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LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 28, 2016

Scott Glenn, Director
Office of Environmental Quality Control
Department of Health, State of Hawai'i
235 S. Beretania Street, Room 702
Honolulu, Hawai'i 96813

Dear Mr. Glenn:

With this letter, the Department of Land and Natural Resources – Division of Forestry and Wildlife hereby transmits the final environmental assessment and finding of no significant impact (FEA-FONSI) for the proposed Parking Lot Improvements at 'Ahihi Kina'u Natural Area Reserve situated at TMK: (2) 2-1-004:073, in the District of Makawao on the island of Maui for publication in the next available edition of the Environmental Notice.

We have included copies of the comments and responses that were received during the 30-day public comment period on the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI), which was published in the January 23, 2016 issue of the Environmental Notice.

Enclosed, is a completed OEQC Publication Form, one (1) hard-copy of the FEA-FONSI, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word.

If there are any questions, please contact Peter Landon at (808) 268-8699 or via email at peter.landon@hawaii.gov.

Sincerely,

Suzanne D. Case, Chairperson

Enclosures

AGENCY PUBLICATION FORM

Project Name:	Parking Lot Improvements at 'Ahihi Kina'u Natural Area Reserve
Project Short Name:	(Ahihi Kinau Parking Lot Improvements)
HRS §343-5 Trigger(s):	Use of State Lands or Funds, Use in a Conservation District
Island(s):	Maui
Judicial District(s):	Makawao
TMK(s):	(2) 2-1-004:073
Permit(s)/Approval(s):	Conservation District Use Permit, Special Management Area Permit, County Construction Permits (Grading and Grubbing)
Proposing/Determining Agency:	State of Hawai'i Department of Land and Natural Resources Kalanimoku Building 1151 Punchbowl St. Room 325 Honolulu, HI 96813
Contact Name, Email, Telephone, Address	Peter Landon peter.landon@hawaii.gov (808) 268-8699 DLNR – Maui Baseyard Kahului, Hawaii 96732
Accepting Authority:	(for EIS submittals only)
Contact Name, Email, Telephone, Address	
Consultant:	WCP, Inc.
Contact Name, Email, Telephone, Address	Richard Stook rstook@wcphawaii.com (808) 242-0218 99-061 Koaha Way Suite #208 Aiea, Hawaii 96701

Status (select one)	**Submittal Requirements**
____ DEA-AFNSI	Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.
__X__ FEA-FONSI	Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.
____ FEA-EISPN	Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.
____ Act 172-12 EISPN ("Direct to EIS")	Submit 1) the proposing agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.
____ DEIS	Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.
____ FEIS	Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.
____ FEIS Acceptance	The accepting authority simultaneously transmits to both the OEQC and the proposing agency a letter

Determination	of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice.
FEIS Statutory Acceptance	Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions.
____ Supplemental EIS Determination	The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice.
____ Withdrawal	Identify the specific document(s) to withdraw and explain in the project summary section.
____ Other	Contact the OEQC if your action is not one of the above items.

Project Summary
Provide a description of the proposed action and purpose and need in 200 words or less.

The proposed project consists of improving an existing parking area by constructing a concrete-paved parking lot approximately 31,000 square feet in size. The proposed parking lot will consist of 55 delineated, marked parking stalls (including three (3) accessible stalls that meet the requirements of the American with Disabilities Act), a toll booth or an automated parking fee machine (for non-resident visitors), an emergency vehicle access/staging area, separate ingress and egress gates, and a one-way internal traffic circulation pattern.

The overall purpose and need of the proposed project is to alleviate vehicular/pedestrian congestion and safety issues by providing organized parking and controlled traffic circulation through establishment of marked stalls, wide access aisles, unidirectional traffic flow, and dedicated ingress and egress points. Additionally, the proposed project also fulfills specific, established goals, objectives, and strategic management actions identified in the *Ahihi Kinau Natural Area Reserve Management Plan* including, but are not limited to, improving and maintaining visitor facilities within the Reserve (including parking areas), limiting the number of vehicle in the Kanahena parking area by establishing parking stalls, and charging a nominal parking fee for non-residents visitors.

FINAL
ENVIRONMENTAL ASSESSMENT

FOR

PROPOSED PARKING LOT IMPROVEMENTS
AT
ʻAHIHI KINAʻU NATURAL AREA RESERVE
KANAHENA, MAUI ISLAND, HAWAIʻI

TAX MAP KEY: (2) 2-1-004-073 (POR.)

April 2016

The State of Hawaiʻi Department of Land and Natural Resources
Division of Forestry and Wildlife

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FINAL
ENVIRONMENTAL ASSESSMENT

FOR

PROPOSED PARKING LOT IMPROVEMENTS
AT
ʻAHIHI KINAʻU NATURAL AREA RESERVE
KANAHENA, MAUI ISLAND, HAWAIʻI

TAX MAP KEY: (2) 2-1-004-073 (POR.)

April 2016

Prepared for:

The State of Hawaiʻi Department of Land and Natural Resource
Division of Forestry and Wildlife

Prepared by:

WCP Inc.
Aiea, Hawaiʻi

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TABLE OF CONTENTS

ACRONYMS

ADA	Americans with Disabilities Act
AFONSI	Anticipated Finding of No Significant Impact
AKMP	ʻAhihi Kinaʻu Natural Area Reserve Management Plan
cfs	Cubic feet per second
CPP	Countywide Policy Plan
DEA	Draft Environmental Assessment
DLNR	Department of Land and Natural Resources, State of Hawaiʻi
DOFAW	Division of Forestry and Wildlife
DOH	Department of Health, State of Hawaiʻi
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISPN	Environmental Impact Statement Preparation Notice
FEA	Final Environmental Assessment
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FS	Feasibility Study
HAR	Hawaiʻi Administrative Rules
HEPA	Hawaiʻi Environmental Policy Act
HRS	Hawaiʻi Revised Statutes
NARS	Natural Area Reserve System
MEC	Munitions and Explosives of Concern
MIP	Maui Island Plan
PCP	Permeable Concrete Pavement
RI	Remedial Investigation
USACE	United States Army Corps of Engineers – Honolulu District
UXO	Unexploded Ordnance

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1. INTRODUCTION

The State of Hawaiʻi, Department of Land and Natural Resources – Division of Forestry and Wildlife (DLNR-DOFAW), proposes to undertake improvements at an existing public parking area in the ʻAhihi Kinaʻu Natural Area Reserve, located on Maui Island, Hawaiʻi .

1.1. Project Summary

Project Name:	Parking Lot Improvements at ʻAhihi Kinaʻu Natural Area Reserve
Proposed Project:	Improve an existing unpaved public parking lot (a.k.a. "Dumps") located in the Kanahena area within the ʻAhihi Kinaʻu Natural Area Reserve.
Proposed Action:	The Proposed Action consists of improving an existing parking area by constructing a concrete-paved parking lot approximately 31,000 square feet in size. The proposed parking lot will consist of 55 delineated, marked parking stalls (including three (3) accessible stalls that meet the requirements of the American with Disabilities Act), a toll booth or an automated parking fee machine (for non-resident visitors), an emergency vehicle access/staging area, separate ingress and egress gates, and a one-way internal traffic circulation pattern.
Alternatives to be Evaluated in EA:	**Preferred Alternative:** Proposed Action **Alternative 1**: No Action
Proposing/Determination Agency:	State of Hawaiʻi Department of Land and Natural Resources Kalanimoku Building 1151 Punchbowl St. Room 325 Honolulu, HI 96813
EA Preparer:	WCP Inc. 99-061 Koaha Way Aiea, Hawaiʻi 96701
Project Location:	ʻAhihi Kinaʻu Natural Area Reserve Kanahena, Maui Island, Hawaiʻi
Tax Map Key:	(2) 2-1-004:073 (portion)
Ownership:	State of Hawaiʻi
Project Area:	31,000 square feet

Property Administrator:	State of Hawaiʻi Department of Land and Natural Resources
Existing Land Use:	Natural Area Reserve
State Land Use Classification:	Conservation
County Zoning Designation:	Park
Special Management Area:	Yes
Agency Determination	Anticipated Finding of No Significant Impact (AFONSI)

1.2. Scope and Authority

This Environmental Assessment (EA) has been prepared in accordance with the Hawaiʻi Environmental Policy Act (HEPA), as codified in Hawaiʻi Revised Statutes (HRS) Chapter 343 and implemented by Hawaiʻi Administrative Rules (HAR) Title 11, Chapter 200. The use of State lands or funds, and proposed use within the Conservation District triggers HEPA for the proposed project. The filing of this Draft EA initiates the HEPA process.

The intent of this EA is to ensure that comprehensive and systematic consideration is given to potential impacts of the proposed action upon the human environment. It is intended to serve as an environmental disclosure document which identifies the purpose and need of the proposed action, reasonable implementation alternatives, existing environmental conditions, potential environmental impacts, and mitigation measures to avoid or minimize such impacts. The finding presented in this EA will provide the basis to determine whether an Environmental Impact Statement (EIS) or Final Environmental Assessment/Finding of No Significant Impact (FEA/FONSI) is appropriate.

2. PROJECT DESCRIPTION

2.1. Proposed Project

The proposed project is to improve the existing public parking lot in the Kanahena area of the ʻAhihi Kinaʻu Natural Area Reserve (hereafter referred to as the "Reserve"). The existing unpaved parking area (hereafter referred to as the "project site") is also known as the "Dumps" parking lot due to its proximity to the "Dumps Surf Break" located approximately 300 yards off shore. Existing conditions and proposed improvements at the project site are discussed in further detail in Sections 2.3 and 2.4 below.

