DRAFT ENVIRONMENTAL ASSESSMENT
KEITH AND CYNDA UNGER SINGLE FAMILY DWELLING AND ASSOCIATED IMPROVEMENTS IN THE CONSERVATION DISTRICT

TMK (3rd): 8-6-014:012; 8-6-011:003
Kalāhiki, South Kona District, County of Hawai'i, State of Hawai`i

APPLICANT:

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APPROVING AGENCY:

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CONSULTANT:

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CLASS OF ACTION:

Use of Land in Conservation District

This document is prepared pursuant to:
The Hawai'i Environmental Protection Act,
Chapter 343, Hawai'i Revised Statutes (HRS), and
Title 11, Chapter 200, Hawai'i Department of Health Administrative Rules (HAR).

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SUMMARY OF PROJECT, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Keith and Cynda Unger propose to construct a single-family dwelling and related improvements on a 0.20-acre property owned by McCandless Land & Cattle Company, LLC ("McCandless Ranch"). The residence would consist of a main beach cottage structure occupying a footprint of approximately 2,046 square feet (sf) (1,403 sf interior, 633 sf lanai and porch). The home will have a composting toilet and a shower that recycles graywater for irrigation. Other features include an electrical generator, a propane tank, a 10,000 gallon water tank, a parking area, and minimal landscaping using the existing types of plants already found in the area, coconuts, naupaka, and tiare. The project would also include light grading of a 250-foot driveway from the mauka side of the property to connect to an existing ranch road which runs from Ho'okena Road to Kalāhiki over lands owned by McCandless Ranch.

Land clearing and construction activities would produce minor short-term impacts to noise, air and water quality and scenery. The project would not require an NPDES permit because grading would occur on much less than one acre, including the driveway. The grading component of the driveway will occur in a vegetated area well mauka of the coastal waters and will take a short period of time to accomplish, approximately three days. The applicant will ensure that its contractor performs all earthwork and grading in conformance with applicable laws, regulations and standards. The residence will be sited 40 feet from the certified shoreline, which is also the site of what is referred to on TMK maps as an "Old Road." While the "Old Road" is not evident on the ground, the area where it is shown on the map is entirely makai of the kuleana and mostly makai of the certified shoreline. Impacts to archaeological and cultural resources have been avoided through inventory and avoidance of the shoreline. If any previously unidentified sites, or remains such as artifacts, shell, bone or charcoal deposits, human burials, rock or coral alignments, pavings, or walls are encountered, work will stop immediately and SHPD will be consulted to determine the appropriate mitigation.

PART 1: PROJECT DESCRIPTION AND E.A. PROCESS

1.1 Project Description and Location

Keith and Cynda Unger propose to construct a single-family dwelling and related improvements on a 0.20-acre property at TMK 8-6-014:012, Kalāhiki, South Kona District, for the residence of Keith and Cynda Unger (Figures 1-3, Appendix 4). Cynthia M. Salley is the sole manager of McCandless Land & Cattle Company, LLC ("McCandless Ranch" or "McCandless"), the property owner. Cynda Unger is the daughter of Cynthia Salley and a member of McCandless Land & Cattle Company, LLC. Keith Unger is married to Cynda Unger and is the general ranch manager for McCandless.

TMK 8-6-014: 012 is a *kuleana*, Land Commission award number 9746-C-1, which was historically, customarily and actually used for single-family residential purposes. McCandless Ranch owners, personnel and their guests as well as other property owners in Kalāhiki already regularly visit the beach at Kalāhiki and many of the 20 *kuleana* and other properties to fish, gather, and enjoy the beach area. The area is also used by fishermen and gatherers of *opihi*, *limu*, and other resources; some hikers and kayakers from Ho'okena also visit the shoreline.

The residence would consist of a main beach cottage structure occupying a footprint of approximately 2,046 square feet (sf) (1,403 sf interior, 633 sf lanai and porch). The structure would be low-profile, with a maximum elevation of no more than 20 feet from the ground. The residence would be 40 feet inland from the certified shoreline and the makai property boundary, as far inland as is feasible on this lot for the single-story home. The house will be painted in muted, non-reflective tones and all exterior lighting will be shielded. The home will have a composting toilet and a shower that recycles graywater for irrigation. Other features include an electrical generator, a propane tank, a 10,000 gallon water tank, a parking area, and minimal landscaping using the existing types of plants already found in the area, coconuts, naupaka, and tiare.

Current access to this property and others at Kalāhiki is via an unpaved four-wheel drive road that runs from Ho'okena Road over property owned by McCandless to the shoreline (see Figure 1). From here north, a road noted as the "Old Road" on TMK maps historically provided access to the kuleana (see Figure 2). The project would also include light grading of an approximately 250-foot long driveway on TMK 8-6-011:003 (also owned by McCandless Ranch) from the mauka end of the kuleana to the four-wheel drive road (see Appendix 4) to connect to the shared access road.

1.2 Environmental Assessment Process

This Environmental Assessment (EA) process is being conducted in accordance with Chapter 343 of the Hawai'i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawai'i Administrative Rules (HAR), is the basis for the

Figure 1 Project Location Map

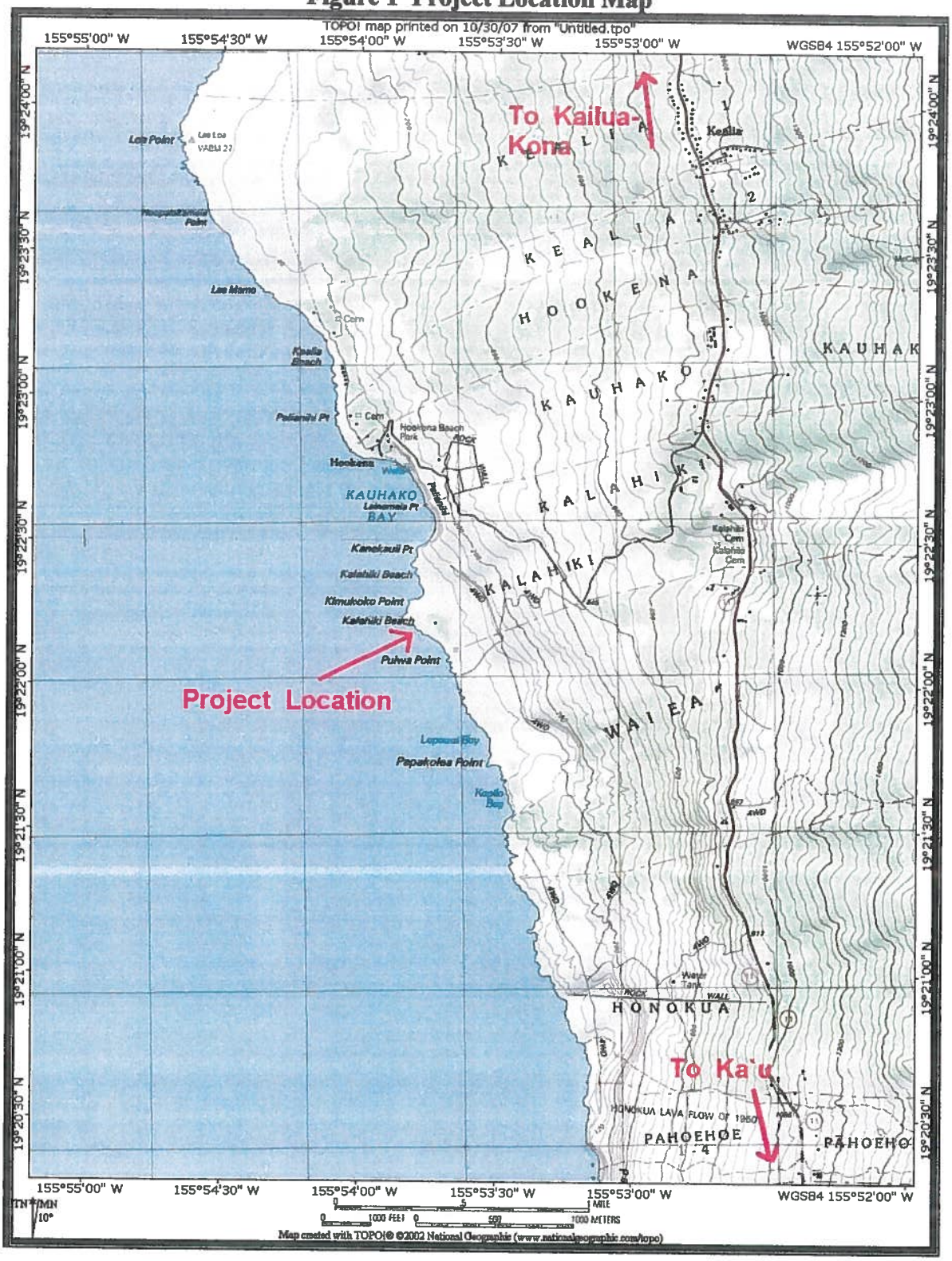
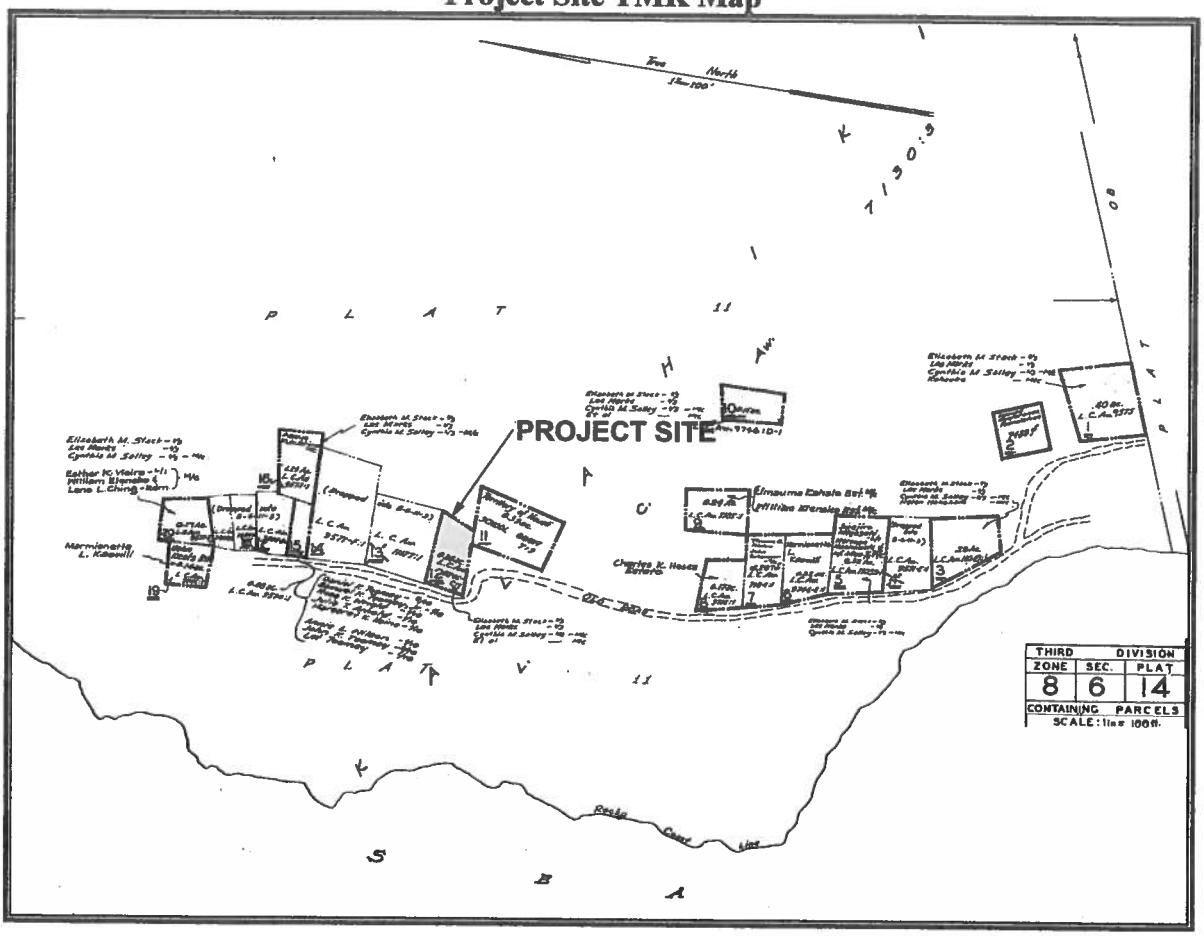
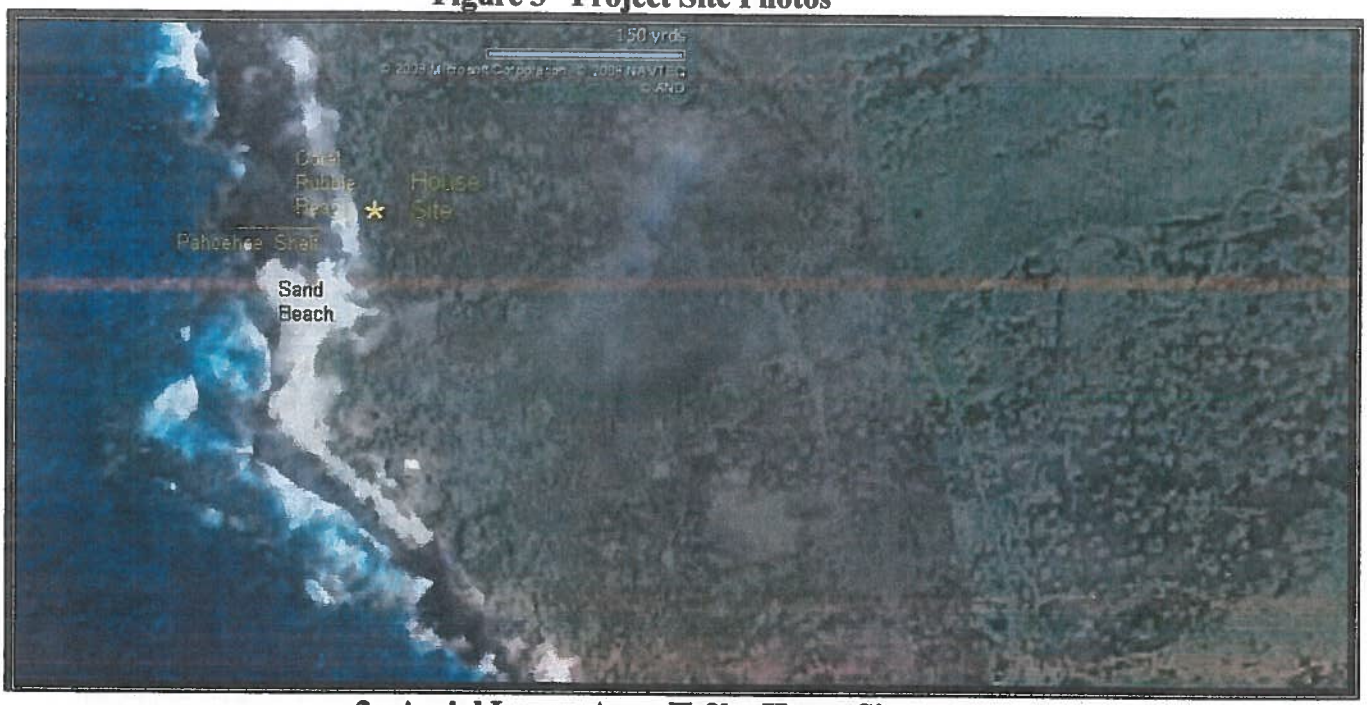


