MEMORANDUM

To: Gary Gill, Director  
   Office of Environmental Quality Control

From: Dean Y. Uchida, Administrator  
   Land Division, Department of Land and Natural Resources

Subject: Final Environmental Assessment for Beach Nourishment at Makaha, Oahu

The Department of Land and Natural Resources, Land Division, has reviewed the comments received during the 30-day public comment period which began on January 24, 1997. The Department has determined that the applicant has met the content requirements for a Final Environmental Assessment (FEA) for the project, and hereby issues a Finding of no Significant Impact (FONSI) to the environment. [Note: Acceptance of the FEA does not constitute the Department or Board’s endorsement of the project.] Please publish this notice in the OEQC Bulletin as soon as possible.

We have enclosed a completed OEQC Bulletin Publication Form (on disk) and four copies of the final EA. Please contact Sam Lemmo at 587-0381 if you have any questions.

Attachments

cc: Chairmen’s Office  
    Oahu Board Member  
    Warren Bucher
FINAL
ENVIRONMENTAL ASSESSMENT FOR PROPOSED SHORE PROTECTION AT MAKAHĀ SURFSDIDE APARTMENTS 85-175 FARRINGTON HIGHWAY

Prepared for:
Ind-Comm Management, Inc.

Prepared by:
Oceanit Coastal Corporation

MAY 1997
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I. GENERAL INFORMATION

Applicant: Makaha Surfside Apartments
c/o Ind-Comm Management

Landowner: State of Hawaii Department of Land and Natural Resources
Managed by Department of Parks and Recreation, City and County
of Honolulu, under Executive Order 3452

Accepting Agency: State of Hawaii Department of Land and Natural Resources

Project Location: Waianae, Oahu, Hawaii

Tax Map Key: 8-5-17:5

Land Area: Approximately 8,000 square feet from the certified shoreline to the
Makaha Surfside property line

State Land Use District: Conservation

Conservation Subzone: Resource

County Development Plan: No designation on project site/Park mauka of project site
See Figure 6 (Area Plan) of Conservation District Use Application

Zoning: No designation on project site/P-2 mauka of project site

Existing Use: Public shoreline

Proposed Use: Beach nourishment with sand

Consulted Agencies:
U.S. Department of the Army
State Department of Land and Natural Resources
Planning Branch
Engineering Branch
State Historic Preservation Division
Department of Land Utilization
Department of Parks and Recreation
II. DESCRIPTION OF PROPOSED ACTION

A. TECHNICAL

The Makaha Surfside Apartments are located on the leeward side of Oahu between Lahilahi Point and Wai`anae High School (see Figure 1). The proposed action involves sand nourishment below the certified shoreline and above the high tide line frontal the Makaha Surfside. The beach is within a small cove or bay. Severe erosion along the shoreline threatens the Makaha Surfside Apartments. The eroded shoreline has receded over 60 feet since 1970 at an average rate of approximately 3 feet per year. The beach receded very quickly in the early 1970s and continued somewhat slower in the 1980s and ‘90s. By 1995, the top of the shoreline was less than 10 feet from the property line of Makaha Surfside. The larger waves runup onto the property and are approaching the buildings, threatening damage during storms or large swells. Further erosion will endanger the buildings on the property. Because the proposed action would occur in the Conservation District, it falls under the jurisdiction of the State Department of Land and Natural Resources (TMK 8-5-17:5).

The parcel of land between the shoreline and the Makaha Surfside property line was placed under the control of the City & County of Honolulu Department of Parks & Recreation via State Executive Order 3452. It consists of a part of Mauna Lahilahi Beach Park and an access road along the shoreline. Most of the road has eroded away, and only a narrow beach surrounded by rocks and an eroding escarpment remains (see Figures 2 & 3). The escarpment continues to crumble towards the Makaha Surfside property line with some portions less than 10 feet away from the property line. The access road can no longer be used by motor vehicles for shoreline access. However, students still use this area as a path for access to and from Wai`anae High School. If erosion continues a few more feet, longshore access will become difficult and possibly dangerous.

The bay has dimensions of approximately 350 feet in the longshore direction and 240 feet in the cross-shore direction. Water depth at the mouth of the bay is approximately 6 feet. The nearshore bottom out to the mouth of the bay is relatively hard with dispersed boulders and very little sand. There are two small sandy beach areas. The sand cover on the beach is very thin, probably less than 2 feet. The base is a combination of volcanic rock and limestone, some consolidated and some existing as small boulders. A layer of topsoil covers the rock at the top of the beach. On both flanking sides of the bay, there are steep rocky areas with no sand cover. Trees were lost in this area, and vegetation lines continue to recede. Aerial photographs of 1972 and 1994 are shown in Figures 4 and 5 respectively.

The certified shoreline follows an embankment eroded into hard clay overlaying rock and boulders. There is no beach ma`auka of the certified shoreline. To protect the park land frontal Makaha Surfside, an erosion control system must be employed. Makaha Surfside requires DLNR concurrence on the proposed action, as sand nourishment will occur below the certified shoreline on State Conservation District land. Appendix B contains the certified shoreline survey map.
Studies discussed in the Final Environmental Impact Statement for Wai'anae Boat Harbor, Wai'anae, Oahu (1976) indicate that the area between Lmahilahi Point and Kanelio Point (south of Pokai Bay) probably comprises a littoral cell, a partially confined area where sand is created and circulating. The cause of accelerated erosion in the cove is not well understood but is probably due to several factors. Residents believe that hurricanes Iwa and Iniki made the situation worse. The beach is a pocket beach; sand transport is primarily onshore/offshore. Outside the cove, sand transport is primarily northwest toward Mauna Lmahilahi Beach but can move in either direction along the coast. Mauna Lmahilahi Beach is relatively large and apparently healthy. Between 1949 and 1988, Lmahilahi Beach eroded approximately 9-12 feet - not nearly as much as in the cove (Sea Engineering, 1988). Most of this erosion probably resulted from Hurricane Ewa in 1982. Aerial photographs show numerous sand patches and channels in the reef indicating that sand from the beach may be in this area.

After evaluating several alternatives, discussed in Chapter IV, rebuilding the beach by adding sand is recommended to protect the shoreline and apartment buildings. The beach should be extended seaward at least 30 feet to minimize wave runup onto Makaha Surfside's property. Salt tolerant vegetation will be planted at the top of the beach. An artist's concept of the nourished beach is shown in Figure 6. A plan view map of the new beach area is shown in Figure 7. Approximately 5,000 cubic yards of sand are necessary to nourish the beach. Sand must be placed between the certified shoreline and the high tide line. Only approximately 1,000 cubic yards can be piled in this space until the sand is redistributed by wave action; therefore, sand placement will have to be done 4 to 5 times with time between each placement. Replacement sand must be similar to existing sand with median grain size greater than 0.4 mm. Larger grain size such as 1-2 mm is desirable because it will remain in place longer. At existing erosion rates, additional sand should be added every 5-10 years. The actual sand source will depend on price and availability when the material is purchased. Several possible sources of sand are being investigated including offshore sand mining and dune sand.

B. SOCIO-ECONOMIC

This project will improve the beach and make it better for recreational use. Beach nourishment reduces the threat to property from storm waves because it creates a buffer zone. Therefore, potential decreases in property values may be mitigated.
FIGURE 1 - SITE LOCATION MAP

85-175 FARRINGTON HIGHWAY
WAIANAE, HAWAII 96792 T.M.K.: 8-5-17:5

Oceanit Coastal Corporation
FIGURE 2. SITE PHOTOGRAPHS, 1976
FIGURE 6. ARTIST'S CONCEPT, BEACH NOURISHMENT
III. AFFECTED ENVIRONMENT

Environmental features of the site and surrounding area include the warm, sunny, dry climate that is characteristic of the leeward shores of Oahu. The generally calm and clear adjacent coastal water is excellent for fishing, diving, surfing, and other water sports.