2.2. Purpose and Need

2.2.1 ʻAhihi Kinaʻu Natural Area Reserve Management Plan

The state's Natural Area Reserves System (NARS) was established in 1970 by the Hawaiʻi Legislature (Hawaiʻi Revised Statutes [HRS] 195-1) to protect the best examples of Hawai'i's remaining ecology and geology, and to preserve in perpetuity, specific land and water areas which support communities, as relatively unmodified as possible, of the natural flora and fauna as well as geological sites, of Hawaii. As such, DLNR-DOFAW prepared the *ʻAhihi Kinaʻu Natural Area Reserve Management Plan* (AKMP) to fulfill the mandate to protect and preserve Hawai'i's "unique geological and volcanological features and distinctive marine and terrestrial plants and animals ...both for the enjoyment of future generations, and to provide baselines against which changes being made in the environments of Hawai'i can be measured. The AKMP outlines management goals, objectives, and actions needed to preserve, protect, and enhance the biological and cultural resources of the Reserve for current and future generations (DLNR, 2012).

2.2.2 Proposed Action

The purpose and need of the Proposed Action are to comply with established goals, objectives, and strategic management actions identified in the AKMP, which include, but are not limited to:

- Providing necessary on-site infrastructure to meet management needs
- Improve and maintain on-site facilities, infrastructure and equipment
- Improve and maintain visitor facilities within the Reserve (including parking areas)
- Manage visitors and access points
- Limiting the number of vehicle in the Kanahena parking area by establishing parking stalls
- Reduce the negative impacts of visitors and increase safety
- Charging a nominal parking fee for non-residents

In addition to meeting the specific objectives and strategic management actions noted above, the Proposed Action will also serve a number of immediate related benefits to the existing parking lot and the Reserve as a whole including:

- Allowing improved access to the Reserve for persons with disabilities. The existing lot provides a single American Disability Act (ADA) compliant parking stall directly fronting the DLNR field trailer. However, the existing unpaved graded ʻaʻā lava parking lot provides limited ADA compliant access beyond this single designated ADA parking stall often restricting and/or precluding further access to some individuals with physical disabilities beyond the designated ADA parking stall due to their inability to traversing the existing uneven and rugged surface.
- Alleviating stress on visitor and staff vehicles by eliminating the existing rugged and uneven graded ʻaʻā lava surface
- Alleviating vehicular/pedestrian congestion and safety issues by providing marked stalls and controlled traffic circulation within the parking lot by providing marked stalls, wide access aisles, unidirectional traffic flow, and dedicated ingress and egress points
- Providing a staging area for emergency vehicles and a turn-around area for large vehicles, trailers, and heavy equipment
- The concrete pavement will provide a physical hard-surface barrier that will provide the added beneficial impact of creating physical hard-surface barrier, which would allow DLNR staff and/or volunteers the opportunity to take appropriate emergency spill-response actions in the event of unforeseen minor motor oil or other material spills. Under existing conditions such spill events cannot be cleaned up as liquids rapidly permeate the highly porous ʻaʻā lava surface
- Providing an attractive, user-friendly focal point for visitor contact and DLNR's outreach program while also discouraging prohibited parking along South Makena Road and in front of the nearby cove area.

Specific, applicable management goals, objectives, strategic actions, and tasks of the AKMP are discussed in further detail in Section 5.4.

2.3 Project Location and Existing Site Conditions

2.3.1 Project Location

The Reserve is located within the County of Maui administrative district of Makawao near the town of Kihei and resort areas of Wailea and Makena, situated along Maui's southern shoreline on the southwest flank of Haleakala. The Reserve was created in 1973 and is approximately 2,045 acres in size. Approximately 807 acres of the Reserve consist of submerged lands and 1,238 acres of terrestrial area spanning approximately 3 miles of the Maui's southern coastline. The Reserve is unique as it has the distinction of being the first Reserve in the statewide NARS, is the only Reserve to encompass marine ecosystems, and is one of few areas on state lands where an entire lava flow is protected from its source to the sea. Much of the terrestrial portions of the Reserve are closed to the public, with the exception of small area (approximately 24.5 acres) near the northwest entrance point to the Reserve off of South Makena Road in the Kanahena area adjacent to ʻAhihi Bay (see Figures 1 and 2 in Appendix A),

The existing parking lot is located in the Kanahena area of the Reserve is also known as "Dumps Parking Lot" as it is located adjacent to the "Dumps" surf break just south of Kanahena Cove. The project site encompasses approximately 31,000 square feet and is delineated by tax map key

(TMK): (2) 2-1-004-073 (por.). The location of the Reserve and project site are shown in Figures 1 through 3.

2.3.2 Existing Site Conditions

Existing conditions at the project site consist of an unpaved, uncovered, graded a'a lava parking area. Ancillary infrastructural improvements within the parking area is limited and consist of a small portable trailer, which functions as a field office surrounded by a barbed wire fence. The parking area entrance is equipped with an iron gate which serves to secure and lock the parking lot between the hours of 7:30pm – 5:30am. Under existing conditions, vehicular congestion and safety issues present major challenges in the management of visitors to the Reserve. Namely, the lack of individually marked parking stalls has resulted in numerous public safety-related issues including, the number of vehicles exceeding the capacity of the parking lot, the lack of a controlled internal traffic circulation pattern, vehicles parking in a haphazard and uncontrolled manner, and the inability of emergency vehicles to effectively access and stage within the site. Photographs of the existing project site conditions are shown in Appendix B.

2.4. Proposed Action and Alternatives

2.4.1. Proposed Action (Preferred Alternative)

To address the issues identified in Sections 2.2 and 2.3, DLNR-DOFAW proposes to improve the existing parking area by constructing a concrete-paved parking lot approximately 31,000 square feet in size. The existing graded ʻaʻā lava parking lot comprises an area of approximately 22,400 square feet. The remaining 8,600 square feet of the proposed project site is presently undeveloped and consists of ʻaʻā lava sparsely covered with vegetation.

The Proposed Action will involve the grading and subsequent capping of the entire 31,000 square foot project site with concrete pavement. The proposed parking lot design will include separate ingress and egress gates, a one-way internal traffic circulation pattern, a total of 55 marked parking stalls (delineated utilizing thermoplastic striping), including three (3) accessible stalls that meet the requirements of the ADA, a toll booth or an automated parking fee machine (for non-resident visitors), and an emergency vehicle access/staging area. In addition, portable restroom facilities will be provided similar to those available at the site today. The project site and proposed improvements are illustrated in Figure 3.

2.4.2. No Action Alternative

Under the No Action alternative the Proposed Action would not be implemented and existing conditions would remain unchanged. Under the No Action alternative the issues described in Sections 2.2 and 2.3 would remain unaddressed and compliance with the AKMP and the HRS 195-1 mandate would not be met. Although the No Action Alternative does not satisfy the action purpose and need, it is further analyzed to serve as a baseline from which to compare the effects of implementing the Proposed Action.

2.4.3. Alternatives Considered But Eliminated From Further Analysis

In addition, to the Proposed Action and the No Action alternative two other potential alternatives were considered. The following discussion briefly summarizes these alternative actions which were examined, but eliminated from further consideration.

2.4.3.1 Alternate Locations

Consideration of alternate locations for the proposed project to meet the purpose and need were eliminated from further analysis due to operational and environmental considerations. Construction of new parking facilities at an alternate location would be restricted and/or limited based on the lack of suitable sites within publicly accessible portion of the Reserve, proximity to the popular recreational and visitor sites within the Kanahena Cove area, and alteration and development of previously undisturbed natural areas of the Reserve. As such, the existing project site is the only feasible alternative for implementing the Proposed Action in terms of location, visitor accessibility, consistency of existing land use, and environmental considerations.

2.4.3.2 Permeable Concrete Pavement

Permeable concrete pavement is a relatively new approach in sustainable road pavement design and construction. The intended purpose of PCP systems are to capture and control storm water onsite to reduce surface runoff and recharge groundwater sources, primarily in urban landscapes containing a high percentage of impermeable surface area.

A typical PCP system consists of a top layer of porous concrete covering, underlain by a layer of gravel covering a layer of uniformly sized aggregate, which is placed on top of a permeable geotextile layer overlaying the existing soil sub-base. Storm water penetrates the porous concrete and is filtered through the first layer of gravel. The voids in the lower level of large aggregate fill with storm water runoff and the stored runoff gradually infiltrates into the underlying soil. A PCP and its sub-base are intended to provide enough water storage capacity to reduce and/or eliminate the need for retention ponds, swales, and other precipitation runoff containment strategies (Thorpe and Zhuge, 2010).

Another intended benefit of PCP is to control the amount of contaminants in waterways, through reducing or eliminating runoff, and allowing treatment of pollution. Such treatment occurs as a result of capturing initial rainfall and allowing it to percolate into the ground, thus allowing soil chemistry and biology to "treat" the polluted water naturally. It is also claimed that through collecting rainfall and allowing it to infiltrate, permeable concrete allows increased groundwater and aquifer recharge, reduction of peak water flow through drainage channels, and minimization of flooding (Thorpe and Zhuge, 2010).

The use of permeable concrete for the proposed project was considered. However, concerns associated with the overall benefits, implementation, maintenance, and the associated costs warranted reconsideration of PCP as a viable alternative.

Use of PCP would require the importation substantially more non-native materials (e.g., substrata gravel, aggregate fill, geotextiles, etc.) in addition to concrete. It has been estimated that installation of permeable pavement could increase installation costs by up to 200 percent depending on the specific project and locality. Additional costs would also be incurred for the purchase, operation, and maintenance of specialized equipment necessary to maintain concrete porosity (e.g., the use of a vacuum truck to power-wash the concrete). Annual life-cycle maintenance costs associated with PCP have been estimated to be approximately one percent of overall installations costs, depending on location and local experience (NFECP-MCBH, 2009).

