# Draft Environmental Assessment

# For Pono Kai Shore Protection

*Prepared for:*

**Department of Public Works**
**County of Kauai**

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# General Information Summary

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|---|---|
| Applicant: | County of Kaua`i, Department of Public Works<br>Mo`ikeha Building<br>4444 Rice Street, Suite 255<br>Līhue, Kaua`i, Hawai`i 96766 |
| Owner: | County of Kaua`i |
| Consultant/Preparer: | Oceanit<br>Suite 600<br>828 Fort Street Mall<br>Honolulu, HI 96813 |
| Approving Agency: | County of Kaua`i, Department of Public Works<br>Mo`ikeha Building<br>4444 Rice Street, Sutie 255<br>Līhue, Kaua`i, Hawai`i 96766 |
| Project Description: | A rock seawall fronting the time-share resort of Pono Kai Resort was reconstructed in 1993 after Hurricane Iniki caused significant shoreline damage. The seawall is damaged and collapsing. Sand is washing through the seawall threatening its stability and causing sink holes that are a safety hazard for bike path users. A new shore protection system is proposed to replace the damaged wall. The land mauka from the wall is owned by the County of Kaua`i and construction will be on County land. The existing seawall will be demolished, and a new sheet pile wall will be built inside the certified shoreline. Excavated sand and sand that was dredged from Waika`ea Canal will be used for beach nourishment fronting the wall. |
| Anticipated Determination: | Finding of No Significant Impact (FONSI) |
| Agencies Consulted: | Corps of Engineers<br>State Department of Land and Natural Resources, Office of Conservation and Coastal Lands<br>State Department of Health, Clean Water Branch<br>State Coastal Zone Management<br>State Historic Preservation Office<br>County of Kaua`i, Planning Department |
| Community Groups Consulted: | Pono Kai Resort |
| Tax Map Key: | (4) 4-5-007:001, 009 |
| State Land Use: | Urban District |
| County General Plan: | Urban Center |
| County Zoning: | Open |
| Special Designations: | Special Management Area and Shoreline Setback |

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# 1 Introduction

This environmental assessment (EA) is being prepared by Department of Public Works (DPW) of the County of Kaua`i, to replace an existing seawall approximately 600 feet long fronting the Kapa`a-Keālia Bike and Pedestrian Path and the Pono Kai Resort. The existing wall was rebuilt in 1993 to stabilize the shoreline that was damaged by Hurricane Iniki. The wall was built of rock with the top portion grouted in place. Waves have washed sand from under and behind the wall. Parts of the wall, especially on the north end, are collapsing inland and sink holes are developing along the mauka side of the wall, causing dangerous conditions. This project will use County of Kaua`i funding to remove the seawall and build a new coastal structure landward from the existing seawall. The project will be constructed within lands owned by the County adjacent to a 12-foot-wide bike and pedestrian pathway that extends for 4.3 miles from Kapa`a to Keālia. The pathway was constructed in 2007. Environmental studies used for this bike/pedestrian pathway will be referenced in this EA.

The proposed shore protection structure is a sheet pile wall with a rock toe. The sheet pile will be built entirely within county property. Construction will require a shoreline setback variance (SSV), a special management area (SMA) use permit, a beach nourishment permit, and a water quality certification. The sheet pile wall will be located mauka of the existing seawall, and the rock toe will help prevent scour and undermining. Rock from the existing wall will be used for the toe.

The project location is shown in Figures 1-1 and 1-2. Photos showing the deteriorating seawall and sinkholes are shown in Figures 1-3 and 1-4.

The tax map key number for this project is (4) 4-5-007:001 (Figure 1-5). The County of Kaua`i is the owner of this parcel.

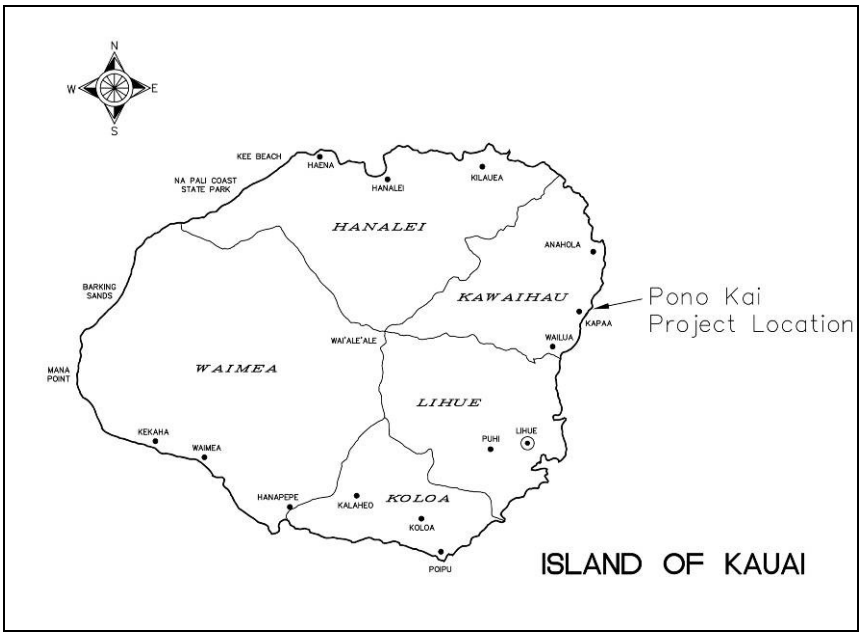


**Figure 1-1. Location of Pono Kai Project**

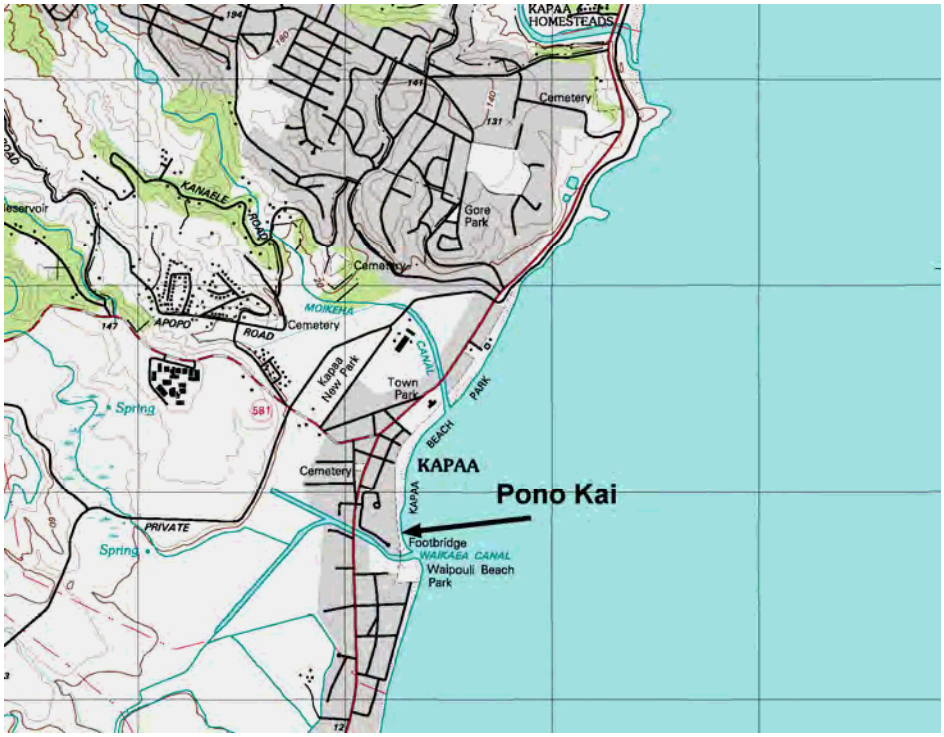


**Figure 1-2. Vicinity Map of Pono Kai Project**

**Figure 1-3. Damaged seawall**

**Figure 1-4. Sinkholes mauka of Seawall**

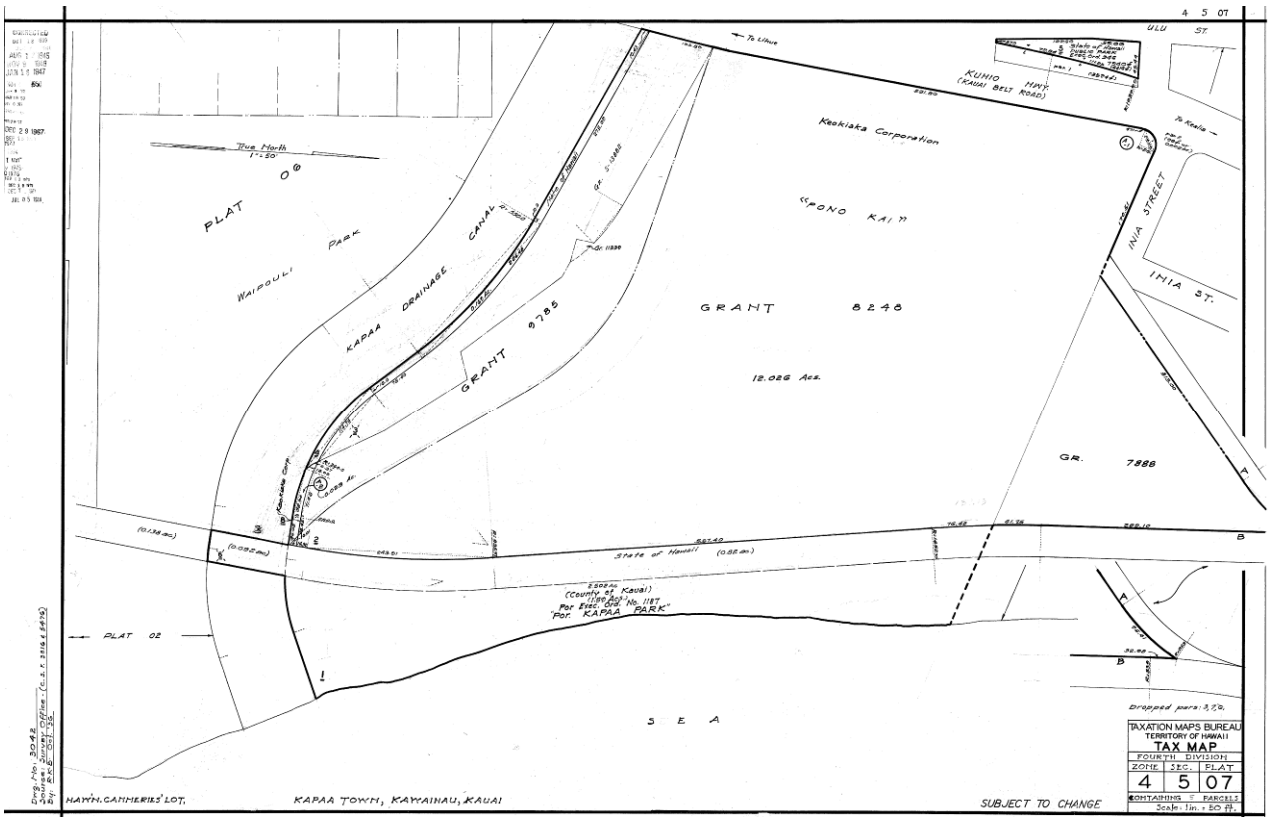


**Figure 1-5. Tax Map Key of Project Site**

# 2 Project Description

## 2.1 Location of Project and Description

The Pono Kai Shore Protection Project is located on the eastern coastline of the island of Kaua`i fronting the Pono Kai Resort in the town of Kapa`a. The existing seawall will be demolished as the new coastal structure of a sheet pile with rock toe is constructed to protect the shoreline. The new sheet pile with rock toe will be built adjacent to the pathway within the Urban district on lands owned by the County of Kaua`i. It will extend from the Waika`ea Canal jetty northward for a distance of approximately 820 linear feet.

Construction of the new sheet pile wall will begin adjacent to and landward of the existing seawall and certified shoreline and extend to the existing pedestrian/bike path. The certified shoreline is mauka of the existing seawall. The rock toe will extend approximately three feet below mean sea level (MSL) to reduce the energy of impinging waves and minimize scour.

Sand was recently excavated from the adjacent Waika`ea Canal. The sand will be used for beach nourishment as well as excess excavated sand from the construction of the new sheet pile wall. Project permits will probably be required from the State Department of Health (DOH), the State Department of Business, Economic Development, and Tourism Office of Planning, the State Office of Conservation and Coastal Lands, and the County of Kauai Planning Department.

## 2.2 Existing Land Use Classifications

The project is located within the urbanized areas of Kapa`a town. The State Land Use designation is "U" (Urban) and the County General Plan designation is "Urban Center" with a narrow strip of park space along the shoreline. The County of Kaua`i zoning designation is "Open" Pono Kai Resort is a timeshare resort that is located inland of the seawall and bike/pedestrian pathway. This bikeway, as shown in Figure 2-1, was built in 2007 and spans 4.3 miles along the coastline from Kapa`a to Āhihi Point. The seawall is on the seaward side of the pathway.

**Figure 2-1. 12-Foot Wide Bike/Pedestrian Pathway**

The project site is within the Special Management Area as shown in Figure 2-2. Therefore a Special Management Area Permit will be required. A shoreline setback variance will also be needed for this project.