A. SEAWARD

The coastal shoreline of Waianae consists of basalt outcrops and uplifted limestone benches with stretches of white coralline sand beaches. There are no major estuarine areas along the coast, and streams and drainage ditches are of an intermittent nature due to low annual rainfall.

Waianae's shallow-water reefs are narrow. The offshore reef surface is comprised mainly of hard consolidated coralline pavement interspersed with sand channels and pockets, and coral growth. Basalt headlands are sometimes associated with offshore basalt formations. Water depths of several hundred feet can be reached about 200 yards from shore.

The beaches of the Waianae coast have their light colored coralline sand and seasonal high surf (Oceanic Institute, 1976). However, the subject property has lost most of its beach—having instead formed a pocket type, wave swept, rocky limestone shoreline.

Currents on the Waianae coast are weak and dominated by the tides. Though prevailing coastal currents flow northwest, a study by Oceanic Institute (1976) revealed strong current reversal over the tide cycle, flowing southeast during ebb and northwest during flood.

Waianae coastal waters are categorized Class A in the State Water Quality Standards. Sewer discharges and thermal discharges along the coast are the only major local deviations from Class A standards. Several intermittent streams and drainage ditches do discharge into coastal water; however, their influence on water quality is limited to periods of heavy rainfall. Existing water quality on the site has not been determined.

The Makaha Surfside is located on the leeward coast of Oahu where the beach is subject to waves from Kona storms, southern swells, and the wrap-around from North Pacific swells. A wave exposure window is shown in Figure 8. Deep water wave data inside this window were analyzed and the results are in Figure 9. The dominant wave directions are the south southwest (southern swell) and northwest (North Pacific swell). Kona storm waves locally generated with much shorter wave periods also contribute to the beach erosion at this site. The most probable wave period is 12 to 14 seconds and the most probable wave height is three feet. As these waves approach the shoreline they are transformed by refraction, friction, shoaling, and breaking. The breaking waves generate longshore currents and cross-shore currents that affect beach processes. Because the beach fronting the property has recessed from the neighboring rocky shorelines, refracted waves enter straight into the bay so that the longshore current is...
FIGURE 8. - MAP OF WAVE EXPOSURE WINDOW
FIGURE 9. DEEP WATER WAVE DATA
Weak within the eroded bay. Cross-shore wave-induced currents are probably the primary cause of beach erosion. Sediments eroded from the beach will either deposit on the offshore bottom or move alongshore with the currents to neighboring beaches, most likely on Mauna Lahihi Beach to the northwest and Pokai Bay to the southeast.

Five measured profiles along the bay are depicted in Figure 10. Instead of a smooth sloping beach, there is an abrupt escarpment of two to three feet then a rocky incline that drops an additional 5 to 7 feet from the non-eroded backshore toward the water. The sandy area is at the bottom of the slope. The average slope of the sand area is about 1:5. Beach slope depends on wave conditions and varies seasonally.

Sand samples were taken at mid-beach and beach toe, where some sand exists. Median size at the beach toe is 1 to 2 mm, relatively coarse, indicating strong wave energy exists at the beach toe. Median size at mid-beach is nearly 0.5 mm. Beach sand size gradation is shown in Figure 11.

B. LANDWARD

The project site is bounded to the southeast by Waianae High School and on the west by the Pacific Ocean. Abutting the project site to the northeast ( mauka ) is the Makaha Surfside, the applicants for the proposed action described herein. Further northwest along the coast is Lahihi Point with its adjacent beach park, and urban/resort developments. Further southeast are the Waianae Boat Harbor and Pokai Bay. Mauka lands of the Waianae Valley are used for dairying, diversified agriculture, and low-density residential use with more densely populated neighborhoods closer to the coastline. Residential uses (single-family dwellings) predominate near the ocean around Waianae town.

The project area as viewed from the Makaha Surfside Apartments include the Pacific Ocean to the south and west and Kamaileunu Ridge of the majestic Waianae mountain range to the east and north. The project area itself is a rocky shoreline with an escarpment and cannot be seen from Farrington Highway.

A field reconnaissance was conducted to identify flora and fauna on the project site on October 15, 1996 (Oceanit). The rocks on the beach are home to several species of algae ( Grateloupio phaeoensis & Symplaca hydroides ) and snails ( Nerita picea [ pipipi ] & Littorina pintado [ pipipi koa ] ). Neither sand crabs or sand dwelling birds were observed on the field reconnaissance.
FIGURE 10. BEACH PROFILES, DECEMBER 15, 1995
FIGURE 10. (Continued). BEACH PROFILES, DECEMBER 15, 1995

Profile 3

Profile 4
FIGURE 10. (Continued). BEACH PROFILES, DECEMBER 15, 1995
FIGURE 11. CUMULATIVE GRAIN SIZE DISTRIBUTION
Surrounding the project site on the remainder of the City and County park are several kiawe trees (*Prosopis sp.*) and turf grass.

Even though sites do exist in the vicinity, this is not a known archaeological site. A human burial site, identified as 50-80-07-4064, was located on the beach. According to the State Historic Preservation Office, the burial was disinterred from the project site and reinterred at Lahilahi Beach. It is not known if other burials exist at the project site.

Although Farrington Highway is approximately 300 feet inland from the project site, ambient highway noise cannot be detected from the project site and, air quality is good due to trade winds and the rural nature of the area.

The Makaha Surfside is located in flood zones VE and AE, an area subject to tsunamis or other velocity hazards, with a base flood elevation of 13 feet.

C. SOCIO-ECONOMIC

The Waianae district has transformed from a rural to a semi-urban community since the 1970s. Trends in the Waianae district are characterized as follows:

- Over the years, gradual dissolution of community and neighborhood cohesiveness has occurred, particularly along ethnic and extended family lines.
- Increasing diversity on a number of dimensions -- demographic, economic, social structures, and physical.
- Blurring of boundaries between communities with the beginnings of a megalopolis extending from Honolulu to Makaha. Greater penetration and extension of influence by extra-community forces, political, commercial and social.

There is a uniqueness to the Waianae area that can be attributed in part to Hawaiian cultural life styles and concepts. Urbanization, however, of the Waianae district has occurred over the last several decades. Road access to the Waianae area has been improved, providing more interaction with island residents and visitors from other areas. Present and past activities of military installations in the area have resulted in rapid increases in population within the District. Luxury resort development within Makaha Valley set the trend for the planning and construction of other resort and housing developments along the coast. These actions in turn have resulted in land use changes from rural/agricultural to urban/resort, even though the main resort, the Makaha Sheraton, has closed due to a weak economy.
IV. IMPACTS, ALTERNATIVES AND MITIGATION

A. SHORT-TERM IMPACTS

Sand nourishment will result in the conversion of approximately 8,000 square feet of rocky shoreline into a sandy beach. About 350 feet of rugged coral shoreline will receive sand. The most likely method of transporting sand to the project site is by truck. Trucks would access the project site just north of the Makaha Surfside. The trucks would then travel approximately 300 feet to the edge of the shoreline and unload the sand above the high tide line and below the certified shoreline. Only 1,000 cubic yards can be placed on the beach at one time; therefore, there will be 4 to 5 nourishment periods of about 1-2 weeks each before the entire 5,000 cubic yards is placed and distributed by wave action. The park area in front of Makaha Surfside will be needed as a stockpiling/staging area, which will require authorization from the City & County Department of Parks & Recreation.

There will be little noticeable impact on shore birds and animals. Shoreline flora and fauna will be altered to the extent that algae and mollusks in the project site may be covered with sand.

There will be a temporary increase of heavy vehicle traffic on Farrington Highway between the source of sand and the project site. To minimize traffic impacts, arrivals and departures of sand hauling trucks shall be coordinated to avoid disruption of peak hour traffic flows. If necessary, flagmen or police officers will be employed to maintain traffic safety while sand is transported to the project site.

Air quality at the project site may be temporarily degraded by some fugitive dust from hauling and sand deployment activities, exhaust emissions from vehicles, and possible traffic disruptions. Dust is anticipated to be minimal.