As discussed above, the main intended benefits of PCP is to manage surface runoff from impermeable urban landscapes by capturing and controlling onsite storm water, thereby reducing further runoff from a given site and allowing for recharge of groundwater sources. However, unlike urban landscapes impervious surfaces are minimal within the Reserve and the project site does not receive large quantities of surface runoff from adjacent areas. Due to the local environmental site conditions, including the overall arid climate, rainfall patterns (limited quantity, duration, and intensity), level topography, geologic conditions (highly porous substrate), and lack of terrestrial water resources (absence of surface water and surface runoff), the use of PCP in place of traditional concrete would not achieve the intended construction-related and environmental benefits of the former.

In contrast, (and as previously noted in Section 2.2.2) the use of traditional concrete pavement will provide the added beneficial impact of creating a physical hard-surface barrier which would allow DLNR staff and/or volunteers the opportunity to take appropriate emergency spill-response actions in the event of unforeseen minor motor oil or other material spills. By design, the highly permeable characteristics a PCP surface would limit and/or preclude the ability for such spill-response actions.

Based on the above-described cost, construction, operational, and environmental-related issues associated with its benefits and use at the project site, consideration of PCP as a viable alternative was eliminated from further consideration.

2.4.3.3 Delayed Action

Under the delayed action alternative, similar conditions to the "No Action" alternative would result until such time that improvements to the existing parking lot are undertaken. For an undetermined period of time, DLNR staff and visitors to the existing parking lot would continue to be restricted and limited to the use of the existing unimproved facilities. Under the delayed action alternative, safer and more efficient operation and compliance with the goals, objectives, and management strategies of the AKMP would continue to be delayed resulting in lost opportunity costs over time. Actual cost of lost opportunity is difficult to quantify, but would be proportional to the length of time action is delayed.

2.5. Time Frame and Proposed Schedule

Publication of the FEA/FONSI is anticipated for March 2016. After requisite land use, environmental, construction permits and approvals, and financing are secured, construction of the

Proposed Action would commence. Construction activities for the proposed parking lot are estimated to commence mid-summer 2016.

2.6. Estimated Project Cost

The total cost for implementation of the Proposed Action is approximately $350,000 which includes all labor and materials associated with proposed concrete paving, access gate installation, parking stall thermos-plastic striping, and parking fee vending services.

3. SUMMARY OF AFFECTED ENVIRONMENT AND POTENTIAL ENVIRONMENTAL CONSEQUENCES

3.1. Natural Environment

3.1.1. Topography, Geology, and Soils

The western flank of Haleakala Volcano is relatively un-eroded, due to the dry climate and continual blanketing of this area by young lava flows. The majority of the Reserve is comprised of young, loose, jagged a'a and pahoehoe lava flows, the overall topography is relatively flat and characterized by a hummocky, undulating land surface, which reflects the original morphology of the lava flows in the area. The coastline along the Reserve consists of rock cliffs, boulder- strewn beaches, and one larger sandy beach with a mix of black and tan sand in La Perouse Bay. The topography of the project site is also relatively flat similar to the rest of the Reserve.

Geology of the Reserve is among the youngest on the island and the terrestrial portion of the Reserve is very rugged and almost entirely comprised of recent pāhoehoe and ʻaʻā lava flows. These lava flows issued from two vents, Pu`u Mahoe and Kaula o Lapa, along a rift on the southwest flank of Haleakalā. Puʻu Mahoe is an old cinder cone situated 1,548 feet above sea level. The most recent flow from this vent is 5 to 20 feet thick and added approximately three-quarters of a mile to the coastline. Downslope and southwest of Puʻu Mahoe is the Kalua o Lapa spatter cone. Although lava from Kalua o Lapa overlies the Puʻu Mahoe flow, petrologic and weathering similarities suggest that the two eruptions may have been simultaneous (Stearns and MacDonald 1942).

Like the rest of the Reserve, soils underlying the Kanahena area (including the project site) are also composed of barren ʻaʻā lava. (soils classification rLW). A'a lava flows are characterized by masses of clinker, hard, glassy, sharp pieces of lava on rough to undulating topography, which makes the terrain difficult to traverse. A`a lava is extremely porous, permeability is very rapid and there is no erosion hazard. The ʻaʻā lava flows that comprise the Reserve are so young that little soil has developed upon them, and the presence of soil on the lava is largely limited to relatively thin lenses of soil (typically less than 6 inches thick) that have accumulated in relatively small isolated pockets (or kipukas) of vegetation dispersed throughout the area. Vegetation on rLW soils is limited to lichens, a few grasses, herbs, shrubs, and scrubby trees (USDA, 1972).

The only non-lava soils (i.e., not ʻaʻā lava) relatively near the project site are located to the northwest and consist of Makena loam, stony complex (soils classification MXC). MXC soils are characterized by 3 to 15 percent slopes, and composed of an equal mix of Makena loam and Stony land. Permeability of the he Makena loam part of the complex is moderately rapid, runoff is slow to medium, and the erosion hazard is slight to moderate. Permeability on the stony land portion of the complex is very rapid and there is no erosion hazard (Ibid). Soils underlying the project site and surrounding vicinity are shown in Figure 4.

Due to the nature of the ʻaʻā lava substrate there are no loose or loamy soils underlying the site project site. As such, no long-term adverse impacts to soils are anticipated, and any impacts to the disruption and/or transport of soils would be short-term and limited to construction activities. With implementation of BMPs, any potential impacts resulting from construction activities are expected to be less than significant. Construction-related impacts could be caused by land-disturbing activities such as grading and grubbing.

To address potential short-term impacts to soils during construction activities, appropriate erosion and sedimentation control measures would be implemented in compliance with applicable federal, state, and county regulations. Standard construction-phase BMPS might include, among others, the employment of construction dust barriers, the application of water and/or soil stabilization and protection materials, paving of exposed areas as soon as finished grades are achieved, the use of silt fences, berms, cut-off ditches. Silt-fences and other erosion control measures would be inspected and repaired to ensure that they operate as intended.

No short- or long-term adverse impacts to topography are anticipated as a result of the Proposed Action. The project site is relatively flat and implementing the Proposed Action would require no major changes to the site's topography. However, the project site's existing drainage patterns may be modified slightly, minimally increasing the volume of surface runoff that discharges into the adjacent soils. Any changes to drainage patterns are not expected to be significant and would not result in any spillover effect that would adversely impact drainage in areas adjacent to the project site. Site drainage and potential impacts to surface waters are discussed further in Section 3.2.2.

3.1.2. Water Resources

3.1.2.1 Groundwater

The Reserve overlies the Lualailua aquifer system (Kahikinui Aquifer Sector), which extends from Kolekole (Haleakala) south along Palaha Gulch to the coast, from the mouth of Palaha Gulch west to Cape Kinaʻu, and from Cape Kinaʻu northeast along the crest of the southwest rift of Haleakala to Kolekole (Mink and Lau, 1990). Despite the large size of this aquifer system, the estimated sustainable yield of the entire aquifer system is only 11 million gallons per day. A thin, basal groundwater system occurs in the Hana rocks near the rocky shoreline, which has no caprock to retard the seaward travel of groundwater to the ocean.

Groundwater results from the infiltration of precipitation through surface soils into permeable rock materials. Groundwater is the principal source of potable water in Hawaiʻi and occurs in two modes, as 1) high-level ground water that is perched atop low-permeability strata or confined within a dyke system, or as 2) a basal aquifer (Juvik & Juvik, 1998). Groundwater beneath the Reserve is likely located above a low permeability dike, at higher levels than the regional freshwater lens. Based on water quality measurements made in wells located in the Kamaole aquifer system to the north, groundwater underlying the Reserve is likely brackish, with

chloride concentrations on the order of 500 to 1,000 milligrams per liter, or higher. Groundwater beneath the Reserve is not used or likely to be used in the future for drinking water (USACE, 2013).

The project site is not underlain by a potable groundwater source. Furthermore, the local geology comprised of a low permeability dike, at levels higher than the regional freshwater lens would prevent the leaching of potential soil contamination due to surface runoff to groundwater resources. As such, there are no anticipated adverse effects to groundwater quality or groundwater recharge due to the Proposed Action.

3.1.2.2 Surface Water

The coastal marine waters of ʻAhihi Bay are located approximately 200 meters west of the project site. In the State of Hawaiʻi marine waters are divided into Class AA and Class A waters. In accordance with Chapter 11-54-06 HAR, the objective of Class A waters is to ensure that their use for recreational and aesthetic enjoyment is protected. The objective of Class AA waters is to preserve them "in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality of any human-caused source or actions." The waters within the Reserve are designated a Class AA waters.

There are no surface streams within the Reserve, and terrestrial surface water bodies within the Reserve are limited to anchialine (Brackish) ponds. Anchialine ponds are recharged through direct subterranean connection with the ocean and are not a source of drinking water. There are 12 groupings of the unique pools within the Reserve, including the largest in the state. Pond group size ranges from a few tens of square feet (sf) at high tide to more than 20,000 sf at Kauhioaiakini Pond depths vary with the tides and some of them can be less than I-foot deep, but others, can exceed 15 feet in depth. The ponds have variable salinities (8.0-22.0%) and temperatures (22.0-28.0 degrees Celsius) which fluctuate with the tide (DLNR, 2010). Besides the anchialine ponds, no other surface water bodies occur within the Reserve, and given the low annual rainfall (approximately 15 inches), surface water flow from precipitation events is infrequent and ephemeral.