Figure 2
Project Site TMK Map

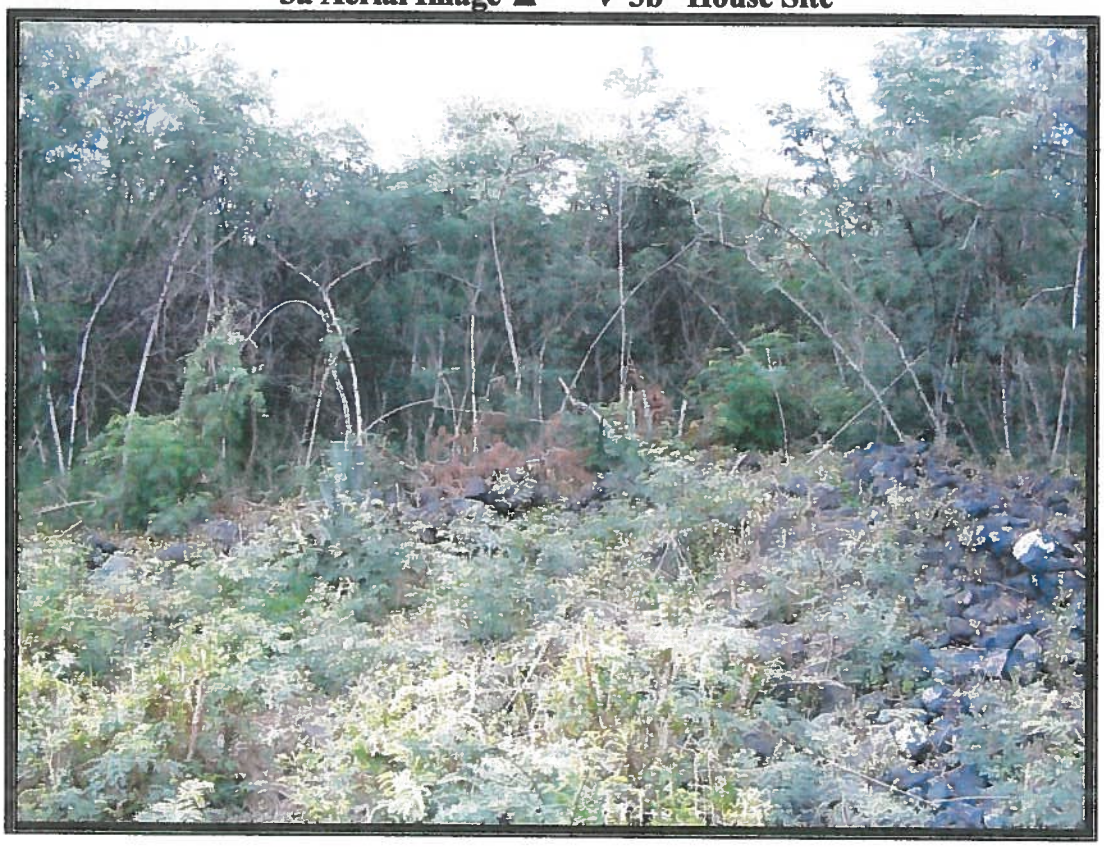


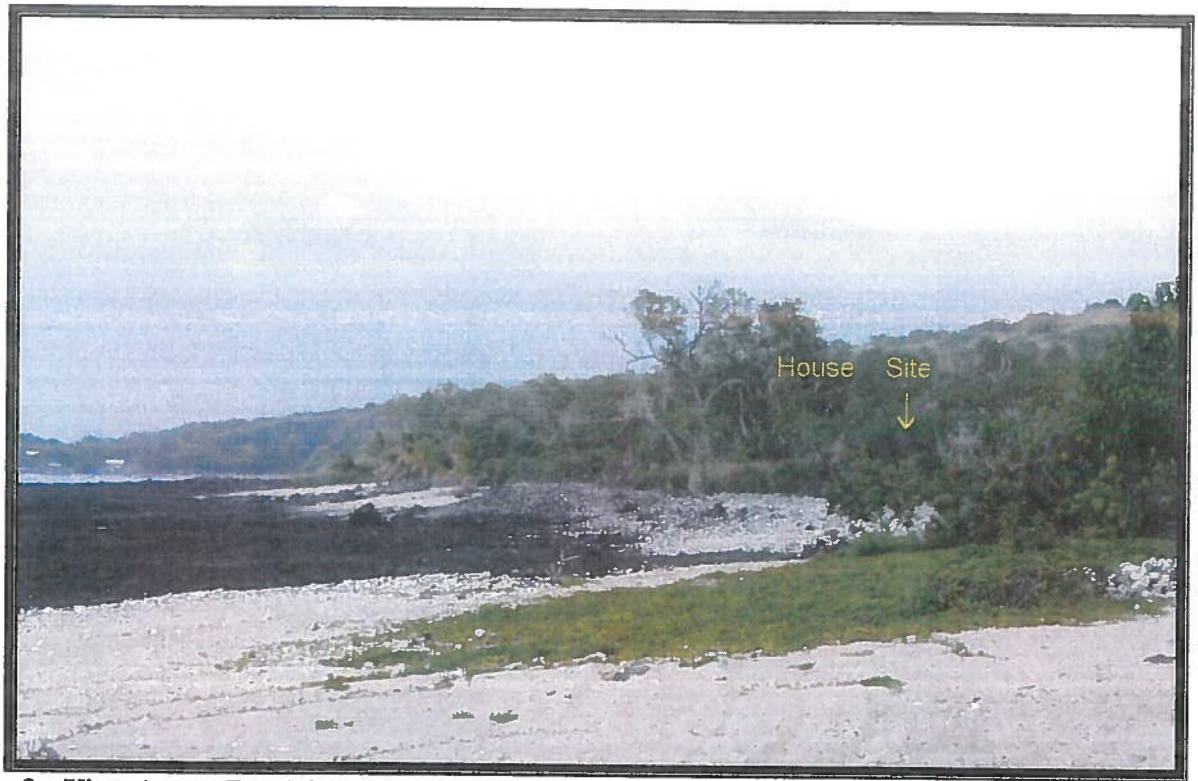
environmental impact assessment process in the State of Hawai'i. According to Chapter 343, an EA is prepared to determine impacts associated with an action, to develop mitigation measures for adverse impacts, and to determine whether any of the impacts are significant according to thirteen specific criteria. Part 4 of this document states the anticipated finding that no significant impacts are expected to occur, based on the preliminary findings for each criterion made by the consultant in consultation with the Hawai'i State Department of Land and Natural Resources, the approving agency. If, after considering comments to the Draft EA, the approving agency concludes that, as anticipated, no significant impacts would be expected to occur, then the agency will issue a Finding of No Significant Impact (FONSI), and the action will be permitted to occur. If the agency concludes that significant impacts are expected to occur as a result of the proposed action, then an Environmental Impact Statement (EIS) will be prepared. It should be noted that HAR § 11-200-8 (A)(3)(a) lists "Single-family residences less than 3,500 square feet not in conjunction with the building of more such units" as being "Exempt Classes of Action."

Figure 3 Project Site Photos

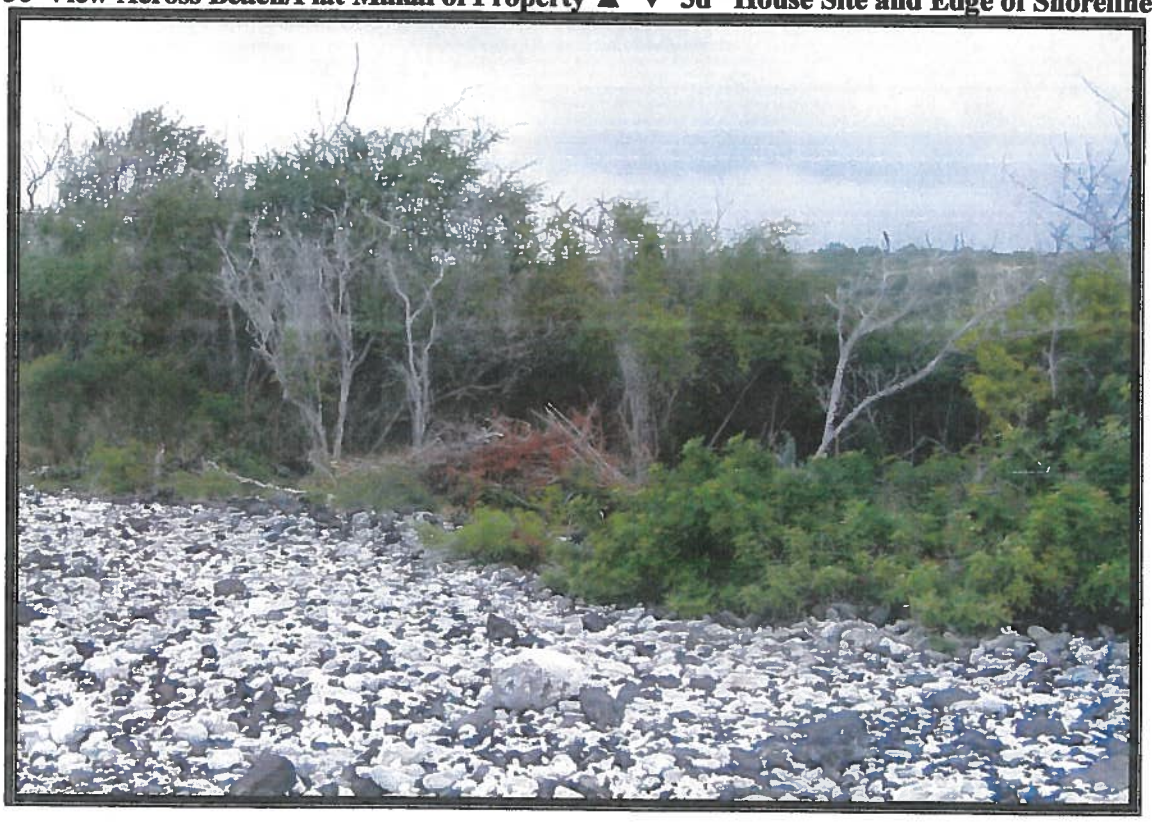


3a Aerial Image ▲ ▼ 3b House Site





3c View Across Beach/Flat Makai of Property ▲ ▼ 3d House Site and Edge of Shoreline