During the nourishment process, noise is not expected to cause any significant impacts to neighboring residents. During sand deployment higher than normal noise levels will be generated by trucks and sand moving equipment. Mitigation of vehicle noise to inaudible levels may not be possible. However, hours will be restricted to daytime only.

B. LONG-TERM IMPACTS

Sand replenishment is expected to cause some changes in the nearshore/shoreline habitat. Since replenishment will occur below the certified shoreline, mollusks and algae along the shoreline may remain covered with sand. Replenishment will alter approximately 550 linear feet of intertidal shoreline.

Sand nourishment is ancillary to recreational uses in the surrounding park areas as designated by the City and County of Honolulu. The sand nourishment will not visually intrude on the regional park open space and, in fact, will improve the aesthetics and increase recreational usage of the beach, as well as provide some incentive to community and tourist usage.
Although a 1971 surfing site inventory does not show a surfing site here, the finished beach will provide easy access to adjacent surfing sites offshore where none now exists. Impacts to surfing are not anticipated.

The finished beach will not cause any displacement of communities or individuals.

Long-term noise and air quality will not be impacted by the proposed action.

C. ALTERNATIVES

The following alternative erosion control methods were considered when selecting a solution to the erosion problem. The first was to build an offshore breakwater at the mouth of the bay. The breakwater, with properly designed layout and stone size, would substantially reduce wave energy that impacts the beach. Gaps between sections of the breakwater would ensure water circulation preserves water quality inside the bay. In addition, sand nourishment is recommended to restore the beach. Generally, a breakwater, as a solution, is beyond the financial capability of a private homeowner, such as those at Makaha Surfside. An offshore breakwater is estimated to cost approximately $500,000.

The second option considered was to construct a rubble revetment between the Makaha Surfside and the ocean along the certified shoreline. A revetment would stop the continued erosion of backshore soil and rocks. If the revetment was buried with sand through nourishment, it would have no negative effect on the beach but would remain as protection during extreme erosion events. The backshore is not a dune area, so the revetment would not block any potential sand source. This option, however, is generally not an accepted by regulatory agencies, unless there is no other alternative. A rock revetment would be about 350-feet long and cost approximately $1,000 per foot.

The third alternative is to use large sandbags for short-term protection of the eroding embankment. The sandbags would stop bank erosion until a long-term solution could be implemented. Due to the expense ($100,000) and potential for vandalism, this alternative is not recommended unless a longer-term solution is not approved.

The fourth alternative is to build a shore protection structure, such as a buried revetment, on the Makaha Surfside property. This alternative is not recommended due to insufficient space between the property line and the buildings. During excavation, there is potential risk of damage to the building foundation. The cost would be approximately $350,000.

The fifth alternative is to use beach nourishment. The disadvantage of this option is that the nourishment action may need to be repeated periodically, possibly at 5-10 year intervals. The cost depends on the sand source, but may range as much as $50-60 per cubic yard for an approximate total of $350,000. To replace annual erosion losses could cost $25,000 per year unless wave energy is reduced.
A combination of offshore breakwaters and beach nourishment would reduce wave energy and reduce the frequency of additional nourishment. However, this alternative is beyond the financial capability of the Makaha Surfside, and should probably be sponsored by a governmental agency.

The no action alternative would result in no new sand and would leave the risk of further shoreline erosion. Leaving the shoreline as is creates the potential for property/building damage at the Makaha Surfside. Under the no action alternative, the objective of protecting the applicant's building from wave damage would not be achieved. The no action alternative is not considered a feasible option.

These options were presented to DLNR for consideration. DLNR supported the sand nourishment alternative (see letter dated July 3, 1996 in Appendix A). Revetments are currently in disfavor with both state and county regulatory agencies. Sand nourishment is recommended as quickly as possible while determining the feasibility of either the breakwater or revetment as a longer-term option.

D. MITIGATION

The objective of erosion control is to prevent further shoreline recession and to prevent waves from reaching and damaging the Makaha Surfside property. Coral sand of sufficient grain size will be specified to minimize fine particles. The source of sand must match or be coarser than the existing sand to minimize sediment transport. A sand beach will prevent erosion of the clay backshore and resulting turbidity. Salt tolerant vegetation will be planted at the top or the beach to help minimize further erosion.
V. REFERENCES


VI. AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONSULTED IN THE PREPARATION OF THE FINAL EA

The notice of availability of the Draft Environmental Assessment for the Makaha Surfside Beach Nourishment project was published in The Environmental Notice by the Office of Environmental Quality Control on January 23, 1997. As part of the preparation of the Final Environmental Assessment, the following agencies, organizations, and individuals sent written comments. A total of 12 comments were received as of March 13, 1997 and are included in this chapter.

Federal

Department of the Army - Pacific Ocean Division

State Agencies

Department of Health
Department of Land & Natural Resources
Division of Aquatic Resources
Division of Land Management
State Historic Preservation Division
Office of Hawaiian Affairs

City and County of Honolulu

Department of Land Utilization
Department of Parks and Recreation
Department of Public Works
Planning Department

Others

University of Hawaii at Manoa
Sierra Club
DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96704-5401

January 16, 1997

Planning and Operations Division

Mr. Dean Y. Uchida, Administrator
State of Hawaii
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Uchida:

Thank you for the opportunity to review and consent on the Conservation District Use Application for the Beach Nourishment Project at Makaha, Oahu (TMK 8-5-17; 051). According to the information provided, work will be done near the high tide line. If any work, including the discharge of fill, occurs beneath the high tide line, a Department of the Army permit would be required. For the applicant's information, the Corps is proposing a Regional General Permit which would allow beach nourishment and restoration in the State of Hawaii.

For additional information regarding permit requirements, please contact Ms. Kathy Dole at 638-9258 (extension 15) and refer to file number P600000379.

Sincerely,

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

Oceanit Coastal Corporation
Coastal engineering services

May 5, 1997

Mr. Paul Mixon, P.E.
Acting Chief
Planning and Operations Division
Department of the Army
Pacific Ocean Division, Corps of Engineers
Fort Shafter, HI 96858-5440

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments 83-175 Farrington Highway
Ref File Number 9600000379

Dear Mr. Mixon:

I thank you for your letter of January 16, 1997 regarding the subject project. At present we plan to place all of the sand for beach nourishment above the high tide line; however, we could possibly use the new Regional General Permit for nourishment if it is in force in the near future.

If you have any questions, please call me or Ms. Robin Anawalt at our office.

Sincerely,

Warren E. Becher, Ph.D.
Senior Ocean Engineer
ce: Mr. Richard Yamashita
Ind-Comm Management
Mr. Sam Lemno
DLNR

1100 Aliakoa Building • 1100 Aliakoa Street, 31st Floor • Honolulu, Hawaii 96813
TELEX: 741144 • FAX: OCEANIT • TEL: (808) 531-3017 • FAX: (808) 531-3177
January 13, 1997

Dean Y. Uchida, Administrator
Land Division, Department of Land and Natural Resources

Lawrence Milke, Director of Health

CONSERVATION DISTRICT USE APPLICATION

Applicant: Makaha Surfside Association
File No.: OA-2850
Request: Beach Nourishment
Location: Makaha, Oahu, Hawaii
TDR: 8-5-17:05 (offshore)

for allowing us to review and comment on the subject on. We do not have any comments to offer at this time.

Oceanit Coastal Corporation
coastal engineering services

A subsidiary of Oceanit Laboratories, Inc.

Map 5, 1997

Dr. Lawrence Milke
Director of Health
Department of Health
P.O. Box 3378
Honolulu, HI 96801

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments 85-175 Farrington Highway

Dear Dr. Milke:

Thank you for your letter dated January 13, 1997 regarding the subject project. Your letter will be included in the Final Environmental Assessment.

If you have any questions, please call me or Mr. Robin Anawalt.

