

STATE OF Hawai`i
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
Honolulu, Hawai`i

180-Day Exp. Date: June 13, 2020

May 8, 2020

**Board of Land and
Natural Resources
State of Hawai`i
Honolulu, Hawai`i**

REGARDING: Conservation District Use Application (CDUA) KA-3856
for the `Aliomanu Road Repair and Revetment Project

**APPLICANT/
LANDOWNER:** County of Kaua`i, Department of Public Works (Applicant)

AGENT: Dayan Vithanage, Ph.D., P.E., Oceanit Laboratories, Inc.

LOCATION: Anahola, island of Kaua`i
TMKs: (4) 4-8-018:028; (4) 4-8-018:029, and seaward

AREA OF PARCELS: Approximately (\approx) 0.36-acres

SUBZONE: Resource

DESCRIPTION OF AREA AND CURRENT USE:

The proposed work is to repair a damaged section of `Aliomanu Road in the Anahola District on the island of Kaua`i and to construct a boulder rock revetment, roughly 390 feet long, along the makai side of the rebuilt roadway to combat ongoing coastal erosion in the area. This section of `Aliomanu Road runs from Kuhio Highway along the Anahola Stream and north along the shoreline, ending at a small subdivision of properties consisting of roughly 28 residences. The proposed work would take place within TMKs (4) 4-8-018:028 and (4) 4-8-018:029, which have a combined land area of 0.36 acres, and adjacent submerged State land within the Resource subzone of the Conservation District. The area just mauka of the road, TMK (4) 4-8-018:032, is owned by the Department of Hawaiian Homelands (DHHL). The information submitted within the application states that the DHHL granted a lease in perpetuity to the County of Kaua`i in February 2019 for the use of this portion of the land for the road repair (**See Exhibits 1&2**).

The site of proposed work contains no structures other than the damaged road and remnants of what is believed to be an old rock revetment. To the east of the road is Anahola Bay, and a sandy beach is located south of the proposed project site. The mauka side of the road, the DHHL property, consists of a steep hillside that descends down to the edge of the roadway.

Regarding utilities in the area, there are power poles running along the mauka side of `Aliomanu Road until they cross to the makai side just north of the project site. Additionally, there is an active subsurface water line along the road that contains a valve connection to an existing blow out facility located on the makai side of the road. There is a depression in the road surface within the project area that allows storm drainage water to cross over as it descends down the adjacent hillside (the DHHL property).

The proposed rock revetment is intended to mitigate coastal erosion that has been ongoing at the site for some time (**Exhibit 3**). According to the application submitted to the Office of Conservation and Coastal Lands (OCCL), at some time before 2004 the County of Kaua`i moved rocks to protect `Aliomanu Road from coastal erosion damage. This action was unauthorized by the DLNR, and a letter dated March 29, 2004 informed the County that it was in violation of Chapter 183C, HRS. After the payment of a fine and mitigation of the violation, the County proposed a temporary emergency repair, in the form of a sand-bag structure, for the road damage until a permanent repair could be designed. This plan was accepted by the DLNR's Office of Conservation and Coastal Lands (OCCL).

An environmental assessment was published for this proposed project, a permanent solution to the ongoing erosion problem, in the Office of Environmental Quality Control's (OEQC) publication *The Environmental Notice* on October 8, 2009, and was republished with updated information and studies on March 23, 2018. During the period between those publications and up to the current date, there have been multiple efforts done to mitigate the erosion efforts at the project site with temporary emergency erosion control measures as described above.

There are currently coir (coconut fiber) sandbags along roughly 200 feet of the eroded roadway. These sandbags are currently in a degraded state, and were recently given a new Emergency Conservation District Use Permit (CDUP), Emergency CDUP KA 20-14, to retain the temporary erosion control structures in place until the proposed rock revetment and road repair project can be initiated. Approval for the presence of sandbags for temporary erosion control for the issue at hand has been consistently re-submitted and re-approved by our office, and this proposed work represents a permanent solution to the ongoing erosion problem and to ensure the continued use of `Aliomanu Road.

Natural Resources

This section of `Aliomanu Road runs along the shoreline, although the beach along the project area is thin and contains a fair amount of boulders, believed to be a previously constructed rock revetment. South of the project site, the beach becomes wider until it hits the mouth of the Anahola Stream, while the area north of the project area is Kuaehu Point, which consists of a rocky coastline. According to the application submitted to our office, the area around the proposed work site varies from sea level to roughly 10 feet above mean sea level (MSL), with the damaged area of the road sitting in the more elevated section at roughly 10 feet above MSL.

The shoreline in the area directly adjacent to the project area is thin, with variable amounts of beach sand that is often mixed with cobbles as well as the currently existing boulders and rocks of assorted sizes. These boulders and rocks appear to have originally been placed with the intention of mitigating coastal erosion, but currently offer no real protection at the

current time. There is a flat nearshore reef area that consists of rock and hardened sediment that is partially dry at very low tide, and only small waves manage to form over the reef flat.

The subject area is located in Flood Zone VE and is also in an area that would be vulnerable to tsunami, earthquakes, and hurricanes, and sea level rise. Potential impacts to the project area from impending sea level rise was analyzed in both the 2009 and the 2018 Environmental Assessments. According to the information submitted, the design of the proposed rock revetment accounted for 3.2 feet of sea level rise on the project area for the revetment's intended design life of 50 years.

Flora/Fauna

A survey of the marine ecosystem was completed on May 8, 2008 for the original Environmental Assessment in 2009. This consisted of a visual survey of the project site as well as a nearshore swim survey of the marine environment just offshore. The area containing the project site contains minimal vegetation. The mauka side of the roadway is largely dominated by ironwood and naupaka, while naupaka and tree heliotrope were the only prominent vegetation found in the upper beach zones of the survey.

According to the application, minimal coral was present at the time of the swim survey, with 5% coral cover noted during the swim survey. Little algae growth was seen on existing rocks in the shoreline area as it is largely dry at low tide. The fish that were observed during the swim survey included schools of small goatfish and a few varieties of damsel fish and wrasses.

In addition, it was identified as "highly likely" that three endangered species could be present in the project area. These species include the Hawaiian hoary bat, the green sea turtle, the hawksbill sea turtle, and the Hawaiian monk seal. Fairly regular monk sea presence has been documented on multiple occasions throughout the process of alleviating the shoreline erosion of `Aliomanu Road. Additionally, the Hawaiian hoary bat is also commonly seen in the area, usually at its foraging periods around both dawn and dusk. The application states that site specific BMPs that include endangered species would be implemented during construction and are discussed further later in this report.

Historic/Cultural

Part of the CDUA process requires that the applicant submit an HRS, 6E form developed by the State Historic Preservation Division. Pursuant to HRS, §6E-42, prior to any agency or officer of the State [in this case, the Board] approving any project involving a permit, license, certificate, land use change, subdivision, or other entitlement for use, which may affect historic property, artifacts, or a burial site, the agency or office [OCCL] shall advise SHPD prior to any approval and allow SHPD an opportunity to review and comment on the effect of the proposed project on historic properties.

An archaeological assessment was completed by Cultural Surveys Hawai'i was consulted for evaluation of potential historical and cultural resources in the project area. Cultural Surveys Hawai'i completed both a field inspection and literature review (September 2008) and a cultural impact assessment (February 2009) which included correspondence with local residents that have a history with the areas associated with the project site. These materials were included in the application.

The archaeological assessment done in February 2009 was accepted by the State Historic Preservation Division (SHPD) on April 1, 2009 as part of the HRS, §6E-42 requirement. The assessment concluded that there are native Hawaiian cultural resources, beliefs, and ongoing practices associated with the area surrounding the project site. Mitigative measures discussed in the assessment included extreme caution during any ground disturbance as well as archeological monitoring during the construction process.

The acceptance letter from the SHPD states that despite the lack of significant cultural properties found in the Jaucas sands in the area during the survey and assessment completed by Cultural Surveys Hawai`i, the potential for impact historic properties, including human burials, remains high. The SHPD agreed with Cultural Surveys Hawai`i's recommendation that archaeological monitoring occur during all repair activities. The letter also states that the report is accepted and meets the minimum requirements for compliance with the requirements of HRS, §6E-42. Our office believes that despite the archaeological assessment being done in 2009, we see no reason to revisit survey results or recommended mitigation measures. The agreements and recommendations that were agreed to in the past will ensure that significant archaeological or cultural resources are protected if they are encountered during the project.

PROPOSED USE

Site

The proposed project is to construct a boulder rock revetment with concrete rubble masonry (CRM) curb walls and a grouted riprap end section along the damaged section of `Aliomanu Road, after which the damaged section of the road would be rebuilt. The entire project is expected to take between three and four months to be fully completed. This damaged section of `Aliomanu Road is on the southern section of the split road, a little over a mile from where it intersects with Kuhio Highway near the Anahola Baptist Church. The current site contains the damaged roadway and boulders and rocks of varying sizes within the thin shoreline area makai of the roadway. South of the project site is a sandy beach, and north of the project site is Kuaehu Point. Directly mauka of the site is a steep hillside owned by the Department of Hawaiian Homelands (DHHL). The information submitted within the application states that the DHHL granted a lease in perpetuity to the County of Kaua`i in February 2019 for the use of this portion of the land for the road repair.

The rock revetment would be roughly 390 feet long and would armor the shoreline to prevent further erosion to the coastline and also allow for continued use and maintenance of `Aliomanu Road. According to the application, all construction activities will take place landward of the mean higher high water (MHHW) and out of navigable U.S. waters and federal jurisdiction (**See Exhibit 1**).

The expected lifespan of the rock revetment is roughly 50 years, and it is stated in the application that the County can expect one repair to address structural settling during this time period. Additionally, the applicant states that the section of repaired roadway would require maintenance roughly every 15 years. The County is developing a plan for beach nourishment in the future for the shoreline area fronting this project site, pending approval of this CDUA.

Site Access

Access to the site would be via `Aliomanu Road itself. The application states that traffic control and road closures will be necessary during construction, and short term impact to area residents will occur. The application contained a traffic control plan to be implemented during the work. The site-specific Best Management Plan included in the application stated that heavy machinery, such as an excavator, will be operating from the `Aliomanu Road itself to construct the revetment.

Rock Revetment and Construction

The process would begin with the removal of the temporary erosion control sandbags at the project site. The majority of heavy work for the project will be done by an excavator working from `Aliomanu Road. This would be followed by temporarily removing the boulders and rocks currently in place at the project site in order to grade the bank to the desired slope of the revetment. A layer of filter fabric will then be placed onto the graded slope, and then construction of the revetment itself would begin atop the filter fabric.