There are no anchialine ponds present within the project site. The nearest anchialine ponds to the project site are located in the Cape Kinaʻu area of the Reserve, approximately 1 mile to the south and 2 miles to the southeast at Nukuele Point and Kalaeloa Point, respectively (Figure 1).

As noted in Section 3.1.1, surface runoff at the project site is extremely limited or nonexistent due to the local geology of the area. Though highly unlikely, as with all construction activities that involve the disturbance of soil or substrate, the potential to impact nearby water bodies through erosion, sedimentation, and runoff during storm events still exists. As such, construction site Best Management Practices (BMPs) would be implemented for storm water runoff prior to and during

construction activities. BMPs would identify the most effective control measures to reduce the amount of soil and sediment transported off-site as a result of construction activities.

The project site's existing drainage patterns may be modified slightly, minimally increasing the volume of surface runoff that discharges into the adjacent soils. Any changes to drainage patterns are not expected to be significant and would not result in any spillover effect that would adversely impact drainage in areas adjacent to the project site. Site drainage and potential impacts to surface waters are discussed further in Section 3.2.2.

3.1.3. Biological Resources

3.1.3.1. Reserve Biological Resources

The Reserve contains some of the most pristine examples of Hawaiian endemic ecosystems associated with recent lava flows. Biological resources found within the Reserve include anchialine pools, coastal marine habitats, coral reef ecosystems, lava flow formations and habitats, remnant native leeward shrublands and forests, and connections between these resources used by native wildlife. Biological resource connectivity is essential for wildlife that travel throughout the slopes of Haleakala and along the shoreline. This land and seascape, relatively free of structures and lights, along with low noise levels, and clear air and sea space, all contribute to providing the high quality wildlife habitat found in the Reserve.

Anchialine pools are surface brackish-water pools, fed underground from both marine and fresh water sources, and lack a surface connection to the sea. As previously noted in Section 3.1.2, the nearest anchialine pools are located approximately 1 to 2 miles south of the project site in the Cape Kinaʻu area of the Reserve. The diversity of shrimp in the pools is the greatest known in the lndo-Pacific, and five of the ten species are listed as candidate species under the Endangered Species Act (ESA). The pools also provide habitat for waterbirds, shorebirds, migratory birds, native herblands and algae. The endangered ae ·a or Hawaiian stilt (*Himantopus mexicanus knudseni*) is known to forage and nest in at least one of the anchialine pool complexes.

In addition to aquatic habitats, these geologic characteristics created at least four unique native terrestrial habitats: aeolian (wind-supported) ecosystems on un-vegetated lava; lava tube cave and associated subterranean voids; littoral (associated with the marine coast) habitats; and seabird nesting habitats. One of the native insects found in the Reserve is the Blackburn's Sphinx Moth (*Manduca blackburni*), the first Hawaiian insect to be listed as endangered under the ESA. The Reserve serves as and was officially designated critical habitat for the Moth designated by the U.S. Fish & Wildlife Services in 2003.

Botanically, the Reserve is part of the lowland dry ecotype. Although comprised almost entirely of un-vegetated lava, there are kipuka (vegetated oasis within lava beds) where remnant native plants are found among the dominant non-native trees. Compared to the historical extent of this ecotype for the island of Maui,less than 2% of this native lowland vegetation is left today. The life cycles of plants here are keyed to a very severe and prolonged dry season and variable wet season. The endemic wiliwili (*Erythrina sandwicensis*) is the dominant tree of the remnant native dry forest zone and in the Reserve. The Reserve contains 21 native plant species, several of which are now rare (Hawai'i Heritage 1989).

Five marine species with protected status frequent the Reserve: Hawaiian Monk seal or 'llio-holo-i-ka-uaua (*Monachus schauinslandi*); Hawksbillturtle or 'ea (*Eretmochelys imbricata*); Green Sea turtle or honu (*Chelonia mydas*); Spinner dolphin or nai'a (*Stenella longirostris longirostris*); and Humpback whale or kohalii (*Megaptera novaeangliae*). The Hawaiian Monk seal, Hawksbill turtle, Green Sea turtle, and Humpback whale are all listed as endangered or threatened under the ESA. The entire marine portion of the Reserve is encompassed by the Hawaiian Islands Humpback Whale National Marine Sanctuary.

The coral reefs of the Reserve are among the most robust in the main Hawaiian Islands. A long-term study of nine Maui reefs indicated that the reefs off of Kanahena were the only Maui reefs to increase coral cover in recent years (17%-30% 1999-2006). At least 33 species of coral,53 species of subtidal invertebrate, and 75 species of fish (17 endemic) were accounted for in the Reserve (DLNR, 2012).

3.1.3.2. Project site Biological Resources

A biological survey of the proposed project site was conducted in support of this EA. The information presented below is based, in large part, on the findings of the biological survey which is attached as Appendix C.

The project site is largely comprised of a large previously disturbed open area of graded ʻaʻā lava (approximately 22,400 square feet) which is subject to heavy human use. A smaller portion (approximately 8,600 square feet) of the project site contains a small sparsely-vegetated area (comprising approximately 3,300 square feet). Terrestrial vegetation within the project area consists primarily of non-native flora, including weedy grasses,herbaceous plants, and a few scattered kiawe trees and shrubs.

During a recent survey a total of 48 plant species were identified at the project site. Of the 48 species, only four species were indigenous native plants, including, kipukai (*Heliotropium curassavicum*), ʻilima (*Sida fallax*), ʻuhaloa (*Waltheria indica*), and the endemic Maiapilo (*Capparis sandwichiana*). The remaining 44 species present are non-native, and include kiawe trees (*Prosopsis spp*.), and a variety of common weedy grasses and other herbaceous species. A complete list of plants present at the project site can be found in Appendix C.

The number and diversity of fauna present at the project site is relatively limited due to the fact that it is a previously disturbed area subject to heavy human use. A total of nine faunal species were observed during the biological survey of the project site. All fauna observed were non-native species and included three birds, one herptile, and four obvious arthropods (all butterfly species). No rare native or endangered species of any taxon were observed in the proposed project site. A review of all host plants for the endangered Blackburn's sphinx moth (*Manduca blacburni*) found no evidence of its presence or foraging. A complete list of fauna present at the project site can be found in Appendix C.

While the species observed are not a representative review of the invertebrate fauna that inhabit the current parking area – it remains unlikely that rare native taxa are present or expected to be present. It is likely that these would be the main affected temporarily displaced fauna during any construction activities, with possibly a few more non-native bird species being present at the site [for ex. Myna (*Acridotheres tristis*), Northern Cardinal (*Cardinalis cardinalis*), and House Sparrow (*Passer domesticus*)].

Due to the limited (predominantly non-native) biota present and the highly disturbed condition within the project site and its relative distance from sensitive marine and terrestrial ecosystems within the Reserve, the Proposed Action is not anticipated to adversely impact biological resources.

3.1.4. Air Quality

Air quality in the project area, as with most areas of the island of Maui, is generally considered good due to the presence of prevailing northeast trade winds from inland areas out to sea. Likewise, at the project site air quality is also considered good as it is in a coastal area and is also influenced heavily by circulating ocean winds.

Short-term impacts to localized air quality would likely be generated by construction activities at the project site. Construction vehicular activity would increase automotive pollutant concentrations at the project site. Construction activities would also generate fugitive dust emissions resulting in an increase of particulate matter levels in the project area. However, these sources of pollutants are temporary in nature and would not result in long term adverse impacts on the ambient air quality.

During the construction period, fugitive dust control measures would be implemented to reduce the amount of particulate matter emissions at the site in conformance with state Department of Health administrative rules, Title 11, Chapter 60 (Air Pollution). The erection of dust screens around the construction site and the frequent watering of unpaved, newly graded areas can help with on-site dust control. Dust would be further minimized by paving newly graded areas as soon as practicable.

No long-term adverse impacts to air quality resulting from future operational activities are expected as use of the site will remain unchanged and the Proposed Action will not increase the discharge of vehicular emissions. The baseline impact of vehicular emissions is less than significant since a strong trade wind persistent in the islands disperses air pollutants rapidly and minimizes any significant impacts.

3.1.5. Climate and Natural Hazards

Due to the location of the Hawaiian Islands in the northern tropics, Maui's climate is mild and pleasant, primarily due to the presence of cooling trade winds. Average temperatures in the lowlands are approximately 72.5 degrees Fahrenheit (°F) (22.5 degrees Celsius [°C]), with decreasing temperatures in higher elevations. Temperatures are coolest in January (59 °F or 15 °C) and warmest in August (89 °F or 31.7 °C). Relative humidity on Maui ranges from 30 to 90 percent. The main mechanism for rainfall is warm, moist ocean air rising and cooling as it passes over the mountains causing precipitation. This results in higher rainfall in the windward and mountain areas, and little in the leeward and coastal zones. Rainfall ranges from approximately 40 centimeters per year (cm/yr) in the leeward coastal areas up to approximately 700 cm/yr on the crest of Haleakala (Juvik, et. Al, 1998).

The climate of the Kanahena area is typical of the southern coastal lowlands of Maui. The area is characterized by abundant sunshine, persistent trade winds, relatively constant temperatures, moderate humidity, and infrequent severe storms. Solar radiation is among the highest in the state. The dark color of the lava absorbs solar radiation, which creates warmer conditions in the Reserve (approx. 500 calories/m2/day) relative to the surrounding areas (DLNR, 2012; Rodgers et al. 2008).