Sincerely,

Warren E. Bucher, Ph.D.
Senior Ocean Engineer

cc: Mr. Richard Yamazaki
Ind-Comm Management
Mr. Sam Leemo
DLNR
STATE OF HAWAII  
Department of Land and Natural Resources  
Division of Aquatic Resources

MEMORANDUM
To: William Devick, Acting Administrator  
From: Richard Sixberry, Aquatic Biologist  
Subject: Comments on Conservation District Use Application OA-2850

Comments Requested By: Dean Uchida, Land Division
Date of Request: 1/2/97  
Date Received: 1/3/97

Summary of Project
Title: Beach Nourishment  
Proj. By: Makaha Surfside Association  
Location: Makaha, Oahu

Brief Description: Beach nourishment has been proposed and accepted by DLNR as the best alternative for preserving and protecting the state-owned shoreline and the Makaha Surfside Apartments buildings at Waianae, Oahu.

Comments: Significant long-term impacts adverse to aquatic resource values is not expected from the proposed beach nourishment although some temporary displacement of some shoreline mollusks and algae will occur. Finally, the sand replacement would expand and enhance the recreational opportunities for the public along this shoreline.

Richard Sixberry  
Aquatic Biologist

May 3, 1997

Mr. Richard Sixberry  
Aquatic Biologist  
Division of Aquatic Resources  
Department of Land & Natural Resources  
P.O. Box 621  
Honolulu, HI 96809

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments E-175 Farrington Highway

Dear Mr. Sixberry:

Thank you for your comments regarding the subject project. We concur that temporary displacement of shoreline mollusks and algae will occur as a result of sand nourishment. Although the primary objective of this project is to protect the Makaha Surfside apartments building from potential property damage, we agree that sand nourishment will also enhance public recreational opportunities in front of the subject property.

If you have any questions, please call myself or Ms. Robin Auzait.

Sincerely,

Warren E. Bunker, Ph.D.  
Senior Ocean Engineer

cc: Mr. Richard Tanaka  
Ind-Com Mgmt.
Mr. San Lomio  
DLNR
MEMORANDUM

To: Dean Y. Uchida, Administrator
    Land Division
From: John Doubling, Land Agent
      Oahu District Land Office
Subject: Conservation District Use Application for Beach
        Erosion, Makaha Ridge, Makaha, Oahu, Hawaii

The Oahu District Office of the Land Division is in favor of
the Conservation District Use Application which involves the
placement of approximately 1,000 cubic yards of sand at the
beach areas located on State-owned lands. The Makaha Surfside
Apartments are threatened by severe erosion on the beach
area, in addition to longshore access along the beach area
becoming hazardous.

We would like to point out that the lands located between
the Makaha Surfside Apartments and the proposed fill area are
encumbered by Governor's Executive Order No. 1453, which sets
the lands to the Department of Parks and Recreation, City and
County of Honolulu, for Park purposes. As such, we recommend that
the Governor's Office for Parks and Recreation, City and County of
Honolulu be given the opportunity to comment on the proposed
fill area.

Additionally, we require that the applicant obtain all
required Federal, State and County permits prior to the actual
work being taken.

Should you have any questions, you may contact me at 7-0431.

Oceancit Coastal Corporation

A subsidiary of Oceanit Laboratories, Inc.

May 3, 1993

Mr. John Doubling
Land Agent
Division of Land Management
Department of Land and Natural Resources
P.O. Box 321
Honolulu, HI 96811

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments 85-175 Farrington Highway

Dear Mr. Doubling:

Thank you for your comment letter dated January 23, 1997. We are aware of Executive Order 1453 and have included the Department of Parks and Recreation as a consulted party on the subject project.

We are applying for all required Federal, State and County permits. Some required permits may depend on the final approved project plans.

If you have any questions, please contact me or Ms. Robin Asawa.

Sincerely,

Warren E. Bucher, Ph.D.
Senior Ocean Engineer

cc: Mr. Richard Yamazaki, Mr. Sam Leeman
    DLNR

1100 Alakea Building • 1100 Alakea Street, 33rd Floor • Honolulu, Hawaii 96813
TELE: 808-548-3300 • FAX: 808-548-3317 • TOLL FREE: 800-333-2831 • FAX: 800-553-3177
MEMORANDUM

January 23, 1997

TO: Dean Uchida, Administrator
Land Division

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Historic Preservation Review Chapter 6E-42 Makaha Surfside Association Beach Nourishment (EIS No. OA-2850) Makaha, Wai`anae, O`ahu

The draft EA and CDUA application should be corrected. A review of our records shows that several human burials (File No. 380-07-4064) have been recovered from the project location. The burials were exposed after high surf eroded the shoreline fronting the Makaha Surfside Apartments.

This project proposes extending the existing beach at least 30 feet seaward and does not involve the construction of any buildings, structures, facilities or dredging. The addition of sand to the shoreline fronting the Makaha Surfside will add needed protection to any existing burials in the vicinity. In order to avoid the possibility of an adverse affect on known and unknown burials in the Mauna Lahanli beach park area, we encourage Hawaiian Cement and Grace Pacific to be used as sand sources rather than the stream outlet at Mauna Lahanli beach park. We believe that the beach nourishment proposed in this project will have "no effect" on historic sites and will offer added protection to any burials in the area.

E:Jk

Cc: Kai Mankell, SHPD Burials Program

Oceani Coastal Corporation

A subsidiary of Oceanic Laboratories, Inc.

May 5, 1997

Mr. Don Hibbard
Administrator
Historic Preservation Division
Department of Land & Natural Resources
33 South King Street, 6th Floor
Honolulu, HI 96813

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments 85-175 Farrington Highway

Dear Mr. Hibbard:

Thank you for your comments regarding the subject project. Your concern regarding the human burial site 380-07-4064 will be included in the Final Environmental Assessment.

Your suggestions regarding Hawaiian Cement and Grace Pacific as possible sand sources have been noted. We are in contact with both companies regarding sand types and costs. We concur that sand nourishment will have "no effect" on historic sites or burials in the area except to cover them with sand.

If you have any questions, please contact me or Mr. Robin Annawat.

Sincerely,

W. E. Baker
Senior Ocean Engineer

cc: Mr. Richard Yanashiki
Ind-Cem Management

Mr. Sam Lamore
DLNR

1100 Ali`i Drive, Suite 100
Hilo, HI 96720
(808) 935-8550
FAX: (808) 935-8560

1100 Ali`i Drive, Suite 100
Hilo, HI 96720
(808) 935-8550
FAX: (808) 935-8560
Oceanit Laboratories

Dear Mr. Anawalt:

Thank you for the opportunity to review the Environmental Assessment (EA) for the Proposed Shore Protection at Makaha Surfside Apartments, 85-173 Farrington Highway. The proposed action involves sand replenishment below the certified shoreline and above the tide line fronting the Makaha Surfside.

The Office of Hawaiian Affairs (OHA) concurs at this time with the proposed recommendation of sand replenishment as a temporary measure to protect the shoreline from further wave erosion. OHA has some concerns about the lack of plans for long-term shoreline protection. Based on the data included in the EA (page 21), sand replenishment appears to be an expensive measure with a high likelihood of annual storm overwashing in the event of (1) highly severe northern and southern storm waves reaching the shoreline, or (ii) catastrophic occurrences such as a tsunami or hurricane. OHA urges the preparers to consider the use of wave energy reducers as part of strategies envisioned to control wave erosion along the Makaha Surfside shoreline. Please contact Lynne Lee, Acting Officer of the Land and Natural Resources Division, or Luis Mancilla, should you have any questions on this matter.

Sincerely yours,

[Signature]

Ishmael Ross
Deputy Administrator

May 5, 1997

Ms. Marsha Ross
Deputy Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, HI 96813

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments 85-173 Farrington Highway

Dear Ms. Ross,

Thank you for your comments regarding the subject project. If needed, sand nourishment is a form of long-term shore protection, but it does require periodic maintenance through adding sand. Additional sand can be expensive, and additional sources, such as offshore sand, are being considered. Sand nourishment does have the risk of accelerated erosion during high wave or tsunami conditions, and this risk must be considered in the decision to use sand. The use of erosion control devices such as offshore breakwaters would reduce the risk. Breakwaters also require federal, state, or county participation in the planning and funding process. The issue of offshore breakwaters will be discussed further with the Department of Land and Natural Resources.

