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JOHN A. BURNS
GOVERNOR OF HAWAII

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF LAND MANAGEMENT

P. O. BOX 621

HONOLULU, HAWAII 96809

SEP 17 1973

Rec'd Plng. O. 9/17/73
By [Signature]

Gordon [Signature]
Wally _____
James _____
Esther [Signature]
→ Len _____
FILE _____

Colonel Leonard Edelstein
District Engineer
U.S. Army Corps of Engineer
Building 96, Fort Armstrong
Honolulu, Hawaii 96816

Dear Sir:

I am pleased to inform you that the Board of Land and Natural Resources has approved your request for a right of entry to enter onto State lands, both fast and submerged, lying between the Kapahulu Storm Drain and the Elks Club and to construct as necessary in connection with the Waikiki Beach Improvement Project.

You may consider this letter your right of entry to enter onto subject lands and construct as necessary, subject to the terms and conditions of that certain "Agreement Between the United States of America and the State of Hawaii for Local Cooperation at Waikiki Beach, Oahu, Hawaii (Kapahulu Storm Drain to Elks Club)," dated June 12, 1973.

Please disregard my letter of September 4, 1973 on this subject.

Very truly yours,

BOARD OF LAND AND NATURAL RESOURCES

Sunao Kido

SUNAO KIDO
Chairman and Member

cc: DOT Harbors
Planning Office

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Honolulu, Hawaii

August 10, 1973

REF: OA-5/29/73-450

REF:

Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Conservation District Use Application for
Beach Restoration Work at Waikiki, Oahu

APPLICANT:

Division of Land Management at the request of the
U. S. Army Corps of Engineers, Honolulu District.

USE REQUESTED:

Improvement of Beach Areas and Control of Sand Erosion

LOCATION:

Inshore areas along properties indicated on Tax Map
Plats 3-1-30 and 3-1-31.

AREA OF USE:

313,000 square feet +

SUBZONE:

General Use - Section 2B(1)(a) of Regulation No. 4.

DESCRIPTION OF AREA:

The area of use includes all of the inshore areas between the Kapahulu Storm Drain Outlet and the Elks Club, a distance of 3800 lineal feet. Beach improvements will be concentrated in a 1400 lineal feet section extending from the Queen's Surf Pavillion to the south wall of the Waikiki Natatorium. The adjoining fast lands, including the Natatorium, are within the urban land use district and presently covered by various executive orders to State and County agencies.

Existing inshore improvements include two sections of seawall which extend from the Kapahulu Drain southward to the Natatorium. From the seawall there is a dropoff of 3 to 5 feet to a sand beach, 65 feet wide, which broadens to a width of 200 feet in the vicinity of the Queen's Surf Pavillion. An existing groin, about 360 feet long, projects seaward at a location just north of the former Queen's Surf Nightclub site.

The inshore areas between the Waikiki Aquarium and the Natatorium have eroded to expose bare gravel and rubble. This is due to the reflected wave action off the seawall. The beach south of the Natatorium varies in width from 40 feet to 100 feet towards the Elk's Club. The Natatorium is 400 feet long and extends 200 feet seaward from the shoreline.

APPROVED AS SUBMITTED 8/10/73

ITEM H-7

On sandy beach portions, deposits of sand are found extending 50 to 100 feet seaward onto an irregular reef flat composed of limestone, sand, rubble and live coral. The reef flat extends further seaward for approximately one half mile. A channel having depths of 6 to 11 feet below mean low low water (MLLW) is located about 200 feet offshore and parallels the shoreline between the Natatorium and the Queen's Surf Pavillion. The channel, dredged within the reef flat, has a bottom of sand and gravel and provides a deep swimming area. It is not used for boating recreation.

The offshore bottom is composed of limestone, sand, rubble and live coral with limestone forming much of the beach bottom in the project area. Dispersed throughout are large sand despositis and smaller concentrations of rubble and live coral.

An average density of 20 pounds of fish per acre was measured within the project area with twice the amount noted in the vicinity of the Natatorium. The assortment of fish noted is comprised of individuals from more than 60 species found in Hawaiian waters. No endangered or rare speices are known to be in the project area.

The project area is presently used for multi-recreational activities such as swimming, wading and sunbathing. The walls of the Natatorium provide convenient platforms for pole fishing. Surfing sites seaward of the project limits are not expected to be affected by the project. The adjacent ~~fast~~lands, which are part of Kapiolani Park, include two beach centers and picnicking facilities. Limited boating facilities are located at the privately owned Outrigger Canoe Club.

