
DRAFT Environmental Assessment:

THE DHHL SOUTH POINT RESOURCES
MANAGEMENT PLAN

Prepared by:
TOWNSCAPE, INC
Prepared for:
DEPARTMENT OF HAWAIIAN HOME LANDS

List of Acronyms

AIS	Archaeological Inventory Survey
AMP	Archaeological Monitoring Program
ASEA	Southeast Mauna Loa Aquifer Sector Area
CDP	Community Development Plan
COH	County of Hawai'i
CSH	Cultural Surveys Hawai'i, Inc.
CZM	Coastal Zone Management
DHHL	Department of Hawaiian Home Lands
DOH	Department of Health
DPP	Department of Planning and Permitting
DWS	Department of Water Supply
EA	Environmental Assessment
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	Geographical Information Systems
HAR	Hawai'i Administrative Rules
HDOH	Hawai'i Department of Health
HELCO	Hawaiian Electric Light Company
HRS	Hawai'i Revised Statutes
LCAs	Land Commission Awards
mgd	million gallons per day
MSL	Mean Sea Level
NHL	National Historic Landmark
NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service
NRHP	National Register of Historic Places
NPDES	National Pollutant Discharge Elimination System
SFHA	Special Flood Hazard Area
SIHP	State Inventory of Historic Properties
SHPD	State Historic Preservation Division
SMA	Special Management Area
TMK	Tax Map Key
TSI	Townscape, Inc.

PROJECT SUMMARY

Project Name: DHHL South Point Resources Management Plan, Ka'ū District, Hawai'i Island, Hawai'i.

Proposing Agency: Department of Hawaiian Homelands
P.O. Box 1879
Honolulu, Hawaii 96805
Contact: Andrew Choy

Consultant: Townscape, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813
Contact: Angela Fa'anunu, PhD.
Phone: (808) 227-8855
E-mail: faanunu@townscapeinc.com

Tax Map Key: (3)-9-3-001:003

Location: Located in Kamā'oa-Pu'ueo Ahupua'a, in the district of Ka'ū, on Hawai'i Island. Situated south of Nā'ālehu town, South Point is the southern-most point of the Hawaiian Islands. The Hawaiian Homestead of Ka'ū is the nearest settlement to the Project area which consists of a handful of 20-acre agricultural lots and 25-acre pastoral lots, some of which have residential houses.

DHHL Land Use Designation: Special District

State Land Use District: Agriculture District; Conservation District

County of Hawai'i Zoning: Ag-20a: Agricultural Zone with minimum lot size of 20 acres

Anticipated Determination: Finding of No Significant Impact (FONSI)

Agencies and Parties Consulted:

Federal
US Army Corps of Engineers
US Coast Guard, District 14
US Department of the Interior:
US Fish and Wildlife Service
National Marine Fisheries Service, Pacific
Island Region, NOAA
Office for Coastal Management, NOAA
Pacific Island Fisheries Science Center, NOAA
National Park Service, Ala Kahakai Historic
Trail

State
Department of Land and Natural Resources:
Commission on Water Resource Management

Engineering Division
State Historic Preservation Division
Division of Forestry and Wildlife
Division of Boating and Ocean Recreation
Division of Aquatic Resources
Office of Conservation and Coastal Lands
Department of Health:
Clean Water Branch
Wastewater Branch
Environmental Planning Office
Department of Business, Economic Development & Tourism
Department of Transportation
Office of Hawaiian Affairs

County of Hawai'i

Mayor's Office
Department of Planning
Department of Water Supply
Department of Environmental Management
Department of Public Works
Department of Mass Transit
Department of Parks and Recreation
Department of Finance
Department of Research and Development
Fire Department
Police Department
Hawai'i County Council, District 6
Hawai'i County House of Representatives

Other

Kamehameha Schools
Hawaiian Civic Clubs of Ka'u
Outdoor Circle
I Ola Na 'Āina Momona
Discovery Harbor Community Association
Hana Laulima Lahui o Ka'u
Ho'omalua Ka'u
Ka Ohana o Honuapo
Ka'u Agroforestry Association
Ka'u Hawaiian Homelands Association
Ka'u Preservation
Na Mamo o Kāwā
O Ka'u Kākou

Responses received during initial consultation:

State of Hawai'i Department of Health:
Clean Water Branch
Wastewater Branch
State of Hawai'i Department of Land and Natural Resources:

Division of Aquatic Resources
Office of Conservation and Coastal Lands
Hawai'i County, Mayor's Office
Hawai'i County, Department of Water Supply
Hawai'i County, Fire Department
Hawai'i County, Police Department
Hawai'i County Council, District 6
Ka'ū Hawaiian Home Lands Association

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1 INTRODUCTION

1.1 Proposing Agency and Action

At the request of the State of Hawai'i's Department of Hawaiian Home Lands (DHHL), Townscape, Inc. (TSI) is preparing an Environmental Assessment (EA), in accordance with Hawai'i Revised Statutes (HRS) Chapter 343, for the implementation of the 2016 DHHL South Point Resources Management (RMP 2016). Future implementation of the RMP 2016 is a use of state lands and funds, therefore, triggers HRS Chapter 343. DHHL proposes implementing the RMP to protect and restore natural and cultural resources on DHHL lands at South Point.

Unregulated access to DHHL lands at South Point, also known as Ka Lae, has compromised the integrity of its heritage sites and of coastal ecosystems. Specifically, heavy use of recreational trucks, ATVs, and motor bikes has not only destroyed sacred sites but has resulted in widespread soil and sand erosion. The unregulated use of off-road vehicles, coupled with the site's exposure to the prevailing winds, has left the natural and cultural resources of South Point in critical condition. To address these threats and accomplish the goals of the RMP 2016, the plan proposes sixteen projects and strategies which consist of near-term priority projects and long-term projects. Refer to Section 1.4 for details on these actions.

1.2 Purpose of Environmental Assessment

This document is an Environmental Assessment (EA) to assess short and long-term impacts to the natural and man-made environment surrounding the Project area, as a result of the proposed Project. The document also identifies mitigation measures to minimize impacts where potential impacts to the environment might occur. The use of State of Hawai'i funds, as well as public lands for this project, triggers an environmental review, as required by Hawai'i Revised Statutes (HRS) Chapter 343 of the State of Hawai'i. The environmental review process allows for three courses of action depending on a project's anticipated level of environmental impacts. These are:

- 1) an exemption from environmental review;
- 2) a project lacks potential "significant*" environmental impacts and only an Environmental Assessment is required; and
- 3) "significant" environmental impacts are anticipated and an Environmental Impact Statement (EIS) is required.

Pre-assessment for this Project suggests no "significant" impacts are expected to result from the proposed actions of this Project, therefore, an EA was prepared.

*Significant is defined under HAR Chapter 200

The DHHL contracted TSI to prepare the EA. Various consultants were sub-contracted to conduct studies in technical areas necessary for project design and for identifying and understanding potential impacts of the Project to the environment. These included:

- Townscape, Inc.— Prime Consultant
 - Traffic Study
 - Cultural Impact Assessment
- Cultural Surveys Hawai'i, Inc.— Archaeology

-
- Geometrician Associates— Fauna and Flora

1.3 Project Location

This Project is located on Tax Map Key (TMK) parcel number: (3)-9-3-001:003, in the ahupua'a of Kamā'oa-Pu'ueo, in the district of Ka'ū, on Hawai'i Island (See Figure 1). Situated south of Nā'ālehu town, South Point is the southern-most point of the Hawaiian Islands. Often referred to as the country, South Point is located in a remote area, far away from major centers of human settlement. The nearest settlement to the Project area are DHHL agricultural and pastoral homestead lots at Kamā'oa-Pu'ueo, consisting of 12 agricultural lot homesteads and 25 pastoral lot homesteads. Not all of these homestead lots are occupied at this time. Kamā'oa Road, which turns into South Point Road, and Kalae Rd, connects South Point to Nā'ālehu and to Māmalahoa Highway. South Point is surrounded by the Pacific Ocean on its western, southern, and eastern boundary.

1.4 Proposed Action

The purpose of the RMP 2016, is to guide future actions to steward the land and resources held under the Hawaiian Homes Land Trust located at South Point and coastal lands extending northeast to Māhana Bay. The plan also serves as a guide for DHHL and the Hawaiian Homes Commission to determine funding requirements and needs for the projects in this area. The RMP 2016 identified a vision for South Point as “a self-sustaining, healthy and safe community where the 'āina—inclusive of the people and resources within it—and native Hawaiian culture and values thrive.” To achieve this vision, the plan proposes four management goals for the area which include:

- (1) **Natural & Cultural Resources Management:** Restore, preserve, and protect cultural and natural resources.
- (2) **Native Hawaiian Culture, Knowledge, & Traditional Practices:** Perpetuate native Hawaiian culture, values, history and language for future generations.
- (3) **Health & Safety:** Provide a safe, clean, and friendly environment.
- (4) **Economic Self-Sufficiency:** Generate revenue in order to sustainably fund cultural and natural resources management activities and provide economic opportunities for DHHL beneficiaries and their families.

To achieve the above goals, the RMP 2016 identifies sixteen projects and strategies which consists of near- and long-term management actions for South Point. These projects and strategies are summarized in Table 1 and listed by goal. Of the 16 projects proposed in Table 1, seven projects have been selected as priority projects to be implemented in the near-term and the remaining projects are long-term strategies to be implemented over time. Priority projects include the following actions:

- (1) Restore and protect important cultural sites and natural resources within the DHHL's property.
 - (2) Plan, design, and construct a walking path that guides visitors around the cultural and natural resources near South Point.
 - (3) Manage vehicular access at South Point.
-

- (4) Provide sanitary amenities and signage at South Point.
- (5) Institute a parking fee for South Point.
- (6) Plan, design and construct a service road and a pedestrian path to Māhana Bay.
- (7) Provide training and technical assistance to local people to become legal business entities on DHHL lands.

Table 1. RMP 2016 Summary of Goals, Projects, and Strategies

SUMMARY OF GOALS, PROJECTS AND STRATEGIES	
Goal 1: Restore, preserve, and protect cultural and natural resources.	
1.1	Restore and protect important cultural sites and natural resources within the DHHL's property.
1.2	Plan, design, and construct a walking path that guides visitors around the cultural and natural resources near South Point.
Goal 2: Perpetuate native Hawaiian culture, values, history and language for future generations.	
2.1	Provide opportunities for 'āina-based educational programs at South Point.
2.2	Design and implement a permit system to allow for 'ohana camping at South Point.
2.3	Plan, design, and create an area to serve as a gathering place for the local community.
Goal 3: Provide a safe, clean, and friendly environment.	
3.1	Manage vehicular access at South Point.
3.2	Provide sanitary amenities and signage at South Point.
3.3	Plan, design and construct a service road and a pedestrian path to Mahana Bay.
3.4	Develop and implement a public education campaign to increase awareness and to deter unpermitted recreational activities.
3.5	Improve access to lifesaving equipment for the local community and visitors.
3.6	Improve access to Kaulana boat ramp and launching area.
3.7	Develop and implement a fire management plan.
Goal 4: Generate revenue in order to sustainably fund cultural and natural resources management activities and provide economic opportunities for DHHL beneficiaries and their families.	
4.1	Institute a parking fee for South Point.
4.2	Provide training and technical assistance to DHHL beneficiaries to become legal business entities on DHHL lands.
4.3	Provide opportunities/programs that engage visitors in the history and culture of the place.
4.4	Seek alternative sources to fund resource protection projects for South Point.

The main near-term priority for DHHL is to gain site control by managing vehicular access. The RMP 2016 found that implementing other recommended actions to protect the integrity of resources without first establishing on-site presence at South Point to enforce management policies would be ineffective and a waste of financial resources and effort. Thus, the proposed actions to address the priority projects mentioned above include the following:

- A: The installation of an entrance gate at the intersection of Kalae Rd. and South Point Road, and a security booth 0.75 miles north of the intersection along South Point Road;
- B: Two designated parking areas at the “Barracks” near the Kaulana Boat Ramp and at Ka Lae;
- C: A cultural interpretive walking trail at Ka Lae with associated signage and protective barriers around cultural sites;
- D: A pedestrian path and an emergency access road extending from the “Barracks” to Māhana (Green Sands) Bay.

The overall Project acreage, comprising of the interpretive walking trail, the pedestrian path, emergency access road and two parking lots total 17.8 acres.

A cultural impact assessment (CIA) conducted for this EA indicated that the majority of participants consulted for the study were concerned about the impacts of unmanaged access to South Point on natural and cultural resources and practices. The majority of informants supported closing down the road to South Point to allow the land to heal. One individual highlighted that continuing to allow public access to DHHL lands is an impact on traditional and customary Hawaiian practices. These actions not only continue to negatively impact the psychological well-being of Native Hawaiians, but also the degraded state of natural and cultural resources caused by unmanaged access at South Point, directly impacts the ability of Native Hawaiians to carry out their traditional and customary practices. The CIA also suggested a general consensus among study participants that limiting vehicular access to South Point was a good idea that is consistent with the historic use of the place where everyone walked. Therefore, the proposed actions (A – D) were welcomed as management strategies for South Point.

Considering the cultural and archaeological significance of South Point, as demonstrated by studies conducted for this EA, the DHHL may designate South Point as a “Heritage Park” pursuant to HAR 10-4-31.

1.4.1 Project Area Change

An archaeological inventory survey (AIS) along the footprint of proposed actions A to D was conducted in 2017 (Figure 1). However, the AIS found that the original alignment for the emergency road, the walking trail, and the parking lots needed to change to account for steep topography and archaeological sites found in the area. Therefore, the alignments of the emergency access road and walking trail in the 2016 plan have been modified as a result of the findings and recommendations in the AIS study that was conducted for this EA. New alignments for those proposed actions were created. The current alignment and location of the emergency road and trail is shown in Figure 2.

1.5 Background

South Point—more commonly referred to as Ka Lae by local people—is a special and unique place for the people of Ka‘ū and for residents from other regions of Hawai‘i Island. For many, this treasured wahi pana connects the past to the future, providing a source of pride and identity for communities in Ka‘ū and for many Hawaiian families. Its significant cultural landscape tells of the early native Hawaiian settlement of the area. Ka Lae is believed to be the site where Polynesians from the Marquesas Islands and possibly other islands, first settled when they arrived in Hawai‘i, which is estimated to have occurred as early as A.D. 124.

Recognizing its historical and cultural importance, approximately 710 acres of this area has been designated as a National Historic Landmark (NHL) because it provides “the longest and most complete record of human occupation in the Hawaiian Islands.” Important cultural sites within the NHL include Pu‘u Ali‘i, Kalalea Heiau, Lua o Palahemo, canoe mooring holes, and Lua Makalei. In addition to its cultural significance, Lua o Palahemo is a unique natural resource; several types of anchialine pool shrimp are known to exist in this anchialine pool, including ‘ōpae ‘ula and the endangered *Vetericaris chaceorum*. Additionally, rare plants such as the endangered ‘ohai also exist within this sacred ‘āina.

Mo‘olelo shared by kūpuna depict South Point as a place of remarkable beauty and great cultural significance with iwi kupuna and sacred sites. However, over the years South Point has been desecrated and exploited by off-road vehicle enthusiasts, extractive actions by visitors and sports fishermen. An earlier management plan was completed for South Point in 1983 by PBR Hawai‘i, however, the ongoing issues of this area still have not been addressed three decades later. The lack of on-site management and enforcement by the DHHL has allowed unrestricted vehicular access to continue resulting in miles of deep, wide, and extremely severe erosion scars, ranging from several feet to over eight feet in depth.

Many Ka‘ū community members are frustrated that there has been no progress for the management of South Point resources. Communities of Ka‘ū pleaded in public meetings and talk-story consultations, to “let the land heal” so that the remaining unique ecosystems of Ka Lae can be shared with future generations. There is general skepticism within the Ka‘ū community about the DHHL’s ability to manage these Trust lands effectively. Many called on the DHHL to do something about the destruction and assume active management of South Point. The need to protect and preserve the natural and cultural sites of South Point was also identified as a priority project in DHHL’s Ka‘ū Regional Plan that was adopted by the Hawaiian Homes Commission in 2012. Thus, in an effort to address some of these long-standing issues, Townscape, Inc., was contracted in June, 2015, to develop the DHHL South Point Resources Management Plan (RMP). The Project was completed in November, 2016. The RMP is available in Appendix A of this document and on-line at: https://dhhl.hawaii.gov/wp-content/uploads/2017/06/DHHL-South-Point-Final-Plan_101916_to-DHHL_low-res.pdf.

1.5.1 The DHHL South Point Resources Management Plan (RMP)

The RMP was developed based on information gathered from consultations with DHHL beneficiaries, and Ka'ū kūpuna and kama'āina knowledgeable about South Point. These community members provided their mana'o to assist the planning team in formulating recommended projects and strategies. Community outreach included two public meetings, a series of small group "talk story" sessions, and an interactive five-hour community "SpeakOut" event. During these community consultations, community members shared their vision, concerns, and ideas for management strategies. Many issues discussed in the 1983 plan were again raised during consultations for the RMP, and some of the projects and strategies presented in the RMP reflect similar recommendations from the 1983 plan. In addition to community members, Kamehameha Schools and some of the agencies and organizations who work to preserve and protect cultural and natural resources were also consulted.

Major concerns expressed during consultations included:

- Over the past several decades, there has been a lack of management by DHHL—in terms of presence, response to problems and enforcement.
- South Point has become a playground for both local people and tourists who drive off-road and tear up the landscape with no regards to the land and its resources.
- Unrestricted vehicular access to the area has left severe scars on the landscape.
- Many visitors also have no knowledge of the resources and fragile ecosystem of the place.
- There is a potential liability to DHHL if people are injured from these unregulated activities on DHHL lands.
- There is a lack of sanitary amenities such as toilets and waste receptacles on-site.
- Local fishermen rely on resources for subsistence, but there is alleged overfishing from "outsiders" and sports fishermen.
- There is a lack of economic opportunities available in Ka'ū, but there are potential opportunities to generate revenue at South Point from visitors for the Trust and its beneficiaries.
- The land has been exploited by individuals providing illegal shuttle services who care only about economic gain even at the expense of the land and resources.

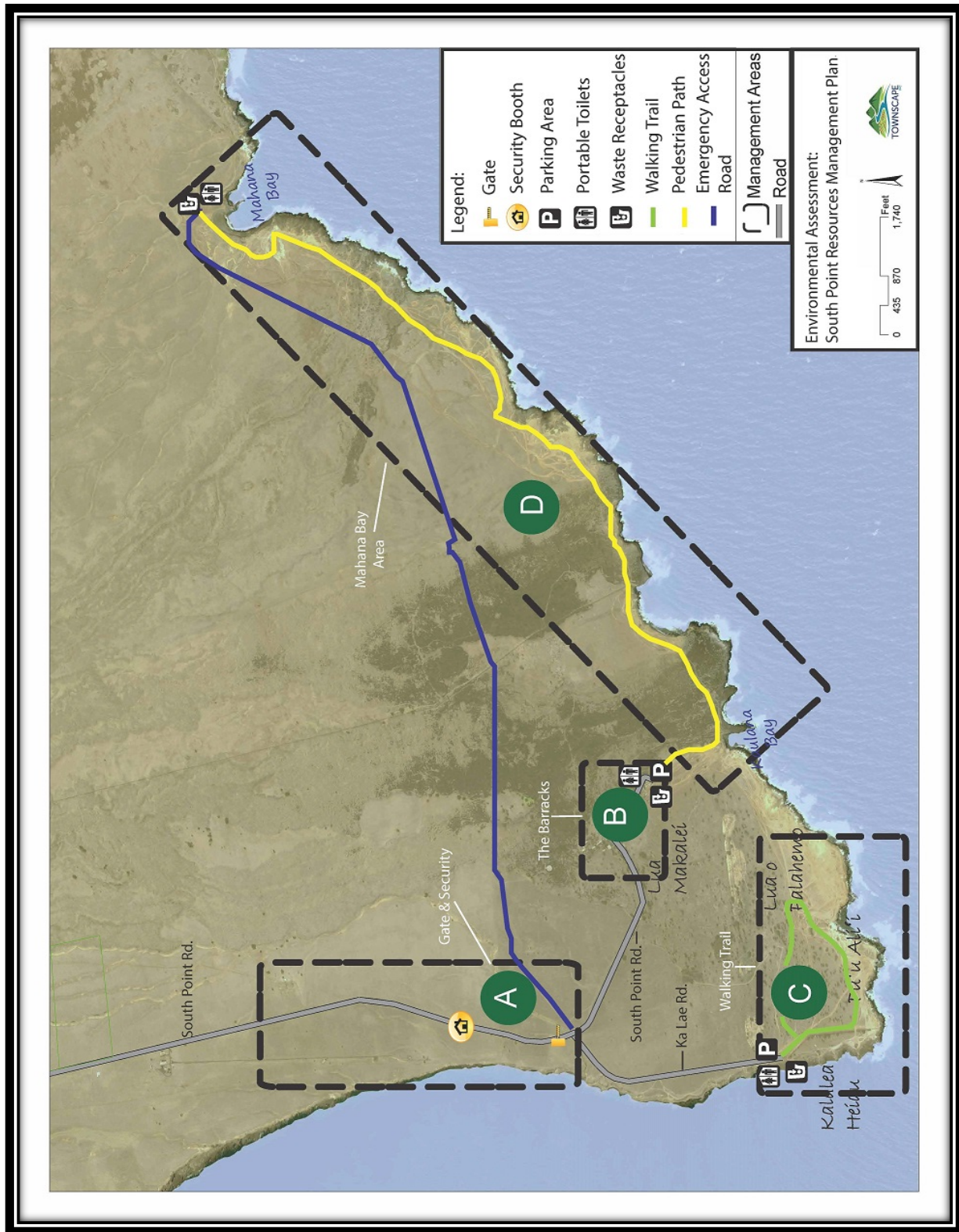


Figure 1. Original Project Area Map

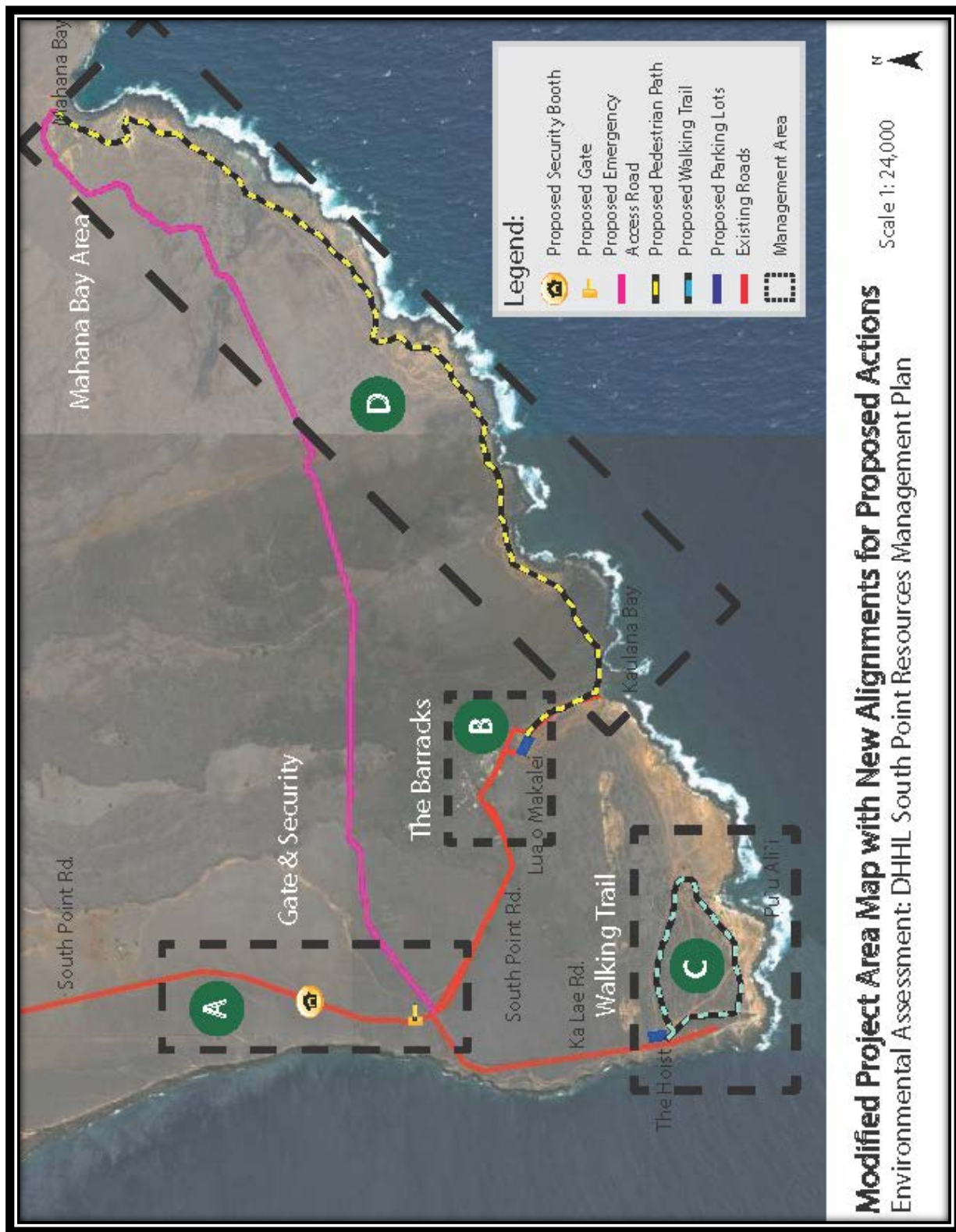


Figure 2. Modified Project Area Map

2 DESCRIPTION OF THE ENVIRONMENT AND POTENTIAL IMPACTS AND MITIGATION MEASURES

2.1 Physical Environment

2.1.1 Land Tenure and Existing Land Uses

2.1.1.1 Land Tenure:

The District of Ka'ū was divided into smaller regions or 'okana (District or sub-district, usually comprising several ahupua'a), which comprised of nearly 30 ahupua'a. The Project area is located within Kamā'oa Ahupua'a, also known as Kamā'oa-Pu'ueo, in the 'ili 'āina (smaller subdivision of an ahupua'a) of Ka Lae. According to Soehren (2010), Kamā'oa contains over 30 'ili 'āina or 'ili kū. Following the Great Māhele of 1848, Kamā'oa Ahupua'a was granted to Leleiohoku who returned it in commutation for lands elsewhere. Kamā'oa was retained by the Government. Māhele records indicate that numerous Land Commission Awards (LCA)s were claimed in Kamā'oa, however, many of them were not awarded. In the 'ili of Kalae, three kuleana claims were made, and all were awarded to Kaoo, Molaolao, and Kuaipalahalaha, as shown in Table 2. A map of the approximate location of LCA 9249, relative to the Project area, is shown on Figure 8 of the archaeological inventory survey conducted for this EA in Appendix D.