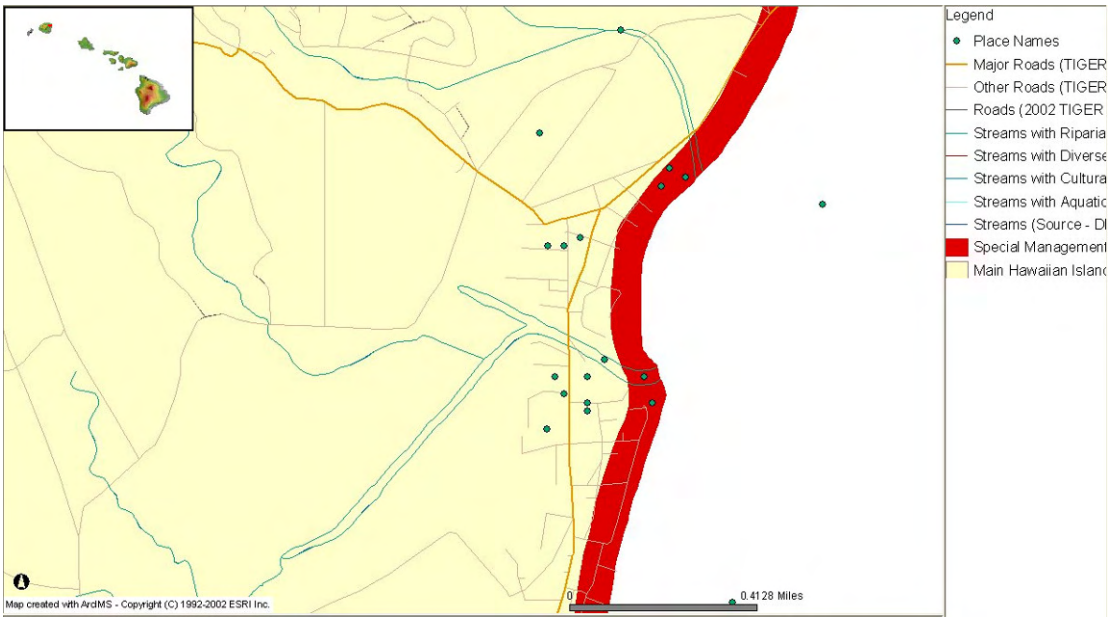


**Figure 2-2. Special Management Area Map**

# 3 Alternatives Considered

## 3.1 No Action Alternative

The no action alternative would mean that the seawall will continue to be undermined by waves and ultimately collapse. Erosion will continue to move inland and ultimately jeopardize the recently constructed bike/pedestrian pathway and existing timeshare development of Pono Kai Resort.

## 3.2 Proposed Project Alternative

The proposed alternative is to construct a new sheet pile wall with rock toe landward of the existing seawall and certified shoreline within lands owned by the County of Kaua`i. This new rock toe will be buried at a depth of about -3 feet mean sea level (MSL) as shown in Figure 3-1. The rock toe will slope landward at 1.5H:1V until it reaches the sheet pile. Rocks from the existing wall will be placed at the toe to reduce wave reflection and protect against scour.

The stockpiled sand taken from Waika`ea Canal will be used as beach nourishment fronting the wall. Excavated sand from the project will also be placed back on the beach fronting the wall. Beach nourishment is proposed as a supplemental protection system to be used in conjunction with the new sheet pile structure.

Coastal structures such as groins might be required in the future to maintain a nourished beach. A detailed study of ocean conditions and sand transport along this coastline is needed to identify a long term solution to coastal erosion.

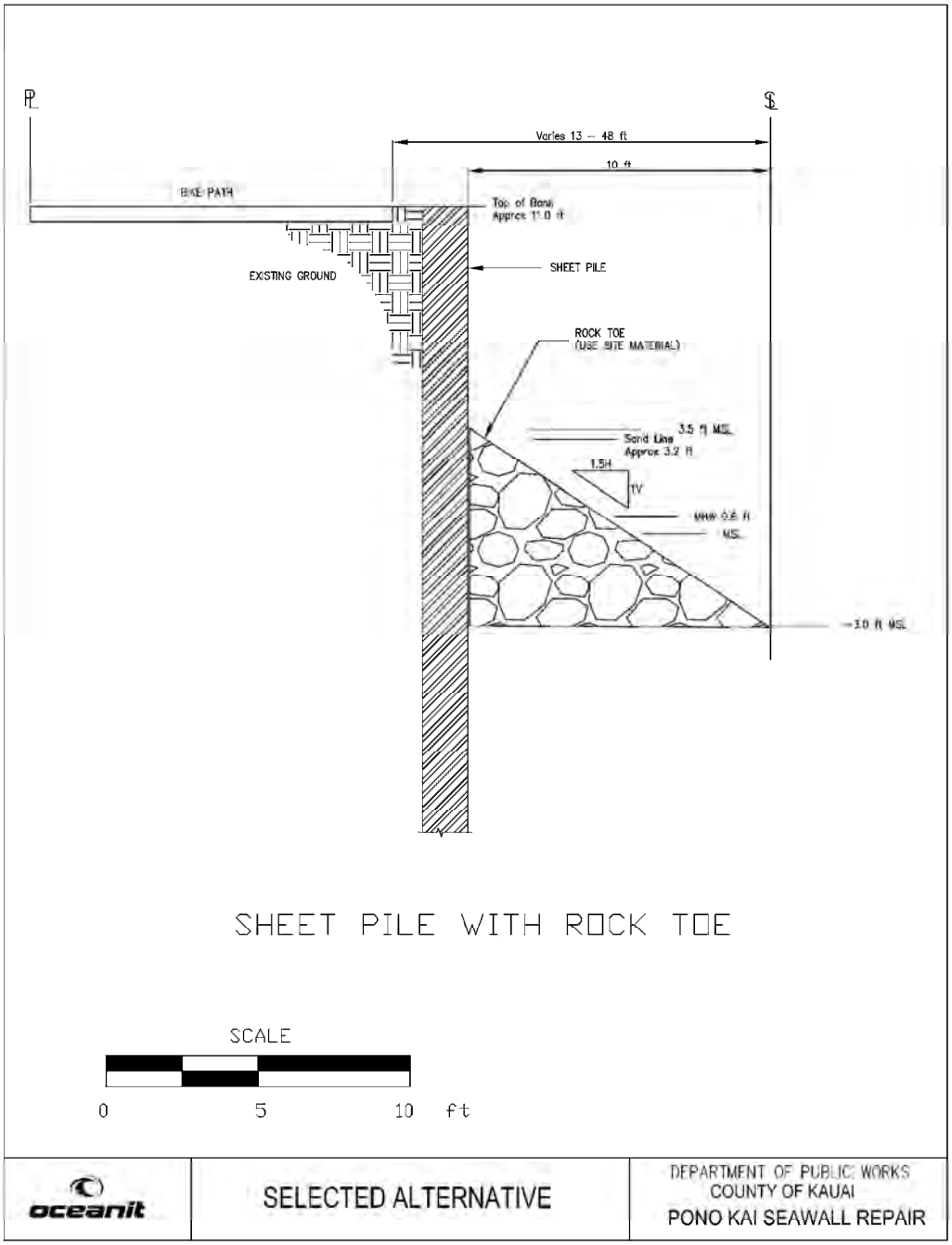


**Figure 3-1. Proposed Sheet Pile Wall with Rock Toe**

## 3.3 Other Alternatives Considered

### 3.3.1 Repair of Existing Wall

Repair of the existing wall was considered as an alternative; however, repair was not selected because the existing seawall foundation is not deep enough to prevent undermining and a filter fabric was not installed on the inland side of the seawall to prevent sand transport through the wall. Portions of the existing wall are located within the Conservation District on the State Land Use Maps. The new sheet pile wall will be constructed further inland on lands owned by the County.

### 3.3.2 Drilled Shaft Retaining Wall

This alternative consists of a series of 30 inch diameter concrete piles that are cast in pre-drilled shafts. Thirty-inch diameter holes are drilled into the substrate to a depth of 25 to 30 feet and a casing is introduced to prevent collapse. The shaft is filled with concrete while the casing is removed. Alternate piles are placed at 24 inches apart and allowed to set. Intermediate piles are then drilled and cast to create a 3 inch overlap that prevents loss of soil from between each pile. As in the earlier alternatives the seaward slope of the seawall will be protected by a rock toe to dissipate wave action and reduce scour at the footing. However, in this option, it is very unlikely that scour will reach the bottom of the piles, and thus there is no possibility of scour failure or sink holes. This alternative was not selected because of the high cost to construct this type of wall.

### 3.3.3 Reinforced Concrete Wall with a Cutoff

This alternative consists of a concrete seawall with a vertical seaward face. The seaward portion of the wall will extend to 6 feet below MSL forming a barrier against soil loss. However, if the beach erosion exposes the bottom of the cutoff wall, soil loss from under the wall will occur resulting in damage to the bike/pedestrian path. This alternative was not selected because of possible functional failure and construction work below water level, which would require dewatering.

### 3.3.4 Reinforced Concrete Seawall Supported by Micro-piles

This alternative consists of a seawall supported on micro-piles driven into the substrate. The piles will be a few feet apart and will be driven to 15 feet below MSL. A pile cap will be placed at 2 to 3 feet below MSL, and the seawall is constructed on the cap. The seaward slope of the seawall will be protected by riprap to dissipate wave action and reduce scour at the footing. This alternative was not selected because of construction below water level and possible scour below the pile cap that will expose the piles that are spaced apart. This might ultimately result in soil loss under the bike/ pedestrian path causing damage.

### 3.3.5 Cement Rubble Masonry Wall

This alternative is a trapezoidal wall built with rocks that are grouted in place and buried to a depth of four to six feet below sea level. The seaward side of the wall would slope 1H:12V and the inner slope would be at 5H:12V. Again this alternative would require dewatering so that the bottom layers of the wall can be grouted. If erosion continues, the bottom of the wall could become exposed and scour below the wall. Therefore this alternative was not selected.

### 3.3.6 Rock Revetment

A rock revetment could be constructed along the eroding shoreline. The revetment would consist of a double layer of bedding stones and a double layer of armor stones placed on a slope of 1V:1.5H. The toe stones would be buried 3-4 feet below sea level to prevent damage form scouring. However, a rock revetment covers more space than is available between the shoreline and the Pono Kai Resort property. There would be insufficient space for the bike path on county property. Because of space limitations, this alternative was not selected.

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# 4 Physical, Biological and Cultural Environment

## 4.1 Climate, Topography, and Soils

The island of Kaua`i has a land area of about 555 square miles, is the fourth largest island in the Hawaiian island chain, and is the northernmost and geologically the oldest of the major islands within the State (SCS, 1972). Kaua`i is a shield volcano classified in the Waimea Canyon volcanic series.

Kaua`i, like the other Hawaiian Islands, has a mild semi-tropical climate. The northeast trade winds blow approximately 80 percent of the time. During winter months, the trade winds are interrupted by cyclonic disturbances known as "Kona" storms where the wind direction is from the southeast.

The elevation of the island rises from sea level to an elevation of 5,170 feet at Kawaikini Peak near the center of the island. The topography at the seawall site rises from sea level to about 12 feet above mean sea level (MSL).

The island of Kaua`i is made up of 10 soil associations. Soil associations in the vicinity of the project site consist of the Jaucas-Mokulē`ia, Hanalei-Kolokolo-Pākalā and Līhue-Puhi soils (SCS, 1972). The Jaucas-Mokulē`ia soils are found along the coastline and are well-drained soils with a coarse texture. Hanalei-Kolokolo-Pākalā soils are found on bottom lands of the island and are nearly level. The soils could either be poorly drained or well-drained. The Līhue-Puhi soils are well-drained soils with fine to moderately fine textured subsoil. Soils specific to the project site are Beaches (BS) and Mokulē`ia fine sandy loam (Mr). Beaches consist mainly of light-colored sand derived from coral and seashells. The Mokulē`ia soils consist of well-drained soils found along the coastal plains.

### 4.1.1 Impacts

The seawall's purpose is to prevent erosion along the coastline fronting a portion of the bike path and the Pono Kai Resort. Over time, the wall will maintain the existing topography in the area and will have no adverse effects. By reducing erosion, the wall will assist in maintaining nearshore water quality.

### 4.1.2 Mitigation

The seawall is not expected to adversely affect the climate, topography, or soils. Therefore, no mitigation measures are proposed.

## 4.2 Natural Hazards

Natural hazards consist mainly of tsunami, hurricanes, high wave events, flooding, and earthquakes. A coastal evaluation of the site was conducted for the bike/pedestrian path situated a few feet inland from the proposed seawall. The proposed seawall lies within the tsunami evacuation zone. Wave heights from the 1946 and 1960 tsunami were 18 and 6 feet, respectively. These wave heights would overtop the wall.

According to the Flood Insurance Rate Map (FIRM), the southern side of the seawall near Waika`ea Canal may be in the 100-year flood zone (VE and AE) as shown in Figure 4-1. Nearby areas are also in the 500-year flood zone (X500). The seawall and bike path will drain naturally into the ocean.

