) 523-4730	6/25/97	8/4/97	Recommends that existing Kili Drive be dedicated to the City. Therefore road will be constructed to City standards. Refer to letter dated July 30, 1997.
DPR Ocean Safety Division 3823 Leahi Avenue Honolulu, HI 96815 Attention: Mr. Ralph Goto	(P) 922-3888 (F) 922-0411	6/25/97	NONE	NO RESPONSE LETTER RECEIVED
University of Hawaii Water Resources Research Center 2540 Dole Street, Holmes Hall 283 Honolulu, HI 96822 Attention: Mr. Roger Fujioka	(P) 957-7847 (F) 956-5044	6/25/97	NONE	NO RESPONSE LETTER RECEIVED
University of Hawaii Environmental Center 2550 Campus Road, Crawford 317 Honolulu, HI 96822 Attention: Dr. John Harrison	(P) 956-7361 (F) 956-3980	6/25/97	NONE	NO RESPONSE LETTER RECEIVED
Waianae Neighborhood Board 87-149 Maipela Street Waianae, HI 96792 Attention: Ms. Cynthia Rezentes	(P) 696-0131 (F) 696-0131	6/25/97	NONE	NO RESPONSE LETTER RECEIVED

MAKAHA BEACH PARK
NEW COMFORT STATION & MASTER PLAN

- PRIVATE

AGENCY	PHONE/FAX	DATE EA REPORT MAILED	DATE EA RESPONSE RECEIVED	REMARKS
AT&T Substation Makaha 84-250 Farrington Highway Waianae, HI 96792 Attention: Wade Higa, Supervisor	(P) 696-4732	6/25/97	NONE	NO RESPONSE LETTER RECEIVED
Makaha Shores Condominium 84-265 Farrington Highway Waianae, HI 96792 Attention: Building Manager	N/A	6/25/97	NONE	NO REPONSE LETTER RECEIVED
Holtz Residence Makaha Surfside 85-175 Farrington Highway C316 Waianae, HI 96792	N/A	N/A	8/6/97	Note: response sent by resident of Waianae, S.J Holtz. Responding to newspaper article in Honolulu Advertiser on Tueday August 5, 1997.

U.S. Department
of Transportation
Federal Aviation
Administration

Western-Pacific Region
Box 50109
Honolulu, HI 96850-4983

RECEIVED
JUL 07 1997
PACIFIC ARCHITECTS, INC.

July 2, 1997

Mr. Gary Lee
Project Coordinator
Pacific Architects, Inc.
2020 S. King Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Your letters of June 26 and 27, 1997, forwarded for review the Draft Environmental Assessment for the City and County of Honolulu, Department of Parks and Recreation proposal to expand and enhance park facilities at Makaha Beach Park, Oahu, Hawaii.

The Federal Aviation Administration has no objections or comments on the proposed project.

We appreciate this opportunity to review your proposal. Please contact me at 541-1236, if there are any questions.

Sincerely,

Darice B.N. Young

Darice B. N. Young
Realty Contracting Officer, AHNL-54B

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

August 14, 1997

U.S. Department of Transportation
Federal Aviation Administration
Western-Pacific Region
P.O. Box 50109
Honolulu, Hawaii 96850

Attention: Ms. Darice B.N. Young, Realty Contracting Officer, AHNL-54B
Project: Makaha Beach Park Master Plan
Subject: Draft Environmental Assessment Report

Dear Ms. Young,

Thank you for reviewing the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. We are preparing the Final Environmental Assessment Report.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary S. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM

OFFICE OF PLANNING
235 South Beretania Street, 6th Flr., Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

BENJAMIN J. CAYETANO
GOVERNOR
SEIJI F. NAYA
DIRECTOR
BRADLEY J. MOSSMAN
DEPUTY DIRECTOR
RICK EGGED
DIRECTOR, OFFICE OF PLANNING

Tel.: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-6789

July 7, 1997

RECEIVED
JUL 1 0 1997
PACIFIC ARCHITECTS, INC.

Mr. Gary G.L. Lee
Project Coordinator
Pacific Architects, Inc.
2020 South King Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

This is in response to your letter request of June 26, 1997, for comments on the Department of Parks and Recreation's proposed expansion and enhancement of facilities at Makaha Beach Park. We are pleased to see that the proposed changes and improvements are based largely on preventing and minimizing damages from coastal hazards. We support this effort to protect the investment of public funds.

We do not have any other comments or concerns relative to the plans and programs in the Department of Business, Economic Development & Tourism. If any questions arise concerning our remarks, please feel free to contact Douglas Tom of our Coastal Zone Management Program at 587-2875.

Sincerely,

Rick Egged
Director
Office of Planning

cc: Seiji F. Naya

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

August 14, 1997

Department of Business,
Economic Development & Tourism
Office of Planning
235 South Beretania Street, 6th Floor
Honolulu, Hawaii 96813

Attention: Mr. Rick Egged, Director Office of Planning

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Mr. Egged,

Thank you for reviewing the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. We are preparing the Final Environmental Assessment Report.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

July 10, 1997

Planning and Operations Division

RECEIVED
JUL 11 1997
PACIFIC ARCHITECTS, INC.

Mr. Gary G. L. Lee
Project Coordinator
Pacific Architects, Incorporated
2020 South King Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Makaha Beach Park Master Plan, Makaha, Oahu. The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Based on the information provided, a DA permit will be required for the discharge of dredged or fill materials into waters of the U.S., including wetlands. Please forward the project plans to our Regulatory Section as they become available so that the impacts can be evaluated. For further information, please contact Mr. Alan Everson at 438-9258.

b. The flood hazard information provided on page 10 of the DEA is correct.

Sincerely,

Paul Mizue, P.E.
Acting Chief, Planning
and Operations Division

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

July 16, 1997

Department of the Army
Pacific Division, Corps of Engineers
Fort Shafter, Hawaii 96858-5440

Attention: Mr. Paul Mizue, P.E
Project: Makaha Beach Park Master Plan
Subject: Draft Environmental Assessment Report

Dear Mr. Mizue,

Thank you for your comments and quick response to the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. We are proceeding in designing the comfort station and parking lot for Phase I of this master plan. As requested by your department, a set of completed plans will be submitted for your review and approval.

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR • HONOLULU, HAWAII 96813
PHONE (808) 523-4361 • FAX (808) 527-5857

JEREMY HARRIS
MAYOR

JONATHAN K. SHIMADA, PhD
DIRECTOR AND CHIEF ENGINEER
ROLAND D. LIBBY, JR.
DEPUTY DIRECTOR

ENV 97-117

July 16, 1997

Mr. Gary G.L. Lee
Project Coordinator
Pacific Architects, Inc.
2020 South King Street
Honolulu, Hawaii 96826

RECEIVED
JUL 16 1997
PACIFIC ARCHITECTS, INC.

Dear Mr. Lee:

Subject: Draft Environmental Assessment (DEA)
Makaha Beach Park Master Plan
TMK: 8-4-2: 12 & Por. 47

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

1. The existing frontage conditions of Kili Drive may require improvements such as repair, reconstruction and/or paved footpath. If so, all improvements should be in accordance with City standards and the Americans with Disabilities Act Accessibility Guidelines.

2. The DEA should add a separate subsection in Section 2 for drainage and water quality. Provide maps showing existing and proposed drainage patterns and expand the narrative on Page 11, "two existing slow running streams," to include names, ownership, and description (approximate width, type of stream bank, history of flooding, and any plans for improvement).

3. Item B.3 on page 3 lists water quality related goals, but the document does not describe implementation. Address how the existing wetlands will be protected, pollution from stream runoff be minimized, and flow of water from the mountain side to the pond be restored.

4. Direct runoff from parking and other paved areas to planted area or grassed swales prior to discharging to streams. Discuss adequacy of, and any proposed improvements for disposal of wastewater from the existing shower at the west end of the park.