Table 2. Land Commission Awards at South Point

LCA #	Awardee	Royal Patent #	Acreage	Land Use Description
9249	Kaoo	-	5.5	One 'apana: one house lot, three sweet potato kihāpai (fields)
9249B	Molaolao	5115	7.75	One 'apana: four sweet potato kihāpai
9249C	Kuaipalahalaha	7098	4.0	One 'apana: five sweet potato kihāpai

The Project area, is composed of approximately 11,000 acres and under is the jurisdiction of the Department of Hawaiian Home Lands (DHHL). The Hawaii Organic Act 1900, stipulates that "Public Lands" includes all lands in the Territory of Hawai'i classed as "government or crown lands prior to August 15, 1895 or acquired by the government upon or subsequent to such date by purchase, exchange, escheat, or the exercise of the right of eminent domain, or in any other manner, with five exceptions. One of the five exceptions includes: (1) lands designated in Section 203 of the Hawaiian Homes Commission Act, 1920, hereafter referred to as Act 1920. Section 203 (1), of Act 1920 states that "Certain public lands designated "Available Lands" include (1) Kamā'oa-Pu'ueo on the island of Hawai'i (all 11,000 acres, more or less).

Thus, the designation of the Project area as "Available Lands" differs from other "Public Lands" administered by state agencies for the State of Hawai'i. As such, the use of Project area lands is NOT intended for the general public of the State of Hawai'i but for the benefit and use of native Hawaiians as defined by Act 1920 and the Hawai'i State Constitution. The United States and the State of Hawai'i have a fiduciary duty to faithfully administer the provisions of Act 1920 on behalf of the native Hawaiian beneficiaries of the Act. Therefore, the use of Available Lands, such as the

Project area, differs from the use of lands for public parks on state and county lands in that the facilities provided by the DHHL on these lands, are to address the needs of native Hawaiians, NOT those of the general public.

Note: Although a portion of the western section of TMK (3)-9-3-001:003, on which the hoist is located, is shown in the State geographical information system (GIS) as belonging to the State of Hawai'i's Department of Land and Natural Resources (DLNR), the parcel was returned to DHHL in 1984 by Executive Order 3273. The change is not reflected in geographical GIS maps generated for this site, therefore, it is necessary to clarify that this section was returned to the DHHL and is currently under the management of the DHHL.

Other major landowners with property in close proximity to the Project area include Kamehameha Schools, the State of Hawai'i, and the United States (U.S.) Coast Guard. The latter owns the parcel at Ka Lae on which the existing lighthouse and Kalalea Heiau are located.

2.1.1.2 Existing Land Use Designations:

The DHHL Hawai'i Island Plan, a 10-year plan published in 2002 to assess the potential use of the 116,963 acres of DHHL lands on Hawai'i Island, recommends optimal use of the land to meet the needs of DHHL beneficiaries. In the Plan, the southern-most portion of Kamā'oa-Pu'ueo, which corresponds with the Project area, is designated as a Special District that requires special attention and additional study due to unique features and resources.

Hawai'i Revised Statute (HRS) Chapter 205, established the State Land Use Commission, which classifies all lands in Hawai'i into four land use districts: Urban, Rural, Agricultural, and Conservation. The Project area is within the Conservation and Agricultural Districts. Specifically, each of the proposed actions overlap both Conservation and Agricultural Districts, as shown in Figure 3. Permitted uses within this district are established and managed by the respective counties through land use ordinance.

The Hawai'i County Code regulates land use to encourage orderly development in accordance with adopted land use policies, including the Hawai'i County General Plan and the County's Community Development Plans (CDPs). The management actions proposed within the Project area fall under the County's Ag-20a zoning designation which is an agricultural zone with minimum lot size of 20 acres. Public uses and structures necessary for agricultural practice are permitted uses in this zone per the County Code's Chapter 25-5-72 Item 18. It should be noted, however, that DHHL lands are not required to conform with County zoning regulations.

Potential Impacts and Mitigation Measures

No significant impacts on the land tenure and existing land uses are anticipated to result from the proposed actions. Instead, the proposed actions will improve the integrity of the existing lands of the Project area.

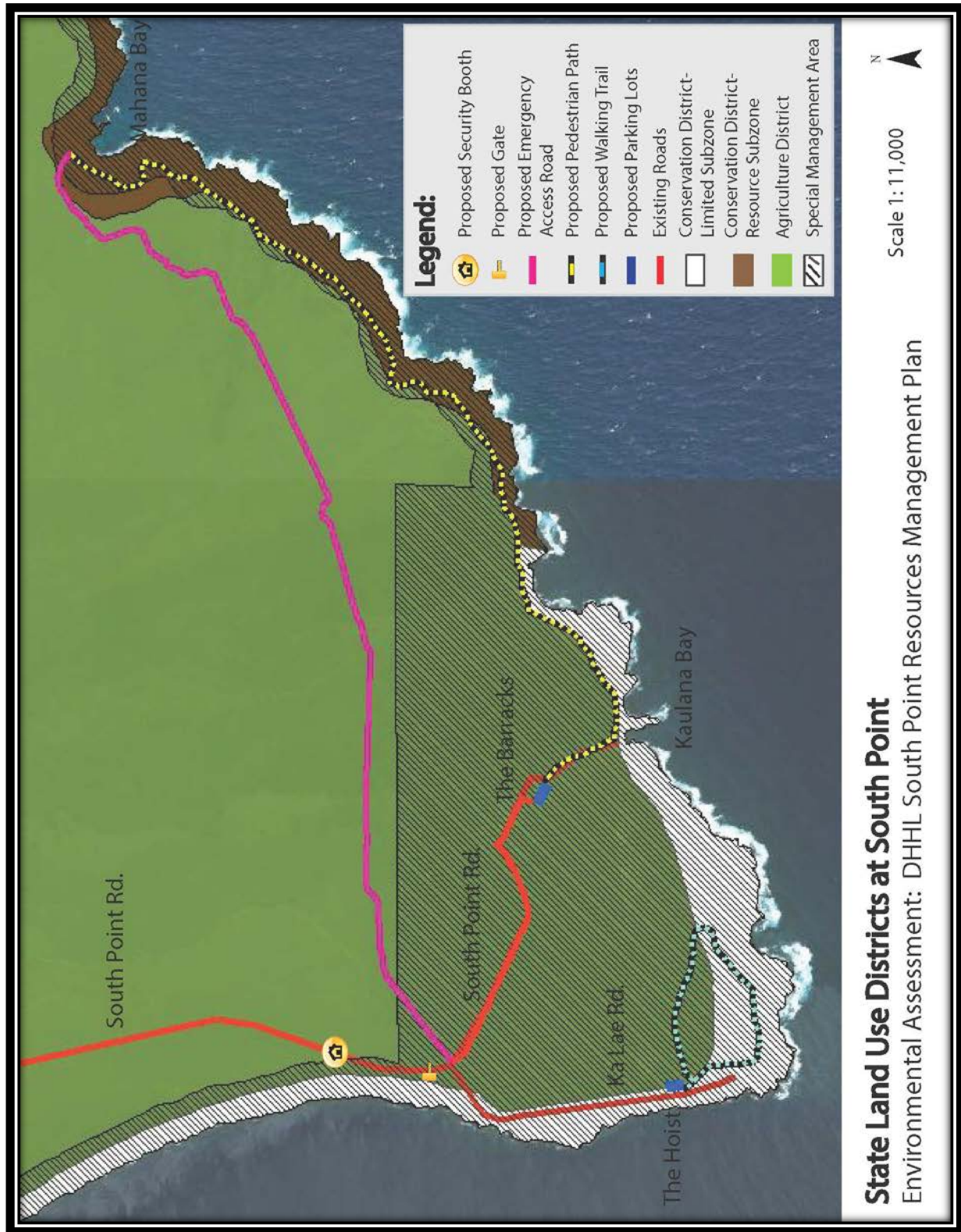


Figure 3. State Land Use Districts at South Point

2.1.2 Climate and Hydrology

2.1.2.1 Climate

Rainfall in the Hawaiian Islands is spatially variable because of the islands' topography and the prevailing northeasterly trade winds. Dry areas receive less than 10 inches of rainfall annually and wet areas receive greater than 400 inches¹. In Ka'u, the mean annual rainfall for South Point is 27 inches which varies throughout the year with 4 inches in January (winter) and 1.7 inches in July (summer). The mean annual temperature is 73°F and ranges from 69.7°F in winter to 75.6°F in the summer. Combined with its exposure to the prevailing northeasterly trade winds which frequently impact the area, as shown in Figure 4, the climate of South Point can be characterized as dry, windy, and hot for most of the year.

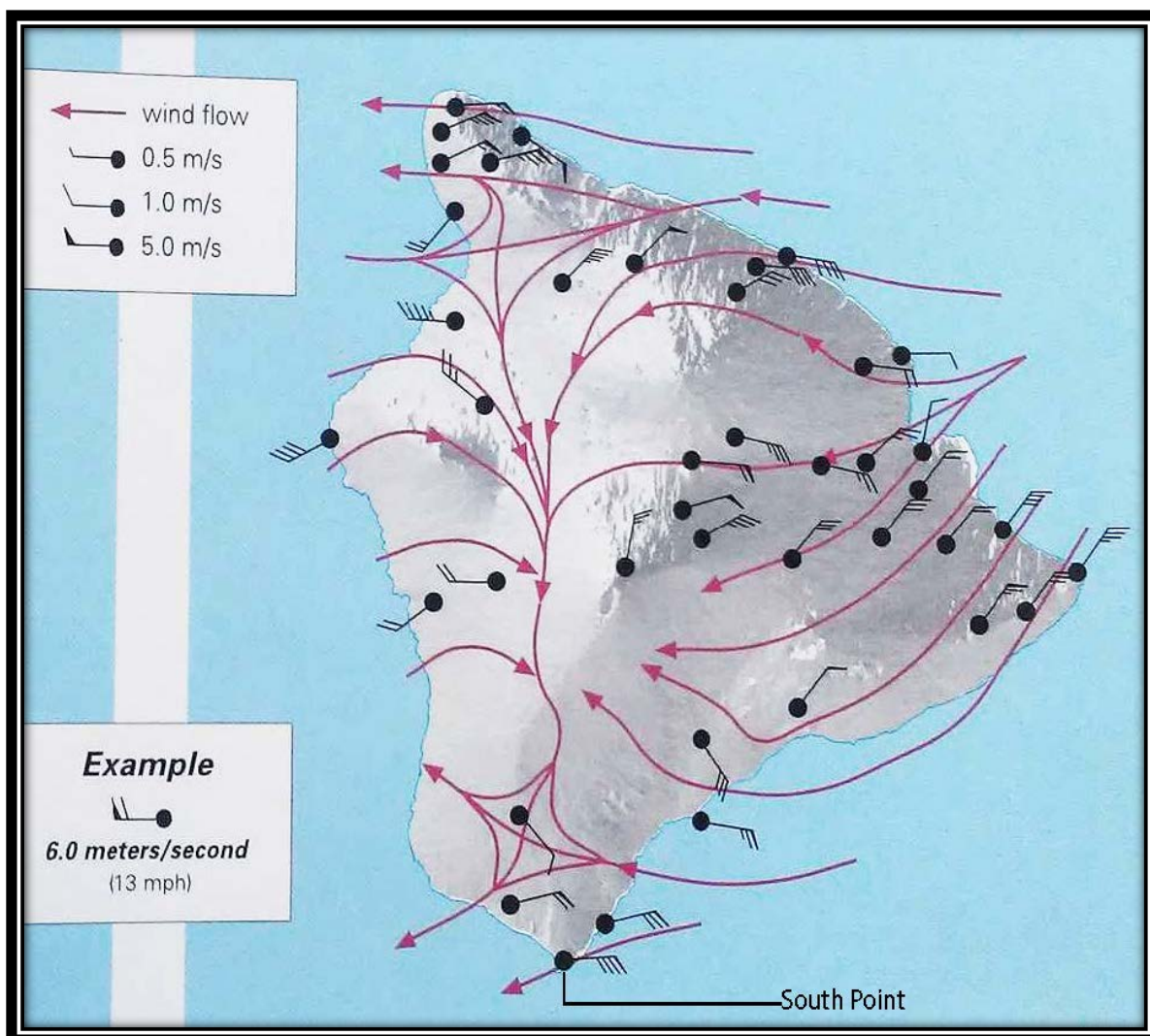


Figure 4. Wind direction and flow at South Point²

¹ <https://hi.water.usgs.gov/publications/pubs/fs/fs126-00.pdf>

² Juvik S. and James Juvik, 1973. *Atlas of Hawai'i : Third Edition*. University of Hawai'i Press, Honolulu.

2.1.2.2 Hydrology

In Hawai'i, ground water is the most reliable source of water supply due to minimal daily or seasonal changes in water tables. Precipitation not lost through evapotranspiration or through streams into the ocean, percolates into the ground and collects in aquifers under the island that slowly leak water into the sea³. Most water is maintained in basal freshwater lenses that "float" on the salt-water permeated rock below but in some locations, significant water is trapped between dikes or perched above impervious ash layers.

The island of Hawai'i contains high ground water levels in the rift zones of Kīlauea and Kohala Volcanoes. High water levels, possibly associated with a buried rift zone of Hualālai Volcano or fault scarps draped with lava flows, also are present along the western coast. Areas of high water levels are also found along the northern flank and eastern flanks of Mauna Kea and on the southeastern flank of Mauna Loa. The occurrence of fresh ground water in each of the Hawaiian Islands can be depicted using water levels measured in wells. Water levels less than 50 feet above sea level, represented by red dots in Figure 5, were arbitrarily chosen to show occurrences of thin freshwater lenses. Water levels greater than 50 feet above sea level, represented by blue dots in Figure 5, show areas where vertically extensive freshwater-lens systems or dike-impounded water exist. As shown in Figure 5, the number of wells in the Ka'ū District is less than in other parts of Hawai'i Island. Several wells, with water levels less than 50 feet above sea level (red dots) are shown to occur at South Point in Figure 5.

South Point lies within the boundaries of the Southeast Mauna Loa Aquifer Sector Area (ASEA) which includes 'Ōla'a, Kapapala, Nā'ālehu, and Ka Lae (80504) Aquifer System Areas⁴. The ASEA covers the south central portion of the island, primarily the Ka'ū District, and the northwestern section of the Puna District. The Water Resources Protection Plan for the State of Hawai'i identified the Ka Lae Aquifer as having a sustainable yield of 31 million gallons per day (mgd). However, the sustainable yield does not consider whether the water resource is feasible to develop.

2.1.2.3 Potable Water

Water Source

Sources of water for domestic systems for Hawai'i County include catchment systems, wells, tunnels or springs, or delivered water. The South Point area uses the County DWS #108 Waiohinu-Naalehu Public Water System which serves the communities of Nā'ālehu, Wai'ōhinu, and South Point. After the closure of the sugar plantation, the Department of Water Supply (DWS) has assumed the management of this water system, while ownership of the system is still undetermined. This water system depends primarily on the New Mountain House Tunnel Spring and Hā'ao Spring for its water supply. Over 20 percent of the water drawn from the DWS system is used for agriculture⁵. Currently, an existing 50,000-gallon water tank is located near the Barracks site at South Point on DHHL property that is maintained by the DWS though ownership

³ https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_037166.pdf

⁴ http://hawaiiidws.org/7%20the%20water/wateruseplan/HWUDP%20Chapter%20805_Final.htm

⁵ https://dlnr.hawaii.gov/forestry/files/2013/02/Kau_FR_Mgmt_Plan_2012.pdf

of the tank is also undetermined. The tank is not currently being accessed by South Point residents for water.

Previously, a deep well at South Point was drilled in 1990 but it was not operational due to high salinity. The Department of Land and Natural Resources (DLNR) drilled a well with a possible capacity of 36,000 to 180,000 mgd for potable water or 140,000 to 430,000 mgd for irrigation water⁶. However, tests during well construction failed to pinpoint a pumping level at which the chloride level stabilized. Thus, no water distribution system was installed.

Water Needs

The RMP 2016 proposes several potential projects that will need water. These include: toilet facilities, a security booth, a gathering place/community center, and overnight camping. A traffic study conducted for this EA indicated that approximately 728 people visited South Point on a weekday and approximately 906 people visited on a weekend day. Assuming these numbers reflect the approximate number of visitors to South Point on any given week day and weekend day, respectively, an estimated 3,640 people visit South Point during the week and 1,812 people visit during the weekend. Based on these numbers, approximately 5,452 people are likely to visit South Point every week, or 283,504 visitors per year. Though more visitor count events are needed to establish a more accurate estimate of visitors to South Point, these numbers suggest that significant water supply will be necessary to support toilet facilities alone to service approximately 779 people per day or 5,000 people or more per week at South Point.

Sewage usage roughly requires approximately five to ten gallons of water per person during the daytime and about 100 gallons per person for overnight camping. Assuming 779 visitors per day, approximately 4,000 to 8,000 gallons of water will be required for daytime toilet facilities per day. This estimate is for daytime toilet usage alone, excluding water needs for a security booth, a gathering place/community center, and overnight camping.

Potential Impacts and Mitigation Measures

No significant impacts on water resources are anticipated to result from the proposed actions as none of the proposed actions will be drilling underground to impact groundwater. Also, to address the future water needs of the RMP 16 expressed above, funding has been approved to allow DHHL to develop and improve the water infrastructure in Ka'ū and at South Point. The DHHL is working more closely with DWS to plan for better water management at South Point.

2.1.3 Anchialine Pool

Palahemo is an anchialine pool at South Point which is a landlocked body of water with a subterranean connection to the ocean. Anchialine pools are a feature of coastal aquifers and are density stratified, with the water near the surface being fresh or brackish, and saline water intruding from the coast below at some depth⁷. Consultations with people from Ka'ū indicate that the water levels of Palahemo fluctuate with tidal changes due to its proximity to the ocean.

⁶ https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_037166.pdf

⁷ https://en.wikipedia.org/wiki/Anchialine_pool

Potential Impacts and Mitigation Measures

No significant impacts are anticipated to result from the proposed actions because no actions will occur in the anchialine pool. Instead, the proposed Project is expected to improve the conditions in and around Palahemo by reducing vehicular access and discouraging recreational activities on motorbikes, ATVs, and trucks at South Point that have caused sedimentation from soil erosion. In addition, re-vegetating the vicinity of the pool with native plants will further prevent soil erosion at Palahemo.

2.1.4 Topography

The Project area gradually descends in elevation from 900 feet to 1,000 feet above sea level at Nā'ālehu to approximately 200 feet above mean sea level where the proposed emergency road is situated. The topography of most of the Project area is below 100 feet above mean sea level.

2.1.5 Geology

Hawai'i Island consists of five coalescent, subaerial (above sea level) volcanoes. Mauna Loa is one of these volcanoes that has influenced the geology of South Point. Mauna Loa is considered to be an active volcano though it is nearing the end of its shield stage, therefore, the volcano's frequency and rate of eruption are declining. However, Mauna Loa still discharges lavas of tholeiitic basalt. Between 1843 and 1995, Mauna Loa erupted 36 times, but only three eruptions have occurred since 1950 (1950, 1975, and 1984)⁸. As shown in Figure 6, the geology of South Point consists primarily of Ka'ū Basalt and Kahuku Basalt.

2.1.6 Soils

Juvik and Juvik (1973) characterize the soil orders of South Point as consisting mostly of Andisols and Histosols-lava. Andisols occur mainly on lava flows older than 3,000 years on Hawai'i and are characterized to take up large amounts of phosphorous. Andisols are the most common soil type in the state of Hawai'i and may persist for more than a million years in very moist environments. Histosol-lava soils are organic soils that develop when plants and decomposing forest litter alter geologically young lava flows. These soils generally form a well-drained, thick layer on the lava rock.

There are 52 different soil types that occur in the Ka'ū District⁹. At South Point, four different soil types are present in the areas of the proposed actions for this Project with the majority of the area consisting of Pakini (PKB) and Ka'alualu (rLV) soils. These soils are explained in more detail in Table 3 and depicted in Figure 7. The sandy loam soils, which make up the majority of the Project area, contain at least 50 percent sand. Exposed sand loam soils are highly erodible by wind and, as shown in Figure 4, South Point is exposed to the prevailing northeasterly trade winds that frequently impact the area. Thus, soil erosion is a naturally-occurring process that occurs at South Point and has shaped the geography of the coastline.