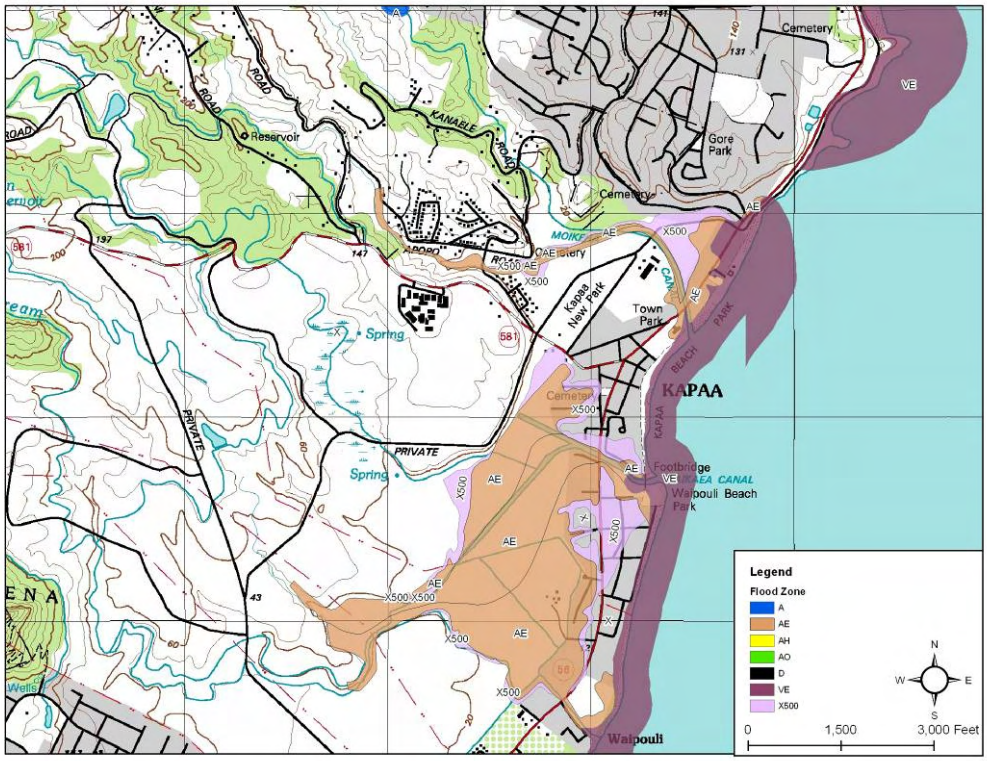


**Figure 4-1. FEMA Flood Map**

The island of Kaua`i has a low rating of Zone 1 for seismic activity from earthquakes. Therefore, no special construction methods for seismic activity will be required.

The existing seawall was constructed in response to damages that occurred as a result of Hurricane Iniki that passed directly over the island of Kaua`i in 1992. Damage caused by this hurricane was estimated at $2.4 billion (Juvik, 1998). Hurricanes cause damage with heavy rains, strong winds, and storm surge. Damage to the new seawall from future hurricane storm surge is possible.

### 4.2.1 Impacts

The new sheet pile wall could be damaged by a tsunami or hurricane. It should not affect flooding from Waika`ea Canal. The seawall will offer some protection to property from high waves but could be overtopped under severe conditions.

### 4.2.2 Mitigation

Since the project will not have an adverse impact on natural hazards, no mitigation is recommended.

## 4.3 Ocean and Coastal Environment

The Pono Kai seawall is located on the east coast of Kauai in Kapa`a. The site is adjacent to the Waika`ea Canal, which drains areas inland from Kapa`a (See Figure 4-2). The shoreline is subject to waves from the northeast to the south that include trade wind waves, North Pacific swell, southern swell, and Kona storm waves. Trade winds blow year round varying predominantly from the north to the east. A sand beach fronts the shoreline at the seawall and continues north along Kapa`a Beach Park. Average beach erosion rate as determined by the University of Hawaii Coastal Geology Group from historical aerial photographs is about 1.5 ft/year at the project site. The beach fronting the seawall is not protected by nearshore reefs as is the adjacent shoreline to the north. The nearshore bottom consists of reef flats, aggregate reef, and sand channels. A large sand channel extends seaward from Waika`ea Channel and is contiguous with the beach at the seawall.


**Figure 4-2. Aerial of Coastline Features**

### 4.3.1 Impacts and Mitigation

No adverse impacts are expected by replacing the existing seawall with a sheet pile wall with a rock toe. Therefore, no mitigation is planned.

## 4.4 Aquatic Resources and Water Quality

A survey of the marine ecosystem was conducted on April 24, 2008 to determine whether or not there were any significant aquatic resources fronting the proposed new seawall (see Appendix A). Eight transects perpendicular to the shore were performed. At transects one through five, no organisms were observed on the sandy bottom except for sea cucumbers that were clustered near a single boulder five yards from the shoreline.

Transects six through eight crossed over a patch reef. There were very few coral colonies on the reef with the largest measuring 18 inches in diameter. The reef consisted of a basalt bench that showed signs of erosion from the surrounding sand.

Numerous species of juvenile fish were observed over the patch reef, although the abundance was low. Fish species observed include: *Canthigaster jactator* (Hawaiian whitespotted toby), *Ostracion meleagris* (Spotted trunkfish), and *Thallosoma duperrey* (Saddle wrasse).

Temperature of the water above the reef averaged 25.2 degrees Celsius with a mean pH of 8.6. Salinity was 36.2 ppt. Laboratory analysis of collected water samples showed total suspended solids in the surface water of 3.2 mg/L and 6.1 mg/L at a depth of three feet.

None of the species observed are on the threatened or endangered list. The Hawaiian green sea turtle is known to forage on reef flats, but none were observed during the survey. The endangered Hawaiian monk seal could also use the beach, but none were observed during the survey.

### 4.4.1 Impacts

None of the aquatic resources found during the survey are considered threatened or endangered. Thus no impacts on marine resources are expected. The endangered green sea turtle and the monk seal may occasionally visit this area.

### 4.4.2 Mitigation

During construction, if a monk seal is seen resting on the beach, the Kaua`i representative for the Department of Land and Natural Resources and the National Oceanic and Atmospheric Association will be contacted and all construction activities will cease operations. If turtles are observed in the construction area, work will also stop until they leave.

## 4.5 Botanical Resources

A botanical survey of the site was conducted in July 2002 for the bike/pedestrian path project by the County. The survey did not find any state or federally listed threatened or endangered plant species in

the area. Most plant species were alien with a few indigenous plants and one endemic vine, *Jacquemontia ovalifolia sandwicensis.*

### 4.5.1 Impacts

Since there were no state or federally listed threatened or endangered plant species in the vicinity of the new seawall, no adverse impacts are expected.

### 4.5.2 Mitigation

There will be no impacts on threatened or endangered plant species, so no mitigation is required. A visual observation of the site also verified that plants within the vicinity of the new seawall are mainly landscaping within the Pono Kai Resort property. The area between the existing seawall and bike/pedestrian path consists mainly of grasses.

## 4.6 Avifaunal and Feral Mammals

A survey of the avian and terrestrial mammalian species was conducted in August 2002 for the construction of the bike/pedestrian path just mauka of the existing seawall (David, 2002). The avian survey results observed 17 species of birds. Two of the bird species observed are listed as endangered, endemic sub-species: the Dark-Rumped Petrel and the Common Moorhen. One threatened, endemic sub-species, Newell's Shearwater, was also observed. Two indigenous species, Wedge-tailed Shearwater and White-tailed Tropicbird were observed during the survey. The remaining 12 species of birds were alien to Hawai`i.

The results of the survey indicated that there were no nesting colonies nor were there any appropriate habitat for these endangered, threatened or indigenous birds. However, it was recommended that construction activities should not be allowed within the streams, canals or nearshore waters. Best management practices to prevent runoff from construction activities into nearby receiving waters should be implemented.

The endangered Hawaiian Hoary Bat was seen on both nights of the survey. A total of five individuals were observed. This species is regularly seen in the lowland areas of Kapa`a and the detection of these mammals was expected. Mammalian surveys conducted in the past have also observed this endangered mammal.

Other mammals included domestic dogs, cats, and horses. Although no rodents were observed, the study indicated that it is likely that these mammals are present in the vicinity of the project site.

### 4.6.1 Impacts

Since there is no habitat available for the endangered or threatened bird species observed at the site, no adverse impacts are anticipated. The Hawaiian Hoary Bat is commonly seen in this area and tends to forage at dawn and dusk during non-construction hours. Therefore, construction operations are not expected to impact the endangered mammal. Once the seawall is constructed, no adverse impacts are expected on endangered or threatened birds or mammals in the area.

### 4.6.2 Mitigation

Because there is no appropriate habitat for the endangered birds observed in the area, no impact is expected. To minimize impacts on the Hawaiian Hoary Bat during construction, work hours will be established to avoid the typical foraging periods at dawn and dusk.

## 4.7 Historic, Archaeological, and Cultural Resources

An archaeological inventory survey was conducted for the bike/pedestrian path adjacent to the project site and is documented in a report dated September 2002 by Cultural Surveys Hawai`i. This inventory survey covered the area from the coastline to just mauka of the bike/pedestrian path. Thirteen backhoe trenching was conducted at Lihi Park and Keālia Beach Park, but none fronting the Pono Kai Resort.

Archaeological sites found near the project site include the Waika`ea Railroad Bridge over Waika`ea Canal, an old railroad foundation on the Pono Kai Resort property, and stairs to an old pavilion at Kapa`a Beach Park. The new seawall will not have an adverse impact on these known sites.

A cultural impact assessment was also conducted and documented in a report dated September 2002 for the bike/pedestrian path. There were two major concerns expressed by those interviewed: 1) impacts on burials; and 2) impacts on marine and stream resources.

If any inadvertent finds are uncovered during the excavation phase of the project, the State Historic Preservation Division (SHPD) will be consulted. In consultation with the SHPD, it was recommended that an archaeologist be present at the site during excavation in the event there are any inadvertent finds.

For impacts on marine and stream resources, the main concerns were overfishing and trash. Trash can be handled through adequate maintenance of the area. This issue was a concern since the bike/ pedestrian path would increase the number of people accessing the shoreline area. In the case of the replacement of the existing seawall, the new sheet pile wall is not expected to attract additional visitors to the area.

The issue of overfishing was also in response to the bike/pedestrian path. The new sheet pile wall is not expected to attract additional fishermen to the area. Any actions regarding overfishing would probably require legislative action to limit fishing during certain seasons or limit the quantity or size of fish caught. This type of action could meet with opposition because of traditional cultural practices.

### 4.7.1 Impacts

None of the archaeological sites were discovered in the vicinity of the proposed seawall. Therefore, no adverse impacts on archaeological resources are expected. The construction of the wall is also not expected to increase visitors to the area. Therefore no adverse impacts from additional trash and overfishing are expected from this project.

### 4.7.2 Mitigation

The State Historic Preservation Division (SHPD) recommends that the site be monitored by an archaeologist during construction. Should inadvertent finds be uncovered during construction, all work will cease and the SHPD will be contacted to determine what appropriate mitigation measures will be needed.

Replacement of the seawall is not expected to have any adverse impact on cultural practices in the area.

## 4.8 Visual Resources

The Kapa`a-Wailua Development Plan dated December 1973 identifies one location at Kapa`a Beach Park makai of the parking lot as a view line for ocean scenic views. The proposed seawall is located south of the viewing area and will not impact scenic resources. The seawall is not expected to block views from residents at the Pono Kai Resort since the highest point of the seawall will be at the same elevation as the bike path. The existing seawall is being replaced mainly to prevent erosion along the coastline and protect the bike path and Pono Kai Resort.

### 4.8.1 Impacts

No adverse impacts are expected from the replacement of the seawall.

### 4.8.2 Mitigation

Since no adverse impacts from the sheet pile wall are expected, no mitigation is planned. However, landscaping using native plants like naupaka could be used for additional soil stabilization and as a visual amenity.

## 4.9 Air Quality and Noise

The State Department of Health, Clean Air Branch, monitors ambient air in the State of Hawai`i via 16 air monitoring stations on four islands. Oahu has nine monitoring stations, Big Island has five and there are one each on Maui and Kaua`i. The Environmental Protection Agency has set standards for six pollutants: 1) carbon monoxide; 2) nitrogen dioxide; 3) sulfur dioxide; 4) lead; 5) ozone; and 6) particulate matter ($PM_{2.5}$ and $PM_{10}$). Particulate matter is measured in microns. The subscript 2.5 and 10 represents microns in aerodynamic diameter. Because of volcanic activity, the State has also set standards for hydrogen sulfide, which is monitored on the Big Island. Only particulates ($PM_{10}$) are measured on Kaua`i.

The State has set more stringent standards for nitrogen dioxide and carbon monoxide. The Federal standard for nitrogen dioxide is 100 $\mu g/m^3$ (micrograms per cubic meter of air) whereas the State standard is 70 $\mu g/m^3$. For Carbon Monoxide, the 1-hour Federal standard is 40,000 $\mu g/m^3$ and the State standard is 10,000 $\mu g/m^3$.

According to the 2006 annual summary none of these pollutants exceeded State or Federal standards in the last 5 years from 2002 to 2006. Ambient air quality in the State of Hawai`i continues to be the one of the best in the nation.

Noise pollution is regulated by the State Department of Health which has set specific decibel levels into three classes based on land use. Hawai`i Administrative Rules Title 11, Chapter 46, Community Noise Control contains the specific sound levels in dBA and is shown in Table 1.

**Table 4.1: Maximum Permissible Sound Levels in dBA**

| Zoning District | Daytime (7 a.m. to 10 p.m.) | Nighttime (10 p.m. to 7 a.m.) |
|---|---|---|
| Class A | 55 | 45 |
| Class B | 60 | 50 |
| Class C | 70 | 70 |

Class A zoning district are lands zoned residential, conservation, preservation, public space, open space, or similar type. Class B lands are zoned for multi-family dwellings, apartment, business, commercial, hotel, resort, or similar. Class C includes lands zoned agriculture, country, industrial, or similar types. Since the seawall is located alongside the bike/pedestrian path, Class A has been identified as the standard to use for this assessment.