The rock revetment itself will be roughly 390 feet long and contain a double layer of bedding stone placed on filter fabric followed by a double layer of armor stone placed atop the bedding stone. The toe stones of the revetment would be buried 4 feet below mean sea level (MSL) and the top of the revetment is designed to reach an elevation of approximately +10 feet MSL. The revetment is designed to retain the nature of the rocky shoreline, and the contractor will use some of the existing boulders that currently exist within the footprint of the proposed project as part of the revetment structure. Upon completion of the stone placement, the revetment toe and trench will be backfilled with clean beach sand.

Construction phases will take place incrementally so as to not expose the filter and bedding to any potential wave action. Upon completion of the revetment stage of the project, reconstruction of the damaged section of `Aliomanu Road will begin. The revetment will be separated from the rebuilt sections of the road by a concrete rubble masonry curbwall transition roughly two (2) feet in width.

Road Repair

According to the application, the damaged section of road would be repaired with 270 linear feet of asphalt concrete pavement, three 25 linear feet transitions, and one 70 foot concrete pavement piece. A 65-foot section of the road that serves as drainage swale for storm water crossing the road will be paved with concrete, while the remaining section of the rebuilt road will be paved with asphalt concrete.

The revetment will be separated from the rebuilt sections of the damaged section of `Aliomanu Road by a concrete rubble masonry curbwall transition roughly two (2) feet in width. The project would repair the road surface and also replace a four inch blow-off waterline in the vicinity. The information provided states that the minimum elevation of curbwall separating the roadway from the rock revetment would be at about 8.5 feet above MHHW, which would make it feasible within the parameters of 3.2 feet of projected sea level rise.

A major discussion point at the community meetings held, as well as written comments received by OCCL, was whether or not to rebuild `Aliomanu Road into one or two lanes. The application received by our office states that it would be a roughly \$200,000 difference in the price between a one-lane and a two-lane road for this damaged section, and also states that it is likely that none of the DHHL lands would be required for use if rebuilding a one land road. The one-lane versus two-lane comparison will be further discussed later in this report.

Expected Mitigative Actions and Practices

Best Management Plans (BMPs), General and Site Specific

The proposed revetment has been designed to be compatible with standard construction and NOAA BMPs as well as site-specific BMPs, including, but not limited to:

- Return flow of or run-off from dredged material stored at inland dewatering or storage sites must be prevented;
- Underlayer fills will be protected from erosion with core-lic units (or stones) as soon after placement as possible;
- Fueling of project related vehicles and equipment should take place away from the water. A contingency plan to control the accidental spills of petroleum products at the construction site will be developed. absorbent pads, containment booms and skimmers will be stored on-site to facilitate the cleanup of petroleum spills;
- No contamination (trash or debris disposal, alien species introductions, etc.) of marine (reef flats, lagoons, open ocean, etc.) environments adjacent to the project site should result from project-related activities;
- No project-related materials (fill, revetment rock, pipe, etc.) will be stockpiled in the water (intertidal zones, reef flats, stream channels, etc.), unless first approved by the Department;
- Turbidity and siltation from project-related work will be minimized and contained to within the vicinity of the site through the appropriate use of effective silt containment devices and curtailment of work during adverse tidal and weather conditions;
- A staging area for equipment and materials will be approved by the County Engineer. Oil absorbent pads, 10 mil. plastic sheets, and a spills kit will be available for any necessary cleanups.

Erosion Control Plan

The proposed construction would utilize a silt barrier in order to contain any potential run-off into the marine environment. This silt barrier will be composed of large sandbags and geotextile fabric that is placed around active work areas, as silt curtains cannot be used at this location due to the shallow water. The erosion control plan's site-specific BMPs are listed below:

- The contractor shall prepare and submit temporary erosion and sediment control procedures to the contracting officer for approval prior to commencement of grading;
- Measures to control erosion and other pollutants shall be in place before any earth moving work is initiated. These measures shall be properly constructed and maintained throughout the construction period;

- Construction shall be sequenced to minimize the exposure time of cleared surface area. Silt barrier protection shall comply with construction sequencing;
- Inspect silt barrier daily and immediately after rainfall. Repair as necessary. Sediment must be removed when it reaches approximately one-third the height of the silt barrier;
- Maintain sediment traps at discharge points during site work and until permanent erosion controls are in place;
- Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed more than twenty (20) calendar days prior to site disturbance;
- Temporary soil stabilization with appropriate vegetation shall be applied on areas that will remain unfinished for more than thirty (30) calendar days;
- Permanent soil stabilization with perennial vegetation shall be applied as soon as practical after final grading;
- Storm water flowing toward the construction area shall be diverted by using appropriate control measures as practical;
- Remove all sediment deposited on paved roadways within 24 hours;

Mitigative actions for sea level rise:

The proposed project took projected global sea level rise into consideration when designing the revetment. Historical erosion maps created by the Coastal Geology Group at the University of Hawai'i show that erosion in the area has increased substantially from its original location (*Exhibit A*). The red bars on the figure represent areas of erosion, while blue bars depict areas of accretion. The project area is very clearly within the erosion area, and the erosion has been exacerbated in recent decades. This has prompted the need for continuous emergency repairs at the site as well as the subject proposal for the rock revetment as a long-term solution.

The design of the revetment for the proposed project accounted for 3.2 feet of sea level rise within the revetment's planned 50-year lifetime. The consultant used a bathtub model of passive flooding to estimate the potential impacts of 3.2 feet of sea level rise.

The design parameters of the proposed revetment appear to be within recommended guidelines regarding expected sea level rise. While a different type of solution to the ongoing coastal erosion in the project area, along with the impending sea level rise, may not be necessary towards the end of the revetment's designed 50-year lifespan, it is very possible that the expected rise in sea level of 3.2 feet is met or surpassed by that time.

Mitigative actions for endangered species and other flora and fauna:

It has been noted that Hawaiian monk seals, the Hawaiian hoary bat are commonly seen in the vicinity of the project site, and it is also possible that both the green sea turtle and the Hawksbill sea turtle could be present in the project area. Standard mitigation measures to reduce impacts to protected species will be followed, including, but not limited to:

- Construction activities would not occur if a Hawaiian monk seal or sea turtle is within the vicinity of the construction area. Construction will only begin after the animal voluntarily leaves the area;

- If a Hawaiian monk seal or sea turtle is noticed after work has begun, all mechanical or construction activities would cease immediately until the animal voluntarily leaves the area;
- Any construction-related debris that may impose an entanglement threat to monk seals and sea turtles would be removed from the construction area at the end of each day and at the conclusion of construction;
- 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;
- Workers would not attempt to feed, touch, ride, or otherwise intentionally interact with any listed species;

Mitigative actions for Cultural and Historic Resources:

An archeological monitoring plan was accepted by the State Historic Preservation Division (SHPD) in 2009 following field inspections and cultural impact assessment done by Cultural Surveys Hawaii. Per this approved monitoring plan, an archeological monitor will be on site during excavation activities in the event subsurface archaeological resources are uncovered during construction. Should subsurface archaeological resources or burials be uncovered during construction, all work will cease and the SHPD will be contacted to determine what appropriate mitigation measures are needed.

Alternatives

A major aspect of the environmental review process for this proposed project was the analysis of potential alternatives to solve the erosion problem at `Aliomanu Road. There were seven (7) potential methods, including the proposed action, to alleviate the erosion in the subject area. They included the following, including a brief analysis and description of each alternative:

1. **No action** - No action was not considered a plausible alternative as `Aliomanu Road would continue to erode. It was deemed to be a risk to public safety, health, and welfare and the road could become impassable without constant repairs and consistently renewing actions for emergency temporary shoreline protection. The current state of the road requires that some type of action is done in order to maintain access to the roughly 28 homes north of the project site.
2. **Proposed action (two-lane road & revetment)** - This proposed action was selected because it was deemed by the applicant to be the most cost effective solution while satisfying the needs of the community in a quality manner.
3. **Repair road into single lane with revetment** - This alternative is still on the table for the current project, as it is identical to the propose action with the difference of the rebuilt section of `Aliomanu Road remaining as one lane in this alternative, as opposed to two lanes, with slight differences in the plans due to the different road widths.
4. **Realignment of `Aliomanu Road mauka of site** - Landward realignment of the road was not chosen because the hillside directly mauka of `Aliomanu Road is composed of a steep, rocky slope that sits on lands owned by the DHHL. This would require a long-term land use agreement with the DHHL, and would require extensive grading, grubbing, and slope stability control during roadway construction, and was thus deemed infeasible for the imminent needs of the project site. However, this is a possible alternative for the future as, even with the proposed revetment,

- `Aliomanu Road will continue to be vulnerable to sea level rise, climate change, and high wave action.
5. **Rebuild a bridge connecting the north and south ends of `Aliomanu Road** - A bridge on the north side of the community once connected the two currently separated parts of `Aliomanu Road. Rebuilding the bridge would require intensive design studies and plans due to the stream mouth it would cross. Its project cost is also double that of the proposed action, which would make this alternative difficult to pursue for the imminent needs of the project site. Additionally, the rebuilt bridge would still be susceptible to the effects of sea level rise, climate change, and high wave action. This solution is a possible alternative for the future.
 6. **Extend Hokualele Road to connect with `Aliomanu Road** - This option would require an easement from DHHL to allow the DHHL owned Hokualele Road to become a county road. The application states that community feedback and feedback from the DHHL was not supportive of this alternative, and thus it was not chosen.
 7. **Pave and extend a private gravel drive to connect with `Aliomanu Road from Kuhio Highway** - This alternative would require a large purchase of private property as well as significant grading, grubbing, and slope stability during roadway construction. Due to the potential difficulty in securing a purchase of private land, as well as a lack of support from the community during public meetings on the project, this alternative was not chosen.

Essentially, five of the seven options were seen as infeasible to meet the immediate needs of the damaged section of `Aliomanu Road, with the preferred options for the project being either the double-lane or single-lane road repair with a 390-foot long rock revetment on the makai side of the repaired roadway. However, the remaining four options (besides the 'no action' option) should remain as possibilities to be pursued in the long term.

The proposed rock revetment is designed with an intended life of roughly 50 years. During that time frame, climate change and sea level rise will be very significant and will likely affect the proposed revetment and repaired section of the road regardless of the design parameters of the revetment accounting for 3.2 feet of sea level rise during the revetment's designed life span.