3e Storm Surf on January 16, 2009 ▲ ▼ 3f Beach and Subject Property on January 16, 2009

1.3 Public Involvement and Agency Coordination

The following agencies, organizations and individuals have been consulted during the Environmental Assessment Process:

County:
- Planning Department
- County Council
- Department of Public Works
- Fire Department
- Police Department

State:
- Department of Health
- Department of Land and Natural Resources, Office of Chairman
- Department of Transportation, Highways Division, Hawai'i Island
- Office of Hawaiian Affairs

Private:
- Sierra Club
- Clarence Medeiros
- Charlie Young
- Neighbors: Alston and Geraldine Kaleohano, Kealia Ranch, Puka'ana Church, Tommy Rietow, Hale Kauai Ltd., Lucia Minan, Joe and Nohea Santimer

Copies of communications received during early consultation are contained in Appendix 1a. The early consultation letter sent to DLNR on November 2, 2007, stated the applicant's plan for the property was to use it for residential and recreational stays for ranch owners, employees, and guests. By letter dated November 28, 2007, the Office of Coastal and Conservation Lands, DLNR (see Appendix 1a) stated that it did not view the proposed use as an identified land use. It has now been clarified that the proposed use is a single-family residence for Keith and Cynda Unger. It should be noted that responses to early consultation are based on the plan described in the early consultation letter.

PART 2: ALTERNATIVES

2.1 Proposed Project

The proposed project is described in Section 1.1 above and its locations and features illustrated in Figures 1-3 and Appendix 4.

2.2 No Action

Under the No Action Alternative, the residence would not be built. This EA considers the No Action Alternative as the baseline by which to compare environmental effects from the project. No other alternatives uses for the property are desired by Keith and Cynda Unger or the McCandless Land and Cattle Co., and thus none are addressed in this EA.

PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION

The property, which is presently vacant and unused, is bounded by a privately-owned parcel that appears to be a kuleana on one side (TMK 8-6-014:011) and partially enclosed by another (TMK 8-6-011:003). There is no development adjacent. On the seaward side is storm-deposit beach beyond which is a wide basalt shore (see photo in Figure 3c). According to the Shoreline Survey (see Appendix 3), the makai/north corner of the lot is at 13.02 feet above mean sea level.

3.1 Physical Environment

3.1.1 Geology, Soils and Geologic Hazards

Environmental Setting

The project site is located on the flank of Mauna Loa, an active volcano, in the District of South Kona, ahupua'a of Kalāhiki. The project site is underlain by lava flow from Mauna Loa of the Ka'u Basalt series of age 1,500 to 3,000 years. Soil in the area classified as Rough broken land (RB), a miscellaneous land type with very steep slopes (35 to 70 percent). The soil material is highly variable in depth, with outcrops common. This soil type is usually used for pasture, woodland, wildlife habitat, and recreation areas (U.S. Soil Conservation Service 1973). This area receives an average of about 40 to 50 inches of rain annually, with a mean annual temperature of approximately 80 degrees Fahrenheit (UH Hilo-Geography 1998:57).

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. Volcanic hazard as assessed by the U.S. Geological Survey in this area of South Kona is 2 on a scale of ascending risk 9 to 1 (Heliker 1990:23). The high hazard risk is based on the fact Mauna Loa is presently an active volcano. Volcanic hazard zone 2 areas have had 15-25% of land area covered by lava or ash flows since the year 1800, and are at lower risk than zone 1 areas because they are not directly themselves active zones, but are found adjacent to and downslope of active rift zones.

In terms of seismic risk, the entire Island of Hawai'i is rated Zone 4 Seismic Hazard (*Uniform Building Code, 1997 Edition*, Figure 16-2). Zone 4 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built. The project site does not appear to be subject to subsidence, landslides or other forms of mass wasting.

Impacts and Mitigation Measures

In general, geologic conditions impose no constraints on the proposed action as much of Hawai'i Island faces similar volcanic hazard, and the residence is not imprudent to construct.

3.1.2 Flood Zones and Shoreline Setting

Environmental Setting

Floodplain status for many areas of the island of Hawai'i has been determined by the Federal Emergency Management Agency (FEMA), which produces the National Flood Insurance Program's Flood Insurance Rate Maps (FIRM) (Fig. 4). The map for the project site is 1551661407C. The property and driveway are classified in Flood Zone X, areas outside the mapped 500-year floodplain, by a distance of at least 50 feet. No known areas of non-coastal local flooding are present.

The property lies adjacent to a wide basalt shoreline shelf with a storm-deposit beach on its *mauka* end. Although at most times the edge of the water is about 100 yards from the property boundary, during times of high waves and high tides, coral rubble, sand and basalt cobbles are deposited much closer. Through time, a shoreline deposit has formed (see photos in Figure 3). A certified shoreline survey was performed and located one corner of the project site's *makai* property line essentially on the shoreline (see Appendix 3 for certified shoreline survey). The applicant, who has been familiar with the property for over 35 years, has never seen the property itself inundated as a result of high storm waves or tsunami. On January 16, 2009, the National Weather Service issued a high surf advisory for waves above 14 feet and Kona experienced one of the largest storm events in the last several years. The applicant visited the *kuleana* during the height of the surf on that day at a medium tide and noted that the storm surge did not approach the makai boundary of the lot (see Figures 3e-f for photographs).

The property lies adjacent to a wide basalt shoreline shelf with a storm-deposit beach on its *mauka* end. Although at most times the edge of the water is about 100 yards from the property boundary, at some point in the past, extremely high waves deposited coral rubble, sand and basalt cobbles deposited much closer. Through time, a coral and basalt cobble deposit has formed (see photos in Figure 3). A certified shoreline survey was performed and located at the south corner of the project site's *makai* property line essentially at the shoreline and about 15 feet makai of the north/makai corner of the lot (see Appendix 3 for certified shoreline survey).

The wide pahoehoe shelf bordering the project site currently protects the property from hazardous waves, which at the makai most part of the property, is 13 feet above sea level. The Site Plan calls for the home to be located at a setback distance of 40 feet, which is double the permitted shoreline setback for the home on this small property, based County of Hawai'i Planning Department Rules, Rule 11-5. Because of the size and configuration of this lot, if all applicable setbacks are applied, including the 40-foot shoreline setback, the buildable area of the lot would be reduced by more than 50%. Thus, under Hawai'i County Planning Department Rule 11-5(b)(1)(b), the shoreline setback would be 20 feet. Here, the applicant is proposing a 40-foot building setback.

Impacts and Mitigation Measures

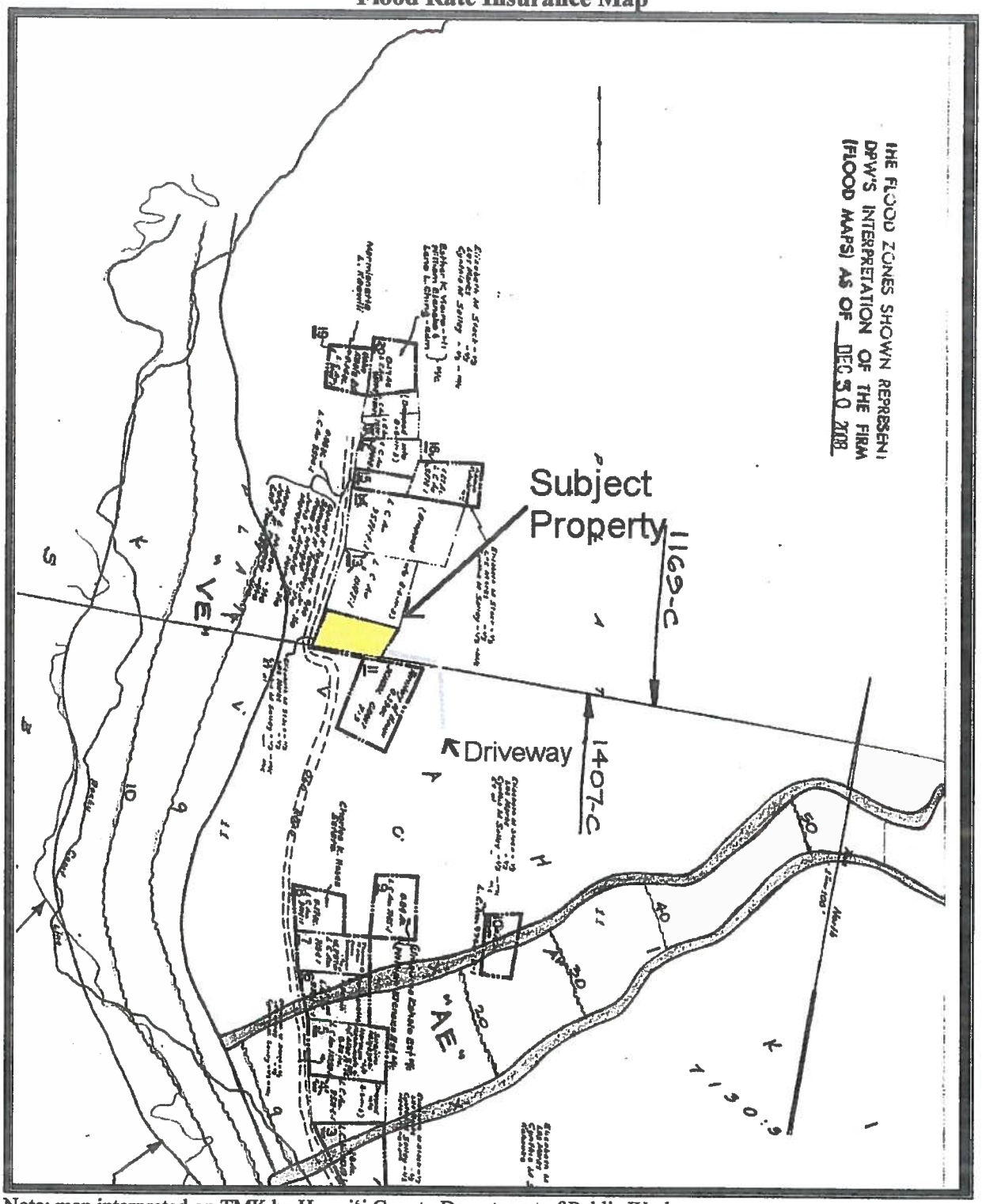
Lots that front the shoreline are subject to natural coastal processes including erosion and accretion, which can be affected by human actions such as removal of sand or shoreline hardening. Erosion may adversely affect not only a lot owner's improvements but also State land and waters, along with the recreational and ecosystem values they support. Development of shoreline properties also exposes residents and visitors to increased risk of hazardous high waves and tsunami.

The project does not involve any shoreline hardening or use of areas subject to beach processes. Access to the home will be by a driveway at the back of the property. As discussed above, the proposed home would be outside the Flood Zone by a distance of 50 feet or more.