Noise levels cannot exceed the dBA identified above for more than 10 percent of the time within any twenty minute period, except by permit or variance. Impulsive noise shall be ten dBA above the maximum permissible sound levels. Impulsive noise includes activities such as hammering, pile driving, and explosion. Construction equipment with a motor and/or exhaust system shall operate with a muffler, except for pile hammers or pneumatic hand tools weighing less than fifteen pounds.

### 4.9.1 Impacts

In the immediate vicinity of the construction activities, short term impacts on air quality are anticipated from the movement and excavation of sand to build the seawall. Release of particulate matter is not expected to be excessive since most of the sand that will be removed will probably be wet. However, if the sand is stockpiled and dries before it is backfilled, particulate matter from the dried sand could become airborne.

Short term noise impacts are also associated with construction activity. Heavy equipment will be used to build the sheet pile wall. Sheet piles could be driven by a vibrating or hammer pile driver, which can generate high noise volume. Depending on the method of installation, a noise permit may be required.

### 4.9.2 Mitigation

The construction site will be watered down periodically to prevent particulate matter from becoming airborne during construction. Dust screens may also be used to protect the construction site from

exposure to wind and to also minimize airborne particulate matter. Once the project is completed, the air quality in the area will not be different from the existing conditions.

Noise impacts will also be generated from construction equipment. Curfew times for construction will be established and mufflers will be used on equipment to minimize noise from construction equipment. Again these impacts are short term and will occur during construction. After construction is completed, no noise impacts will be generated by the project.

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# 5 Social and Economic Factors

This section describes the social and economic environment of the Kapa`a area where the new seawall will be built. Factors such as demographic characteristics and economic context are described below.

## 5.1 Social Factors

Population of the County of Kaua`i was 58,463 people according to the 2000 census data. This represents only 5 percent of the total population of the State of Hawai`i. Kawaihau district had a population of 18,525 people with Kapa`a town accounting for 9,472 people.

The average number of people per household on the island of Kaua`i in 2000 was 2.86 people. This average household size is lower than a decade earlier when the number of people per household was 3.09.

The largest ethnic population of Kaua`i is Asian with 21,042 people, followed by White with 17,255 people. Native Hawaiians are the third largest ethnic population with 5,334 people. These numbers represent people that declared one race on the census survey.

Housing units on Kaua`i in year 2000 totaled 25,331 compared to 460,542 units in the State. Owner occupied units totaled 12,384 units and renter occupied units totaled 7,799 unit. Vacant units totaled 5,148. Homeowner vacancy rate was 1.2 percent while the rental vacancy rate was 6.1 percent. The median value of housing units on Kaua`i in 2000 was $216,100.

### 5.1.1 Impacts and Mitigation

Construction of the seawall is not expected to have adverse impacts on the social environment on Kaua`i. Thus no mitigation is planned.

## 5.2 Economic and Fiscal Factors

Civilian labor force for the island of Kaua`i in 2006 is estimated at 32,550 people. The labor force is comprised of persons 16 years of age and over. Kaua`i has the smallest labor force compared to the other three counties. Oahu has the highest with a labor force of 439,850 people. On Kaua`i 31,800 people in the labor force are employed. The unemployment rate is 2.3 percent. The average annual income is $31,390 on Kaua`i compared to $37,656 on Oahu.

Leisure and hospitality industry has the highest number of jobs at 8,550. These jobs include arts, entertainment, recreation, accommodation, food services, drinking places and full-service restaurants. The second highest job count was the Trade, Transportation, and Utilities industry with 6,150 jobs. These jobs include wholesale and retail trade, transportation, warehousing, air transportation and utilities. Government (Federal, State, and Local) accounted for the third highest job count of 4,250. The job count in the agricultural industry was in the bottom three lowest with 700 jobs.

There were 565 farms on Kaua`i in 2002 covering 151,828 acres. The average farm size was 269 acres. Farms between 1 to 9 acres were the most abundant with 352 farms followed by 127 farms between 10 to 49 acres. Crop lands totaled 474 acres with the remaining in livestock and poultry. Crop lands include sugarcane, pineapple, fruits, vegetables, coffee, flowers, seed crops, nursery products, and macadamia nuts. Livestock include cattle and calves, hogs and pigs, and chickens.

### 5.2.1 Impacts

Long-term adverse impacts on the economy are not expected from the construction of the new seawall. Short term positive impacts are expected from direct and indirect employment and supplies needed to construct the wall.

### 5.2.2 Mitigation

No mitigation is needed on the economic environment of the project since the project is relatively small and will have a short term positive impact on the economy.

# 6 Infrastructure, Public Facilities, and Utilities

This section describes the existing infrastructure, public facilities, and utilities in the vicinity of the project site and any adverse impacts that the project will have. Water, wastewater, drainage, solid waste, transportation, electric, telephone, cable, medical, schools, police, and fire will be addressed in this section.

## 6.1 Water, Wastewater, Drainage, and Solid Waste

Services provided by the County of Kaua`i include water, wastewater, drainage, and solid waste. Water is managed by the Department of Water. In the Kapa`a area, the main water supply mains are installed along Kūhiō Highway. Construction of the new seawall will not impact the water supply or distribution systems in the area

Wastewater facilities are handled by the Department of Public Works. Sewer lines have been installed in Kapa`a town. The project will not have an impact on the wastewater facilities.

Nearby drainage consists mainly of surface runoff sheet-flowing into the ocean or into the two nearby canals, Waika`ea and Moikeha, which flow into the ocean. No increase in runoff is expected from the project.. Storm water runoff near the project currently sheet-flows over the existing wall into the ocean.

The County maintains an island-wide system of solid waste collection and disposal. Kekaha Landfill is the primary disposal site for solid waste with refuse transfer stations located throughout the island. The nearest transfer station is the Kapa`a station. The new seawall is not expected to have an adverse impact on solid waste facilities. Rocks from the existing seawall will be reused to build the new sheet pile toe.

### 6.1.1 Impacts and Mitigation

The new sheet pile wall is not expected to have an adverse impact on water, wastewater, drainage, or solid waste facilities. Therefore, no mitigation is planned.

## 6.2 Transportation

Kūhiō Highway is the main vehicular access to this area and is under the jurisdiction of the State Department of Transportation. The construction of the sheet pile wall is not expected to have an impact on existing roadways since the construction site is located on the coastline. However, bike and pedestrian traffic along the bike/pedestrian path will need to be temporarily routed around the construction site. After construction, full use of the path will be restored.

### 6.2.1 Impacts

Short term impact to bikers and pedestrians will occur during construction of the new seawall. Construction equipment will block this section of the path and bikers and pedestrians will have to be routed around the construction area on the mauka side of the site.

### 6.2.2 Mitigation

A temporary path located mauka of the construction site will be provided to allow continuous movement along the existing path. Once construction is completed, the path will be restored to the existing condition.

## 6.3 Power and Communications

Electricity is provided by Kaua`i Island Utility Cooperative, and Hawaiian Telephone and Sandwich Isles Communications provide telephone service. Oceanic Time Warner Cable provides cable TV service. The new seawall will not require electricity, telephones or cable service.

### 6.3.1 Impacts and Mitigation

Since the project will not require electricity, telephone, or cable services, no impacts on these systems are expected and no mitigation is required.

## 6.4 Medical, Schools, Police, and Fire

Medical facilities in the area include Kaua`i Medical Clinic and Samuel Mahelona Memorial Hospital. Public schools include Kapa`a Elementary, Kapa`a Middle School, and Kapa`a High School. A police substation is located along Niu Street and the nearest fire station is located on Kūhiō Highway near Pouli Road. No effects on these facilities are expected from the project.

### 6.4.1 Impacts and Mitigation

No impacts on medical, schools, police, and fire are expected. Thus no mitigation is required.

# 7 Conformance with Plans and Policies

This section will describe the relationship of the project to applicable State and County policies. Only those policies related to the proposed sheet pile seawall will be described.

## 7.1 Hawai`i State Plan and Functional Plans

The Hawai`i State Plan was developed to serve as a guide for future development of the State of Hawai`i in areas of population growth, economic benefits, enhancement and preservation of the physical environment, facility systems maintenance and development, and socio-cultural advancement. The Plan identifies, in general, the goals, objectives, policies and priorities for the development and growth of the State.

Twelve Functional Plans were also developed to further define the goals and objectives of the Hawai`i State Plan. The twelve functional plans include: 1) Agriculture; 2) Conservation Lands; 3) Employment; 4) Energy; 5) Health; 6) Higher Education; 7) Historic Preservation; 8) Housing; 9) Recreation; 10) Tourism; 11) Transportation; and 12) Water Resources Development.

Functional plans that have a positive or adverse impact from the proposed sheet pile with rock toe are Employment and Historic Preservation.

### 7.1.1 Employment Functional Plan

The major issues of concern for the Employment Functional Plan are:

1) Improve the qualifications of entry-level workers and their transition to employment;

2) Develop and deliver education, training and related services to ensure and maintain a quality and competitive workforce;

3) Improve labor exchange;

4) Improve the quality of life for workers and families; and

5) Improve planning of economic development, employment and training activities.

Construction of the project will have a short-term positive impact on employment by providing direct and indirect jobs. After construction is completed, no new jobs will be created.

### 7.1.2 Historic Preservation Functional Plan

The issues of concern in the Historic Preservation Function Plan are:

1) Preservation of historic properties;

2) Collection and preservation of historic records, artifacts and oral histories and perpetuation of traditional skills; and

3) Public information and education on the ethnic and cultural heritages and history of Hawai`i.

Construction of the existing seawall and the adjacent bike/pedestrian path did not uncover any historic or cultural resources of significance. However, if any inadvertent finds are uncovered during construction, work will cease and the SHPD will be consulted. An archaeologist should monitor the site during excavation activities.

## 7.2 Kaua‘i General Plan

The Kaua`i General Plan is the guiding document for Ordinance No. 753, Bill No. 1957, Chapter 7, and HRS Chapter 46. It provides the framework for land use regulations, the location and character of new development and facilities, and planning for County and State facilities and services.

The island of Kaua`i was divided up into five planning districts: 1) North Shore; 2) Kawaihau; 3) Līhue; 4) Kōloa-Po`ipū-Kalāheo; and 5) West Side. The project site is located in the Kawaihau planning district. One of the major components of the plan was the development of Heritage Resources Map and the Land Use Map for each district. The heritage resources map identifies known historic, scenic, and other unique qualities of the district. The land use map identifies the future land use vision for development in the district.

The heritage map shows several historic buildings in the vicinity of the project site. These historic buildings will not be affected by the construction of the sheet pile with rock toe. The land use map shows "Park" designation immediately along the coastline with "Urban Center" mauka of the "Park" lands. Construction of the sheet pile seawall will not change the land use designations in Kapa`a town.

## 7.3 Kapa`a-Wailua Development Plan

To further guide how each district should grow, the Development Plans were developed to provide more detailed guidance for development in each of the five districts. These plans are an expression of community values and provide form and substance to the goals and aspirations of those who live, work, and play in an area. The development plan map identifies the project site as "Beach Park" makai of the bike-pedestrian path. Construction of the sheet pile seawall will not affect the land use designation for this area.

# 8 Significance Criteria

To determine whether a proposed action may significantly affect the environment, it needs to consider every phase of the action, the expected primary and secondary consequences, and the cumulative as well as the short and long-term effect of the action. Therefore, evaluation of the significance criteria determines if there are any significant impacts on the environment. The following criteria are used to determine significance of project activities, if any.

*(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;*

The project will not result in the irrevocable commitment to loss or destruction of any natural or cultural resource. However, if inadvertent finds are uncovered during construction, work will cease and the SHPD will be contacted.

*(2) Curtails the range of beneficial uses of the environment;*

The new sheet pile seawall will preserve the beneficial uses of the environment by preventing the coastline from eroding into the ocean from waves and currents. The project will also allow continued recreational use of the pedestrian and bike path.

*(3) Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;*

The project will not conflict with the State's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS. Evaluation of the construction activity described in this EA shows that the project will not have long-term negative impacts. Short-term negative impacts will occur during construction from noise, dust and turbidity in the water. However, these impacts can be mitigated by the use of best management practices such as mufflers on equipment, frequent watering to keep dust down, and control of construction material including rock and sand.

*(4) Substantially affects the economic or social welfare of the community or state;*

The project will have a short-term positive effect on the economy from jobs and increased revenue during construction. However, after construction the seawall will not directly affect the economy. The project also will not affect the social welfare of the community or the state.

*(5) Substantially affects public health;*

Construction of the sheet pile with rock toe will protect the bike path that is used for recreation and exercise. The result should be a positive effect on public health.

*(6) Involves substantial secondary impacts, such as population changes or effects on public facilities;*

The new sheet pile with rock toe will have no impact on population, but will make the public bike path safer.

*(7) Involves a substantial degradation of environmental quality;*

The sheet pile seawall will not substantially degrade environmental quality. The wall will actually reduce loss of topsoil into the ocean.

*(8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;*

The project is not part of a larger action and will not contribute to cumulative adverse environmental effects on the environment. The wall does not trigger any commitment for larger actions.

*(9) Substantially affects a rare, threatened, or endangered species, or its habitat;*

Neither the construction nor the wall itself should negatively affect any endangered species or their habitat. The endangered Hawaiian Hoary Bat is known to forage in the area. These mammals forage at dawn and dusk, which is before and after the construction operations. After construction completion, the sheet pile with rock toe will have no affects on the endangered bat.

No lighting is planned for the new sheet pile wall that would affect the flight of the Dark-rump Petrels and Newell's Shearwater birds. Thus no impact on these nocturnally flying birds is expected.