If you have any questions, please contact me or Mr. Robin Anawalt.

Sincerely,

[Signature]

Warren E. Bacher, Ph.D.
Stein Ocean Engineer

cc: Mr. Richard Yamashita
Lei-Cam Management
Mr. Sam Leonno
DLNR

1100 Ala Moana Building • 1100 Ala Moana Street, 31st Floor • Honolulu, Hawaii 96813
TELL: (808) 541-6175 • FAX: (808) 541-6481

University of Hawai'i at Mānoa

Land Management Div.

FEB 24 '97
16:00 NO.007 P.02

Mr. Richard Yamashita
Malihini Surfside Association
City & County Management
541 South King Street
Honolulu, Hawai'i 96813

February 24, 1997
EA-8855

Dear Mr. Yamashita,

Dr. Environmental Assessment
Malihini Surfside Beach Stabilization Project

The Malihini Surfside Association proposes to conduct a beach nourishment project to preserve the shoreline and protect the Malihini Surfside Apartments from further damage due to shoreline erosion. Located between Pali Highway and the ocean, the project would involve the placement of approximately 5,200 cubic yards of sand on the seaward side of a beach easement in front of the apartments.

We reviewed the EIS with the assistance of Bob Hoxish, Hawai'i Sea Grant Extension, Charles Fitcher, Coral Reef and Beaches, and Paul Kurotschi of the Environmental Center. While we support the beach restoration strategy over any shoreline hardening approaches, we have some additional comments on both the project and the document.

Surfing Suzuki Beach Stabilization

Although beach nourishment appears to be the most effective and environmentally benign solution, beach nourishment by itself may not provide an adequate erosion buffer. Given that the site has been eroding at a rate of 6 feet/year since 1973 and is subject to large waves and strong currents (sharper and offshore) each winter, unconfined beach nourishment does not appear to be a viable long-term solution. Our reviewers suggest that beach nourishment should be incorporated in an aggressive beach management plan (e.g., seaward and/or offshore), and that some sort of off-shore structure should be considered to dissipate incoming wave energy. Artificial reefs constructed offshore, a breakwater of submerged large rocks, would increase the resilience of the beach nourishment and reduce

the frequency of nourishment. Another option would be to set up offshore, detached breakwaters, although this alternative is technically less appealing. In absence of any offshore structures, the initial nourishment is unlikely to remain in place for long.

Sand Source

As stated on the first page of the document, the replenished sand should reach the existing sand as closely as possible. Therefore, natural sand, which is chemically and physically homogenous with the existing sand, should not be considered. Asnatural sand is highly reactive, other beaches associated with the coastal area such as Kawaihae Beach and Kailua Beach have been considered. The beach sand, with a grain size of approximately 0.3 mm, is also comparable with the existing sand and has a grain size of 0.5 mm at mid-bathymet 0.5 mm at the toe of the beach. The recommended grain size for the nourishment sand would be equal to or slightly larger than the existing sand. The only comparable sand available in the area is the sand from the shoreline at Kahuku Lagoon. Before this source is used, the applicant should check for community opposition and regulatory difficulties. This sand should also be coarse enough to avoid degrading water quality.

An alternative source not mentioned in the document is offshore sand deposits. A recent CSM (Beach Nourishment Viability Study) identified a nearshore location in Malahoe as one of Oahu's best and most promising sources of sand for beach nourishment. Technology for mining, transport, and delivery of sand from offshore deposits is proven and simple, requiring fewer approvals compared to mining, hauling, and delivery of land-derived sources. Additional information is available from the Ocean Engineering Department's Littoral Laboratory.

Water Quality Monitoring

As increased mobility is almost always associated with beach replenishment, the proposed actions should include a short-term and long-term water quality monitoring program. Such a program will help to assess any potential impacts to the receiving terrestrial community. First baseline data should be obtained. Next a monitoring policy should be formulated and recorded. Before the project begins, a set of thresholds and mitigative measures should be established in order to ensure any necessary mitigation occurs at the appropriate moment.

Debris Provisions

The protection of beach profile data is satisfactory, as the document fails to discuss the location of each of the profiles. The profiles should then include the location for the survey points, the number of points, and the distance of each point along the profile (e.g., south, north, etc.).
In conclusion, we hope that our suggestions on enhanced monitoring, used sources, and water quality monitoring will be useful in refining the proposed actions. Before continuing further with the project, these three issues as well as the other items on the presentation should be addressed. Thank you for the opportunity to comment on the draft EA.

cc: OSCR, DLNR, Roger Fujihata, Rob McPherson, Chalisa Fong, Paul Inocencio

John T. Harrison
Environmental Coordinator

Oceanic Coastal Corporation

May 5, 1997
John T. Harrison, Environmental Coordinator
Environmental Center
University of Hawaii at Manoa
Crawford 317, 2550 Campus Road
Honolulu, HI 96822

SUBJECT: Draft Environmental Assessment for Proposed Sheet Protection at Makaha Surfside Apartments 81-173 Farrington Highway

Dear Dr. Harrison:

Thank you for your comments dated February 24, 1997 regarding the subject project. We offer the following in response to your comments:

1. Supplemental Beach Nutrient

We concur that the nutrient scenario will last longer if it is protected by vegetation and some type of offshore structure to reduce wave energy. In our report to DLNR, "Erosion Control Alternative for Coastal Property Fencing Makaha Surfside Apartments," we recommended a combination of nourishment and offshore breakwaters. DLNR chose nourishment alone as the option it would support. In addition, nourishment structures are beyond the economic means of the Makaha Surfside. Also the beach area is part of Maunalua Bay Park administered by the county Department of Parks and Recreation. We believe construction of offshore structures should be done by the state or county so we are currently exploring ways that this might be done.

2. Sand Sources

The sand sources mentioned are typical of those available on Oahu. Good beach sand of the proper size is difficult to find and the selected source will depend on availability and price at the time the sand is purchased. It is unlikely that crushed coral would be used because of the reasons listed in your letter unless the fines can be removed by washing. The sand at the stream outlet on Malaekahana Beach is insufficient to meet requirements, and its use would require intervention by the Department of Parks and Recreation.

The use of offshore sand deposits as a source was considered. Several forward sand deposits were evaluated in the C2M "Beach Nourishment Viability Study." The deposits at Malaekahana, as mentioned in your letter, appears to have good sand although the median
Environmental Center
May 2, 1997
Page 2

grain size is smaller than that desired for the Makaha Surfside Location. The sand could
be used, but more than 5,000 cubic yards would probably be necessary because finer
material will be carried offshore by wave action and lost. Dredging sand in the open
ocean can be difficult because of wind, waves, and water depth. Dredging also requires
additional regulatory permits. Therefore, we do not yet know if use of offshore sand is
economically and legally viable for Makaha Surfside.

3. Water Quality Monitoring

A Department of the Army Permit is not required for this project; therefore, a 481 Water
Quality Certification with its accompanying best management practices plan and water
quality monitoring plan is not required. After reviewing the Environmental Assessment
and CDBA permit application, the State Department of Health had no comments and
requested no water quality monitoring program.

4. Document Presentation

Your comments regarding figures and the beach profile data have been noted. The Final
Environmental Assessment will contain the "Beach Profile Map," which includes all
survey points,advance, and other points of significance.

A scale will be added to Figure 1. The aerial photographs have been enlarged from
other photos and the scale is not known. North arrows will be placed where appropriate.

We hope we have satisfactorily addressed your comments. If you have any questions, please
contact me or Ms. Robin Anawalt.