The remaining four options include three that would require land negotiations - for either a land purchase or an easement - with either the DHHL or private landowners, but these obstacles do not render the options impossible. The fourth option, replacing the former bridge to connect the two non-contiguous sections of `Aliomanu Road, also remains a possibility in the future. However, the bridge option's future viability would also be reliant on the outcome of climate change and sea level rise during the proposed revetment's designed 50-year life span.

In total, a large portion of the efforts for this project have consisted of the repeated analysis of potential options to remedy the issue of erosion along this section of `Aliomanu Road. No action was deemed as infeasible as either a short or long term solution. The two options that remain as possible solutions for the immediate situation at `Aliomanu Road, options 2 and 3, are nearly identical as both would contain the same rock revetment in regards to size, with the lone difference being the rebuilt section of the road being one or two lanes.

Our office strongly suggests that the other four rejected actions - realignment of the road mauka of the project site, rebuilding a bridge connecting the north and south sections of `Aliomanu Road, or extending either the currently existing Hokualele Road or a private gravel drive to connect `Aliomanu Road to the Kuhio Highway directly - be considered during the life span of proposed revetment as potential solutions to be pursued in the long-term.

SUMMARY OF COMMENTS

The application was referred to the following agencies for their review and comment: the **State**: Department of Health; Office of Hawaiian Affairs; Department of Transportation; Department of Land and Natural Resources Divisions of: Aquatic Resources, Forestry and Wildlife, Historic Preservation, Kaua`i District Land Office, Conservation and Resource Enforcement, and State Parks; the **County of Kaua`i**: Department of Planning and Department of Transportation; and the **Federal**: National Ocean and Atmospheric Administration (NOAA), the US Army Corps of Engineers, and the US Fish and Wildlife Service. In addition, this application was also sent to the nearest public library, the Kapa`a Public Library, to make this information readily available to those who may wish to review it. The application was also transmitted to the Wailua-Kapa`a Neighborhood Association for community and neighborhood feedback.

Responses were received and have been summarized from the following agencies:

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

Forestry and Wildlife

No comments.

Kaua`i District Land Office

No Comments.

State Parks

No comments.

DEPARTMENT OF TRANSPORTATION

“Thank you for the opportunity to review the above-referenced project for the CDUA in conjunction with the Final Environmental Assessment required by Chapter 343, HRS on the subject project for the use of County land. The proposed work will consist of road repair to protect further erosion, including the construction of a 390-foot long boulder rock revetment with masonry walls along `Aliomanu Road.

The project site involves portions of the `Aliomanu Road, a County roadway, which intersects with the State Kuhio Highway at the southern approach where the road will end. The DOT has the following comments:

1. No significant impact to the State facility is anticipated, as the proposed work is not in the immediate vicinity of the State Kuhio Highway.

2. Any work within the State highway right-of-way will require approved plans and permit to be coordinated and reviewed by the HDOT, Kaua'i District Office.

Applicant's Response

We note that the project is not anticipated to have a significant impact as the proposed work is not in the immediate vicinity of the State Kuhio Highway. In addition, any work within the State highway right of way will require approved plans and permits to be coordinated and reviewed by the Hawaii Department of Transportation, Kauai District Office.

FEDERAL

The US Fish and Wildlife Service

The Fish and Wildlife Service was unable to specifically address the matter due to significant workload constraints. They provided a table of the protected species most likely to be encountered in the project area as well as information for the applicant on how to proceed if there are concerns regarding endangered species.

Applicant's Response

We note that the following protected species may occur in the project area: Hawaiian hoary bat (*Lasiurus cinereus semotus*), Hawaiian Duck / kōla (*Anas wyvillianai*), Hawaiian goose / nēnē (*Branta sandvicensis*), Hawaiian coot / `alae kea (*Fulica alai*), Hawaiian gallinule / `alae `ula (*Gallinula galeata sandvicensis*), Hawaiian stilt / A`eo (*Himantopus mexicanus knudseni*). In addition, the following species may visit the shoreline area: Green sea turtle (*Chelonia mydas*), Hawaiian Monk Seal (*Monachus schauinslandi*).

All precautions will be taken to avoid impacts to these and other protected species. If a protected species is seen within the project area, construction activities will cease until the animal leaves on its own accord. The avoidance and minimization measurement guideline that you provided on the Pacific Islands Fish and Wildlife Office (PIFWO) website will be followed. Should any further Page 2 of 2 information regarding conservation of endangered species be needed, the PIFWO will be contacted.

OTHER

Wailua-Kapa`a Neighborhood Association

Mahalo for the opportunity to comment on the above referenced County of Kaua'i, Public Works Department's project. The project premise has many faults and the priority should be managed retreat. It is ill-advised to "bring `Aliomanu Road back to its original, pre-erosion condition as a two-lane road" for many reasons:

1. A one-lane roadway should have been included as an alternative.
2. This dead-end road has no pressing need for 2-lanes.
3. Future damage to this coastline is inevitable due to sea level rise and climate change.
4. The frequency and intensity of storms is increasing, not decreasing.
5. The project is not a high priority use of taxpayer dollars.
6. The 28 residences (primarily vacation rentals) are not deprived of reasonable use of their properties by maintaining 1-lane access or by extending Hokualele Road.

7. Armoring the coastline with a boulder stone revetment is a short-term fix, and the “expected 50-year lifetime” is unrealistic.
8. Damage to the roadway and revetment from heavy rains, strong winds, and storm surge is inevitable according to the CDUA, therefore the proposal is ill-advised.
9. Impacts to the endangered Hawaiian monk seals is likely because they haul out in this area.
10. “Shoreline erosion control” is a fallacy.

The W-KNA respectfully believes that managed retreat should be pursued and sees no need to rebuild the damaged section of road from its current state as a 1-lane road into a 2-lane road.

Applicant's Response

Thank you for your comments on the `Aliomanu Road Repair and Revetment Project Conservation District Use Permit (CDUA), Reference No. KA-3856. This response letter was prepared on behalf of the County of Kauai Department of Public Works for comments addressed to the State of Hawai'i Department of Land and Natural Resources (DLNR) Office of Conservation and Coastal Lands (OCCL). Please see responses to your comments below.

Comments a, b, e, and f: The final decision on the road design is at the discretion of the County of Kauai. A single-lane road is a design alternative that was discussed in the 2018 Supplementary Environmental Assessment (SEA), which is publicly available on the Office of Environmental Quality Control's website. Section 3.3 of the SEA analyzes this alternative in detail. There are potential pros and cons to this option, so the decision on the final number of lanes constructed rests with the County DPW.

Comments c, d, and h: The objective of the 2018 SEA was to “describe the potential impact of sea level rise on the proposed road repair project and to evaluate alternative means for re-establishing safe, reliable vehicular access impacted by this damaged section”. In the 2018 SEA, the engineered erosion protection design of the project accounted for sea level rise projections based on expected climate change.

Comment g: The proposed project was designed for an “expected 50-year lifetime” based on sea level rise projections, which range between 0.4 feet to 3.5 feet by 2070.

Comment i: The 2009 Final Environmental Assessment of the project discusses the “fairly regular monk seal presence” in the area and provides the following mitigation measures that shall be taken if a monk seal is observed resting on the beach during construction: The Department of Page 2 of 2 Land and Natural Resources and the National Oceanic and Atmospheric Administration will be contacted and all construction activities will cease operations. A beach restoration plan may be implemented seaward of the revetment in the future, which would restore and possibly augment monk seal haul out areas.

Comment j: The proposed structure would be designed to protect the road from erosion and prevent soil erosion that can create runoff into the ocean.

Public Hearing: Additionally, a public hearing was held at the Kapa`a Public Library on Thursday, March 5, 2020, to gauge community feedback on the project. The following people gave testimony at the hearing, with their comments summarized below:

Wayne Medeiros - Mr. Medeiros doesn't own property in Anahola, but he has been on the island for over 60 years and is very familiar with the project area. He believes the erosion problem began when illegal seawalls were constructed north of the project site. Additionally, in 2002, the County put an excavator in the ocean fronting the road and moving the boulders that are currently on site into their current locations. He believes that the State and County failed to address or correct the above problems and developed what he referred to as 'situational amnesia'. Mr. Medeiros does not believe the husk bags worked, as they were ripped apart and debris was strewn all over the place. He stressed that they *need* to do the project but do it right. He wants to connect it (the revetment) to the seawalls to the north - make it "one big shore break". In 2007 they went to court with the County, and still nothing was done. He believes that the County dropped the ball.

Kulamanu Medeiros (fka Lemke) - Her mother's family owns a house just south of one of the seawalls nearby. She discussed the immense erosion lost due to the seawall. She was given a permit in 2011 for a sandbag revetment, which is still there and protecting the property. However, it is now 15 feet or less from the sand to the deck of the house. Even though she has a sandbag revetment protecting her house, she still believes that the road will be lost. She wants to connect the revetment to the wall, as well.

Joel Medraza - Mr. Medraza has been living in the area for about 12 years and wants to help the County get the project approved. He is an engineer and believes that the consultant has done their due diligence in looking for the best design available today. He stressed how long the erosion has been an issue, and something needs to be done as the shoreline will continue to erode and carry soil and other debris into the ocean. He noted that monk seals have come to shore less and less as the years have gone by and the erosion has gotten worse. Mr. Medraza talked about how important the area is to the local community and its culture, citing anecdotes and pictures of people fishing, walking, and enjoying the community. He stressed that the entire community is big on walking in the area, and it is very important to maintain that ability with a wide enough path.

Cindy Griffin - Ms. Griffin lives north of the project site, and she is uncomfortable with the current state of the road. Her home is elevated, and she can see the channel in the reef where people frequently get stuck. She noted that she has frequently had to call emergency services for people to get stuck in the channel, and she greatly appreciates the actions to fix the road. She supports the County's current plan.

Dana Wilke - Ms. Wilke has lived on `Aliomanu Road for 40 years, and her biggest concern is that the area is filled with potholes and the area becomes a giant lake when it rains. She believes money could be saved if the project is done the right way, as opposed to the continued grading she has seen over the years. She agrees with the Medeiros family's viewpoints.

Aunty Aggie - She has lived in the Anahola area for about 35 years, and her concerns are cultural impacts. She referenced the State coming in to move rocks that Mr. Medeiros referenced, and said there is a heiau in that area and that those could be heiau rocks. She is part of a group that grows limu in the project area with local families and is concerned about runoff going into the ocean and destroying the limu habitat. She also echoed Ms. Wilke's sentiments of the potholes and water runoff and accumulation during rain. She stated that mother nature is taking the sand back that was previously removed from the river mouth to fill the sandbags currently existing on the project site. She is concerned that a free flowing river would allow for more flooding, so no more sand should be taken from the river mouth.