Should a monk seal haul itself out on the beach near the construction site, construction will cease until the Kauai representative of the Department of Land and Natural Resources makes a determination on whether the construction activities are disturbing the monk seal. If so, work will commence after the monk seal has left the area.

There were no threatened, rare or endangered botanical resources seen in the vicinity of the project. Therefore, no negative impacts on plants are expected during or after construction.

*(10) Detrimentally affects air or water quality or ambient noise levels;*

Short-term impacts on air quality and noise levels will occur during construction. However, when the construction is completed, no long-term effects on air quality and noise level are expected.

Construction of the sheet pile and rock toe may temporarily increase turbidity in nearshore waters. Best management practices will be implemented to minimize the effects of turbidity or other pollutants.

*(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;*

The planned new sheet pile with rock toe and adjoining beach are within the tsunami inundation area and within the coastal flood zone where storm wave action can be a hazard. The beach occurs naturally at this location. The threat from erosion and coastal flooding is no different from that facing the existing seawall. By replacing the existing damaged wall with a sheet pile with rock toe, the potential for damage to the structure and protected bike path is reduced.

*(12) Substantially affects scenic vistas and viewplanes identified in county or state plans or studies;*

The sheet pile wall is not within an identified view plane. Residents and visitors to the Pono Kai Resort will continue to have a view of the ocean. Bikers and pedestrians along the adjacent walkway will also continue to have views of the ocean.

*(13) Requires substantial energy consumption.*

The new sheet pile with rock toe is not dependent on electricity and will not have an impact on energy consumption. Construction equipment will use fuel to work. When construction is completed, no other energy will be needed.

## 8.1 Anticipated Determination

A Finding of No Significant Impact (FONSI) determination is anticipated for the project based upon the information provided in this EA document. The results of the assessments conducted have determined that there will be no significant negative impact from the installation of the new sheet pile with rock toe.

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# 9 Permits and Approvals

This section lists the anticipated permits and approvals that will be required to construct the new sheet pile with rock toe. Although the project is along the coastline, the new sheet pile with rock toe will not be within the conservation district; therefore a Conservation District Use Permit will not be required.

## 9.1 Permits Required

Table 9.1 lists the two County permits that will be required to replace the existing seawall with a sheet pile with rock toe. Other Federal and State permits that may be required are also shown below.

**Table 9.1 Permits Required**

| Permit | Agency Approval |
|---|---|
| Special Management Area Use Permit | County of Kaua`i Planning Department |
| Shoreline Setback Variance | County of Kaua`i Planning Department |
| Beach Nourishment Permit | State Department of Land and Natural Resources, Office of Conservation and Coastal Lands |
| 401 Water Quality Certification | State of Hawaii Department of Health |
| Coastal Zone Management Federal Consistency | Office of Planning, DBEDT |

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# Appendix A

# Terrestrial and Aquatic Assessment

# Terrestrial and Aquatic Assessment

# For Pono Kai Sea Wall

*Prepared for:*

**Department of Public Works**
**County of Hawaii**

*Prepared by:*
oceanit

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June 2008

# Table of Contents

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# 1 INTRODUCTION

The proposed project is to rebuild a deteriorating rip-rap sea wall that protects a public walking/bike path. The bike path runs parallel to the shoreline and is bordered by the Pono Kai Condominiums on the landward side and the seawall and beach at Kapa'a, Kauai. Regular wave action causes soil erosion behind the wall's boulders, undermining it. This report discusses a survey of the marine community ecosystem undertaken for an environmental assessment and applicable permit applications in anticipation of reconstructing the sea wall mauka of the existing wall, closer to the bike path.

# 2 METHODS

The field reconnaissance survey took place on April 24, 2008 between 8 am and 2 pm by an Oceanit biologist and a field technician. A qualitative survey of the nearshore and intertidal marine environment was conducted using face mask and fins of the area fronting the sea wall and documented with an underwater camera. Terrestrial vegetation in and adjacent to the project site was also identified. A water quality probe was deployed during the day of the survey over the reef flat, suspended approximately three feet below the water surface. Water samples were collected at a location with a four foot depth at Transect 4. One water sample was collected from the top three inches of the surface and the other from three feet below the surface (Figure 1).

The marine survey was conducted during a rising tide. This coastline is typically exposed to northeasterly trade winds and associated wind-swell. A calm day was selected for the survey: wave action was minimal, and winds were out of the southeast, 0-5 mph in the morning, building to 10-15 mph in the afternoon. Skies were clear to partly cloudy, and water visibility ranged from 5-10 feet within 24 feet of the shore, increasing to 30 feet beyond this distance.

Marker flags were placed approximately every 75 feet along the face of the seawall, to establish eight transects perpendicular to shore. The northern face of the Waika'ea Canal breakwater was considered a ninth transect. A line formed between the outermost extent of the channel breakwater and another deteriorated sea wall 1/2 –mile north of the project site represented the terminus of the transects. To survey the area, the diver swam alternately in then out along each transect, recording information on an underwater tablet and taking photographs where appropriate. Figure 1 illustrates the area surveyed.

The original reconnaissance plan for this site investigation included additional surveys outside the project area. These areas included the faces of the breakwater in the Waika'ea Canal, as well as an area immediately south of the stream channel. Due to the arrival of a barge in preparation for dredging activities (unrelated to this project), a thorough survey of the breakwater walls in the channel was not possible. Redirected boat traffic (due to the barge in the main channel) also prevented a thorough survey of areas south of the channel.

# 3 RESULTS & DISCUSSION

The area seaward of the project site may be divided into four habitat types: Breakwater boulders, sand bottom, coral reef flat, and channel. These areas are delineated in Figure 1.

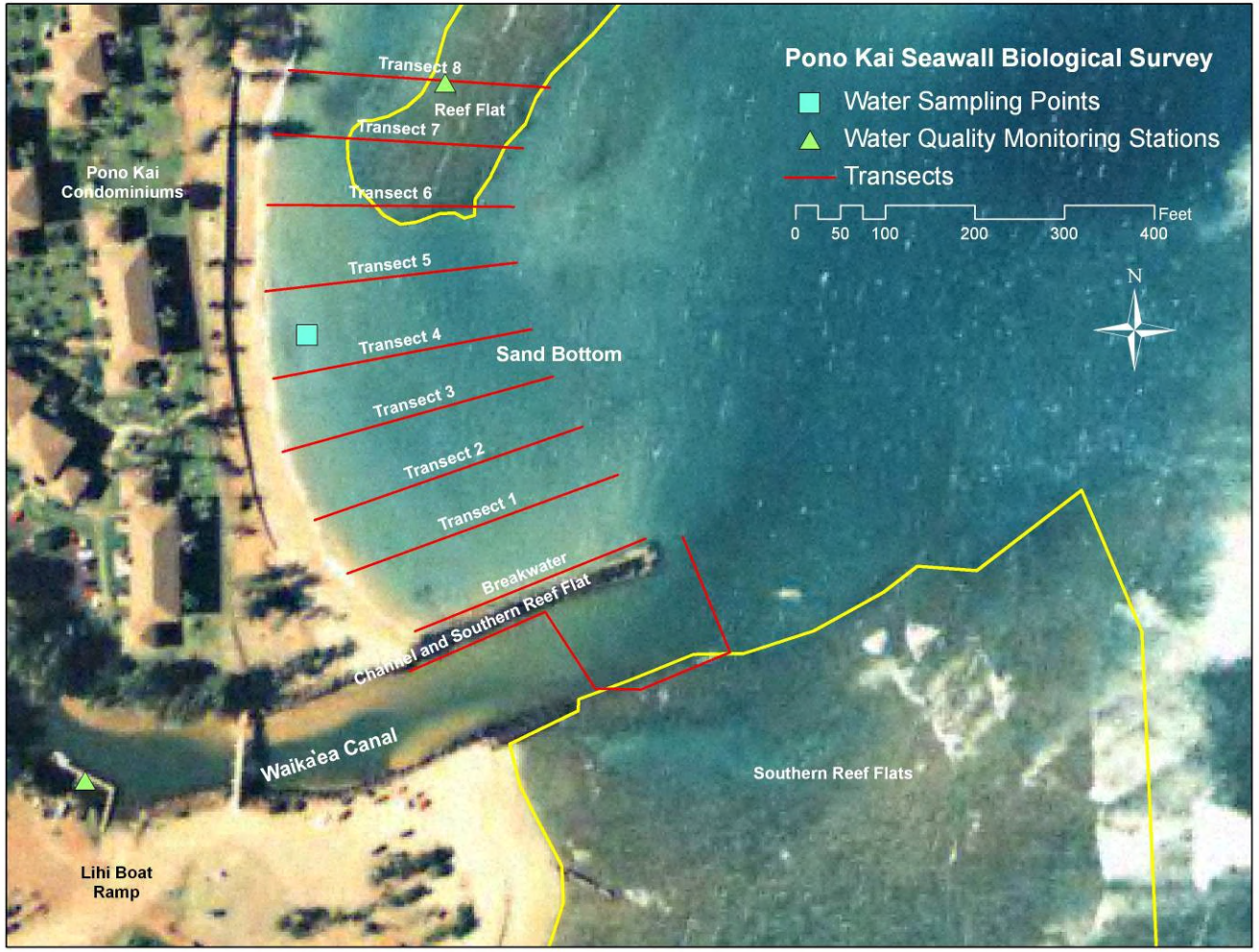



**Figure 1. Site map illustrating water sampling locations, water quality monitoring stations and transects followed for the biological assessment. Reef flat areas extending from the north and to the south are noted.**

## 3.1 Breakwater

The breakwater boulders provide substrate for establishment of sessile organisms. The vertical structure and crevices provide habitat and shelter for motile species including invertebrates and fish. Algae observed along the breakwater included *Dictyota sp., Dictyosphaeria sp. Wrangelia sp.,* and *Symploca hynoides*. Crustose coralline algae covered the boulders in the intertidal zone. At least three *Pocillopora damicornis* coral colonies were observed attached to the boulders, but none larger than six inches in diameter. The only fish species observed was *Abudefduf abdominalis*, (aka Sergeant Major, *mamo*), though others undoubtedly sought refuge in the crevices during our transit. *A'ama* crab (*Grapsus tenuicrustatus*) were observed foraging on the breakwater boulders. Sea cucumbers (*Holothuria atra*) were occasionally present at the base of the breakwater where it meets the sand.

One shorebird, a *Heteroscelus incanus* (Wandering tattler), was observed foraging on the breakwater boulders during the survey.

## 3.2 Transects 1 – 5

Sandy bottom was encountered along transects one through five. No organisms were observed on the sand or in the water column above. Sea cucumbers were observed clustered around a lone boulder approximately 5 yards from shore along transect four. Two patches that appeared slightly shaded on aerial imagery were investigated and determined to be areas where larger pebbles were accumulating.

## 3.3 Transects 6 – 8

Transects six – eight crossed over a patch reef. The extent of the patch reef is clearly visible in the aerial imagery. Depth ranged from six feet at the periphery to less than one foot (during low tide) at the reef crest. In general, there were very few hard coral colonies: approximately one per two square meters. Large coral heads were absent from the reef. The largest coral head encountered was approximately 18 inches in diameter (*Pocillopora meandrina*). The remainder of the reef consisted of a basalt bench showing signs of wave erosion from the surrounding sand. The assemblage of sand, corals and algae suggest a moderately high wave-energy environment. Algal species include *Pterocladiella caerulescens, Liagora sp., Halimeda sp., Symploca hydroides, Chaetomorpha sp, Sargassum* (in shallower parts of the reef), and *Padina sp.* The smaller, more abundant coral species found included *Pocillopora damicornis*. *Palythoa cease,* a colonial anemone was also occasionally observed. Seven spiny lobsters were observed trapped in a net laid out across the reef flat. Numerous species of reef fish were observed on the transects crossing the reef, though abundance was low. All fish observed were in their juvenile phase and/or less than four inches in length, likely due to the absence of cracks, or other spaces large enough to offer shelter. Common fish species observed include: *Canthigaster jactator* (Hawaiian whitespotted toby), *Ostracion meleagris* (Spotted trunkfish), and *Thallosoma duperrey* (Saddle wrasse).

## 3.4 Channel and Reef flat to the south

Species diversity and abundance on either side of the breakwater extending makai did not differ significantly. Sand fills the inner reaches of the channel. Occasional Purse Shells colonies (*Isognomon californicum*) were observed on breakwater boulders. The dredged channel bottom closer to the

channel mouth consists of coral rubble with little or no colonization by algae or other organisms. The channel slopes beyond the southern breakwater rise up to a shallow reef flat that displays lower coral and algal diversity than the reef-flat fronting the project site. The crustose coralline alga *Lithophyllum kotschyanum* was the most common on the reef flat to the south.

## 3.5 Terrestrial Vegetation

Vegetation on the seaward side of the bike path consists of landscaped grass with an occasional *Ipomea sp.* (beach morning glory). There is a small grove of five *Casuarina equisetifolia* (Ironwood) trees at the southernmost point of the project area. At the base of the southernmost tree closest to the beach is a patch of the native *'Aki 'Aki* grass (*Sporobolus virginicus*) and the introduced shrub *Tournefortia argentea*. These species are common coastal vegetation in the Main Hawaiian Islands. The Ironwood trees are a common introduced species.

## 3.6 Water Quality

Temperature of the waters above the reef averaged 25.2 degrees Celsius with a mean pH of 8.6. Salinity was 36.2 ppt. Laboratory analysis of the water samples collected showed total suspended solids in the surface water at 3.2 mg/L and 6.1 mg/L at the three foot depth.