The beach areas within the project limits are subject to waves approaching from the south to southwest nearly all the time, causing sand to move northward. Accumulation of sand occurs on the south side of the Queen's Beach groin with some sand by-passing the groin. The average loss of sand from the project area is estimated to be about 2000 cubic yards annually. Wind erosion is not a major factor since light tradewinds prevail much of the time. Strong rip currents in the project area are not significant although a current flowing seaward during ebb tide has been observed occasionally in the San Souci Channel.

The water quality of the area is tested routinely by the Department of Health to determine coliform density. While such tests show exceeding amounts of coliform following rainstorms, the effects dissipate quickly and year round beach uses are not impaired.

No historical or archaeological sites of particular significance are known to exist within the conservation district portions of the proposed project area.

DESCRIPTION OF USE:

The plan of improvement includes the construction of three new groins, placement of 46,000 cubic yards of sand, the demolition of the Waikiki Natatorium and relocation of existing facilities in the project area.

The three groins are to be located in the vicinity of the Queen's Surf Pavillion, the Waikiki Aquarium, and the present south wall of the Natatorium. The groins range in length from about 300 feet to 350 feet and will be constructed of large stones resting on firm reef foundation. The groins will project seaward from the existing seawall to insure against possible sand erosion along the sides of the groins. Lower sections of the groins will limit the passage of sand, permitting water to go through, and upper sections will be impermeable to sand.

The groins are designed to stabilize the reconstructed beach and minimize erosion. Each will slope from the crest of a sand berm, 6 feet above MLLW, to an elevation of about 3 feet above MLLW, then taper to 0 feet elevation the remaining distance to seaward. The groins will act to restrict sand drift to the north, retain the full width of the new beach, and reduce the annual loss of sand. Some sand will bypass each of the groins and enter the beach area north of the Queen's Surf groin.

46,000 cubic yards of sand will be placed in the area between the Natatorium and the Pavillion. This will add about 132,000 square feet of beach to the existing 181,000 square feet of beach within the project limits, an increase of 73%. The width of the reconstructed beach will vary from 85 to 210 feet and will have an average dry beach width of 120 feet. The sand on the beach will be within 2 feet below the level of the existing seawall. Steps and ramps will be constructed to cross over the seawall to the beach.

The source of the sand to be used will be the responsibility of the successful contractor at auction. It is most likely to come from some inland fossil beach deposit not part of any shoreline system. Natural areas for sand exist along the north coast of Oahu and along the west coast of Molokai. Coordination with responsible government agencies will be accomplished prior to sand mining to ascertain the environmental impact of sand mining in any area.

No incineration will be permitted at the project site. Environmental protection measures will be included in the contract. To assume minimum disturbance and contract compliance, construction inspectors will be located on site. The construction work will be phased to minimize restrictions on beach use. To prevent sand moving northward from San Souci beach, the south wall of the Natatorium will not be demolished until a temporary groin is placed immediately to the south.

Total cost for the proposed improvements which will involve both Federal and State funds, is estimated to be between 2 to 3 million dollars. The project is to be completed in about twelve months.

COMMENTS RECEIVED TO DATE:

The Board of Water Supply has no objections to the proposed improvements.

The Department of Health states that the project, as proposed, should have very little long term effect on water quality in the area, but could cause significant short-term pollution unless efforts to minimize same is made. In principle, there are no objections to the project, but proper measures for control of sediment pollution from the Natatorium should be included in the approval of the project.

ANALYSIS:

According to the EIS prepared by the Corps of Engineers, the proposed beach restoration work, covering the entire shoreline from Fort DeRussy to the Elks Club, is a part of the Waikiki Beach Erosion Control Project which was included in the River and Harbor Act of 1965. Congressional action followed a study by the Corps of Engineers, Honolulu District, at the request of the State of Hawaii in 1959. The initial sum of \$635,000 was appropriated for the project.

The Statewide Comprehensive Outdoor Recreation Plan, completed by the Department of Planning and Economic Development, in 1972, rated existing conditions as average. Future expansion of the project areas was evaluated and determined to be desirable without adverse environmental impact and should not interfere with existing surfing sites.

The placement of approximately 46,000 cubic yards of sand is to include filling the offshore dredged channel and areas presently within the Natatorium to a depth of -5 feet MLLW. This will cover some holes and other marine habitats along the seaward escarpment of the channel. No habitat on the reef flat should be altered by the sand placement. The infauna presently living in some sandy bottom areas close inshore will be covered and killed but an equivalent assemblage should establish itself in the new sand deposits from sandy areas further out from shore. The increased beach area will reduce the deep swimming area created by the dredged channel by 35 percent, but it will increase the safety of swimming in this area by reducing the depth below MLLW to a maximum of 5 feet and by providing a flatter bottom slope along the shoreward edge of the channel.