Sincerely,

[Signature]

Warren E. Bucher, Ph.D.
Scientific Ocean Engineer

cc: Mr. Richard Yamasaki
    Ind-Con Management
Mr. Sam Leomo
    DLNR

Oceanit Coastal Corporation
February 11, 1997

To: The Honorable Michael D. Wilson, Director

From: Conservation District Use Application (CDUA)

Subject: Beach Nourishment at the Makaha Surfside Apartments

We have reviewed the project information contained in the subject application transmitted by your letter dated January 2, 1997, and have the following comments on the Draft Environmental Assessment (DEA).

1. Section I. General Information

a. County General Plan: Although the Draft EA correctly indicates that the subject property has no designation, the General Plan for the City and County of Honolulu does not specifically designate any particular parcel of land. The General Plan instead, is a comprehensive statement of the objectives and policies which set forth the long-range aspirations of Oahu's residents and the strategies to achieve them.

b. Development Plan: The Draft EA does not discuss the Development Plan (DP) designation for this property. It notes that this property is designated as Park on the Wai'anae Development Plan Map. This information should be verified by the Planning Department and included in the Final EA.

c. Zoning: The Draft EA incorrectly indicates that there is no zoning designation for the subject property. The portion of the property within the certified shoreline is zoned P-1 General Preservation.

2. Section II. Description of Proposed Action

Although the Draft EA indicates (page 2, paragraph 4) that the project will occur on City and County Park land (Maui Lanihi Beach Park), this fact is not reflected in Section 1. GENERAL INFORMATION. More importantly, it is our understanding that this fact precludes that the City's Department of Parks and Recreation (DPR) authorizes the CDUA (as a signatory).

This section should also be revised to include the description, which is discussed in Section IV. IMPACTS, ALTERNATIVE AND MITIGATION, of how the project is to be conducted (i.e., truck deliveries and access, etc.). This section should also elaborate on whether any stocking or replanting area will be necessary if landscaping or site restoration would be required after the project's completion.

3. Shoreline Erosion and Its Prevention is a Complex and Perhaps Unpredictable Process. Although the Draft EA may not be intended as a treatise on this matter, it should elaborate upon a number of pertinent issues raised by this proposal:

a. Durability: The Draft EA points out the rapid rate of erosion (3 feet per year) which has occurred in this area and notes that the proposed project is not intended to be a long-term fix to erosion. Consequently, the restored beach is likely to return to its present condition in 6 years. In other words, the beach profiles are as currently understood, which would enhance the durability of the nourished beach. Similarly, the Final EA should also discuss whether some form of maintenance program is necessary, planned or budgeted.
The Honorable Michael D. Wilson, Director
Page 3
February 11, 1997

b. DKE: The Draft EIR estimates that the project would cost $350,000. Inasmuch as the beach being nourished is owned by the State and managed by the City, the Final EA should discuss whether any funding or other form of support is being provided by these agencies. In addition, a discussion should be provided on the relationship between sand selection, beach durability and the cost implications relative to any continual nourishment efforts (i.e., larger grain size = less replenishment = lower costs, etc.).

Should you have any questions, please contact Steve Tagawa of our staff at 333-4417.

Very truly yours,

[Signature]

Acting Director of Land Utilization

Oceanit Coastal Corporation

A subsidiary of Oceanit Laboratories, Inc.

May 5, 1997

Loretta K.C. Chee
Deputy Director
Department of Land Utilization
650 South King Street, 7th Floor
Honolulu, HI 96813

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments 85-175 Farrington Highway

Dear Ms. Chee:

Thank you for your letter dated February 11, 1997 regarding the subject project. We offer the following responses, in respective order, to your comments:

1. We acknowledge that the County General Plan is a statement of objectives and policies of long-range aspirations for the Island of Oahu. We also acknowledge that the Development Plan (DP) was not included in the Draft Environmental Assessment. The Final Environmental Assessment (Section I, General Information) will be changed to substitute the current DP designation in place of the General Plan.

   For clarification purposes, the Final Environmental Assessment will also discuss the zoning designation (R-3) of the project site which is inclusive of the Makaha Surfside apartment building.

2. The Final Environmental Assessment will state that the proposed project will occur below the protected shoreline line which is on State Conservation lands not City and County Park land. Because the project will occur on State Conservation District lands, the City and County may not need to authorize the CDBA as a signatory. However, the upbuilding/marking area, which includes proposed land deliveries and access on park land to the project site, may necessitate coordination from the City and County Parks Department. This will be discussed in the Section IV of the Final Environmental Assessment. We have discussed the project with the Department of Parks and Recreation and will continue to coordinate with them.

3. Beach nourishment projects such as this one are by their nature large-scale projects. Sand must be added to further enhance access, and Makaha Surfside Apartments is aware of this need and the appropriate cost. To enhance the durability of the nourished beach, the new sand grain size must be as large or larger than the existing sand, and wave energy should be reduced. Methods of reducing wave energy such as offshore
We have been sufficiently informed of your comments. If you have any questions, please contact me or Ms. Baku Awaah. Thank you.

Sincerely,

[Signature]

Irene E. Baker, Ph.D.
Senior Ocean Engineer

cc: Mr. Robert Xunwa
Int. Govt. Affairs
DIBU
Mr. Michael D. Wilson
Department of Parks and Recreation
City and County of Honolulu

February 4, 1997

Mr. Michael D. Wilson, Chairperson
Department of Land and Natural Resources
State of Hawaii
1131 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Wilson:

Subject: Conservation District Use Application (CDUA)

We are pleased to review the Conservation District Use Application (CDUA) for the proposed project at Makaha, Oahu. Thank you for your opportunity to review the CDUA and draft environmental assessment (DEA) for beach nourishment on State-owned land at Makaha Surfside Apartments.

Generally, we are supportive of the proposed project since, as noted in the application, it will enhance public beach park land that has seriously eroded within the past 20 years or more. Also, the adjacent property owners of the Makaha Surfside Apartments are clearly threatened and need immediate action to solve the erosion problem. Beach nourishment is certainly a more preferred approach to solving the erosion problem than shoreline hardening, which is the most common practice.

The CDUA and DEA do not indicate that the beach land to receive sand fill material is, in fact, part of a City park (Makaha Lagoon Beach Park). The subject land, although owned by the State, is under the management and control of the Department of Recreation and Parks. The Governor's Executive Order No. 4422 of April 4, 1979 placed this land (and other adjacent lands comprising Makaha Lagoon Beach Park) under our control. Our department, therefore, has a major interest in any decision regarding this beach park land.
May 5, 1997

M.G. (retd.) John R. D'Alessio, Jr.
Director
Department of Parks and Recreation
650 South King Street
Honolulu, HI 96813

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments E5-175 Farrington Highway

Dear M.G. (retd.) D'Alessio:

Thank you for your letter dated February 4, 1997 regarding the subject project. We offer the following in response to your comments:

We concur that the Makaha Surfside Apartments are threatened by shoreline erosion and need a remedy. We understand that the parcel of land between the shoreline and the Makaha Surfside property line has been leased under the control of the City and County of Honolulu via State Executive Order No. 3432. At the present time, the proposed action is to nourish the beach with sand below the certified shoreline, which we understand falls within the jurisdiction of the State Department of Land and Natural Resources. Mobilization of equipment and delivery of sand will require access to park property. We plan to coordinate fully with your department on any and all decisions that will impact city park lands and operations.

We share your concern that sand nourishment may be carried away. Ideally, we would like to have some method, such as offshore breakwaters, to dissipate wave energy before it reaches the beach. Although we recommended breakwaters during our initial review of alternatives, DLNR selected sand nourishment as the preferred alternative. In addition, the resilience of Makaha Surfside can be affected to build offshore structures. We believe that the county or state would have to participate in constructing any offshore structure to make that option viable.

The sand source for nourishment has not yet been determined and will depend on availability and price at the time it is needed. There are few supplies of good beach sand on Oahu. Offshore sand is possible; however, additional permits and a dredging system will be required. If your department becomes aware of available sand, please contact us.