Rainfall in the Reserve ranges from 15 inches along the coastline, to 24 inches per year along the mauka (upland) boundary. The Kanahena area of the Reserve averages approximately 13 inches of rain per year. There is distinct seasonal variability in rainfall, with much of the precipitation from winter storms. Major widespread rainstorms, which account for the bulk of the precipitation in the area, usually occur several times during each wet season, but are infrequent in the dry season. Approximately 50 percent of the normal annual rainfall occurs in the three months of December through February, and over 80 percent in the six months of the wet season. June is the driest month, receiving about 1 percent of the annual total. Occasionally, an entire dry season month will go by with no measurable precipitation. At the other extreme, a single wet season storm sometimes contributes more than one-half the total rainfall in an individual year (USACE, 2013; DLNR, 2012).

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps for Maui, the project site is located within zone X. Zone X refers to areas determined to be outside of the 0.2 percent annual chance floodplain. The project site is located outside of both the 100-year floodplain (zone AE) and the 100-year coastal floodplain (zone VE) which are located several hundred yards west of the project site as shown in Figure 5 (FEMA 2012).

Natural hazards which can potentially impact the project site include seismic events (earthquakes), tsunami, and hurricanes. Areas most susceptible to earthquake damage are areas that are built on unconsolidated sediments that will tend to experience heightened ground motion. The project site is situated on consolidated sediment (i.e., ʻaʻā lava) relatively minimizing susceptibility to adverse

impacts from seismic activity. The entire project site is located within the tsunami evacuation zone and in the event of a passing hurricane the project site's coastal location increases its potential to be adversely impacted by both wind and high wave action. Potential adverse impacts associated with high waves generated by tsunami or hurricanes at the project site include debris over wash, flooding, erosion, high wave energy and turbulence in the nearshore zone, and strong currents. However, such events are mitigated through the Maui County Civil Defense Agency which is responsible for administering and operating the various local, state, and federal civil defense programs for the County which includes planning, preparing, and coordinating civil defense operations in meeting disaster situations and coordinating post-disaster recovery operations.

3.2. Man-Made Environment

3.2.1. Land Use

As previously noted, the Reserve was established in 1973 with the objective of preserving unique geologic, biological, and cultural resources of the area. Of the 1,238-acre terrestrial portion of the Reserve only 24.5 acres (approximately 2%) is accessible to the public. The remaining areas of the Reserve were closed to the public August 2008 to address adverse impacts to and for the protection of the natural, geological, and cultural resources found within the Reserve (DLNR, 2008, 2012). Additionally, subsequent identification of unexploded ordnance (UXO) within the Reserve required closure of large areas of the Reserve in the interest of public safety (see Section 3.2.3). The 31,000-square foot project site [identified by tax map key (TMK): (2) 2-1-004-073 (por.)], is located entirely within a publically accessible area of the Reserve and is utilized by the state DLNR-DOFAW staff, volunteers, and the Reserve visitors for vehicular parking (see Figure 2).

The State of Hawaiʻi's Land Use Commission sets the boundaries and classifies all lands within the State into one of four district classifications; Conservation, Agricultural, Rural, and Urban. The State maintains jurisdiction and administration over all Conservation District land. All lands within the Reserve are designated State Land Use Conservation District. Land immediately adjacent to the Reserve to the north, east, and south are designated Agriculture District. Urban and Rural State land use designations are located approximately one mile north of the project site. State Land Use Designations of the project site and the surrounding vicinity are shown in Figure 6.

Lands underlying the project site are zoned PK (Park) by the County of Maui. Lands immediately north of and adjacent to the project site are zoned for Conservation use. In addition to Park and Conservation zoning designations, lands extending approximately 1 to 3 miles north of the project site also include county zoning designations of Agriculture, Rural, Hotel, Single Family, Multi-Family, Park-Golf Course, and Open Space. The project site also lies within the County of Maui, Special Management Area (SMA). As such, a SMA Assessment Application will be prepared for the Proposed Action and submitted to the Maui County Planning Department for review and approval. County land use and zoning designations of the project site and surrounding vicinity are shown in Figure 7.

Potential impacts on land use would be considered significant if access to an adjacent property is impaired or land use is disrupted to the extent that existing activities are precluded. Incompatibility with planned use of surrounding land or conflicts with land use policy would also be considered a significant impact.

Existing land use at the project site is a designated parking lot to accommodate Reserve workers, volunteers, and visitors and their vehicles. No change in land use is proposed as a result of the Proposed Action. The Proposed Action would result in the continued public use at the project site and would continue to be consistent with existing land use at the project site and of the surrounding area. Disruptions resulting from construction-related activities will be short-term and temporary and would not permanently alter or impact land use. Over the long-term, the Proposed Action would result in beneficial impacts as existing parking facilities are improved to better accommodate Reserve visitors.

3.2.2. Infrastructure and Utilities

The project site and its immediate surroundings are situated entirely within the Reserve established for conservation purposes. Not intended for development, lands within the Reserve contain no or limited infrastructure and public services. A large sign with the name of the Reserve and a map of the boundaries is located at the Reserve entry at the western end of South Makena Road. The existing unpaved parking lot is located approximately 100 meters further down the coast east of the Reserve entry (Figure 1). Within the project vicinity various signage is posted, including signs stating Reserve restrictions, access restrictions, UXO threat, and other informational signage is located further along the road, at a public parking area and restricted access trail heads at La Perouse Bay/Keoeoio, which is located approximately two miles southeast of the project site and outside of the Reserve. Similarly, utilities within the project site are also limited consisting of a small trailer (i.e., on-site DLNR office) within a barbed wire fence, and portable toilets (see Appendix B). Overhead power lines and a water pipeline run parallel of the road that traverses the Reserve, serving the households and Makena Stables at the east end of South Makena Road (Figure 1).

Drainage

There is no existing drainage infrastructure (e.g.., sewer lines, drainage ditches, culverts, etc.) at the project site. As previously mentioned in Section 3.1.1, surface runoff from rainfall at the project site, its immediate surroundings, and most all of the Reserve is extremely limited or non-existent due to the highly porous and permeable characteristics of the underlying ʻaʻā lava substrate.

In the long-term, the Proposed Action would result in approximately 31,000 square feet of additional impervious surface at the project site. Relative to the Reserve as a whole the proposed impervious surface area is negligible. As with any impervious parking or driving surface, increased surface runoff, and the potential release of some vehicle-derived contaminants therein

is unavoidable. However, potential impacts are not anticipated to be significant, as such releases would remain similar in scale to existing conditions.

As previously discussed, the a'a lava underlying the project site and immediate surrounding area is highly porous and not susceptible to surface runoff. Therefore, any surface runoff generated from on-site impervious surfaces would permeate into, the surrounding ʻaʻā lava. The potential migration of surface runoff into the nearest coastal marine waters (located approximately 200 meters from the project site), would be prevented by the surrounding substrate which would function as a natural retention and filtration system.

The Proposed Action is presently in its conceptual stages and final design details have not yet been developed. However, preliminary design and construction elements would include paving the area per applicable DLNR Engineering Division standards. Additionally, the concrete will be broom finish with grooved lines running parallel to the coastline, and the pavement will be sloped NW to SE so that storm water runoff is directed into adjacent clinker a'a lava for natural filtration through percolation. As a result, no storm water runoff is anticipated to reach nearshore waters or threaten flora or fauna in the area

Preliminary storm water runoff calculations estimate a total of 0.43 cubic feet per second (cfs) as the existing net flow off the project site assuming a 10-year storm reoccurrence. After construction of the Proposed Action the flow is estimated to be 1.37 cfs. This equates to a minimal storm water flow increase of 0.94 cfs as a result of the Proposed Action. As previously noted, this additional surface water will not run into the ocean or other sensitive areas, as it will be directed in a diffuse manner, and absorbed into to the surrounding porous lava. Preliminary concrete paving specifications and storm water runoff calculations are attached as Appendix D.

Furthermore, the Proposed Action will be in full compliance with all applicable design standards contained in the County of Maui Department of Public Works and Waste Management - *Rules for the Design of Storm Drainage Facilities (Title MC-15, Chapter 4)*. During the design-build phase of the Proposed Action, specific project features to address surface runoff and storm water management may also be developed to further lessen impacts to drainage and surface waters. In addition, to the Proposed Action's design features intended to minimize and manage storm water runoff, operational protocols can be implemented that would further mitigate impacts to surface waters and drainage. Operational protocols could include such activities as imposing rules/constraints on Reserve visitors, as well as educating visitors as to the effect their actions can have on the Reserve and environmentally sensitive water resources.

In summary, the Proposed Action is not anticipated to result in significant adverse impacts from storm water runoff and/or potential pollutants entering coastal marine waters. The Proposed Action would minimally increase peak storm water runoff from the project site (by less than 1 cfs), and would not significantly increase existing storm water volume flows and infiltration rates at the project site and immediate surrounding area.

3.2.3. Public Safety and Health

During the mid-1940's the U.S. Navy used the lands within the existing Reserve for bombing practice exercises. Approximately 75% of the Reserve landside area, extending from the coast to approximately one mile inland were impacted by these bombing exercises resulting in the presence of residual UXO within the Reserve. To address the nature and extent of potential munitions and explosives of concern (MEC) remaining within the Reserve the U.S. Army Corps of Engineers – Honolulu District (USACE) completed a remedial investigation (RI) in 2013. Subsequently, the USACE completed a feasibility study (FS) in 2015 for the purpose of developing and evaluating effective remediation alternatives. Based on the findings of the RI and FS the remedial action selected to address potential remaining MEC within the Reserve was limited surface removal and educational signage. The proposed remedial action is yet to be fully implemented and completed (USACE, 2013, 2015).