⁸ Juvik S. and James Juvik, 1973. *Atlas of Hawai'i : Third Edition*. University of Hawai'i Press, Honolulu.

⁹ https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_037166.pdf

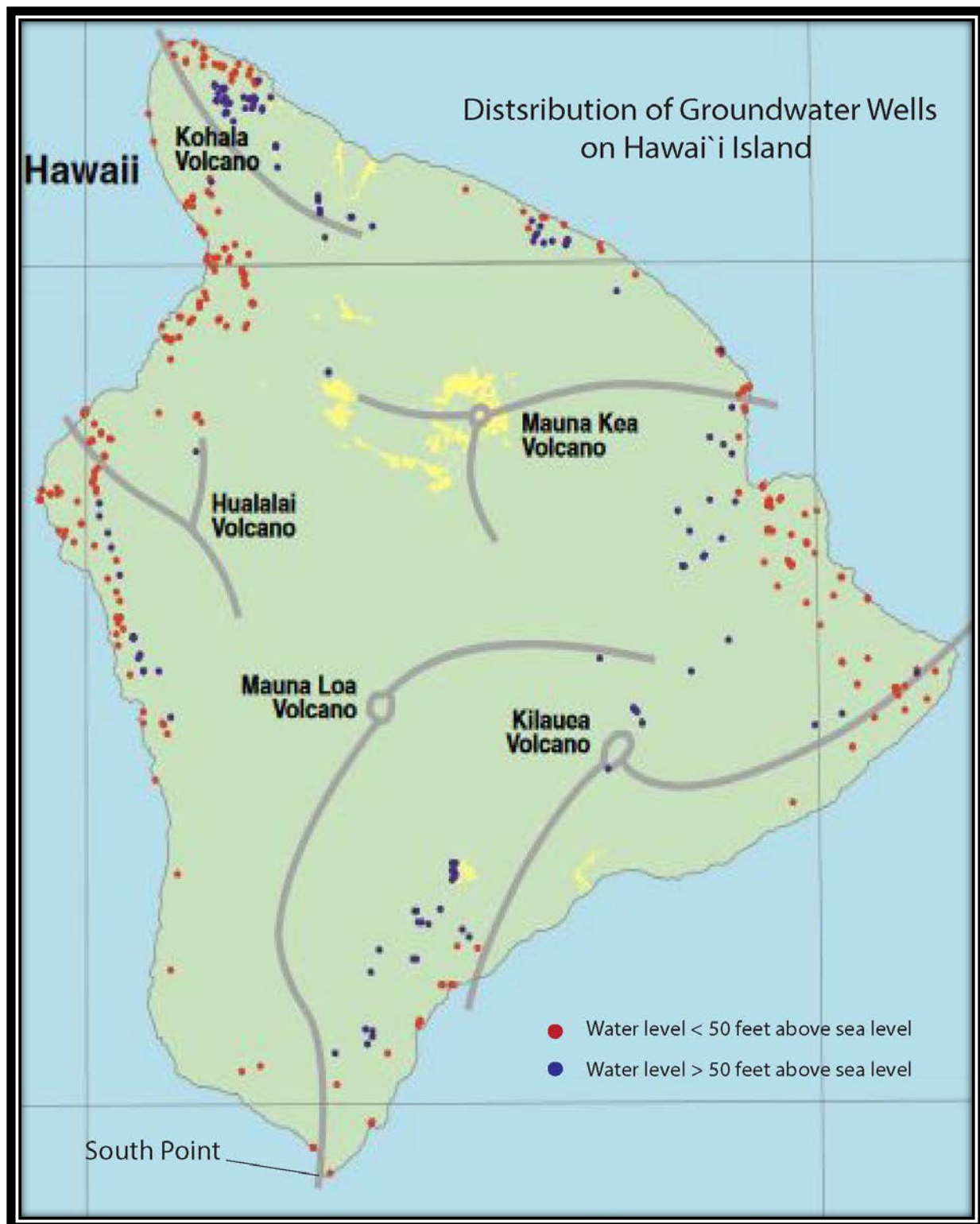


Figure 5. Distribution of groundwater wells on Hawai'i Island

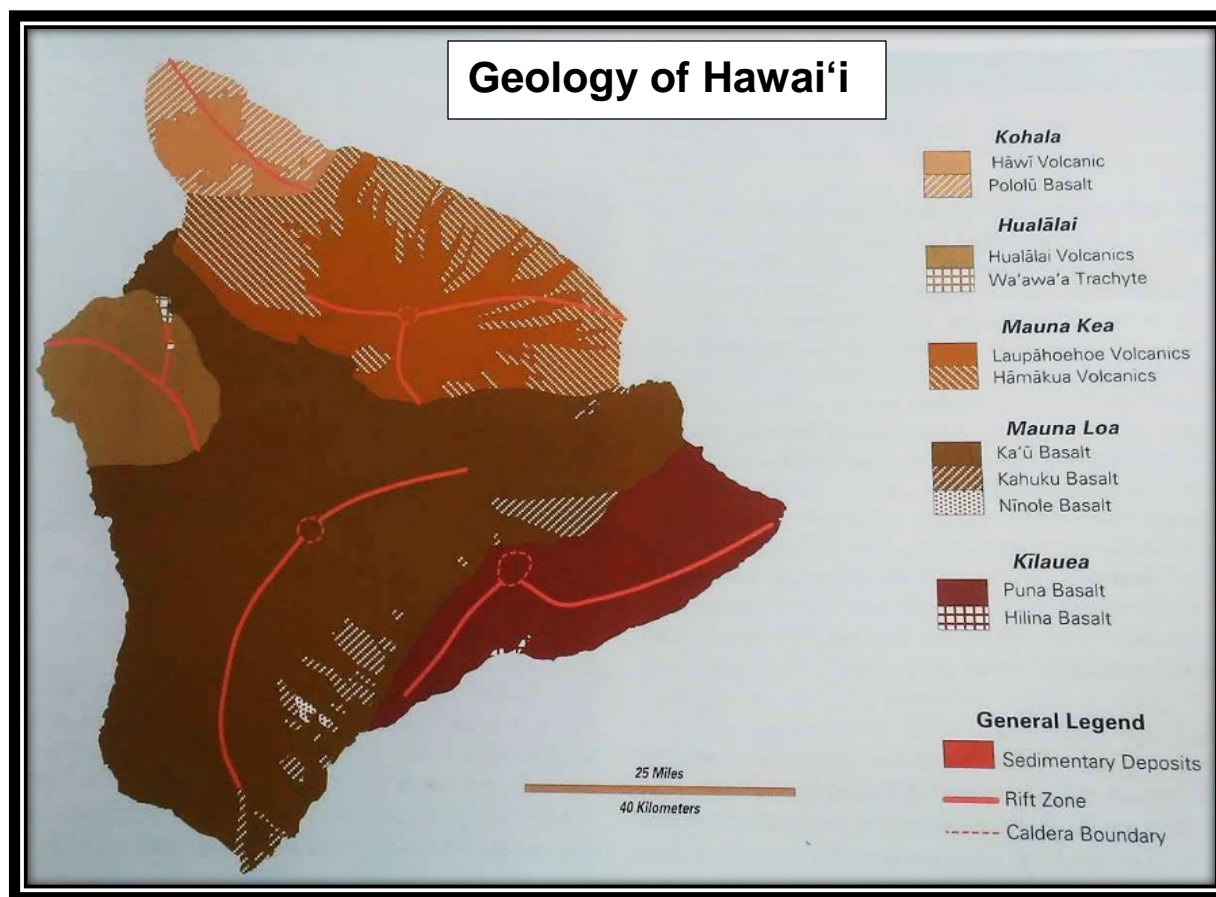


Figure 6. Geology of Hawai'i Island (Juvik and Juvik 1973)

Soil Erosion is a visible cause of declining soil quality. The loss of top soil from erosion removes the most favorable layer for plant cultivation diminishing nutrients and organic matter in the soil. As shown in Table 3, the soil types of the Project area are not prime farmland. Eroded soil may also be carried by runoff into coastal waters and degrade water quality, a phenomenon that occurs frequently at South Point from the widespread use of recreational vehicles. Though soil erosion is a naturally-occurring process, the unmanaged use of recreation vehicles has cut grooves into the land and also denuded vegetation that hold the soil and prevent erosion. Combined with the impact of wind on very fine sandy loam particles, these actions have exacerbated coastal erosion at South Point.

Coastal Erosion and Sea-Level Rise: According to Juvik and Juvik, 1973, the coastal areas along the southern coast of Hawai'i Island, such as South Point, are subject to rocky shoreline collapse and landslides¹⁰. Sections of rocky shoreline on Hawai'i Island can suddenly collapse when coastal rock formations and steep slopes are destabilized by landslides and undercutting by waves. This phenomenon occurs along the coastline bordering Pu'u Ali'i and storm events exacerbate the process. Coastal erosion is also attributed to sea-level rise. Data for Hawai'i show that the rate of sea level change depends partly on how rapidly an island is subsiding or sinking.

¹⁰ Juvik S. and James Juvik, 1973. *Atlas of Hawai'i : Third Edition*. University of Hawai'i Press, Honolulu.

Hawai'i island is sinking faster than the neighboring islands because its massive geologically young volcanic rock weighs heavily on the underlying crust. Thus, Hawai'i has been experiencing a rate of 1.6 inches of sea level rise per decade. This rate may be compounded by global warming which is predicted to worsen in the future. Thus, erodible coasts and low-lying shores, such as those along South Point, would be most vulnerable to sea-level hazards.

Potential Impacts and Mitigation Measures

The proposed Project is expected to reduce soil erosion at South Point and improve soil quality as vegetation covers exposed areas. The Project proposes to create only one path along the coast and allow vegetation to grow. No significant long-term impacts on soils are anticipated as a result of the proposed Project; therefore, no mitigative measures are proposed for the long-term.

Table 3. Soil types in areas of the proposed actions

<u>Soil Label</u>	<u>Soil Description</u>
<u>PKB: Pakini medial very fine sandy loam, 2-10 percent slope</u>	This soil type typically occurs at an elevation of 0-1,000 feet in areas with mean precipitation of 15 to 30 inches and temperatures of 72-75 Fahrenheit (F). Pakini soils are made of ash fields on lava flows. This soil type is well drained, runoff is low, frequency of flooding is low and depth to water table is more than 80 inches. Pakini has minor components of Ka'alualu soil. This soil is not prime farmland.
<u>rVS: Ka'alualu cobbly medial loamy sand, 2 to 10 percent slopes</u>	This soil type typically occurs at an elevation of 0-1,000 feet in areas with mean annual precipitation of 15 to 30 inches and temperatures of 72 to 75 F. Ka'alualu soils are also ash fields on 'ā'ā lava flows, containing minor components of Pakini soil. This soil type is somewhat excessively drained with a low likelihood of runoff and flooding, and the depth to the water table is more than 80 inches. This soil type is not prime farmland.
<u>rLV: Ka'alualu extremely cobbly medial loamy sand, 2 to 10 percent slope</u>	This soil type typically occurs at 0 to 1,000 feet in areas with mean annual precipitation of 15 to 30 inches and annual air temperature of 72 to 75 F. This soil type consists of minor Pakini soil, is also set as ash fields on 'ā'ā lava flows, and occurs at about 20 to 40 inches to lithic bedrock. This soil is somewhat excessively drained, occurs more than 80 inches from the water table and has a very low runoff capacity with low frequency of flooding. This soil type is not prime farmland.
KBC: Ka'alualu-Pakini Complex, 2 to 10 percent slope	This soil type typically occurs at 0 to 1,000 feet in areas with mean annual precipitation of 15 to 30 inches and annual air temperature of 72 to 75 F. This soil type consists of 60 percent Ka'alualu and 40 percent Pakini soils. The KBC occurs as ash fields on 'ā'ā lava flows, is 20 to 40 inches to lithic bedrock, is somewhat excessively drained, more than 80 inches to the water table, and has very low water runoff and flooding capacity. This soil type is not prime farmland.

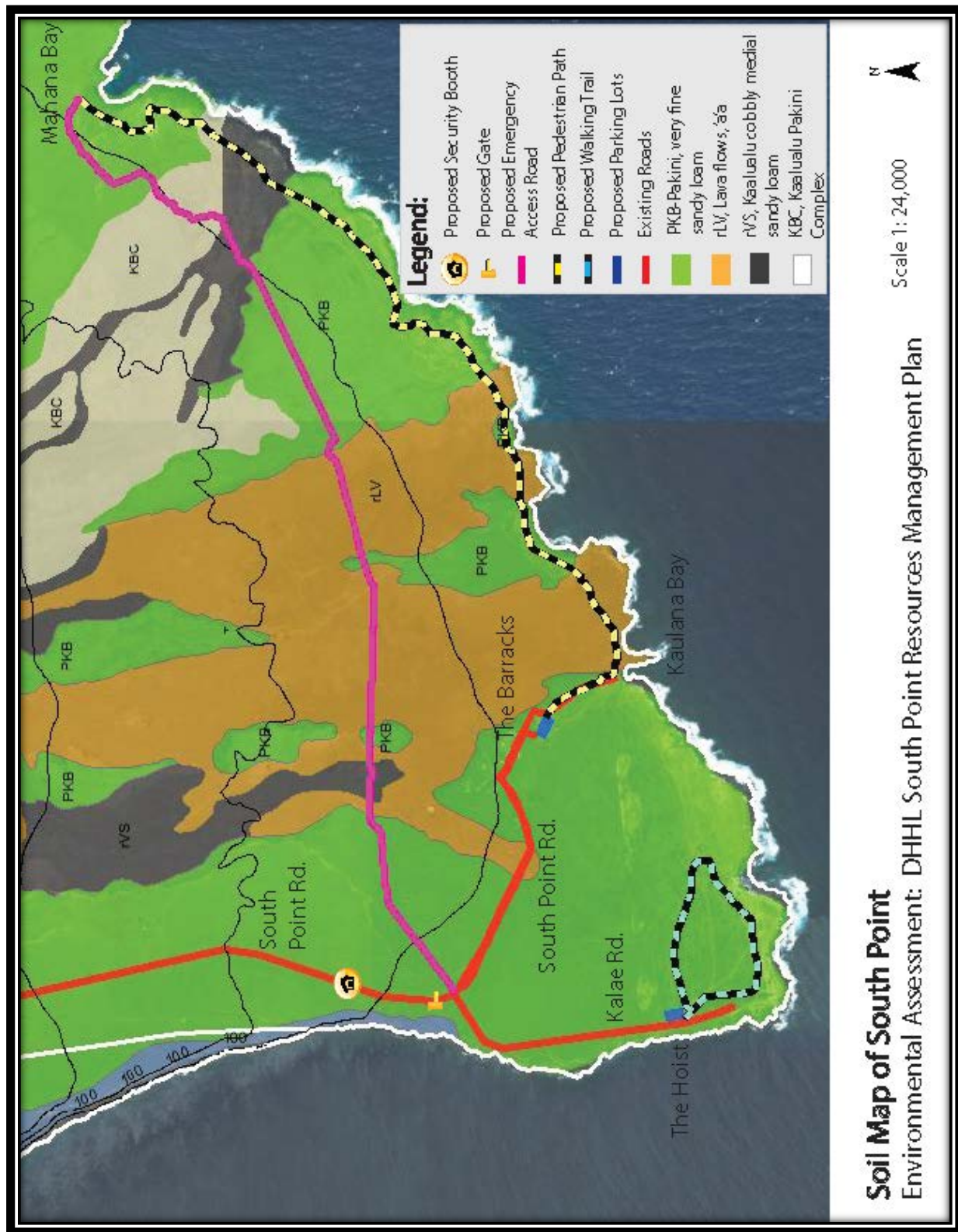


Figure 7. Soil Map of South Point

2.1.7 Air Quality

Air pollution control is regulated by the State Department of Health's Clean Air Branch. Rules and regulations governing air pollution control include HRS, Chapter 342B, "Air Pollution Control," HAR Title 11, Chapter 59, "Ambient Air Quality Standards," and HAR Title 11, Chapter 60.1 "Air Pollution Control."

Air quality at South Point is influenced by dust from soil and wind erosion, as described in more detail in Section 2.1.6. Currently, unregulated recreational use of vehicles at South Point have created many roads and deep grooves in the land that has led to soil erosion and exacerbated by exposure to windy trade wind conditions. The Project site is located in an undeveloped, remote area, therefore, the site is isolated from residential and populated areas.

Potential Impacts and Mitigation Measures

The proposed Project is expected to improve air quality at South Point. Actions proposed in this Project are intended to create more organized access ways in and around South Point to reduce widespread development of roadways and allow vegetation to grow. Thus, the proposed Project is expected to reduce long-term air pollution attributed to soil erosion. No significant long-term impacts on air quality are anticipated as a result of the proposed Project; therefore, no mitigative measures are proposed for the long-term.

Short-term construction-related activities related to building fences around cultural sites may generate dust affecting the air quality in and around the Project area. However, considering the site's isolation from populated areas and the presence of trade wind conditions, it is anticipated that pollutants will be blown towards the ocean. The short-term effects on air quality will be mitigated by compliance with State DOH Administrative Rules, Title 11, Chapter 60, "Air Pollution Control." The following are BMPs that may be implemented to control dust:

- Phase construction activities, focus on minimizing dust-generating materials and activities;
- Landscape and rapidly cover bare areas, including slopes;
- Control dust from debris being hauled away from the Project site;
- Provide adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities.

2.1.8 Noise

Noise is regulated by the State Department of Health, Indoor and Radiological Health Branch. Rules and regulations for noise include HRS Chapter 342, "Noise Pollution" and HAR, Title 11 Chapter 46, "Community Noise Control." Maximum permissible sounds levels in dBA are classified into 3 zoning districts: Class A which includes lands zoned as Conservation; Class B includes lands zoned as Business and Commercial, and Class C includes lands zoned as agriculture, country, industrial or similar. These zoning classifications are depicted in Table 4 which are applicable to the various County zoning designations within the Project area. The project area falls under Class A and Class C.

Table 4. Allowable Noise Limits

Zoning	Daytime (7:00am – 10:00 pm)	Nighttime (10:00pm-7:00am)
Class A (Includes Conservation)	55 dBA*	45 dBA
Class B (Business, Commercial)	60 dBA	50 dBA
Class C (Industrial, Agriculture)	70 dBA	70 dBA

*Refers to the A-weighted sound level or unit of measurement describing the total sound level of all noises as measured with a sound level meter using the “A” weighting network.

Potential Impacts and Mitigation Measures

Impacts from noise are anticipated to be temporary from construction-related activities and traffic associated with the construction activities. Also, considering the remote location of the Project area that is far away from areas of human settlement, the proposed Project will have no significant impact on noise levels.

2.1.9 Flora and Fauna

Studies were conducted by Geometrician Associates, in the summer of 2017, to document flora and fauna, threatened or endangered plant or animal species, critical habitat, and the potential to be currently using any habitat within the Project area. Data were collected from Ka Lae to Māhana Bay, and at an intensive level along various existing and proposed trails, roadways, parking areas, and other discrete sites as indicated in the study which can be found in Appendix C of this report. Plant species were identified and inventoried using walking transects spaced 100 feet apart, from the shoreline to distances ranging from a quarter to a half mile. A handheld GPS was used to flag locations as appropriate.

A vertebrate faunal assessment was also conducted which consisted of a bird survey at multiple times and an assessment of the habitat and standard mitigation measure for any threatened or endangered animals. Dusk and dawn observations were conducted for Hawaiian hoary bats, but with presumption that bats are present whether or not visually detected. The study was completed in 16 personnel days. The flora and fauna study is referred to hereafter as the 2017 study and is summarized here but the report is listed in Appendix C.

2.1.9.1 Flora

The 2017 study documented 75 plant species of which 17 are listed as indigenous, six are endemic, and one is both a federal and state listed endangered species. These native plants are listed in Table 5 below. All plant species found in the Project area are listed in Table 1 of the 2017 report in Appendix C.

The most common vegetation found at South Point, was the Mixed Alien Lowland Dry Grasslands, which was consistent with a report conducted by The Nature Conservancy (TNC), hereafter referred to as the 1993 TNC report. This invasive vegetation type was seen to increase in areas

of vehicular damage as it tends to fill in damaged areas. Alien grasslands are maintained by fire and grazing regimes, to which they are generally better adapted than native species. The TNC report stated that in the absence of disturbances, "...it is likely that the alien grasslands would develop eventually into either shrubland or forest."

The most common grass in the Project area is buffelgrass (*Cenchrus ciliaris*), with much lesser amounts of pitted beardgrass (*Bothriochloa pertusa*), Bermuda grass (*Cynodon dactylon*), Guinea grass (*Panicum maximum*), and others. Mixed in with these grasses, and occasionally dominating in patches especially where 'ā'ā is present, are kiawe, koa haole, sourbush, Sodom apple (*Solanum linnaeanum*), and lantana. It should be noted that 'ilima, 'uhaloa, kakalaioa and some other native plants can be found mixed in the alien grasslands.

Native Plant Communities

The TNC report described five native terrestrial coastal communities at South Point in 1993. These communities included:

- 'Aki'aki Coastal Dry Grassland
- 'Ākulikuli Coastal Dry Herbland
- Mau'u 'Aki'aki Coastal Dry Grassland
- 'Ilima Coastal Dry Shrubland
- Nehe Coastal Dry Shrubland

The 2017 study found that these native coastal communities often overlapped and extended continuously from Ka Lae to Māhana, with a variable width of up to a quarter mile. The study found that the same vegetation pattern holds a quarter century later at South Point, except that the area has been more heavily dissected and trampled by roads. Patches of rare plants reported in 1993, are no longer found, and where they are found, the plants are less extensive. Table 3 summarizes the findings for each of the five native coastal communities described at South Point.

Threatened/Endangered and Rare Species

No plant critical habitat is present in the Project area and only one plant species currently listed as threatened or endangered (T&E) under the Endangered Species Act of 1973, as Amended (16 USC 1531-1544), was found at South Point: 'ōhai (*Sesbania tomentosa*). 'Ōhai was found in all of the areas noted in the 1993 TNC report, although probably at reduced frequencies. Most plants were contained within roped-off and signed enclosures, with plants sometimes sprawling outside and isolated individuals located nearby. Although clearly threatened by a variety of factors, management actions are helping to preserve these fragile populations.

The endangered *Portulaca villosa*, was reported in the TNC 1993 report to be found in several areas, including Papakolea (west of Māhana Bay), at Ka Lae, and near Hanalua Bay. The herb was not identified in the 2017 study, however, the small plant may be difficult to spot in dense vegetation, particularly if there are dry conditions and/or it is not flowering. Thus, it is possible that the endangered herb is present. The rare sprawling shrub, maiapilo (*Capparis sandwichiana*), was noted in several closely spaced patches in just one rocky area near Hanalua Bay, mauka of

the four-wheel drive roads and footpaths. The location of this patch has been provided to DHHL. This rare plant was not reported in the 1993 TNC report.

Table 5. Native Plants identified in the Project area, 2017 (I=Indigenous, E=Endemic, End=Federal and State listed endangered species.