Department of Parks and Recreation
May 5, 1997
Page 2

We hope we have satisfactorily addressed your comments. If you have any questions, please call me or Ms. Robin Anawalt. Thank you.

Sincerely,

Warren E. Beshler, Ph.D.
Senior Ocean Engineer

cc: Mr. Richard Yamazaki
    Mr. San Lemmo
    DLNR
January 21, 1997

Mr. Michael D. Wilson, Chairman
Department of Land and Natural Resources
State of Hawaii
P.O. Box 601
Honolulu, Hawaii 96809

Attention: Mr. Dean Y. Uchida, Administrator
Division of Land Management

Dear Mr. Wilson:

Subject: Your Letter, File No.: OA-2600, of January 2, 1997, Relating to a Conservation District Use Application for Beach Nourishment at Makaha.

We have reviewed the above application and have the following comments:

1. How long is the proposed measure expected to last? Will there be a need to replenish at regular intervals? If so, provide estimates of life expectancy and replenishment rates.

2. If there are any questions, please contact Gerald Takayama at 237-6104.

Very truly yours,

Kenneth E. Sprague
Director and Chief Engineer

Oceanit Coastal Corporation

May 3, 1997

Jonathan K. Shimada, Ph.D.
Director
Department of Public Works
650 South King Street, 11th Floor
Honolulu, HI 96813

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments 83-175 Farrington Highway

Dear Dr. Shimada:

This is in response to a letter dated January 21, 1997 and signed by Mr. Kenneth Sprague regarding the subject project. We offer the following in response to the comments contained in that correspondence:

Sand nourishment requires periodic maintenance. The proposed project will extend the beach approximately 30 feet seaward by adding approximately 3,000 cubic yards of sand. At an erosion rate of 5 feet per year, the beach will return to its pre-project conditions in about 4 years, losing about 800 cubic yards per year. These numbers are approximate and depend on wave, current, and sand grain size. A large hurricane could totally change this beach in a matter of hours.

We hope we have satisfactorily addressed your comments. If you have any questions, please contact me or Mr. Robin Answell. Thank you.

Sincerely,

Warren E. Bucher, Ph.D.
Senior Ocean Engineer

cc: Mr. Richard Yasunaka
    Mr. Sam Lemno
    DLNR
Honorable Michael D. Wilson, Chairperson
Board of Land and Natural Resources
Department of Land and Natural Resources
State of Hawaii
P.O. Box 631
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Conservation District Use Application (DA-2450)
for Beach Renourishment at Makaha, Oahu, Hawaii

In response to your department’s request of January 2, 1997, we have reviewed the subject CDUA/DEA and offer the following comments:

1. The proposed project supports the objectives and policies of the General Plan and the Wahiawa Development Plan. This project is located on land designated as Park on the Wahiawa DP Land Use Map, and is consistent with that use.

2. We have two concerns: a) the proposed action may not represent a long-term solution to the problem of beach erosion at this site; and b) the applicant’s analysis of the short dynamics of the area may not allow accurate prediction of the effects beach nourishment at this site may have on adjacent areas. Although these concerns are briefly mentioned in the DEA, the development or suggestion of one or more long-term solutions, and discussion of potential negative effects are not emphasized in either the DEA or the application.

Should you have any questions, please call Gordon Wood of the Planning Department staff at 377-6073.

Sincerely,

Cheryl D. Soon
Chief Planning Officer

Oceanaith Coastal Corporation
A subsidiary of Oceanaith Laboratories, Inc.

May 5, 1997
Mr. Patrick T. Oishi
Chief Planning Officer
Planning Department
610 South King Street, 8th Floor
Honolulu, HI 96813-3017

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments 85-173 Farrington Highway

Dear Mr. Oishi:

This is in response to a letter dated January 17, 1997 and signed by Ms. Cheryl D. Soon regarding the subject project. We offer the following in response to the comments contained in that correspondence:

1. We acknowledge that the proposed project supports the objectives and policies of the general plan. The Final Environmental Assessment will show the proposed project is located adjacent to land designated as Park on the Wahiawa DP Land Use Map.

2. Beach nourishment, although it can be a long-term solution to shoreline erosion, requires periodic maintenance with additional sand. Sand nourishment as proposed at this site is not likely to have any effects on adjacent shoreline areas. The small river forms a “pocket beach.” Pocket beaches are often good locations for nourishment because sand is trapped by headlands on either side. A rocky shoreline is found to the north of the site and Mauka Laie Beach is to the south. Sand can move along the coast in either direction. The amount of new sand that may be introduced to this environment from nourishment is small compared to the quantity that has already eroded. Therefore, we don’t believe there will be any additional negative impact on adjacent areas.

We prepared an evaluation of erosion control alternatives, including methods such as offshore breakwaters, for DLNR. Sand nourishment was the only alternative they supported. However, we will explore these topics further with them. Generally, solutions such as breakwaters are beyond the financial capability of residents in a complex like Makaha Surfside. Offshore erosion control structures should be sponsored by county, state, or federal government.

1100 alakea Building • 1100 alakea Street, 33rd Floor • Honolulu, Hawaii 96813
TELE: 808/548-4048 • FAX: 808/548-4049 • www.oceanaith.com • TEL: 808/521-3017 • FAX: 808/521-3177
Planning Department
May 2, 1997
Page 2

We hope we have satisfactorily addressed your comments. If you have any questions, please call me or Mr. Robin Anwalt. Thank you.

Sincerely,

[Signature]

Warren E. Bucher, Ph.D.
Senior Ocean Engineer

cc: Mr. Richard Yasumaki, Sen. Com. Management
Mr. Dan Leman, DLNR
Oceanic Coastal Corporation
A subsidiary of Oceanic Laboratories, Inc.

May 5, 1997
Mr. Philip Bogato
Chair
Oahu Group, Sierra Club, Hawaii Chapter
P.O. Box 2377
Honolulu, HI 96803

SUBJECT: Draft Environmental Assessment for Proposed Shore Protection at Makaha Surfside Apartments 85-175 Farrington Highway

Dear Mr. Bogato,

Thank you for your letter dated January 28, 1997 regarding the subject project. Your letter requests that the source of sand for nourishment be clearly identified. Unfortunately, no suitable beach sand is not always available on Oahu; for instance, the source used will depend on availability and cost when nourishment begins. Even when the source, the sand must be clean and of sufficient size so that it will not be immediately transported away. This means that the median size must be equal to or larger than the existing sand, and that 85 percent of the sand should be larger than 50 microns. Fall velocity, mentioned in your letter, is used with several other parameters to calculate initial drift. Fall velocity might be used during erosion analysis but would not normally be included in an environmental assessment.

A beach maintenance program, including measurement of beach profiles, will be recommended to the Makaha Surfside. The beach, as part of Mauka Luluku Beach Park, is completely accessible to the public.

We hope we have adequately addressed your comments. If you have any questions, please call me or Ms. Robin Anawit. Thank you.

Very truly yours,

Warren E. Baker, Ph.D.

cc: Mr. Richard Yasumaki  In-Corn Management
    Mr. Sam Lambo  DLNR
February 24, 1997

Mr. Michael Wilson, Chair
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject: Draft Environmental Assessment for the Makaha Surfside Beach Nourishment Project

This is in response to the review of the subject document. We have the following questions and comments.

1. Please evaluate the impact of the beach nourishment project on any adjacent coral reefs, mud flats, or fish spawning grounds.

2. Please provide details about mitigation measures to ensure that no debris, petroleum products, or other wastes enter the ocean during the term of the project.

3. Please consider the alternative of pumping sand from the nearshore area directly onto the beach. Please compare the cost/benefit of this alternative versus the preferred option.

4. Please show any nearby public beach access right-of-way and describe who is paying for this project.

5. Please provide reasons for supporting the determination based on an analysis of the significance criteria in section 11-200-12 of the Hawaii Environmental Impact Statement Rules.