Julie Allen - Ms. Allen has lived on the road since 1971, in the 6th house in on the mauka side. She was also concerned about runoff and water levels during rainstorms, as she has seen the increase in damage they have done over the last 50 years. She is on the beach almost daily and noted the varying amounts of sand at any time at the project area. Ms. Allen discussed seeing turtles and monk seals in the area during her walks.

One written response was received from a person who attended the hearing, Hope Hamilton Kallai. The full language of the letter is below:

“Please do not issue permit for CDUA: KA-3856, the `Aliomanu Road Repair project, as presented, as it fails to include public lateral coastal access to a 1 significant, traditional, culturally-important reef and the application does not incorporate the April 23, 2019 Shoreline Certification, Attachment D, with a 2 reduction of 9,710 square feet due to coastal erosion in the proposed revetment area or the nearby seawall that is causing the excessive erosion. On Page 200 of the CDUA, in the Cultural Impact Assessment, the Office of Hawaiian Affairs expressed concerns about beneficiary access to marine resources and preservation of water quality:

Lateral coastal access on the alaloa has been mapped on the early Kauai maps - Registered Map 432 , from 1833 by Ursula Emerson, and the 1878 First 3 Government Survey of Kauai, Registered Map 13954 Registered Map 432 from 1833 shows lateral coastal access trails in `Aliomanu, joining the harbors of Anahola and Papa`a.

This area of `Aliomanu has high traditional and cultural use, including fishing and gathering of marine and coastal resources, spiritual practices, kilo (or star, weather and ocean observation), and ocean based recreation.

Registered Map 1395 from 1878, the first Government Survey of Kauai performed by Kitteridge, also shows a coastal trail in makai `Aliomanu. Lateral coastal access on pre-1892 trails is preserved in HRS 115.

Traditional and cultural use of this area is ancient, well documented, and on-going. Access for traditional cultural practices must be preserved.

At every public meeting that has been held on Kauai discussing this issue, the community was clear that a high priority was maintaining a foot trail along this stretch of reef, as boulderhopping is unsafe. There is no beach in the area of replacement. Please include

consideration for a one lane vehicle road, with a one lane, dedicated, footpath. The couple dozen homes in area beyond the proposed revetment work are now mostly vacation rentals, for mostly tourists, most of whom are not familiar with Hawaiian traditional fishing and gathering practices. Most of the traffic beyond this proposed revetment is tourist traffic who do not necessarily know to yield to folks walking, carrying buckets, throw nets and coolers of fish. The particular population dynamics of the area mainly served by this proposed revetment make a safe walking path more necessary. When the county previously attempted to use rocks from this area, the community reacted negatively because some of the rocks have known names. This is an extremely sensitive cultural area and change is not welcome. Especially change that appears to cater to a specific user group. Many cultural practitioners using this area have complained about the ridiculous attempt to stop the ocean with fiberglass sand bags, all of which end up on the reef, wrapping around peoples legs while fishing. This project incorporates two Environmental Assessments, the first in 2009 and the second in 2018 but neither address current shoreline locations as certified April 23, 2019, included as Attachment D. The reduction of over 9,000 square feet of shoreline must be addressed in this permit as must the expected increase in global sea rise. I do not believe this revetment, designed to withstand 10' waves, is adequate or appropriate for this area. This proposal does not consider climate change or King tides. The erosion of Kuaehu point is exacerbated by the seawall constructed nearby, which has changed the wave patterns fronting the road project section, increasing erosion rates. The SOEST coastal erosion maps show a serious coastal 8 erosion reduction in this area of 0.6 inch/yr to 1.1 ft/yr rate. In the projected 50 year span of this project, according to their projections, this area will erode from 30' to 55'. This proposed roadway will be gone.

Monk seals and green sea turtles frequent this area often. What are the plans to mitigate impact to these protected marine mammals? Cease construction? Relocate the seals? This is a real problem that must be considered, before the impacting action.

Please reject this CDUA, as it does not adequately consider traditional, cultural and public access, include engineering for the current shoreline certification, global climate change, endangered species or alternative analysis of other projects. Mahalo for considering rejecting this permit application until it more thoroughly considers cultural and environmental impacts, pedestrian public access and alternatives.”

ANALYSIS

After reviewing the application, by correspondence dated September 19, 2018, the Department has found that:

1. The proposed use is an identified land use in the Resource subzone of the Conservation District, pursuant to §13-5-22, Hawaii Administrative Rules (HAR), P-15, SHORELINE EROSION CONTROL, (D-1): Seawall, revetment, groin, or other coastal erosion control structure or device, including sand placement, to control erosion of land or inland area by coastal waters, provided that the applicant shows that (1) the applicant would be deprived of all reasonable use of the land or building without the permit;(2) the use would not adversely affect beach processes or lateral public access along the shoreline, without adequately compensating the State for its loss; or (3) public facilities (e.g., public roads) critical to public health, safety, and welfare would be severely damaged or destroyed without a shoreline erosion

- control structure, and there are no reasonable alternatives (e.g., relocation). Requires a shoreline certification.
2. Pursuant to §13-5-40 of the HAR, a Public Hearing was not required; however, a public hearing was held out of good faith due to high public interest in the project shown in previous years. The public hearing was held on March 5, 2020, at the Kapa`a Public Library;
 3. In conformance with Chapter 343, Hawai`i Revised Statutes (HRS), as amended, and Chapter 11-200, HAR, the two versions of the Final Environmental Assessment (FEA) for this project were published in the OEQC's October 8, 2009, and March 23, 2018 editions of The Environmental Notice, and the County of Kaua`i, Department of Public Works was the approving agency of the Final Environmental Assessment and Finding of No Significant Impact for the proposed project; and
 4. Since the project would be constructed within the shoreline setback area, the applicant will prepare and submit an application package to the County of Kaua`i, Department of Planning and Permitting to obtain the necessary Shoreline Setback Variance in concurrence with the Special Management Area Use Permit.

CONSERVATION CRITERIA

The following discussion evaluates the merits of the proposed land use by applying the criteria established in Section 13-5-30, HAR.

1. *The proposed land use is consistent with the purpose of the Conservation District.*

The objective of the Conservation District is to conserve, protect and preserve the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare.

The proposed use is an identified land use in the Resource subzone of the Conservation District; as such, it is subject to the regulatory process established in Chapter 183C, HRS and detailed further in Chapter 13-5, HAR.

The proposed land use is to mitigate and minimize shoreline erosion at the already damaged section of `Aliomanu Road. This southern portion of `Aliomanu Road is the only access to a subdivision of homes to the north of the project site. Numerous archaeological, cultural, and biological studies were done regarding potential impacts to endangered species, such as the Hawaiian monk seal or the Hawaiian hoary bat, and any potential culturally significant resources that may be found at or near the project site. A number of mitigative practices have been identified within the application and environmental assessments to ensure appropriate management and action shall be implemented to protect natural resources.

2. *The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur.*

The objective of the Resource subzone is to ensure, with proper management, the sustainable use of the natural resources of those areas. A permanent shoreline revetment is an identified land use pursuant to the HAR, §13-5-22, P-15 SHORELINE EROSION CONTROL, Seawall, revetment, groin, or other coastal erosion control structure or device, including sand placement, to control erosion of land or inland area by coastal waters, provided that the applicant shows that (1) the applicant would be deprived of all reasonable use of the land or building without the permit; (2) the use would not adversely affect beach processes or lateral public access along the shoreline, without adequately compensating the State for its loss; or (3) public facilities (e.g., public roads) critical to public health, safety, and welfare would be severely damaged or destroyed without a shoreline erosion control structure, and there are no reasonable alternatives (e.g., relocation). Requires a shoreline certification.

The design and construction of the revetment conforms to the objectives set forth in HAR 13-5-22, specifically parameter 3 of P-15, SHORELINE EROSION CONTROL. The proposed revetment is intended to prevent further shoreline erosion to protect `Aliomanu Road from further eroding, which would block the only access road to the subdivision north of the project site. The road currently sits in an area exposed to consistent wave wash and action, and the proposed revetment would assist in mitigating the effects of erosion and wave action on the road, allowing for its continued use and maintenance as well as access to the homes in the subdivision to the north.

The Department does not support shoreline armoring. State policies under Chapter 205A, HRS do not generally support shoreline armoring. However, each case must be reviewed based on its own merits. In the present case, there is a clear need to maintain access the area and this is the only available access way. Thus, building a revetment would ensure access. The main concern with shoreline armoring is the resultant damage to beaches and coastal access. While staff would have preferred that an alternative – e.g., rebuilding of the bridge to the north, or construction of a new access way from the north, would have been preferable, the County did not pursue these actions. Thus, OCCL staff considers this action in light of potential impacts to beach resources and lateral shoreline access.

3. *The proposed land use complies with provisions and guidelines contained in Chapter 205, HRS, entitled "Coastal Zone Management," where applicable.*

The intended purpose of the revetment is to minimize shoreline erosion at the project site, which would allow for continued use of this section of `Aliomanu Road, a county road.

Under Policy number 9 (“Beach protection”) in the Hawai`i Revised Statutes Chapter 205A-2, “Coastal Zone Management Program; Objectives and Policies”, point C states a goal to “minimize the construction of public erosion protection structures seaward of the shoreline”. The shoreline for this project was noted to be at the makai edge of `Aliomanu Road.

OCCL staff conducted a site visit with the County and the representative of Oceanit. One of the primary purposes of this visit was to clearly visualize the extent of the project work, to discuss alternatives, and to investigate how the project reach into the shoreline area could be minimized. The County, Oceanit, and OCCL staff discussed reducing the footprint of the revetment by looking at different designs such as a hybrid revetment (revetment on the bottom, seawall on top), and reducing the width of the road to one lane.

If `Aliomanu Road remains as a one-lane street, and provided that pedestrian lateral access can be maintained, OCCL staff believes that the proposed project, in light of the unique nature of the project site allowing for rearranging of currently existing boulders and rocks in order to minimize the footprint of the revetment and introduction of new materials, can potentially fit within the Coastal Zone Management Program's Objectives and Policies. It is imperative that all Best Management Practices (BMPs) are carefully followed in order to minimize any potential negative impacts during construction.