Should you have any questions, please call Mr. Alex Ho, Environmental Engineer, at 523-4150.

Very truly yours,

J. K. Shimada

JONATHAN K. SHIMADA, PhD
Director and Chief Engineer

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

August 19, 1997

Department of Public Works
City & County of Honolulu
650 S. King Street, 11th Floor
Honolulu, Hawaii 96813

Attention: Jonathan K. Shimada, PhD, Director & Chief Engineer

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Dr. Shimada,

Thank you for your comments to the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. The following are responses to your comments:

Improvements to Kili Drive
Should there be improvements made to Kili Drive, all work will comply with City & County of Honolulu standards and the Americans with Disabilities Act Accessibility Guidelines. Improvements to the road will be coordinated with State of Hawaii Department of Transportation since Kili Drive ties into Farrington Highway.

Existing Slow Running Streams
There are two existing slow running streams which separates from the main Makaha Stream. One stream runs through the existing Wetland and the other runs adjacent to the east side of Kili Drive. The mouth of both streams end at Makaha Beach. Tax Map Key indicates the stream to vary in width and is approximately 10 feet wide. Enclosed are information of Makaha Stream.

The only times when the mouth of the streams flood is during heavy rain. Water flows down the streams from the valley and empties out to the beach. The most recent flood was in November 1996 , heavy caused flooding at the Makaha Valley Towers and Kili Drive. History of flooding also include Hurricane Iniki and Hurricane Ewa.

The wetland and streams will not be altered. If there are future plans to alter these areas, the U.S. Army Corps of Engineers will be informed for consultation and permit process.

Water Quality & Wetland Protection
Areas disturbed by construction will be maintained by landscaping. It is unlikely that wetland and stream be disturbed by construction. Construction activities to comply with Chapter 11-60.1, "Air Pollution Control", Section 11-60.1-33 on Fugitive Dust.

Water Runoff
Slope and design of parking lot will be coordinated with Civil Engineer to direct runoff from parking lot to landscaped areas. Sewage will be disposed into leaching field and septic tank. Water from outdoor shower will drain onto landscape and gravel area.

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE (808) 523-4414 • FAX: (808) 527-6743

JEREMY HARRIS
MAYOR

JAN NADE SULLIVAN
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

97/SMA-037(DT)
97-04753

July 25, 1997

Mr. Gary Lee
Pacific Architects, Inc.
2020 South King Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Comments to Draft Environmental Assessment (EA)
Makaha Beach Park Master Plan
Tax Map Keys: 8-4-1: 12 and 8-4-2: 47

We have reviewed the proposal to add new comfort stations and other improvements to the site located mauka of Makaha Beach Park, and renovations to the existing temporary comfort station at the Park. We have the following comments:

1. Tax Map Key

   It appears that the Draft EA lists an incorrect Tax Map Key (8-4-2: 12) for one of the project sites. This should be corrected in the Final EA.

2. Flood Zone

   Tax Map Key 8-4-2: 47 is within Flood Zones A and AE, and must comply with the requirements of Section 7.10 of the Land Use Ordinance (LUO).

   Makaha Beach Park is within Flood Zones AE and VE, and must comply with Section 7.10 of the LUO.

   The Flood Hazard section on Page 10 of the Draft EA should mention how the proposed structures will meet the flood requirements of Section 7.10 of the LUO.

3. Funding For Phase 2

   Page 5 of the Draft EA mentions that funds are currently not available for Phase 2. Approximately when will funds be available for construction of Phase 2?

4. Alteration To Land Forms

   Page 10 of the Draft EA reports that the area adjacent to Farrington Highway is low and will require fill during construction. The Final EA should indicate the amount of grading and filling that will be performed on the site.

5. Kaneaki and Ukanipo Heiaus

   The Draft EA states that the two heiaus are not within the location of the project site. What is the distance of the heiaus to the project site?

6. Solid and Liquid Waste

   The method of solid waste disposal to be utilized after the project is completed should be included in the Final EA.

   Details of the septic tank, size, capacity, plans, etc. should be included in the Final EA. The septic tank and leach field should be added to the Conceptual Master Plan (Figure 1).

7. Wetlands

   Page 22 of the Draft EA mentions that the wetlands will be protected. The Final EA should indicate how this will be accomplished.

8. Water Quality

   The effects on receiving waters during construction, such as stream and ocean waters, should be included in the Final EA.

9. Existing Comfort Station

   Page 4 of the Draft EA mentions that Phase 1 work includes renovations to the existing restroom facility. What types of renovations are proposed?

If you have any questions regarding this letter, please contact Dana Teramoto of our staff at 523-4648.

Very truly yours,

JAN NOE SULLIVAN
Director of Land Utilization

JNS:am
cc: Department of Parks and Recreation
wes37des.djt

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

August 29, 1997

Department of Land Utilization
City & County of Honolulu
650 S. King Street, 8th Floor
Honolulu, Hawaii 96813

Attention: Ms. Jan Naoe Sullivan, Director of Land Utilization

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Ms. Sullivan,

Thank you for your comments to the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. The following are responses to your comments:

Tax Map Key
The correct Tax Map Key is 8-4-1: 12. Correction has been made to the Final Environmental Assessment Report.

Flood Zone
The proposed project will comply with Section 7.10 in the Land Utilization Ordinance.

Funding for Phase II
No implementation has been made for Phase II. The purpose of this master plan is to layout the entire Makaha Beach Park.

Alteration to Land Forms
An approximate area of 8,750 cubic yards will be filled fronting Farrington Highway to locate the new comfort station and parking lot for Phase I of the project.

Kaneaki and Ukanepo Heiau
Kaneaki Heiau is located approximately 2.3 miles inland of the project site. The other major heiau of the region is Ukanepo Heiau located west side of Makua Valley, approximately 4.3 miles away from the project site.

Solid and Liquid Waste
Solid waste disposal will be by normal City and County Refuse collection. A dumpster and enclosure will be located adjacent to the new comfort station. Liquid waste will be disposed to a septic tank and leaching field. The area for the septic tank and leaching field will be approximately 75'-0" by 75'-0" (5,625 sf) and located in the parking lot adjacent to the comfort station. Normally, if there were open areas available for the leaching field, that would be the preferred site. However, the picnic area may not be a desirable location as there will be inspection ports and cleanouts for the leaching field that may be punctured by tent stakes.

Wetland
Wetland will be protected during construction activities by blanketing the surrounding area and comply Chapter 11-60.1, "Air Pollution Control", Section 11-60.1-33 on Fugitive Dust.

Water Quality
Areas disturbed by construction activities will be maintained by landscape. It is unlikely that Wetland, streams and ocean water will be disturbed since construction activities are not within the areas.

Renovation to Existing Restroom
There are plans to renovate the existing restroom to meet current Americans with Disabilities Act Guidelines. Plumbing fixtures will be upgraded and repairs made to the walls and roof.

Respectfully,
Pacific Architects, Inc.

Gary Gi Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

LAWRENCE MIIKE
DIRECTOR OF HEALTH

RECEIVED
AUG 04 1997
PACIFIC ARCHITECTS, INC.

In reply, please refer to

July 29, 1997

97-137/epo

Mr. Gary G. L. Lee
Pacific Architects, Inc.
2020 South King Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Subject: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
Project: Makaha Beach Park Master Plan
Location: Makaha, Oahu, Hawaii
TMK: (1) 8-4-02: 12, Por. 47

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

Control of Fugitive Dust

Potential dust problems may arise during the demolition, clearing and removal of debris, grading, excavation, and construction activities for the subject project, particularly because of the soil characteristics and dry, hot climate of the area. Implementation of adequate dust control measures during all phases of construction is warranted. Construction activities must comply with provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33 on Fugitive Dust.

The contractor should provide adequate means to control dust from the road areas and during the various phases of construction activities. These means include, but are not limited to:

a. Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;

b. Providing an adequate water source at the site prior to startup of construction activities;

c. Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;

d. Controlling of dust from shoulders, project entrances, and access roads;

e. Providing adequate dust control measures during weekends, after hours, and prior to daily startup of construction activities; and

f. Controlling of dust from vehicles hauling debris away from the project site.