Scientific Name	Family	Common Name	Life Form	Status
<i>Argemone glauca</i>	Papaveraceae	Pua Kala/Prickly Poppy	Herb	I
<i>Boerhavia repens</i>	Nyctaginaceae	Alena	Herb	I
<i>Caesalpinia bonduc</i>	Fabaceae	Kakalaioa	Vine	I
<i>Capparis sandwichiana</i>	Capparaceae	Maiapilo	Shrub	E
<i>Cuscuta sandwichiana</i>	Convolvulaceae	Kaunaoa Pehu/Dodder	Vine	E
<i>Cyperus polystachyos</i>	Cyperaceae	Cyperus	Sedge	I
<i>Fimbristylis cymosa</i>	Cyperaceae	Mau'u 'Aki'aki	Sedge	I
<i>Heliotropium curassavicum</i>	Boraginaceae	Hinahina	Herb	I
<i>Heteropogon contortus</i>	Poaceae	Pili Grass	Herb	I
<i>Hibiscus tiliaceus</i>	Malvaceae	Hau	Shrub	I
<i>Ipomoea indica</i>	Convolvulaceae	Koali 'Awa/Morning Glory	Vine	I
<i>Ipomoea tuboides</i>	Convolvulaceae	Hawaiian Moon Flower	Vine	E
<i>Jacquemontia ovalifolia</i>	Convolvulaceae	Pa'u o Hi'iaka	Vine	I
<i>Mariscus phleoides</i>	Cyperaceae	None	Herb	E
<i>Melanthera integrifolia</i>	Asteraceae	Nehe	Herb	E
<i>Panicum fauriei</i> var. <i>latius</i> *	Poaceae	Panicum	Grass	E
<i>Scaevola taccada</i>	Goodeniaceae	Naupaka	Shrub	I
<i>Sesbania tomentosa</i>	Fabaceae	'Ōhai	Herb	End
<i>Sesuvium portulacastrum</i>	Aizoaceae	'Ākulikuli	Herb	I
<i>Sida fallax</i>	Malvaceae	'Ilima	Shrub	I
<i>Sporobolus virginicus</i>	Poaceae	'Aki'aki Grass	Herb	I
<i>Thespesia populnea</i>	Malvaceae	Milo	Tree	I
<i>Tribulus cistoides</i>	Zygophyllaceae	Nohu	Herb	I
<i>Waltheria indica</i>	Sterculiaceae	'Uhaloa	Herb	I

Table 6. Native coastal communities at South Point, 2017.

'Aki'aki (<i>Sporobolus virginicus</i>) Coastal Dry Grassland	The 1997 study found that the indigenous grass, 'aki'aki, is well developed between Ka Lae and Māhana Bay, especially in 'ā'ā, but also in ash deposits and sometimes pāhoehoe. This finding is consistent with the 1993 TNC report. 'Aki'aki, along with mau'u 'aki'aki (<i>Fimbristylis cymosa</i>), is the dominant plant in the first band of plants mauka of the ocean. This zone transitions to various other types of plants inland. Other plants found in this zone, include mau'u 'aki'aki, nehe (<i>Melanthera integrifolia</i>), 'ilima, pa'u o Hi'iaka (<i>Jacquemontia ovalifolia</i>), kipukai (<i>Heliotropium curassavicum</i>), 'ākulikuli (<i>Sesuvium portulacastrum</i>) and <i>Panicum fauriei</i>
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	var. <i>latius</i> . Other natives like hau (<i>Hibiscus tiliaceus</i>) and naupaka are also sparingly present. In the 1993 TNC report, the endangered 'ihi (<i>Portulaca villosa</i>) was seen in the 'Aki'aki Coastal Dry Grassland in one location, however, was not relocated in the 2017 study.
'Ākulikuli (<i>Sesuvium portulacastrum</i>) Coastal Dry Herbland	The 'ākulikuli vegetation type is dominated by prostrate mats of 'ākulikuli and is usually found in sandy, ashy or rocky areas where spray and wash from the sea bring in large quantities of salt that restrict the growth of other plants. Consequently, rare plants are generally not found here, although it intermingles with other communities, and various coastal plants can be found mixed in. Australian saltbush favors similar areas, and in the more mauka areas where salt spray and wash are not as prevalent.
Mau'u 'Aki'aki (<i>Fimbristylis cymosa</i>) Coastal Dry Herbland	This community often occurs as the first band of vegetation in pāhoehoe landscapes that offer relatively few handholds for vegetation to take root. It is not very diverse, often having the sedge mau'u 'aki'aki and little else.
'Ilima (<i>Sida fallax</i>) Coastal Dry Shrubland	'Ilima (<i>Sida fallax</i>) is described in the TNC 1993 report, as "variable in stature and species make-up, ranging from simple stands of 'ilima with few other associates, to variable assemblages of coastal plants in complex mosaics, with 'ilima most prominent. At Kamā'oa-Puueo, 'ilima shrubland extended from near sea level to locations up to ...975 feet [in elevation] inland, on both ash and 'a'a substrates." 'Ilima borders the 'akiaki communities listed above, often lying just mauka of them.
Nehe (<i>Melanthera integrifolia</i>) Coastal Dry Shrubland	This community is dominated by one of several species of <i>Melanthera</i> , generally <i>M. integrifolia</i> . Nehe is found in the Project area on 'ā'ā flows and immediately adjacent ash substrates. Like the 'Ilima Shrubland, nehe is found mauka of the other three types. There is often a mosaic of different types and no clear dividing lines. Associated native plants include those found in other types listed above, plus occasional kakonakona grass (<i>Panicum torridum</i>), the sedge <i>Mariscus phleoides</i> , and the relatively rare koali pehu (<i>Ipomoea tuboides</i>).

2.1.9.2 Fauna

Birds

The 2017 study recorded 17 species of birds in the Project area which included five native species and twelve non-natives (Appendix C). Native birds found are listed in Table 5 below.

Table 7. Native Fauna observed in the Project area, 2017

Scientific Name	Common Name, Hawaiian Name	Status
<i>Anous minutus</i>	Black noddy tern, noio	Indigenous Resident
<i>Asio flammeus sandwichensis</i>	Hawaiian s-eared owl, pueo	Endemic Resident
<i>Fregata minor</i>	Great Frigatebird, 'iwa	Indigenous Resident
<i>Heteroscelus incanus</i>	Wandering Tattler, 'ulili	Migratory Resident
<i>Pluvialis fulva</i>	Pacific Golden-plover, kōlea	Migratory Resident

The most common land birds were mynas (*Acridotheres tristis*), skylarks (*Alauda arvensis*), and zebra doves (*Geopelia striata*). These birds were found in all areas of the Project area, with the skylarks being more abundant in the buffelgrass grasslands and the mynas and zebra doves in

areas with trees and shrubs. On June 7, a single short-eared owl or pueo (*Asio flammeus sandwichensis*) was detected on a transect near Pu'u Ali'i. A single 'iwa (*Fregata minor palmerstonior*) or great frigate bird, was observed just off-shore of South Point. Noio (*Anous tenuirostris melanogenys*) or black noddy tern were also seen off the tall cliffs north of South Point. No other seabirds were detected, however, most Hawaiian seabirds frequent offshore areas, and the lack of detection does not signify absence.

Endangered Birds

No endangered birds were observed such as the Hawaiian hawk or 'io (*Buteo solitarius*), Hawaiian goose or nēnē (*Branta sandvicensis*), Hawaiian stilts (*Himantopus mexicanus knudseni*), or any of the native duck or moorhen species. Seabirds that may use the airspace over the Project area include the endangered Hawaiian dark-rumped petrel or 'ua'u (*Pterodroma phaeopygia sandwichensis*), the threatened Newell's shearwater or 'a'o (*Puffinus puffinis newelli*), and the endangered band-rumped storm-petrel or 'akē'akē (*Oceanodroma castro cryptoleucura*). The petrels and shearwater hunt over the ocean during the day and fly to higher elevations at night to roost and nest. Hawaiian petrels presently nest on the southwest rift zone of Mauna Loa, but based on elevation and vegetation, no part of the Project area provide suitable habitat for these seabirds.

The 2017 study reported that the most valuable bird habitat in the Project area is for shorebirds in the coastal zone. Migratory birds were only seen during the one observation on August 20, 2017, just outside the summer migration period. On that day, several wandering tattlers or 'ulili (*Heteroscelus incanum*) and a number of Pacific golden-plovers or kōlea (*Pluvialis dominica*) were observed. The 2017 study noted, that on other years, researchers have frequently seen ruddy turnstones or 'akekeke (*Arenaria interpres*) and even on occasion a bristle-thighed curlew or kioea (*Numenius tahitiensis*) at South Point.

Mammals, Reptiles and Amphibians

Although no systematic bat surveys were performed, and no bats were observed (most observations took place between 8 AM and 4:30 PM outside the time in which bats are usually observed, with a single dawn and dusk observation period), bats have been observed in many areas of Ka'ū¹¹. The 1993 TNC report did not find Hawaiian hoary bats or 'ōpe'ape'a (*Lasiurus cinereus semotus*) but stated that the species may exist in the area because of previously collected specimens. This endangered species should be presumed to be present at least occasionally and to roost in some parts and of the Project area. Non-native mammals, amphibians and reptiles were not inventoried, although cattle, mongooses and mice were seen. The current scope does not allow detailed discussion, but goats, pigs, cattle, mongooses, rats, mice, cats and various lizards have some potential to interact negatively with native flora and fauna.

¹¹ PBR Hawaii. 1988. *Punalu'u Resort, Final Environmental Impact Statement*.

Invertebrates

Although invertebrates were not included in the 2017 study, the study noted that 23 species of invertebrate are currently listed as threatened or endangered in the State of Hawai'i. These include a spider, an amphipod, a moth, snails, picturewing flies, yellow-faced bees and damselflies. Most of the listed species are restricted to other islands, or found at substantially higher elevations or wetter habitats on the Big Island, or with specific host plant species that are lacking in the area. With the exception of yellow-faced bees, none of these species has a high potential to be present in the Project area.

Coastal invertebrate fauna on the southern half of the Big Island includes several rare, threatened or endangered species from two groups: damselflies (the endangered *Megalagrion xanthomelas*, or the orangeblack Hawaiian damselfly), and yellow-faced bees (the endangered *Hylaeus anthracinus* and the rare species *Hylaeus flavipes*). The estuarine marshes of the Kāwā spring system and Honu'apo support documented damselfly populations, which may also be present at Ka'alu'alu. *Hylaeus anthracinus* is known to be restricted to small patches of habitat on each island, including South Point on the Big Island. It is possible that additional sites may exist. In *Insects of Hawaii* (Daly and Magnacca 2003), *Hylaeus flavipes* is noted as being found on the islands of Hawai'i, Maui, and Lana'i. They have recently been collected in the Ka'ū Desert and at Kaulana near South Point. Host plants are known to include plants from the genera *Dodonaea*, *Jacquemontia*, *Myoporum*, *Scaevola*, *Sesbania*, *Sida*, *Sophora*, *Leptecophylla*, *Tournefortia* and *Tribulus*. A number of species from some of these plant genera are widely known in the study area and elsewhere in coastal Ka'ū. The study did not assess invertebrate fauna, but no threatened, endangered or rare species were observed. No damselflies were seen either. Numerous plants in the host genera were opportunistically examined, but no members of the *Hylaeus* genus were observed.

Shrimp or 'Ōpae'ula

The 2017 study mentions that “anchialine pond, nearshore and marine ecosystems may actually be the most valuable biological asset in coastal Ka'ū.” The 1993 TNC report noted the biological importance of the anchialine resources, including rare native 'ōpae'ula, at Lua o Palahemo, which was threatened by pollution, eutrophication and the introduction of alien fish. The report noted:

It is a unique biological site, containing a combination of anchialine pool organisms that is not found anywhere else in the archipelago, or the world. One of the shrimps found at Lua o Palahemo, *Halocaridina palahemo*, is unique to the site. Other shrimps at the site, including *Vetericaris chaceorum*, *Antecaridina lauensis*, *Calliasmata pholidota*, and *Procaris hawaiana*, are known from very few sites worldwide. In short, Lua o Palahemo comprises the largest concentration of candidate endangered anchialine pool organisms in the world.

Since that time, *Vetericaris chaceorum* and *Procaris hawaiana* were listed as endangered..

Turtles and Monk Seals

Coastal waters and beaches of Ka'ū are well-documented feeding areas for the endangered green sea turtle (*Chelonia mydas*), nesting areas for the endangered Hawaiian hawksbill turtle (*Eretmochelys imbricata*), and haul-out areas for Hawaiian monk seals (*Monachus schauinslandi*). The water surrounding the entire Big Island are critical habitat for the Hawaiian monk seal.

Potential Impacts and Mitigation Measures

The 2017 study showed that the strand vegetation at South Point is diverse and unique and includes rare, threatened, and endangered species. Where the vegetation is not damaged by human activity, the Project area offers excellent habitat for migratory shorebirds, pueo, and native insects. The study indicated that the proposed management plan actions of the proposed Project to reduce vehicular use in the shoreline portion of the corridor and restrict vehicles in the Project area, will significantly improve the environment and enhance and preserve the unique flora and fauna. The study further states that “the areas chosen for the infrastructure necessary to support the management plan, including parking lots, emergency road, guard booth and gate, do not contain valuable native vegetation, flora or animal habitat, and are suitable for their proposed uses.”

Therefore, the proposed Project will not have significant negative impacts on the fauna and flora of the Project area. Instead, the proposed Project is expected to improve the habitat of fauna and flora of the Project area and support the growth of and possible re-establishment of native populations.

2.1.10 Hazards

2.1.10.1 Geologic

The entire island of Hawai'i is subject to geologic hazards, especially lava flows and earthquakes. The surface geology of South Point consists mostly of 'ā'ā basaltic lava flows of the Ka'ū Volcanic series that erupted from Mauna Loa between 750 and 3,000 years ago (Wolfe and Moris 1996). South Point is located in Lava Flow Hazard Zone 2, the second highest on a scale of 1 to 9. In terms of seismic risk, the entire island of Hawai'i is rated Zone 4 Seismic Probability Rating (Uniform Building Code, Appendix Chapter 25, Section 2518). Zone 4 areas are at risk from major earthquake damage, especially to poorly designed or built structures.

Potential Impacts and Mitigation Measures

Generally, geologic conditions do not appear to impose any constraints on the proposed Project. It is recognized that most of Hawai'i Island is subject to the risk of lava inundation. Any future structures will be built according to County of Hawai'i building code standards.

2.1.10.2 Flooding

The Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) shows that the proposed Project overlaps the Zone X and Zone VE flood zones. Zone X is considered to be at moderate risk of flooding under the National Flood Insurance Program, thus,

flood insurance is not required in Zone X. Zone VE is subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action. Flood insurance is mandatory for Zone VE.

The majority of the Project area is located within Zone X with only a small portion of the pedestrian path overlapping Zone VE.

Potential Impacts and Mitigation Measures

The proposed Project is not anticipated to increase flood hazards or have any impacts on the tsunami zone. Detailed weather and tsunami forecasts enable emergency evacuation plans to be executed should such flood or tsunami events occur. In the event of flooding or tsunami threats, the pedestrian path will be closed and the emergency road shall be used for evacuations.

2.1.11 Archaeology

An Archaeological Inventory Survey (AIS) for the proposed RMP 2016, was conducted by Cultural Surveys Hawai'i, hereafter referred to as Bautista et. al, 2017 (Appendix D). Fieldwork was conducted in 86-person days between June, 2017 to August 2017. Fieldwork consisted of a 100% pedestrian inspection, an extensive subsurface testing program, and photo documentation of previously recorded sites located along the Green Sand Beach Pedestrian Path. Bautista et. al, 2017, documented numerous historic properties found in previous archaeological studies within and near the Project area, as well as five newly discovered historic properties during fieldwork for this Project. Those findings are summarized below and the AIS can be referenced in Appendix D for more detailed information on the survey.

2.1.11.1 *Historic and Archaeological Districts*

The Project area crosses three historic and archaeological districts, as shown in Figure 8. These districts, with their corresponding State Inventory of Historic Properties (SIHP) numbers, include:

- South Point Complex National Historic Landmark (NHL) (SIHP # 5010-75-04140);
- Māhana Archaeological District (SIHP # 50-10-76-10230); and
- Kīpuka Kuniau Archaeological District (SIHP # 50-10-76-10231).

This section briefly describes the historic properties within each district. However, more detailed descriptions of each historic property can be found in the AIS report by Bautista et. al, 2017 (Appendix D). The distribution of the various historic properties within each district relative to the proposed actions for the RMP 2016, is presented in Figures 8 to 12.

SIHP # 50-10-[76]-04140, South Point Complex, National Historic Landmark

The South Point Complex was first established as a National Historic Landmark (NHL) and registered with the National Register of Historic Places (NRHP) on October 15, 1966 (National Register 1966). In 1962, Regional Archaeologist Paul J.F. Schumacher nominated the South Point Complex as a NHL in a National Park Service (NPS) document (see Bautista et. al, 2017, Appendix B in Volume 2). According to the NPS document, six sites (the first six sites listed below) made up the entirety of the South Point Complex. In 1970, the boundary of the NHL was expanded to an area of approximately 710 acres which included a seventh site, Kapapaloa Bay Village. These are the sites that make up the NHL:

1. Pu'u Ali'i (SIHP # 50-10-76-03605);

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2. Lua Mākālei Cave Shelter (SIHP # 50-10-76-03606);
 3. Kalalea Heiau (SIHP # 50-10-76-03607);
 4. Canoe Mooring Holes (SIHP # 50-10-76-03608);
 5. Salt Pans near Kalalea Heiau (no SIHP #);
 6. Pohakuokeau “Stone of Times” (no SIHP #); and
 7. Kapapaloa Bay Village (SIHP # 50-10-76-03911)

The South Point Complex is recognized for its rich and significant archaeological resources and depicted in Figures 9 and Figure 10. The 1970 NRHP nomination form asserts, “[T]he South Point complex is a group of sites which provides the longest and most complete record of human occupation of the Hawaiian Islands.” Early excavations from the 1950s revealed a plethora of traditional fishhooks that were used to establish a relative chronology of fishhook types (Emory et al. 1959). Price-Beggerly (1987:55) notes, “[E]arly research in this area stimulated and challenged previous theories on the origin and migration of the Polynesians who settled Hawai’i.” Unfortunately, a bulk of the fieldwork conducted in the 1950s and 1960s, in what is now the South Point Complex NHL, remains unpublished.

[SIHP # 50-10-76-10230, Mahana Archaeological District](#)

The Mahana Archaeological District was listed on the NRHP on October 14, 1986 (National Register 2017). The nomination form for the Mahana Archaeological District was prepared by Jim Landrum in September 1984 (see Appendix B in Volume 2). Six sites are included in the Mahana Archaeological District and they represent traditional Hawaiian coastal settlements in the South Point region, ranging from pre-historic to historic occupation. The boundaries Landrum provided were based on his 1984 survey, as well as the natural geographic area of the bay, comprising an area of 153.35 acres. Landrum noted that there are “additional sites outside of the ...district that probably are related to the district complex.”

[SIHP # 50-10-76-10231, Kīpuka Kuniau Archaeological District](#)

The Kīpuka Kuniau Archaeological District was also nominated to the NRHP by Jim Landrum in 1984, but it has not been listed. The Kīpuka Kuniau Archaeological District is adjacent to, and essentially an extension of, the South Point Complex NHL. The district is located mauka of the South Point Complex. The proposed district boundaries were designated by the limits of Landrum’s 1984 survey, comprising 399.45 acres. The district contains 24 pre-Historic sites with 138 features. These sites represent traditional Hawaiian temporary habitation settlements associated with agricultural activity in the South Point region. The sites within the district could yield more information about Hawaiian subsistence activities, environmental exploitation, environmental data, and settlement patterns, as well as their relationship to coastal settlement sites.

2.1.11.2 *Historic Properties*

I. Historic Properties from Previous Archaeological Studies

A review of previous archaeological studies at South Point was conducted and the distribution of these studies relative to the proposed actions for the RMP for South Point, is depicted in Figure

12. However, previous research at South Point is limited and outdated. Some of the best documentation of large-scale geographical and archaeological sites areas at Ka Lae comes from Landrum (1984)—a study that is now over 30 years old. Given the significant and ongoing natural, anthropogenic, and/or bovine impacts at Ka Lae, it must be considered that archaeological features have for the most part continued to degrade. Bautista et. al, 2017, lists approximately 82 historic properties from previous studies which can be referenced in Table 6 of the AIS report in Appendix D.

II. New Historic Properties Discovered in Project area

Bautista et. al (2017) found five newly documented historic properties within the Project area.

These included:

1. SIHP # 50-10-76-30726: a large historic ranching enclosure;
2. SIHP # 50-10-76-30727: a historic ranching boundary wall;
3. SIHP # 50-10-76-30728: a rock mound of unknown age and function;
4. SIHP # 50-10-76-30729: a pre-Contact temporary habitation complex;
5. SIHP # 50-10-76-30730: a subsurface pre-Contact human burial site.

In accordance with HAR §13-275-6, all five of the newly identified historic properties are assessed as significant under Criterion D for their information content. SIHP # 50-10-76-30730, a subsurface pre-Contact human burial site, is also assessed as significant under Criterion E for its inherent importance to the Hawaiian people as a burial site. In accordance with HAR §13-275-7, the project effect recommendation is “effect, with proposed mitigation commitments.”

Potential Impacts and Mitigation Measures

Though South Point has numerous historic properties, the AIS conducted for this Project has generated sufficient information regarding the location, function, age, and construction methods of historic sites to mitigate any adverse effects from the proposed actions for this Project. Thus, the proposed actions will not have any significant impacts on archaeological sites. More specifically, the location of each proposed action, is dictated by the location of historic properties. Therefore, the orientation and location of the emergency road, pedestrian path, and walking trail alignments and paths will continue to be modified to be positioned away from any historic property.

Regarding SIHP # 50-10-76-30730, this newly identified historic property will be preserved in place, pursuant to HAR §13-275-8. No further work is recommended for SIHP -30726 through -30729. As recommended by the AIS, an archaeological monitoring program will be implemented where ground disturbance work will occur along the three proposed routes of the Project. Monitoring locations and conditions will be delineated and detailed in an archaeological monitoring plan (AMP) prepared in accordance with HAR §13-279-4 and accepted by SHPD.