4. *The proposed land use will not cause substantial adverse impacts to existing natural resources within the surrounding area, community, or region.*

The proposed revetment is intended to mitigate the ongoing coastal erosion in the area and to preserve use of `Aliomanu Road, the only access to the subdivision to the north. There has been a constant presence at the site of temporary erosion control structures (sandbags) for well over a decade, and this proposed revetment is a permanent solution to the erosion issue as well as the continued maintenance/replacement of the temporary erosion control structure. If the rebuilt section of the road remains at one lane and the significant majority of the boulders and rocks used in the revetment come from those currently existing within the project area, staff believes the proposed land use should not cause substantial adverse impacts to existing natural resources within the surrounding area, community or region provided that mitigative measures are implemented and the applicant shall be required to take measures to eliminate or minimize the interference, nuisance, harm, or hazard that the project may cause.

5. *The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding area, appropriate to the physical conditions and capabilities of the specific parcel or parcels.*

Staff is of the opinion that the proposed project will be compatible with the locality and surrounding areas and is appropriate to the physical conditions and capability of the specified parcels. The majority of the rocks and boulders to be used for the revetment are already existing in the vicinity of the project area, and thus the revetment will be compatible with the rest of the shoreline. While there is public use of the area directly to the south, including beach and beach park use, fishing, boating and offshore canoe paddling, and other ocean activities, the project is not expected to significantly detract from these activities, nor is it incompatible with the surrounding land uses.

6. *The existing physical and environmental aspect of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, which ever is applicable.*

The proposed project will maintain the physical and environmental aspects of the land, primarily as the rock revetment will use mostly boulder sand rocks that already exist within the project area. The applicant states specifically that “the revetment is designed to retain the nature of the rocky shoreline”. The proposed project is intended to blend visually with the surroundings, and it is believed there shall be no view impacts to the public or the neighbors.

7. *Subdivision of the land will not be utilized to increase the intensity of land uses in the Conservation District.*

No subdivision of land is proposed for this project.

8. *The proposed land use will not be materially detrimental to the public health, safety and welfare.*

Staff believes the proposed land use will not be materially detrimental to the public health, safety and welfare as mitigated. In fact, it is believed that the proposed action is necessary to public health, safety, and welfare as ensuring the continued existence of `Aliomanu Road - as well as the public utilities that are in the project vicinity - as it is the only access to the subdivision to the north. With proper BMPs identified and followed correctly, the proposed land use will improve public health and welfare in the area.

CULTURAL IMPACT ANALYSIS

An archaeological assessment was completed by Cultural Surveys Hawai`i was consulted for evaluation of potential historical and cultural resources in the project area. Cultural Surveys Hawai`i completed both a field inspection and literature review (September 2008) and a cultural impact assessment (February 2009) which included correspondence with local residents that have a history with the areas associated with the project site. These materials were included in the application.

The assessment concluded that there are native Hawaiian cultural resources, beliefs, and ongoing practices associated with the area surrounding the project site, and that the potential for impact historic properties, including human burials, remains high. This conclusion was affirmed by the commentary during public meetings on the project, as noted above in the comments section of this report. However, during the field assessment of the site, no cultural or historical resources were found at the project site itself.

The archeological assessments and reports completed by Cultural Surveys Hawai`i for the proposed project were accepted by the State Historic Preservation Division (SHPD) in February 2009. The acceptance letter also states that the archeological assessment and reports submitted meet the minimum requirements for compliance with the requirements of HRS, §6E-42. The SHPD agreed with Cultural Surveys Hawai`i’s recommendation that archaeological monitoring occur during all repair activities. The mitigative measures discussed

in the assessment included extreme caution during any ground disturbance as well as archeological monitoring during the construction process.

During the processing of this application, no comments were received from the Office of Hawaiian Affairs. The proposed action does not appear to adversely affect traditional Hawaiian rights. While construction activities are expected to adversely impact everyone, including native Hawaiian practitioners, it is believed that the project, once completed will not impair, diminish, or preclude customary or traditional native Hawaiian rights and no action is necessary to protect these rights.

Although the archaeological assessment noted that there was a likelihood of encountering archaeological, historical, or cultural features in the area, there is no record of any of these resources being found within the footprint of the project site itself. If important archaeological, historical or cultural features are discovered, all work will stop, and immediate archaeological consultation will be sought with the State Historic Preservation Division in accordance with applicable regulations.

DISCUSSION

The proposed land use consists of the construction of a boulder rock revetment, roughly 390 feet long, along the makai side of the rebuilt section of `Aliomanu Road. The proposed rock revetment is intended to mitigate coastal erosion that has been ongoing at the site for some time; there is currently a temporary erosion control structure composed of coir sandbags on site. These sandbags have consistently needed repair and replacement throughout the past decade, and the subject section of `Aliomanu Road is beginning to be undermined due to consistent exposure to erosion. This proposed land use represents the permanent solution to the ongoing erosion problem. The County agreed to come up with a permanent solution when the DLNR granted them an emergency authorization more than a decade ago. While this solution is not ideal from a policy perspective, as we would like to move away from seawall building, OCCL staff feels that the project is needed to maintain access to the area by residents.

The location of the proposed revetment currently contains a large number of boulders and rocks, many of which the applicant intends on using within the rock revetment itself in order to maintain the rocky nature of the shoreline as it currently exists. In essence, the boulders currently on the shoreline will be rearranged and replaced in order to form a structurally sound revetment to provide erosion control. It has not been determined how many new boulders will have to be imported to complete the project. The County is apparently developing a plan for beach nourishment in the future for the shoreline area fronting this project site, pending approval of this CDUA.

Construction phases will take place incrementally so as to not expose the filter and bedding to any potential wave action. Upon completion of the revetment stage of the project, reconstruction of the damaged section of `Aliomanu Road will begin. A 65-foot section of the road that serves as drainage swale for storm water crossing the road will be paved with concrete, while the remaining section of the rebuilt road will be paved with asphalt concrete. The revetment will be separated from the rebuilt sections of the road by a concrete rubble masonry curbwall transition roughly two (2) feet in width.

Despite being a primary topic of debate amongst members of the community, the single-lane road has currently been functioning as is and in its current place for over a decade. The comparative cost/benefit analysis between the one and two lane projects were negligible on all fronts, and, as the majority of community members favor the rock revetment itself, the one-or-two lane argument dominated both community meetings that occurred for the proposed project.

In the view of OCCL, the one-lane road is much preferred to the two-lane option as it would minimize the extension of the rock revetment into the shoreline area and the Resource sub-zone of the Conservation District and would “minimize” construction of shoreline hardening seaward of the shoreline.

Staff notes that during construction Standard Best Management Practices will be observed. Within the Application and the Final Environmental Assessment, the applicant has identified a number of mitigative measures, conditions and practices to ensure that the proposal will have minimal effects on the natural and other resources nearby. As such these proposed measures, conditions and practices are incorporated into the permit. These are listed in the “Mitigation” section of this report.

In the event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sinkholes are identified during the demolition and/or construction work, all work shall be ceased in the immediate vicinity of the find, the find would be protected from additional disturbance, and SHPD would be notified immediately.

The proposed project appears to fulfill the third parameter in HAR 13-5-22, P-15 listed above, “public facilities (e.g., public roads) critical to public health, safety, and welfare would be severely damaged or destroyed without a shoreline erosion control structure, and there are no reasonable alternatives”. The damaged section of `Aliomanu Road, a County-owned road, serves as the only access way into the subdivision of roughly 28 residences to the north of the project site. The construction of the proposed revetment would protect the road from further eroding, and potentially cutting off access to the subdivision. Additionally, it is not believed that the revetment - if it utilizes a minimal footprint with a one-lane road - would result in a significant alteration to the area, which can be characterized as an altered boulder beach with intermittent sand pockets. Public access to or along the shoreline would be maintained.

Overall, staff believes that the project will have negligible adverse environmental or ecological effects provided that best management practices and mitigation measures as described in the application and environmental assessment, and as required by rule or laws, are fully implemented.

RECOMMENDATION

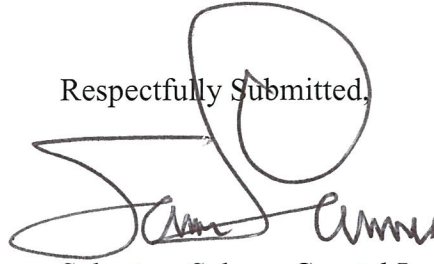
Based on the preceding analysis, staff recommends that the Board of Land and Natural Resources **APPROVE** Conservation District Use Application KA-3856 for the `Aliomanu Road Repair and Revetment Project, to include a one lane road feature with pedestrian access, and use of boulders in the vicinity of the project footprint, located in Anahola, Kaua`i at TMKs (4) 4-8-018:028; (4) 4-8-018:029, and seaward, subject to the following conditions:

1. The permittee shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, state, and county governments, and applicable parts of this chapter;
2. The permittee, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit;
3. Before proceeding with any work authorized by the department or the board, the permittee shall submit four copies of the construction plans and specifications to the chairperson or an authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to the permittee. Plan approval by the chairperson does not constitute approval required from other agencies;
4. Unless otherwise authorized, **any work or construction to be done on the land shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by the chairperson, and shall be completed within three years of the approval of such use;**
5. The permittee shall notify the Office of Conservation and Coastal Lands (OCCL) in writing at least 24 hours prior to the initiation and upon completion of the project;
6. All representations relative to mitigation set forth in the accepted application and environmental assessment or impact statement for the proposed use are incorporated as conditions of the permit;
7. The permittee shall comply with all of the mitigation and Best Management Practice representations and conditions stated in this staff report;
8. The permittee shall comply with all applicable Department of Health administrative rules;
9. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the permittee shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;
10. The applicant shall plan to minimize the amount of dust generating materials and activities. Material transfer points and on-site vehicular traffic routes shall be centralized. Dusty equipment shall be located in areas of least impact. Dust control measures shall be provided during weekends, after hours and prior to daily start-up of project activities. Dust from debris being hauled away from the project site shall be controlled. Landscaping and dust control of cleared areas will be initiated promptly;