If you have any questions regarding fugitive dust, please contact Mr. Robert Tam of the Clean Air Branch at 586-4200.

Water Pollution

1. The applicant should contact the Army Corps of Engineers to identify whether a federal permit (including a Department of Army permit) is required for this project. If a federal permit is required, then a Section 401 Water Quality Certification is required from the State Department of Health, pursuant to Section 401 (a)(1) of the federal Water Pollution Control Act (commonly known as the Clean Water Act).

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

   a. Storm water discharges relating to construction activities for projects equal to or greater than five acres;

   b. Storm water discharges from industrial activities;

   c. Construction dewatering activities;

   d. Cooling water discharges less than one million gallons per day;

   e. Groundwater remediation activities; and

   f. Hydrotesting water.

Any person requesting to be covered by a NPDES general permit for any of the above activities should file a Notice of Intent with the Department's Clean Water Branch at least 30 days prior to commencement of any discharge to waters of the State.

Any questions regarding these comments should be directed to Mr. Denis Lau, Branch Chief, Clean Water Branch at 586-4309.

Wastewater

The subject project is located in the No Pass Zone, above 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.

Wastewater treatment and disposal have not been adequately addressed in the subject document. After consultation with the City & County of Honolulu's Wastewater Management Division, it has been determined that the area is within the County sewer service system, however, the property is not currently connected.

Therefore, as there is an existing sewer service system in the area, this project must connect to the sewer system. Use of low pressure sewers or small diameter sewer lines should be considered.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions on these comments, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4294.

Noise Concerns

1. Noise generated by the activities in the playground area may impact nearby residences of the project.

2. Activities associated with the construction phase of the project must comply with the provisions of Hawaii Administrative Rules, Chapter 11-46, "Community Noise Control."

a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the regulation as stated in Section 11-46-6(a).

b. Construction equipment and on-site vehicles requiring an exhaust of gas or air must be equipped with mufflers as stated in Section 11-46-6(b)(1)(A).

c. The contractor must comply with the conditional use of the permit as specified in the regulations and conditions issued with the permit as stated in Section 11-46-7(d)(4).

Should there be any questions regarding this matter, please call Mr. Jerry Haruno, Environmental Health Program Manager of the Noise, Radiation and Indoor Air Quality Branch at 586-4701.

Sincerely,

BRUCE S. ANDERSON, Ph.D.
Deputy Director for Environmental Health

c: CAB
CWB
WWB
NR&IAQB

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

September 2, 1997

State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Attention: Bruce S. Anderson, Ph.D, Deputy Director for Environmental Health

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Dr. Anderson,

Thank you for your comments to the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. The proposed project will comply with all codes regarding control of air polluition, fugutive dust, water pollution, wastewater and noise.

Air Pollution and Fugitive Dust
A proposal is to blanket the surrounding construction area and comply with provisions of Hawaii Administration Rules, Chapter 11-60.1, "Air Pollution", Section 11-60.1-33 on Fugitive Dust.

Water Pollution
A set of construction drawings will be submitted to the US Army Corps of Engineers for review. The proposed project will comply with guidelines set by the National Pollutant Discharge Elimination System (NPDES).

Wastewater
City and County of Honolulu, Department of Planning mentioned that the Waianae Development Plan shows a symbol for publicly funded sewer system (Makaha Beach Trunk Sewer) within six years.

If no sewer system at the time of construction, a proposal is to provide a septic tank and leaching field for liquid waste disposal. The area of the septic tank and leaching field will be approximately 75'-0" by 75'-0" (5,625 sf) and located in the parking lot adjacent to the comfort station. Normally, if there were open areas available for leaching field, that would be a preferred site. However, the picnic area may not be a desirable location as there will be inspection ports and cleanouts for the leaching field that may be punctured by tent stakes.

Noise
There is an existing playground adjacent the condominium. During the community meetings for planning this master plan, residents of the condominium who participated did not have any complaints regarding the existing playground.

As with any project, extreme care must be taken during construction. The contractor will try to use every precaution to lessen the impact of noise. Every effort will be made to complete the project as scheduled and do the necessary work during normal working hours. Construction Acitivies will comply with the provisions of Hawaii Administrative Rules, Chapter 11-46, "Community Noise Control".

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

DEPARTMENT OF PLANNING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 8TH FLOOR • HONOLULU, HAWAII 96813-3017
PHONE: (808) 523-4711 • FAX: (808) 523-4950

JEREMY HARRIS
MAYOR

PATRICK T. ONISHI
CHIEF PLANNING OFFICER

DONA L. HANAIKE
DEPUTY PLANNING OFFICER

MH 6/97-1341

July 31, 1997

Mr. Gary G. L. Lee
Project Coordinator
Pacific Architects, Inc.
2020 South King Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Makaha Beach Park Master Plan
Draft Environmental Assessment (DEA)

In response to your request of June 26, 1997, we have reviewed the subject DEA and have the following comments to offer:

1. We confirm that the subject site is designated for Park, Agriculture and Residential uses on the Waianae Development Plan Land Use Map.

2. The Waianae Development Plan Public Facilities Map shows a symbol for a publicly funded sewer system (Makaha Beach Trunk Sewer), within six years. This sewer system is along Farrington Highway which bisects the subject site.

3. The proposed project is consistent with Ordinance No. 92-125 which amended the Waianae Development Plan Public Facilities Map by adding symbols for publicly funded park/modification and park, site determined, within six years (see attached Ordinance No. 92-125).

4. We have no objections to the proposed improvements for Makaha Beach Park which would expand and enhance recreational opportunities at this world renown surfing beach park.

Thank you for the opportunity to comment. Should you have any questions, please contact Matthew Higashida of our staff at 527-6056.

Yours very truly,

PATRICK T. ONISHI
Chief Planning Officer

PTO:js

c: Department of Parks and Recreation
Office of Environmental Quality Control

Attachment

ORDINANCE NO. 92-125 BILL NO. 143 (1992)

A BILL FOR AN ORDINANCE TO AMEND A PORTION OF THE WAIANAE DEVELOPMENT PLAN PUBLIC FACILITIES MAP BY ADDING SYMBOLS FOR PUBLICLY FUNDED PARK/MODIFICATION AND PARK, SITE DETERMINED, WITHIN SIX YEARS, IN MAKAHA, WAIANAE, OAHU, HAWAII.

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION I. A portion of the Waianae Development Plan Public Facilities Map is hereby amended by adding symbols for publicly funded park/modification and park, site determined, within six years, as shown on the map attached hereto, marked Exhibit A, and by reference made a part hereof.

SECTION II. These public facilities map symbols shall be deleted from the Public Facilities Map by administrative procedure once completion of the facilities has been certified in writing by the applicant/agency to the Department of General Planning and the City Council.

SECTION III. This Ordinance shall take effect upon its approval.