Due to the past use of Reserve lands by the military for bombing practice potential remaining UXO presents a hazard to public health and safety. The Reserve contains information signage in various locations informing the public of potential UXO hazards. Further limiting the probability of potential UXO encounters by the public all areas within the Reserve with known or likely presence of remnant UXO are closed to the public.

The majority of areas identified as containing UXO are concentrated in the Cape Kinaʻu area of the Reserve. These UXO-containing areas are located approximately 1 -2 miles from the project site. No adverse significant impacts related to UXO hazards are anticipated as there no known UXO in the nearby vicinity or within the project site (USACE, 2013).

Fire and police protection services at the project site and the surrounding South Maui area are provided by the County of Maui Police and Fire Departments, respectively. The nearest fire and police stations are located in in the nearby town of Wailea approximately 5 miles north of the project site. Ambulance and pre-hospital emergency medical services (EMS) is provided to all residents and visitors on Maui by American Medical Response services. Public safety and health-related incidents at the project site are mainly associated with minor physical injuries to visitors as a result of hiking and/or in-water recreational activities, vehicular-related accidents, and petty criminal activities (e.g., auto break-in and/or thefts) at times requiring the above-described emergency services.

Efficient and effective access to the project site by EMS, fire, and police emergency service vehicles is often hindered due to the unimproved conditions of the existing parking lot. The Proposed Action would result in beneficial impacts to public safety and health. The clearly delineated parking stalls and directional internal traffic circulation pattern would reduce vehicle-related accidents. The proposed paved concrete surface would further reduce physical pedestrian-related injuries to visitors as a result of accidents due to the rough and uneven surface of the existing graded ʻaʻā lava (Appendix B). The proposed paved surface improvements would make site conditions more accessible and safe for disabled persons in particular. Lastly, the Prosed Action allows for a designated area reserved for emergency service vehicles only. This restricted area would be located along the southern boundary of the new parking lot allowing for efficient access to the entire project site and nearby shoreline (Figure 3).

3.2.4. Recreational and Aesthetic Resources

The Reserve is a popular destination for both visitors and Maui residents alike. With more new residents and visitors in southwest Maui and the paving of the government road to La Perouse Bay/Keone'o'io in the 1990s, the Reserve and adjacent areas have become an increasingly popular recreation destination. A survey conducted during the mid-1990's recorded as many as 805 people per day visited the Reserve, and approximately 75 percent of the visitors were out-of-state visitors. The survey further estimated that nearly 10 percent of all Maui visitors go to the Reserve, making it the third most visited attraction on Maui (HWF, 2006).

Despite its popularity as a visitor attraction, the majority of the terrestrial portion of the Reserve (approximately 1,213 acres or 98%) was closed to recreational users in August 2008 to address adverse impacts to and for the protection of the natural, geological, and cultural resources found within the Reserve (DLNR, 2012). Since the closure of large areas within the Reserve it is estimated that an average of 700 visitors per day or approximately 250,000 total visitors per year visit the Reserve (Vann et al. 2006; HWF 2007; HWF 2008).

Recreational activities in the project area include hiking and general site seeing activities on land, and ocean recreational activities include swimming, snorkeling, and surfing. The popular surf break "Dumps" is located directly off-shore and approximately 300 yards from the project site, and a public hiking trail originates at the "Dumps" Parking Lot

Recreational activities will be affected by temporary, short-term construction-related activities (i.e., use of temporary parking areas and/or closure of construction areas). It is anticipated that implementation of the Proposed Action would result in long-term beneficial impacts on recreational activities at the project site by addressing many of the same issues discussed in Sections 2.2.2 and 3.2.2 above.

Visual and aesthetic resources include scenic vistas, scenic overlooks, unique topography, or visual landmarks having scenic value. The surrounding landscape at the project site, located within a natural area reserve, is aesthetically beautiful, biologically and geologically unique, and culturally important. It affords sweeping views of Haleakala volcano's southwest rift zone, the West Maui Mountains, the islands of Kaho'olawe, Lanai, and Molokini, and the surrounding ocean.

Impacts to this visual and aesthetic resources are evaluated on the basis of the amount or severity of change to the aesthetic and visual resources of the affected environment, as well as the resulting extent of diminished viewing opportunities or enjoyment.

No long-term adverse impacts to visual and aesthetic resources are not anticipated as a result of the Proposed Action. The appearance of Proposed Action would be consistent with the visual aesthetic of the existing project site and landscape of the surrounding area (Appendix B). Furthermore, due to the extreme roughness and fractured nature of the ʻaʻā lava terrain, the surrounding area is extremely difficult to traverse on foot for sightseeing and/or hiking activities by visitors. Therefore. long-term beneficial impacts to visual and aesthetic resources may result

from the Proposed Action as it would provide an improved, safer, easily accessible, and open viewing area from which visitors can engage in sightseeing activities.

3.2.5. Traffic and Circulation

The project site is bounded by South Makena Road along its northern boundary. South Makena Road is a paved two-way undivided roadway and it is the only road access to the project site and into the Reserve. Relative to nearby developed areas (i.e., Kihei, Wailea, and Makena) overall traffic volumes within the Reserve are light. In 2001, visitor counts recorded for the entire Reserve were 805 people per day and as many as 339 vehicles per day (CSV Consultants and HWF 2007). However, since the closure of large areas of the Reserve to the public, in recent years the Reserve averages approximately 700 visitors per day or 250,000 visitors per year (Vann et al. 2006; CSV Consultants and HWF 2007; HWF 2008).

Traffic volumes and circulation patterns at the project site are highly variable. The number of visitor vehicles utilizing the existing parking lot is greatly influenced by the weather, ocean conditions, and the time of year, In general, visitor vehicle volumes at the project site are highest during the summer months (i.e., between June-September) when surf is favorable due to the frequency of incoming southern swells. The parking lot also experiences an increased number of visitor vehicles during the Holiday season. The number of vehicles utilizing the project site can vary from a low of approximately 25 vehicles per day to a high of 150 vehicles per day. The average number of vehicles utilizing the project site during a given year is estimated to be approximately 100 vehicles per day (DLNR, 2015).

When vehicle volumes are very high and the parking lot is approaching capacity (i.e., between 40-50 vehicles) internal traffic circulation and vehicle parking can be highly disorganized and haphazard. The lack of a uniform directional traffic flow and disorganized parking practices contribute to unsafe conditions for both vehicles and pedestrians within the parking lot.

Short-term impacts may result in the form of the temporary displacement and/or disruption of parking access and facilities during construction activities. To minimize disruption to visitor access and parking, surfaces will be paved in phases and/or by sections, to the extent practicable, to allow for concurrent vehicular access in areas of the parking lot not undergoing construction activities.

In the long-term, it is anticipated that the Proposed Action will result in beneficial impacts to traffic and circulation as it would create more favorable conditions for DLNR staff to manage and control the number of vehicles utilizing the parking lot and prevent capacity from being exceeded. Proposed improvements would alleviate vehicular and pedestrian congestion by providing

dedicated ingress and egress points, wide access aisles, a fixed number of marked parking stalls, and controlled unidirectional traffic flow.

3.2.6. Noise Environment

Due to the predominantly natural surroundings, sound levels within the Reserve are relatively low compared to more populated areas. In the vicinity of the project site, ambient sound levels are influenced primarily by natural ambient noise such as wind and ocean surf. Additionally, sight-seeing visitor activities also comprise the background noise environment in the project area. Impacts of sound on the environment are determined by several factors including, sound level (loudness), the duration of exposure to the noise, the frequencies involved, and the variation or fluctuations in noise levels during exposure.

No adverse long-term operational noise impacts are anticipated as there will be no change in the existing land use at the project site. Short-term noise impacts generated from construction-related activities at the project site would result from the Proposed Action. Noise generated by such activities (e.g. earth moving equipment, construction vehicles, etc.) can generate intermittently high noise levels, particularly during close-in construction work. However, these impacts would be short-term and temporary in nature and would not result in long-term adverse impacts to the surrounding noise environment. Short–term noise impacts activities would be conducted in compliance and mitigated in accordance with DOH regulations for Community Noise Control (HAR 11-46).

3.2.7. Archaeological, Historic, and Cultural Resources

This section addresses the archaeological, historic, and cultural resources that could potentially be affected by the Proposed Action. An archaeological assessment was prepared in support of the Proposed Action and the contents of this section is based primarily on the findings of this assessment (included as Appendix E).

The Reserve has numerous archeological features and cultural landscapes including both pre-European contact and post-contact Native Hawaiian village sites, heiau (religious sites), burials, trails, shelters, caves, loko i'a complexes, ranching walls, and a lighthouse site. It also includes traditional place names, genealogies, records of travel, oral histories, ecological knowledge, and mythology of Hawaiian deities. The cultural landscape includes the entirety of the landscape itself, the physical history, and living connections to the place and the past. Cultural and historic sites within the boundaries of the Reserve are protected by Hawai'i Administrative Rules {HAR) § 13-209-4. There are nine site complexes in the Reserve are on the Hawai'i Register of Historic Places, including the Ma'onakala Village Complex, Kualapa Cluster, Kauhuoaiakini and Halua Pool Complex.

Of the nine complexes, the Ma`onakala Village Complex (Site No.s: 1018 and 3995) is nearest to the project site, situated approximately 200 yards to the south. The Ma`onakala Village Complex contains a canoe shed, a heiau, a well, several housing enclosures, plus 65 supplemental features

located to the northwest (Site 3995). In addition, the Ma`onakala Village Complex had an extensive trail network including two trails (Sites 8024 and 8025) located approximately 50 yards east of the project site (DLNR, 2015b). Cultural resources within the vicinity of the project site are shown in Figure 8.