# 4 CONCLUSIONS

A majority of the area seaward of the project site is sand bottom. The reef flat that extends from the north into the area fronting the project site comes within 10-15 yards of the beach. The reef flat makes up approximately 15% of the area surveyed, with depths on the reef ranging from six feet to less than one foot depending on tide and wave conditions. Live coral cover on the patch reef is less than 2%, the solid benthic substrate covered primarily by macroalgae. A majority of the reef supports various common species of macro-algae, with low densities of coral and fish also commonly found through the main Hawaiian Islands. The nearby breakwater boulders have a much lower diversity of algal species and one coral species.

Aside from the single Wandering Tattler, larger vertebrates were absent in the study area. While no threatened or endangered species were observed during this study, the endangered Hawaiian green sea turtle is known to forage on reef flats similar to the reef flat found off the project site. Furthermore, the possibility exists that a turtle or the endangered Hawaiian Monk Seal could haul out on the beach at or near the project site.

None of the marine and terrestrial species observed during the survey were considered threatened or endangered. Therefore construction of the new sea wall will not have an adverse impact on land and sea species.

**Figure 2. The red alga, *Wrangelia* shown growing on a breakwater boulder.**

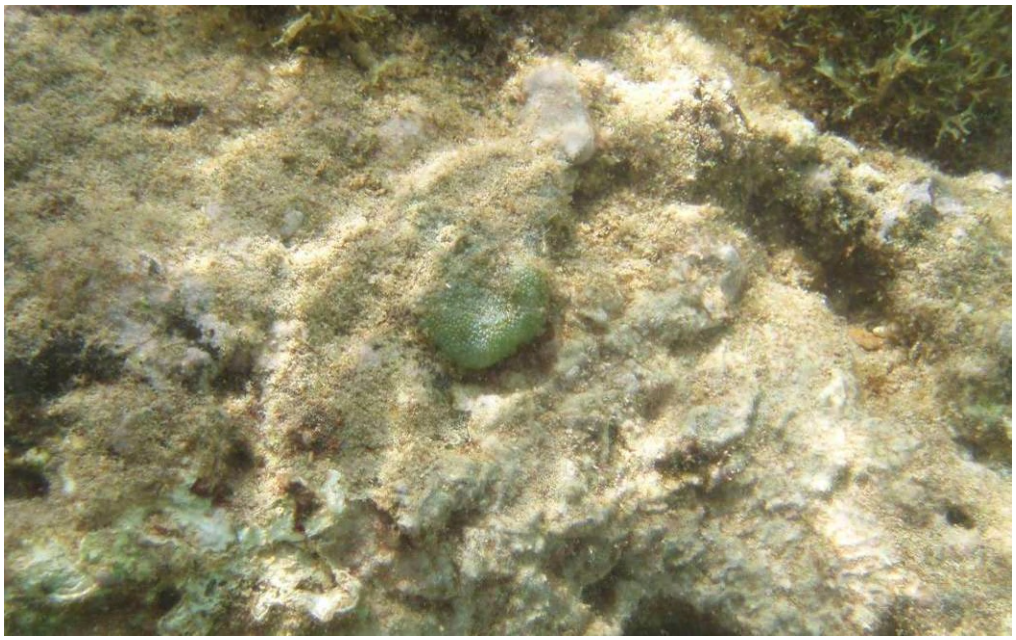


**Figure 3. The green alga *Dictyosphaeria cavernosa* observed growing on breakwater boulders.**

**Figure 4. *Abudefduf abdominalis* (Sergeant major) were frequently observed in breakwater boulder crevices and on the reef flat.**

**Figure 5. *Pocillopora damicornis* coral colony (three inch diameter) observed on breakwater boulder and on the reef flat.**

**Figure 6. *Holothuria atra* (black sea cucumber) observed foraging at the base of the breakwater where it meets the sand bottom.**

**Figure 7. Wandering Tattler (*Heteroscelus incanus*) observed foraging on exposed breakwater boulders**

**Figure 8. Example of sand bottom across much of the study area, with hand for scale.**

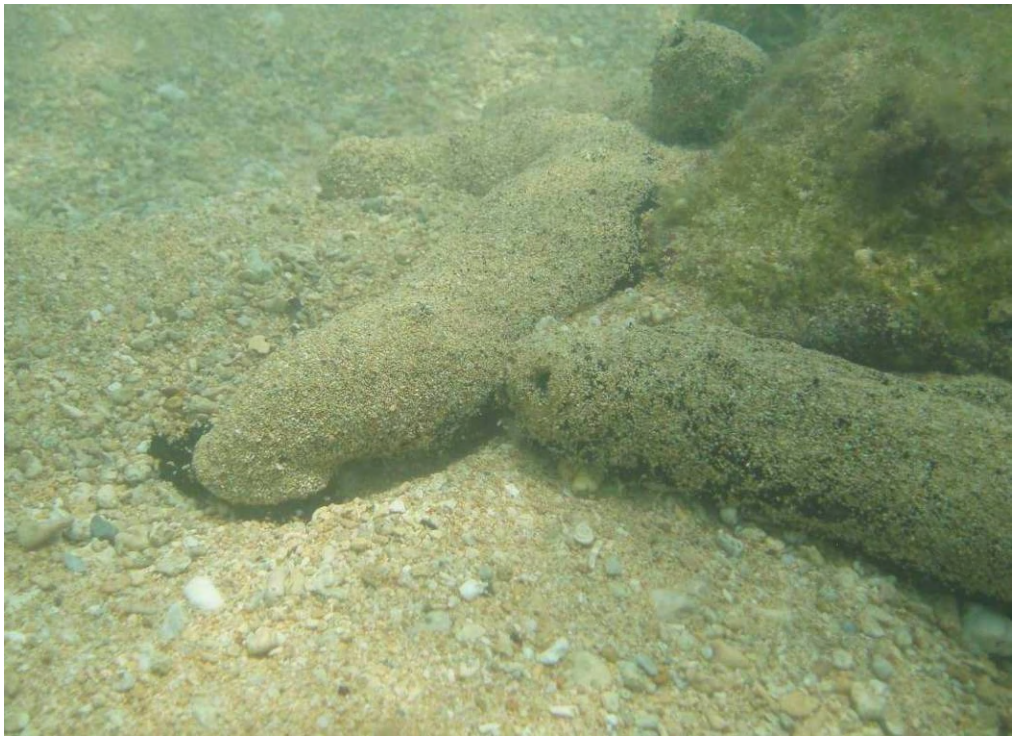


**Figure 9. Sea Cucumbers feeding along boulder at transect 4**

**Figure 10. The red alga *Liagora* established on the reef flat.**

**Figure 11. The green alga *Halimeda* species on an exposed ridge of the reef flat.**

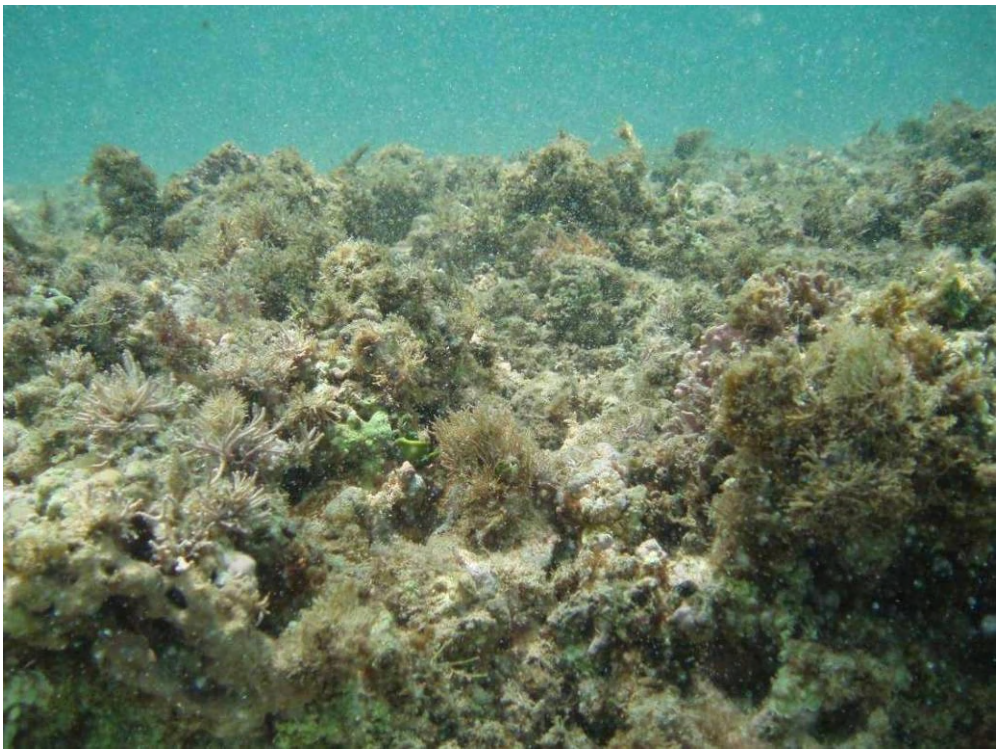


**Figure 12. Typical view of the reef flat along transects 6-8.**

**Figure 13. *Palythoa caesia,* a common colonial anemone, observed on the reef flat.**

**Figure 14. A domino fish (*Dascyllus trimaculatus*) in the largest coral head encountered (*Pocillopora meandrina*).**

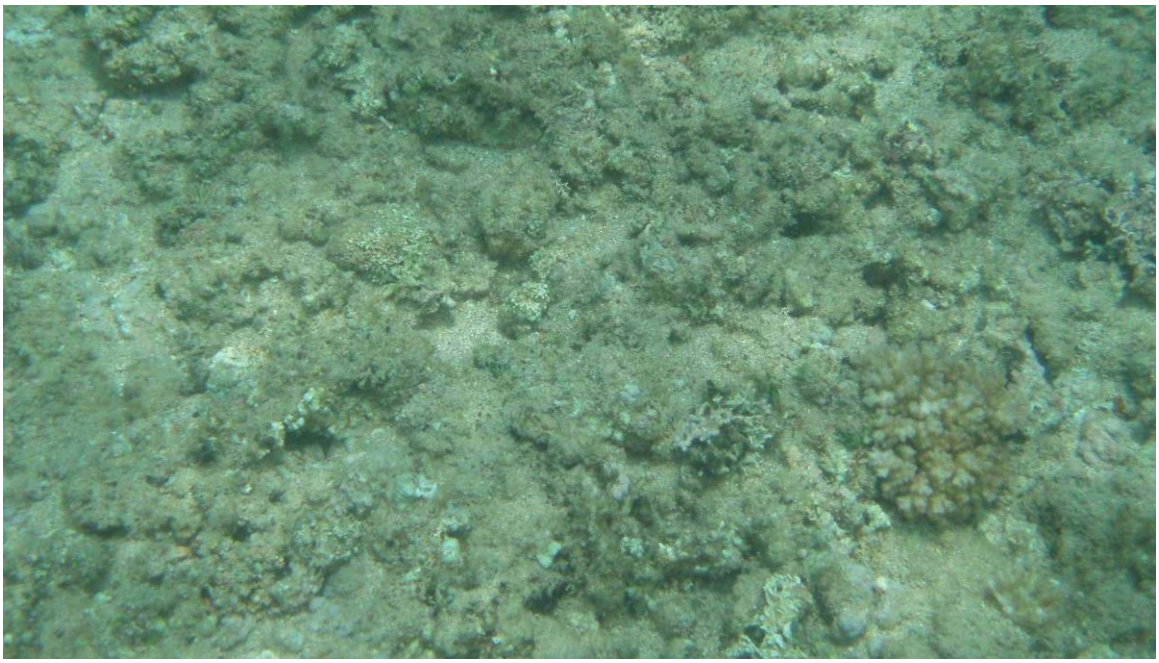


**Figure 15. Typical view of the reef flat viewed from above.**

**Figure 16. Auger shell encountered along the transect.**

**Figure 17. Purse Shells (*Isognomon californicum*) found on the break water boulders facing the channel.**

**Figure 18. The most common crustose coralline alga found to the south of the channel (*Lithophyllum kotschyanum*), outside the project area.**

**Figure 19. View of the area south of the channel, beyond the project area.**

**Figure 20. *Aki 'Aki* grass (*Sporobolus virginicus*, common, native) at the southernmost end of the project site, at the foot of the ironwood trees (common, introduced).**

**Figure 21. The introduced shrub, *Tournefortia argentea,* at the foot of an ironwood tree.**

**Figure 22. Panoramic view of the study area facing north. The seawall to be repaired lies in the distance left of center, lined with orange construction fencing.**

# Appendix B

# Comments received during consultation process

CZM will provide response to Draft EA

oceanit
innovation through engineering & scientific excellence

December 11, 2008

Mr. John Nakagawa
Coastal Zone Management
Department of Business Development & Tourism
Office of Planning
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Nakamura:

Subject: New Revetment Fronting Pono Kai Resort and the County of Kauai Pedestrian/Bike Path, Kapaa, Kauai, TMK: (4) 4-5-007:001
Consultation for Environmental Assessment (EA)

The County of Kauai, Department of Public Works, is planning on constructing a revetment landward of an existing seawall that was constructed in response to damage caused by hurricane Iniki in 1992. The 15-year-old seawall is currently being undermined by wave action and sinkholes are beginning to form landward of the existing seawall. Photos of the site are attached as Appendix A.