INTRODUCED BY:

DATE OF INTRODUCTION:

August 6, 1992
Honolulu, Hawaii

APPROVED AS TO FORM AND LEGALITY:

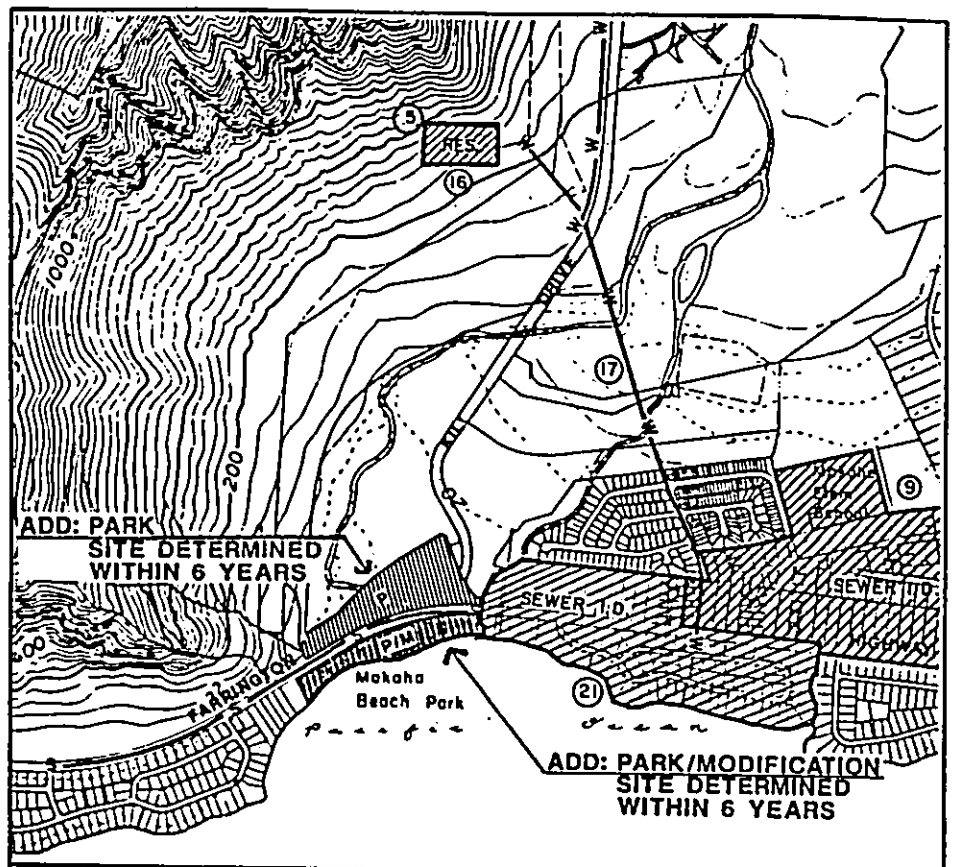
Deputy Corporation Counsel

Approved this 18th day of November, 1992.

FRANK F. FASI, MAYOR
City and County of Honolulu

Councilmembers

92-125



PORTION OF
DEVELOPMENT PLAN PUBLIC FACILITIES MAP
WAIANAE

PROJECT NAME:	MAKAHA BEACH PARK EXPANSION
APPLICANT:	CITY COUNCIL
TAX MAP KEY:	8-4-2: POR. 47 ; 8-4-1: 12
FOLDER NO.:	92/W-1003 (IC)
LAND AREA:	19.267 ACRES
PREPARED BY:	DEPARTMENT OF GENERAL PLANNING CITY AND COUNTY OF HONOLULU
PUBLIC HEARING:	PLANNING COMMISSION 7/22/92 CITY COUNCIL OCT 14 1992

ORD. NO.: 92-125 92/PF-30

EFF. DATE: NOV 18 1992 EXHIBIT A BILL 143, 1992

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

August 14, 1997

Department of Planning
City & County of Honolulu
650 S. King Street, 8th Floor
Honolulu, Hawaii 96813

Attention: Patrick T. Onishi, Chief Planning Officer

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Mr. Onishi,

Thank you for your comments to the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. Your comments will be addressed in the Final Environmental Assessment Report.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
PACIFIC PARK PLAZA • 711 KAPIOLANI BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813
PHONE (808) 523-4525 • FAX (808) 523-4730

JEREMY HARRIS
MAYOR

CHERYL D. SOON
DIRECTOR

JOSEPH M. MAGALDI, JR.
DEPUTY DIRECTOR

RECEIVED
AUG 04 1997
PACIFIC ARCHITECTS, INC.

July 30, 1997

TSP7/97-03197R

Mr. Gary G. L. Lee, Project Coordinator
Pacific Architects, Inc.
2020 South King Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Subject: Makaha Beach Park Master Plan

In response to your June 26, 1997 letter, the draft environmental assessment for the subject project was reviewed. It is recommended that if the intent is to dedicate Kili Drive to the City, then the roadway should be constructed to City standards for the full length of the project's frontage.

Should you have any questions regarding this matter, please contact Faith Miyamoto of the Transportation System Planning Division at 527-6976.

Sincerely,

Cheryl D. Soon

CHERYL D. SOON
Director

cc: Transportation Management Division

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826
Phone: 808/949-1601
Fax: 808/942-0054

August 14, 1997

Department of Transportation Services
City & County of Honolulu
711 Kapiolani Boulevard, Suite 1200
Honolulu, Hawaii 96813

Attention: Ms. Cheryl D. Soon, Director

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Ms. Soon,

Thank you for your comments to the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. Your comment regarding Kili Drive will be addressed in the Final Environmental Assessment Report. It is the intent that if improvements are made to Kili Drive, all construction will meet City and County of codes and coordinated with State of Hawaii Department of Transportation.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

BENJAMIN J. CAYETANO
GOVERNOR

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

SAM CALLEJO
COMPTROLLER

MARY PATRICIA WATERHOUSE
DEPUTY COMPTROLLER

(P)1516.7
LETTER NO.

AUG 1 1997

RECEIVED
AUG 04 1997
PACIFIC ARCHITECTS, INC.

Mr. Gary G. L. Lee
Pacific Architects, Inc.
2020 South King Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Subject: Makaha Beach Park Master Plan
Makaha, Oahu, Hawaii
Draft Environmental Assessment

Thank you for the opportunity to review the subject document. We have no comments to offer.

If there are any questions, please have your staff contact Mr. Ronald Ching of the Planning Branch at 586-0490.

GORDON MATSUOKA
State Public Works Engineer

RC:jy

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

August 19, 1997

State of Hawaii
Department of Accounting & General Services
P.O. Box 119
Honolulu, Hawaii 96810

Attention: Mr. Gordon Matsuoka, State Public Works Engineer

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Mr. Matsuoka,

Thank you for your reviewing the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. We are preparing the Final Environmental Assessment Report.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

PHONE (808) 594-1858

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

July 15, 1997

Mr. Gary G.L. Lee
Pacific Architects, Inc.
2020 S. King St.
Honolulu, HI 96826

Subject: Draft Environmental Assessment (DEA) for Makaha Beach Park Master Plan, Island of Oahu.

Dear Mr. Lee:

Thank you for the opportunity to review the Draft Environmental Assessment (DEA) for Makaha Beach Park Master Plan, Island of Oahu. The Department of Parks and Recreation of the City & County of Honolulu has developed a blueprint of actions aimed to expand and enhance the Park's recreational activities.

The Office of Hawaiian Affairs (OHA) has no concerns at this time to the proposed master plan for the Makaha Beach master plan. The plan appears to be comprehensive enough to address multiple needs of the park. The plan outlines several steps to expand and improve recreation facilities with provisions to (i) maintain the unique settings of the park, and (ii) protect and preserve natural and cultural resources.

An area in the master plan that needs more thinking and elaboration is the one related with beach losses and storm wave erosion. The plan furnish no details on the City & County's intent to address beach damage and to relocate Farrington Highway. On beach protection, OHA urges the preparers to outline specific measures to prevent and/or counteract storm wave erosion.

Please contact Lynn Lee, Acting Officer of the Land and Natural Resources Division, or Luis A. Manrique, should you have any questions on this matter.

Sincerely yours,

Randall Ogata
Administrator

Lynn Lee
Acting Officer, Land
and Natural Resources

LM:lm
cc Trustee Clayton Hee, Board Chair
Trustee Abraham Aiona, Board Vice-Chair
Trustee Rowena Akana, Land & Sovereignty Chair
Trustee Haunani Apoliona
Trustee Billie Beamer
Trustee Frenchy DeSoto
Trustee Moses Keale
Trustee Colette Machado
Trustee Hannah Springer

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

August 30, 1997

State of Hawaii
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Attention: Mr. Randall Ogata, Administrator

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Mr. Ogata,

Thank you for reviewing the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. The following is a response to your comment regarding beach losses and wave storm erosion:

Beach Losses and Prevention
The beach at Makaha appears to have a yearly cycle of sand moving from the north end to the south end during the winter months. During the summer months, the sand moves the opposite direction. A proposal to replenish the beach to keep it in its original form is by moving the transported sand with a bulldozer. This procedure has been used for Makaha Beach as well as other beaches on Oahu.