Of increasing importance to land use approvals in coastal regions throughout the world is the issue of sea level rise. There Earth is warming because of increases in human-produced greenhouse gases such as carbon dioxide and methane, which in turn, this has led to a rise in global sea level (http://www.ncdc.noaa.gov/oa/climate/globalwarming.html). According to the National Climate Data Center of the National Oceanic and Atmospheric Administration (NOAA), global mean sea level has been rising at an average rate of 1.7 mm/year (plus or minus 0.5mm) over the past century, a rate which has increased over the last 10 years to 3.1 mm/year (Bindoff et al 2007). NOAA projects an expected range of sea level rise over the next century of between 0.18 and 0.59 m due mainly to thermal expansion and contributions from melting alpine glaciers. However, potential contributions from melting ice sheets in Greenland or Antarctica may yield much larger increases. Dr. Charles Fletcher of the University of Hawai'i, Manoa, estimates that sea level may rise up to one meter by the end of the next century.

In Hawai'i, beach erosion, reef overtopping and consequent higher wave run-ups, more devastating tsunami, and full-time submergence of critical coastal areas are likely to occur (http://www.soest.hawaii.edu/coasts/sealevel/). It is particularly important to consider the location of new infrastructure, and the State and counties must consider how to adjust zoning and setbacks so that large, expensive public buildings are not put in the path of inevitable damage. On the Big Island, eustatic (global) sea level rise is coupled with local effects of subsidence. Since 1946, sea level at Hilo on the Big Island has risen an average of 1.8 ± 0.4 mm/yr faster than at Honolulu on the island of O'ahu, a figure that has recently decreased. The degree to which this reflects subsidence versus variations in upper ocean temperature is currently not known (Caccamise et al 2005).

Figure 5
Flood Rate Insurance Map



Note: map interpreted on TMK by Hawai'i County Department of Public Works

A scenario of modest sea level rise would not likely substantially affect the integrity or use of the proposed residence, which is 13 feet above sea level in an area without reef protection, for many decades, if at all. Larger increases, particularly in a case of sudden onset, could certainly affect it. If so, this residence would be among thousands, or perhaps tens of thousands, to be affected in what would be the largest disaster to affect the Hawaiian Islands since human settlement. As sea level rise is gradual, there would probably be an opportunity for the owner to consider relocating or scrapping the structure for re-use of its valuable materials should sea level rise sufficiently to endanger the structure. The Ungers maintain that as this property is a kuleana and they have the legal right to build a home, the decision on whether to build this modest, local-style beach residence in the face of potential sea level rise over the next century is a decision they have the right to make. It is understood that in light of sea level rise of an indeterminate magnitude the property may be subject to significant erosion or even submergence. The owner would agree to a CDUP and/or deed condition that would prevent any future request for shoreline hardening regardless of hardship related to protecting the residence, and a condition requiring moving or dismantling the home if sea level rise eventually threatens the integrity of the structure.

3.1.3 Water Quality

As discussed in the preceding section, the property is adjacent to the shoreline. No water features such as streams, springs, or anchialine ponds found on or near the property. Grading for the driveway and house lot will include practices to minimize the potential for sedimentation, erosion and pollution of coastal waters. The builder shall perform all earthwork and grading in conformance with Chapter 10, Erosion and Sediment Control, and Chapter 27, Drainage, of the Hawai'i County Code, and any additional best management practices required by the Board of Land and Natural Resources.

The project would not require an NPDES permit because grading would occur on much less than one acre, including the driveway. The grading component of the driveway will occur in a vegetated area well mauka of the coastal waters and will take a short period of time to accomplish, approximately three days. Applicant will ensure that its contractor shall perform all earthwork and grading in conformance with:

(a) "Storm Drainage Standards," County of Hawai'i, October, 1970, and as revised.
(b) Applicable standards and regulations of Chapter 27, "Flood Control," of the Hawai'i County Code.
(c) Applicable standards and regulations of the Federal Emergency Management Agency (FEMA).
(d) Applicable standards and regulations of Chapter 10, "Erosion and Sedimentation Control," of the Hawai'i County Code.

Upon its completion, the driveway will be consistent with other McCandless Ranch roads that have been in existence for close to a century in the area and, as such, it is expected that the project will not contribute to sedimentation, erosion, and pollution of coastal waters.

3.1.4 Flora and Fauna

Environmental Setting

The project site's vegetation is dominated by non-native species including kiawe (*Prosopsis pallida*), opiuma (*Pithecellobium dulce*), koa haole (*Leucaena leucocephala*), and Christmas berry (*Schinus terebinthifolius*). Plant species detected on the project site are listed in Table 1 below.

Birds utilizing the site are mostly entirely alien. Typical expected birds, some of which were observed during site visits, include Common Myna (*Acridotheres tristis*), Northern Cardinal (*Cardinalis cardinalis*), Yellow-billed Cardinal (*Paroaria capitata*), Yellow-fronted Canary (*Serinus mozambicus*), Spotted Dove (*Streptopelia chinensis*), Japanese White-eye (*Zosterops japonicus*), Gray Francolin (*Francolinus pondicerianus)*, and House Finch (*Carpodacus mexicanus*). No native birds were identified during the survey, and it is unlikely that many native forest birds would be expected to use the project site due to its low elevation, alien vegetation and lack of adequate forest resources. Common shorebirds such as Kolea (*Pluvialis fulva*), Ruddy Turnstone (*Arenaria interpres*), and Wandering Tattler (*Heteroscelus incanus*), were observed on the basalt shelf fronting the property. They would be unlikely to make much use of the property itself, which offers no habitat for them.

In addition to cats and dogs, the mammalian fauna of the project area is composed of introduced species, including feral goats (*Capra hircus)*, small Indian mongooses (*Herpestes a. auropunctatus*), roof rats (*Rattus r. rattus*), Norway rats (*Rattus norvegicus*), European house mice (*Mus domesticus*) and possibly Polynesian rats (*Rattus exulans hawaiiensis*). None are of conservation concern and all are deleterious to native flora and fauna.

The only native Hawaiian land mammal, the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), may also be present in the general area, as it is present in many areas on the island of Hawai'i. The project site itself is small and not heavily vegetated and would not offer any substantial habitat for this endangered species, which has been observed in kiawe scrub vegetation in other parts of Kona.

Table 1. Plant Species On/Near Property

Scientific Name	Family	Common Name	Life Form	Status*
Boerhavia coccinea	Nyctaginaceae	Boerhavia	Herb	A
Catharanthus roseus	Apocynaceae	Madagascar periwinkle	Shrub	A
Cleome gynandra	Capparaceae	Spider wisp	Herb	A
Cocos nucifera	Arecaceae	Coconut	Tree	A
Furcraea foetida	Agavaceae	Mauritius hemp	Shrub	A
Ipomoea pes-caprae	Convolulaceae	Beach morning glory	Vine	I
Kalanchoe pinnata	Crassulaceae	Air plant	Herb	A
Leucaena leucocephala	Fabaceae	Haole koa	Tree	A
Momordica charantia	Cucurbitaceae	Wild bittermelon	Vine	A
Morinda citrifolia	Rubiaceae	Noni	Shrub	A
Panicum maximum	Poaceae	Guinea grass	Herb	A
Pithecellobium dulce	Fabaceae	Opiuma	Tree	A
Portulaca oleracea	Portulacaceae	Pigweed	Herb	A
Prosopis pallida	Fabaceae	Kiawe	Tree	A
Rivina humilis	Phytolaccaceae	Coral berry	Shrub	A
Schinus terebinthifolius	Anacardiaceae	Christmas berry	Tree	A
Senna occidentalis	Fabaceae	Coffee senna	Tree	A
Sida rhombifolia	Malvaceae	Sida	Herb	A
Thespesia populnea	Malvaceae	Milo	Tree	A
Waltheria indica	Sterculiaceae	'Uhaloa	Shrub	I

* A = alien, E = endemic, I = indigenous

Impacts and Mitigation Measures

Because of the relatively minor nature of the project and the lack of native terrestrial ecosystems and threatened or endangered plant species, construction and use of the single-family residence are not likely to cause adverse biological impacts. The applicant is planning minimal landscaping. No effect on any coastal ecosystem will occur, both because of the lack of well-developed native community on or in front of the property and the fact that no activities are planned for the shoreline area. The precautions for preventing any effects to water quality during construction listed above in Section 3.1.1 should minimize any adverse impact on aquatic biological resources in coastal waters. Exterior lighting will be shielded to minimize the potential for disorientation of seabirds.

3.1.4 Air Quality, Noise, and Scenic Resources

Environmental Setting

Air quality in the area is generally excellent, due to its rural nature and minimal degree of human activity, although vog, sulfur dioxide and particulate matter from Kilauea volcano, is occasionally blown into South Kona.

Noise on the site is low, and is derived from natural sources (such as surf and wind) due to the very rural nature of the area.

The area shares the quality of scenic beauty along with most of the Kona coastline. The County of Hawai'i General Plan contains Goals, Policies and Standards intended to preserve areas of natural beauty and scenic vistas from encroachment. The General Plan specifically lists an area about a half mile to the north, Ho'okena-Kauhako Bay, in TMK Plats 8-6-13 and 14, as examples of natural beauty.

Impacts and Mitigation Measures

The project would not affect air quality or noise levels in any substantial ways. Brief and minor adverse effects would occur during construction. However, there are virtually no sensitive noise receptors in the vicinity, and given the small scale of the project, noise mitigation will likely not be necessary.

The project site is located a quite far from any community or other center of activity. Due to obstructing vegetation and distance, the residence would likely not be visible from Ho'okena Beach or Ho'okena Road, nor would it have any impact on the scenic resources in the Ho'okena-Kauhako area. The vegetation surrounding the property would partially mask the appearance of the residence. It should be recognized that a single-family home is an identified use in the Conservation District, and a specifically permitted kuleana use under HRS 183C-5. Any single-family home will have some visual impact. The applicant is planning to continue the low-key landscape of the property and utilize native plants in landscaping.

3.1.6 Hazardous Substances, Toxic Waste and Hazardous Conditions

Based on onsite inspection, it appears that the site contains no hazardous or toxic substances and exhibits no other hazardous conditions. In order to ensure that construction-related damage is avoided or minimized, the applicant will ensure the following, which are expected to be imposed as condition of the CDUP:

- Construction activities with the potential to produce polluted runoff will be limited to periods of low rainfall;
- Cleared areas will be replanted or otherwise stabilized as soon as possible;
- Fuel storage and use will be conducted to prevent leaks, spills or fires; and
- Construction materials, petroleum products, wastes, debris, and landscaping substances (herbicides, pesticides, and fertilizers) will be prevented from blowing, falling, flowing, washing or leaching into the ocean.

3.2 Socioeconomic and Cultural

3.2.1 Land Use, Designations and Controls

Existing Environment

The property is bordered by the shoreline to the west and by private properties on the remaining sides.

The State Land Use District for the property, and adjacent properties, is Conservation, subzone Limited, and is therefore not zoned by the County of Hawai'i. The project site is within the Special Management Area. No structures are proposed to be located within the Shoreline Setback Area.

The property is a kuleana. HRS 183C-5 provides: "Any land identified as a kuleana may be put to those uses which were historically, customarily, and actually found on that particular lot." Construction of a single-family home and associated improvements is permitted and, indeed, cannot legally be prohibited on a kuleana in the Conservation District. The owner may be required to apply for a Conservation District Use Permit (CDUP) and Special Management Area Permit (or exemption) in order to ensure that the proposed structure is "consistent with the surrounding environment." (HRS 183C-5.)

Single-family residences may be determined to be an exempt action under the County's Special Management Area (SMA) guidelines. The County of Hawai'i Planning Department requires preparation of an SMA Assessment Application, in which SMA issues are expressly dealt with.

The consistency of the project with the regulations and policies of the Conservation District and the Special Management Area are discussed in Section 3.6.2 and 3.6.3.

3.2.2 Socioeconomic Characteristics and Recreation

Existing Environment

The project site is a kuleana located within the ahupua'a of Kalāhiki on the southwest shore of the Island and County of Hawai'i. This is a remote portion of the Big Island, with the nearest town of Captain Cook located approximately eight miles away.

Although South Kona was an important district in pre-Contact Hawai'i, by 1900 it had become a sleepy rural district of scattered coffee farms and cattle ranches, with more traditional fishing villages such as Ke'ei and Napo'opo'o still present on the coast. Many parts of West Hawai'i have experienced high rates of growth associated with the booming visitor industry. Population has grown rapidly in all of West Hawai'i, although less so in the District of South Kona, where

the number of inhabitants increased from 7,658 in 1990 to 8,589 in 2000, and increase of about 12%, less than the County's growth from 120,317 in 1990 to 148,677 in 2000, an increase of about 25%. This is attributable to the fact that South Kona has very little urban area or small agricultural lots to accommodate population growth.