No known cultural or archaeological features have been identified within the proposed project site. There is a low likelihood of finding surface sites within the project area. Within the existing parking lot the *ʻaʻā* lava rock has been graded and any features on the landscape would have long since been destroyed. Although two documented traditional Hawaiian trails (Sites 8024 and 8025) are located east of the parking lot, they are outside the proposed project site and will not be impacted by the paving of the site. It is therefore anticipated that the proposed project will have 'no effect' on historic properties (DLNR, 2015b).

3.2.8. Socioeconomic Setting

The socio-economic environment is a reflection of economic and social factors on the island. Beginning in the 1970s, Maui, more than any other Hawaiian Island, experienced dramatic population growth, doubling between 1980 (63,000 residents) and 2000 (128,000 residents). The estimated overall population of Maui today is approximately 160,000. The defacto island population (residents plus visitors) which can be 30-50,000 people greater, depending on the time of year has been estimated at approximately 201,870 persons on average (Maui County, 2013)..

The population increases on Maui over the past 35 years are reflected in the nearby communities of Kihei, Wailea, and Makena located within 10 miles of the Reserve. In 1980, from Kihei to Makena, a population of 7,263 people lived in a quiet rural area with miles of uncrowded beaches and a few small hotels. Today, the area comprising Kihei, Wailea, and Makena is the second largest tourism area on Maui, with a resident population of approximately 27,000 people, in a 10-mile stretch of urban development (Maui County, 2013).

Potential socio-economic impacts would be considered significant if implementation of the project would result in: a sudden and substantial change to population, such that it would produce measurable indirect effects on the County of Maui's economy, or demand on public services and facilities; a sudden change in employment that would impact the economic vitality of Maui County; or a sudden and substantial change to housing demands or availability.

The Proposed Action would result in beneficial impacts on both short-term and long-term socio-economic conditions. Short-term beneficial impacts would result from the creation of construction and construction-related support jobs for civilian contractors and crews. Additionally, the local purchase of goods and services would add to overall business and tax revenue.

The Proposed Action would result in long-term beneficial economic impacts due to the proposed $5.00 entrance fee for non-resident visitors utilizing the parking lot. As discussed in Sections

3.2.4 and 3.2.5, it is estimated that the proposed parking lot will receive approximately 100 vehicles per day, of which non-resident visitors would comprise approximately 75%. As such, the Proposed Action is estimated to generate additional revenue of approximately $19,500 annually from non-resident parking fees. Revenue generated from proposed parking fees would result in long-term beneficial impacts as these funds would be allocated to ongoing management and conservation efforts at the Reserve

3.3. Cumulative and Secondary Impacts

Cumulative effects are defined by Title 11, Chapter 200, Hawai'i Administrative Rules (HAR), Environmental Impact Statement Rules as

> *"The impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. "*

A "secondary impact" or "indirect effect" from the proposed action is defined by Title 11, Chapter 200, HAR, as

> *"effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. "*

Due to the fact, the project site is located within a natural area reserve, over the years construction projects occurring in the project site vicinity have been minimal in terms of both occurrence and scale. Similarly, the number of possible future projects proposed in the project site vicinity are limited as well.

Currently, only two minor Reserve improvement projects are proposed within the vicinity of the project site. The first proposed project involves construction of a small, shaded-providing, visitor station and kiosk with interpretive signage, and the second project consists of making ADA access improvements to the existing visitor pathway which may extend to an ocean viewing platform. Approximate implementation dates for these two projects are CY 2017 and 2018, respectively.

In terms of scale, both projects are substantially smaller relative to the Proposed Action. Though both projects will be proximal to the project site, and will eventually compliment the Proposed Action, both are stand-alone projects independent of each other and the Proposed Action. As such, the Proposed Action is not part of a larger action, and in this regard is not anticipated to cumulatively have a negative effect on the environment.

In Summary, the Proposed Action would aid DNLR-DOFAW staff by limiting the volume and facilitate the management of vehicles utilizing the project site. The Proposed Action will not result in a change of land use or increase the number of vehicles and/or visitors to the Reserve. Additionally, there are no reasonably foreseeable effects associated with the Proposed Action that would result in adverse secondary impacts. Conversely, the Proposed Action would result in

beneficial secondary impacts with respect to public safety, traffic, and economic impacts. As discussed in previous sections of this EA any adverse impacts associated with implementation of the Proposed Action would be associated with construction activities and would be limited, short-term, and insignificant in nature.

4. DETERMINATION

The DLNR-DOFAW has determined that a finding of no significant impact is applicable for the proposed action and therefore an environmental impact statement will not be required. This negative determination has been made in accordance with the following significance criteria specified in Section 11-200-12 of the Department of Health rules relating to Environmental Impact Statements:

1. The proposed project will not involve an irrevocable commitment, loss or destruction of any natural or cultural resources. No significant natural or cultural resources will be committed or lost. The project site is a highly disturbed area already utilized for vehicle parking and it contains no significant natural or cultural resources
2. The proposed project will not curtail the range of beneficial uses of the environment. The proposed project enhances and in no way curtails beneficial uses of the existing environment at the project site. This is particularly true when considering the benefits the proposed improvements would provide both visitors and DLNR staff.
3. The propose project will not conflict with the state's long-term environmental policies. The state's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of the policy are to conserve natural resources and enhance the quality of life. This project fulfills these policies by improving existing facilities in the Reserve and implementing the goals, objectives, and strategies of the AKMP.
4. The proposed project will not substantially affect the economic or social welfare of the community or state. The Reserve will continue to benefit and serve the local surrounding communities and over time the Proposed Action will benefit the operation, management, and revenue of the Reserve in the long-term.
5. The proposed project does not substantially affect the public health in any detrimental way. As previously discussed in Sections 3.2.3 and 3.2.5, the project will benefit the public health in both the short and long-term
6. The proposed project will not involve substantial secondary impacts such as population changes or effects on public facilities. No secondary effects are anticipated to result from the proposed action, nor will it induce significant in-migration or adversely affect public facilities.
7. The proposed project will not involve a substantial degradation of environmental quality. The intent of the Proposed Action is to continue supporting DLNR's efforts to protect and preserve the unique natural and cultural resources found within the Reserve.
8. The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat. As previously noted, the intent of the Proposed Action is to continue supporting DLNR's efforts to protect and preserve the unique natural and cultural resources found within the Reserve by improving existing facilities in the Reserve and implementing the goals, objectives, and strategies of the AKMP
9. The proposed project is not one which is individually limited but cumulatively may have considerable effects upon the environment or involves a commitment for larger actions. The

project is not related to additional activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.

10. The proposed project will not detrimentally affect air or water quality or ambient noise levels. No adverse effects on these resources will occur. Mitigation of construction phase impacts will preserve the quality of said environmental attributes. Disturbance during the construction activities will be short-term and temporary and limited to reasonable daytime hours.
11. The project does not affect or would it likely to be damaged as a result of being located in environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous lane, estuary, fresh water, or coastal area. The project site is located in a coastal area and within a tsunami inundation zone. Additionally, the project site is in an area with seismic risk. However, all coastal areas and the entire Island of Maui share these risks, and the project will employ design standards appropriate for the seismic zone to the extent practicable.
12. The project will not substantially affect scenic vistas and view planes identified in the county or state plans or studies. No scenic view will be adversely affected by the project. The Proposed Action will.be consistent with the visual aesthetic of the existing project site and landscape of the surrounding area. Long-term beneficial impacts to visual and aesthetic resources may result from the Proposed Action as it would provide an improved, safer, easily accessible, and open viewing area from which visitors can engage in sightseeing activities.
13. The project will not require substantial energy consumption. Initial construction of the facility will require additional but limited consumption of energy. The Proposed Action will have no adverse effects on the limited existing energy utilities servicing the nearby surrounding area.

5. RELATIONSHIP TO PLANS POLICIES AND CONTROLS

5.1. State Land Use Law

All lands within the State of Hawaiʻi are classified into one of four land use districts – Urban, Rural, Agriculture, or Conservation – by the State Land Use Commission pursuant to Chapter 205, HRS. The Reserve and proposed project site lie within the State Land Use Conservation District and conforms to permissible uses therein.

5.2 The Hawaiʻi State Plan

Chapter 226, Hawaiʻi Revised Statutes (HRS), also known as the Hawaiʻi State Plan, is a long-range comprehensive plan, which serves as a guide for the future long-range development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. The proposed action is consistent with the following goals of the Hawaiʻi State Plan:

- *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.*
- *Physical, social, and economic well-being, for individuals and families in Hawaiʻi, that nourishes a sense of community responsibility, of caring, and of participation in community life.*

The proposed action is consistent with the following objectives and policies of the Hawaiʻi State Plan:

Chapter 226-11, HRS, Objectives and Policies for the Physical Environment - Land-Based, Shoreline, and Marine Resources.

226-ll(b)(l), HRS: *Exercise an overall conservation ethic in use of Hawai'i's natural resources.*

226-ll(b)(3), HRS: *Take into account the physical attributes of areas when planning and designing activities and facilities.*

226-ll(b)(4), HRS: *Manage natural resources and environment to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.*

226-ll(b)(S), HRS: *Pursue compatible relationships among activities, facilities, and natural resources.*

226-ll(b)(9), HRS: *Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.*

Chapter 226-12, HRS, Objectives and Policies for the Physical Environment- Scenic, Natural Beauty, and Historic Resources.

226-12(b)(3), HRS: *Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.*

226-12(b)(S), HRS: *Encourage the design of developmentsand activities that complement the natural beauty of the islands.*

Chapter 226-23 HRS, Objectives and Policies for Socio-Cultural Advancement - Leisure.