Wave Storm/Erosion
During the wave storm, the sand is taken out to the ocean. The beach will restore to its original level when nature takes its course to bring the sand back to shore.

Relocation of Farrington Highway
As mentioned in the Draft Environmental Assessment Report (Section 1-Description of Proposed Action), in 1985 the US Army Corps of Engineers conducted a shore protection study. The City aquired addtional park land on the mauka side of the beach park and lobbied the State to fund the relocation of the highway inland. All attempts to have the highway realignment failed.

It is not likely that Farrington Highway will be aligned in the near future. Therefore, the City has proceeded to develop a master plan with the current highway alignment for Makaha Beach Park. It will continue its effort to lobby for the realignment of Farrington Highway further inland to protect the highway from furture wave damage and improve safety for its park users.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843
PHONE (808) 527-6180
FAX (808) 533-2714

July 31, 1997

RECEIVED
AUG 0 6 1997
PACIFIC ARCHITECTS, INC.

Mr. Gary G.L. Lee
Pacific Architects, Inc.
2020 South King Street
Honolulu, Hawaii 96826

Dear Mr. Lee:

Subject: Your Letter of June 26, 1997 on the Draft Environmental Assessment for the Makaha Beach Park Master Plan, Makaha, Oahu, TMK: 8-4-02: 12 and Portion 47

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the Makaha Beach Park Master Plan.

We have the following comments to offer:

1. The existing water system cannot provide adequate off-site fire protection in accordance with our Water System Standards. Therefore, the applicant will be required to install a fire hydrant in the vicinity of the proposed development. The construction drawings should be submitted for our review and approval.

2. There is no water service to the proposed expansion site on the mauka side of Farrington Highway, TMK: 8-4-02: 12 and portion 47. However, there are two 2-inch water meters serving the existing beach park at TMK: 8-4-01: 12.

3. The availability of water will be determined when the Building Permit Applications are submitted for our review and approval. If water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

4. If a three-inch or larger water meter is required, the construction plans showing the installation of the meter should be submitted for our review and approval.

5. The proposed project is subject to our cross-connection control requirements prior to the issuance of the building permit application.

6. The Final Environmental Assessment should include the water requirements for the master planned park areas. It should also discuss the availability and use of nonpotable water, such as the adjacent Makaha Stream or reclaimed effluent from the Waianae Wastewater treatment plant, for the irrigation of the park.

7. The landscape plans should incorporate xeriscape or water efficient principles including the use of drought tolerant/low water use plants and an efficient irrigation system such as drip irrigation. The irrigation system should incorporate moisture sensors to prevent its operation in the rain and if the ground has adequate moisture.

8. Should Farrington Highway be realigned, the existing and any future water main(s) located in the highway will be required to be relocated. The realignment plans should be coordinated with our Engineering Branch.

9. The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

10. The waste disposal plans should be coordinated with the State Department of Health.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

RAYMOND H. SATO
Manager and Chief Engineer

cc: Department of Parks and Recreation

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

September 2, 1997

Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Attention: Mr. Raymond H. Sato, Manager and Chief Engineer

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Mr. Sato,

Thank you for reviewing the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. Your comments regarding water services to the project site will be addressed in the Final Environmental Assessment Report.

Construction drawings will be submitted to your department for review for water connection to the new facilities. Location of new fire hydrants will be coordinated with Fire Prevention Bureau of the Honolulu Fire Department to comply with on-site protection requirements.

Our office will consult with our Landscape Architect regarding your departments's recommendation to incorporate xeriscape or water efficient principles including the use of drought tolerand/low water use plants. Irrigation system with moisture sensors will be considered for maintaining the landscaped site.

The following are some landscape items considered for Makaha Beach Park:

Trees & Palms
Coconut (Cocos Nucifera)
False Kamani (Terminalia Catappa)
Hala (Pandanus Odoratissimus)
Heliottrope (Messerschmidia Argentea)
Ironwood (Casuarina Spp.)
Kamani (Calophyllum Inophyllum)
Kou (Cordia Subcordata)
Milo (Thespesia Populnea)
Kukui (Aleurites Moluccana)
Noni (Morinda Citrifolia)
Sea Grape (Coccologa Uvifera)
Pua Kenikeni (Fagraea Berelana)
Wiliwili (Erythrina Sandwicensis)

Shrubs
Hibiscus (Hibiscus Spp.)
Naupaka (Scaevola Frutescens)
Tiare (Gardenia Taitensis)

Ground Cover
Beach Morning Glory (Ipomoea Spp.)
Hinahina (Heliotropium Anomalum)
'Lima Papa (Sida Fallax)

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

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

In Reply Refer To: LTG

RECEIVED
AUG 0 6 1997
PACIFIC ARCHITECTS, INC.

AUG 5 1997

Mr. Gary G.L. Lee
Project Coordinator
Pacific Architects, Inc.
2020 S. King Street
Honolulu, HI 96826

Re: Makaha Beach Park Master Plan Draft Environmental Assessment, Oahu, Hawaii
TMK: 8-4-01: 12 & 8-4-02: por.4 7

Dear Mr. Lee:

The U.S. Fish and Wildlife Service (Service) has reviewed the Makaha Beach Park Master Plan (Plan) Draft Environmental Assessment (EA), Oahu, Hawaii. The Plan is the guiding document for developments and improvements at the 20.622 acre park. Planned developments include a support facility, comfort stations, parking lots, a multi-purpose field, and picnic areas. The Service offers the following comments and recommendations for your consideration.

1. The EA should address impacts of this project on endangered and threatened species and migratory birds. Service biologists visited the proposed project site on July 25, 1997 and observed two endangered Hawaiian stilts (*Himantopus mexicanus knudsenl*) in the existing pond. Migratory seabirds and shorebirds also use the area.

2. We recommend limiting or eliminating the use of herbicides and/or pesticides in the maintenance of the park's landscaping. The use of pesticides and herbicides may have direct and indirect impacts on Hawaiian stilts as well as other wildlife in the area. The National Memorial Cemetery of the Pacific (Punchbowl) has been successful in maintaining the park's landscape without the use of herbicides and pesticides. For more detailed information the Service suggests that you contact the staff at Punchbowl.

3. The EA should describe how the wetland will be protected during and after construction of the park's facilities.

4. We encourage that the wetland be used as an interpretive feature to highlight wildlife resources associated with the park.

5. The EA should address the potential negative impact (i.e. fall-out) from lights within the park on wedge-tailed shearwaters (*Puffinus pacificus*) and other seabirds in the area.

6. We recommend that native plant species be used for landscaping, especially those native to the project area.

7. We also recommend that best management practices be utilized within the project area to maintain or improve water quality and minimize siltation into the wetland and estuarine and marine areas, especially during construction activities.

The Service appreciates the opportunity to provide comments on the proposed project. We look forward to continuing to work with you during the development of this plan. If you have any questions concerning these comments, please contact Fish and Wildlife Biologist, Leila Gibson of my staff at 808/541-3441.

Sincerely,

Brooks Harper

Brooks Harper
Field Supervisor
Ecological Services

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

September 2, 1997

United States Department of the Interior
Fish and Wildlife Service
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3108
P.O. Box 50088
Honolulu, HI 96850

Attention: Brooks Harper, Field Supervisor Ecological Services

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear M. Harper,

Thank you for reviewing the Draft Environmental Assessment Report for Makaha Beach Park Master Plan. The following are responses to your comments:

Protection of Wetland, Streams and Inhabitants
Wetland and streams adjacent to the project site will be protected during construction activities. A proposal is to blanket the surrounding construction area and comply with with provisions of Hawaii Administration Rules, Chapter 11-60.1, "Air Pollution Control", Section 11-60.1-33 on Fugitive Dust. This will asssist to protect species and migrating birds that may inhabit the area. Areas disturbed during construction activities will be maintained by landscape.