The project site is about 0.6 miles south of Ho'okena Beach Park, a County Park located at the end of Ho'okena Beach Road. The only vehicular access to the project site is through an approximately one-mile long private 4WD road over land owned by McCandless Ranch, which utilizes the surrounding area for ranching. Public vehicular access is not available, but McCandless Ranch respects and provides for the access rights of kuleana owners.

The shoreline and nearshore waters at Kalāhiki are currently used by *kuleana* owners or guests who drive in using four-wheel drive vehicles, as well as low numbers of fishermen, divers, swimmers, kayakers and hikers who either utilize boats for access or hike/swim in (mainly from Ho'okena Beach Park).

Impacts and Mitigation Measures

No adverse socioeconomic impacts are expected to result from the project. The project will have a very small positive economic impact for the County of Hawai'i. The residence and associated improvements will not adversely affect other residents, as there are no homes nearby.

The applicant understands that there is public pedestrian access along the shoreline in front of the property. Construction of the residence would have no adverse effect on recreational use of the shoreline or the nearby Ho'okena County Beach Park, which is located a half mile to the north. Possible incorporation of the "Old Road" into the Ala Kahakai National Historic Trail system is discussed in the next section.

3.2.3 Cultural and Historic Resources

An archaeological inventory survey and limited cultural impact assessment report for the proposed action was performed by Rechtman Consulting. This report is attached as Appendix 2 and is summarized below. In the interest of readability, the summary below has eliminated most scholarly references; readers interested in sources may consult Appendix 2.

Historical and Cultural Background

Appendix 2 provides a cultural-historical background of Kalāhiki Ahupua'a and the general South Kona region. It is first of all acknowledged that in Hawaiian society, natural and cultural resources are one and the same. Native traditions describe the formation (the literal birth) of the Hawaiian Islands and the presence of life on and around them in the context of genealogical

accounts. All forms in the natural environment, from the skies and mountain peaks, to the watered valleys and lava plains, and to the shoreline and ocean depths were believed to be embodiments of Hawaiian deities. One Hawaiian genealogical account, records that Wākea (the expanse of the sky–father) and Papa-hānau-moku (Papa—Earth-mother who gave birth to the islands)—also called Haumea-nui-hānau-wā-wā (Great Haumea—Woman-earth born time and time again)—and various gods and creative forces of nature, gave birth to the islands. Hawai'i, the largest of the islands, was the first-born of these island children. As the Hawaiian genealogical account continues, these same godbeings, or creative forces of nature who gave birth to the islands, were also the parents of the first man (Hāloa), and from this ancestor, all Hawaiian people are descended. It was in this context of kinship, that the ancient Hawaiians addressed their environment and it is the basis of the Hawaiian system of land use.

Archaeologists and historians believe that for generations following initial settlement from Polynesia, communities were clustered along the watered, windward (*ko'olau*) shores of the Hawaiian Islands. Over a period of several centuries, areas with the richest natural resources became populated and perhaps crowded, and by about A.D. 900 to 1100, the population began expanding to the *kona* (leeward side) and more remote regions of the island. In Kona, communities were initially established along sheltered bays with access to fresh water and rich marine resources. The primary "chiefly" centers were established at several locations—the Kailua (Kaiakeakua) vicinity, Kahalu'u-Keauhou, Ka'awaloa-Kealakekua, and Hōnaunau. The communities shared extended familial relations, and there was an occupational focus on the collection of marine resources. By the fourteenth century, inland elevations to around the 3,000-foot level were being turned into a complex and rich system of dryland agricultural fields (today referred to as the Kona Field System). By the fifteenth century, residency in the uplands was becoming permanent, and there was an increasing separation of the chiefly class from the common people. In the sixteenth century the population stabilized and the *ahupua'a* land management system was established as a socioeconomic unit.

Over the generations, the ancient Hawaiians developed a sophisticated system of land and resources management. By the time 'Umi-a-Līloa rose to rule the island of Hawai'i in ca. 1525, the island (*mokupuni*) was divided into six districts or *moku-o-loko*. On Hawai'i, the district of Kona is one of six major *moku-o-loko* within the island. The district of Kona extends from the shore across the entire volcanic mountain of Hualālai, and continues to the summit of Mauna Loa, where Kona is joined by the districts of Ka'ū, Hilo, and Hāmākua. Like other large land units on the Island of Hawai'i, Kona is divided into two smaller units of land and is referred to as North and South Kona. The *ahupua'a* of Kalāhiki is located in South Kona within a subregion traditionally known as *Ka-pali-lua*, translated as "the two cliffs" (Pukui and Elbert 1986). This descriptive term refers to the prominent coastal bluffs of the area. South Kona is noted for its steep slopes, former extensive upland agricultural plantations beginning near the former *ala loa* (ancient trail, later *alanui aupuni* [government road] and currently approximating the alignment of Māmalahoa Highway), and rich near shore and deep sea fisheries. The portion of *Ka-pali-lua* in which the current project area is situated includes the *makai*-most sections of the former extensive agricultural areas.

According to Pukui et al. (1974:73), Kalāhiki literally means "the sunrise". One story of how Kalāhiki Ahupua'a acquired its name, retold in Appendix 2, involves the sacred chiefesses, Ka-lā-hiki-lani-ali'i and Waiea-nui-hāko'i-lani, who would make *lehua* garlands in a protected *'ohi'a* forest.

In Kona, where there were no regularly flowing streams to the coast, access to potable water (*wai*), was of great importance and played a role in determining the areas of settlement. The waters of Kona were found in springs and caves (found from shore to the mountain lands), or procured from rain catchments and dewfall. Traditional and historic narratives abound with descriptions and names of water sources, and also record that the forests were more extensive and extended much further seaward than they do today. These forests not only attracted rains from the clouds and provided shelter for cultivated crops, but also in dry times drew the *kēhau* and *kēwai* (mists and dew) from the upper mountain slopes to the low lands. The worship of Lono appears to have been centered in Kona; indeed, it was while Lono was dwelling at Keauhou, that he is said to have introduced taro, sweet potatoes, yams, sugarcane, bananas, and *'awa* to Hawaiian farmers The rituals of Lono, "The father of waters," and the annual *Makahiki* festival, which honored Lono, were of great importance to the native residents of this region. The significance of rituals and ceremonial observances in cultivation and in all aspects of life was of great importance to the well being of the ancient Hawaiians, and cannot be overemphasized, or overlooked when viewing traditional sites of the cultural landscape.

In the 1920s-1930s, Handy et al. (1972) conducted extensive research and field interviews with elder native Hawaiians and recorded traditions of agricultural practices and rituals associated with rains and water collection. Primary in these rituals and practices was the lore of Lono – a god of agriculture, fertility, and the rituals for inducing rainfall. It was the limited access to fresh water that necessitated the need for planting in zones according to rainfall and moisture.

Kalāhiki Ahupua'a likely provided a variety of sustainable resources to the Precontact Hawaiians residing there and to the *ali'i* who claimed the land. As with other areas of Kona, the *ahupua'a* residents utilized the land in accordance with specific elevation zones. These land use zones reflected different environments where specific natural resources were readily acquired and where varying degrees of modification of the terrain produced a sustainable amount of agricultural goods. Dryland planting techniques in the upland regions included the *'umokī* (planting in mulched holes); *pu'epu'e* (planting in earthen or stone mulched mounds); and *pā kukui* (planting in *kukui* groves where trees were felled and used as mulch).

Given the environmental conditions of the region, the native residents practiced a subsistence-based system of seasonal travel and residence across the land. Traditions recorded in the nineteenth and early twentieth centuries, and oral histories collected from individuals born in the early 1900s, document that the families of the region maintained residences at various elevations. Primary residences were situated near the *ala loa* and along the shore. Temporary residences, which were used recurrently over long periods of time, were maintained in the upland planting zones. Travel between residences was carried out over a system of *mauka/makai* trails in each

ahupua'a. Coastal residences in different *ahupua'a* were also connected by trails. Many of these trails continued to be traveled on foot by residents and landowners through the early 1900s. By the 1930s, some of the trails were modified for vehicular travel.

In Precontact Hawai'i, all land and natural resources were held in trust by the high chiefs (*ali'i 'ai ahupua'a* or *ali'i 'ai moku*). The use of lands and resources, including fisheries were given to the *hoa'āina* (native tenants), at the prerogative of the *ali'i* and their representatives or land agents (*konohiki*), who were generally lesser chiefs.

By all accounts, the Hawaiian people attempted to practiced resource conservation, trying never to deplete their fisheries or over harvested their plant resources. Once a fisherman discovered an area full of fish, it became his special feeding spot (*ko'a*). Here he would feed the fish so they would became accustomed to visiting the *ko'a* and frequent it often. Then he would take only as much fish so as to not alarm the other fish and not deplete the resource. Fish such as the *aku* and *'opelu* that run in large schools, were not to be taken during the spawning season. There were also restrictions as to where people could fish, so that they did not take from another *ahupua'a*.

It was King Kamehameha I who in historical times united the Hawaiian Islands. Early in his reign there were troubles. Many of the chiefs and landlords under him oppressed the common people. During this period, Kalāhiki Ahupua'a is reported to be one the locations where Kamehemeha's chiefs Alapa'i-malo-iki and Ka-uhiwawae-ono "went out with their men to catch people for shark bait" (Kamakau 1992:232). Troubles with oppressing and greedy chiefs led Kamehameha I to make this law: The number of landlords (*haku'aina*) over the keeper of the land (*hoa'aina*) shall be [but] one. The people (*maka'ainana*) shall not be made to come long distances to work for the keeper (*konohiki*); the chiefs and keepers shall not strip the people of their property leaving them destitute; no man shall give many feasts and absorb the property of the poor; no landlord shall compel a man to work for him who does not want to, or to burden him in any way; he should be impartial and judge his people aright. (Kamakau 1992: 231)

Captain Cook sailed into Kealakekua Bay, about seven miles to the north, in 1778. With the arrival of foreigners came disease, and different views on politics, land and fishing tenure, religion, and tradition. During the time period between Captain Cook's arrival and the death of King Kamehameha I in 1819, settlement and subsistence practices continued to operate much as they had prehistorically. After Kamehameha's death, many of the traditional Native Hawaiian ways were altered to adjust to the influence of foreign entities. Within six months after the death of Kamehameha I, and during the rule of his successor Liholiho (Kamehameha II), the traditional socio-religious (*kapu*) system had been dismantled. And with the end of the *kapu* system, changes in the social, religious, and economic patterns began to affect the lives of the common people. Liholiho died in 1824, but during his short reign drastic changes that affected the course of Hawaiian history occurred. The friendly reception afforded to the missionary arrival in 1820 was among the most significant of Liholiho's actions.

William Ellis was a missionary who toured the Island of Hawai'i in 1823 searching for communities in which to establish and promote the Calvinist mission. Besides preaching at various villages along his route, Ellis also recorded features of the land, customs of the people he encountered and various other details about the island and its people. At one point along his journey, Ellis, along with Mr. Harwood and fellow missionaries Thurston, Goodrich, and Bishop departed from Honaunau and traveled south. After some distance they came to and rested at Kalāhiki. It is in the following passage that we gain insight into the early Historic Period of Kalāhiki Ahupua'a.

> "Mr. Harwood being indisposed, and unable to travel, and being myself but weak, we proceeded in the canoe to Kalahiti [Kalāhiki], where we landed about 2 p.m. and waited the arrival of our companions. The rest of the party traveled along the shore, by a path often tedious and difficult. The party that had traveled by foot to Kalāhiki: ...passed through two villages, containing between three and four hundred inhabitants, and reached Kalahiti [Kalāhiki] about four in the afternoon. Here the people were collected for public worship, and Mr. Thurston preached to them from John VI. 38. They gave good attention, and appeared interested in what they heard. The evening was spent in conversation on religious subjects, with those who crowded our lodgings.... (Ellis 2004: 163-172).