- 11. Should historic remains such as artifacts, burials or concentration of charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage. The contractor shall immediately contact SHPD (692-8015), which will assess the significance of the find and recommend an appropriate mitigation measure, if necessary;**
12. The applicant shall implement both site-specific and standard Best Management Practices (BMPs), including the ability to contain and minimize silt in nearshore waters and clean up fuel, fluid or oil spills immediately for projects authorized by this letter. Equipment must not be refueled in the shoreline area. If visible petroleum, persistent turbidity or other unusual substances are observed in the water as a result of the proposed operation, all work must cease immediately to ascertain the source of the substance;
13. During construction, appropriate mitigation measures shall be implemented to minimize impacts to the aquatic environment, off-site roadways, utilities, and public facilities;
14. When provided or required, potable water supply and sanitation facilities shall have the approval of the Department of Health and the City & County Board of Water Supply;
15. Obstruction of public roads, trails, lateral shoreline access, and pathways shall be avoided or minimized. If obstruction is unavoidable, the permittee shall provide alternative roads, trails, lateral beach access, or pathways acceptable to the department;
16. During construction, appropriate mitigation measures shall be implemented to minimize impacts to the aquatic environment, off-site roadways, utilities, and public facilities;
17. Artificial light from exterior lighting fixtures, including but not limited to floodlights, uplights, or spotlights used for decorative or aesthetic purposes, shall be prohibited if the light directly illuminates or is direct to project across property boundaries toward the shoreline and ocean waters, except as may be permitted pursuant to HRS §205A-71. All exterior lighting shall be shielded to protect the night sky;
- 18. No night work that requires outdoor lighting during seabird fledging season from September 15 through December 15;**
19. The activity shall not adversely affect a federally listed threatened or endangered species or a species proposed for such designation, or destroy or adversely modify its designated critical habitat;
20. The activity shall not substantially disrupt the movement of those species of aquatic life indigenous to the area, including those species which normally migrate through the area;

21. No contamination of the marine or coastal environment (trash or debris) shall result from project-related activities authorized under this letter;
22. All placed material shall be free of contaminants of any kind including: excessive silt, sludge, anoxic or decaying organic matter, turbidity, temperature or abnormal water chemistry, clay, dirt, organic material, oil, floating debris, grease or foam or any other pollutant that would produce an undesirable condition to the beach or water quality;
23. The permittee acknowledges that the approved work shall not hamper, impede, or otherwise limit the exercise of traditional, customary, or religious practices of native Hawaiians in the immediate area, to the extent the practices are provided for by the Constitution of the State of Hawai'i, and by Hawai'i statutory and case law;
24. If the revetment results in significant flank erosion the County will be required to correct the problem in consultation with the OCCL;
25. The permittee understands and agrees that the permit does not convey any vested right(s) or exclusive privilege;
26. The permittee shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, state, and county governments, and applicable parts of this chapter;
27. In issuing the permit, the department and board have relied on the information and data that the permittee has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and the department may, in addition, institute appropriate legal proceedings;
28. The permittee shall obtain necessary county permits for proposed the use prior to final construction plan approval by the department;
29. Any landscaping will shall be appropriate to the site location and shall give preference to plant materials that are endemic or indigenous to Hawai'i. The introduction of invasive plant species is prohibited;
- 30. The reconstructed road remains as a single-lane road in order to minimize the footprint extending into the shoreline area and Conservation District;**
31. Other terms and conditions as prescribed by the Chairperson; and
32. Failure to comply with any of these conditions shall render this Conservation District Use Permit void under Chapter 13-5, as determined by the chairperson or board.

Respectfully Submitted,



Salvatore Saluga, Coastal Lands Program Specialist
Office of Conservation and Coastal Lands

For

Approved for submittal:

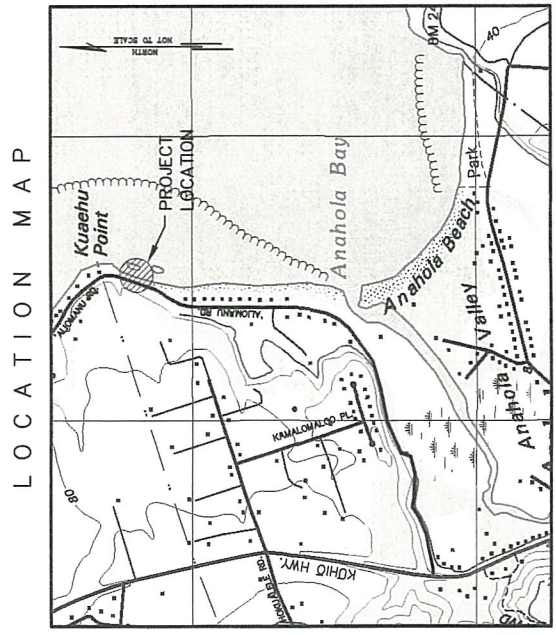
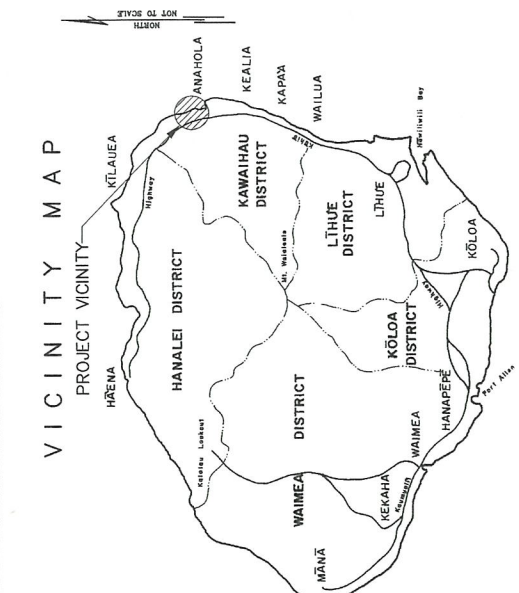
Suzanne D. Case

Suzanne D. Case, Chairperson
Board of Land and Natural Resources

DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI
 CONSTRUCTION PLANS
 FOR
ALIMANU ROAD REPAIR

ANAHOLA, KAWAIHAU, ISLAND OF KAUAI, HAWAII

PREPARED BY:



A P P R O V E D

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS COUNTY OF KAUAI	DATE
MANAGER AND CHIEF ENGINEER, DEPT. OF WATER COUNTY OF KAUAI	DATE
DIRECTOR, PLANNING DEPARTMENT COUNTY OF KAUAI	DATE
KAUAI ISLAND UTILITY COOPERATIVE	DATE
HAWAIIAN TELCOM	DATE
OCEANIC TIME WARNER CABLE	DATE
SANDWICH ISLES COMMUNICATIONS INC.	DATE

S H E E T I N D E X

DRAWING NUMBER	SHEET NUMBER	DESCRIPTION OF DRAWINGS
T-1	1	TITLE SHEET
T-2	2	GENERAL NOTES
T-3	3	WATER NOTES
T-4	4	UTILITY NOTES
T-5	5	LIST OF ABBREVIATIONS
C-1	6	EXISTING CONDITIONS
C-2	7	EROSION CONTROL PLAN
C-3	8	DEMOLITION PLAN
C-4	9	PLAN & PROFILE
C-5	10	CROSS SECTIONS - 1: STA 0+35 TO 1+50
C-6	11	CROSS SECTIONS - 2: STA 2+00 TO 3+60
C-7	12	CROSS SECTIONS - 3: STA 3+65 TO 4+65
DT-1	13	TYPICAL ROCK RETEMENT SECTIONS
DT-2	14	TYPICAL ROADWAY DETAILS
DT-3	15	CONCRETE PAVEMENT DETAILS
DT-4	16	BLOW-OFF WATERLINE DETAILS
TC-1	17	TRAFFIC CONTROL PLAN - DURING WORKING HOURS
TC-2	18	TRAFFIC CONTROL PLAN - DURING NON-WORKING HOURS

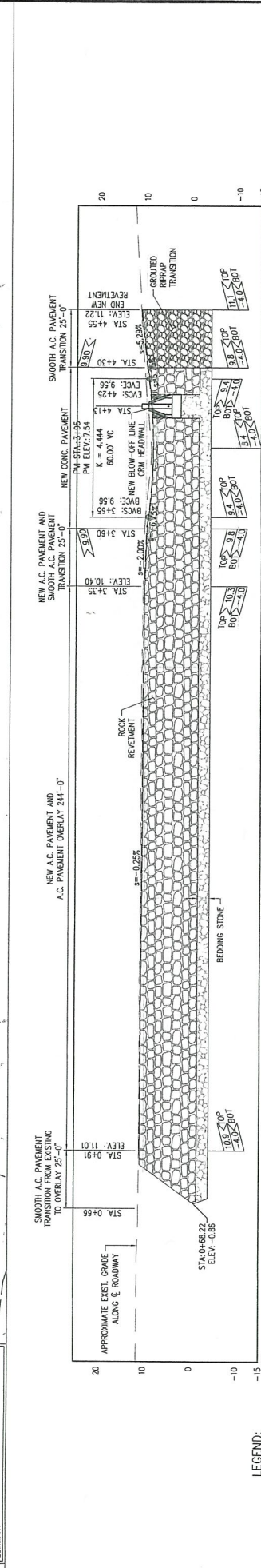
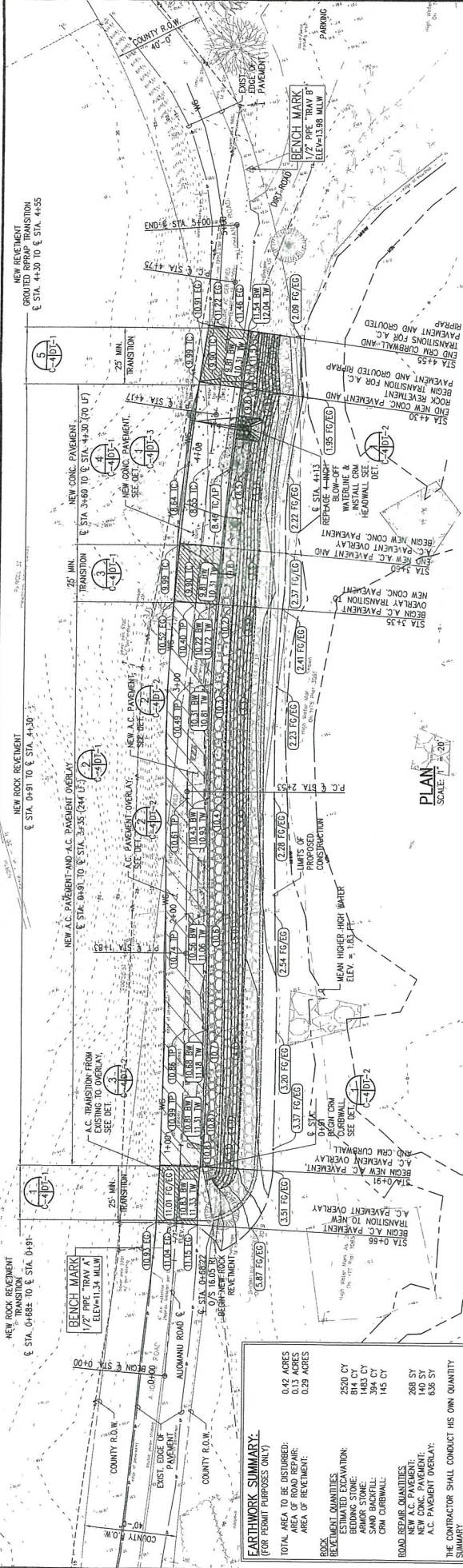
DWG. NO. T-1
 SHEET NO. 1 OF 18