The existing site is a vacant lot with dirt surface and overgrown kiawe trees and hale koa trees. The new facilities will contribute in maintaining the adjacent Wetland with new landscape and enhancing the surrounding area.

Landscape
Our firm will consult with our Landscape Architect regarding your recommendation in limiting or eliminating the use of herbicides and/or pesticides in maintaining the new landscaped area.

Board of Water Supply recommended the use of incorporating xeriscape or water efficient principles including the use of drought/low water use plants. Irrigation system with moisture sensors will be considered for maintaining the landscaped site.

The following are some landscape items considered for Makaha Beach Park:

Trees & Palms
1. Coconut (Cocos Nucifera)
2. False Kamani (Terminalia Catappa)
3. Hala (Pandanus Odoratissimus)
4. Heliottrope (Messerschmidia Argentea)
5. Ironwood (calophyllum Inophyllum)
6. Kou (Cordia Subcordata)
7. Milo (Thespesia Populnea)
8. Kukui (Aleurites Moluccana)
9. Noni (Morinda Citrifolia)
10. Sea Grape (Coccologa Uvifera)
11. Pua Kenikeni (Fagraea Bereiana)
12. Wiliwili (Erythrina Sandwicensis)

Shrubs
1. Hibiscus (Hisbiscus Spp.)
2. Naupaka (Scaevola Frutescens)
3. Tiare (Gardenia Taitensis)

Ground Cover
1. Beach Morning Glory (Ipomoea Spp.)
2. Hinahina (Heliotropium Anomalum)
3. 'Lima Papa (Sida Fallax)

Exterior Lighting at Parking Lot
To be sensitive to shore birds that may fly in the area, it has been recommended by our Electrical Engineer to use Cut-Off Luminare. This type of lighting provides no light above 90 degree level and shines straight down to the parking lot surface.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G.T. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

C316 Makaha Surfside
85-175 Farrington
Waianae, HI 96792

RECEIVED
AUG 0 6 1991
PACIFIC ARCHITECTS, INC.

5 Aug 91

Aloha!

I'm responding to today's article, Honolulu Advertiser, re. "Makaha park plan." Renovating the rest rooms I can see. Bright lighting may help keep the "dopers" from hanging out there. I've lived here a long time - 15 yrs - and the past few years I completely stay clear of that area. "Batu", coke, weed can be purchased right there. It's an un-comfortable feeling of what may be there in the restroom.

Lots of picnic tables seems like a waste. The Leeward Coast is full of them & they virtually go unused. I like swing-sets, but they're bound to be destroyed by the rest. Putting respect into folks who have nothing constructive to do is impossible.

Cleaning & maintaining the park area & adding a few tables is fine. What became of the clubhouse which was once there by the restrooms? I'd like another one built.

Sincerely, S J Ashby

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

September 2, 1997

Holtz Residence
Makaha Surfside
85-175 Farrington Highway
Waianae, Hawaii 96792

Attention: Holtz Residence

Project: Makaha Beach Park Master Plan

Subject: Honolulu Advertiser Article August 5, 1997

Dear Holtz Residence,

Thank you for your comments for Makaha Beach Park Master Plan. Your comments will be taken into consideration in preparing the construction documents.

It is proposed to provide vandal resistant lighting for security within the restroom. Central lighting in the central storage room will also be provided. Gates will be provided at restroom entrances and secured during the late evening hours.

Location and number of new picnic tables will be reviewed during the landscape design. Your reference regarding the clubhouse must be old restroom and caretaker's residence on the second level that was destroyed by a wave storm. Your proposal for building a new clubhouse will need to be reviewed with the City and County of Honolulu agencies.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G. L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

THOMAS & SUSANNA CALDWELL
P.O. BOX 4118
WAIANAE, HAWAII 96792
(808) 696-6414
(808) 696-3881 fax

FAX COVER SHEET

TO: PARKS & RECREATION

ATTN.: CARL IMURA

FAX #: 523-4767

FROM: TOM CALDWELL

DATE: 8/7/97

SUBJ.: MAKAHA BEACH PARK

PAGES: (Including Cover) 2

NOTES: PLEASE CONSIDER THE PRIORITIES FOR AVAILABLE FUNDS RE: THE MAKAHA BEACH PARK IMPROVEMENTS VERY CAREFULLY.

IT IS THE OPINION OF MANY PEOPLE, INCLUDING MYSELF, THAT THE PRIORITIES FOR THE LIMITED FUNDS CURRENTLY AVAILABLE SHOULD BE ALLOTTED AS FOLLOWS:

1. **RENOVATE THE EXISTING MAKAI COMFORT STATION. THE CURRENT STATUS OF "OPTIONAL ADD-ON" DEPENDING ON ADDITIONAL FUNDING AVAILABILITY, IS RIDICULOUS. THE CURRENT COMFORT STATION BECAUSE OF LOCATION IS HEAVILY UTILIZED. ANY THOUGHT THAT A NEW COMFORT STATION LOCATED MAUKA OF FARRINGTON HIGHWAY IN THE PROPOSED PARKING LOT WILL SIGNIFICANTLY DECREASE THE USE OF THIS FACILITY IS WRONG. THE COMMUNITY DESERVES TO HAVE THIS COMFORT STATION OVERHAULED NOW, AND IT SHOULD NOT BE LEFT DANGLING DURING THIS FIRST STAGE OF THE MASTER PLAN IMPLEMENTATION.**
2. **CONSTRUCT ADDITIONAL PARKING ON THE CITY OWNED LAND THAT IS MAUKA OF FARRINGTON HWY.**
3. **INSTALL A LIGHTED CONTROLLED CROSSWALK TO ASSIST THE PEOPLE IN SAFELY GETTING FROM THE NEW PARKING LOT TO THE BEACH. PEOPLE BARRIERS SUCH AS LOW FENCES AND HEDGES SHOULD BE INSTALLED TO DIRECT PEDESTRIAN TRAFFIC TO THE CROSSWALK. TO IGNORE THE SAFETY ISSUES PRESENTED BY HAVING A BEACH ON ONE SIDE OF THE ROAD, AND PARKING ON THE OTHER IN NOTHING SHORT OF NEGLIGENCE. IF THE PURELY HUMANITARIAN ISSUES REGARDING BLOOD ON THE HIGHWAY ARE NOT CONVINCING ENOUGH, THEN I BEG YOU TO THINK ABOUT HOW MANY TIMES OVER THE CITY AND WE TAXPAYERS WILL PAY FOR THE COST OF ONE LIGHT WHEN SOME PLAINTIFF'S ATTORNEY GETS DONE SUING THE CITY FOR IT'S PLANING DEFICIENCIES, ATTRACTIVE NUISANCE, AND NEGLIGENCE; ALL IN THE AFTERMATH OF THE DEATH OR INJURY OF ONE OF OUR OWN COMMUNITY MEMBERS.**
4. **IF FUNDS ARE REMAINING AFTER THE ABOVE, HAVE AT IT, I DON'T CARE. BUILT A COMFORT STATION IN THE PARKING LOT, A CANOE HALE, ETC., JUST DON'T CONSTRUCT A COMFORT STATION ON THE MAUKA SIDE OF THE HIGHWAY AND TELL US THAT THERE ARE NO FUNDS AVAILABLE FOR A LIGHT. THE VERY CONCEPT THAT THE COMFORT STATION IS INSEPARABLY BUNDLED WITH THE FUNDS FOR THE CONSTRUCTION OF THE PARKING LOT, MAKES A MOCKERY OF THE COMMUNITY PLANING PROCESS, AND THE PRIORITIES PRESENTED BY THEM.**

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

September 2, 1997

Mr. & Mrs. Thomas and Susanna Caldwell
P.O. Box 4118
Waianae, Hawaii 96792

Attention: Thomas and Susanna Caldwell

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Mr. & Mrs. Caldwell,

Thank you for your comments for Makaha Beach Park Master Plan. We recognize the importance of the existing comfort station and we will look at the safety measure for pedestrians crossing Farrington Highway.