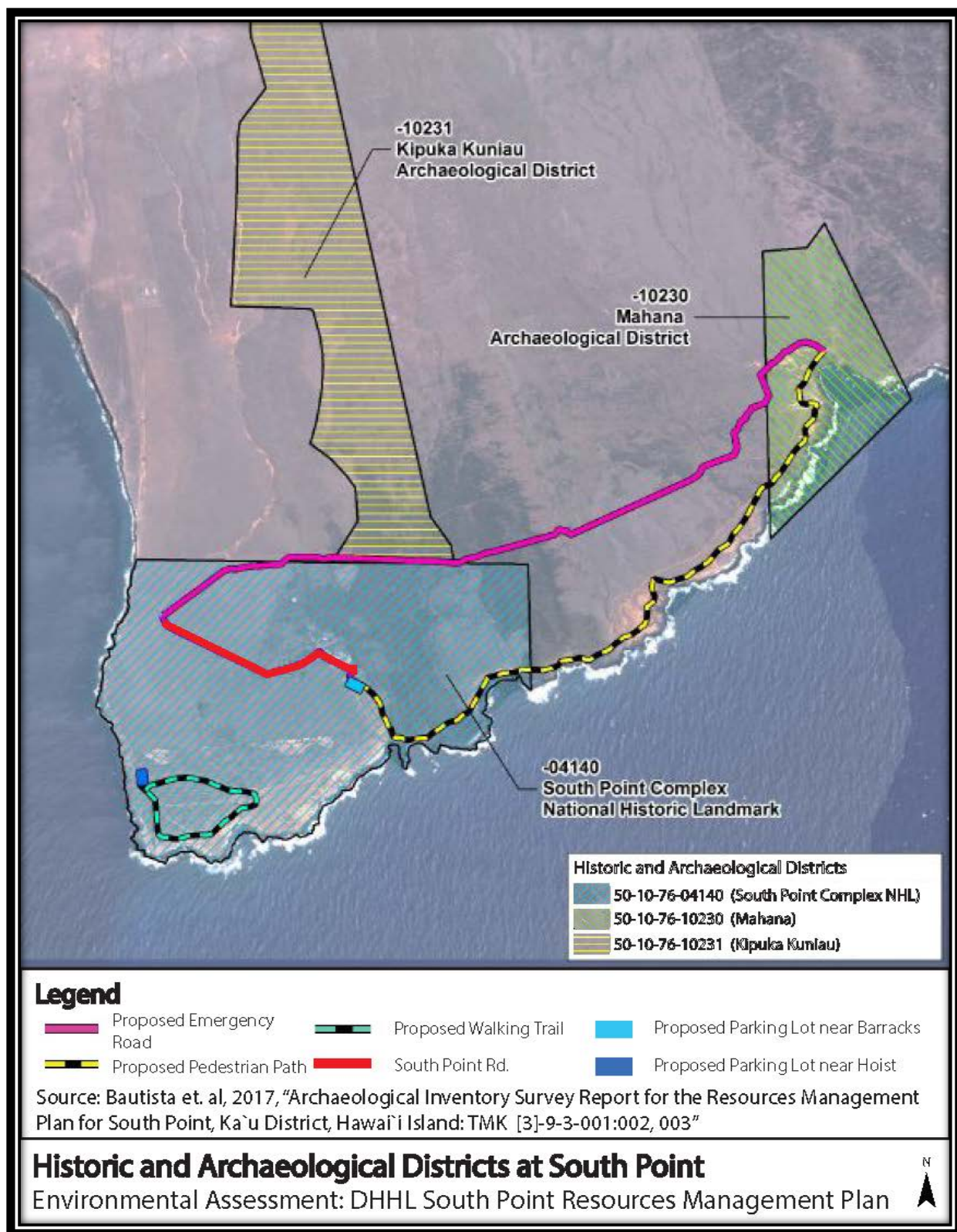


Figure 8. Historic and Archaeological Districts at South Point

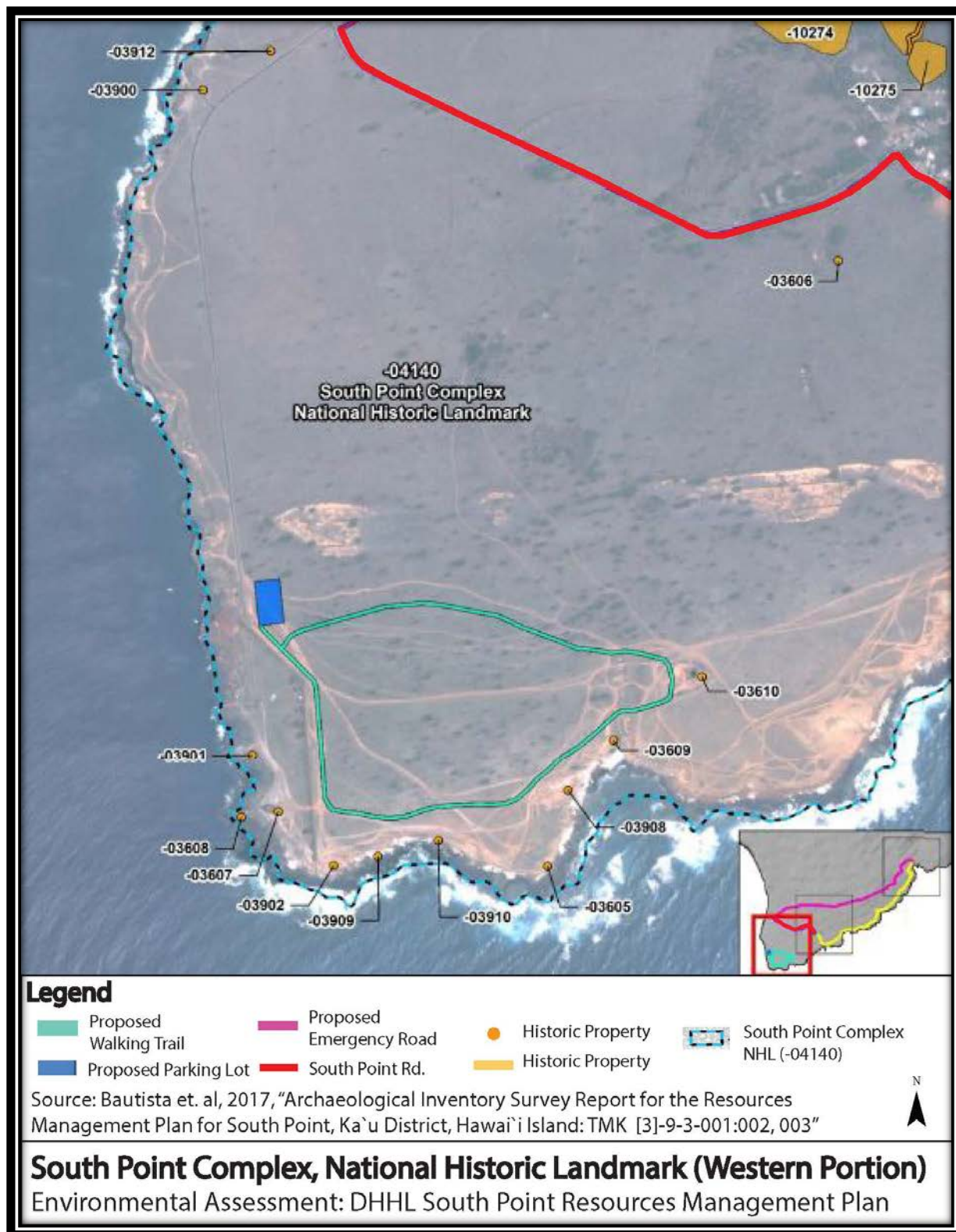


Figure 9. South Point Complex, National Historic Landmark, Western Portion of Project area

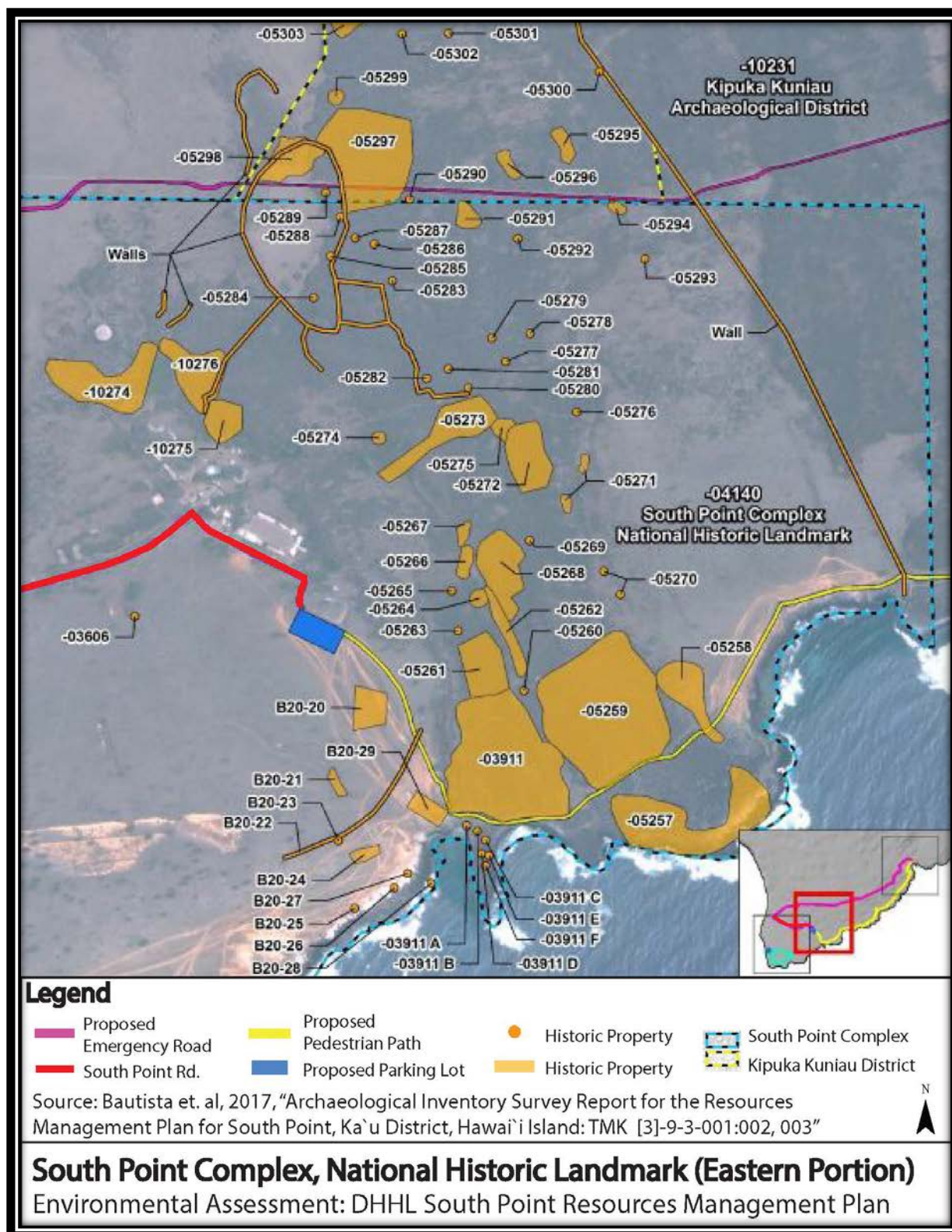


Figure 10. South Point Complex, NHL (Eastern Portion) and Kipuka Kuniau Archaeological District

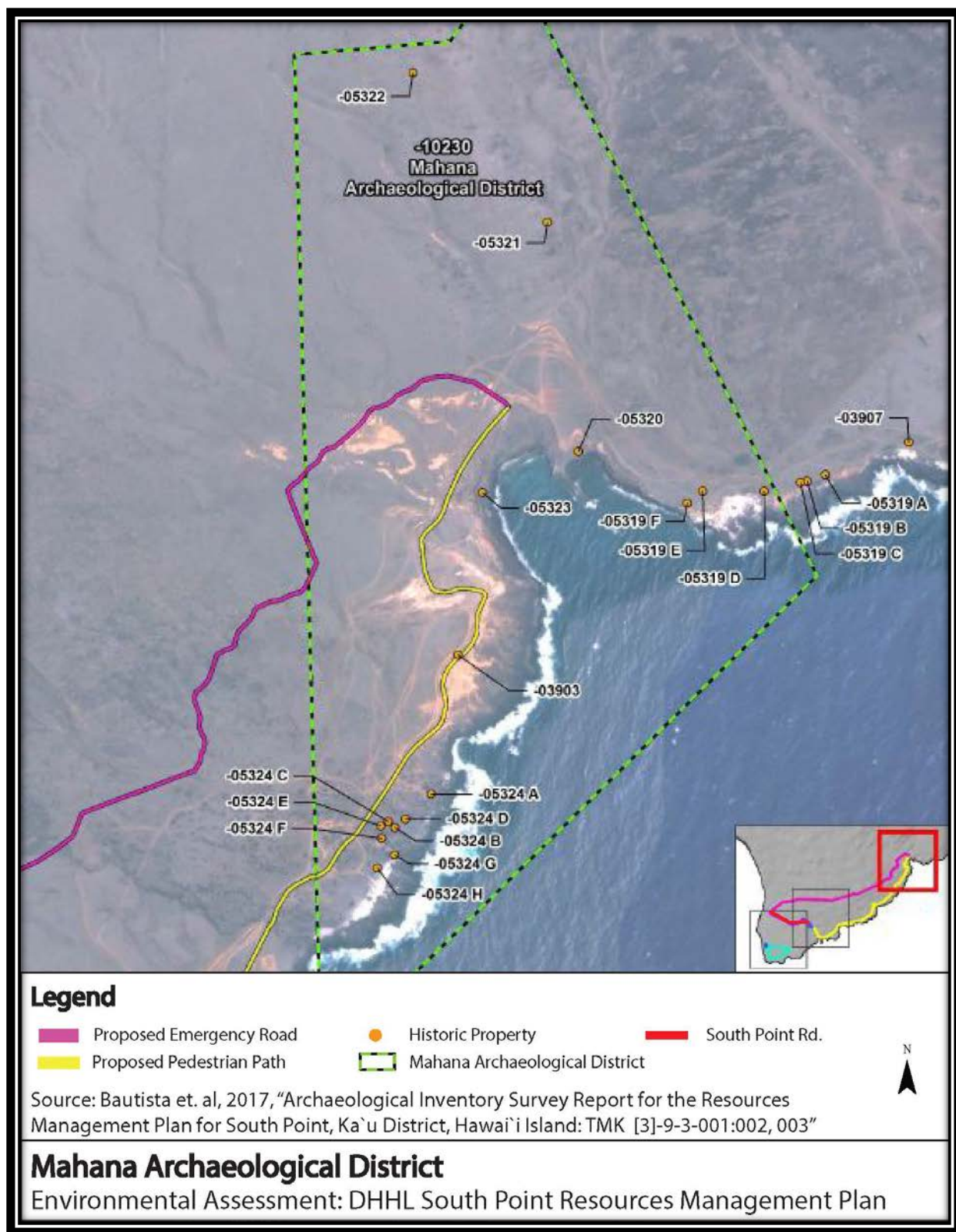


Figure 11. Mahana Archaeological District

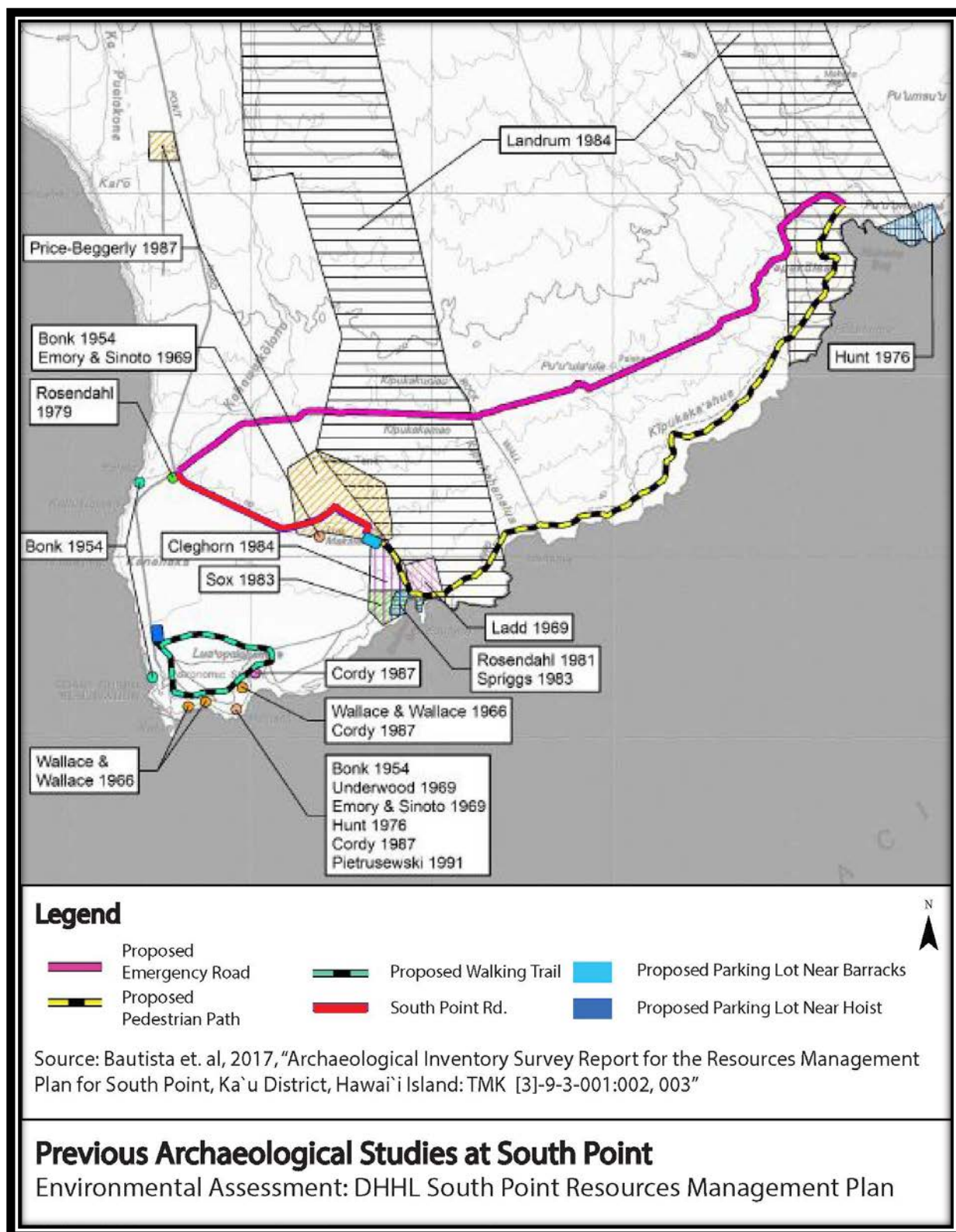


Figure 12. Previous Archaeological Studies at South Point

2.1.12 Cultural Impact Assessment

A cultural Impact Assessment (CIA) was conducted by TSI to assess the potential impacts of the proposed Project on the cultural resources and practices of the Project area within the greater context of Kamā'oa-Pu'ueo Ahupua'a. The CIA consisted of background research of historical documents, maps, and existing archaeological information related to the Project area, as well as community consultations with kūpuna and kama'āina with knowledge about previous and current cultural resources and practices of the Project area and the larger Kamā'oa-Pu'ueo Ahupua'a. Information collected were synthesized to assess the potential impact of the proposed Project on the cultural resources and practices of the Project area and its larger context within Kamā'oa-Pu'ueo Ahupua'a and the district of Ka'ū. The CIA can be found in Appendix E of this document.

2.1.12.1 *Results of Background Research*

Background research for this Project yielded the following results, presented in approximate chronological order:

1. The Project area, which consists of approximately 11,000 acres of DHHL-owned land, is located within the ahupua'a of Kamā'oa-Pu'ueo, also known as Kamā'oa Ahupua'a, in the 'ili 'āina (smaller subdivision of an ahupua'a) of Ka Lae.
2. Kamā'oa is described as: "Plain near Ka Lae (South Point), Ka'ū, Hawai'i, a place noted for red dust; people jumped from a cliff (Kau-maea-lele-kawa) near here into a dust heap in imitation of the sport of leaping from a cliff into water (lele kawa) (Pukui et al. 1974)." Pu'ueo is described as, "land sections... Ka Lae qds., Hawai'i." Ka Lae translates literally as, "the point," (Pukui et al. 1974) and is referred to as, "South Point, Hawai'i, the southernmost point in all the fifty states; quadrangle, south Hawai'i."
3. Settlement of the Project area, and the southern-most coastline of Hawai'i by early Polynesians, possibly occurred by the fourth or fifth century AD (Kirch (1985:81–87). Radiocarbon dates from sources approximately 6 miles northwest of the Project area, suggest occupation between AD 1420 and 1655 (Robins et al. 1992). Handy and Handy (1972:545) also describe the ahupua'a of Kamā'oa as the homeland of one group of early settlers who in historic times called themselves the 'clan of Pele.' Linguistic origins of the place names in Ka'ū, like Manu'a and Ta'u [or Ka'u] to Samoa, infer possible early migrations from Samoa (Handy and Handy 1972:545).
4. Mo'olelo (stories, oral histories), wahi pana (storied places), and 'ōlelo no'eau (proverbs) associated with the Project area are plentiful suggesting early settlement of the area by a viable Native Hawaiian population. The presence of distinguished heiau (Pre-Christian place of worship), rock walls, canoe-moorings, and other cultural features is testament to early settlement.
5. Oral histories describe the Project area and the lands of Ka'ū as an arid, rugged land with a resilient and rebellious people.
6. Population census conducted by missionaries in 1831-1832, recorded a total population of 5,800 in the district of Ka'ū which decreased to 2,210 by 1853 with an estimated population of 150 at Ka Lae.

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7. During the Māhele, Kamā'oa Ahupua'a was granted to Leleiohoku who returned it in commutation for lands elsewhere, thus, the land became government lands. Three kuleana claims were made and awarded in the 'ili of Kalae to Kaoo, Molaolao, and Kuaipalahalaha who all cultivated sweet potato.
 8. The Plantation Era significantly impacted the social and economic history of Ka'ū which began with cattle ranching after 1850 when Princess Ruth Ke'elikolani started Ka'alu'alu Ranch and the first sugar mill was established in Wai'ōhinu in 1866 (Elwell and Elwell 2004). Chinese laborers were brought to work in the sugar plantations in Ka'ū in 1876 followed by an influx of immigrant workers including Portuguese, Japanese, Pacific Islanders, and Filipinos who eventually settled in Ka'ū. The sugar industry ended in Ka'ū in 1996 but ranching persisted as the main economy at Ka Lae. Macadamia nut and coffee farm ventures replaced the sugar industry which continue in Ka'ū today.
 9. The Ka Lae Lighthouse at South Point was established by a 1908 Presidential Proclamation.
 10. Military presence at South Point began in 1926, with the designation of 517 acres in Ka Lae for a U.S. Air Service military reservation airplane landing field called Morse Field. The construction of Morse Field Barracks and the airstrip in the 1940s also brought a water line to South Point by 1941. Military infrastructure was destroyed as a precautionary measure against enemy use during World War II but remnants of these structures and roads remain at South Point today.
 11. The DHHL acquired the lands of Kamā'oa-Pu'ueo in 1970 and since that time, limited development has occurred within the Project area.
 12. An increase in tourism to South Point has occurred in recent years, attributed to sites like Māhana Bay and the growing prominence of Ka Lae as the Southern-most point of the United States of America. Unregulated recreational use has led to severe degradation of the DHHL lands at South Point.

2.1.12.2 *Results of Community Consultations*

TSI attempted to contact 36 community members, government agencies, community organizations, and individuals, including residents, “recognized” descendants, and cultural practitioners. Of the 15 people that responded, five kūpuna (elders) and/or kama'āina (Native-born) participated in formal interviews for more in-depth contributions to the CIA and four people provided a statement via e-mail. However, one individual chose to remove their statement from the study. Three interviews from previous TSI work at South Point were also included resulting in a total of eight individuals who provided in-depth information in interviews for this Project. The interviews were conducted from August to October, 2015 and from May to November, 2017. These community consultations indicate:

1. South Point is a place where kūpuna and kama'āina of Ka'ū identify with, feel deep spiritual connections to, and where many spent their childhood learning and applying Native Hawaiian traditional practices such as: fishing; gathering limu, salt, and 'opihi; camping; and spending time with family. A kupuna expressed that she finds her spiritual self at South Point where she is able to talk to the wind. Others describe life in Ka'ū as

characterized by strong, resilient, and rugged people who value relationships and close-knit communities that nurture family and take care of each other.

