

# ENVIRONMENTAL ASSESSMENT

## LAUPAHOEHOE POINT PARK MASTER DEVELOPMENT PLAN

PREPARED FOR: DEPT. OF PARKS & RECREATION  
COUNTY OF HAWAII

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MARCH 1977

## STATEMENT NEED

It has been determined that the Laupahoehoe Point Park Master Development Plan be exempted from the preparation of an Environmental Impact Statement and a Negative Declaration filed because of the following reasons:

- 1-The park construction involves only "minor alteration in the conditions of land or vegetation."\* Short term impacts will occur only during the construction phases of the park; the Contractor is expected to take measures to keep impacts at a minimum level. The Long term impacts are expected to be minimal as well. (Refer to Potential Impacts section of this report for details on the Short term and long term impacts.)
- 2-The demand for a beach swimming/sunbathing area within the North Hilo district will be met. The County of Hawaii's Recreation Plan and the State Comprehensive Outdoor Recreation Plan recommended the development of the park area to meet the recreation needs of the North Hilo District.
- 3-Design measures will be made to reinforce the structures in the park from tsunami and flood conditions. Trees and vegetation will be used to act as a natural barrier; buildings will have berms; and elevation changes (+7 feet on the average) along the shoreline with the exception of the swimming area will be maintained.

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\*Environmental Impact Statement Regulations, Sub-Part D, 1:33 Exempt Classes of Action.

# INTRODUCTION

## PURPOSE OF ASSESSMENT

Assessment is defined in the Environmental Impact Statement Regulations, State of Hawaii, as "an evaluation" by "any department, office board or commission of the State or County which is a part of the executive branch of that government" of a proposed action to determine whether an Environmental Impact Statement is required. It is the purpose of this report to fulfill such requirements for the Laupahoehoe Point Park Master Plan Development located in the North Hilo district along the rugged coastline of Hamakua, County of Hawaii. In the pages that follow, possible environmental concerns that may be impacted by the Laupahoehoe Point Park development will be identified and discussed. From this discussion, an evaluation will be made to aid in determining whether an Environmental Impact Statement is necessary.

## ORGANIZATION OF REPORT

As mentioned in the previous section, the intent of this report is to evaluate the proposed Laupahoehoe Point Park development. To accomplish this, the report is organized according to the following major sections:

- Assessment Summary:

This section summarizes the text of the report.

- Project Description:

This section locates the Laupahoehoe Point Park Master Development Plan, discusses its development phases, timing, costs, source of funds, and operating expenditures.

- Description of Affected Area:

This section discusses the surrounding area, the physical site characteristics such as soil and wave conditions, activities that take place at the Park, and State, Federal, and County Land Use Designations.

- Potential Impacts:

This section considers elements which will be affected by the park development and discusses the possible impacts.

# ASSESSMENT SUMMARY

## LAUPAHOEHOE POINT PARK MASTER DEVELOPMENT PLAN

As an existing regional park, Laupahoehoe Point Park has the following existing facilities (Refer to the Master Plan Map for locations of the structures):

- 1) One comfort station, built in 1973;
- 2) Four picnic shelters;
- 3) Boat ramp with related parking;
- 4) A large grassed playfield;
- 5) Existing pavilion/restroom with maximum capacity of 100 persons;
- 6) Former school gymnasium which was renovated to function as a community center/gymnasium.

Current plans for the park call for the improvement of the existing park to accommodate the recreation needs of the North Hilo District. The improvements are of two types:

- 1) Improvement/Renovation of existing structures;
- 2) Development of new structures.

In the first category, Improvement/Renovation of existing structures, the following structures are involved:

- 1) Gymnasium building: The building was repaired/painted. Parking for 38+ cars will be provided in the future.
- 2) Existing pavilion and restrooms: The existing pavilion is located in the northwest sector of the park. Renovations are to be made so that maximum use of the structures will be made by recreators and community groups.
- 3) Boat ramp: Plans have been made to expand the existing 2 lane boat ramp to 4 lanes approximately 25 feet, and to repair damaged areas.

In the second category, development of new structures, the following items are to be constructed:

- 1) Two restroom facilities with showers: One facility is to be located near the newly created swimming area and the other near the campsites.

- 2) One pavilion to house a maximum capacity of 160 persons: The pavilion which covers approximately 2600 square feet will include kitchen facilities and a barbecue pit as well as restroom facilities. Community activities such as social events and meetings could thus take place at this pavilion located at the northeast sector of the park.
- 3) Four picnic shelters to each house one family, approximately six persons: These hexagonal roofed structures cover approximately 370 square feet and will contain picnic tables.\*
- 4) Ten campsites: These campsites are to include picnic tables, barbecue camping stoves, and refuse disposal units. Each campsite will be approximately 150 square feet and located on fairly level areas near the Laupahoehoe Stream.

Laupahoehoe Point Park is situated on a flood and tsunami prone area. Soil conditions at the site, the Laupahoehoe dry stream bed which forms the northwest boundary of the park, and the park's location create the "relatively minor" flood conditions of the park.\*\* Besides flooding, Laupahoehoe Point Park is also a tsunami designated area. In 1946, twenty four persons were killed by a tsunami. Design measures have been taken to create barriers against tsunamis. For example, existing vegetation--ironwood trees, coconut trees, and naupaka--will be supplemented by such vegetation as the madagascar olive and kamani trees to form a natural barrier against wave action generated by a tsunami. Park structures will be recessed by earth berms, and the natural elevation of the shoreline with an average of +7 feet, with the exception of the swimming area, will further act to protect the park from tsunami inundation.

The area where the park rests is zoned "Conservation" by the State of Hawaii. The use of the area as a park is compatible with the State Land Use law. A conservation district use application, however, was approved by the State Department of Land and Natural Resources in April 1972 for the road improvements within the park.

The State of Hawaii Comprehensive Outdoor Recreation Plan and the County of Hawaii's Recreation Plan recommend the development of the Laupahoehoe Point Park to meet recreation needs

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\*Three picnic shelters have been completed.

\*\*Department of the Army, Honolulu District, Corps of Engineers, Flood Hazard Information, Island of Hawaii, Sept. 1970, p. 10.

especially swimming and sunbathing at a beach park, of the North Hilo District.

The development of Laupahoehoe Point Park will have two types of impacts: short term impacts lasting only for the duration of the project construction and long term impacts. Short term impacts will result from the construction of park facilities. These impacts involve noise from construction vehicles, increased vehicular traffic, dust, erosion, and impacts on existing vegetation. Measures and precautions will be taken by the construction companies involved to minimize the impacts resulting from the development of the park. (For details regarding these impacts, refer to the Potential Impact, Short-Term Impacts, and Appendix C.)

The long term impacts are expected to be also minimal. The long term impacts can be further categorized into impacts resulting from increased park use and impacts from the facilities themselves. Impacts from users will primarily involve noise, increase in vehicles, sewage and trash, biological effects, and effects on water quality. Noise will be controlled by the regulation of park hours. Noise generated by campers will be absorbed by the surrounding trees and vegetation; the location of the campsites in the northwest sector of the park will also help to minimize noise. Adequate parking will be provided to accommodate the increased use and pollutants from automobiles will be dispersed by northeast breezes and thus should be no problem. Sewage and trash will be efficiently disposed of by cesspool and periodic garbage pickups by the maintenance personnel of the County. Due to the nearby restroom locations and refuse maintenance, the impacts on the ocean's water quality should be minimal.

Impacts from the second category, Impacts from proposed facilities, is expected to be minimal. The impacts include landscaping, roadway and park improvements/construction and land displacement. Environmental effects resulting from landscaping will be negligible. The park will be landscaped using as much of the existing vegetation as possible, such as the ironwood trees and coconut trees. Compatible vegetation such as the kamani tree and madagascar olive will also supplement the existing vegetation.

Parking and road improvements/construction within the park is expected to be minimal. Road and parking structures have been located to allow use of much of the existing vegetation at the site as possible. Internal road improvements of the park will basically involve the widening of the existing road. No persons or structures will be displaced by the proposed project. With the exception of the road widening involving a few feet on each side of the road, all land involved in the construction are owned by the County.

## PROJECT DESCRIPTION

### LOCATION

Located within the North Hilo district (Tax Map Key: 3-6-02), the Laupahoehoe Point Park runs along the rugged Hamakua coastline of the Big Island. The park encompasses 18.44 acres, 17.09 acres owned by the County and 1.35 acres owned by the Federal Government. The acreage owned by the Federal Government is located at the tip of the Laupahoehoe Point and is in the process of being transferred to the County of Hawaii for recreational uses, pursuant to the provisions of the Federal property and Administrative Services Act of 1949, as amended. The site includes the Laupahoehoe Stream bed which runs along the northwestern boundary of the park and empties into the Pacific Ocean. (For a general location of the park, refer to the Location Map on page 7 of this text).

### PARK DEVELOPMENT OBJECTIVES

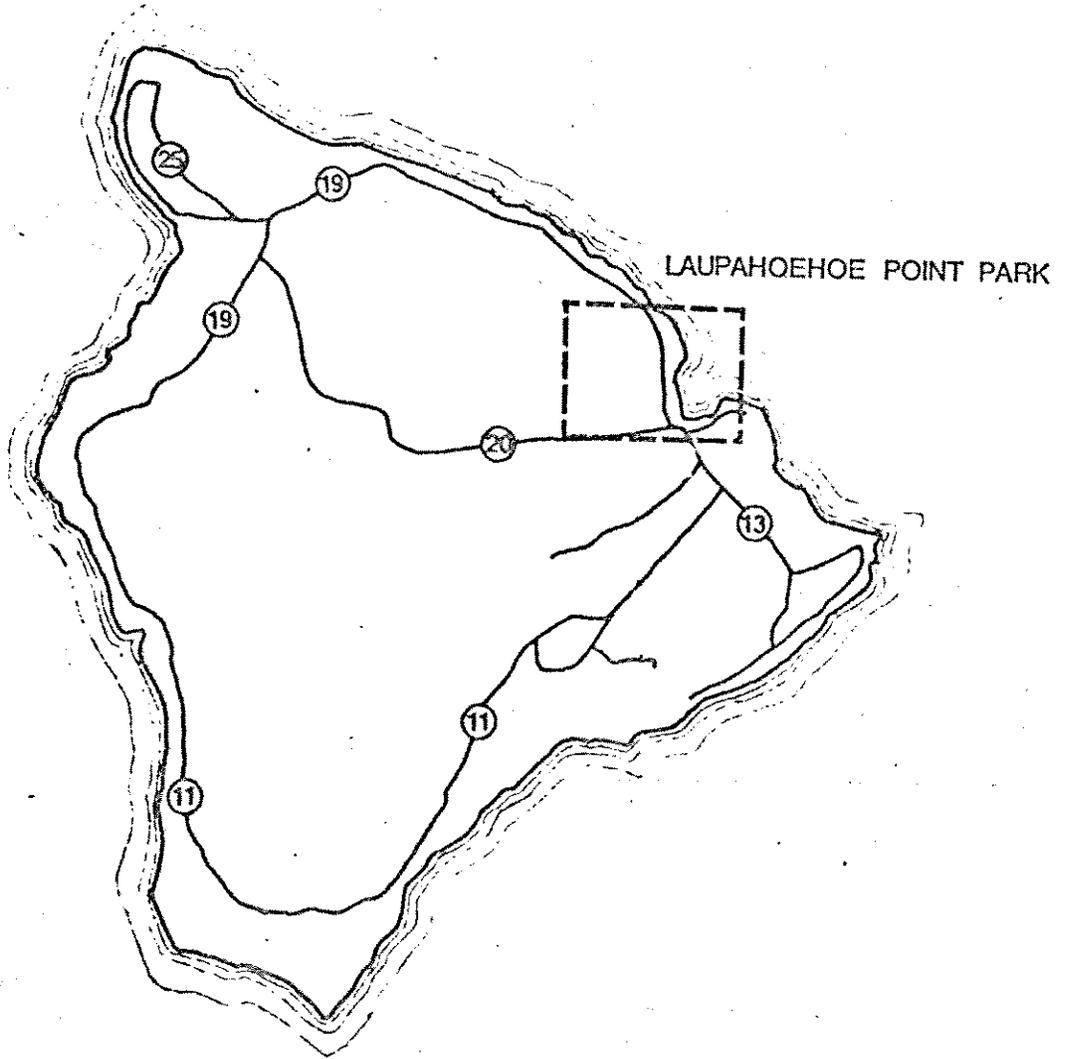
It is the purpose of the Laupahoehoe Point Park Master Plan Development to accomplish the following objectives:

1. "Provide improvements within existing parks and playgrounds in accordance to the immediate community needs and demands."\*
2. "Develop Laupahoehoe Beach Park so that it could fulfill its potential as the primary beach park for the residents of the North Hilo area...."\*\*\*
3. Improve access to the Laupahoehoe Point Park thereby increasing the use of the park by recreators and tourists.
4. Maintain the scenic qualities of the area while allowing it to function as a recreational area and tourist attraction.
5. Provide facilities (Community/cultural center) for residents to conduct community meetings and activities.
6. Provide facilities for camping.