AUGUST 2019

EXHIBIT

Site of Proposed Work





LEGEND:

- BASE LINE
- EXISTING CONTOUR
- MEAN HIGHER HIGH WATER
- MEAN SEA LEVEL
- LIMITS OF CONSTRUCTION
- GRADE BREAK
- NEW CENTERLINE MONUMENT
- CUT/FILL SLOPE
- ROCK REVELMENT
- BEDDING STONE
- A.C. PAVEMENT TRANSITION
- NEW A.C. PAVEMENT
- A.C. PAVEMENT OVERLAY
- NEW CONC. PAVEMENT

NOTES:

- ELEVATIONS ON PLANS REFERENCED TO MEAN LOWER LOW WATER.
- FINISHED ROAD GRADES SHOWN ON PLAN DO NOT INCLUDE 1" THICK A.C. PAVEMENT OVERLAY. CONTRACTOR SHALL MATCH SURFACE OF NEW A.C. PAVEMENT, A.C. PAVEMENT OVERLAY AND CONC. PAVEMENT WITH EXISTING ROADWAY SURFACE (MINIMIZING UNEVENNESS) TO PROVIDE A SMOOTH RIDING SURFACE.
- SEE SHEETS C-X TO C-X FOR SECTIONS ALONG BASELINE.
- FOR TYPICAL REVELMENT SECTIONS, SEE SHEET D1-X.

GRAPHIC SCALE:
 20' 0" 10' 0" 5' 0"
 SCALE: 1" = 20'

SCALE: 1" = 10'

APPROVED: _____ DATE _____
 MANAGER AND CHIEF ENGINEER
 DEPT. OF WATER, COUNTY OF KAUAI

REVISIONS:

NO.	DATE	REVISION	BY	APPROVED

oceanit
 DEPARTMENT OF PUBLIC WORKS
 COUNTY OF KAUAI
 ROADWAY AND REVELMENT
 PLAN & PROFILE

PROJECT NO. C-4
 SHEET NO. 9 OF 18

DATE: _____

SCALE: (PLAN) 1" = 40'
 (PROFILE) 1" = 10'

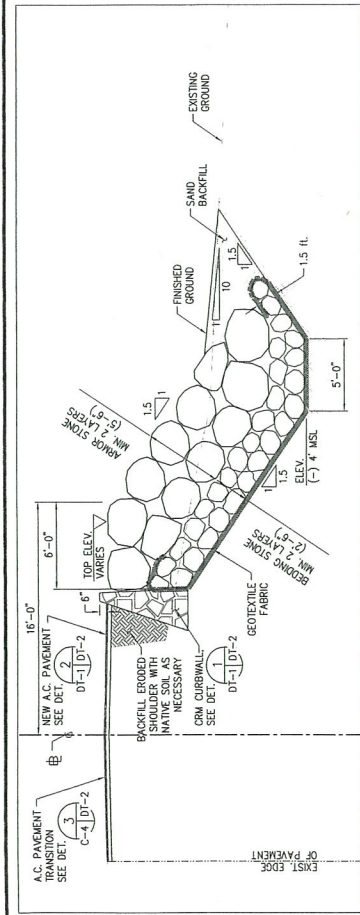
EARTHWORK SUMMARY:
 (FOR PERMIT PURPOSES ONLY)

TOTAL AREA TO BE DISTURBED: 0.42 ACRES
 AREA OF ROAD REPAIR: 0.13 ACRES
 AREA OF REVELMENT: 0.29 ACRES

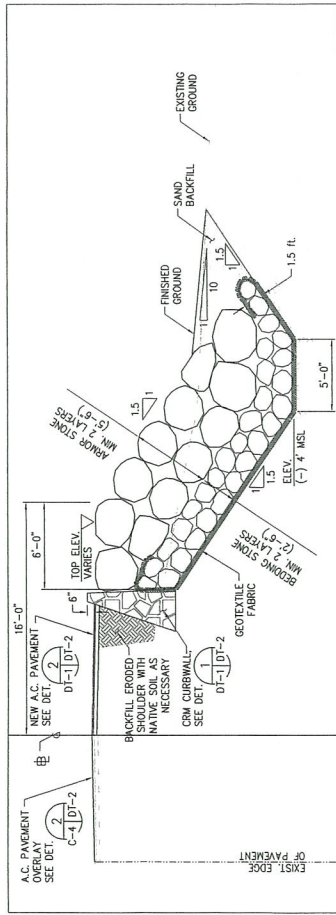
ROCK REVELMENT QUANTITIES:
 ESTIMATED EXCAVATION: 2520 CY
 BEDDING STONE: 814 CY
 SAND BACKFILL: 394 CY
 CRM CURB WALL: 145 CY

ROAD REPAIR QUANTITIES:
 NEW A.C. PAVEMENT: 268 SY
 NEW CONC. PAVEMENT: 140 SY
 A.C. PAVEMENT OVERLAY: 636 SY

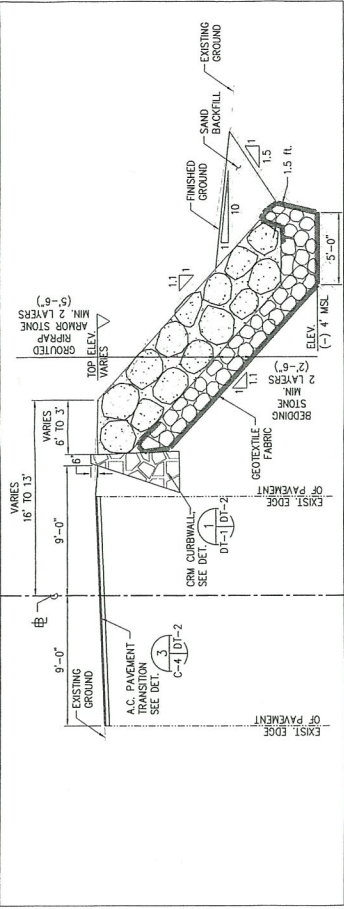
THE CONTRACTOR SHALL CONDUCT HIS OWN QUANTITY SUMMARY.



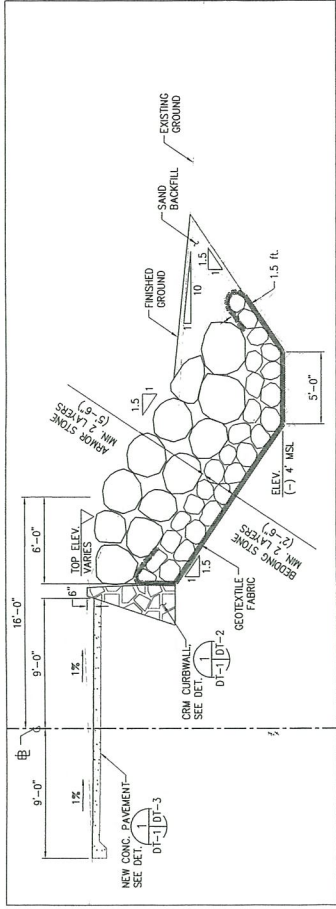
3 ROCK REVETMENT TYPICAL SECTION STA 3+35 TO STA 3+60
C-4 DT-1 SCALE: 1"=4'



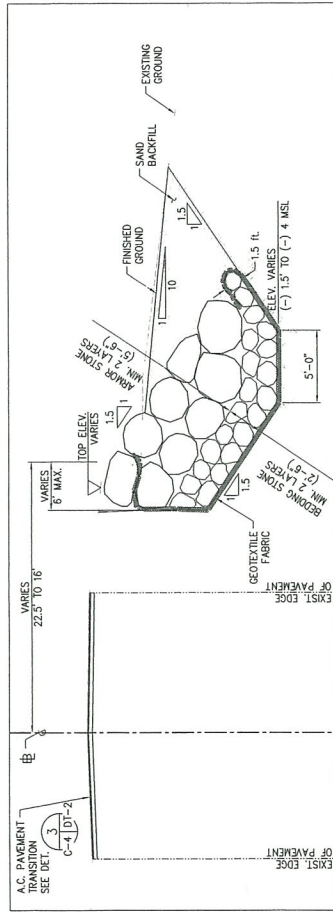
2 ROCK REVETMENT TYPICAL SECTION STA 0+91 TO STA 3+35
C-4 DT-1 SCALE: 1"=4'



5 ROCK REVETMENT TYPICAL SECTION STA 4+50 TO STA 4+55
C-4 DT-1 SCALE: 1"=4'



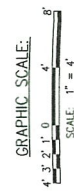
4 ROCK REVETMENT TYPICAL SECTION STA 3+60 TO STA 4+50
C-4 DT-1 SCALE: 1"=4'



1 ROCK REVETMENT TYPICAL SECTION STA 0+66 TO STA 0+91
C-4 DT-1 SCALE: 1"=4'

NOTES:

- ARMOR STONE: 2.0' - 3.0' NOMINAL DIAMETER
SIZE GREATER THAN 2.5'
- BEDDING STONE: 1.0' - 1.5' NOMINAL DIAMETER
SIZE GREATER THAN 1.2'
- ROCK DENSITY 165 PCF



GRAPHIC SCALE:
4 3 2 1 0 1 2 3 4
SCALE: 1" = 4'

DESIGNED BY	DATE	BRIEF	MADE BY	APPROVED
DEPARTMENT OF PUBLIC WORKS COUNTY OF KAUAI 'AIOMANU ROAD REPAIR				
TYPICAL ROCK REVETMENT SECTIONS				
DRAWING NO. DT-1 SHEET NO. 13 OF 18 SCALE: AS SHOWN DATE: 08/2019				



8. Ironwood (*Casuarina equisetifolia*) and Naupaka (*Scaevola sericea*) on the right dominate the mauka portions of the project site. On the makai side of the road (left upper), Naupaka and tree heliotrope (*Tournefortia argentea*) can be observed.