To prevent further erosion, a new revetment is planned landward of the existing seawall, which is approximately where the certified shoreline has been preliminarily identified, and up to the pedestrian/bike path on lands owned by the County of Kauai. A filter fabric will be placed under the rock revetment to prevent future undermining from wave action. The rock revetment will not be grouted. Armor stone will be placed on the slope to attenuate waves and protect the embankment. The slope of the revetment is expected to be 1V:1-1/2H or 1V:2H. The length of the revetment is approximately 600 feet. Alternative designs for the revetment are currently being prepared. Sand recently dredged from Waika`ea Canal may be used for beach nourishment after the revetment has been constructed.

The Environmental Assessment will be prepared using the Final Environmental Assessment (FEA) that was prepared for the Pedestrian/Bike Path in August 2003. The title of the FEA is *"Kapaa-Kealia Bike & Pedestrian Path"* and can be found at the Office of Environmental Quality Control (OEQC) Online Library website at: http://hawaii.gov/health/environmental/oeqc/index.html/.

We would appreciate any comments or concerns you may have regarding the EA for this project and identify any permits you may require should this project be approved. Please submit your comments to us no later than January 25, 2009.

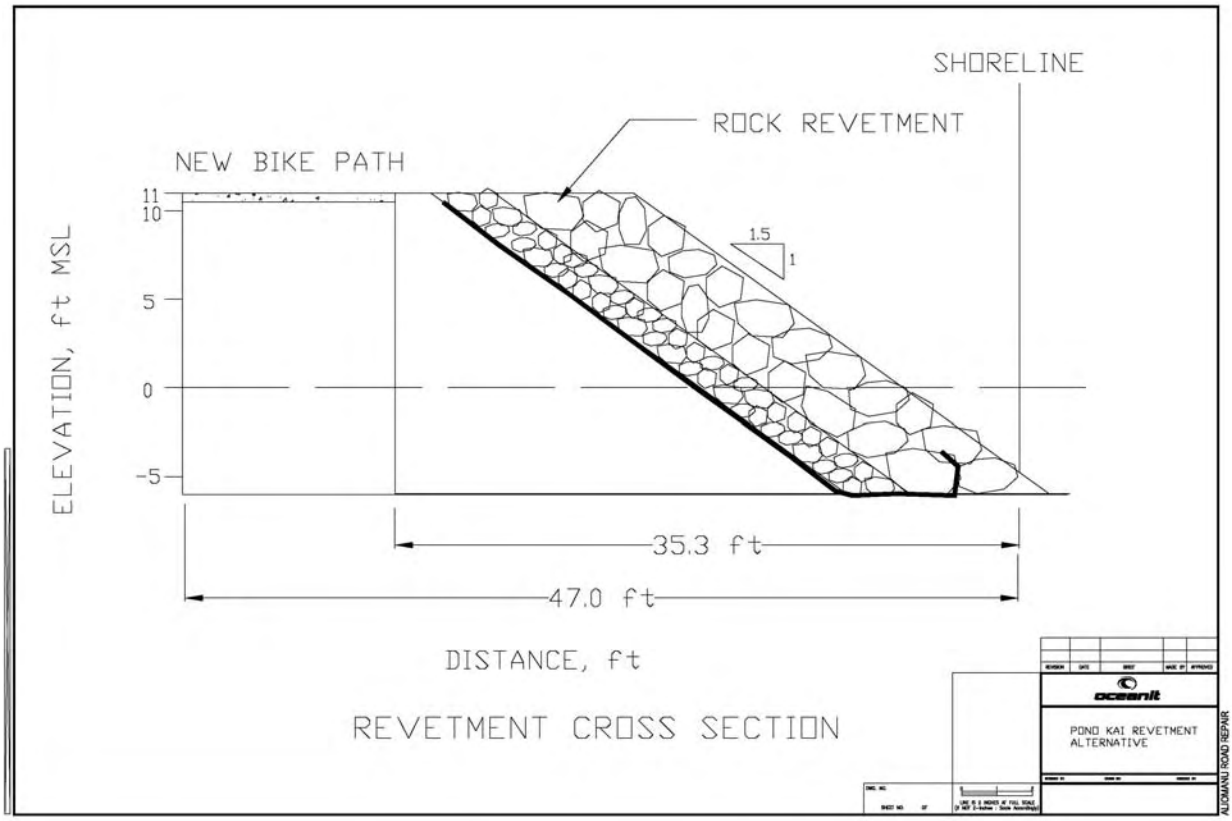
Sincerely,

Joanne Hiramatsu
Senior Planner/Project Manager

Oceanit Center 828 Fort Street Mall, Suite 600 Honolulu, Hawaii 96813 Phone: 808.531.3017 Fax: 808.531.3177

Photo 1. Rock seawall fronting Pono Kai Resort

Photo 2. Sinkholes landward of the wall.




Possible Design Alternative for Rock Revetment

oceanit
innovation through engineering & scientific excellence

December 11, 2008

Ms. Nancy McMahon
State Historic Preservation Division - Kauai Office
5532 Tapa St.
Koloa, HI 96756

Dear Ms. McMahon:

Subject: New Revetment Fronting Pono Kai Resort and the County of Kauai Pedestrian/Bike Path, Kapaa, Kauai, TMK: (4) 4-5-007:001
Consultation for Environmental Assessment (EA)

The County of Kauai, Department of Public Works, is planning on constructing a revetment landward of an existing seawall that was constructed in response to damage caused by hurricane Iniki in 1992. The 15-year-old seawall is currently being undermined by wave action and sinkholes are beginning to form landward of the existing seawall. Photos of the site are attached as Appendix A.

To prevent further erosion, a new revetment is planned landward of the existing seawall, which is approximately where the certified shoreline has been preliminarily identified, and up to the pedestrian/bike path on lands owned by the County of Kauai. A filter fabric will be placed under the rock revetment to prevent future undermining from wave action. The rock revetment will not be grouted. Armor stone will be placed on the slope to attenuate waves and protect the embankment. The slope of the revetment is expected to be 1V:1-1/2H or 1V:2H. The length of the revetment is approximately 600 feet. Alternative designs for the revetment are currently being prepared. Sand recently dredged from Waika`ea Canal may be used for beach nourishment after the revetment has been constructed.

The Environmental Assessment will be prepared using the Final Environmental Assessment (FEA) that was prepared for the Pedestrian/Bike Path in August 2003. The title of the FEA is *"Kapaa-Kealia Bike & Pedestrian Path"* and can be found at the Office of Environmental Quality Control (OEQC) Online Library website at: http://hawaii.gov/health/environmental/oeqc/index.html/.

We would appreciate any comments or concerns you may have regarding the EA for this project and identify any permits you may require should this project be approved. Please submit your comments to us no later than January 25, 2009.

Sincerely,

Joanne Hiramatsu
Senior Planner/Project Manager

Oceanit Center 828 Fort Street Mall, Suite 600 Honolulu, Hawaii 96813 Phone: 808.531.3017 Fax: 808.531.3177

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
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CONSERVATION AND COASTAL LANDS
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ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

**STATE OF HAWAII**
**DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 24, 2008

Ms. Joanne Hiramatsu
Oceanit
828 Fort Street Mall, Suite 600
Honolulu, Hawai'i 96813

LOG NO: 2008.5778
DOC NO: 0812WT91
Archaeology

Dear Ms. Hiramatsu:

**SUBJECT:** **Chapter 6E-8 Historic Preservation Review--**
**Consultation for Environmental Assessment--**
**Replacement of a Revetment Fronting Pono Kai Resort and the County of Kaua'i Pedestrian/Bike Path, Kapa'a, Kaua'i, Island of Kaua'i, Hawai'i**
**TMK (4) 24-5-007: 001**

Thank you for providing the opportunity to consult on this project, which we received December 15, 2008. This project will be conducted upon the preparation of a Draft Environmental Assessment (DEA) which will depend heavily on the Final Environmental Assessment (FEA) prepared for the Pedestrian/Bike Path in August 2003.

The proposed project is to replace a 600 foot revetment constructed along the beach in response to damage by Hurricane Iniki. In the past 15 years the revetment has been undermined by wave action and sinkholes are beginning to form landward of the revetment.

According to an Archaeological Inventory Survey conducted for the Bike Path FEA and reviewed by this office (Log 31775/Doc 0302NM20), several sites were identified and a determination of significance offered. We recommended that several procedures be performed in order to mitigate adverse effects on the historic properties recorded during that project. They included drafting an MOA (Memorandum of Agreement), producing a Preservation Plan (PA), an Archaeological Monitoring Plan (AMP), and a Burial Treatment Plan.

As this revetment falls within the Area of Potential Effect (APE) for the Bike Path, the possibility of previously identified historic sites may extend into, and be impacted by this project exists. Examples of such sites include buried cultural layers, human burials, plantation era infrastructure, including the Kapa'a Railroad foundation, and other historic site.

Therefore, we are requiring that archaeological monitoring be conducted by a qualified archaeologist during all construction activities and ground disturbance.

In the event that historic resources, including human skeletal remains, are identified during the activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, notified immediately at (808) 692-8015.

Aloha,

Nancy A. McMahon

Nancy A. McMahon (Deputy SHPO)
State Historic Preservation Officer

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December 11, 2008

Mr. George Young, P.E.
Department of the Army
U.S. Army Engineer District, Honolulu
Building 252, CEPOH-EC-R
Fort Shafter, HI 96858-5440

Dear Mr. Young:

Subject: New Revetment Fronting Pono Kai Resort and the County of Kauai Pedestrian/Bike Path, Kapaa, Kauai
Consultation for Environmental Assessment (EA)

The County of Kauai, Department of Public Works, is planning on constructing a revetment landward of an existing seawall that was constructed in response to damage caused by hurricane Iniki in 1992. The 15-year-old seawall is currently being undermined by wave action and sinkholes are beginning to form landward of the existing seawall. Photos of the site are attached as Appendix A.

To prevent further erosion, a new revetment is planned landward of the existing seawall, which is approximately where the certified shoreline has been preliminarily identified, and up to the pedestrian/bike path on lands owned by the County of Kauai. A filter fabric will be placed under the rock revetment to prevent future undermining from wave action. The rock revetment will not be grouted. Armor stone will be placed on the slope to attenuate waves and protect the embankment. The slope of the revetment is expected to be 1V:1-1/2H or 1V:2H. The length of the revetment is approximately 600 feet. Alternative designs for the revetment are currently being prepared. Sand recently dredged from Waika`ea Canal may be used for beach nourishment after the revetment has been constructed.

The Environmental Assessment will be prepared using the Final Environmental Assessment (FEA) that was prepared for the Pedestrian/Bike Path in August 2003. The title of the FEA is *"Kapaa-Kealia Bike & Pedestrian Path"* and can be found at the Office of Environmental Quality Control (OEQC) Online Library website at: http://hawaii.gov/health/environmental/oeqc/index.html/.

We would appreciate any comments or concerns you may have regarding the EA for this project and identify any permits you may require should this project be approved. Please submit your comments to us no later than January 25, 2009.

Sincerely,

Joanne Hiramatsu
Senior Planner/Project Manager

Oceanit Center 828 Fort Street Mall, Suite 600 Honolulu, Hawaii 96813 Phone: 808.531.3017 Fax: 808.531.3177

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF:

January 23, 2009

Regulatory Branch
Engineering and Construction Division

**Corps File No.: POH-2007-261**

Ms. Joanne Hiramatsu
Senior Planner/Project Manager
Oceanit
828 Fort Street Mall, Suite 600
Honolulu, Hawaii 96813

Dear Ms. Hiramatsu:

This letter responds to your request for our comments on the preparation of the Draft Environmental Assessment (DEA) for the *New Revetment Fronting Pono Kai Resort Pedestrian/Bike Path* project located in Kapaa, Hawaii. According to your letter, the DEA will be prepared using the August 2003 Final EA (FEA) entitled *Kapaa-Kealia Bike & Pedestrian Path, Basis of Design Project*, which was jointly prepared by the U.S. Department of Transportation, Federal Highway Administration; State of Hawaii, Department of Transportation, Highways Division; and the County of Kauai, Department of Public Works (County). According to your letter, the County plans to construct a revetment landward of the existing seawall, which was constructed following Hurricane Iniki in 1992. The structural integrity of the now 15-year-old seawall is being undermined by wave action and developing sinkholes.

Based on information furnished to our office, we understand the new revetment would be approximately 600 linear feet and maintain a 1:1.5 or 1:2 slope, although alternative designs are currently being prepared. In addition, your letter indicates the County may perform beach nourishment following the construction of the revetment utilizing dredged materials (sand) from nearby Waika`ea Canal.

The DEA should include site-specific information pertaining to the occurrence of water resources and features within the project area, such as USGS designated blue-line streams and wetlands. For non-tidal waters occurring within the project area, the ordinary high water mark must be determined as described at 33 C.F.R. 328.3(e). The boundaries of wetlands that may exist on-site or adjacent to the project site should be delineated based on the procedures set forth in the Corps' 1987 *Wetlands Delineation Manual*. Similarly, for coastal areas and tidally influenced waters within the project area, the environmental document should clearly demarcate or otherwise identify the mean high water line and high tide line [as described at 33 C.F.R. 328.3(d)].

In addition, we suggest the DEA include the following information, as applicable:

- The source and volume of dredged or fill material;
- The method and timing for any discharge (placement) of dredged or fill material;

- The siting of the proposed revetment and any associated construction features, including the demolition of the existing seawall. Specifically, the document should illustrate and describe the footprint of disturbance (temporary and permanent), expressed in acres, relative to the boundaries of the Corps' jurisdiction in tidal and non-tidal waters of the U.S.;
- The location of disposal sites for excavated material or demolition materials not reused in the construction of the new revetment. If such sites are other than existing landfill operations, the DEA should also identify impacts associated with the disposal of such materials at those sites.
- An assessment of the functions, values and services of the waters of the U.S.;
- An estimate of the total construction period; and
- A detailed description of the short- and long-term maintenance activities associated with the revetment.