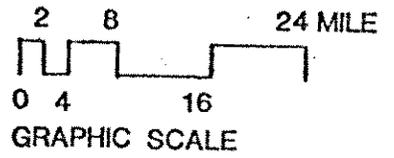
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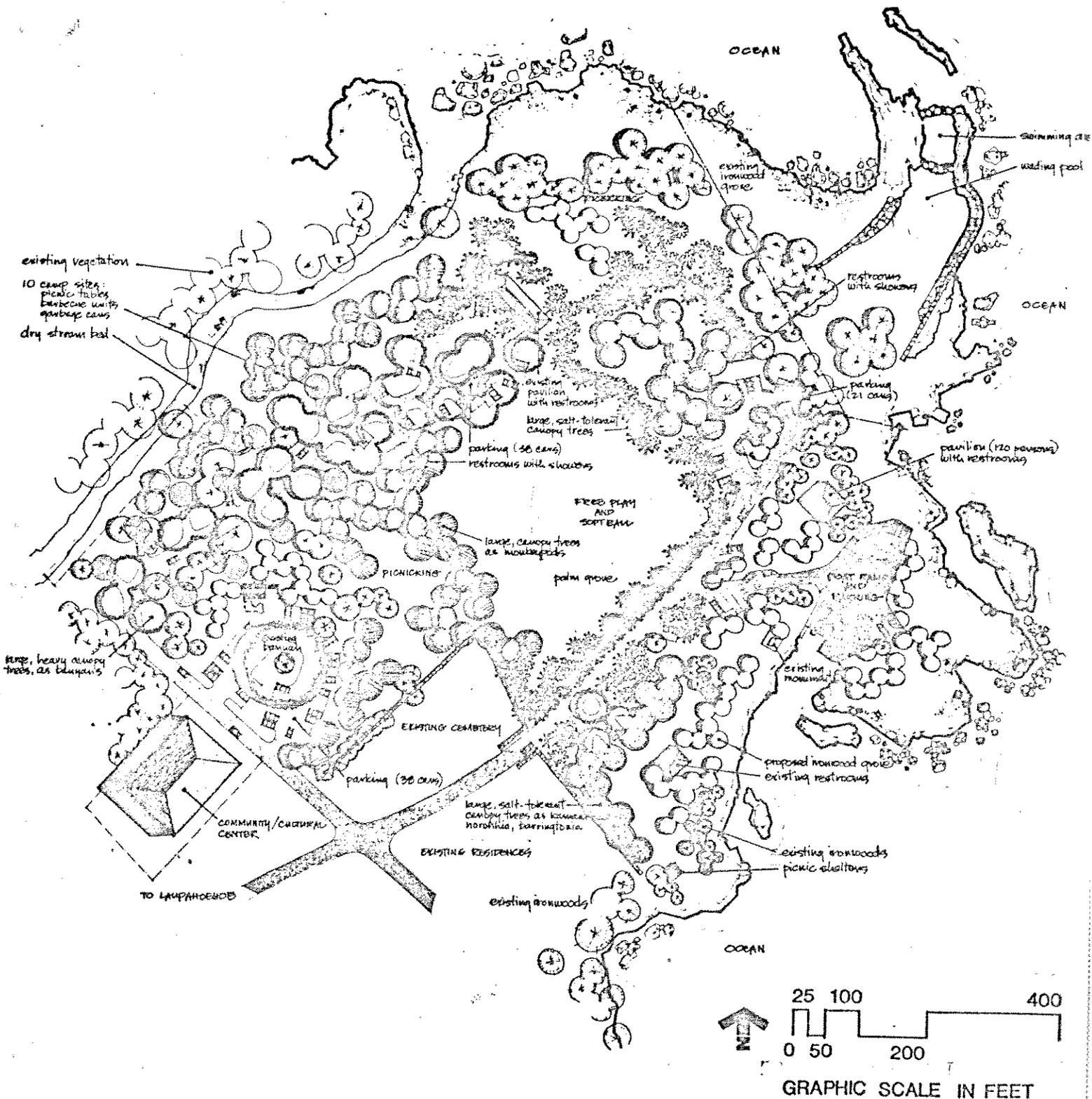
\*Edward R. Aotani and Associates, Inc. for the Department of Parks and Recreation, Planning Department, County of Hawaii. County of Hawaii: Recreation Plan, 1973, p. 74.

\*\*George S. Walters and Associates, Inc. prepared for the Department of Parks and Recreation, County of Hawaii. Master Development Plan, Laupahoehoe Point Park, North Hilo, Hawaii, Sept. 1974.



LOCATION MAP





MASTER DEVELOPMENT PLAN • LAUPAHOEHOE POINT PARK • NORTH HILO, HAWAII

PREPARED FOR THE DEPARTMENT OF PARKS AND RECREATION • COUNTY OF HAWAII  
 GEORGE S. WALTERS AND ASSOCIATES, INC., LANDSCAPE ARCHITECTS • SEPTEMBER 1974

## MASTER DEVELOPMENT PLAN PROPOSAL

### Existing structures:

The existing Laupahoehoe Point Park is a rural regional park situated on the land mass created by the Laupahoehoe lava flows. A 100-person capacity pavilion, equipped with restrooms and an outdoor shower, stands at the northwest sector of the park. Plans have been made to renovate this pavilion. A comfort station, built in 1973, is situated at the southeast corner. A large grassed playfield is provided. Three rectangular picnic shelters equipped with picnic tables also exist at the park. Besides these picnic shelters, an "open" picnic shelter is also situated near the former Coast Guard property. A wading and "learning to swim" facility is proposed at the northeast shoreline of the Park. The wading pond will cover approximately three-quarters of an acre and provide a greatly needed area for swimming activities. For further information about the wading pond, refer to Appendix A, Environmental Statement of Construction of Laupahoehoe Park Wading Pond, February 1974. The former school gymnasium is situated at the southwest part of the park; the Master Plan recommends the renovation of this structure to function as a community center/gymnasium for the area.

### Proposed structures:

The Master Development Plan for Laupahoehoe Point Park, prepared by George S. Walters and Associates for the County of Hawaii, proposes a plan for the development and improvement of the existing regional park at Laupahoehoe. The Master Plan describes the project site as follows:

Laupahoehoe Point Park is a seaside park known for its extremely rugged coastline of tumbled boulders and jagged fingers of lava protruding from an almost constantly pounding surf.\*

To develop the park to its fullest use, the Master Plan proposes the renovation of the old school gymnasium building into a community-oriented facility. The community center will be located near the entrance to the park. Parking will accommodate approximately thirty-eight cars, with the existing banyan tree preserved to enhance the natural setting. Community activities and meetings as well as cultural activities and displays will be housed in the center.\*\*

\*George S. Walters & Associates, Inc. for the Department of Parks and Recreation, County of Hawaii. Master Development Plan, Laupahoehoe Point Park, North Hilo, Hawaii, Sept. 1974.

\*\*The Community Center has already been completed.

Also requiring improvements to its structure is the boat ramp located in the northeast sector of the park near the monument. The ramp will be improved and expanded from two lanes to four lanes approximately 25 feet, with repairs to be made to damaged portions of the ramp resulting from new construction. Such improvements are expected to increase the boating activities at the park.

In addition to the improvements of the boat ramp, the Master Plan proposes the improvement of the existing pavilion and its restrooms. The Master Plan projects two pavilions, one existing and one to be built. The existing pavilion is located in the northwest sector of the park near the Laupahoehoe Stream bed. Improvements are planned for this pavilion with its restrooms to accommodate activities such as group picnicking and community functions. The new pavilion is to be built in the northeast section of the park near the boat ramp area. It will provide space for 160 persons (2,600 square foot area) with parking for thirty cars located nearby. This pavilion will include a kitchen and a separate barbecue facility. Restrooms will also be located at the pavilion to serve the park users in that area. Because of its kitchen, barbecue facilities, and its size, this pavilion is planned to accommodate a greater variety of activities and community functions. (For location of this pavilion, refer to the Master Plan Map, page 8).

Besides the construction of the pavilion in the northeast sector of the park, the Master Plan also proposes the construction of other new structures to further the recreation opportunities at the Park. (Refer to the Master Plan layout for locations of these structures). These structures are as follows:

- Two restroom facilities with showers:

The construction of these two comfort stations along with the existing comfort station built in 1973 will bring the total number of such facilities to three. One of the new comfort stations is to be built near the swimming area of the Park; the other to be located near the campsites in the northwest sector of the park.

- Four picnic shelters:

These hexagonal-shaped shelters with picnic tables will house a family of six persons.\*

- Ten campsites:

Campsites will be located behind the canopy trees near the dry Laupahoehoe Stream bed. Development is expected to be minimal with picnic tables, barbecue camping stoves, and refuse disposal units provided. Plans recommend that campsites be located near an automobile parking spur with each campsite comprising approximately 150 square feet of roughly gravelled areas.

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\*Three picnic shelters have been constructed.

## ACCESS IMPROVEMENT TO LAUPAHOEHOE POINT PARK \*

Access to the park is presently along Mamalahoa Highway. A study conducted in 1971 to determine the feasibility of alternative accesses to the park concluded that it was not economically feasible to construct another access to the park and that the Mamalahoa Highway would adequately serve as an entry road into Laupahoehoe Point Park provided that it is improved and widened.

The program to improve entry into Laupahoehoe Point Park involves an area located within the boundaries of Manowaiopae, Laupahoehoe, and Waipunalei in the North Hilo district. It is phased into three parts:

- Phase One will improve the Laupahoehoe Point Road from the old Mamalahoa Highway to the park.
- Phase Two will improve the old Mamalahoa Highway from the Hawaii Belt road access in Waipunalei to the Laupahoehoe Point Road intersection. The existing road will be widened and resurfaced; guardrails or other retaining structures will be constructed for automobile safety because the road runs along the steep Hamakua cliffs.
- Phase Three will improve the old Mamalahoa Highway from the Hawaii Belt Road access in Manowaiopae to the Point Road intersection. Improvements involve the repair of the roadway, which was damaged from the April 1973 earthquake. Depending on the stability of the earthquake cracks, the Hilo access may be designated and improved for one way traffic down to the Point Road.

A Negative Declaration for the road project was submitted to the Environmental Quality Commission in December 1975. (See Appendix B for the text of the Negative Declaration of the Laupahoehoe Valley Road Improvements). The roadway improvements are expected to increase the aesthetic appreciation of the area by tourists and recreators alike.

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\*Improvements to the Mamalahoa Highway and the Laupahoehoe Point Park Access Road are not included in the Master Development Plan for Laupahoehoe Point Park but constitute a separate project. Such access improvements are mentioned here to inform the reader that improvements will be made to the roadways leading to the park, thereby allowing greater utilization of the park.

## ROAD AND PARKING IMPROVEMENTS/CONSTRUCTION IN THE PARK

Besides improving the Mamalahoa Highway and the Laupahoehoe Point Road to the park, plans have also been made to improve the roads within the park. Constructions will involve the widening of the roads and where necessary the realigning of roads that interrupt the scenic values of the park. Parking areas will also be constructed and improved to service the following areas:

- The community center/gymnasium will be serviced by a thirty-eight + car capacity parking lot.
- A thirty-eight + car capacity parking lot will serve the existing pavilion.
- A thirty-car + car capacity parking lot will furnish parking to the proposed pavilion and to the swimming area.
- Parking will service the boat ramp facility.
- Additional parking as required.

## CONSTRUCTION PHASING & COSTS

The Master Plan for the Laupahoehoe Park development phases construction as follows:

### Phase I

	<u>Cost</u>
Demolition and clearing of existing concrete slabs throughout the project area .....	\$ 9,417.00
Roads and Parking .....	75,495.00
Landscaping .....	77,190.00
Picnic Shelters (4).....	31,500.00
Restroom with Showers (2).....	68,750.00
Pavilions with restrooms .....	
(1,225 square feet).....	49,000.00
Conversion of gym to community center.....	75,000.00*
Improvements to existing pavilion .....	15,000.00
Phase I: Subtotal	<u>\$401,352.00</u>

### Phase II

Camping Area	
site preparation and landscaping .....	\$ 85,872,00
auto parking spurs .....	3,045,00
furniture .....	5,000,00
Phase II: Subtotal	<u>\$ 93,917,000</u>
TOTAL	<u>\$495,269,000</u>

Improvement/Repairs to Existing Boat Ramp..... \$ 55,000

### Operating Costs

Operating expenditure for the park is expected to be approximately \$10,000 per annum.

\*Actual construction cost is \$93,800.

## DESCRIPTION OF AFFECTED AREA

### PHYSICAL CHARACTERISTICS OF THE SITE

#### Soil Conditions:

Laupahoehoe Point Park has four types of soils. They are as follows (Refer to the Soil Survey Map for the soil configurations):

- Ookala silty clay loam (OoD), 12 to 20% slopes:  
This type of soil is dark reddish brown silty clay loam about 12 inches thick whose subsoil is dark brown to dark yellowish-brown silty clay loam about 43 inches thick. This subsoil is underlain by partly weathered Aa fragments.\*
- Ookala silty clay loam (OoE), 20 to 30% slopes:  
This soil is similar to the Ookala silty clay loam, 12 to 30 percent slopes, except that it is steeper.\*\*
- Mixed Alluvial Land (MT):  
This is a miscellaneous land type made up of recent stream disposition that varies in texture.\*\*\*
- Rough Broken Land (RB):  
This type consists of very steep precipitous land broken by many intermittent gulches; the slope is dominantly 35 to 40 percent.\*\*\*\*

At the site of the Master Plan Development, runoff ranges from slow to rapid, and erosion hazard from moderate to severe. Due to the presence of the Laupahoehoe Stream bed, the area along the stream is prone to flooding from rainfall.