Liholiho's successor was his younger brother Kauikeaouli (Kamehameha III). It was Kamehameha III who transformed Hawai'i into a constitutional monarchy (Kamakau 1992:370). It is under a constitutional monarchy that grievances against oppressing chiefs could be considered and settled upon. Before Hawai'i was a constitutional monarchy, property rights for "both chiefs and commoners were unstable..." (Kamakau 1992:376). Kamehameha III redistributed the land between himself, the chiefs, and the commoners. In 1839, Kamehameha III defined and distributed the fishing rights of the native tenants, the chiefs, and himself. A letter to the Minister of the Interior from Kinimaka (the Kalāhiki *ali'i* awardee) stated that a restricted fish is the *'opelu* (Maly and Maly 2003).

Among the many changes that occurred during the early Historic Period, the change in land tenure was immense. In 1848, the *Māhele 'Āina* radically altered the Hawaiian system of land tenure. The *Māhele* (division) defined the land interests of Kamehameha III (the King), the high-ranking chiefs, and the *konohiki*. Laws in the period of the *Māhele* record that ownership rights to all lands in the kingdom were "subject to the rights of the native tenants;" those individuals who lived on the land and worked it for their subsistence and the welfare of the chiefs.

As a result of the *Māhele*, Kalāhiki Ahupua'a was awarded to an *ali'i* named Kinimaka (LCAw. 7130). Kinimaka was a Maui chief who was imprisoned on Kaho'olawe Island in 1840 for forging Maui Governor Hoapili's will but was pardoned by the House of Nobles in 1842.

A review of the *Waihona 'Aina Māhele* database showed 32 *kuleana* and two *ali'i* (both to Kinimaka, possibly a duplicate error) land holdings claimed in Kalāhiki Ahupua'a, but only 25 were awarded. Within the coastal portion of Kalāhiki there were 19 LCAw.

The current study parcel is one of these and was awarded to a commoner named Auae (LCAw. 9746-C: 1). Auae claimed three sections: a house lot; an *ili* (Hanainui); and a taro *kihapai*. The current study parcel is the house lot awarded to Auae in 1847. His agricultural fields were located further inland at elevations ranging from 760 to 920 feet above sea level. Auae reported that he received the house lot from Kahimahauna.

Typically, coastal awardees also claimed inland agricultural land where they cultivated taro, sweet potato, banana, coffee, and oranges. These crops were grown within either *kīhāpai* (cultivated patch, garden, orchard, or small farm) or *mala* (garden, field). In Kalāhiki, there were at least 120 *kihapai/mala* mentioned in the *Māhele* testimony of the nineteen coastal LCAw.

Following the *Māhele*, the Kingdom began selling parcels of parcels of government land to interested residents in an effort to encourage more native tenants onto fee-simple parcels of land. The parcels of land sold in the grants ranged in size from approximately ten acres to many hundreds of acres. When the sales were agreed upon, Royal Patents were issued and recorded following a numerical system that remains in use today. Within Kalāhiki Ahupua'a there were two grants: School Grant 7:9, and Grant 1853, issued to Mikahaka in 1855 that consisted of the *'ili kupono* Kapuai. Mikahaka was also awarded LCAw. 11049, located within Kalāhiki.

By the late 1840s a system of roads called the "*Alanui Aupuni*", or Government Roads, were created. These were likely initiated due to the land acquisitions by foreigners, and their desire to reach their land more efficiently. The roads also facilitated foot transportation for children who went to schools in different *ahupua'a*. Some of the "Government Roads" were modified ancient trails, such as the *ala loa.* Letters written by and between local residents and government officials during the construction of these roads provide information about site-specific locations. Letters indicated that by 1847 government officials were planning a road through the lower portion of Kalāhiki and that by no later than 1890 it had been built.

After the building of roads throughout Hawai'i Island it was much easier for tourists to visit. H.W. Kinney published a visitor's guide to Hawai'i Island in 1913. In this guide, Kinney describes traditional practices, historical accounts, and land features that one may encounter around the island. Kinney described traveling from Ho'okena south to Kalāhiki:

> "A fair trail leads through KEALIA, a pretty village which is practically a suburb to HOOKENA, a steamer landing place, which was once a village of much importance, but which is now being abandoned by the population, which is Hawaiian. Near the wharf was a place famous in ancient days for the playing of a game with *pupu* shells. In the great cliff south of the village are several caves, some of them still floored with sand, where *tapa* makers piled their trade. A very poor trail leads *makai* of this cliff to the KALAHIKI village, a small settlement on the south side of the bay, which may also be reached by a better trail on top of the bluff. Here are traces of a four terrace *heiau*. Beyond this there is no practicable trail leading south" (Kinney in Maly and Maly 2001:38).

By 1919, L.L. McCandless began ranching operations in South Kona. McCandless Ranch incorporated a vast area both *mauka* and *makai* of Māmalahoa Highway within several *ahupua'a*, and included most of Kalāhiki Ahupua'a. The general area in which the current study parcel is located was used by the ranch as free-range pasture, as the McCandless Ranch operation was primarily focused on trapping "wild cattle" that had proliferated on the land. The fee-simple parcels along the Kalāhiki coastline, which collectively formed the "village" described by Kinney in 1913, had but a couple of Hawaiian families resident in the 1930s, and by the 1940s, these residences were no longer occupied on a year-round basis.

Although focused broadly on a long stretch of the coastline of the island of Hawai'i, the planned development of the Ala Kahakai National Historical Trail (NHT) is also an important subject for cultural studies in South Kona. Established in 2000 for the preservation, protection and interpretation of traditional Native Hawaiian culture and natural resources, the Ala Kahakai NHT is a 175-mile trail corridor full of cultural and historical significance. The National Park Service prepared Draft and Final Environmental Impact Statements and a Comprehensive Management Plan (U.S. Department of the Interior 2008), which provides the information in this EA. It traverses hundreds of ancient Hawaiian settlement sites through more than 200 ahupua'a. Cultural resources along the trail include several important *heiau*, royal centers, *kahua* (house site foundations), *loko 'ia* (fishponds) *ko'a* (fishing shrines), *ki'i pohaku* (petroglyphs), *holua* (stone slide), and *wahi pana* (sacred places). Natural resources include anchialine ponds, *pali* (precipices), nearshore reefs, estuarine ecosystems, coastal vegetation, migratory birds, native sea turtle habitat, and several threatened and endangered endemic species of plants and animals.

The EIS considered No Action (A), Single Trail (B), and Ahupua'a Trail System (C) alternatives. Alternative C, the preferred alternative, is based on the traditional Hawaiian trail system in which multiple trail alignments within the *ahupua'a* (mountain to sea land division) are integral to land use and stewardship. Under the proposed action, a continuous trail parallel to the shoreline would be protected; however, on public lands and where landowners wish it, the Ala Kahakai NHT could include inland portions of the *ala loa* or other historic trails that run lateral to the shoreline, and the shoreline *ala loa* would be connected to ancient or historic *mauka-makai* (mountain to sea) trails that would have traditionally been part of the *ahupua'a* system. During the 15-year planning period that is the current focus of the trail planning effort, the priority zone from Kawaihae through Pu'uhonua o Hōnaunau National Park to Ho'okena (outside and to the north of the project site) would be the focus for developing a continuous publicly accessible trail, but trail administration and management would protect and preserve trail sections outside of that zone as feasible. Through an agreement, the State of Hawai'i could convey to the NPS a less-than-fee management interest in trail segments that are state-owned under the Highways Act of 1892 within the Ala Kahakai NHT corridor. The NPS would then be responsible for managing these segments and federal law would fully apply. However, in cooperation with the NPS, local communities of the *ahupua'a* would be encouraged to take responsibility for trail management using the traditional Hawaiian principles of land management and stewardship. The Ala Kahakai Trail Association would be expected to be robust enough to play a major part in trail management, promotion, and funding.

Maps contained with the Draft EIS for Alternative C of the Ala Kahakai are very general. They indicate a main trail well *mauka* of the project site and a "potential trail" within the Na Ala Hele Inventory closer to the ocean. Although the scale of the map is so small that the alignment of this potential trail cannot be located with any precision, there is no physical trail on or across the kuleana, and the "Old Road" shown on the TMK map runs entirely makai of the kuleana. It is presumably the "King's Trail" shown on various old maps, which appears to correspond to the current "Old Road" shown on TMK maps *makai* of the project site (see Figure 2). There is ample area makai of the kuleana lot for a pedestrian trail. Most people who traverse the area walk on the pahoehoe bench (*papa*) along the shoreline, although it is possible to walk along the lava and coral rubble on the route of the "Old Road." The use of this kuleana for a single-family residence will in no way limit or impair pedestrian access along the shoreline using either route.

Existing Archaeological Resources

The study area for the archaeological inventory survey was the house lot awarded to Auae in 1847 as LCAw. 9746C currently identified as TMK 8-6-014:012 and the proposed driveway leading to it from a ranch road. The context of a house lot and the generalized model inferred from previous coastal archaeological work in the broader South Kona region shows the possibility of locating Precontact habitation features such as platforms, agricultural features such as mounds and burials in platforms and/or filled cracks in the *pāhoehoe* lava. Historic Period features that might be present include possible residential, agricultural, and burial features relating to Auae's (the original *kuleana* owner's) use.

Fieldwork for the current project was conducted on November 1 and 2, 2007, by Matthew R. Clark, B.A., Ashton K. Dircks, B.A., Johnny R. Dudoit, B.A., and Michael K. Vitousek B.A., under the supervision of Robert B. Rechtman, Ph.D. The survey strategy included a visual inspection of the entire study area utilizing east/west pedestrian transects with fieldworkers spaced at 10-foot meter intervals. The corners of the study parcel were clearly marked in the field with survey markers (pipe or nail in concrete) as was the driveway corridor. Although the vegetation was fairly dense in the eastern portion of the study parcel, fieldworkers adequately identified all archaeological features. Observed archaeological features were placed on a scaled map of the property using a tape and compass, tying them into the known corner points of the study parcel. The features were then cleared of vegetation, recorded in detail, and photographed. Archaeological surface features existing on the study parcel include three formerly stacked core-filled walls that are now mostly collapsed. Two test units were excavated within the study parcel. Subsurface testing revealed middle nineteenth century artifacts of European manufacture such as glass and ceramic fragments, basalt tool production or use, and a small amount of marine and faunal food remains. The lot has been reworked by various natural and human-induced forces through time and the site lacks overall integrity. No archaeological resources were identified in the proposed driveway alignment. As a result of the research, this *kuleana* house lot (LCAw. 9746) was recoded and is identified as part of a larger State Site Complex (50-10-56-4200) that represents a large number of features along the coast in Kalāhiki.

Impacts and Mitigation for Archaeological Resources

LCAw. 9746 was a *kuleana* house lot occupied during the Historic Period and is considered significant under Criterion D for the information it has yielded relative to *kuleana* land use. The archaeologist has determined that information collected during the current study has been adequate to successfully mitigate any potential impacts to this site resulting from the proposed residence and driveway. No additional mitigation is recommended. The archaeologist has submitted the archaeological inventory survey to the State Historic Preservation Division (SHPD) for their review. The Final EA will report on the review of SHPD.

In the unlikely event that undocumented archaeological resources, including shell, bones, midden deposits, lava tubes, or similar finds, are encountered during construction of the residence or driveway within the current study area, work in the immediate area of the discovery should be halted and SHPD contacted as outlined in Hawai'i Administrative Rules 13§13-275-12.

Other Cultural Resources and Practices

Appendix 2 also contains an assessment of the cultural value of the project site. The purpose of this investigation was to determine whether the property supported any traditional gathering uses, was vital for access to traditional cultural sites, or had other important symbolic associations for native Hawaiians. Sources for the information included archaeological work, documents and maps, and discussion with native Hawaiians and others knowledgeable about the Kalāhiki area.

As part of early consultation, an effort was made to obtain information about any potential traditional cultural properties and associated practices that might be present, or have taken place in the project area. The Office of Hawaiian Affairs, Clarence Medeiros, Kama'āina United to Protect the 'Āina (KUPA), Puka'ana Church, and a number of neighbors with knowledge of cultural resources and traditional practices were contacted. Responses obtained are contained in Appendix 1a.