The following are several alternatives to facilitate the safe crossing of Farrington Highway:

1. Provide a marked crosswalk adjacent to the parking lot driveway and at Kili Drive for safer crossing.

2. By designating the areas in which pedestrians are expected to cross, thereby reducing the possible locations of pedestrian-vehicle conflicts and providing a clear indication of drivers that pedestrians crossing can be expected.

3. Provide warning signs to supplement markings to improve the visibility of crosswalks.

4. Designate areas to prohibit parking to maintain sight light lines and conflicts between pedestrians and vehicles be implemented where necessary.

5. Provide a fence fronting the new comfort station to direct pedestrians to use the crosswalks.

Your recommendation for installing traffic signals on will need to comply with the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). One of eleven warrants listed in the MUTCD would need to be satisfied. These warrants typically show the minimum traffic volumes or other conditions which must be exceeded in order that a signal installation be approved. The satisfaction of a warrant does not mean a signal should be installed, rather , it is one of the conditions which should be met. If not warranted, the State Highways Division and Federal Highway Administration would not approve the traffic signal.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

GARY GILL
DIRECTOR

August 7, 1997

RECEIVED
AUG 08
PACIFIC ARCHITECTS, INC.

Mr. Michael T. Amii, Acting Director
Department of Parks and Recreation
City and County of Honolulu
650 South King Street, 10th Floor
Honolulu, Hawaii 96813

Dear Mr. Amii:

Subject: Draft Environmental Assessment for the Makaha Beach Park Master Plan

Thank you for the opportunity to review the subject document. We have the following questions and comments.

1. In 1983, strong waves eroded a 100,000 square foot area of the park. How much of the sandy beach was lost? What measures have been and/or will be taken to restore the sandy beach to its original level?

2. According to the environmental assessment, Makaha appears to have a yearly cycle of sand moving from the north end of the beach toward the south during the winter periods and returning to the north end during the summer periods, possibly with little change in total sand volume. From a long-term perspective, what is the net change in total sand volume in a) the north end, and b) the south end? If the sandy beach is eroding in any particular area, please consider replenishing the beach.

3. Farrington Highway provides the only main access route to the west end of Oahu. It is a two-lane highway with a posted speed limit of 35 miles per hour at the park location. Parking for park users is planned on the mauka side of the highway. Many park users would have to cross the highway to get to the beach park. Please consider mitigation measures, such as a traffic signal or pedestrian bridge, to allow pedestrians to safely cross the highway.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

for Gary Gill
Director

c: Pacific Architects

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

August 29, 1997

State of Hawaii
Office of Environmental Quality Control
238 South Beretania Street, Suite 702
Honolulu, HI 96813

Attention: Mr. Gary Gill, Director

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Mr. Gill,

Thank you for your comments for Makaha Beach Park Master Plan. We have the following response to your comments:

Restoration of Lost Sand
No sand has been lost due to strong wave actions. During the wave storm, the sand is taken out to the ocean. The beach will restore to its original level when nature takes its course to bring the sand back to shore.

Replenishing the Beach
The beach at Makaha appears to have a yearly cycle of longshore and transport with sand moving from the north end to the south end during the winter months and opposite in direction during the summer months. A proposal to replenish the beach is to move the sand by a bulldozer rather than waiting for nature to take its course in the next season. This procedure will keep the beach in its original form throughout the year.

Pedestrian Safety at Farrington Highway
The following are several alternatives to facilitate the safe crossing of Farrington Highway:

1. Provide a marked crosswalk adjacent to the parking lot driveway and at Kili Drive for safer crossing.
2. By designating the areas in which pedestrians are expected to cross, thereby reducing the possible locations of pedestrian-vehicle conflicts and providing a clear indication of drivers that pedestrians crossing can be expected.
3. Provide warning signs to supplement markings to improve the visibility of crosswalks.
4. Designate areas to prohibit parking to maintain sight lines and conflicts between pedestrians and vehicles be implemented where necessary.
5. Provide a fence fronting the new comfort station to direct pedestrians to use the crosswalk.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

cc: Carl Emura, Department of Parks & Recreation
File

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

August 11, 1997

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
GLENN M. OKIMOTO
Brian K. Minaai

IN REPLY REFER TO:
HWY-PS
2.5607

Mr. Gary G L. Lee
Project Coordinator
Pacific Architects, Inc.
2020 South King Street
Honolulu, Hawaii 96826

RECEIVED
AUG 12 1997
PACIFIC ARCHITECTS, INC.

Dear Mr. Lee:

Subject: Makaha Beach Park Master Plan

Thank you for transmitting the minutes of our meeting on June 12, 1997, and the Draft Environmental Assessment (EA) regarding the Makaha Beach Park Master Plan.

We have the following comments on the minutes of the meeting, which also apply to the EA:

1. Item #1 should be reworded:

   Because of the wetland encroachment, the project must be coordinated with the Corps of Engineers (COE). The COE will require that the City Department of Parks and Recreation (DPR) comply with Section 404 and 401 of the Clean Water Act.

   Since the realigned highway encroaches onto lands currently under the jurisdiction of the DPR and if Federal funds will be provided for the construction of this highway facility, this proposed highway realignment should comply with the requirements of Section 4(f) of the Department of Transportation Act. We will check about the availability of State funds for the highway realignment.

2. Item #2

   The second sentence should read:

   The Department of Transportation recommended that the DPR hire a consultant to determine whether a feasible or workable alignment is available.

Additional Comments:

The alignment of Farrington Highway should be an integral part of the master plan. The highway and park must be planned together. Otherwise, when the highway is realigned later, the highway project will require a Section 4(f) Statement that may jeopardize a jointly-planned location.

3. Item #3

   The purpose of this recommendation is to allow the DPR to proceed, as soon as possible, with the improvements immediately mauka of the highway. However, the master plan must be modified, in the future, to accommodate the realigned highway as mentioned in No. 2 above.

4. Item #4

   The word "rubble" in the second sentence should be "rumble".

5. Item #6

   Add the following statement. A Traffic Impact Analysis Report (TIAR) should be prepared and incorporated in the Draft Environmental Assessment.

Very truly yours,

HUGH Y. ONO
Administrator
Highways Division

Pacific Architects, Inc.
2020 S. King Street, Honolulu, Hawaii 96826 Phone: 808/949-1601 Fax: 808/942-0054

August 14, 1997

State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

Attention: Mr. Hugh Ono, Administrator Highways Division

Project: Makaha Beach Park Master Plan

Subject: Draft Environmental Assessment Report

Dear Mr. Ono:

Thank you for your comments for Makaha Beach Park Master Plan. Your comments will be addressed in the Final Environmental Assessment Report.

If you should have any questions, please call our office at 949-1601.

Respectfully,
Pacific Architects, Inc.