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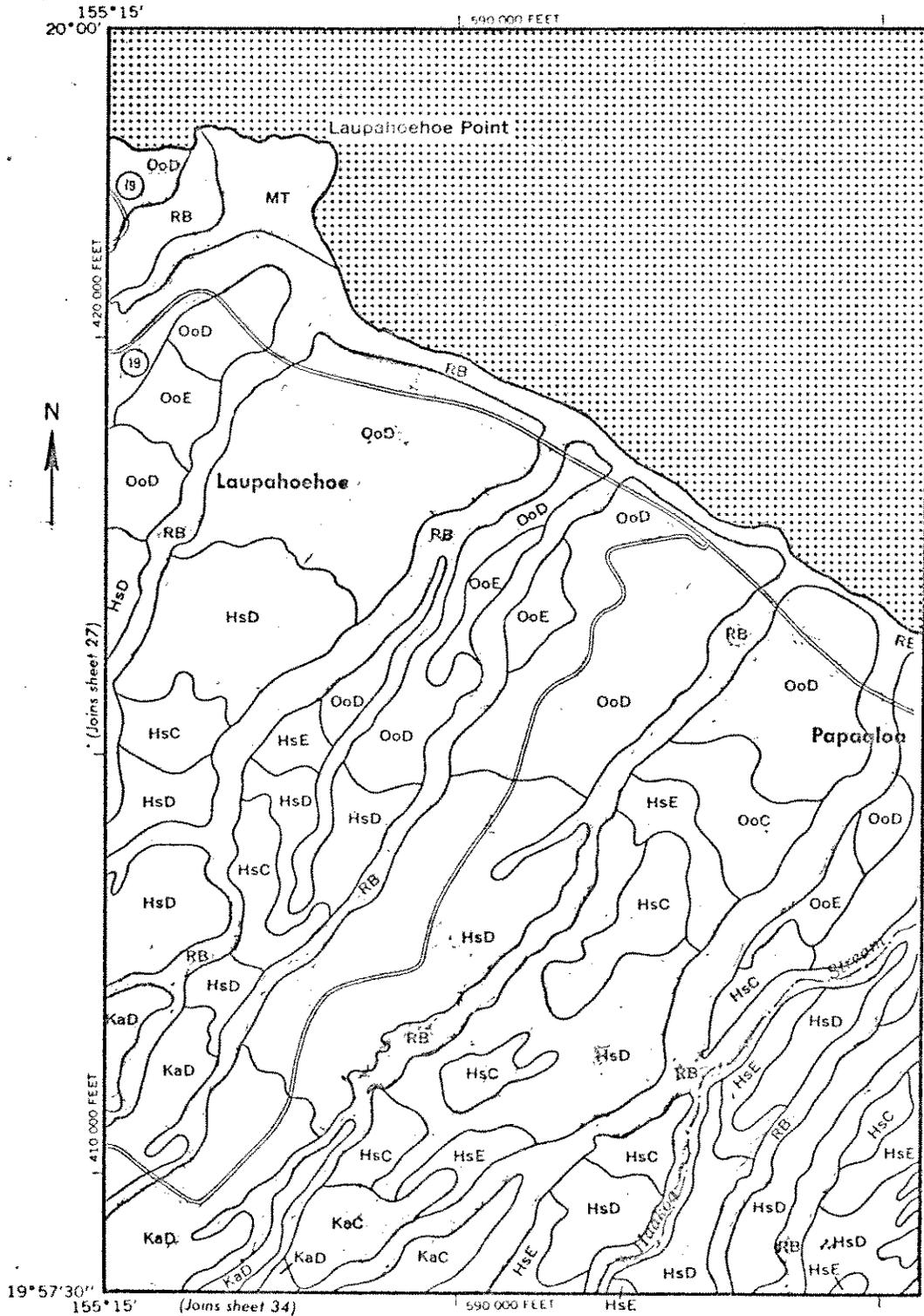
\*U.S. Department of Agriculture, Soil Conservation Service in cooperation with University of Hawaii Agricultural Experiment Station, Soil Survey of Island of Hawaii, State of Hawaii, Issued December 1973, p. 43.

\*\*Op. Cit., p. 43.

\*\*\*Op. Cit., p. 39

\*\*\*\*Op. Cit., p. 51.

# SOIL SURVEY MAP



SOURCE: U.S. Department of Agriculture, Soil Conservation Service in cooperation with University of Hawaii Agricultural Experiment Station, Soil Survey of Island of Hawaii, State of Hawaii, Issued December 1973, p. 43.

Raw Sewage Disposal:

Disposal of raw sewage will be accomplished by a cesspool system. The cesspool system will meet the following criteria:

- Eight-foot diameter with concrete lining;
- Twenty-feet placement depth or to a porous strata;
- Fifty-feet minimum setback from the shoreline and stream;
- Ten-feet away from any large trees or structure.

The State Department of Health has approved the use of cesspool disposal for the Laupahoehoe Point Park provided it meets the following requirements in addition to the criteria specified above: (Refer to Appendix D for further information.)

The cesspool is located more than 50-feet from the shoreline and that it "be located in the driveway or parking lot area with the greatest distance away from the nearshore waters."\*

There are no significant lava tubes or cracks in the area planned for the location of the cesspool; and,

The type of soil or rock layers are acceptable filter materials.

Trash Disposal:

Trash will be disposed into refuse containers by recreators at the Laupahoehoe Point Park. Maintenance of the park including comfort stations and picnic and camping areas will be the responsibility of the Parks and Recreation Department's maintenance crew.

Flooding Inundation:

As observed in the section entitled "Soil Conditions", the park area is prone to flooding. The U.S. Department of Interior's Geological Survey Map illustrating Flood Prone areas supports

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\*Letter from the Department of Health, State of Hawaii, from Harold Matsuura, Chief Sanitarian, to Gordon Imata of Imata and Associates, Inc., December 1, 1976.

this observation. The flooding situation, however, is "relatively minor."\* Occasional flooding at the Laupahoehoe Point Park is primarily caused by the overflow of the Laupahoehoe Stream which changes from a dry stream to a moving torrent during periods of heavy rain. Chances for flooding in the area according to the U.S. Geological Survey Map, is one in a hundred within a year.

#### Rainfall:

Annual mean rainfall at Laupahoehoe Point Park is between 125-inches and 150-inches per year.

#### Tsunami Inundation:

The Environmental Impact Statement for the Construction of the Laupahoehoe Park Wading Pond (February 1974) reports that most of the Park is prone to tsunami inundation. The Impact Statement illustrates in a table the wave run-up data for four tsunamis and the impacts on Laupahoehoe, Hilo, and Honolulu. In this table, Laupahoehoe ranks second in wave run-up in comparison with Hilo and Honolulu (See Appendix A, Page 4, for the tsunami data). The Report further states that "there is reason to believe that Laupahoehoe Point is somewhat less susceptible to tsunami inundation than Hilo, possibly because of the concentrating effect of the Hilo Bay bathymetry to the long period tsunami waves." At any rate, large tsunamis have occurred at Laupahoehoe Point Park and can occur in the future at a rate of one tsunami per ten years.

Measures will be taken to minimize the effects of tsunami waves. Existing groves of ironwood trees along the shoreline will be supplemented with new ironwood trees to act as a natural tsunami barrier. Elevation changes of the shoreline (+7 feet on the average), with the exception of the land used in the swimming area, will further strengthen the natural barrier. Proposed structures will also be surrounded by earth berms for additional protection.

#### Wave Action:

The Laupahoehoe Point Park shoreline is characterized by rough

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\*Department of the Army, Honolulu District, Corps of Engineers, in cooperation with State of Hawaii Department of Land and Natural Resources, Flood Hazard Information, Island of Hawaii, September 1970, p. 10.

wave action and turbulence (Refer to Appendix A, page 5, for further descriptions on the wave action at the Park). Such wave action makes swimming and boating dangerous at times. The construction of the proposed swimming area, however, should make swimming and wading safe for 90% of the time at the park.

Volcanic Conditions - Lava Flows:

The Park rests upon the Laupahoehoe volcanic series which entered the Laupahoehoe Point.\*

Archeological and Historic Sites:

Except for the marker commemorating the death of twenty-four persons killed in the 1946 tsunami, there are no known historic or archaeological sites located in the Park area.

Land Use Designations:

The Laupahoehoe Point Park rests on land designated by the County as "Agricultural" (AG-1) and by the State as "Conservation." Although the County designates the area as "Agricultural", the State has jurisdiction over the area's use. "Conservation" is defined as follows:

Conservation districts shall include areas necessary for protecting watersheds and water sources; preserving scenic areas; providing park lands, wilderness and beach reserves; conserving endemic plants, fish, and wildlife preventing floods and soil erosion, forestry; and other related activities....\*\*

As a park, therefore, Laupahoehoe meets the State zoning designation. A Conservation District Use Application, however, was filed with the State Department of Land and Natural Resources in April 1972 for the improvements to the Laupahoehoe Valley roads and approved by the same department.

The Federal government (Pres.Ord. 1260) owns 1.35 acres at the tip of Laupahoehoe Point for use by the U.S. Lighthouse Service. The 1.35 acres, however, is in the process of being transferred to the County of Hawaii for recreational use.

\*Hawaii's Shoreline, 1964, p. 106.

\*\*Act 205, Section 98H-2, 1963.

Areas Surrounding the Park:

Most of the residences located in the Laupahoehoe Point region were destroyed in the 1946 tsunami. In subsequent years, the area was converted to park use with the exception of the existing residences in the northeast sector of the park and the cemetery located across the residential area.

Emergency Services (Fire and Ambulance):

The Laupahoehoe Point Park will be serviced by emergency vehicles and personnel, primarily fire and ambulance, located in Hilo and Honokaa areas.

## RECREATION AT LAUPAHOEHOE POINT PARK

The Statewide Comprehensive Outdoor Recreation Plan (1975) and the County of Hawaii's Recreation Plan both recommend the development of existing parks in the planning area of which Laupahoehoe Point Park is located (in the Statewide Comprehensive Outdoor Recreation Plan, the Hamakua-North Hilo area; in the County of Hawaii's Recreation Plan, the North Hilo area) to satisfy recreation needs in the area. The Statewide Comprehensive Outdoor Recreation Plan ranked recreation activities such as swimming/sunbathing, picnicking according to need generated. Projecting need to 1990, the Statewide Comprehensive Outdoor Recreation Plan indicated that the recreation need was high for beach swimming/sunbathing for the planning area of which the Laupahoehoe Point Park is located.\*

The County of Hawaii Recreation Plan (1974) also calls for improvements to existing parks to satisfy the recreation needs. It further classifies the Laupahoehoe Beach Park Improvements as "High" in the level of recreation development for the area.\*\*

The Laupahoehoe Master Development Plan calls for recreation improvements to the maximum point possible. The proposed swimming and wading area would provide an area for water-oriented activities. Further boat activities moreover would become possible with the repairs and improvements made to the existing boat ramp. The locale with its ironwood trees will provide a pleasant area for picnickers and campers offering picnic shelters, barbecue camp stoves, comfort stations, areas for trash disposal, and tables.

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\*Aotani & Hartwell Associates, Inc. for the Department of Planning and Economic Development, State of Hawaii, State Comprehensive Outdoor Recreation Plan, 1975, pp. 174-176.

\*\*Edward R. Aotani and Associates, Inc. for the Department of Parks and Recreation, Planning Department, County of Hawaii, County of Hawaii: Recreation Plan, 1973, pp. 74-84.

## POTENTIAL IMPACTS

The Laupahoehoe Point Park development is expected to have short-term and long-term impacts. The short-term impacts will occur only during the construction phases of the development. The long-term impacts, on the other hand, will occur during the life of the park itself.

### SHORT TERM IMPACTS

The development of Laupahoehoe Point park will generate the following short term impacts:

- Noise:

Noise from construction vehicles will last for the duration of the park development. As an inevitable impact, the noise will be minimized by the use of engine mufflers and the regulation of working hours.

- Increased vehicular traffic:

During the development phases of the Park, increases in vehicular traffic will occur from the movements of construction vehicles to and from the development site. Such movements will be controlled by the appropriate authority.

- Dust:

One of the inevitable conditions of construction is dust. Measures such as water sprinkling of the site, or the application of chemicals or a bituminous coating will be utilized to reduce dust in the area.

- Erosion:

During the development of the park, erosion controls will be used. Measures to reduce runoff and plans for water drainage, sediment and erosion control will be made as part of construction operations.

- Impact on existing vegetation:

As much of the existing vegetation--ironwood trees, coconut trees, and naupaka--will be used in the landscaping of the park. Protective measures will be employed to prevent destruction of the vegetation.

As seen from the above listing, the short-term impacts generated from development of the park will last for the duration of construction only. The short term impacts are expected to be very minimal since construction measures will be taken to considerably reduce the impacts involved. (Refer to Appendix C for a more detailed listing of measures that should be taken by the contractor to minimize environmental impacts).

## LONG TERM IMPACTS

Long-term impacts of the Laupahoehoe Point Park can be categorized into two groups. The first group deals with the impacts that an increased number of recreators or users will have on the environment. The second category are those impacts that the proposed structures will have upon the park environment. These two types of impacts will be discussed in the following sections.

### Impacts from Users

Upon completion of the project, an increase in park use is expected. This increase use will mean that the park will service a greater number of users/recreators than compared with present park usage. Increased park population will inevitably generate the following impacts:

- Noise:

Because more people will use the park's facilities--picnickers, campers, sunbathers, and swimmers--there will be more noise than presently exists at the Laupahoehoe Point Park. The renovation of the old school/gymnasium building into a community center/gymnasium will also increase its use and therefore more noise will be generated.

- Vehicles:

Directly corresponding to the increase in park population is the increase in vehicles. Roadway improvements are proposed to improve the Mamalahoa Highway in order to accommodate more vehicles going to the park, and improvements will be made to existing roads within the park. Parking for approximately 106 cars will be provided and located as follows:

- Thirty eight + car parking capacity across from the new community center/gymnasium;

- Thirty + car parking capacity adjacent to the new pavilion; and,

- Thirty eight + car parking capacity at the existing pavilion.

- Additional parking as required.

- Vehicles (con't):

Besides providing parking for the community center/gymnasium and the two pavilions, parking will also accommodate the picnickers, campers, and other recreators using the park.