At this time, we are unable to determine whether the proposed construction activities would result in the discharge (placement) of dredged and/or fill material into waters of the U.S. pursuant to our authorities under Section 404 of the Clean Water Act (33 U.S.C. 1344) or would require structures or work in navigable waters of the U.S. as regulated under Section 10 of the Rivers and Harbor Act of 1899. Your DEA should consider that in general, Department of the Army (DA) authorization is required for:

a) Structures or work in or affecting navigable waters of the U.S. pursuant to Section 10 of the Rivers and Harbors Act (RHA) of 1899. Examples include, but are not limited to: 1) constructing a pier, revetment, bulkhead, jetty, aid to navigation, artificial reef or island, and any structures to be placed under or over a navigable water; 2) dredging, dredge disposal, filling and excavation;

b) The discharge of dredged or fill material into, including any redeposit of dredged material within, jurisdictional waters of the U.S. and adjacent wetlands pursuant to Section 404 of the Clean Water Act (CWA) of 1972. Examples include, but are not limited to: 1) creating fills for residential or commercial development, placing bank protection, temporary or permanent stockpiling of excavated material, building road crossings and driveways, backfilling for utility line crossings and constructing outfall structures, dams, levees, groins, weirs, or other structures; 2) mechanized land clearing, grading which involves filling low areas or land leveling, ditching, channelizing and other excavation activities that would have the effect of destroying or degrading waters of the U.S.; 3) allowing runoff or overflow from a contained land or water disposal area to re-enter a water of the U.S.; 4) placing pilings when such placement has or would have the effect of a discharge of fill material; and

c) Any combination of the above.

We appreciate the opportunity to provide input into the preparation of your DEA. Should you have questions, you may contact Ms. Susan A. Meyer of my Regulatory staff at (808) 438-2137 or by email at susan.a.meyer@usace.army.mil. Please be advised you can provide comments on your experience with the Honolulu District Regulatory Branch by

accessing our web-based customer survey form at http://www.poh.usace.army.mil/EC-R/forms/ecr-CustomerSurvey.pdf. Thank you for your cooperation with our regulatory program. Please reference Corps file number POH-2007-261 in any future correspondence with our office regarding this project.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

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December 11, 2008

Mr. Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Lemmo

Subject: New Revetment Fronting Pono Kai Resort and the County of Kauai Pedestrian/Bike Path, Kapaa, Kauai, TMK: (4) 4-5-007:001
Consultation for Environmental Assessment (EA)

The County of Kauai, Department of Public Works, is planning on constructing a revetment landward of an existing seawall that was constructed in response to damage caused by hurricane Iniki in 1992. The 15-year-old seawall is currently being undermined by wave action and sinkholes are beginning to form landward of the existing seawall. Photos of the site are attached as Appendix A.

To prevent further erosion, a new revetment is planned landward of the existing seawall, which is approximately where the certified shoreline has been preliminarily identified, and up to the pedestrian/bike path on lands owned by the County of Kauai. A filter fabric will be placed under the rock revetment to prevent future undermining from wave action. The rock revetment will not be grouted. Armor stone will be placed on the slope to attenuate waves and protect the embankment. The slope of the revetment is expected to be 1V:1-1/2H or 1V:2H. The length of the revetment is approximately 600 feet. Alternative designs for the revetment are currently being prepared. Sand recently dredged from Waika`ea Canal may be used for beach nourishment after the revetment has been constructed.

The Environmental Assessment will be prepared using the Final Environmental Assessment (FEA) that was prepared for the Pedestrian/Bike Path in August 2003. The title of the FEA is *"Kapaa-Kealia Bike & Pedestrian Path"* and can be found at the Office of Environmental Quality Control (OEQC) Online Library website at: http://hawaii.gov/health/environmental/oeqc/index.html/.

We would appreciate any comments or concerns you may have regarding the EA for this project and identify any permits you may require should this project be approved. Please submit your comments to us no later than January 25, 2009.

Sincerely,

Joanne Hiramatsu
Senior Planner/Project Manager

Oceanit Center 828 Fort Street Mall, Suite 600 Honolulu, Hawaii 96813 Phone: 808.531.3017 Fax: 808.531.3177

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

**STATE OF HAWAII**
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 18, 2008

Corr: KA-09-113

Joanne Hiramatsu
Project Manager, Oceanit
Oceanit Center
828 Ft. Street Mall Suite 600
Honolulu Hi 96813

Dear Mrs. Hiramatsu:

SUBJECT: Pre-Consultation for Draft Environmental Assessment. Revetment Fronting Pono Kai Resort, Kapaa, Kauai (TMK: (4) 4-5-07:001).

The Department of Land and Natural Resources (DLNR), Office of Conservation and Coastal Lands (OCCL) is in receipt of your December 11, 2008 letter requesting consultation on the subject draft environmental assessment (DEA) for a new sloping rock revetment along the shoreline fronting the Pono Kai Resort in Kapaa, Kauai. Based on existing project information and previous personal communication with Oceanit and Kauai County staff the OCCL has the following comments regarding the proposed activities.

1. It is our understanding the County of Kauai is in the process of obtaining a certified shoreline from the DLNR. This is critical in order to accurately determine the jurisdictional boundary between the DLNR and County of Kauai for permitting and design purposes. Based on current information portions of the shoreline survey indicate the shoreline is mauka of the existing seawall.
2. We understand the County of Kauai will be seeking a Shoreline Setback Variance (SSV) to construct a new replacement structure that will be situated entirely landward of the certified shoreline.
3. Since the proposed activities will be located outside of the state Conservation District (defined by the certified shoreline) there is no trigger for any land use permits from the OCCL at this time.
4. The OCCL suggests considering sand restoration as a measure to mitigate potential negative impacts of the proposed structure on the existing beach resource. Sand placed seaward of the revetment may help maintain a sandy beach fronting the structure and may

also lessen the impact the structure may pose to sediment transport characteristics by providing a "soft" buffer from wave action on the structure.

5. The DEA should address alternative strategies to the proposed action including,
    a. Relocating the threatened structures landward (retreat).
    b. Beach restoration (with and without structures).
    c. Various shore protection designs (revetment vs. seawall vs. breakwater, etc..).
    d. The justification section discussion might center on the rational that alternative routes for the existing pathway are far more costly and less viable than retaining the existing route along the coast as was discussed in our past meetings.
6. The DEA should also address potential sand sources for ongoing beach restoration. This may include offshore marine sources, terrestrial and the periodic Waika'ea Canal dredging source. If Waika'ea canal sand is identified as potential ongoing sand source for beach replenishment, we suggest you contact the Division of Boating and Ocean Recreation (DOBOR) of the DLNR to ascertain future dredging schedules and estimated volumes.

Please contact Dolan Eversole of the Office of Conservation and Coastal Lands at (808) 587-0377 if you have any questions.

Sincerely,

Sam Lemmo, Administrator
Office of Conservation and Coastal Lands

cc: Chairperson's Office
Kauai Board Member
Kauai Land Agent
Kauai County Planning Department (Ian Costa)
Kauai County Council
Kauai DPW

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December 11, 2008

State of Hawaii Department of Health
Environmental Management Division
Clean Water Branch
P.O. Box 3378
Honolulu, HI 96801-3378

Subject: New Revetment Fronting Pono Kai Resort and the County of Kauai Pedestrian/Bike Path, Kapaa, Kauai, TMK: (4) 4-5-007:001
Consultation for Environmental Assessment (EA)

The County of Kauai, Department of Public Works, is planning on constructing a revetment landward of an existing seawall that was constructed in response to damage caused by hurricane Iniki in 1992. The 15-year-old seawall is currently being undermined by wave action and sinkholes are beginning to form landward of the existing seawall. Photos of the site are attached as Appendix A.

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We would appreciate any comments or concerns you may have regarding the EA for this project and identify any permits you may require should this project be approved. Please submit your comments to us no later than January 25, 2009.

Sincerely,

Joanne Hiramatsu
Senior Planner/Project Manager

Oceanit Center 828 Fort Street Mall, Suite 600 Honolulu, Hawaii 96813 Phone: 808.531.3017 Fax: 808.531.3177

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD / CWB

02092PJF.09

February 24, 2009

Ms. Joanne Hiramatsu
Senior Planner/Project Manager
Oceanit
828 Fort Street Mall, Suite 600
Honolulu, Hawaii 96813

Dear Ms. Hiramatsu:

**Subject: Environmental Assessment (EA) for**
**New Revetment Fronting Pono Kai Resort and**
**the County of Kauai Pedestrian/Bike Path**
**Kapaa, Island of Kauai, Hawaii**
**TMK: (4) 4-5-007:001**

The Department of Health (DOH), Clean Water Branch (CWB), has reviewed the subject plan and offers these comments on your project. Please note that our review is based solely on the information provided in the subject plan and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf.

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:

   a. Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities.

   b. Hydrotesting water.

   c. Construction dewatering effluent.

   You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html.

3. For types of wastewater not listed in Item No. 2 above or wastewater discharging into Class 1 or Class AA waters, you may need an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html.

4. The CWB acknowledges that consultation with the Department of Land and Natural Resources, State Historic Preservation Division (SHPD) has been initiated (Section 4.8). Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.

5. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 Water Quality Certification are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation.

6. The EA should specify if any impacted State waters are listed in the Clean Water Act, Section 303(d) list of impaired water bodies in Chapter IV of the *2006 State of Hawaii Water Quality Monitoring and Assessment Report.*

   Any NPDES permit(s) for discharges into these water bodies will incorporate the requirement for the Permittee to develop and implement a facility/project-specific Waste Load Allocation (WLA) implementation and monitoring plan when a Total Maximum Daily Load (TMDL) which specifies WLAs applicable to the Permittee's project is approved by the U.S. Environmental Protection Agency. The Permittee shall incorporate and implement the facility/project-specific WLA implementation and monitoring plan as part of the project's Storm Water Pollution Control Plan or Site-Specific Best Management Practices Plan, as appropriate. The facility/project-specific WLA implementation and monitoring plan shall include Data Quality Objectives (DQO) and Quality Assurance and Quality Control methods. The purpose and goal of DQO process can be found at http://www.hanford.gov/dqo. Information on the DOH WLA Implementation and TMDLs are available on the DOH Environmental Planning Office website at http://hawaii.gov/health/environmental/env-planning/wqm/wqm.html (see *TMDL Technical Reports and Implementation Plans for approved TMDLs are available here for download in pdf format).*

If you have any questions, please visit our website at http://www.hawaii.gov/health/environmental/water/cleanwater/index.html, or contact the Engineering Section, CWB, at 586-4309.

Sincerely,

Alec Wong

ALEC WONG, P.E., CHIEF
Clean Water Branch

JF:np

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innovation through engineering & scientific excellence

December 11, 2008

Mr. Ian Costa
County of Kauai
Planning Department
4444 Rice Street, Suite A473
Lihue, Kauai 96766

Dear Mr. Costa:

Subject: New Revetment Fronting Pono Kai Resort and the County of Kauai Pedestrian/Bike Path, Kapaa, Kauai, TMK: (4) 4-5-007:001
Consultation for Environmental Assessment (EA)

The County of Kauai, Department of Public Works, is planning on constructing a revetment landward of an existing seawall that was constructed in response to damage caused by hurricane Iniki in 1992. The 15-year-old seawall is currently being undermined by wave action and sinkholes are beginning to form landward of the existing seawall. Photos of the site are attached as Appendix A.

To prevent further erosion, a new revetment is planned landward of the existing seawall, which is approximately where the certified shoreline has been preliminarily identified, and up to the pedestrian/bike path on lands owned by the County of Kauai. A filter fabric will be placed under the rock revetment to prevent future undermining from wave action. The rock revetment will not be grouted. Armor stone will be placed on the slope to attenuate waves and protect the embankment. The slope of the revetment is expected to be 1V:1-1/2H or 1V:2H. The length of the revetment is approximately 600 feet. Alternative designs for the revetment are currently being prepared. Sand recently dredged from Waika`ea Canal may be used for beach nourishment after the revetment has been constructed.

The Environmental Assessment will be prepared using the Final Environmental Assessment (FEA) that was prepared for the Pedestrian/Bike Path in August 2003. The title of the FEA is *"Kapaa-Kealia Bike & Pedestrian Path"* and can be found at the Office of Environmental Quality Control (OEQC) Online Library website at: http://hawaii.gov/health/environmental/oeqc/index.html/.

We would appreciate any comments or concerns you may have regarding the EA for this project and identify any permits you may require should this project be approved. Please submit your comments to us no later than January 25, 2009.

Sincerely,

Joanne Hiramatsu
Senior Planner/Project Manager

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January 23, 2009

Joanne Hiramatsu
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Subject: New Revetment Fronting Pono Kai Resort and the County of Kauai
Tax Map Key (4) 4-5-007:001, Kapa'a, Kaua'i
County of Kauai, Department of Public Works, Applicant

This is to acknowledge receipt of your letter dated December 11, 2008 regarding the identification of permits that would be required for construction of a new revetment on the above referenced parcel. Based on the information provided, we find that the proposed action would require a Shoreline Setback Determination and a Special Management Area Permit pursuant to H.R.S. 205(A) and the County of Kauai Comprehensive Zoning Ordinance, Special Management Area Rules and Regulations.

Please call Lisa Ellen Smith to schedule a pre-application meeting to discuss the submittal of the required application and subsequent process for the public hearing.

IAN K. COSTA
Planning Director