Gary G.L. Lee
Project Coordinator

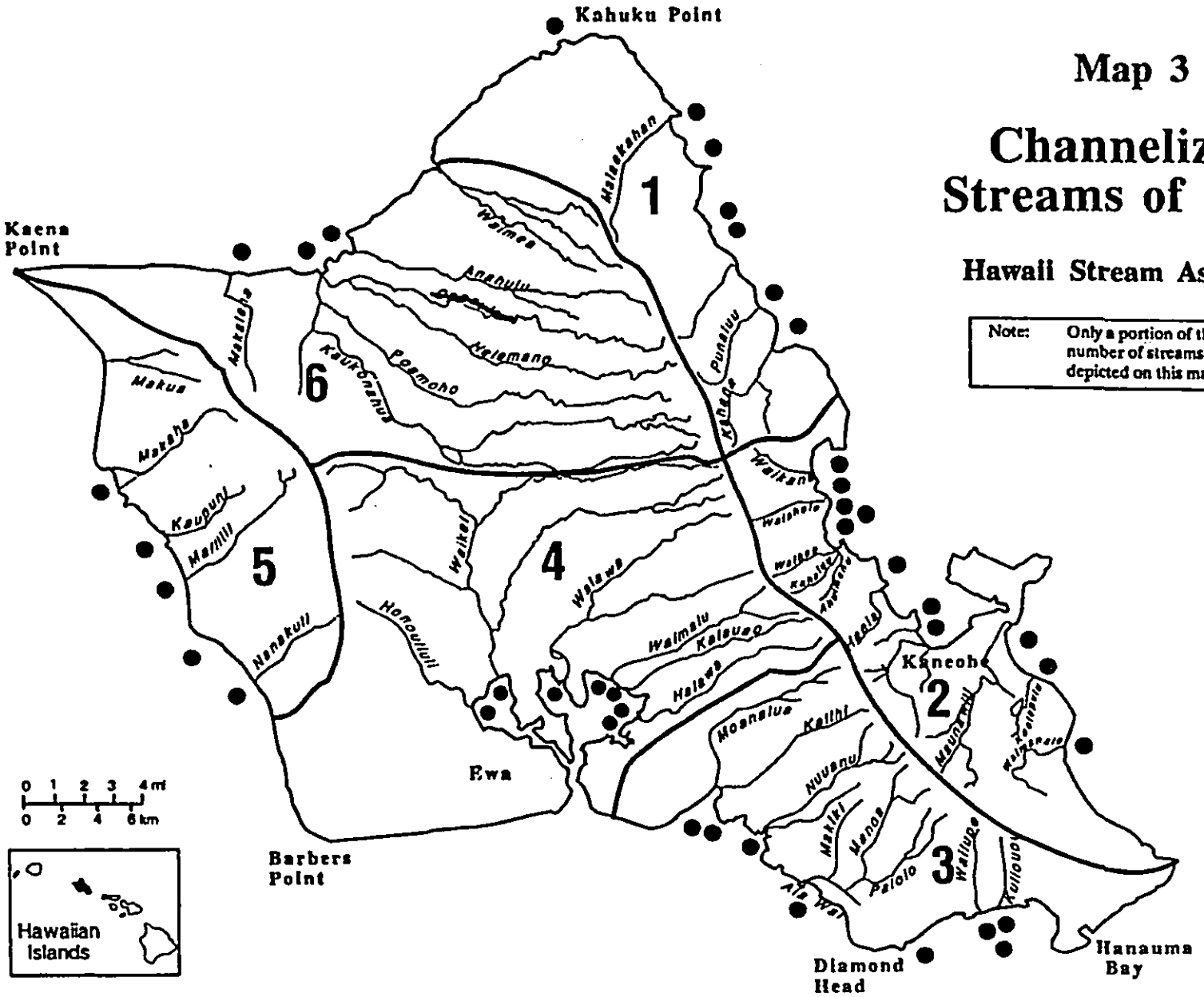
cc: Carl Emura, Department of Parks & Recreation
File

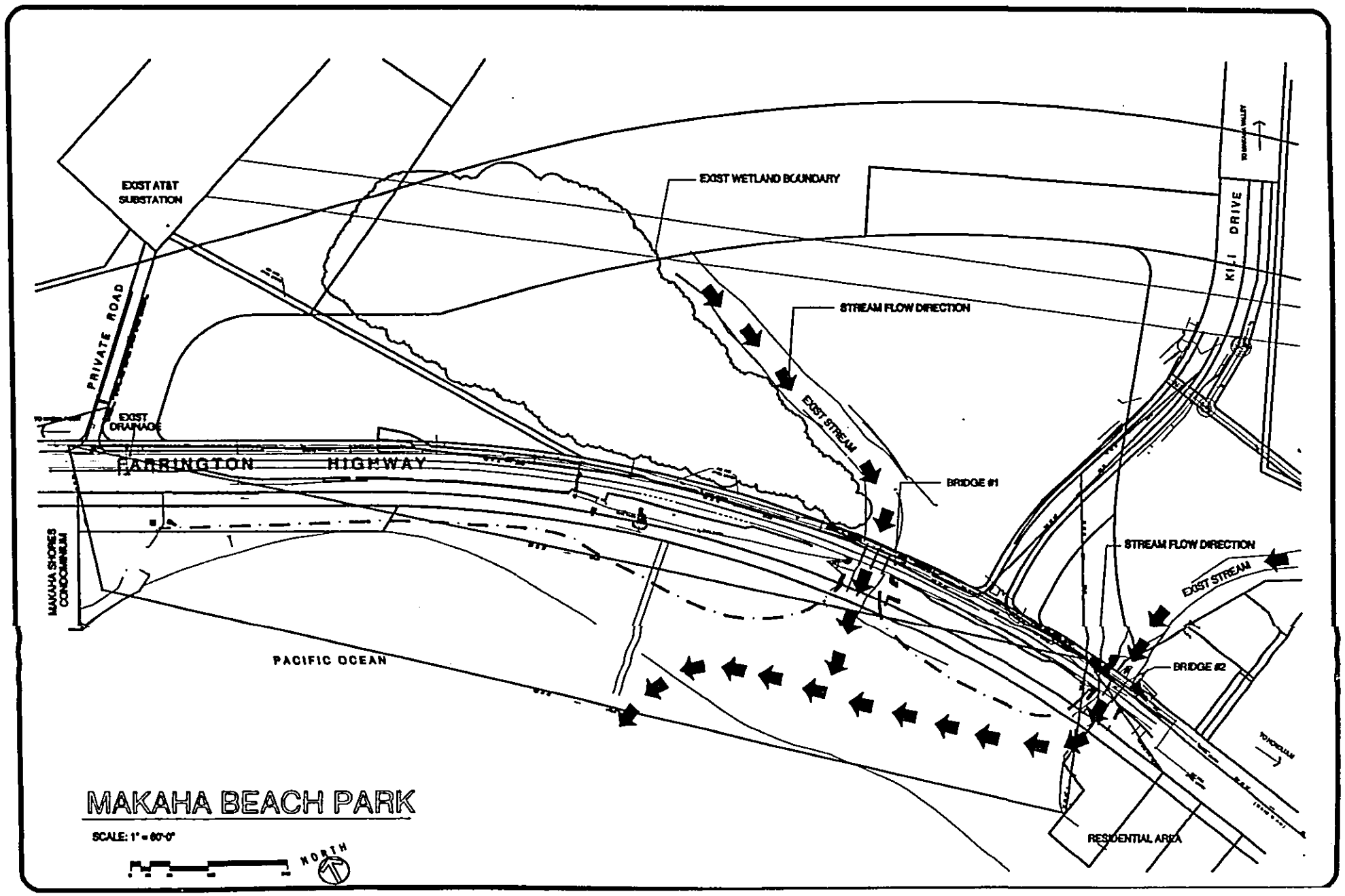
Map 3

Channelized Streams of Oahu

Hawaii Stream Assessment

Note: Only a portion of the total number of streams are depicted on this map.




EXIST AT&T SUBSTATION
EXIST WETLAND BOUNDARY
KIHI DRIVE
TO WAILUKU VALLEY
PRIVATE ROAD
STREAM FLOW DIRECTION
EXIST STREAM
EXIST DRAINAGE
FARRINGTON HIGHWAY
BRIDGE #1
MAKAHA SHORES CONDOMINIUM
STREAM FLOW DIRECTION
EXIST STREAM
BRIDGE #2
PACIFIC OCEAN
TO HONOLULU
RESIDENTIAL AREA
MAKAHA BEACH PARK
SCALE: 1" = 60'-0"
NORTH