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

Sincerely,

Gary Gill
Director

c: Richard Yamasaki
July 21, 1997

Attn: Mr. Jeyan Thirugnanam
Mr. Gary Gill, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

SUBJECT: Draft Environmental Assessment for the Makaha Surfside Beach Nourishment Project

Dear Mr. Gill:

Thank you for your letter dated February 24, 1997 regarding the subject project. We apologize for our late response. Inadvertently, your original letter was not sent to Oceanit. We offer the following in response to your comments:

1. The nearshore bottom consists primarily of rock and sand. Coral is sparsely located in the nearshore area. There are no mud flats in the vicinity. Environmental studies prior to constructing Waianae Boat Harbor did not indicate any fish spawning areas. The shoreline substrate is a combination of volcanic rock and limestone, some consolidated and some existing as small boulders. A layer of topsoil covers the rock at the top of the beach. Beach nourishment will minimize further erosion of topsoil and provide water quality conditions more conducive to coral and other marine life.

2. The construction phase of this project consists of dumping sand from trucks at the specified location. Clean sand without organic debris will be specified. Other than the sand trucks, there will be no petroleum products on site. Trucks will not be refueled or maintained on site. To minimize waste from entering the ocean, coral sand of sufficient grain size will be specified to minimize fine particles. The sand must match or be coarser than the existing sand to minimize sediment transport. A sand beach will prevent erosion of the clay backshore and resulting turbidity. Salt tolerant vegetation will be planted at the top of the beach to help minimize further erosion. No other waste material is anticipated as a result of this project.

3. The alternative of pumping sand from the nearshore area directly onto the beach was considered. In concept, this is a good idea; however, there are several factors that make this option difficult for Makaha Surfside. To pump from offshore, a sufficient quantity of appropriately sized sand must be located relatively near the beach. Results of sand sampling at several locations along the leeward coast are discussed in Beach Nourishment Viability Study, (Sea Engineering, 1993). The locations included Lahilahi Point,
Waianae, Pokai Bay, and Maili. Of these, only Maili was judged to have sand in sufficient quantity for beach nourishment. Most of the Maili sand, however, is too small for the conditions at Makaha Surfside (less than 0.5 mm median grain size). Sand from any of these locations would have to be dredged and then transported to shore by barge. The distances are too great to pump directly. Offshore dredging would require a permit from the Department of the Army Corps of Engineers and permits from the State of Hawaii. The Conservation District Use Permit (CDUP) granted to Makaha Surfside does not cover dredging for sand. The Department of the Army is currently establishing a regional permit for beach nourishment, which should make the permit process simpler in the future. The cost of additional permits and an environmental assessment would exceed $40,000. A minimum of 6 months would be required to process the permit applications. If sufficient acceptable sand was available, dredging and transporting the sand to the beach could be less expensive than trucking in sand from land sources. However, Oceanit believes that dredging offshore sand for beach nourishment should be sponsored by the state or county and should be a continuing operation rather than a one-time project. At this time, since the Makaha Surfside has received a CDUP, and since the new sand should be placed during the summer months to minimize loss, and since the Makaha Surfside has already spent a large sum on obtaining permits, Oceanit believes that it is not practical to start the permit and environmental assessment process over just to be able to use offshore sand.

4. The parcel of land between the shoreline (project site) and the Makaha Surfside property line was placed under the control of the City & County of Honolulu Department of Parks & Recreation via State Executive Order 3452. It consists of a part of Mauna Lahihi Beach Park and an access road along the shoreline. Just north of the project site, Mauna Lahihi Park is public accessible on its entire length along Farrington Highway. The project has been and will continue to be funded by the Makaha Surfside Association of Apartment Owners even though the erosion area is part of the beach park. No state or county funding has been offered.

5. Analysis of the Significance Criteria in section 11-200-12 of the Hawaii Environmental Impact Statement Rules shows that the proposed action will not have a significant impact on the environment. The criteria are discussed as follows:

(1) The proposed action does not involve an irrevocable commitment or loss or destruction of any natural or cultural resource. Sand nourishment will enhance the natural and scenic resource of the area.

(2) The proposed action would actually enhance the range of beneficial uses of the environment. The recreational shoreline area has diminished as a result of erosion, leaving little or no area for sunbathing, picnicking or other recreational activities. Beach
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nourishment would also help to reduce beach and soil erosion by covering the eroded embankment.

(3) The State's long-term environmental policies or goals as expressed in Chapter 344 are not in conflict, as the proposed action would enhance the shoreline as a recreational resource while protecting the Makaha Surfside property.

(4) Unless the cost of sand nourishment and/or subsequent replenishment becomes prohibitive, the proposed action does not affect the economic or social welfare of the community or State.

(5) The proposed action has no effect on public health, other than reducing the potential for storm damage to homes at the Makaha Surfside.

(6) The proposed action will have positive impacts on public facilities. In this case, the public beach will be improved.

(7) Not only will a substantial degradation of environmental quality not occur, environmental quality will increase in nearshore waters by reduction of erosion.

(8) Additional actions may involve replenishment as the sand eventually washes offshore. This will cause additional costs every 5 to 10 years. This is not expected to have a considerable effect on the environment or involve a commitment for larger actions.

(9) The proposed action will not affect any rare, threatened or endangered species or its habitat. Shoreline flora and fauna will be altered to the extent that algae and mollusks in the project site may be covered with sand.

(10) Air quality and ambient noise levels will not be affected by the proposed action. Water quality is expected to improve with the addition of clean sand as the backshore escarpment will be protected from further erosion.

(11) The proposed action will occur in an environmentally sensitive area as it is in a flood plain, tsunami zone, erosion-prone area, and along coastal waters; however, the impact will be positive as stated above.
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We hope we have satisfactorily addressed your questions. If you have any questions please do not hesitate to contact me. Thank you.

Sincerely,

[Signature]

Warren E. Bucher, Ph.D.  
Senior Ocean Engineer

cc:  Mr. Richard Yamasaki  Ind-Comm Management  
     Mr. Sam Lemmo  DLNR
APPENDIX A
CORRESPONDENCE FROM DLNR
Mr. Richard Yamasaki
Ind-Comm Management, Inc.
Makaha Surfside Condominium
85-175 Farrington Hwy.
Waianae, Hawaii 96792

Dear Mr. Yamasaki:

We have reviewed the beach erosion problem fronting the Makaha Surfside Condominiums at 85-175 Farrington Highway, and have the following relevant comments to offer.

On Sunday, June 2nd Mr. Roy Schaefer a Department of Land and Natural Resources (DLNR) planner with the Land Division conducted a site visit of the beach erosion, and subsequently met with your consultant Dr. Warren Bucher of Oceanit Laboratories, Inc. on June 6, 1996. The purpose of the meeting with Dr. Bucher was to find out what his preliminary conclusions were for a possible solution for the beach erosion problem.

Your Oceanit Consultant concluded in two studies submitted to the DLNR that beach nourishment is the best method of protecting the shoreline and the Makaha Surfside Condominiums 454 units. We agree with this conclusion and support the beach nourishment alternative as proposed. Unfortunately, the DLNR does not have a budget to provide financial assistance but can assist your consultant in meeting environmental and permitting requirements for the project. The DLNR is very concerned with the sustainability of the State's resources and particularly with coastal land loss problems that result in substantial beach erosion and subsequently threaten man-made structures.

In terms of permitting requirements, a Conservation District Use Application (CDUA) would need to be submitted to the DLNR with the appropriate environmental assessment documentation. In addition, this project would need approval by the Board of Land and Natural Resources for the CDUA. Also, there would be permitting requirements from the Department of Health and the Federal Government Army Corps of Engineers.
If you have any questions regarding this response, please do not hesitate to call Roy Schaefer of my Planning Branch staff at 587-0383.

Aloha,

[Signature]

MICHAEL D. WILSON

cc: Dr. Warren Bucher
APPENDIX B

CERTIFIED SHORELINE SURVEY MAP
OVERSIZED DRAWING/MAP

PLEASE SEE 35MM ROLL

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