An increase in vehicles in the park will inevitably mean an increase in exhaust pollutants, but due to geographic and climatic conditions, pollution is expected to be minimal.

- Sewage and Trash:

Directly related to the increase in park users is the increase in sewage and trash. Impact is expected to be minimal since the park development includes the construction of facilities that will accommodate the increase in the park's population. As mentioned in the "Description of Affected Area" of this report, raw sewage will be disposed by means of a cesspool. Receptacles for trash will be provided and periodically cleared from the park by the County maintenance personnel.

- Biological Impacts:

The Environmental Impact Statement prepared for the Construction of the Laupahoehoe Point Park Wading Pond (submitted February 1974) stated that the use of the ocean water for swimming and wading would reduce the marine populations within the confines of the swimming area. Taking into consideration the proportion of the affected area and the general shoreline area and the overall benefits derived from the recreation use of the area by the populace in the North Hilo District, the impact on marine life was considered minimal.

- Water Quality:

The ocean's water quality will inevitably be affected to some degree by the swimmers and recreators. Impact will be minimal since adequate and convenient restrooms will be provided and trash receptacles supported by the County's maintenance personnel will be provided.

The environmental effects created from increased park populations are expected to be minimal. Noise from overnight campers will be minimal due to the campsite location at the northwest sector of the park and vegetation, primarily trees, surrounding the campsite area. Because of the inland breezes in the area, exhaust pollutants from vehicles, etc. should create no problems. Raw sewage and trash will be efficiently disposed thereby keeping impacts on water quality at low levels.

## IMPACTS FROM PROPOSED STRUCTURES

Proposed recreation facilities used with the existing facilities at the Laupahoehoe Point Park will have certain impacts on the environment:

- Landscaping:

Impacts on the landscape should be minimal. Plans for the park area call for maintaining as much of the present landscaping, such as the ironwood trees, coconut trees, and naupaka, as possible. The landscaping plans also call for new vegetation. New planting will include ironwoods to supplement the existing groves and coconut trees, naupaka, and madagascar olive as well as Kamani trees to serve as intermediate landscaping between the ironwood and coconut trees.

- Historical/Archeological:

Except for the memorial marking the death of twenty-four persons killed by the 1946 tsunami wave, there are no known historical or archeological artifacts in the area. Therefore, construction of new facilities at the park will have no impact on historical/archeological artifacts in the area.

- Parking and Road Improvements:

Parking will be built to accommodate the park's major facilities--the existing pavilion, the community center/gymnasium, the proposed pavilion, the swimming area, and the boat ramp (Refer to the Master Plan Map for parking locations). These parking areas will also service the adjacent areas. Roads will also be widened and constructed to provide access to the major park areas. Impact of parking and road constructions are expected to be minimal. Parking and road improvement/construction areas were located and planned to minimize the destruction of vegetation and to maximize the use of existing vegetation in the overall landscaping of the park.

- Relocation of Residences:

It will not be necessary to relocate residences in the area. Most of the land is owned by the County. The 1.35 acres owned by the Federal Government, moreover, is in the process of being transferred to the County for recreational use. Consequently, no privately-owned structures will be affected by this project; it is expected that there will be no impact involved in this area.

## BIBLIOGRAPHY

Act 205, Section 98H-2, State of Hawaii, 1963

Edward R. Aotani & Associates, Inc. for the Department of Parks and recreation, Planning Department, County of Hawaii, County of Hawaii: Recreation Plan, 1973, p. 74.

Aotani & Hartwell Associates, Inc. for the Department of Planning and Economic Development, State of Hawaii, State Comprehensive Outdoor Recreation Plan, 1975. pp. 174-176.

Dept. of the Army, Honolulu District, Corps of Engineers in cooperation with State of Hawaii Department of Land and Natural Resources, Flood Hazard Information, Island of Hawaii, Sept. 1970. p. 10.

U.S. Department of Agriculture, Soil Conservation Service in cooperation with University of Hawaii Agricultural Experiment Station, Soil Survey of Island of Hawaii, State of Hawaii, issued December 1973,

Department of Public Works, County of Hawaii, Negative Declaration, Laupahoehoe Valley Road Improvements, December 1975.

Environmental Quality Commission, State of Hawaii, Rules of Practice and Procedure, 1975.

Hawaii's Shoreline, 1964.

Sunn, Low, Tom & Hara, Inc. for Department of Public Works, County of Hawaii, Environmental Impact Statement of Construction of Laupahoehoe Park Wading Pond, February 1974.

George S. Walters and Associates, Inc. prepared for Dept. of Parks and Recreation, County of Hawaii, Master Development Plan, Laupahoehoe Point Park, North Hilo, Hawaii, Sept. 1974.

Letter from the Department of Health, State of Hawaii, from Harold Matsuura, Chief Sanitarian, to Gordon Imata and Associates, Inc., December 1, 1976.

Letter from Department of Health, State of Hawaii, from Harold Matsuura, Chief Sanitarian, to Douglas R. Yanagihara, Aotani & Associates Inc., March 15, 1977

APPENDIX A

FINAL  
ENVIRONMENTAL IMPACT STATEMENT  
OF CONSTRUCTION OF  
LAUPAHOEHOE PARK WADING POND

Prepared for:

Department of Public Works  
County of Hawaii  
25 Aupuni Street  
Hilo, Hawaii 96720

Prepared by:

Sunn, Low, Tom & Hara, Inc.  
Environmental Engineers  
190 South King Street  
Honolulu, Hawaii 96813

February 1974

LAUPAHOEHOE PARK WADING POND

COUNTY OF HAWAII

DRAFT

FINAL ENVIRONMENTAL STATEMENT

Responsible Office: Department of Public Works, County of Hawaii

Name of Action:  Administrative  Legislative

Description of Action: The action consists of the construction of a wading and "learning to swim" facility on the shoreline of Laupahoehoe Point, County of Hawaii. The total project area is about three-quarters of an acre and includes a wading area, a "learning to swim" area, and a beach area all protected by two +9 foot MSL wave barriers.

Estimate of Environmental Impact: The water quality and biological effects of the project will be largely confined within the project boundaries with no significant effects anticipated outside. The project will provide a needed recreational facility for the people living along the Hamakua Coast.

Adverse Environmental Effects: Adverse environmental effects are (1) destruction of the existing marine and intertidal habitat within the project boundaries, (2) temporary turbidity increase during construction, and (3) somewhat aesthetically undesirable interruption of the rugged Laupahoehoe Point coastline.

Alternatives: Alternatives considered include:

- 1) Constructing an inland swimming and wading facility.
- 2) Using the alternative site just northwest of the proposed site.
- 3) Not providing any facility at all.

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## PROJECT DESCRIPTION

The proposed project of a wading pond at Laupahoehoe Park on the island of Hawaii was initiated in 1970 by the County of Hawaii Department of Public Works and the County Department of Parks and Recreation. This initiation was partly prompted by the favorable public response to the wading facility at Onekahakaha in Hilo. The presently proposed location and general configuration are the results of coordination among the Department of Public Works, Department of Parks and Recreation, their engineering, oceanographic and environmental consultants, and a citizens group.

The Hamakua Coast on the windward side of Hawaii has almost no reasonably safe wading or swimming areas for young children. The proposed project should provide one such facility, thus fulfilling the requirement of the County of Hawaii's general plan to "provide a swimming facility in the Laupahoehoe area."

As presently planned, the entire project area is about 30,000 square feet of which about 10,000 and 13,000 square feet are under water at low and high tide, respectively. The area set aside for learning to swim is about 2,500 square feet, while the planned "beach" area is about 14,000 square feet. The proposed project location and configuration are indicated in Figure 1.

The main physical features of the project are the two +9 feet MSL wave barriers, the two safety barriers, and the 1/8-inch crushed basalt "beach" area.

The proposed wave barriers will consist of a concrete rubble masonry wall built with a 16-foot base on 1/2 to 6 ton boulders. The wall will be constructed of 0.75 cu ft minimum face stone and 0.50 cu ft minimum

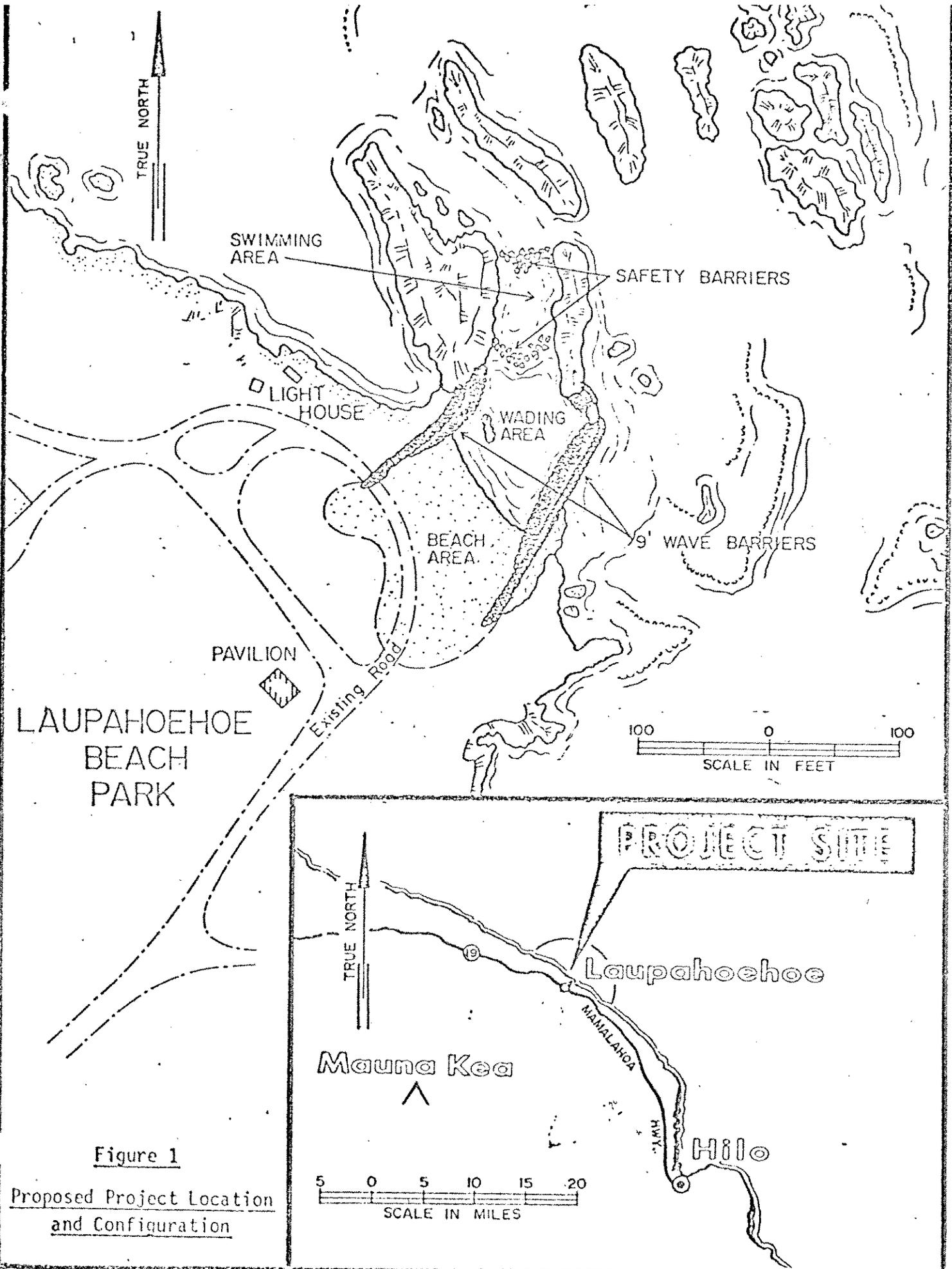


Figure 1

Proposed Project Location and Configuration

heart stone all mortared together. The outer layer joints on the 1.25 to 1 sloping pond side face will be made with black mortar and recessed 4 to 6 inches to increase aesthetic appeal. The nearly vertical seaward face of the wave barriers will be made smoother to reduce the purchase of wave forces on the wall. Details of the design are included in the design analysis prepared by Sunn, Low, Tom & Hara, Inc. in March 1973.

The 5 to 7 ton unmortared stones comprising the two safety barriers will project above the water at high tide but allow relatively free circulation of water. Plastic filter material placed along the bottom two feet of the landward safety barrier will minimize the transport of the 1/8-inch crushed basalt beach material out of the wading pond.

Construction of the pond and wave barriers will require the excavation of about 7,000 cubic yards of material. Because this material is mostly cobbles and larger stones, no significant turbidity problem is anticipated.

The beach material will be placed in a 1-foot layer in the wading area and the beach area. The landward portion of the project area will be landscaped with ironwood trees and grass.

The proposed wading and swimming facility is being integrated into the plan of the general park improvements at Laupahoehoe. Access, parking, sanitary and other facilities are included in the overall park plan being prepared by the County Department of Parks and Recreation.

#### DESCRIPTION OF THE AREA WITHOUT THE PROJECT

The Laupahoehoe Peninsula is located on the Hamakua Coast about 23 miles northwest of Hilo. The seaward extremity of this projection of land consists of a series of irregular lava rock formations extending

into the surf zone. The project site is located mostly between two such lava rock formations. Further inland are a lighthouse, two pavilions, and a general park area. Current plans for this park area include extensive new landscaping, several new park buildings, improved access, and parking facilities. On the Hilo side of this peninsula, there exists a small boat ramp which is unsafe most of the time due to heavy surge conditions.