The three groins to be constructed will extend seaward a sufficient distance to cover small areas of the reef flat. These groins will provide some habitat for fish and some substrate for benthic growth, but not to a sufficient extent to replace that lost by the removal of the Natatorium walls. The new groins will segment the longshore pile-up of water and reduce any tendency for the formation of offshore rip currents. During construction of the groins and the placement of sand, some material will go into suspension in the water. All of this material will settle quickly, as it will be sufficiently sorted, according to construction specifications, and of a large enough average particle size. No extensive or persistent turbidity should be added to the environment.

Increased beach size and use will increase traffic to this area of Waikiki. No additional parking space is provided by the project. It is sufficiently far from residential areas and hotels to expect that most people will come by private or public conveyances. Parking lots exist within Kapiolani Park, at the Waikiki Shell, and on Kapiolani Boulevard. The available parking space is inadequate for peak demand periods and greater use of mass transit facilities must be expected to be encouraged for future users of the beach area.

Temporary adverse effects associated with the construction period will be minimized by controls exercised through the construction specifications. However, some inconveniences to the public, turbidity, noise, and dust will be unavoidable over the approximately eleven-month construction period.

The applicant considered several alternatives. One alternative was to retain the existing conditions with no reconstruction proposals. The existing sandy beach areas along this sector are relatively stabilized, and no additional significant erosion has occurred. The present uses of the shoreline would continue, and the Natatorium would remain. Temporary adverse effects such as turbidity and inconveniences to the public during construction would be avoided. On the other hand, the pressing need for beach land is expected to continue and will not be reduced in the near future by improvements to this sector.

The development of other alternatives for the sector under consideration was guided by the objectives of restoring the sandy beach area and assuring that the sand placement is retained. Initially, restoration of the shoreline along the entire sector was considered. Evaluation of the existing shoreline showed that the beach fronting the Queen's Surf area is of adequate width and in stable condition. The one fronting the Sans Souci-Elks Club area has limited public access. Therefore, no improvements were planned for these portions.

The dry beach between the Kapahulu Storm Drain and Queen's Surf groin is generally less than 65 feet wide. Engineering studies have indicated that the predominant movement of sand in this section is in an offshore direction. The most effective method of retarding this type of sand movement is construction of an offshore breakwater. Such a structure would protect a restored sand beach and provide a calm swimming area. Together with the proposed improvements described previously, this alternate plan would create the greatest amount of additional sandy beach space. This alternate plan was not adopted, and no changes are proposed for this portion of the beach for three reasons. First, the location of the offshore breakwater would interfere with a popular surfing area. Second, during coordination and review of the

project with the public, there were expressions of opposition to offshore structures, which stressed their visual intrusion on the shoreline scenery. Third, though the beach is narrow, additional erosion that might endanger park land or structures behind the beach is not anticipated.

Staff finds that the analysis of the environmental impact statement as prepared by the Corps of Engineers is reasonable. However, it should be emphasized that the proposed improvements are not intended as a "cure-all" for problems created by natural forces. Such improvements are to support the natural reef barrier by further reducing the velocity and energy of wave action. And, in so doing, control the northward movement of sand and minimize sand loss. Staff is aware that additional improvements to the completed beach portions north of the Kapahulu Drain were made recently. Similar measures and corrective procedures can be expected in the subject area.

The present and future uses of Waikiki Beach are to serve as a major recreational center for the State of Hawaii, providing the setting and facilities for swimming, fishing, surfing, sunbathing, picnicking, and other related activities. The proposed project will increase the beach land available for water-related activities, as well as improve access to the shoreline. The project would enhance the long-term productivity of the site as an attractive beach for both residents and visitors to the islands. The long-term advantages of increased beach land should benefit a greater number of beach users than preservation of present conditions.

RECOMMENDATION:

Staff recommends that this application for the construction of beach groins, sand emplacement, and appurtenant steps and ramps be approved with the following conditions:

1. The applicant shall submit a minimum of three copies of plans for construction to the Chairman for review and approval prior to the start of work activity.
2. The applicant shall notify the department upon the commencement and at the completion of all work.
3. All grading work shall be subject to the approval of the department.
4. All debris and rubbish from the work activity shall be removed to approved sanitary disposal sites.
5. All structures shall be painted to blend with the environment.
6. The applicant shall comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments.

August 10, 1973

7. The applicant, its successors and assigns shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit and also any loss, liability, claim or demand for property damage, personal injury and death arising out of or relating to or connected with the granting of this permit.
8. Should future improvements be necessary to correct problems unforeseen at this time, the plans for such improvements shall be submitted, in triplicate, for review and approval of the Chairman prior to the start of construction.

The applicant is apprised that approval of this application does not include approval of sand mining in any of the Conservation Districts.

Respectfully submitted,



GORDON SOH, Program Planning
Coordinator

RECOMMENDED FOR APPROVAL:



SUNAO KIDO, Chairman