Furthermore, the cultural impact assessment included interviews with three individuals (Alfred Medeiros; Louis Alani; and Clarence Medeiros Jr., who had also shared information during early consultation for the EA [see Appendix 1a]) as well as with a small gathering of community members tied to Kama'āina United to Protect the 'Āina (KUPA). These interviews were conducted by Robert B. Rechtman, Ph.D. with assistance from Herbert Poepoe. The interviews were informal in nature, meaning that they were not recorded nor transcribed. Interviewees were asked about their relationship to and knowledge of the current study area, about any past and/or on-going cultural practices that took/take place within and around the current study area, and about any cultural impacts that might result from the construction of a single-family residence on the subject parcel. Details of the interviews are contained in Appendix 2.

In general, although no specific resources were identified that were either within the property or that would be affected by the proposed action, there was agreement that coastal Kalāhiki area was a culturally significant place. Some informants expressed concern about fishing-related activities, goat hunting, canoe landing and launching, and coastal and *mauka-makai* trails. There was particular concern that that they did not want to see a vacation rental or a bed-and-breakfast built on the parcel; and 2) that the proposed development would not interfere with the use of a pedestrian trail on the *makai* side of the parcel.

In a letter of March 27, 2008, offering early consultation comments (see Appendix 1a), Clarence Medeiros Jr., stated that there had been no quiet title for the action and that his family has interest in title in various *kuleana*. McCandless ranch has stated that their title to the property is clear and insured. In the absence of a successful legal action by Mr. Medeiros demonstrating title, the concerns are not relevant to the proposed action or its impacts. Mr. Medeiros also claims that he exercises traditional and customary practices in the ahupua'a, including hunting and gathering for subsistence, ceremonial activities, wood gathering, and accessing spring water, using various access points and sometimes no designated trail. He also noted that other families have and exercise those rights.

In a letter of July 28, 2008, Dennis Ka'ui Hart, President of the Na Hoa Aloha o ka Pu'uhonua Honaunau (see Appendix 1a), expressed special concern for the system of ancient and more modern trails and cart roads that make up the *ala loa* and other trails, and in particular, the Ala Kahakai National Historic Trail (see discussion above). Mr. Hart noted that a trail noted on an 1883 map of passed directly *makai* of the project site, and he stated that this would be a part of the Ala Kahakai Trail system. He further asserted that the portion of the trail directly in front of the project site (the "Old Road") was a steppingstone trail (which subsequent archaeological work disclosed was not the case). In order to protect these cultural resources, Mr. Hart called for archaeological monitoring, and recommended a minimum 50-foot setback from the trail and a 20-foot height limitation on the structure.

Impacts and Mitigation Measures to Other Cultural Resources and Practices

Based on the resources present in the *kuleana* property and driveway and the information related by individuals knowledgeable about the area, the cultural specialist determined that there were no Traditional Cultural Properties, valued natural resources, or cultural beliefs and practices identified to be specifically associated with the property. As a result of the archival review and the consultation process, it was determined that the hunting, fishing, gathering, and ceremonial cultural practices ongoing in the general area discussed by the informants would not be impacted by the construction of a single-family residence on this *kuleana* property. It has been noted that the general area is already well-used by McCandless Ranch personnel and their guests as well as other *kuleana* owners in Kalāhiki, who already visit this and other *kuleana* to fish, gather, and enjoy the beach area. No restriction of access nor effects to *mauka-makai* trails or lateral coastal or other trails would occur. No effects on gathering, hunting or other uses by those claiming traditional and customary rights would occur. The concerns about utilizing the property as a bed

and breakfast or vacation rental are reasonable concerns generally, but Keith and Cynda Unger have no intention to use their home as a bed and breakfast or vacation rental and are not opposed to a CDUP condition prohibiting such uses.

In terms of the Ala Kahakai National Historical Trail, no impacts are expected. If the "Old Road" in front of the project site is eventually incorporated into the Ala Kahakai, no aspect of the proposed project will adversely affect it. As discussed in Section 1.1, the "Old Road" has been used by four-wheel drive vehicles and foot traffic to laterally access different areas within Kalāhiki, as there are no lateral inland trails and the vegetation is a thick, thorny scrub. The proposed single-family residence would gain access to the existing ranch road from the mauka portion of the lot. This will not impact use of any trail.

Concerning other recommendations from members of the public noted above, because the kuleana lot is small and building space within the setbacks very restricted, the owners are proposing a 40-foot building setback from the shoreline. The proposed building is one story and will not exceed 20 feet in height. Finally, the owner/applicants are not opposed to having an archaeological monitor present during any grading or mechanical grubbing.

The cultural specialist also addressed the issue of the use of the *kuleana* property as a single-family residence as a cultural practice. As discussed in an article on the legal status of *kuleana* by attorney Jocelyn Garovoy in the context of land trusts:

> "The *kuleana* lots in areas zoned for Conservation have an associated right to build a house if it can be shown that the parcel was customarily used as a house lot. Hawaii law provides that: "[a]ny land identified as a *kuleana* may be put to those uses which were historically, customarily, and actually found on the particular lot including, if applicable, the construction residence" [Hawai'i Revised Statue §183C-5] (Garovoy 2005:544).

The established legal rights associated with *kuleana* parcels are based on Hawaiian cultural stewardship values (as documented in the Kuleana Act), which are a significant aspect for defining and maintaining both an individual's and a community's cultural identity. The owner of a *kuleana* parcel not only owns the fee-simple land, but also the rights and responsibilities appurtenant to that land. These legal rights are transmitted from one *kuleana* owner to the next. For an assessment of cultural practices and rights, the question then is whether cultural practices can be transmitted from one *kuleana* owner to the next, regardless of ethnicity. Given Hawai'i's long history of multi-ethnic communities and the concomitant cross-cultural blending of practices, this is a valid question. A group of adherents to a set of cultural values together form a community of practitioners. As a collective, *kuleana* owners form a group that shares a common set of vested rights and obligations as defined by both Hawaiian cultural values and legal authority. It is pointed out that *kuleana* were not just awarded to people of Hawaiian ancestry, but were also awarded to people of European and other international ancestry. All of the *kuleana* awardees, Hawaiian or otherwise, were actively engaged in the use of their lands, which were jurisdictionally administered by the Hawaiian Government that established the culturally-based

kuleana laws. One might then argue that if someone were to be denied the ability to build a single-family residence on a *kuleana* parcel that has been identified as having once had a residence on it, not only would they be denied a legal right they would also be denied a valid cultural right.

It is reasonable to conclude that based upon the limited range of resources and the proposed mitigation to all affected resources, the exercise of native Hawaiian rights related to gathering, access or other customary activities will not be affected, and there will be no adverse effect upon cultural practices or beliefs. This Draft EA has been distributed to agencies and groups who might have knowledge in order to confirm this finding.

3.3 Public Facilities and Utilities

3.3.1 Vehicular Access

Existing Environment, Impacts and Mitigation Measures

The project site is currently accessed via a ranch road from Ho'okena Beach Road to the coastline just south of the subject kuleana. TMK maps show an "Old Road" that runs north along the beach makai of the kuleana lot. This roadway is shared by nearby *kuleana* users. Long-term vehicular use of the area where the "Old Road" appears to be located will enhance coastal erosion and may impair coastal habitats. In order to remove potential shoreline impacts due to the proposed residence, the kuleana site will be accessed by a new driveway from the existing ranch road to the mauka boundary of the kuleana (see map of new access to lot in Appendix 4).

3.3.2 Public Utilities and Facilities

Environmental Setting, Impacts and Mitigation Measures

No public utilities of any kind service the project site. No parks, schools or other facilities are present nearby. The project would utilize a generator for electrical power and human waste would be managed with a composting toilet. There will be no adverse impact to any public or private utilities. As Keith and Cynda Unger already live full-time in South Kona, no additional residents are involved, and there will be no adverse impact or additional demand to public facilities such as schools, police or fire services, or recreational areas.

3.4 Secondary and Cumulative Impacts

Due to its small scale of the proposed project would not produce any major secondary impacts, such as population changes or effects on public facilities.

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. Only one other small single-family home is located in the project area. As pointed out in Section 3.2.3, there was previously a village at Kalāhiki. Most of the parcels are kuleanas. Each kuleana owner could, as of right, use their kuleana for recognized kuleana land uses. The adverse effects of building a single-family residence in this context are very minor and temporary disturbance to air quality, noise, and visual quality during construction. It should once again be noted that this area is isolated from other residences, and no accumulation of adverse construction effects would be expected. Other than the precautions for preventing any effects to water quality during construction listed above in Section 3.1.3, no special mitigation measures should be required to counteract the small adverse cumulative effect.

The coastal area of South Kona, and particularly the project area, has a distinctly rural character. Ho'okena State Park is a popular destination for residents, but is located more than 0.6 miles from the project site. While use of kuleana properties in the area for approved kuleana uses would gradually lessen the wilderness character, the rebuilding of homes on kuleana in Kalāhiki Village would be consistent with a legally and culturally appropriate land use. The Ungers are not aware of any kuleana owners planning to build single-family residences and the change from this small project would be incremental and not significant. Conversely, restoring residences to this area is in keeping with its historical and traditional *kuleana* uses.

3.5 Required Permits and Approvals

County of Hawai'i:

Special Management Area Permit or Exemption
Plan Approval and Grubbing, Grading, Building Permits

State of Hawai'i:

Conservation District Use Permit

3.6 Consistency With Government Plans and Policies

3.6.1 County of Hawai'i General Plan

The *General Plan* for the County of Hawai'i is the document expressing the broad goals and policies for the long-range development of the Island of Hawai'i. The plan was adopted by ordinance in 1989 and revised in 2005. The *General Plan* is organized into thirteen elements, with policies, objectives, standards, and principles for each. There are also discussions of the specific applicability of each element to the nine judicial districts comprising the County of Hawai'i. Below are pertinent sections followed by a discussion of conformance.

ECONOMIC GOALS

(a) Provide residents with opportunities to improve their quality of life through economic development that enhances the County's natural and social environments.
(b) Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawaii.
(d) Provide an economic environment that allows new, expanded, or improved economic opportunities that are compatible with the County's cultural, natural and social environment.

Discussion: The proposed project is in balance with the natural, cultural and social environment of the County, would create temporary construction jobs for local residents, and would indirectly boost the economy through construction industry purchases from local suppliers. A multiplier effect takes place when these employees spend their income for food, housing, and other living expenses in the retail sector of the economy. Such activities are in keeping with the overall economic development of the island. Pre-contact native Hawaiians identified residential use of the kuleana as the most desirable use of this land. Building a personal single-family home on this kuleana maintains a viable and sustainable quality of life.

ENVIRONMENTAL QUALITY GOALS

(a) Define the most desirable use of land within the County that achieves an ecological balance providing residents and visitors the quality of life and an environment in which the natural resources of the island are viable and sustainable.
(b) Maintain and, if feasible, improve the existing environmental quality of the island.
(c) Control pollution.

ENVIRONMENTAL QUALITY POLICIES

(a) Take positive action to further maintain the quality of the environment.

ENVIRONMENTAL QUALITY STANDARDS

(a) Pollution shall be prevented, abated, and controlled at levels that will protect and preserve the public health and well being, through the enforcement of appropriate Federal, State and County standards.
(b) Incorporate environmental quality controls either as standards in appropriate ordinances or as conditions of approval.
(c) Federal and State environmental regulations shall be adhered to.

Discussion: The proposed project would not have a substantial adverse effect on the environment and would not diminish the valuable natural resources of the region. The home and associated improvements would be compatible with the existing rural single-family homes and

recreational uses in the area. Pertinent environmental regulations would be followed, including those for mitigation of water quality impacts.

HISTORIC SITES GOALS

(a) Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawaii.
(b) Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.

HISTORIC SITES POLICIES

(a) Agencies and organizations, either public or private, pursuing knowledge about historic sites should keep the public apprised of projects.
(b) Amend appropriate ordinances to incorporate the stewardship and protection of historic sites, buildings and objects.
(c) Require both public and private developers of land to provide historical and archaeological surveys and cultural assessments, where appropriate, prior to the clearing or development of land when there are indications that the land under consideration has historical significance.
(d) Public access to significant historic sites and objects shall be acquired, where appropriate.

Discussion: The inventory survey performed for the property has properly documented and mitigated impacts to historic sites. The continuation of the use of the kuleana as a home is consistent with historical and cultural uses and upholds a legal right of the kuleana owner.