Surf and Surge Conditions

The surf and surge conditions at the project site are primary factors in the design of the wading area. Under high tide and high wave conditions, the surf presently sweeps across the inland portion of the proposed wading area. Most of Laupahoehoe Park is also susceptible to tsunami damage as was tragically illustrated on April 1, 1946 when 24<sup>1</sup> persons were lost as a result of a tsunami. Unfortunately, quantitative data on tsunami occurrence and run up are scarce for Laupahoehoe. Table 1 (after Adams, 1969)<sup>2</sup> shows the available run up data at Laupahoehoe in comparison with the corresponding run ups at Hilo and Honolulu.

TABLE 1  
TSUNAMI RUN UP AT LAUPAHOEHOE

<u>Date</u>	<u>Source and Intensity</u>	<u>Damage in Hawaiian Islands</u>	<u>Run Up (feet)</u>		
			<u>Laupahoehoe</u>	<u>Hilo</u>	<u>Honolulu</u>
April 1, 1946	Aleutians (7.4)	Very Severe	30	26	2
Nov. 4, 1952	" (8.5)	Moderate	0	4.9	2
Mar. 9, 1957	" (8.5)	Moderate	10	14	2
May 23, 1960	Chile (8.5)	Very Severe	7	35	3

<sup>1</sup> Hawaii Tribune Herald.

<sup>2</sup> Adams, W.M., Prediction of Tsunami Inundation from Relative Seismic Data, HIG Report 69-9, Honolulu, May 1969.

From these data it appears that the run up at Laupahoehoe is usually more than at Honolulu and less than at Hilo. Tsunami frequency of occurrence statistics have not yet been definitely established by authorities in the field because of the large variation in the methods and criteria used in making observations. Recent available data (Iida, et al., 1967)<sup>3</sup> for Hilo and Honolulu indicate a tsunami observation rate of somewhat less than one per year. Only about one-third of these observations indicate a wave height of greater than 0.1 meters (about 4 inches). Since 1837 there have been 14 tsunamis at Hilo with wave heights greater than 2.0 meters (about 6-1/2 feet). This translates into an average rate of about one tsunami of major proportions per ten years. There is some reason to believe that Laupahoehoe Point is somewhat less susceptible to tsunami inundation than Hilo, possibly because of the concentrating effect of the Hilo Bay bathymetry to the long period tsunami waves. In any case, large tsunamis can and do occur at Laupahoehoe Point and existing warning systems must be maintained.

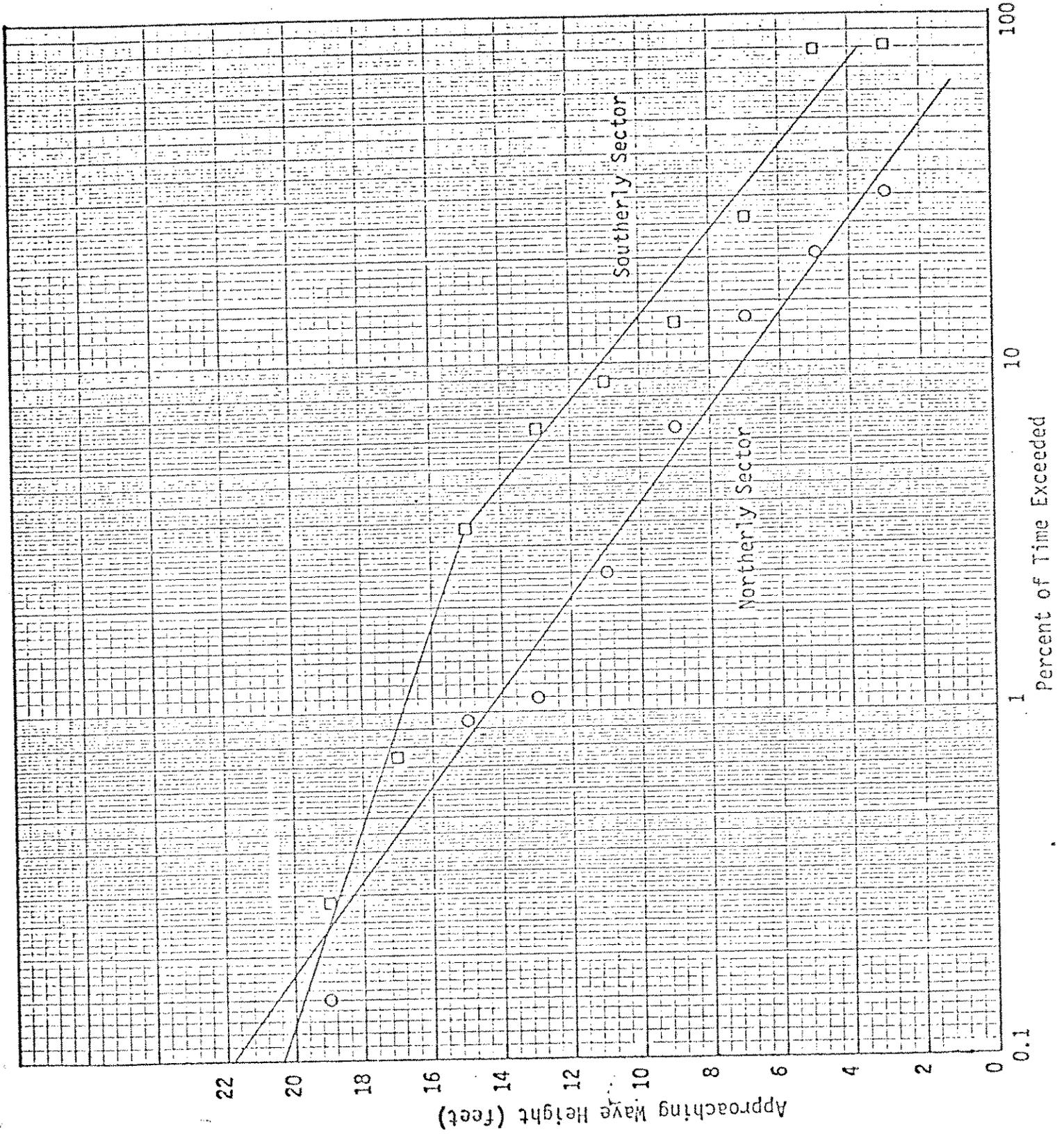
The energies of short period wind waves tend to be concentrated at points such as Laupahoehoe. Figure 2 indicates the frequency of occurrence of wave heights approaching Laupahoehoe from the northerly and southerly sectors. Without a wave barrier, it is estimated that the wading area is unsafe about 60 to 70 percent of the time. This estimate is based on the observations of high turbulence in the area at high tide when about 5-foot waves approached from the southerly sector and includes the expected danger from the northerly sector. With the planned +9 MSL wave barriers, it is expected that some slight spray will overtop with

---

<sup>3</sup> Iida, K., D. C. Cox, and G. Pararas-Carayannis, Preliminary Catalog of Tsunamis Occurring in the Pacific Ocean, HIG Report 67-10, 1967.

Figure 2

Wave Height Frequencies for Waves Approaching Laupahoe Point



6-foot waves, but that the area will remain reasonably safe. With greater wave heights larger amounts of water will be overtopping and the area will become progressively less safe. The amount of overtopping is also dependent on the wave period with longer periods resulting in more overtopping. Because of the large number of variables and considerations, it is not possible to draw a definite line between safe and unsafe conditions. However, the 9-foot wave barriers will greatly increase safety and therefore increase the usable time for wading and learning to swim. For example, wave heights less than barrier heights are expected to occur more than 75 percent of the time. On-the-spot observations will have to be made to determine the degree of safety. The exposed nature of Laupahoehoe Point makes it impractical to construct a structure that will never be overtopped, especially when it is desired to blend the construction into the natural surroundings.

#### Water Quality

On December 13, 1972 a field trip was made to the project site for the purposes of making physical observations, taking water samples, and making biological observations. The biological portion will be discussed in a subsequent section. Water samples were taken at four locations (see Figure 3) at low tide under moderate surf conditions. At the time of sampling there were collection lines of bagasse and cane trash from sugar mill discharges up to about the +10 foot MSL contour. Since the sugar industry along the Hamakua Coast will be eliminating trash and bagasse from their discharges, there will be an elimination of these collections of cane debris in the future.

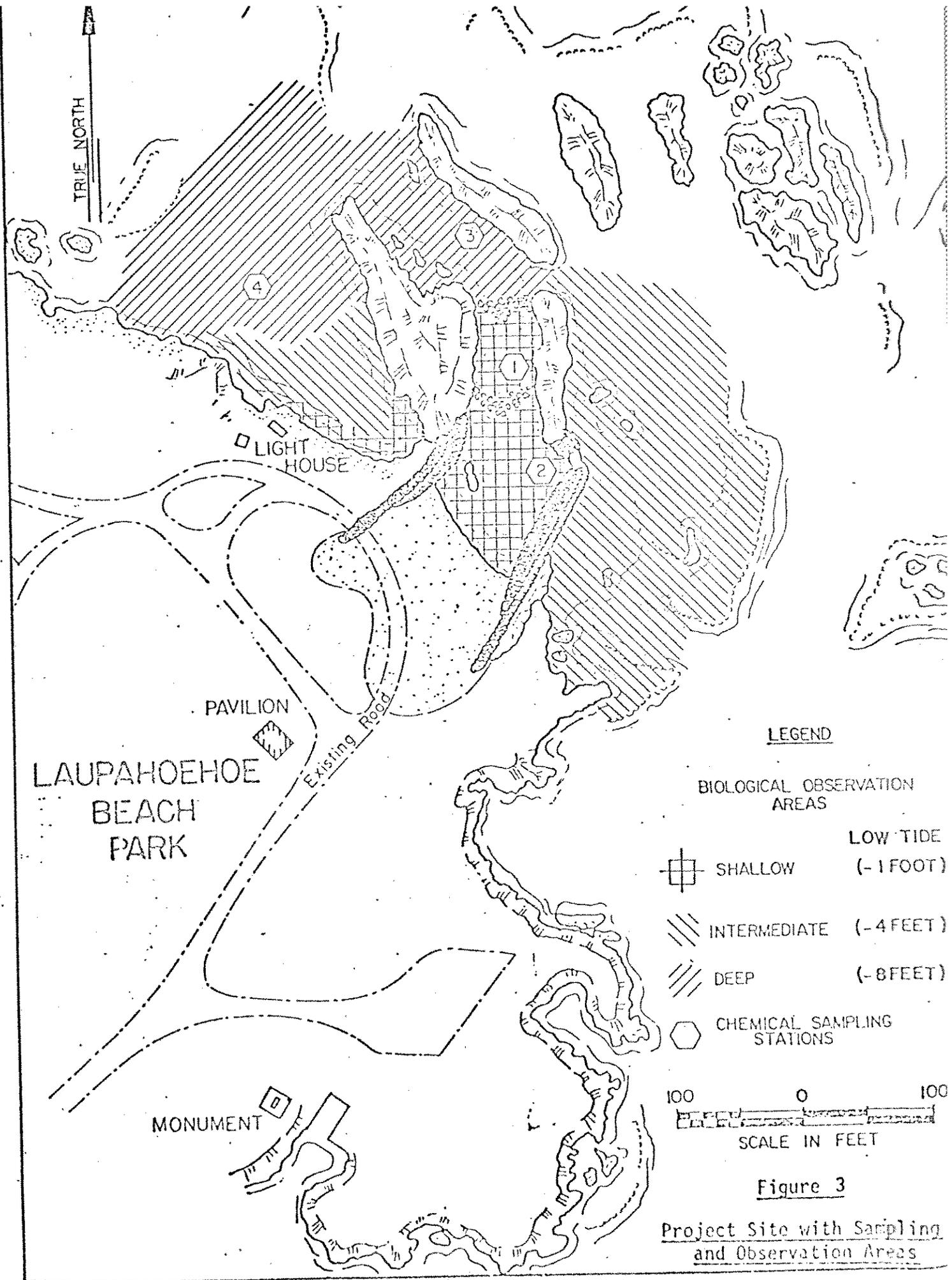
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**LEGEND**

**BIOLOGICAL OBSERVATION AREAS**

- |   |              |                    |
|---|--------------|--------------------|
|  | SHALLOW      | LOW TIDE (-1 FOOT) |
|  | INTERMEDIATE | (-4 FEET)          |
|  | DEEP         | (-8 FEET)          |
- |   |                            |
|---|----------------------------|
|  | CHEMICAL SAMPLING STATIONS |
|---|----------------------------|



**Figure 3**  
Project Site with Sampling and Observation Areas

Hawaii Water Quality Standards for total nitrogen and total phosphorus in Class A waters are included.

TABLE 2  
WATER QUALITY PARAMETERS AT LAUPAHOEHOE POINT

Sampling Location*	Salinity (0/00)	Total Kjeldahl Nitrogen (TKN) (mg/l)	Total Phosphorus (mg/l)	Turbidity (JTU)	Temperature °F
1	36.0	0.11	0.027	0.5	75.2
2	35.2	0.09	0.030	0.5	75.2
3	36.2	0.12	0.029	0.5	75.2
4	36.6	0.05	0.028	0.5	75.2
-----					
State Class A Standards	--	0.15**	0.025	--	--

\* See Figure 3 for location map.

\*\* Total nitrogen.

The salinity data suggests that at sampling location 2 there is about 3 percent fresh water. This confirms the visual observation of schlieren (refraction differences) at location 2 which indicated the presence of a small underwater spring. However, no measurable temperature difference was noted even though spring water at other locations in the Laupahoehoe Point area has a somewhat lower temperature (69.8° F) than the sea water. A large spring flow would be considered undesirable for wading and swimming

activities because of the consequent lower water temperature and the slight possibility of sewage contamination from the existing and future cesspools located on the peninsula.