2. Camping was and continues to be a common practice at South Point among Ka'ū families, particularly on the first day of summer, on the weekends, where the ocean is more calm for swimming such as at Kaulana Bay and in the area between Kahuku Beach towards Ka'alualu.
3. The settlement of DHHL lands at South Point by Native Hawaiians is believed by one informant to have been ignored by the DHHL since 1920 who have prioritized "everybody else's needs over those of Native Hawaiians. He recounted a series of unsuccessful proposed developments as examples, including NASA's proposed rocket launching project at Ka Lae, the Department of Transportation's proposal for a public boat ramp at Kaulana and many others that local residents protested.
4. The Project area is rich in archaeological features associated with early settlement of the area, and the first inhabitation of the Hawaiian Islands from the South Pacific. Community members highlight important features from this era at South Point including: canoe mooring holes at Ka Lae, Kalalea Heiau, an extensive historic rock wall, burial grounds of Pu'u Ali'i, ancient trails,
5. Kamā'oa-Pu'ueo Ahupua'a is rich in mo'olelo associated with early Native Hawaiian settlement. Community members recounted mo'olelo associated with supernatural experiences near Kalalau Heiau, mo'olelo that demonstrate the rebellious and resilient nature of Ka'ū people, moolelo that describe the geneology of Ka'ū including the various place names at Kamā'oa-Pu'ueo, such as Palahemo, Lua o Makalei, Kaulana, Kapalaoa, the two sisters that died at Palahemo.
6. South Point is considered by many Ka'ū residents as a wahi pana of great spiritual significance that warrant protection. These sites include:
 - **Palahemo:** Consultations indicated that Palahemo is spiritually significant because: Ku Mauna [in Pahala], the rain god, can be viewed from Palahemo, therefore, "it brings you closer to the gods"; it is the dwelling of a mo'o (lizard) of the same name; and the boundaries of the Puna and Kona Districts are visible from the pond, thus, one can see the entire Ka'ū District from Palahemo. An informant explained that previously, Ka'ū was known for two stones, Ka'ūloa and Wai'ōhinu, located in the mauka region between Na'alehu and Wai'ōhinu. Over time, the stones receded and disappeared underground and Palahemo became the symbol for Ka'ū. So highly regarded is Palahemo that a kupuna explained, "You haven't seen Ka'ū if you haven't seen Palahemo." The site is also associated with various 'ōlelo no'eau (proverbs), as shown in Section 3.1.5.
 - **Kalalea Heiau:** One informant recounted stories of supernatural experiences surrounding this heiau while another shared that the heiau was for fishermen and women were not allowed to enter the heiau.
 - **Pu'u Ali'i:** A native Hawaiian burial ground where many iwi were removed during early archaeological studies by Bishop Museum and stored in garbage bags at the museum. Many of the iwi were repatriated to Pu'u Ali'i in the 1980s following the creation of NAGPRA that mandated the return of iwi to their places of origin. An

informant expressed concern over the protection of iwi at Pu‘u Ali‘i and who should assume responsibility over their management because the iwi belong to the people of Ka‘ū rather than the DHHL. Another informant remembered seeing Palikapu Dedman bring the iwi back to Pu‘u Ali‘i. The same individual considered Pu‘u Ali‘i and Palahemo as the “heaviest” sites of South Point and he was socialized to treat these sites as sacred. He shared incidences where he had taken people down to pour water and conduct protocol relating to iwi kupuna buried at the site. Some Maori also consider themselves to originate from ancestors buried at Pu‘u Ali‘i.

- **Lua O Mākālei:** A cave in the vicinity of the Barracks that is believed to have been used for sheltering and training warriors during Kamehameha I’s reign, serve as a habitat for the endemic pueo (*Asio flammus sanwicensis*), and contains burials. Consultations indicate that Mākālei is a supernatural tree of the Goddess Haumea, mother of Pele, used as a lure for fishing. Mākālei is also a lua technique that refers to, “gaug[ing] out the eye.”
7. Palahemo is an anchialine pond that provided habitat for the red ‘ōpae‘ula (shrimp). Consultations indicate that the pond extends to 150 feet and is connected to the ocean below, therefore, is responsive to the flow and ebb of the tides. ‘Ōpae‘ula from the pond was used traditionally for ‘ōpelu fishing, however, the pond is currently inhabited by a grayish-black shrimp, is seasonally wasp-infested, and is now “heavily muddied” from loose dirt created by vehicular access near the pond.
 8. Māhana Bay was described by a kupuna as a canoe landing where people used to leave their canoes there for fishing: “They would just remove the ama and take that with them but leave the canoe in the bay,” he recalled. Māhana Bay was also described as having a strong current. Several informants shared that Māhana Bay was not typically a destination for kama‘āina of Ka‘ū who regularly accessed South Point, but rather, Ka‘alualu was usually the destination and Māhana was just along the way. “From Kaulana to Ka‘alualu, people would surround net, lobster net, lay net at night and check the next day, even turtle net... [and they would] feed kū‘ula (ko‘a),” said a kupuna of South Point.
 9. The south winds usually blow at South Point during the winter months and a prominent current known as Hala‘ea, fronts Ka lae. During the winter, the ocean is calm and ideal for fishing and South Point is “beautiful with lantana flowers everywhere.”
 10. South Point was and continues to be an important fishing ground—Broken Landing is known for spearfishing, the cliffs at Ka Lae are known for line fishing, the areas from Kaulana Bay to Māhana, was known for net fishing when the water was calm, and Kaulana Bay was known for limu kohu and where boats launch from for deep-sea fishing. Marine products frequently caught and collected included manini, ‘āholehole, pakukui, kala, ‘opihi, and ‘a‘ama. Kupuna recall fishing for ‘ōpelu using pumpkin, taro, and ‘ōpae‘ula caught at Palahemo. Today, deep-sea fishing off the coast of South Point for tuna and marlin is more common, however, fish caught is usually sold in Hilo.
 11. The hoist was built by an informant’s father, to provide access to fishermen to enter and exit the ocean along the cliffs at Ka Lae. Fishermen would leave their catch at the top area of hoist while they fished.
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12. Salt gathering was a common practice at Ka Lae but the practice has ceased to exist because of unsanitary conditions from people urinating along the coastline. Consultations indicate that the practice occurred along the entire shoreline from Ka Lae to Ka'alualu and the salt was described by kupuna as "glassy." When salt was not available, a rock from the ocean could be boiled.
 13. Previously, there was one coastal road that extended from Kaulana Bay to Māhana Bay. Two informants remember only one road along this shoreline growing up where people accessed by foot and on horseback for fishing and as a thorough way to Ka'alualu. One kupuna recalled that fishermen who accessed the hoist would park on the mauka-side of the historic wall and walk down to the hoist. Informants explained that in more recent years, the recreational use of vehicles at South Point has created many roads that have damaged the land and desecrated sacred sites like Palahemo and Pu'u Ali'i.
 14. The Project area has native plants that informants highlight as worth protecting. Consultations also indicate that previously, plants were successfully cultivated at South Point despite dry conditions. These included vegetables like pumpkin, and canoe plants like coconut.
 15. In the 1990s, the non-profit, 'Ohana o Kalae, operated an education program that taught children of Ka'ū, Hawaiian cultural knowledge and practices. Accounts from community members indicate that the program was highly effective.
 16. Water is an important but limited resource at South Point. Lineal descendents of South Point recall stories told by kupuna that "water in Ka'ū runs underground" and that early residents would capture water percolating from below, as well as from springs originating from Hā'ao Springs. South Point lacks a systematic water supply which has been a point of contention among homesteaders and DHHL for over 30 years. A DHHL homesteader at South Point identified several water sources at South Point including: a 50,000-gallon water tank located near the Barracks that is supplied by a four-inch waterline from Hā'ao Springs and maintained by the County of Hawai'i's Department of Water; a DHHL-owned fresh water well contaminated by saltwater intrusion from excessive drilling; and two County meters that several beneficiaries split, one of which was paid for by a beneficiary. A kupuna felt that the availability of water would unite Native Hawaiians of the area with common goals of achieving plans for South Point.
 17. Kupuna remember the prevalence of ranching and the paniolo lifestyle at South Point and how "cows used to be everywhere." However, a homesteader at South Point pointed out that 25-acres, the size of DHHL lots at South Point, is too small to support a ranching operation.
 18. During the Plantation Era, the plantations supported the livelihood of most people in Ka'ū and an informant believed that Ka'ū has never recovered from the closing of the plantations. The land at South Point was owned by C. Brewer & Co. Ltd. Plantation, one of the "Big Five," and it was subsequently sold to Parker Ranch. Though the Plantation Era ended, he believed a new "Big Five" emerged to replace the plantations that continue to keep rural communities on the periphery, resulting in economic hardships that characterize life in Ka'ū today. These include: the construction company, shipping and commerce, real estate and land holdings, the visitor industry, and the military.
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19. South Point was also occupied by the military and served as a gun nest during World War II. A kupuna remembered that service men used to live at South Point and it was the military that initially brought the water into South Point. The kupuna believed that the military destroyed many cultural resources that were at South Point and another informant explained that the military negatively impacted the environment of South Point by filling up Lua o Makalei with rubbish cans and barbed wire and failed to clean up a tar pit that still exists at South Point.

2.1.12.3 *Potential Cultural Impacts and Recommendations*

Though all study participants spoke of the history of impact to cultural resources and practices at South Point resulting from unmanaged access to South Point, several informants believed that there had been enough destruction to resources at South Point previously, from military and ranching activities, that any actions from the RMP 2016 would not negatively impact the area. One individual pointed out that the U.S. Military had negatively impacted the environment at South Point. He shared the following:

The military filled up Lua o Makalei with rubbish-cans and barbed wire. When we came down, we had them clean up the mess. When the military left, they did not put that place back to the way it was. They had that alternate airport but they didn't clean up that tar pit. They applied to use the Superfund but they never got it. The tar pit is still there.

The same individual also stated that continuing to allow public access to South Point, impacts traditional and customary Hawaiian practices. He explained that these actions not only continue to negatively impact the psychological well-being of Native Hawaiians, but also the degradation of natural and cultural resources caused by unmanaged access at South Point, directly impacts the ability of Native Hawaiians to carry out their traditional and customary practices. As one of the few remaining spaces in Hawai'i that has been designated for Native Hawaiians, he recommended closing the gate to South Point and limiting public access except for Native Hawaiian beneficiaries. He felt that this action is necessary to allow the land to heal.

Though the RMP 2016 does not advocate a road closure, the actions proposed in the plan were generally regarded by most participants of this study to improve the integrity of natural and cultural resources of the area, thereby, improving the capacity of the land to support cultural practices in the long term. Thus, the RMP 2016, was supported by the majority of informants consulted for this study, as a positive impact on the cultural resources and practices at South Point.

The following cultural impacts and recommendations are based on a synthesis of all information gathered during preparation of the CIA. The study indicated that the Project area is located within a culturally significant area with many burial and archaeological sites. The most significant potential cultural impacts, if the RMP 2016 is implemented, include: the possibility of encountering iwi kūpuna (human skeletal remains) and cultural sites, during subsurface ground disturbance; limiting access to traditional and cultural practices; and impacting sense of place. To help mitigate the potential adverse impacts of the proposed Project on Hawaiian cultural beliefs, practices, and resources, recommendations should be faithfully considered, and the development of the appropriate measures to address each concern should be implemented.

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1. Several respondents indicated that burials are located throughout the Project area, particularly in the area surrounding Pu'u Ali'i. Another individual recommended conducting an archaeological inventory survey prior to the design and development of the emergency access road. TSI recommends archaeological monitoring, as well as cultural monitoring during all phases of development.
 2. Should cultural or burial sites be identified during ground disturbance, all work should immediately cease and the appropriate agencies notified pursuant to applicable law. Kūpuna and/or lineal descendents from the Project area should also be consulted to ensure proper cultural protocol are addressed.
 3. Installing the proposed entrance gate should not limit Native Hawaiian access to traditional and customary practices. South Point is one of the most important fishing grounds in the Ka'ū District. Consultations indicated concern that the proposed gate in the RMP 2016 might limit the ability of cultural practitioners to continue their practice. To mitigate these concerns the following recommendations were provided:
 - a. Four participants recommended that the gate not limit kūpuna and local people from accessing South Point for cultural practices; therefore, provide parking along South Point Road and allow for pedestrian access;
 - b. One respondent recommended allowing 24-hour access to cultural practitioners and another individual highlighted Volcano National Park as an example of 24-hour access to cultural practitioners;
 - c. One respondent recommended that there be enforcement. "If there's no enforcement, nothing will happen," he said. He further suggested that if the security/information booth is intended to acclimate visitors to South Point, then it should be more than a booth, such as the visitor center at Mauna Kea;
 - d. One respondent recommended that a gate with security guards should also be implemented at the backside or the Ka'alualu side of the Project area to account for the whole area;
 - e. In the event that an entrance fee to South Point is implemented, three participants recommended that the fee be waived for the people of Ka'ū.
 4. Installing a fence/protective barrier around Pu'u Ali'i and Palahemo should not limit access to traditional and customary practices at those sites. One individual recommended that if a fence is built around Pu'u Ali'i, there should be ways that still allow access for cultural practice.
 5. Implementing the RMP 2016 should not impact the sense of place of South Point. One respondent stated that: "It is important that we maintain the sense of place at Ka Lae," a sentiment shared by all who participated in the study. The following recommendations were provided to protect sense of place:
 - a. Use natural materials for the construction of proposed actions. One participant recommended that the pedestrian pathway and proposed roads should be as
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- natural as possible to blend in with the environment. He also strongly discouraged the use of asphalt, concrete or man-made materials for the pedestrian pathway. A kupuna recommended building a protective stone wall around Palahemo.
- b. Two community members recommended allowing community members to implement immediate actions that do not require an environmental review process, such as: posting of signage with rules regarding off-road vehicle use; hiring of security officers to enforce rules; placement of additional lua at the Barracks and fishing hoist; trash collection; facilitation of stewardship agreements with community organizations and government agencies for cultural and natural resource management; and the creation of an advisory committee.
 - c. Increase education awareness about the sacred sites and cultural significance of South Point through the use of signage and protective barriers. However, the design and exact placement of the cultural interpretive walking trail and any associated interpretive signage/protective barriers around cultural sites, should be informed by descendants of South Point. One participant recommended working closely with community and descendants of the area.
6. Community members and organizations should be briefed and consulted as the Project design progresses. This will keep the community informed of changes that could result in unanticipated adverse cultural impacts. A kupuna supports this idea and recommended that management of South Point should be a co-management effort where community groups also have a responsibility towards stewardship of the place. One individual shared that he could have volunteers ready to help restore the historical wall near the hoist. Another respondent called on the DHHL to assume their responsibility to prioritize the settlement of native Hawaiian people not only at South Point but throughout the State of Hawai'i.

Potential Impacts and Mitigation Measures

Though the CIA identified several potential cultural impacts resulting from the proposed RMP 2016, the study proposed recommendations and mitigative measures, shown in Section 2.1.12.3, to mitigate any adverse effects from the proposed actions of the Project. These recommendations shall be considered for the implementation of the RMP 2016 to avoid and minimize any impacts to cultural resources, beliefs, and practices. Additionally, the CIA also found that the majority of participants consulted for the study considered the RMP 2016 a positive intervention to improve the integrity of natural and cultural resources of the area, thereby, improving the capacity of the land to support cultural practices in the long term. Thus, the RMP 2016 was supported by the majority of informants consulted for this study as potentially positively impacting the cultural resources and practices at South Point. No significant impacts on cultural resources and practices are anticipated to result from the proposed Project.

2.2 Socio-Economic Characteristics

2.2.1 Population Demographics

South Point is surrounded by several settlement centers whose residents access South Point regularly. In 2015, the US Census estimated the populations of these places which included: Nā'ālehu (847 people), Wai'ōhinu (112), Pāhala (1,405), Discovery Harbor (1,107), and Ocean View (4,276). The average family size was highest in Nā'ālehu with 5.3 people per household, followed by Pāhala (4.3), Wai'ōhinu (4) and Ocean View (4), and then Discovery Harbor (3.2). Of these places, Nā'ālehu and Discovery Harbor are within the ahupua'a of Kamā'oa-Pu'ueo. Nā'ālehu experienced a -2.2% decrease in its population from 2010. During this time period, adjacent Discovery Harbor increased its population by 16.6%. In 2015, the median age in Nā'ālehu was 47.2 and 45.7 for Discovery Harbor.

With regards to education, the five settlement areas near South Point had lower education-level attainment compared to the State of Hawai'i. The percent of residents with a college degree was as follows: State of Hawai'i (31%), Nā'ālehu (11%), Wai'ōhinu (14%), Pāhala (12%), Ocean View (13%), and Discovery Harbor (19%). Nā'ālehu had the highest percentage of students dropping out of high school (21%), followed by Pāhala (15%), Wai'ōhinu (12%), Ocean View (10%), and Discovery Harbor (4%).

Potential Impacts and Mitigation Measures

The proposed Project will not directly increase the population of settlement centers surrounding South Point, therefore, no significant impacts are anticipated to result from this Project.

2.2.2 Economy

In 2016, the median income per worker, as well as per household in settlement areas near South Point were lower than the State of Hawai'i¹². Figure 7 shows that of the five settlement areas listed, Nā'ālehu (\$26,296) had the lowest median income per worker while Ocean View had the highest (\$41,616) following by Discovery Harbor (\$38,421), Pāhala (\$33,234) and Wai'ōhinu (\$31,563). However, the median household income was highest in Pāhala (\$50,125), and then Nā'ālehu (\$40,568), Discovery Harbor (\$36,071), Ocean View (\$34,128), and Wai'ōhinu (\$30,875). The difference in household income reflects larger household sizes in Nā'ālehu, Pāhala, and Discovery Harbor.

The percentage of the population within each settlement area below the poverty line varies for these five areas. Nā'ālehu (17.6%) had the lowest percentage below the poverty line followed by Pāhala (18.1%), Wai'ōhinu (22.9%), Discovery Harbor (25.7%), and Ocean View (47.5%).

Potential Impacts and Mitigation Measures

¹²<http://www.towncharts.com/Hawaii/Demographics/Naalehu-CDP-HI-Demographics-data.html>

The proposed Project is not anticipated to negatively impact the economy in the settlement areas surrounding South Point. Instead, one of the goals of the RMP 2016 is to generate revenue in order to sustainably fund cultural and natural resources management activities and provide economic opportunities for DHHL beneficiaries and their families. Strategies to achieve this goal may include: instituting a parking fee to South Point; provide training and technical assistance to DHHL beneficiaries to become legal business entities on DHHL lands; provide opportunities/programs that engage visitors in the history and culture of the place; and seek alternative sources to fund resource protection projects for South Point. Thus, implementing the RMP 2016 would likely increase economic opportunities for South Point and its surrounding areas.

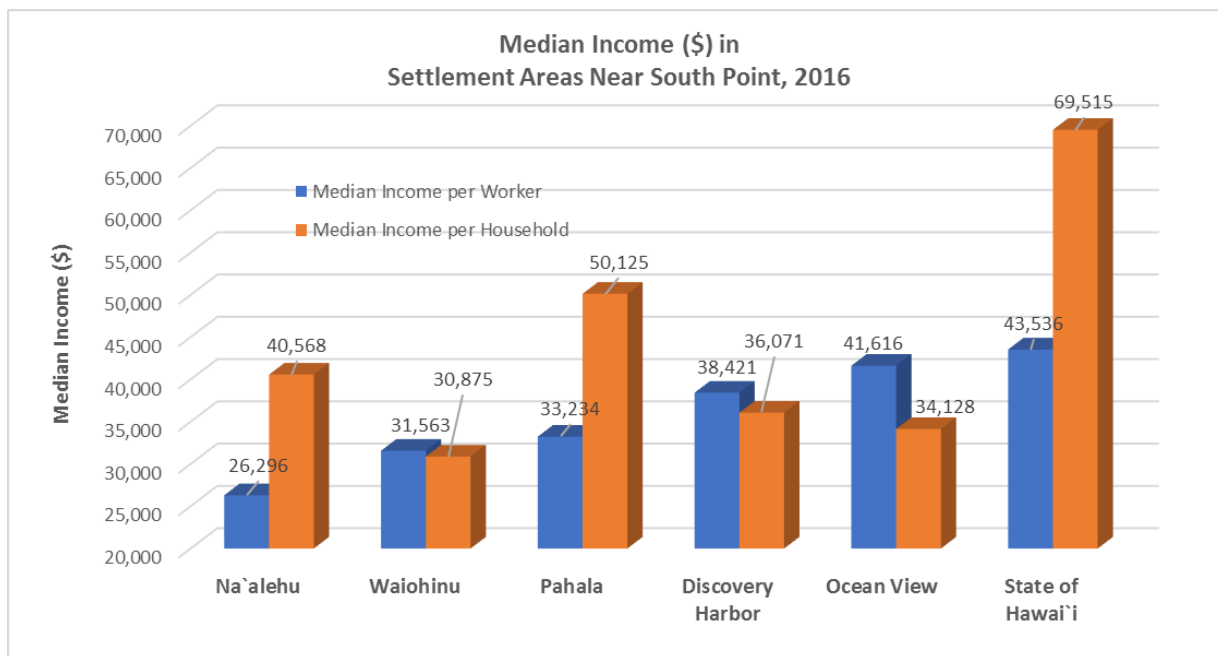


Figure 13. Median income by worker and household in settlement areas near South Point

2.2.3 Housing

The 2016 American Community Survey found that the total number of housing units in settlement centers surrounding South Point were: Nā'ālehu (295), Wai'ōhinu (54), Pāhala (502), Discovery Harbor (668), and Ocean View (2,623). The housing density in the area, which is measured by houses per square land mile, showed the following: Nā'ālehu (123), Wai'ōhinu (40), Pāhala (599), Discovery Harbor (188), and Ocean View (72). The average housing density in the U.S.A. is 38 and 82 for the State of Hawai'i. Thus, the housing density of Nā'ālehu and Discovery Harbor are both greater than the average for the USA and the State of Hawai'i.

In 2016, Nā'ālehu had the highest percent of home ownership of all five settlements near South Point with 82 percent of people owning their homes and only 18 percent rented. The other settlement centers of Wai'ōhinu (77%), Pāhala (64%), Discovery Harbor (61%), and Ocean View (78%) all had a greater percentage of their residents owning their homes compared to the State

of Hawai'i (57%). Of the five settlements, Wai'ōhinu (\$216,700) had the highest median home value compared to Nā'ālehu (\$163,200), Pāhala (\$178,900), Discovery Harbor (\$216,600), and Ocean View (\$113,100). The median home value for the State of Hawai'i was \$515,300. Though Ocean View had the lowest median home value, Ocean View had the highest median monthly rent of \$914 compared to Nā'ālehu (\$775), Pāhala (\$750), Discovery Harbor (\$739), and Wai'ōhinu (\$583). The cost of rent in these areas were significantly lower than the median monthly rental cost for the State of Hawai'i which was \$1,438.

Potential Impacts and Mitigation Measures

The proposed Project will not increase the population or the number of houses in the area, therefore, no significant impacts are expected to result from this Project.

2.2.4 Traffic

South Point is situated in the southern-most location of Hawai'i Island. It is accessed from the east side of the island on Hawai'i Belt Road. Also known as Māmalahoa Highway, the road passes through the town of Nā'ālehu and wraps around the district of Ka'ū to the west side of the island in Kona. The section of the highway that extends between Hilo and Kona and passes through the district of Ka'ū, is known as the Hawai'i State Route 11. As shown in Figure 14, Hawai'i Belt Road connects to Kamā'oa Road which leads to South Point Road. Within the Project area, South Point Road turns into Kalae Road where the proposed emergency road begins. Kalae Road extends west towards the southern-most tip of the island, through an area referred to as "the Hoist" near the location of the proposed walking trail. South Point Road continues south east through an area referred to as "the Barracks," towards the pedestrian path that extends to Māhana Bay. South Point Road is owned and maintained by the County of Hawai'i up to a point above the fork in the road where Kalae Road begins. South of this point, the roadways are under the jurisdiction of the Hawai'i State Department of Hawaiian Home Lands.

Thus, South Point is situated away from and south of the major thorough ways of travel between Kona to Hilo and among settlement areas in Ka'ū. In June, 2017, staff of Townscape, Inc., conducted traffic counts at the intersection of Kalae Road and South Point Road to better understand traffic conditions within the Project area at South Point. The following section describes the study in more detail.