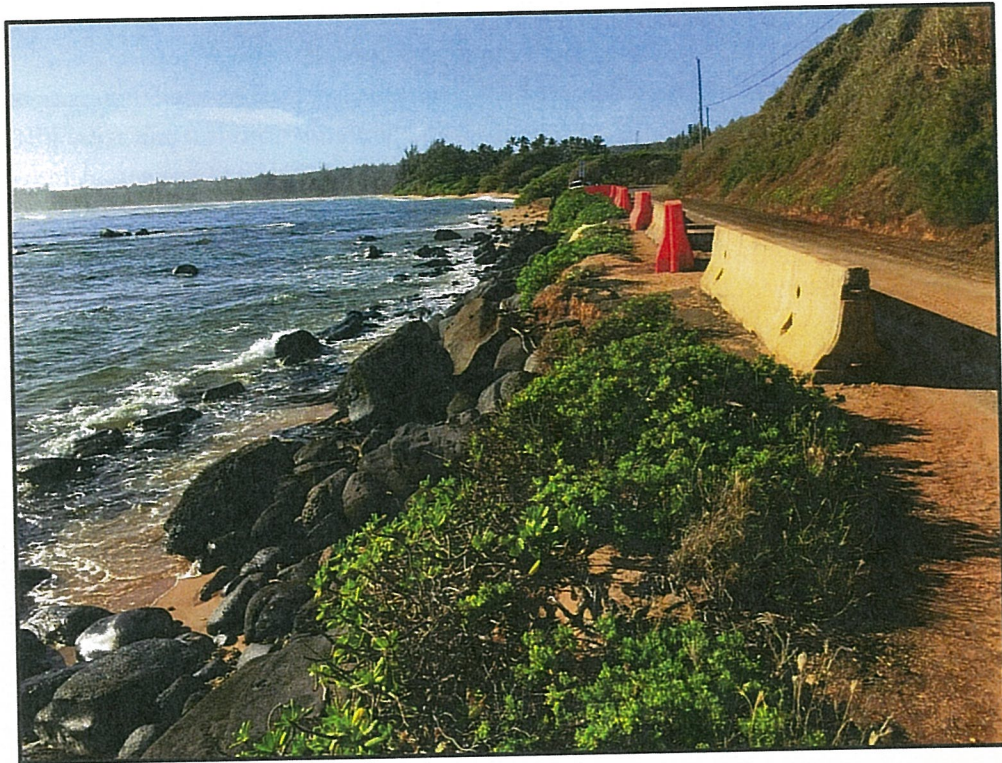


Figure 3. Photograph looking south along the damaged road.



Figure 4. Photograph looking north along the damaged road.

1.1 Background

The trend of shoreline erosion in the project area has been documented by the University of Hawai‘i at Mānoa Coastal Geology Group. Using orthorectified and georeferenced historic aerial photographs and National Ocean Survey topographic survey charts dating to 1927, the University determined that the average shoreline change for the project area is about -1.3 feet horizontally per year [1]. The beach erosion has caused progressive damage to the most seaward portion of ‘Aliomanu Road (Figure 2) reducing the width of the road. Currently, the road is only one lane wide in the project area and the erosion continues to progress (Figure 3 and Figure 4). If the erosion continues to go unaddressed, the damage may make the road impassible. The County of Kaua‘i proposes to repair the road and restore it to two lanes.

The Kaua‘i County Code 1987 restricts development within the shoreline setback areas. The proposed repair is within this setback, so a shoreline setback variance will be required. Section 8-27.10 of the Code states that a variance may be approved for “private and public structures that may artificially fix the shoreline but not adversely affect beach processes; provided that, the Commission also finds that shoreline erosion is likely to cause severe hardship to the applicant if the facilities or improvements are not allowed within the shoreline setback area and all alternative erosion control measures, including retreat, have been considered” [2].

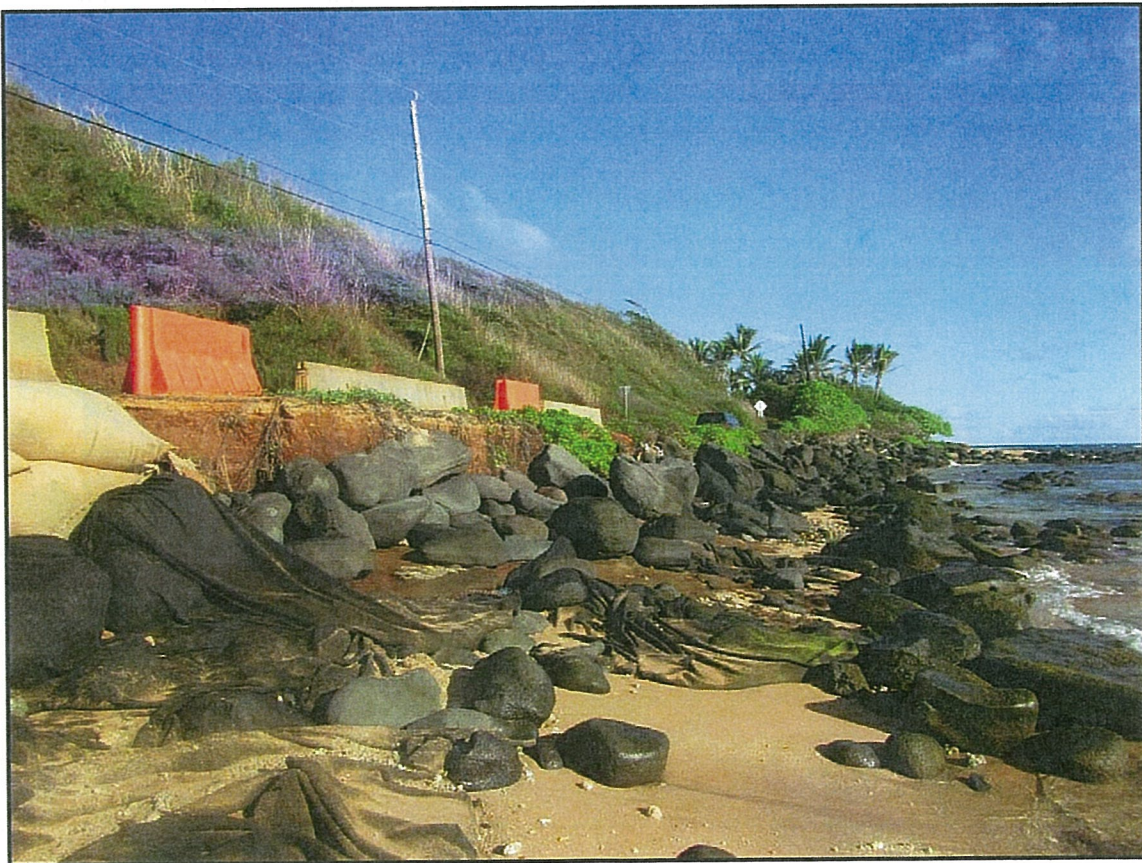


Figure 2. Photograph of the shoreline erosion undermining ‘Aliomanu Road.

6. View of the project site and coastline from the north, facing south. Also the starting point for the revetment.



7. A tree heliotrope (*Tournefortia argentea*) individual recently topple due to erosion.

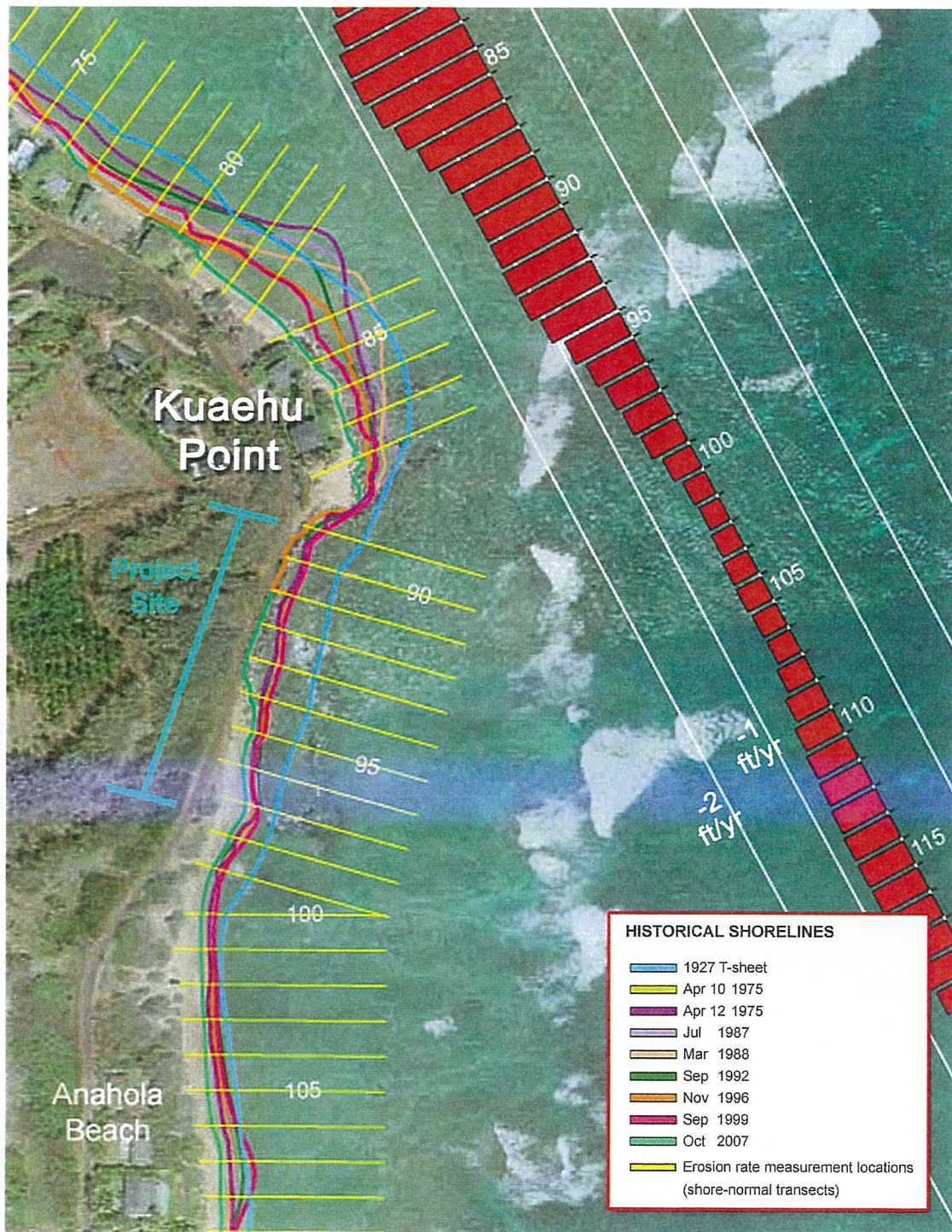


Figure 2-1. Map showing historical erosion

Source: University of Hawaii, Coastal Geology Group