The TKN concentration includes organic and ammonia nitrogen forms which make up almost all of the nitrogen found in offshore Hawaiian waters. (The  $\text{NO}_3^-$  plus  $\text{NO}_2^-$  nitrogen concentration usually amounts to less than 0.02 mg/l nitrogen in open ocean waters.) The waters at the project site therefore were within the total nitrogen limits at the time of sampling. However, the total phosphorus concentrations exceeded the State Class A Standards of 0.025 mg/l. This is not an unusual occurrence in that several investigators have noted nutrient concentrations higher than standards in near pristine areas and near shore samples, thus pointing out a difficulty associated with the general application of single number standards. It is probable that the slightly higher total phosphorus values in the project site are associated with the somewhat high turbidity values. This higher turbidity in turn is the result of surf and surge action on the bottom and rock outcrops in the area. It was observed that a major component of the visible particulate matter in the water consisted of tiny pieces of barnacle exoskeletons. This suggests that a large number of barnacles are in the area and that there is an adequate number of particulate organic material to supply the nutrient needs of the barnacles. These slightly higher phosphorus and turbidity levels in the vicinity of the proposed facilities should have no significant effect on swimming and wading activities.

#### Biological Description

For purposes of convenience in description, the project area has been

divided into shallow, intermediate, and deep areas roughly corresponding to characteristic depths of 1, 4, and 8 feet at low tide. These areas are indicated in Figure 3.

Shallow Waters. The shallow area habitat is characterized by a bottom consisting of about 1 to about 6-inch diameter rounded cobbles with some outcropping of solid lava rock which provide a large amount of interstitial space and ledge areas. Since most of this area is intertidal almost all of the organisms are found in the portion below low tide levels. This area is colonized by a surprisingly varied fauna consisting of small fishes, crustaceans, and echinoderms. (A list of the organisms observed in all three areas is given in the Appendix.) The rock surfaces in this area are nearly devoid of encrusting type organisms. In some areas characterized by more rapid water movement, a thin layer of filamentous algae or colonial diatoms coat the rock surfaces.

Intermediate Waters. The intermediate area is characterized by a water depth of 4 feet at low tide, moderate to heavy wave surge, and the presence of many large rocks that protrude through to the surface. The substratum in this area consists of solid basalt with few loose rocks. The fishes, corals, and algae in this area are generally much more abundant than in the shallower areas. Encrusting organisms, including corals, barnacles, and vermetid molluscs are common. Although there is not a large difference in the number of species of fishes found in the intermediate area, the size and number of individuals of the same species is considerably greater. For example, in the shallow areas approximately 10 juvenile specimens of wrasse (*Hinalea*) were observed. In the intermediate area, however, approximately 50 to 60 adults of the same wrasse species were observed. This same observation generally holds true for most of the fishes observed.

Corals of the Pocillopora and Porites genera were the most common forms observed. Other corals are present but in fewer numbers. Large colonies of Porites lobata as well as many heads of Pocillopora meandrina were observed on the Hilo side of Laupahoehoe Point. This indicates that the area can and does support significant coral growth.

As was the case with fish, the long-spined sea urchins of the Echinothrix genus were more abundant in the intermediate areas. The short-spined forms of the Tripneustes and Pseudoboletia genera were more commonly observed in the shallow and central deep areas where wave surge is nearly absent.

The large rocks in the intermediate area not only provide habitat for many fishes but also surfaces for filamentous algae. Many herbivorous surgeon fishes (e.g., Manini, Kala) were observed feeding on the rock surfaces and presumably upon the algae present. Judging from the number of surgeon fishes feeding in this manner, it seems that the rock surfaces provide a significant amount of nutrient material for these fishes. Scattered over the rock surfaces are varied numbers of filter feeding barnacles and vermetid molluscs.

Deep Water Zone. The deep areas are characterized by water depths of approximately 8 feet (at low tide), slight to heavy surge, and a relatively rugged substratum that consists of solid basalt, large loose rocks, and some rocks that protrude through to the surface.

The fauna in the deep areas was observed to be generally similar to that of the intermediate areas. Some differences were noted, however, including the presence of parrot fishes (Uhu), stick fishes (Nunu), needle fishes ('Aha'aha), and an increased number of scorpion fishes (Nohu). Also

notable were increased numbers of short-spined sea urchins of the Tripneustes genus found in the deeper and less rugged portions of the larger pool on the Honokaa side of the project site.

The corals present were somewhat different in species composition than those of the intermediate areas. Generally Pocillopora was the most abundant genus. Porites was present, but the colonies were fewer and smaller than those observed in the intermediate areas. A third genus of coral, Montipora, was present in the more protected portions of the area.

#### ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

The estimate of environmental impact can be classified and discussed under the headings of hydraulic, water quality, biologic, societal, and aesthetic impacts. Although there would be drastic changes within the project boundaries as a result of the construction of the walls and the "beach," it must be remembered that the entire project is contained in an area of only about three-quarters of an acre.

#### Hydraulic Changes

The main purpose of the planned wave barriers is to minimize the effect of the surf and surge on the waders and swimmers. Consequently, the existing water movement characteristics of the area will be changed so as to result in an area that is safe a greater percentage of the time. Another purpose of the enclosing walls is to help maintain the planned "beach" which will consist of about 1-foot depth of #9 crushed basalt (about 1/8 inch) on an 8:1 slope. Within the project site the area covered by water would be somewhat increased due to the planned excavation of cobbles. Under relatively calm conditions the circulation of water through the area would be limited to tidal exchange and wave surges through the interstices of the

bottom of the Hilo side wave barrier and the pervious barrier enclosing the "learning to swim" area. During times of higher surf, the exchange through the interstices will be significantly greater and will be supplemented by water overtopping the wall. Conditions resulting in significant overtopping (wave heights of 11 to 12 feet and greater) are projected to occur during about 10 to 15 percent of the year. It is therefore expected that moderate circulation will predominate, but that occasionally significant overtopping will result in high flow and high turbulence conditions. During these times the crushed basalt beach material will tend to be moved into the wading area and possibly into the "learning to swim" area, and even possibly out of the project site. Some small amount of sand movement is also expected to occur through the interstices of the Hilo side wave barrier. Provisions have been included in the design of the pervious barriers to minimize the movement of sand through them. Also, it is suggested as a maintenance measure, that excess sand deposited in the wading and "learning to swim" areas be occasionally transferred back up to the beach area. This would maintain an adequate water depth and minimize transport of sand out of the project area and thus reduce the possibility of detrimental effects on the surrounding biological community. Experience will indicate how much make-up sand will be necessary to maintain an acceptable beach area and how often sand must be transferred back up to the beach area. An initial working estimate is that such a transference will be necessary semi-annually.

#### Water Quality

During construction of the proposed facility, it is expected that there will be some turbidity increase in the waters adjacent to the project site. However, since the bulk of the material to be excavated

appears to be relatively large cobbles, the temporary turbidity increase should not be great enough to affect the surrounding coral based biological community.

The proposed use of crushed basalt as a beach material instead of crushed coral should avoid the long-term problems with turbidity encountered in wading facilities elsewhere. However, some degradation of water quality is expected as a result of increased public use of the area.<sup>4</sup> This undesirable effect can be minimized by providing adequate and convenient restroom and trash facilities backed up by a conscientiously applied maintenance program. Such a program should include the picking up of litter and debris and the maintenance of restroom facilities in an attractive condition. With such a program it is expected that the proposed project will have no significant long-term impact on the water quality of the area.

#### Biological Impact

The construction of the wave barriers and especially the formation of a coarse sand bottom and beach will destroy the existing marine life within the project boundaries. Although the interstices of the wave barriers are expected to be colonized by much of the indigenous flora and fauna, the proposed coarse basalt sand bottom provides a much less diverse habitat for marine life and very few species can be expected to recolonize this area after construction.

A detrimental effect would result in the adjoining areas if there were a significant shifting of the coarse basaltic sand out of the project

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<sup>4</sup> Hanes, N.B., A.J. Fossa, "A Quantitative Analysis of the Effects of Bathers on Recreational Water Quality," Advances in Water Pollution Research, Proceedings of the 5th International Conference, Vol. 2, 1970.

area. Not only can the local coral be killed by the abrasive action of wave-borne sand particles, but the general habitat can also be adversely altered by the filling of existing interstitial spaces among the large rocks and cobbles. However, the design provisions to make the pervious barriers somewhat impervious to sand along with the proposed occasional redistribution of sand from the "learning to swim" area to the beach area should prevent the movement of a significant amount of sand across the project boundaries. The biota of the adjoining areas should therefore be only marginally affected by the proposed project.

There is a possibility that the general fish population in the Laupahoehoe Point area will be slightly reduced as a result of the reduction in natural shallow tide pool areas (by about 10,000 square feet). These tide pools presently provide space and protection for many juvenile forms of fishes. With a slight reduction in space for juveniles, there is expected to be corresponding reduction in the number of adults. However, when considering the entire Laupahoehoe Point coastal area, this anticipated reduction in space is very small and the resulting effect on the fish population would probably not be measurable.

In summary, the biological impact will be primarily confined within the project boundaries with some minimal effects outside, mostly as a result of some loss of sand and some reduction in tide pool area.

There are no known endangered or rare species in the area that would be affected by the proposed project.

#### Societal Considerations

The proposed wading and "learning to swim" facility was conceived to provide a relatively safe place for small children and their families to

become familiar with and enjoy the ocean in a near natural setting. The rugged Hamakua Coast provides no natural location for these activities, and consequently many of the children miss participating fully in the water-oriented heritage of Hawaii.

The present plan for the facility is a compromise involving the factors of community wishes, cost, safety, environmental preservation, and aesthetics. The factors of environmental preservation and aesthetics are discussed elsewhere in this Statement. The community wishes as originally expressed by the North Hilo Community Council involved the larger area northwest of the present location. However, the factors of engineering feasibility, cost, safety, and environmental preservation were more favorable to an inland swimming pool. The presently proposed location and configuration were the resulting compromise. The originally planned +12 foot (MSL) wave barriers were lowered to the +9 foot (MSL) elevation of the existing rock formations, thus somewhat reducing the safety factor and enhancing the aesthetic factor.

Safety considerations and the variability of the wave conditions at Laupahoehoe Point make it necessary that a daily safety determination be made and that when the area is found to be unsafe, warnings be prominently displayed and the area supervised. The County Department of Parks and Recreation appears to be the logical agency to carry out this task. It is estimated that the planned facilities would be unsafe about 10 to 20 percent of the year.

During times of very low surf, the biologically rich adjacent area that was originally proposed by the North Hilo Community Council as the location for the artificial swimming and wading facility can be used by snorklers to observe the reef and tide pool communities in their natural condition.

There are no known archaeological or historical sites that would be affected by the proposed construction.

### Aesthetic Impact

The requirements of safety and ocean engineering dictate the need for rather massive wave barriers on two sides of the proposed wading facility. These walls, although reduced in size from what was originally planned, constitute a major deviation from the rugged, irregular, and uncontrolled natural setting that gives Laupahoe Point its aesthetic appeal. They include lowering the wave barriers to the height of the connecting natural stone outcropping, constructing the walls with black mortar in recessed joints on the pond side of the walls, using wall stones of varying sizes to be placed in an irregular pattern, using coarse crushed black basalt "sand" for beach material, and leaving natural solid rock outcroppings standing in the excavation area. In addition, some landscaping is planned in the inshore area using indigenous trees.

The above construction measures, along with a conscientious beach maintenance program, should render the finished project aesthetically acceptable to most people.

### ADVERSE EFFECTS WHICH CANNOT BE AVOIDED

Several adverse effects are expected to result from the proposed construction of the wading and "learning to swim" facility at Laupahoe Point. The most detrimental of these is the destruction of the existing biological habitat within the project boundaries. Some recolonization by indigenous species will undoubtedly occur on and in the proposed wave barriers, but the enclosed area will be filled with coarse sand and will not be able to support most of the existing biota and will serve only

marginally as shelter for juvenile fish. It is also expected that some reduction in water quality will occur as a result of increased public use of the area. The temporary turbidity increase due to construction activities probably will not have a long-term adverse effect.

The adverse effect on the aesthetic appeal of the rugged Laupahoehoe Point coast cannot be completely avoided. However, the use of all black "sand" and wall construction material as well as some deliberate irregularity in stone placement should make the deviation from the natural background less objectionable.

#### ALTERNATIVES TO THE PROPOSED ACTION

As presently planned, the proposed wading and swimming facility is estimated to have a construction cost of about \$190,000. The emphasis of the planned facility is on wading, with a smaller area being provided for swimming.

Three principal alternatives to the proposed action have been considered. These are: constructing an inland swimming and wading facility, developing the site immediately northwest of the presently proposed site, and not building any facility at all.

The alternative of an inland facility is attractive because it involves the advantages of greater safety, poses few adverse environmental and aesthetic problems, and provides a larger swimming area. However, it is not an acceptable alternative to the North Hilo Community Council or the Department of Parks and Recreation for the reason that it does not involve a near-natural ocean condition with which the children and their families could interact. No specific swimming pool site was evaluated in this study, however, a cost of about \$250,000 for an olympic size pool complex is estimated.

Development of the alternative site just northwest of the presently proposed site was supported by the North Hilo Community Council. It has the advantage of providing a much larger swimming area. However, questionable engineering feasibility, higher cost, very doubtful safety, more adverse biological effects, and a more detrimental aesthetic impact weighed against this site. No specific cost estimate was made for this alternative because of the questions of engineering feasibility.

The alternative of doing nothing would cost little and have the least environmental impact, but would not fulfill the recreational requirements of the people living along the Hamakua Coast.

#### THE RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The total area that will be directly affected by the proposed project is about three-quarters of an acre. The present biological productivity in this area will be interrupted by construction and is expected to only partially recover. Outside of the project boundaries, the environmental productivity is expected to be minimally affected and should continue to thrive in its natural setting.

#### COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

The action involves the commitment of three-quarters of an acre of natural coastal area for a recreational facility. The concomitant loss of intertidal biological habitat is also involved. In addition, there is the unaesthetic interruption of the rugged, uncontrolled beauty of Laupahoehoe Point. However, the smallness of the area involved and the planned measures taken to minimize the adverse aesthetic impact should make the overall adverse impact of the project minimal.

APPENDICES

A - BIOLOGICAL OBSERVATIONS

B - COMMENTS ON DRAFT ENVIRONMENTAL  
STATEMENT AND RESPONSES

TABLE 3

ORGANISMS OBSERVED AT LAUPAHOEHOE POINT ON DECEMBER 13, 1972

Common Name	Hawaiian Name	Family Name or Genus	# of Species	Where Observed*
<u>FISHES</u>				
	Aholehole	Kuhliidae	1	S & I
Surgeon fish	Manini, Kala, Kole, Lau'ipala	Acanthuridae	5	S, I & D
Damsel fish	Kupipi, Maomao	Pomacentridae	4	S, I & D
Blenny	Pao'o	Blenniidae	2	S
Goby	O'opu	Gobiidae	1	S
Butterfly fish		Chaetodontidae	4	S, I & D
Wrasse	Hinalea	Labridae	4	S, I & D
Scorpion fish	Nohu	Scorpaenidae	4	S & D
Moray eel	Puhi	Muraenidae	2	S
Puffer fish	Pu'u-ola'i	Canthigasteridae	1	S
Squirrel fish	Ala'ihi	Holocentridae	1	S
Moorish idoi	Kihikihi	Zanclidae	1	I & D
Goat fish	Kumu	Mullidae	2	I & S
	Nehu	Engraulidae	1	I & S
Silversides	Iao	Atherinidae	1	I & S
Mullet	'Ama'ama	Mugilidae	1	I & S
Cardinal fish	Upapalu	Apogonidae	1	S, I & D
Needle fish	'Aha'aha	Hemiramphidae	1	D
Stick fish	Nunu	Aulostomidae	1	I & D
Hawk fish	Piloko'a	Cirrhitidae	2	I & D

Common Name	Hawaiian Name	Family Name or Genus	# of Species	Where Observed*
Parrot fish	Uhu	Scaridae	1	D
Lizard fish	Sand opu	Synodontidae	1	D
<u>INVERTEBRATES</u>				
Mollusc		Neretidae	1	S - splash zone
Sea cucumber		Holothuridae	3	S, I & D
Sea cucumber		Synaptidae	1	S
Brittle star		Ophiocomidae	1	S
Sea urchin	Vana	<u>Echinothrix</u>	2	S, I & D
Sea urchin		<u>Echinometra</u>	2	D
Sea urchin		<u>Tripneustes</u>	1	S & D
Sea urchin		<u>Pseudoboletia</u>	1	S
Barnacle		Balanidae	1	I & D
Mollusc (swimming)		Hexabanchus	1	I & D
Cone shell		Conidae	2	S
Crab		Grapsidae	2	S
Shrimp		Stenopidae	1	S
Hermit crab		Paguridae	2	S
Mollusc		Vermetidae	1	I & D
Crab		Xanthidae	3	S
Coral		<u>Pocillopora</u>	1	I & D
Coral		<u>Porites</u>	1	I & D
Coral		<u>Cyphastrea</u>	1	I & D
Coral		<u>Leptastrea</u>	1	I & D
Soft coral		<u>Palythoa</u>	1	I & D
Coral		<u>Tubestria</u>	1	I
Coral		<u>Montipora</u>	1	D

Common Name	Hawaiian Name	Family Name or Genus	# of Species	Where Observed*
<u>ALGAE</u>				
Red algae		<u>Galaxaura</u>	1	S
Green algae		<u>Codium</u>	1	S
Filamentous algae		?	?	S, I & D

\* S = shallow; I = intermediate; and D = deep (see Figure 3).

## APPENDIX B

### COMMENTS ON DRAFT ENVIRONMENTAL STATEMENT AND RESPONSES

The following are paraphrases of significant comments received on the Draft Environmental Statement from the reviewing agencies along with the responses to each of these comments.

#### County of Hawaii Planning Department

Comment: Improve and expand project description.

Response: The project description was expanded to include more material on the wave barriers, safety barriers, crushed basalt "sand" beach, landscaping, and interconnection with the overall Laupahoehoe Park plan.

Comment: Estimate the quantity of beach material that will be moved out of the project area and estimate the cost of the maintenance program.

Response: An initial semi-annual beach redistribution schedule is suggested in the Final Statement. Experience will show whether this initial schedule should be changed as well as show what the associated cost is.

Comment: Expand on adverse environmental impact on the juvenile fish population.

Response: The text was changed to show that no significant effect on the overall fish population of Laupahoehoe Point is expected.

Comment: Substantiate the statement that anticipated water quality effects would be due to human use of the area.

Response: The Statement was referenced to the substantiating literature.

Comment: Describe the potential or expected water circulation pattern.

Response: Circulation is indicated in the text. Specifically, under moderate wave conditions the exchange will primarily be in and out through the safety barriers. With overtopping of one of the wave barriers, additional outward flow will occur through the safety barriers.

State of Hawaii Department of Health

Comment: Include details of landscaping and construction of new park buildings.

Response: A brief description of the landscaping within the project boundaries is included in the project description. The remainder of the Laupahoehoe Park improvements are included in the Laupahoehoe Park Improvement Plan being prepared by the County Department of Parks and Recreation.

Comment: Minimize the turbidity and disruption of marine life during construction.

Response: The text was expanded to indicate that the material to be excavated consists primarily of cobbles and larger stones; consequently, no significant turbidity problem is anticipated.

Comment: Solid waste should be removed to an approved disposal area.

Response: Proper solid waste disposal will be provided by the Department of Parks and Recreation.

State of Hawaii Department of Transportation

Comment: Improve and expand project description and figures to indicate access, parking facility, etc.

Response: Project description and figures were expanded and clarified. Access, parking, and other support facilities are described by the overall Laupahoehoe Park Plan being prepared by the County Department of Parks and Recreation.

Comment: Consider the effect of deleting the west wave barrier.

Response: Deletion was considered and rejected for reasons of safety and "beach" stability.

Corps of Engineers, Honolulu District

Comment: Improve and expand project description and accompanying figures.

Response: The text was expanded and the figures were clarified.

Comment: The practicality of using mortar for armor stone subject to rather severe wave attack is highly questionable.

Response: The wave barriers were designed on the basis of recommendations by Mr. Robert Q. Palmer, consultant for the ocean engineering portion of the project. A structural life of 20 to 25 years is estimated. See the design analysis for this project for a more detailed design discussion.

*4/18/4 2:15  
Phone conversation  
with Ruby Iken  
said to  
\* basically  
satisfied*

Comment: Estimate the percentage of the year when use of the facility will be restricted for safety reasons.

Response: Safety considerations are included in the text. It is estimated that the area will be unsafe 10 to 20% of the year. It is recommended that daily safety determinations be made.

United States Coast Guard

Comment: Construction of the proposed project requires permission from the Coast Guard because of encroachment upon Coast Guard Lighthouse property.

Response: Permission is being sought by the County Department of Public Works.

State of Hawaii Department of Planning and Economic Development

Comment: The proposed project is in conformance with the Hawaii County General Plan.

Response: The text was expanded to include this comment.

State of Hawaii Board of Land and Natural Resources

Comments will be made when the Conservation District Use Application is processed.

State of Hawaii Office of Environmental Quality Control

Summary of comments received from other agencies. Comments and responses are given under the agency heading.

## APPENDIX B

DEPARTMENT OF PUBLIC WORKS  
COUNTY OF HAWAII  
HILO, HAWAII

MEMORANDUM

Date December 23, 1975

TO: Planning Department  
FROM: Chief Engineer  
SUBJECT: Negative Declaration  
Laupahoehoe Valley Road Improvements

Transmitted for your review is our negative declaration for the subject project.  
Please forward the necessary documents to EDC upon completion of your review  
and approval.

---

EDWARD HARADA, Chief Engineer

Enc.

RN/sn

## NEGATIVE DECLARATION

### Laupahoehoe Valley Road Improvements

1. Proposing Agency - Department of Public Works, County of Hawaii
2. Approving Agency - Mayor, County of Hawaii
3. Agencies Consulted
  - a. County of Hawaii, Planning Department - reviewed and commented on environmental assessment of the proposed project. (See Exhibit A, Planning Department letter dated, October 16, 1975.)
  - b. State of Hawaii, Department of Land and Natural Resources - approved special use application for improvements to a public road within a Conservation district. (See Exhibit B, D.L.N.R. letter dated, April 24, 1972.)
  - c. County of Hawaii, Department of Water Supply - commented on the design and installation of a 6" waterline which will be included with the construction of the proposed project.
  - d. Hawaiian Electric Light Company and Hawaiian Telephone Company - commented on the relocation of existing utility poles within the proposed improvement areas. (See Exhibit C, H.E.L.C.O. letter dated August 5, 1975, and Exhibit D, Hawaiian Telephone Company letter dated, August 4, 1975.)
4. General Description
  - a. The proposed projects to improve the access roads to Laupahoehoe Point Park is located within the boundaries of Manowaiopae, Laupahoehoe and Waipunalei in the district of North Hilo, County of Hawaii. The overall project is divided into three phases as follows: (See Exhibit E, location map.)
    1. Laupahoehoe Valley Hanakua Access Improvements

This phase of the project is to improve the Old Mamalahoa Highway from the Hawaii Eolt Road access in Waipunalei to the Laupahoehoe Point Road intersection. The existing roadway, approximately 4,000 feet long, will be widened and resurfaced to a minimum width of 20 feet with 3 feet shoulders to allow two way traffic. Since the road runs along the sheer cliffs of Hanakua, guardrails or other retaining structures will be constructed and a scenic look-out site investigated. Drainage improvements will be provided as required.

2. Laupahoehoe Valley Hilo Access Improvements

The purpose of this phase is to improve the Old Mamalahoa Highway from the Hawaii Belt Road access in Manowaiopae to the Point Road intersection. This 4,400 feet section of roadway, presently closed due to damages sustained from the April, 1973 earthquake, will be repaired and resurfaced to allow a one way traffic flow in the makai direction. Guardrails will be installed and a scenic lookout site also considered. Drainage improvements will be provided as needed.

3. Laupahoehoe Point Road Improvements

This phase of the project will improve the Laupahoehoe Point Road from the Old Mamalahoa Highway to the park. The existing 30-ft. right-of-way and 14-ft. wide pavement will be improved to meet the County minor road standards of 50-ft. wide right-of-way, 20-ft. pavement and 6-ft. shoulders. Additional lands will be purchased from adjacent owners and stone walls and fences will be relocated along the new property lines. No drainage problem is anticipated from this phase. The installation of 1600 feet of 6-in. waterline and the improvement of two sides roads are to be included with this phase of the project.

- b. There are no significant economic characteristics associated with the implementation of this project. Additional land and/or easements acquired will be residential properties in the Laupahoehoe Point community or vacant unuseable land along the Hamakua coast.
- c. The development of the Laupahoehoe Point Park will probably result in an increase in the use of its facilities by tourists and local residents. The proposed improvements when completed will provide a safer and more comfortable roadway for people travelling to and from the Point area. Future improvements will be limited to normal maintenance and repairs. Appropriate measures will be taken to lessen inconveniences to residents and park users during construction. Approximately 10 feet of the frontages of properties abutting the Point Road will be acquired for the proposed improvements. (See Exhibit F, Point Road Parcel Map.) Whenever possible, the right-of-way will be adjusted so that structures need not be relocated. The relocation of structures, stone walls, and fences, if necessary, will be coordinated with the affected property owners. The relocation of 20 graves located within the proposed improvement has been completed. (See Exhibit G, Grave Relocation.)

- d. The proposed projects will have minimal or no significant effects on the environment. Normal noise and dust pollution encountered during construction will be temporary and controlled by appropriate abatement measures. The D.L.N.R. conditions to control soil erosion and dust shall be complied with. The proposed road improvements will generally follow the existing road alignment, so damages to the natural beauty of the Laupahoehoe Valley will be minimal. There are no historic sites or preserves that will be disturbed by the improvements.

## 5. Summary Description

- a. The existing roadways to the Laupahoehoe community and park are substandard and narrow with no shoulders, and are relatively hazardous for two-way traffic. The proposed widenings and guard rail or barrier installations will reduce the hazards and increase the safety and comfort of the road users.
- b. The County of Hawaii, Department of Parks and Recreation has designated the Laupahoehoe Point Park as a regional park for the North Hilo district and has developed a master plan to provide additional recreational facilities for the park. (See Exhibit H, "Master Plan for Laupahoehoe Point Park".) The proposed roadway improvements will greatly improve the accessibility to the community and Point Park facilities and will be consistent with the master plan development of the park.

## 6. Alternatives

A feasibility study for improving the access from the Hawaii Belt Road to Laupahoehoe Point was made by the firm of Sam O. Hirota, Inc., in 1971. (See Exhibit I, "New Laupahoehoe Point Access Study".) The firm studied 6 alternate routes which were classified as follows. (see "study")

- a. Most direct alignments (Alternates 1 and 2)
- b. Alignment utilizing existing "access permitted" areas along the States' Hawaii Belt Highway (Alternates 3 and 4)
- c. Improvements to Old Mamalahoa Highway (Alternates 5 and 6)

Advantages and disadvantages of each of the alternate routes can be found in the attached "study". The most favorable route recommended by Sam Hirota, Inc., was Alternate 5 which is the improvement of the Hamakua access to Laupahoehoe Point. Because of the high cost of constructing a standard roadway along this route, this access will only be improved to a minimum safe width for two-way traffic and the Hilo access will be improved to provide a one way traffic flow as earlier stated.