2.2.4.1 Traffic Study

Method

Traffic counts at South Point were conducted on June 2nd and 4th, 2017 which corresponded to a week day and a weekend day. Counts began at 7 A.M until 7 P.M. on both days and data were collected by two individuals at the intersection between Kalae Road and South Point Road. Data recorded included the following variables: total number of vehicles, number of vehicles traveling to "the Hoist" on Kalae Road, number of vehicles traveling to "the Barracks" on South Point Road, vehicle type, number of people per vehicle, and whether the passengers of vehicles were "local" or non-local. The distinction between "local" versus "non-local" was based on subjective observations by recorders on whether vehicles with accompanying passengers were tourists (non-local) or not (local).

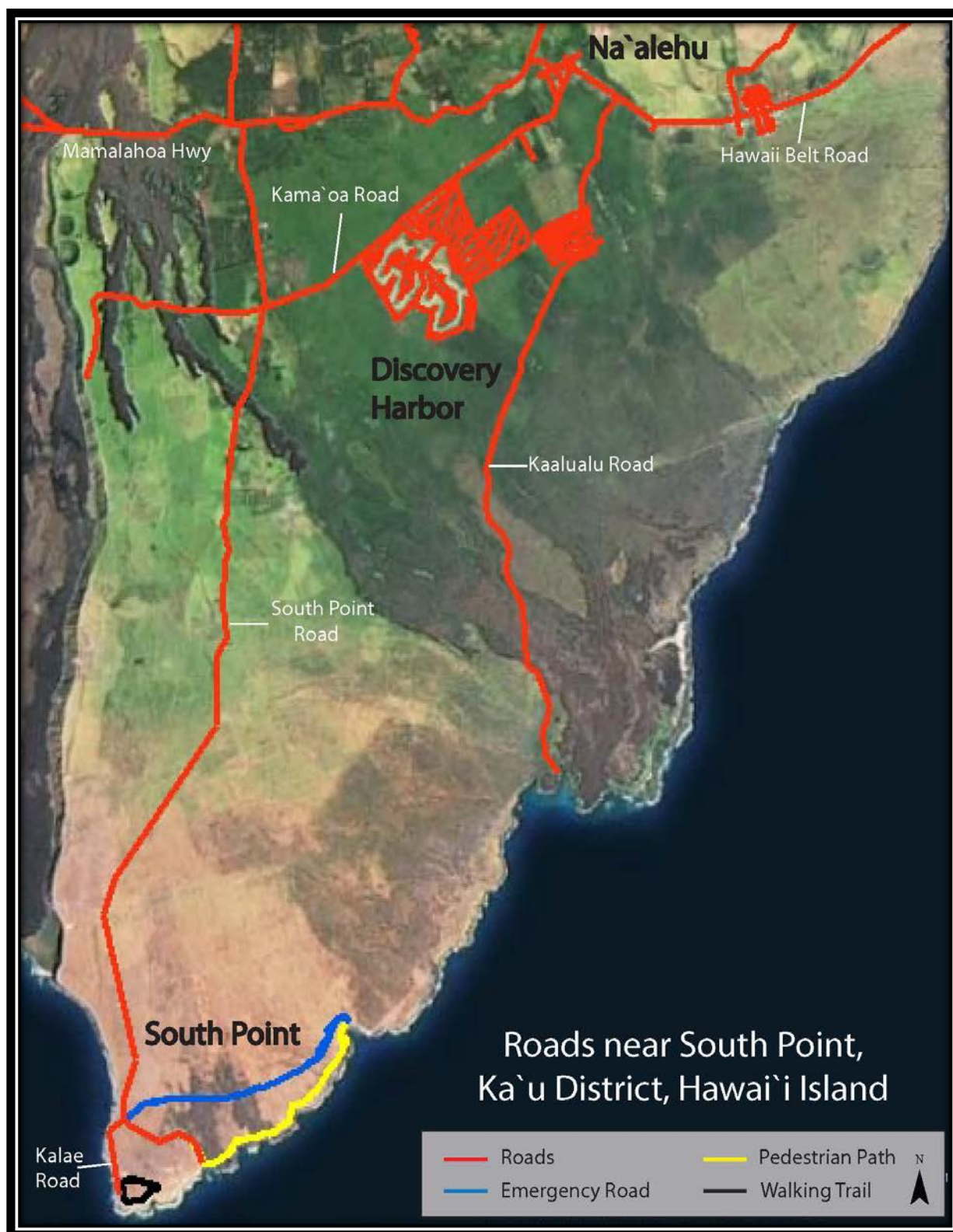


Figure 14. Roads near South Point, Ka'u District, Hawai'i Island

The number of vehicles parked near “the hoist,” “the Barracks,” and Kaulana Bay were recorded 3 times each day at 7AM, noon, and at 4:30-5:00 PM. During these times, one recorder drove to these sites for observations while the other remained at the count site to collect data. Parking lot counts for Kaulana and the Barracks are not available from June 4th, at 4:30-5:00 PM.

Findings

Visitors to South Point

The study found that a significant number of vehicles visit South Point on a daily basis, regardless of the day of the week. On Friday, June 2nd, 2017, a total of 308 vehicles carrying 728 passengers, was recorded at South Point. Of the total number of vehicles, only about 31% of vehicles were local (Figure 15) while the majority were non-locals. Also, the majority (62%) of vehicles visited the Barracks compared to only 38% visiting the Hoist (Figure 16). Comparatively, the number of vehicles recorded at South Point were higher on Sunday, June 4th, with 379 vehicles carrying 906 passengers. As shown in Figure 9, the proportion of local vehicles (29%) recorded on Sunday was similar to Friday though slightly less. Though more vehicles visited the Barracks on Friday, almost the same number of vehicles were recorded visiting the Barracks (190) compared to the Hoist (189) on Sunday. The number of vehicles at the Barracks stayed the same around 190 to 191 vehicles regardless of the day of the week, whereas the number of vehicles at the Hoist during the week was significantly less compared to the weekend.

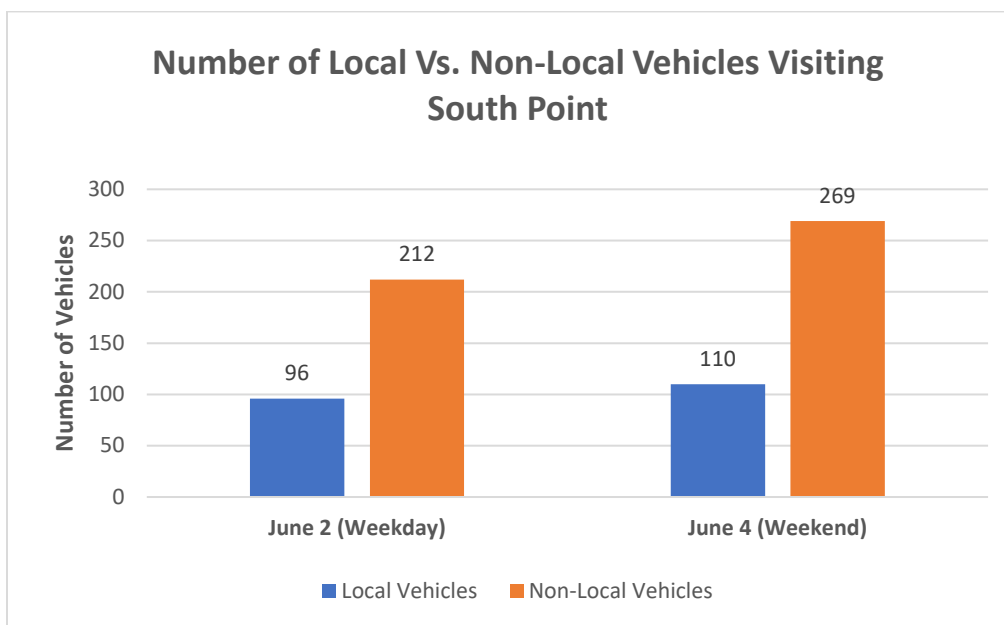


Figure 15. Local and Non-Local Vehicles at South Point

Vehicle Type

Table 8 shows that cars make up the largest proportion (39-41%) of vehicles visiting South Point regardless of the day of the week followed by SUVs (~21%), jeeps (15-16%), trucks (18-19%), and vans (2-5.5%). The proportion of vehicle type recorded at South Point over the two-day period reflects the higher number of non-locals visiting South Point. Non-locals were more likely drive rental cars, SUVs, and jeeps while truck users were locals. Interestingly, ATV, dirt bikes, and

motorcycles, were only recorded at South Point on June 4th, the weekend day (Figure 17). Though more observation days are required to further understand the use of these vehicles at South Point, a general trend might be inferred that people generally have more time during the weekend for recreational activities. Thus, the use of ATV, dirt bikes, and motorcycles might be more common at South Point on the weekend.

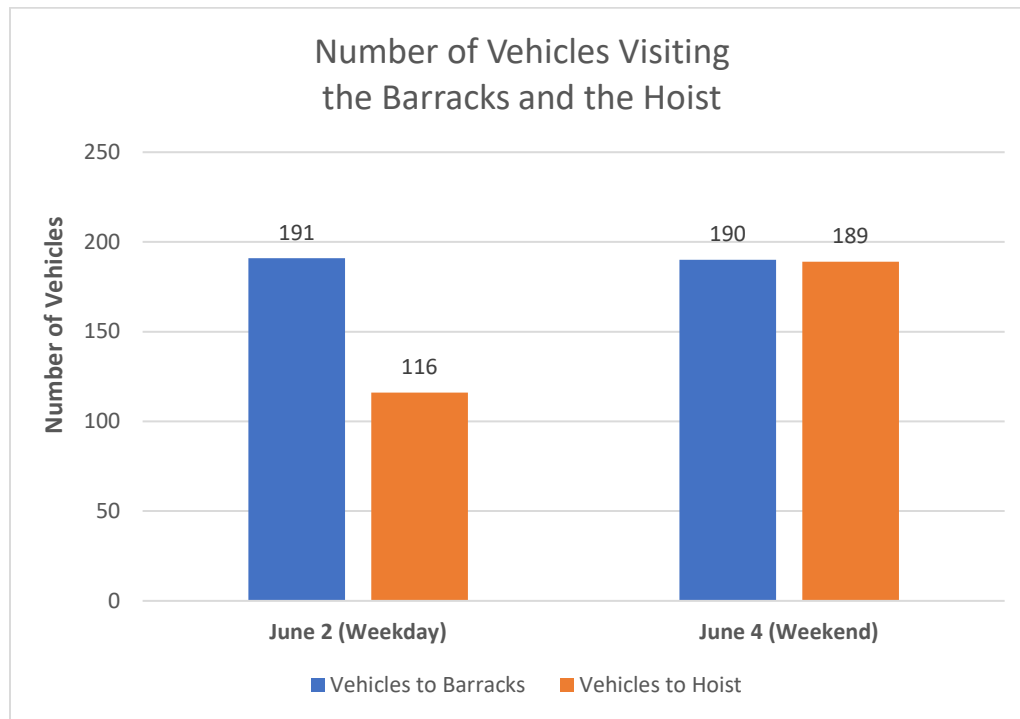


Figure 16. Number of vehicles visiting the Barracks and the Hoist

Table 8. Type of Vehicle recorded at South Point on June 2, and June 4, 2017

Vehicle Type	June 2-Week Day		June 4-Weekend Day	
	Number of Vehicles	Percent of Total Vehicles (%)	Number of Vehicles	Percent of Total Vehicles (%)
Cars	121	39.3	156	41.2
Jeep	50	16.2	56	14.8
Suv	62	20.1	82	21.6
Truck	58	18.8	68	17.9
Van	17	5.5	10	2.6
ATV	0	0	4	1.1
Dirt Bike	0	0	2	0.5
Motorcycle	0	0	1	0.3
Total	308	100	379	100

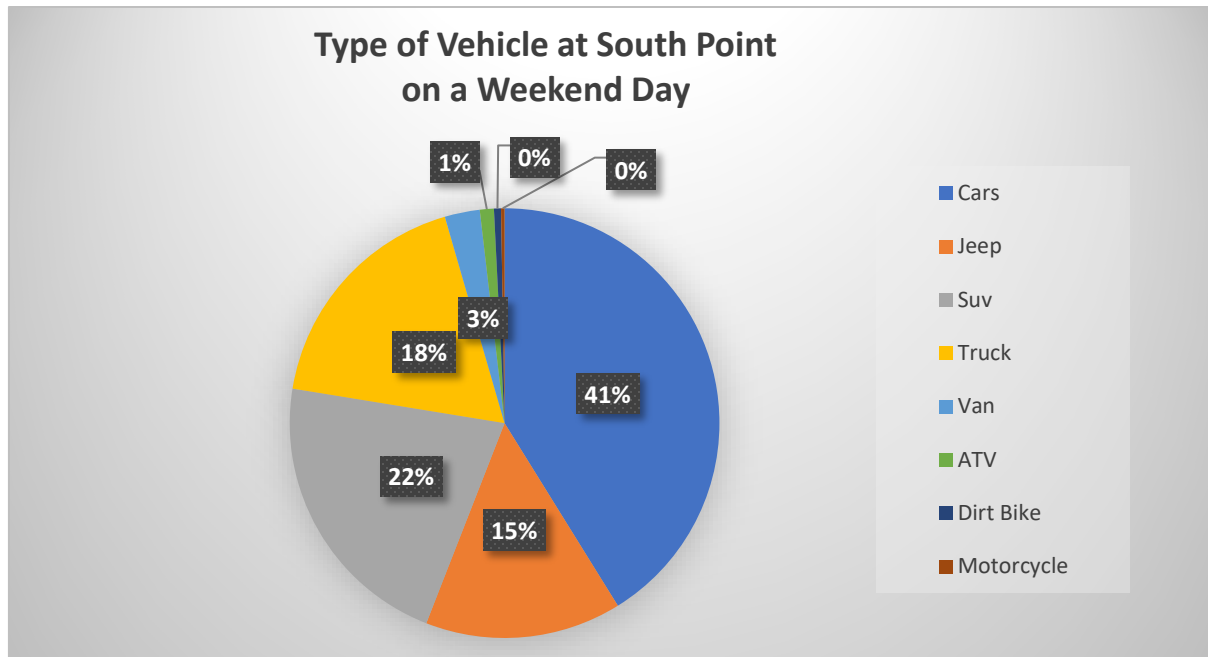


Figure 17. Vehicle type at South Point on a Weekend Day

Parking

On both days, the number of parked vehicles at South Point were generally less during the morning hours compared to the afternoon (Table 9). The Barracks had the most number of parked vehicles at any one time compared to the Hoist or Kaulana. Also, approximately 20 vehicles at the Barracks belong to the operators of an unauthorized shuttle service. The parking lot at the Barracks reached its capacity at 44 vehicles which suggests that in the afternoon hours, the parking area at the Barracks is likely full.

Table 9. Number of vehicles parked at different locations at South Point

Number of Parked Vehicles (June 2, 2017)				
Time of Day	Hoist	Barracks	Kaulana Boat Ramp	Total
7:00-7:30 AM	6	32	2	40
12:00-12:30 PM	13	40	3	56
4:30-5:00 PM	19	51	4	74
Number of Parked Vehicles (June 4, 2017)				
Time of Day	Hoist	Barracks	Kaulana Boat Ramp	Total
7:00-7:30 PM	3	24	2	29
12:00-12:30 PM	39	44 *parking lot full	6	89
4:30-5:00 PM	15	*Not Available	*Not available	*Not available

Potential Impacts and Mitigation Measures

No significant impacts to traffic in the surrounding settlement centers of South Point will occur as a result of the proposed Project because South Point Road is removed from Māmalahoa Highway and major roads that Kaʻū residents use. Also, the development of two designated parking lot areas near the Barracks and the Hoist will improve vehicular parking conditions at South Point and provide a safer parking environment for visitors. Designated parking areas will also reduce soil erosion and improve air and water quality of the area. It is worth noting that a significant number of vehicles visit South Point daily, transporting many visitors into South Point. The perpetual influx of visitors suggests that management strategies, such as those proposed in the proposed Project, should be in place to address the human impacts of visitors on the natural and cultural landscape of South Point.

2.3 Public Facilities and Services

2.3.1 Wastewater Treatment and Disposal

Wastewater, is water that has been negatively impacted by human use as a result of domestic, industrial, commercial, or agricultural activities. This includes surface runoff or storm water, and any sewer inflow or sewer infiltration.

Currently, no industrial, commercial, or agricultural activities occur in the Project area. Two porta-potty toilets are located near the hoist and are utilized by visitors to Ka Lae. The toilets are serviced by a non-profit organization. However, in a letter on November 2, 2017, the State of Hawaiʻi's Department of Health, Wastewater Branch (DOH,WWB), indicated that:

“the project area will receive domestic wastewater from residents, visitors, and tourist to the project site and therefore, shall not be exempted from Hawaii Administrative Rules (HAR), Section 11-62-7.1 © (2) which is provided for facilities generating non-domestic wastewater that are located in certain agricultural and conservation districts.”

The DOH also stated that wastewater discharged to a portable toilet is considered domestic wastewater and is subject to the provisions of HAR Chapter 11-62, Subchapters 2 and 3. The DOH further stated that a portable toilet is not a wastewater system that complies with the provisions of HAR Chapter 11-62, Subchapter 3, thus, portable toilets will not be approved by the DOH for the use at South Point.

Potential Impacts and Mitigation Measures

To mitigate the wastewater situation and ensure that the proposed Project is compliant to the provisions of HAR Section 11-62-7.1, several wastewater system alternatives are proposed in lieu of porta-potty toilets at South Point. Although at this time, the preferred wastewater system alternative has not been determined, the chosen wastewater system will include design considerations to address any effects associated with the construction of and/or discharges from the wastewater systems to any public trust, Native Hawaiian resources, or the exercise of traditional cultural practices.

The location of the chosen wastewater system at South Point is important considering the proximity of the Project area to the ocean, as well as being situated in an area of high cultural and archaeological significance. Major fecal microbial pollution can occur if septic systems are located in improper soils and where surface and groundwater is shallow. This may be problematic along coastal areas where soils are sandy and porous. Thus, the location of this alternative structure/(s) would need to be chosen carefully with an appropriate setback from the coast to avoid impacts to natural and cultural resources. According to the State of Hawai'i, Department of Health, nine site conditions have significant influence over the selection of onsite wastewater treatment and disposal systems¹³. These include depth to water table, impermeable soil or rock formation, steep terrain, flood zones, proximity to in land surface waters, protection of coastal waters from excessive nutrient inputs, areas with high density of cesspools and/or areas with high rates of cesspool failures, protection of groundwater resources, and hydrology.

Possible locations at South Point for the chosen wastewater system might include: (1) the vicinity of the Barracks; and (2) outside the Project area located further away from the coast, such as near the location of the proposed gate and/or guard shack. Consultations for this Project indicated that toilet facilities and water infrastructure to support these facilities, previously existed at the Barracks during the U.S. Military's occupation of South Point during World War II. Community members recall toilet facilities at the Barracks in the 1980s when an education program was conducted at South Point. However, once the appropriate wastewater system is chosen, an assessment of site conditions will be conducted to identify the most ideal site conditions for the chosen system.

A professional engineer will be consulted to ensure that proper permits, plans, and construction meet state and local regulations for treatment systems. The construction of such systems will be a collaboration between the DHHL, the engineers, the contractors, and the manufacturers of the systems. Also, the systems require operation and maintenance to be clearly delineated, and by state regulations, there must be an operator or supervisor of the wastewater systems with flows greater than 1,000 gpd. Therefore, no negative impacts resulting from the proposed Project is anticipated.

Alternative Wastewater Systems:

I. Compost Toilet: A composting toilet is a type of toilet that uses a predominantly aerobic process to treat human waste by composting or managed aerobic decomposition. These toilet systems typically use no water for flushing, thus, are also called a "dry toilet." In some systems, carbon additives like sawdust, coconut coir, or peat moss is added after each use to create air pockets in human waste to promote aerobic decomposition. This also improves the carbon-to-nitrogen ratio and reduces potential odor. Most composting toilets rely on mesophilic composting as well as retention time to destroy pathogens. The end product may also be treated by a secondary system which is usually another composting step. This type of toilet is often used when water is limited or a connection to a sewage treatment plant is unavailable. However, the capacity of composting toilets is limited and can only service low numbers of users per day. Also, the use

¹³ <http://health.hawaii.gov/wastewater/files/2013/06/onsitesurvey.pdf>

of composting toilet systems in Hawai'i is challenging because maintenance is often problematic in that it is often difficult to find skilled personnel to fix the compost toilet system when it breaks down or to replace parts. Considering the large volumes of people visiting South Point, with 700 to 800 visitors per day, compost toilet systems are not feasible for South Point.

II. Individual Large Capacity Septic Tank:

Sewage usage roughly requires approximately five to ten gallons of water per person during the daytime and about 100 gallons per person for overnight camping. With the assumption that approximately 779 people may visit South Point on any given day or more than 5,000 per week, based on estimates described in Section 2.1.2.3 (Potable Water) and Section 2.24 (Traffic), an individual large capacity septic tank(s) with appropriate leach fields would need to be large enough (4,000 to 8,000-gallons) to accommodate this volume of daily use. Septic tank capacity would also need to consider additional water needs should overnight camping be permitted in the future, as proposed in the RMP 2016. In the County of Hawai'i, non-residential toilet facilities that use individual septic tank systems with more than a 1,000-gallon capacity, require a variance for up to five years. Therefore, a variance would be necessary for this alternative.

III. Small Treatment Plant:

A small treatment plant alternative might be considered for the proposed Project. However, this endeavor may be larger than the other alternatives, more expensive, and may not be appropriate for the fragile ecosystem and culturally-sensitive areas of South Point.

2.3.2 Emergency Facilities

South Point is isolated and far away from emergency facilities. The nearest emergency facility is the Hawai'i County Fire Department station located in the center of Nā'ālehu town, approximately 15 miles from South Point and about a 26-minute drive from the hoist. The fire station provides emergency medical services and operates an ambulance to service the Ka'ū District. The fire station at Pāhala operates a fire engine for fire emergencies. The Nā'ālehu Police Station is located on the outskirts of Nā'ālehu town, approximately 18 miles from South Point, or half-hour by car. The nearest emergency medical center to the Project area is Ka'ū Hospital, located approximately 27 miles away in Pāhala. Though the hospital is located in the Ka'ū District, drive time is still expected to take approximately 42 minutes from the hoist at South Point.

Community consultations indicate that medical emergencies at South Point are often related to injuries resulting from recreational activities at South Point. Fatalities and accidents have been reported to include incidents of people jumping off the hoist at Ka Lae, as well as people drowning from swimming or being swept away by strong currents, particularly in the vicinity of Māhana Bay. Unprepared tourists hiking along the three-mile stretch of coastline towards Māhana Bay have also been reported to need medical attention due to dehydration and injuries.

South Point Road, the main access road to South Point, is a paved road that is maintained by the County of Hawai'i, as well as the DHHL. The road is well-maintained and accessible to medical, fire, and police emergency vehicles and services. Currently, there is a dirt road that extends from

the fork in the road where Kalae Road connects with South Point Road to Māhana Bay, but the road is bumpy and needs 4-wheel drive. Therefore, access to Māhana Bay for emergency services is not as easily accessible.

Potential Impacts and Mitigation Measures

The proposed emergency road extending from the beginning of Ka Lae Road to Māhana Bay, is intended to improve emergency access to more remote areas of the Project area. Therefore, the proposed Project will not interfere with or hinder access to emergency services and/or facilities. Instead, the proposed Project will directly improve emergency access to the Project area and make the surrounding areas safer.