FLOOD CONTROL AND DRAINAGE GOALS

(a) Protect human life.
(b) Prevent damage to man-made improvements.
(c) Control pollution.
(d) Prevent damage from inundation.
(e) Reduce surface water and sediment runoff.
(f) Maximize soil and water conservation.

FLOOD CONTROL AND DRAINAGE POLICIES

(a) Enact restrictive land use and building structure regulations in areas vulnerable to severe damage due to the impact of wave action. Only uses that cannot be located elsewhere due to public necessity and character, such as maritime activities and the necessary public facilities and utilities, shall be allowed in these areas.
(g) Development-generated runoff shall be disposed of in a manner acceptable to the Department of Public Works and in compliance with all State and Federal laws.

FLOOD CONTROL AND DRAINAGE STANDARDS

(a) "Storm Drainage Standards," County of Hawaii, October, 1970, and as revised.
(b) Applicable standards and regulations of Chapter 27, "Flood Control," of the Hawaii County Code.
(c) Applicable standards and regulations of the Federal Emergency Management Agency (FEMA).
(d) Applicable standards and regulations of Chapter 10, "Erosion and Sedimentation Control," of the Hawaii County Code.
(e) Applicable standards and regulations of the Natural Resources Conservation Service and the Soil and Water Conservation Districts.

Discussion: The property is within the Zone X, or areas outside of the 500-year Floodplain as determined by detailed methods in the community flood insurance study, according to the Flood Insurance Rate Maps (FIRM). The project will conform with applicable drainage regulations and policies of the County of Hawai'i.

NATURAL BEAUTY GOALS

(a) Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.
(b) Protect scenic vistas and view planes from becoming obstructed.
(c) Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

NATURAL BEAUTY POLICIES

(a) Increase public pedestrian access opportunities to scenic places and vistas.
(b) Develop and establish view plane regulations to preserve and enhance views of scenic or prominent landscapes from specific locations, and coastal aesthetic values.

Discussion: The improvements are minor and consistent with traditional uses of the land and will not cause scenic impacts or impede access.

NATURAL RESOURCES AND SHORELINES GOALS

(a) Protect and conserve the natural resources from undue exploitation, encroachment and damage.
(b) Provide opportunities for recreational, economic, and educational needs without despoiling or endangering natural resources.
(c) Protect and promote the prudent use of Hawaii's unique, fragile, and significant environmental and natural resources.
(d) Protect rare or endangered species and habitats native to Hawaii.

(e) Protect and effectively manage Hawaii's open space, watersheds, shoreline, and natural areas.
(f) Ensure that alterations to existing land forms, vegetation, and construction of structures cause minimum adverse effect to water resources, and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation, or failure in the event of an earthquake.

NATURAL RESOURCES AND SHORELINES POLICIES

(a) Require users of natural resources to conduct their activities in a manner that avoids or minimizes adverse effects on the environment.
(c) Maintain the shoreline for recreational, cultural, educational, and/or scientific uses in a manner that is protective of resources and is of the maximum benefit to the general public.
(d) Protect the shoreline from the encroachment of man-made improvements and structures.
(h) Encourage public and private agencies to manage the natural resources in a manner that avoids or minimizes adverse effects on the environment and depletion of energy and natural resources to the fullest extent.
(p) Encourage the use of native plants for screening and landscaping.
(r) Ensure public access is provided to the shoreline, public trails and hunting areas, including free public parking where appropriate.
(u) Ensure that activities authorized or funded by the County do not damage important natural resources.

Discussion: The proposed project avoids impact on shoreline resources by remaining located 40 feet behind the shoreline setback.

3.6.2 Special Management Area

The proposed land use complies with provisions and guidelines contained in Chapter 205A, Hawai'i Revised Statutes (HRS), entitled *Coastal Zone Management*. Single-family residences may be determined to be an exempt action under the County's Special Management Area (SMA) guidelines. The proposed use would be consistent with Chapter 205A because it would not affect public access to recreational areas, historic resources, scenic and open space resources, coastal ecosystems, economic uses, or coastal hazards.

The proposed improvements are not likely to result in any substantial adverse impact on the surrounding environment. The house site is set back from the shoreline and will not restrict any shoreline uses such as hiking, fishing or water sports. Lateral pedestrian use of the shoreline area will not be impacted and there will be no effect on the public's access to or enjoyment of this shoreline area. Furthermore, viewplanes towards the project site will not be adversely impacted,

as the property is located a significant distance from nearby roadways or sensitive viewsheds. It is expected that the project will not result in any impact on the biological or economic aspects of the coastal ecosystem. The project site is not situated over any major natural drainage system or water feature that would flow into the nearby coastal system. The property contains few native plants and none that are uncommon. No floodplains are present in the area. Flood Insurance Rate Maps (FIRM) delineate the areas of the property in which construction would occur as Zone X, outside the floodplain. In terms of beach protection, construction is set back from the shoreline and would not affect any beaches nor adversely affect public use and recreation of the shoreline in this area. No impacts on marine resources are likely to occur. Historic sites and cultural uses have been properly assessed.

3.6.3 Conservation District

The property is in the State Land Use Conservation District, Limited subzone. Any proposed use must undergo an examination for its consistency with the goals and rules of this district and subzone. The applicant has concurrently prepared a Conservation District Use Application (CDUA), to which this EA is an Appendix. The CDUA includes a detailed evaluation of the consistency of the project with the criteria of the Conservation District permit process. Briefly, the following individual consistency criteria should be noted:

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

The development of the single-family residence is conformant with the purpose of the Conservation District. The proposed use of the subject property for a single-family residence, an identified use in the Conservation District, and management of the site will conserve, protect and preserve the natural features on the subject property. The proposed use will not impact the lateral public access or the public's ability to utilize the coastal resources that front this property. No valuable natural or cultural resource would be committed or lost. No native ecosystems are present.

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 limited subzone "*...is to limit uses where natural conditions suggest constraints on human activities.*"

Floodplain status for many areas of the island of Hawai'i has been determined by the Federal Emergency Management Agency (FEMA), which produces the National Flood Insurance Program's Flood Insurance Rate Maps (FIRM) (Fig. 5). The area is classified as Zone X, outside the mapped 500-year floodplain.

> *A single family residence in a floodplain or coastal high hazard area that conforms to applicable county regulations regarding the National Flood Insurance Program and single family residential standards as outlined in this chapter.*

Because the proposed use is a kuleana land use under HAR § 13-5-22, P-3, D-1, and HRS § 183C-5, the proposed use as a single family residence is not subject to the same conditions as "single family residence" under HAR § 13-5-23, L-6, D-1. In other words, a kuleana use (here, a single family residence) is permitted in the Limited Subzone even if it is within Zone X. HAR § 13-5-23(b) says that land uses identified in HAR § 13-5-22 and land uses identified in § 13-5-23 may be permitted in the Limited Subzone. Thus, uses permitted by § 13-5-22, P-3,D-1, are permitted in the limited subzone without having to meet the requirements of HAR § 13-5-23, L-6, D-1. HRS § 183C-5 also states that:

> Any land identified as a kuleana may be put to those uses which were historically, customarily, and actually found on the particular lot including, if applicable, the construction of a single family residence. Any structures may be subject to conditions to ensure they are consistent with the surrounding environment.

The proposed dwelling will be built to comply with all federal, State and County regulations to insure that the structure will be safe and there will be no risk to the inhabitants.

3. The proposed land use complies with provisions and guidelines contained in Chapter 205A, Hawaii Revised Statutes (HRS), entitled "Coastal Zone Management," where applicable;

The proposed land use complies with provisions and guidelines contained in Chapter 205A, Hawai'i Revised Statutes (HRS), entitled *Coastal Zone Management*, as discussed above in Section 3.6.2.

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

Because of the relatively minor nature of the project and the lack of native terrestrial ecosystems and threatened or endangered plant species, construction and use of the property for a single-family residence is not likely to cause adverse biological impacts. The applicant is planning to implement low-key landscaping with native and Polynesian plants. No effect on any coastal ecosystem will occur, both because of the lack of well-developed native community on or in front of the property and the fact that no activities are planned for the shoreline area. The precautions for preventing any effects to water quality during construction should prevent any adverse impact on aquatic biological resources in coastal waters.

The proposed action would include mitigation measures to prevent soil erosion. The proposed project will have no adverse impacts to historic sites or to the scenic character of the area. No substantial adverse impact will occur to existing natural resources. The proposed use of the subject property for a single-family residence and commitment to management of the site will help conserve, protect and preserve the natural and historic features of the area.

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

The proposed use is consistent with historical land use in this area of *kuleana* single-family residences. The home will have a low-key design, one-story with 2,046 square feet (sf) (1,403 sf interior, 633 sf lanai and porch. These structures and uses will not adversely affect the surrounding properties or how these properties are utilized.

6. The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable;

The proposed use of the subject property for a single-family residence and commitment to management of the site will help conserve, protect and preserve the natural features of the area. The physical beauty characteristics of the existing lot will be enhanced by landscaping with native and Polynesia species, which would replace the mostly alien vegetation that currently dominates the lot.

The single-family residence would only be visible from the shoreline and ocean directly *makai* of the structure due to existing obstructing vegetation on three sides. The residence would not be visible from Ho'okena County Park or Highway 11, or any other sensitive shoreline area. Restoring residences to this area is in keeping with its historical and traditional *kuleana* uses.

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

The proposed action does not involve or depend upon subdivision and will not lead to any increase in intensity of use beyond the requested single-family residence.

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

The general area is already in use for recreation by the landowners of the area and the proposed single-family residence in will not be detrimental to the public health, safety, and welfare.

PART 4: DETERMINATION, FINDINGS AND REASONS

4.1 Determination

The applicant expects that the State of Hawai'i, Department of Land and Natural Resources, will determine that the proposed action will not significantly alter the environment, as impacts will be minimal, and that this agency will accordingly issue a Finding of No Significant Impact (FONSI). This determination will be reviewed based on comments to the Draft EA, and the Final EA will present the final determination.

4.2 Findings and Supporting Reasons

1. *The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* No valuable natural or cultural resource would be committed or lost. Native plant communities are not present. Impacts to archaeological resources have been mitigated through data recovery during the inventory survey. No valuable cultural resources and practices such as coastal access, fishing, gathering, hunting, or access to ceremonial will be affected in any way.

2. *The proposed project will not curtail the range of beneficial uses of the environment.* No restriction of beneficial uses would occur by revival of residential use on this *kuleana* lot.

3. *The proposed project will not conflict with the State's long-term environmental* policies. The State's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The project is minor and basically environmentally benign, and it is thus consistent with all elements of the State's long-term environmental policies.

4. *The proposed project will not substantially affect the economic or social welfare of the community or State.* The project will not have any substantial effect on the economic or social welfare of the Big Island community or the State of Hawai'i.

5. *The proposed project does not substantially affect public health in any detrimental way.* The project will not affect public health and safety in any way.

6. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.* The small scale of the proposed project will not produce any major secondary impacts, such as population changes or effects on public facilities.

7. *The proposed project will not involve a substantial degradation of environmental quality.* The project is minor and environmentally benign, and thus it would not contribute to environmental degradation.

8. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* The site supports mostly alien vegetation and represents poor habitat for native animals. No rare, threatened or endangered species of flora or fauna are known to exist on the project site, and none would be affected by any project activities.

9. *The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* The adverse effects of building a single-family residence are very minor and temporary disturbance to traffic, air quality, noise, and visual quality during construction. This area is fairly isolated from other residences, and no accumulation of adverse construction effects would be expected. Other than the precautions for preventing any effects to water quality during construction listed above, no special mitigation measures should be required to counteract the small adverse cumulative effect.

10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* No substantial effects to air, water, or ambient noise would occur. Brief, temporary effects would occur during construction and will be mitigated.

11. *The project does not affect nor would it likely to be damaged as a result of being located in environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area.* No development associated with the single-family residence would be located within a flood zone. All improvements will conform to appropriate regulations guiding development within hazardous zones.

12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* The single-family residence would only be visible from the shoreline and ocean directly *makai* of the structure due to existing obstructing vegetation on three sides. The residence would not be visible from Ho'okena County Park or Highway 11, or any other sensitive shoreline area.

13. *The project will not require substantial energy consumption.* Negligible amounts of energy input will be required for construction.

For the reasons above, the proposed project will not have any significant effect in the context of Chapter 343, Hawai`i Revised Statues and section 11-200-12 of the State Administrative Rules.

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