## 7. Determination

It has been determined that the subject project will have minimal or no significant effect on the environment and an EIS is not required.

- a. The proposed improvements will generally follow the existing road alignments, so damages to the natural beauty of the Laupahoehoe Valley will be minimal.
- b. Inconveniences to residents and park users, soil erosion, and noise and dust pollution during construction will be controlled by appropriate measures.
- c. Existing drainage courses will not be disturbed.
- d. There are no historic sites or preserves that will be affected by the subject project.
- e. The improvements will result in greater safety and comfort for park users and area residents.
- f. Although residents of the Laupahoehoe community will lose a portion of their properties for the proposed improvements, no residential structure will be required to be relocated. The right-of-way may be adjusted to avoid the necessity to relocate a garage.

## 7. Determination

It has been determined that the subject project will have minimal or no significant effect on the environment and an EIS is not required.

- a. The proposed improvements will generally follow the existing road alignments, so damages to the natural beauty of the Laupahoehoe Valley will be minimal.
- b. Inconveniences to residents and park users, soil erosion, and noise and dust pollution during construction will be controlled by appropriate measures.
- c. Existing drainage courses will not be disturbed.
- d. There are no historic sites or preserves that will be affected by the subject project.
- e. The improvements will result in greater safety and comfort for park users and area residents.
- f. Although residents of the Laupahoehoe community will lose a portion of their properties for the proposed improvements, no residential structure will be required to be relocated. The right-of-way may be adjusted to avoid the necessity to relocate a garage.

APPENDIX

Planning Department Letter  
Dated, October 16, 1975

Department of Land and Natural Resources Letter  
Dated, April 24, 1972

Hawaiian Electric Light Company, Inc., Letter  
Dated, August 5, 1975

Hawaiian Telephone Company Letter  
Dated, August 4, 1975

Overall Location Map

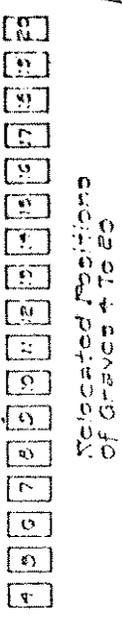
Point Road Improvements  
Parcel Map

Relocation of Graves  
Parcel Map

"Master Plan for Laupahoehoe Park"

"New Laupahoehoe Point Access Study"

226° 40' 246.20

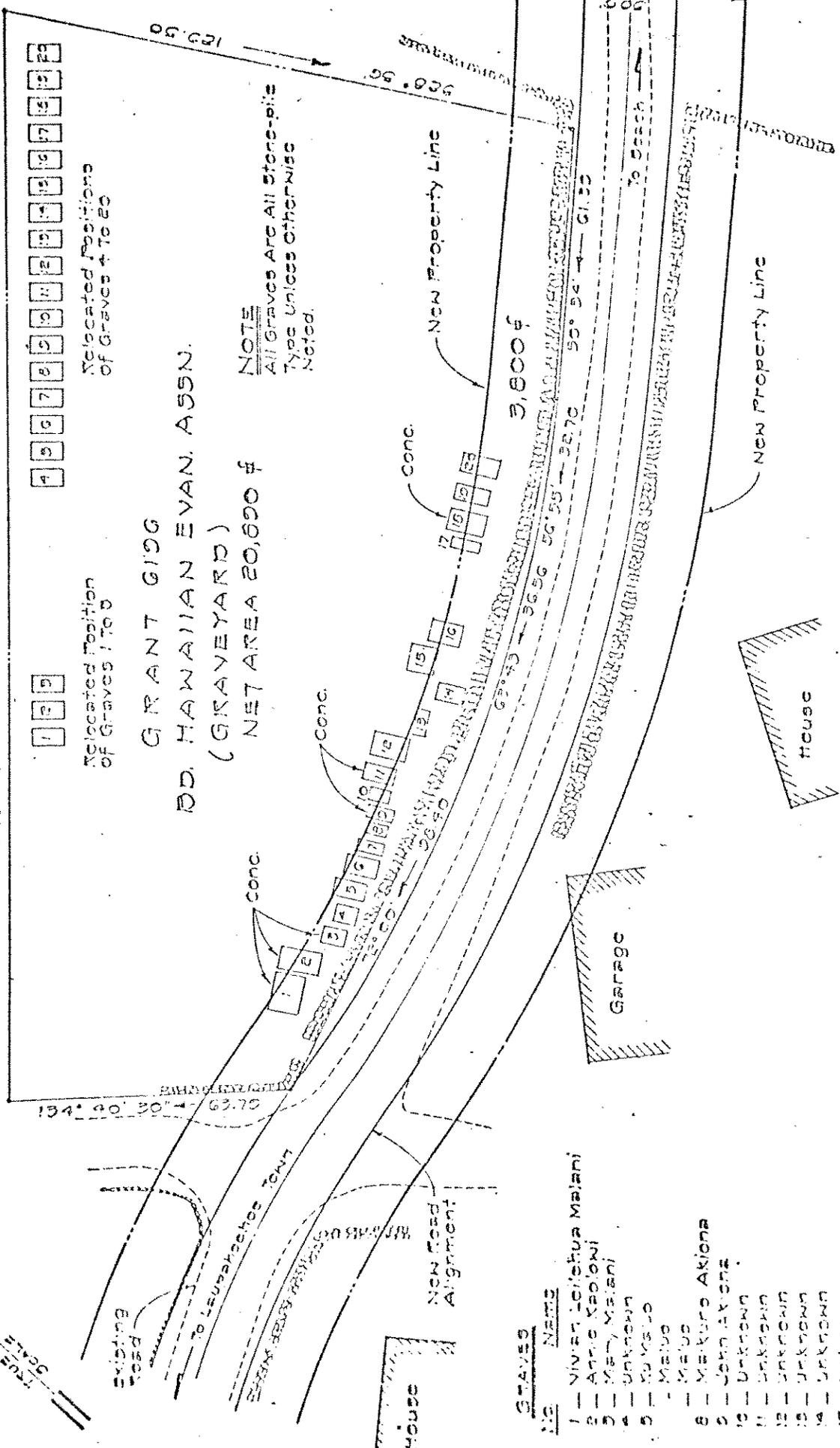


Relocated Position of Graves 1 to 20

GRANT GIDD  
 DD. HAWAIIAN EVAN. ASSN.  
 (GRAVEYARD)

NET AREA 20,690 sq

NOTE  
 All Graves Are All Stone-pile  
 Type Unless Otherwise  
 Noted.



NO.	NAME
1	VIVIAN Iolichua Malani
2	Anna Kadioli
3	Mary Malani
4	Unknown
5	Meluso
	- Meluso
6	Mekure Akioma
7	John Akioma
8	Unknown
9	Unknown
10	Unknown
11	Unknown
12	Unknown
13	Unknown
14	Unknown
15	Unknown
16	Unknown
17	Unknown
18	Unknown
19	Unknown
20	Unknown

LAUPAHOEHOE POINT ROAD IMPROVEMENTS  
 (GRAVE RELOCATION)

## APPENDIX C

## SECTION 1A

### ENVIRONMENTAL PROTECTION

#### PART 1 GENERAL

1.1 The Contractor shall comply with the following requirements for pollution control in performing all construction activities:

#### 1.2 Rubbish Disposal

- A. No burning of debris and/or waste materials shall be permitted on the project site.
- B. No burying of debris and/or waste material except for materials which are specifically indicated elsewhere in these specifications as suitable for backfill shall be permitted on the project site.
- C. All unusable debris and waste materials shall be hauled away to an appropriate off-site dump area. During loading operations, debris and waste materials shall be watered down to allay dust.
- D. No dry sweeping shall be permitted in cleaning rubbish and fines which can become airborne from floors or other paved areas. Vacuuming, wet mopping or wet or damp sweeping is acceptable.
- E. Enclosed chutes and/or containers shall be used for conveying debris from above to ground floor level.
- F. Cleanup shall include the collection of all waste paper and wrapping materials, cans, bottles, construction waste materials and other objectionable materials, and removal as required. Frequency of cleanup shall coincide with rubbish producing events.

#### 1.3 Dust

- A. Unless otherwise directed by the Architect, dust shall be kept down to an acceptable level

at all times, including non-working hours, weekends, and holidays by sprinkling water.

- B. All sprinkling required for dust control, whether voluntarily done by the Contractor or ordered by the Architect, shall be paid for by the Contractor.
- C. Sprinkling or watering work listed shall be the responsibility of the Contractor and be a part of the lump-sum bid:

Areas planted with ground cover and/or grass.

Areas outside the Contract Zone limits such as adjacent roads and streets.

#### 1.4 Noise

- A. All internal combustion engine-powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.
- B. No blasting and use of explosives will be permitted without prior approval of the Architect.
- C. Starting up on none-highway vehicular equipment shall not be done prior to 6:45 a.m. without prior approval of the Architect.

#### 1.5 Erosion

- A. During interim grading operations the grade shall be maintained so as to preclude any damages to adjoining property from water and eroding soil. Temporary berms, cut-off ditches, and other provisions which may be required because of the Contractor's method of operation shall be installed at no cost to the Owner. Drainage outlets and silting basins shall be constructed and maintained as shown on the plans to minimize erosion and pollution of waterways during construction.

## 1.6 Others

- A. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Waste water shall not be discharged into existing streams, waterways, or drainage systems such as gutters and catch basins unless treated to comply with Department of Health pollution regulations.
- B. Trucks hauling debris shall be covered as required by PUC Regulation. Trucks hauling fine materials shall be covered.
- C. No dumping of waste concrete will be permitted at the job site unless otherwise permitted in the Special Provisions.
- D. Except in an emergency, such as mechanical breakdown, all vehicle fueling and maintenance shall be done in a designated area. A temporary berm shall be constructed around the area when runoff can cause problems.
- E. Except for rinsing of the hopper and delivery chute, and for wheel washing where required, concrete trucks shall not be cleaned at the job site.
- F. Spray painting will not be allowed unless done by the "airless spray process".

## 1.7 Suspension of Work

- A. Violation of any of the above requirements or any other pollution control requirements which may be specified in the Technical Specifications herein shall be cause for suspension of the work creating such violation. No additional compensation shall be due to the Contractor for remedial measures to correct the offense. Also, no extension of time will be granted for delays caused by such suspensions.

- B. If no corrective action is taken by the Contractor within 72 hours after a suspension is ordered by the Architect, the Owner reserves the right to take whatever action is necessary to correct the situation and to deduct all costs incurred by the Owner in taking such action from monies due the Contractor.
- C. The Architect may also suspend any operations which he feels are creating pollution problems although they may not be in violation of the above mentioned requirements. In this instance, the work shall be done by force account.

## APPENDIX D

GEORGE R. ARIYOSHI  
GOVERNOR



GEORGE A. L. YUEN  
DIRECTOR OF HEALTH  
AUDREY W. MURPHY, M.D.  
DEPUTY DIRECTOR OF HEALTH  
HENRY H. THOMPSON  
DEPUTY DIRECTOR OF HEALTH  
JAMES S. KUMUHALI, Ph.D.  
DEPUTY DIRECTOR OF HEALTH

DEPARTMENT OF HEALTH  
STATE OF HAWAII

Hilo, Hawaii  
December 1, 1976

Handwritten initials, possibly "JY", in the top right corner of the letter.

Mr. Gordon Imata  
Imata & Associates, Inc.  
2615 So. King Street, Room 3A  
Honolulu, HI 96814

Dear Mr. Imata:

Re: Laupahoehoe Point Park

This letter confirms our telephone conversation regarding the sewage disposal system for the subject development. The general plan for the park site include the construction of a wading and a swimming pool which was submitted by the U.S. Army Corps of Engineers. We would like to recommend that the proposed sewage disposal system for the comfort station be located in the driveway or parking lot area with the greatest distance possible away from the near shore waters. Comppools may be utilized, providing significant lava tubes or cracks are not found and the type of soil or rock layers are of acceptable filter material.

We project a sharp increase in the usage of the park site when the wading and swimming pools and the sand beach area are constructed. The proposed sanitary facilities should also project a heavier usage, although the availability of parking area would limit the population allowed.

Please call us if additional information is required.

Handwritten signature of Harold Matsuura in cursive script.

Harold Matsuura  
Chief Sanitarian, Hawaii

HM:acv

GEORGE R. ARIYOSHI  
GOVERNOR



GEORGE A. L. YÜEN  
DIRECTOR OF HEALTH  
AUDREY W. MERTZ M.D.  
DEPUTY DIRECTOR OF HEALTH  
HENRY N. THOMPSON  
DEPUTY DIRECTOR OF HEALTH  
JAMES S. KUMAGAI, PH.D.  
DEPUTY DIRECTOR OF HEALTH

DEPARTMENT OF HEALTH

STATE OF HAWAII

Hilo, Hawaii  
March 15, 1977

Mr. Douglas Yanagihara  
Aotani & Associates, Inc.  
Harbor Square Suite 400  
225 Queen Street  
Box 4376  
Honolulu, HI 96813

SUBJECT: Laupahoehoe Point Parks Sewage Disposal System

Cesspool as the means of sewage disposal for the park's comfort station is acceptable. The concern is for the location of the cesspool. If the direction of current of the near shore waters is toward the wading and swimming pool area, the proposed location of the cesspool, 50' away from the ocean, is questioned.

Please relocate the cesspool site to the farthest point possible away from the proposed pool area.

Please call our office if additional comments are required.

Harold Matsuura  
Chief Sanitarian, Hawaii

HM:acv