2.3.3 Power and Communication

There are no existing electric lines, telephone poles, or internet towers in the Project area.

Potential Impacts and Mitigation Measures

The proposed Project will have no impact on power and communication in the surrounding area, because there are no existing electric lines, telephone poles or internet towers in the Project area.

3 RELATIONSHIPS TO STATE AND COUNTY LAND USE PLANS, POLICIES, AND CONTROLS

3.1 DHHL General Plan

The DHHL General Plan, approved in 2002, is the umbrella statewide plan that guides future plans for long-term management of DHHL lands. There are seven categories of goals and objectives in the DHHL General Plan to support DHHL's mission "to manage the Hawaiian Home Lands trust effectively and to develop and deliver lands to native Hawaiians." The following management areas, with their respective long-range goals, are relevant to South Point and reflected in the RMP 2016.

3.1.1 Land Use Planning

- Utilize Hawaiian Home Lands for uses most appropriate to meet the needs and desires of the beneficiary population.
- Develop livable, sustainable communities that provide space for or access to the amenities that serve the daily needs of its residents.

3.1.2 Land and Resources Management

- Be responsible, long-term stewards of the Trust's lands and the natural, historic and community resources located on these lands.

3.1.3 Economic Development

- Provide economic opportunities for beneficiaries within areas designated for their use;
- Generate significant revenue to provide greater financial support towards fulfilling the Trust's mission.

3.1.4 Building Healthy Communities

- Establish the homestead associations to manage and govern their communities.
- Establish self-sufficient and healthy communities on Trust lands.

3.2 DHHL Hawai'i Island Plan

The DHHL Hawai'i Island Plan is a 10-year plan, published in 2002, to assess the potential use of the 116,963 acres of DHHL lands on Hawai'i Island. The goal of the Hawai'i Island Plan is to assess and recommend future uses for DHHL lands on Hawai'i Island. The plan recommends optimal use of the land to meet the needs of DHHL beneficiaries. In the Plan, the southern-most portion of Kamā'oa-Pu'ueo, which corresponds with the Project area, is designated as a Special District that requires special attention and additional study due to unique features and resources. The RMP for South Point and associated studies, such as this environmental assessment and the technical studies for the report, furthers the understanding of the unique resources and features of South Point that informs more appropriate management strategies.

3.3 DHHL Native Hawaiian Development Plan (NHDPP)

The NHDPP identifies priority programs and services that should be provided for beneficiaries within 3-6 years. The purpose of the NHDPP is to "improve the general welfare and conditions of native Hawaiians through educational, economic, political, social, cultural, and other programs."

The NHDPP identifies the need to provide more than a land lease to “rehabilitate a native Hawaiian family. It focuses on two areas of development: Individual Development and Community Development. The NHDPP identified educational opportunities through scholarships and technical assistance programs in homesteading, as well as providing grants, technical assistance, and training to homestead associations and organizations, as strategies to increasing the self-sufficiency of beneficiaries. The proposed RMP for South Point could potentially provide such opportunities, supporting the purpose of the NHDPP.

3.4 DHHL Ka‘ū Regional Master Plan

The DHHL Ka‘ū Regional Plan, published in 2012, is a two to four year plan to guide the future direction of homestead lands. The Plan applies the goals, policies, and land use designations set forth in the DHHL’s General Plan and Hawai‘i Island Plan for the Ka‘ū region. Two priority projects for South Point identified in the DHHL Ka‘ū Regional Plan include:

- Develop Vehicular Roadways(s) and Pedestrian Pathways within the Coastal Area of Ka Lae (to manage access to Kaulana Bay, the fishing grounds at Ka Lae and protect sensitive resources);
- Protect and Preserve Cultural Sites in Kamā‘oa.

Thus, the RMP 2016 directly addresses the priority projects identified for South Point in the DHHL Ka‘ū Regional Plan.

3.5 Hawai‘i State Plan

Hawai‘i Revised Statute (HRS) Chapter 226, sets forth the Hawai‘i State Plan that serves as a guide for the future long-range development of the State of Hawai‘i. The Plan was created in response to a need to improve the planning process in the State of Hawai‘i, to increase the effectiveness of public and private actions, and to improve coordination among different agencies and levels of government, to provide for wise use of Hawai‘i’s resources and to guide the future development of the State. The Plan was drafted and passed in 1978, almost four decades ago. The goals of the Hawai‘i State Plan include the following:

- (1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai‘i’s present and future generations.
- (2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- (3) Physical, social, and economic well-being, for individuals and families in Hawai‘i, that nourishes a sense of community responsibility, of caring and of participation in community life.

The goals of the RMP 2016 are consistent with and support the goals of the Hawai‘i State Plan which seeks to develop a strong economy, maintain the integrity of a desirable physical environment, and enhance the well-being of Hawai‘i.

3.6 State Land Use Law

The State Land Use Law, Chapter 205 HRS, established the State Land Use Commission, which classifies all lands in Hawai‘i into four land use districts: Urban, Rural, Agricultural, and

Conservation. The Project area is within the Agricultural and Conservation Districts. Similarly, the Proposed actions are located within both land use districts. However, the DHHL is exempt from the requirements of the State Land Use Law.

3.7 Coastal Zone Management Program

The Hawaii Coastal Zone Management (CZM) Program was created in 1977 through the enactment of HRS Chapter 205A. The program was created to coordinate federal, state and county agency efforts in the comprehensive management of Hawai'i's valuable coastal resources. The CZM Program is administered by the Office of Planning, but the four counties are responsible for administering the program locally through Special Management Area (SMA) permits and shoreline setback provisions in their respective counties. HRS Chapter 205A requires State agencies, such as the DHHL, to be in legal and operational compliance to the objectives and policies and the CZM Program. The policies of the CZM articulate the following objectives, as stated in §205A-2:

- (1) **Recreational resources**; Provide coastal recreational opportunities accessible to the public.
- (2) **Historic resources**; Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.
- (3) **Scenic and open space resources**; Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.
- (4) **Coastal ecosystems**; Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.
- (5) **Economic uses**; Provide public or private facilities and improvements important to the State's economy in suitable locations.
- (6) **Coastal hazards**; Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.
- (7) **Managing development**; Improve the development review process, communication, and public participation in the management of coastal resources and hazards.
- (8) **Public participation**; Stimulate public awareness, education, and participation in coastal management.
- (9) **Beach protection**; Protect beaches for public use and recreation.

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- (10) **Marine resources**; Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

The proposed actions for the RMP 2016 support all ten objectives of the CZM Program, including recreational activities on the coast. Though the proposed actions are intended to manage and limit the use of recreational vehicles that occur **on DHHL property and destroy natural and cultural resources on DHHL property**, the proposed actions do not prohibit access to recreational activities along the coast. Therefore, access to coastal recreational resources will not be impacted as a result of the proposed Project.

3.8 Hawai'i Historic Preservation Laws

3.8.1 HRS Chapter 6E

HRS Chapter 343, Hawai'i's environmental law, requires consideration of a proposed project's effect on cultural practices and resources. Through document research and cultural consultation efforts in an archaeological inventory study and a cultural impact assessment for this Project, this environmental assessment provides information pertinent to the assessment of the proposed Projects' impacts to cultural practices and resources (per the *Office of Environmental Quality Control's Guidelines for Assessing Cultural Impacts*) which may include Traditional Cultural Properties (TCP) of ongoing cultural significance that may be eligible for inclusion on the State Register of Historic Places, in accordance with Hawai'i State Historic Preservation Statute (Chapter 6E) guidelines for significance criteria according to Hawai'i Administrative Rules (HAR) §13–275 under Criterion E.

3.9 Hawai'i County General Plan

The General Plan is guided by the Hawai'i State Plan and sets forth the long-range goals, policies, standards, and courses of action for the County of Hawai'i, as well as the legal basis for all of the other elements of the County's planning structure. Thus, the General Plan is the umbrella plan that establishes the other limits or boundaries that the County must operate within. Together with the Functional Plans, the Community Development Plans (CDPs), and Area Improvement Plans for each district, the General Plan provides a direction and framework to guide the programs and activities of Hawai'i County. The original General Plan was adopted in 1965. However, this plan did not include the district of Ka'ū. After the ratification of the County Charter in 1968, a General Plan was adopted in 1971 that provided the foundation for a comprehensive plan for the entire County of Hawai'i. The most current General Plan was published in 2005.

The proposed Project is consistent with and supports various focus areas of the General Plan. These include environmental quality, historic preservation, natural beauty, natural resources and shoreline, and agricultural land use. These areas are described in more detail below:

3.9.1 Environmental Quality

According to the General Plan, the County's basic industries of agriculture, tourism, and scientific and technological enterprises, depend upon a "clean" environment for optimum growth. The agricultural industry depends upon the availability of clean air, soil, and water. The island's major

visitor attraction, especially for tourists from large urban centers, is its natural beauty accentuated by the quality of the air, land, and water. Thus, the environmental quality of the County not only enhances the quality of life for its residents, but is also a major economic asset. The General Plan also states that it is essential to control soil erosion, water runoff, and protect endangered plants and animal species, among other things, in order to maintain an ecological balance for the biological physical, social and physiological well-being of the island community.

3.9.2 Historic Preservation

The General Plan acknowledges the wealth of historic and archaeological sites in Hawai'i County and proposes the following goals:

- (a)** Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawai'i.
- (b)** Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.
- (c)** Enhance the understanding of man's place on the landscape by understanding the system of ahupua'a.

3.9.3 Natural Beauty

The General Plan acknowledges the natural beauty of Hawai'i as one of the most significant and valuable assets of Hawai'i County. To protect and enhance the natural beauty of Hawai'i County, the following goals are proposed:

- (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.

3.9.4 Natural Resources and Shoreline

Natural resources include, but are not limited to, the land, water, air, flora, fauna, soils, geologic features, geothermal steam, climate, wind, sunshine, ocean waters, and shoreline. With growing populations and urbanization, there is greater demand on these resources. To protect the natural resources and shorelines of Hawai'i County, the following goals are proposed in the General Plan:

- (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.

3.9.5 Land Use: Agriculture

Approximately 46% or almost half of Hawai'i's land is in the Agricultural District. Thus, the following goals are proposed in the General Plan to support and protect agricultural lands in Hawai'i County:

- (a) Identify, protect and maintain important agriculture lands on the island of Hawai'i.
- (b) Preserve the agricultural character of the island.
- (c) Preserve and enhance opportunities for the expansion of Hawai'i's Agricultural

The majority of the area for this Project is within the Agricultural District. The proposed RMP 2016 is intended to manage human activities and restore the land, therefore, is consistent with the goals for agricultural land use, as set forth by the General Plan for Hawai'i County.

3.10 Hawai'i County Zoning

Hawai'i County's Land Use Ordinance regulates land use to encourage orderly development in accordance with adopted land use policies, including the Hawai'i County General Plan and the County's six Community Development Plans. The actions for the proposed Project, all fall into one zoning designation which is Agricultural Lots with a minimum lot size of 20 acres or Ag-20a. Permitted uses within the Agricultural District are listed in Section 25-5-72 of the Hawai'i County Code. However, the DHHL is not subject to County zoning codes.

The actions proposed in the RMP 2016 are consistent with the permitted uses within the Agricultural District and include the following uses that are relevant to the proposed RMP 2016:

- (1) Agricultural parks;
- (3) Agricultural tourism as permitted under section 25-4-15;
- (18) Public uses and structures which are necessary for agricultural practices;
- (19) Retention, restoration, rehabilitation, or improvement of building or sites of historic or scenic interest.

The Hawaiian Homes Commission has exclusive authority of land use on Hawaiian Home Lands.

3.11 Ka'ū Community Development Plan

The Ka'ū Community Development Plan (CDP), revised in 2017, is a 10-year-plan, to translate and implement the broad goals of Hawai'i County's General Plan on a regional basis. The CDP is intended to be a forum for community participation in managing growth and coordinating the delivery of government services to communities. The Ka'ū CDP planning area includes most of the Judicial District 9 of Hawai'i County which include South Point. The CDP sets forth community objectives for Ka'ū. The following objectives are relevant for the proposed Project at South:

- 3. Protect, restore, and enhance ecosystems, including mauka forests and the shorelines, while assuring responsible access for residents and for visitors;

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4. Protect, restore, and enhance Ka'ū's unique cultural assets, including archeological and historic sites and historic buildings;
 6. Encourage community-based management plans to assure that human activity doesn't degrade the quality of Ka'ū's unique natural and cultural landscape;

The RMP 2016 is consistent with and supports many of the community objectives listed here for Ka'ū.

4 PERMITS AND APPROVALS REQUIRED

To ensure that the proposed actions for the RMP for South Point are compliant to and consistent with the land use policies and regulations for the lands at South Point, the following permits and plans are needed from the respective oversight agencies.

Permit and Approval	Oversight Agency
Grubbing and Grading Permit	Hawai'i County, Department of Planning
County Building Permit	Hawai'i County, Department of Public Works, Building Division
National Pollution Discharge Elimination System (NPDES)	Hawai'i State Department of Health Clean Water Branch
Archaeological Monitoring Plan Approval	Hawai'i State Department of Land and Natural Resources (DLNR), Division of Historic Preservation

5 ALTERNATIVES TO THE PROPOSED ACTION

Three alternatives are proposed for this EA and described in this section. Of the three, Alternative II is the preferred alternative of the DHHL and Alternative III is the preferred alternative of the majority of Ka'ū community members consulted in the CIA study for the EA.

1. Alternative I: No Action

Under the **No Action** alternative, no management actions will be implemented and existing conditions at South Point remain unchanged. The **No Action** alternative is not an option as widespread destruction of natural and cultural resources at South Point, from human impact, is at a critical point.

2. Alternative II: Manage human activities at South Point, including management of vehicular access onto DHHL lands by implementing actions in four areas at South Point, as proposed in the Resources Management Plan for South Point.

Alternative II of allowing vehicular access onto DHHL lands at South Point and implementing management actions in four management areas is the preferred alternative of the DHHL. Alternative II has several advantages:

- A. The installation of an entrance gate at the intersection of Kalae Rd. and South Point Rd, and a security booth 0.75 miles north of the intersection along South Point Rd, will:

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- 1) Create opportunities for revenue generation by charging an entrance fee at the gate that can be used to manage the natural and cultural resources of South Point;
 - 2) Create opportunities for education and awareness about South Point at the gate entrance that would lead to more informed visitors and possible long-term management actions for South Point;
 - 3) Increase employment opportunities for the district of Ka'ū through the hiring of security guards and staff to manage the area;
 - 4) Provide DHHL presence at South Point and subsequently, greater public safety in the area through the provision of security personnel.
- B. Two designated parking areas at the “Barracks” near the Kaulana Boat Ramp and at Ka Lae will:
- 1) Deter visitors from driving off-road and destroying natural and cultural resources;
 - 2) Encourage public safety by providing a designated area for vehicles in specific places rather than throughout the property, as well as provide opportunities for the placement of security guards in the future to reduce car theft and break-ins;
 - 3) Provide a mechanism for monitoring capacity to ensure that the carrying capacity of the environment is not exceeded by the number of visitors.
- C. A cultural interpretive walking trail at Ka Lae with associated signage and protective barriers around cultural sites will:
- 1) Encourage opportunities for education and raising awareness about the cultural and historical significance of South Point;
 - 2) Attract visitors to Ka'ū that would increase and support opportunities for economic activity;
 - 3) Provide recreational opportunities for local communities, including kūpuna and youth, to enjoy the rich cultural heritage of Ka'ū, thereby increasing pride in place and a greater quality of life;
 - 4) Protect significant cultural sites and fragile ecosystems at South Point.
- D. A pedestrian path and an emergency access road extending from the “Barracks” to Māhana Bay will:
- 1) Protect the natural and cultural resources along the coast from Kaulana Bay to Māhana by creating only one path along the coast;
 - 2) Increase public health safety through the provision of a defined access road along the coast, as well as improving the access road for emergency service vehicles to Māhana Bay.

3. Alternative III: Limit vehicular access onto DHHL lands at South Point by closing public access through the DHHL-owned portion of South Point Road.

Alternative III, the preferred alternative by the majority of Ka'ū community members interviewed for the Cultural Impact Assessment, proposes closing down the DHHL-owned portion of South Point Road and prohibiting vehicles from entering DHHL property. This alternative is more straight forward than Alternative II.. Alternative III has several advantages. Prohibiting vehicular access onto DHHL lands at South Point would:

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- 1) Significantly reduce human impacts on the natural and cultural resources at South Point and allow the land to recover more quickly. Thus, restoration efforts would yield more immediate positive results in the absence of the threats of human impact;
 - 2) Be less expensive for DHHL since the cost of proposed actions in Alternative II would not be necessary;
 - 3) Be consistent with and allowed under the land tenure of the Project area as “Available Lands” rather than Public Lands that supports the needs of native Hawaiian people rather than the general public;
 - 4) Be consistent with the historic land use of the Project area where South Point was accessed by foot;
 - 5) Be consistent with and support the desire of the majority of the Ka’ū community members consulted for this Project who recommended shutting down the road to South Point and letting the land heal.

However, **Alternative III** would limit potential economic opportunities for potential income generation in an area that is economically disadvantaged. As shown in Chapter 3 of this document, one of the goals of the DHHL is to build the self-sufficiency of DHHL beneficiaries. This goal is expressed in the various DHHL plans to manage DHHL lands on Hawai’i Island. Alternative III would eliminate potential economic opportunities to utilize the natural and cultural resources of South Point to support and build the capacity of beneficiaries.

6 DETERMINATION

6.1 Cumulative Impacts

Based on the analysis presented in this EA, the proposed Project is not anticipated to have significant impacts to the natural, built, or social environment. The proposed Project is not expected to have a significant cumulative effect upon the environment. Instead, management actions of the proposed Project will:

- 1) Restore, preserve, and protect cultural and natural resources;
- 2) Perpetuate native Hawaiian culture, values, history and language for future generations;
- 3) Provide a safe, clean, and friendly environment; and
- 4) Generate revenue to sustainably fund cultural and natural resources activities and provide economic opportunities for DHHL beneficiaries and their families.

The proposed actions are compliant to and consistent with the goals of various land use policies and plans in Hawai’i, including the Hawai’i State Plan, the Coastal Zone Management Program, the SMA, Historic Preservation laws, the Hawai’i County General Plan, Hawai’i County Zoning, the Community Development Plan for Ka’ū, and the various land use plans for DHHL lands on Hawai’i Island, such as DHHL General Plan, the DHHL Hawai’i Island Plan, the DHHL Native Hawaiian Development Plan, and the DHHL Ka’ū Regional Master Plan.

The primary impacts of the proposed actions would result from construction activities, such as dust, noise, traffic, and erosion. These will be short-term impacts that will be mitigated through use of Best Management Practices to minimize and mitigate potential negative impacts.

6.2 Findings and Reasons Supporting the Determination

The potential effects of the proposed project are evaluated based on the significance criteria identified in the HAR, Section 11-200-12. The following is a summary of the potential effects of the Project.

1. Irrevocable commitment to loss or destruction of any natural or cultural resource

The proposed Project is not expected to adversely impact any natural or cultural resources. Technical studies have been conducted to assess the potential impact of the proposed Project on fauna and flora, as well as cultural and archaeological resources at South Point. These studies have found the proposed Project will not negatively impact native fauna and flora populations at South Point. The archaeological inventory survey and cultural impact assessment conducted for this Project also found that the proposed actions will not negatively impact the natural and cultural resources and practices of the Project area. Though archaeological and cultural features might be encountered during the construction phase, an archaeological monitoring plan will be in place and an archaeological monitor will be present at all times of construction. Should any resources be discovered during construction, all work will cease immediately and SHPD will be contacted.

2. Curtailment of the range of beneficial uses of the environment.

The proposed Project is not expected to curtail the range of beneficial use of the environment since the proposed actions are minimal. Rather, the proposed actions will improve the integrity of the environment at South Point.

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

The proposed Project is consistent with the environmental policies, goals, and guidelines expressed in HRS Chapter 344.

4. Substantially affects the economic or social welfare of the community or State.

The proposed Project is not expected to have significant negative socio-economic effect, but rather, is anticipated to provide significant benefits to communities surrounding South Point through employment opportunities, restoring and maintaining the sense of place of South Point that many value.

5. Substantially affects public health.

The proposed Project is not anticipated to negatively affect public health. Instead, the proposed Project will improve public health and safety by providing toilets to improve sanitary conditions, as well as infrastructure for emergency service vehicles.

6. Involves substantially secondary impacts, such as population changes or effects on public facilities.

The proposed Project is not anticipated to have secondary impacts such as population changes or effects on public facilities. The proposed project will not encourage changes in population size.

7. Involves substantial degradation of environmental quality.

No substantial degradation of environmental quality is expected as a result of the proposed Project. However, the proposed Project is expected to substantially improve the environmental quality of South Point.

8. *Is individually limited but cumulatively has considerable effects on the environment, or involves a commitment for larger actions.*

The proposed Project is not expected to have a significant cumulative effect upon the environment.

9. *Substantially affects a rare, threatened, or endangered species or its habitat.*

The fauna and flora study that was conducted for this Project found that the proposed actions will not negatively impact rare, threatened, or endangered species or its habitat. The study notes that the proposed management actions of the Project will instead enhance and improve habitats at South Point that will in turn attract more native species.

10. *Detrimentially affects air or water quality or ambient noise levels.*

The proposed Project is not anticipated to have any long-term impacts on air, water quality, or noise conditions. Impacts on air and water quality and noise conditions are anticipated to be minor and short-term resulting from construction-related activities for the proposed roads, trails and paths, community center, wastewater system, and security booth. These short-term impacts will cease upon Project completion. Short-term impacts may include an increase in dust generating around the Project area; an increase in noise levels from construction equipment and onsite vehicles; and increase in the amount of sediment in storm runoff because of exposed soils. However, the proposed Project is located far away from residential areas, therefore, will not impact surrounding communities. Nevertheless, these short-term impacts will be mitigated through use of Best Management Practices (BMPs) to minimize and mitigate potential negative impacts.

Also, the actions of the RMP 2016 are anticipated to protect against detrimental effects to air or water quality by limiting destructive activities that expose soils. Proposed actions will also encourage the re-establishment of native vegetation in exposed areas, thereby reducing the potential for soil erosion.

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

The Project area is located in Zone VE (pedestrian path) and Zone X (emergency road, pedestrian path, walking trail, and parking lots) of the FEMA's Flood Insurance Rate Map. Zone VE is subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action. Zone X is considered to be at moderate risk of flooding under the National Flood Insurance Program.

The proposed Project is not anticipated to increase flood hazards or have any impacts on the tsunami zone. Detailed weather and tsunami forecasts enable emergency evacuation plans to be executed should such flood or tsunami events occur. In the

event of flooding or tsunami threats, the pedestrian path will be closed and the emergency road shall be used for evacuations. Improving the proposed emergency road in the RMP 2016 will increase public safety in emergency situations.

12. Substantially affects scenic vistas and view planes identified in county or state plans or studies.

The proposed Project will not adversely affect the public's enjoyment of scenic vistas and view planes. Instead, the proposed Project is anticipated to improve and protect the integrity of the cultural and natural resources of South Point and enhance coastal views at South Point.

13. Requires substantial energy consumption.

The proposed project is not anticipated to consume a substantial amount of energy.

Based on the evaluation of the significant criteria and the information contained in this Draft Environmental Assessment, an Environmental Impact Statement will not be required and a Finding of No Significant Impact has been determined for this Project.

7 LIST OF APPENDICES

Appendix A: DHHL South Point Resources Management Plan

Appendix B: Pre-Consultation Letter and Agency Responses

Appendix C: Fauna and Flora Report

Appendix D: Archaeological Inventory Survey

Appendix E: Cultural Impact Assessment