226-23(b)(1), HRS *Foster and preserve Hawai‘i's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.*

226-23(b)(2), HRS: *Promote a wide range of activities andfacilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.*

226-23(b)(3), HRS: *Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.*

226-23(b)(4), HRS: *Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.*

***226-23(b)(5), HRS*:** *Ensure opportunities for everyone to use and enjoy Hawai‘i's recreational resources.*

226-23(b)(10), HRS: *Assure adequate access to significant natural and cultural resources inpublic ownership.*

5.3 State of Hawai‘i Environmental Policy

Chapter 344, HRS, the State Environmental Policy, encourages productive and enjoyable harmony between people and their environment. The policy promotes efforts which will prevent or eliminate damage to the environment and biosphere, stimulate the health and welfare of humanity, and enrich the people of Hawai‘i’s understanding of ecological systems and natural resources. The Environmental Policy seeks to conserve natural resources and enhance the quality of life for residents of Hawai‘i. Expanding citizen participation in the decision-making process is one of the guidelines specified in Chapter 344, HRS. During the EA’s pre-assessment consultation process, comments were solicited from federal, state, and county agencies; public services; private interests; and other potentially interested parties (presented in Appendix E).

5.4 ʻAhihi Kinaʻu Natural Area Reserve Management Plan

As discussed earlier in this EA, the state's Natural Area Reserves System was established in 1970 by the Hawaiʻi Legislature (Hawaiʻi Revised Statutes [HRS] 195-1) to protect the best examples of Hawai'i's remaining ecology and geology. As such, DLNR-DOFAW prepared the *ʻAhihi Kianu Natural Area Reserve Management Plan* to fulfill the mandate to protect and preserve Hawai'i's "unique geological and volcanological features and distinctive marine and terrestrial plants and animals ...both for the enjoyment of future generations, and to provide baselines against which changes being made in the environments of Hawai'i can be measured. The Proposed Action fulfills a number of management goals, objectives, and actions outlined in the AKMP needed to preserve, protect, and enhance the biological and cultural resources of the Reserve including:

Goal 1: Build and Maintain the Reserve's Management Capacity.

Objective M1: Secure and sustain the level of human and financial resources needed.

Strategic Actions and Tasks:

d) Establish a Reserve user fee program
(v) Implement user fee program and initiate process to collect and manage revenues generated;
(vi) Communicate clearly to Reserve visitors what their fees are used for in supporting Reserve management

Objective M3: Provide onsite infrastructure to meet management needs.

Strategic Actions and Tasks:

a) Complete the Reserve's facility and infrastructure planning
(iv) During 2016, implement plans to build and maintain necessary facilities, infrastructure, and equipment.
b) Improve and maintain Reserve access gates and roads
c) Improve and maintain onsite facilities
(iii) Improve and maintain visitor facilities within the Reserve, including parking, lavatories, informational stations, and interpretive areas.

Goal 2: Manage human use.

Objective H1: Reduce negative impacts of visitors and increase safety.

Strategic Actions and Tasks:

a) Manage visitors and access points
(ii) Set parking limits by establishing parking stalls with low tech, attractive, practical materials for existing unpaved area at Kanahena
d) Gather relevant information regarding visitor levels and behavior

5.5 Maui County General Plan 2030

The General Plan is a term for a bundle of plan documents that guide future growth and policy direction in Maui County. The Maui County General Plan – Countywide Policy Plan (CPP) acts as an over-arching values statement and is an umbrella policy document for the island and community plans. The CPP provides broad goals, objectives, policies, and implementing actions that portray the desired direction of the County's future through the year 2030.

The Maui County General Plan - Maui Island Plan (MIP) functions as a regional plan and addresses the policies and issues that are not confined to just one community plan area, including regional systems such as transportation, utilities, and growth management, for the Island of Maui. The MIP provides direction for future growth, the economy, and social and environmental decisions on the island through 2030, and establishes a vision, founded on core values that break down into goals, objectives, policies, and actions.

The following sections identify pertinent objectives, policies, implementing actions and related provisions set forth in the CPP and the MIP with respect to the Proposed Action.

Countywide Policy Plan

The intent of the CPP is to provide broad policies and objectives which provide guidance for the desired direction of the County's future. The following goals, objectives, policies and implementing actions illustrate the Proposed Action's compliance with the CPP.

Protect the Natural Environment

Goal: *Maui County's natural environment and distinctive open spaces will be preserved, managed and cared for in perpetuity.*

Objective 1: *Improve the opportunity to experience the natural beauty and native biodiversity of the islands for present and future generations.*

Policy:

Preserve and provide ongoing care for important scenic vistas, viewplanes, landscapes, and open-space resources.

Objective 2: *Improve the quality of environmentally sensitive, locally valued natural resources and native ecology of each island.*

Policy: *Improve the connection between urban environments and the natural landscape, and incorporate natural features of the land into urban design.*

Objective 3: *Improve the stewardship of the natural environment.*

Policies:

a. Preserve and protect natural resources with significant scenic, economic, cultural, environmental, or recreational value.

k. Improve enforcement activities relating to the natural environment.

Improve Parks and Public Facilities

A full range of island-appropriate public facilities and recreational opportunities will be provided to improve the quality of life for residents and visitors.

Objective 1: *Expand access to recreational opportunities and community facilities to meet the present and future needs of residents of all ages and physical abilities.*

Policies:

a. Protect, enhance, and expand access to public shoreline and mountain resources.

g. Promote the development and enhancement of community centers, civic spaces, and gathering places throughout our communities.

Objective 2: *Improve the quality and adequacy of community facilities.*

Policies:

c. Ensure that parks and public facilities are safe and adequately equipped for the needs of all ages and physical abilities to the extent reasonable.

d. Maintain, enhance, expand, and provide new active and passive recreational facilities in ways that preserve the natural beauty of their locations.

Objective 3: *Enhance the funding, management, and planning of public facilities and park lands.*

Policy: *Develop partnerships to ensure proper stewardship of the islands' trails, public lands, and access systems.*

Maui Island Plan

The MIP provides specific policy- based strategies for population, land use, transportation, public and community facilities, water and sewage systems, visitor destinations, urban design, and other matters related to the future growth of Maui. The relationship of the Proposed Action with respect to pertinent goals, objectives, policies and implementing actions of the MIP are summarized below.

Heritage Resources-Scenic Resources

Goal: 2.5 Maui will continue to be a beautiful island steeped in coastal, mountain, open space, and historically significant views that are preserved to enrich the residents' quality of life, attract visitors, provide a connection to the past, and promote a sense of place.

Objective: 2.5.1 *A greater level of protection for scenic resources.*

Policy: 2.5.1.b *Identify, preserve, and provide ongoing management of important scenic vistas and open space resources, including mauka-to-makai and makai-to-mauka viewplanes.*

Infrastructure and Public Facilities-Parks

Goal: 6.6 Maui will have a diverse range of active and passive recreational parks, wilderness areas, and other natural-resource areas linked, where feasible, by a network of greenways, bikeways, pathways, and roads that are accessible to all.

Objective: 6.6.1 *More effective, long-range planning of parks and recreation programs able to meet community needs.*

5.6 County Zoning

Lands underlying the project site are zoned Park (Pk) by the County of Maui. The general purpose and intent of the park district ordinances are to preserve and manage lands for passive or active recreational activities by a system of parks suited to the varying recreational needs of the county, to provide parks which are of differing sizes and uses, and to implement the general plan and community plans of the county and the land use laws of the state

Lands immediately north of and adjacent to the project site are zoned for Conservation use. In addition to Park and Conservation zoning designations, lands extending approximately 1 to 3 miles north of the project site also include county zoning designations of Agriculture, Rural, Hotel, Single Family, Multi-Family, Park-Golf Course, and Open Space. The project site also lies within the County of Maui, Special Management Area (SMA). As such, a SMA Assessment Application

will be prepared for the Proposed Action and submitted to the Maui County Planning Department for review and approval.

6. CONSULTED PARTIES

6.1. Early Consultation and Draft EA

In accordance with Hawaiʻi Revised Statutes Chapter 343, and Hawaiʻi Administrative Rules Title 11, Chapter 200 early consultation efforts were undertaken as part of this EA preparation. In October 2015 early consultation request letters were distributed to federal, state and local agencies; stakeholders groups; and individuals to solicit input on the Proposed Action. A total of 27 early consultation letters were disseminated to interested parties and agencies and a total of 10 comment letters were received during this phase of the EA process. The draft EA was subsequently published, for public review and comment, in January 23, 2016 issue of the State Office of Environmental Quality Control Environmental Notice, and a total of four comment letters on the draft EA were received. Early consultation and draft EA consultation correspondence documentation are attached to this EA as Appendix F.

6.2. ʻAhihi Kinaʻu Natural Area Reserve Advisory Group

In addition to the above-described early consultation efforts for the Proposed Action, DLNR-DOFAW continues to engage in an ongoing collaborative process with the ʻAhihi Kinaʻu Natural Area Reserve Advisory Group (Advisory Group) which is comprised of interested agencies, organizations, public stakeholder groups, and individuals. The Advisory Group played a key role in the development of the AKMP and continues to play an integral part in its implementation; assisting DLNR-DOFAW by providing input and direction for ongoing operations and management efforts at the Ahihi Kinaʻu Natural Area Reserve. The Advisory Group meets regularly and all meetings are open to the general public.

6.3. Natural Area Reserve System Commission

As discussed earlier in this EA, the state's NARS was established in 1970 by the Hawaiʻi Legislature. Implementing statute (HRS §195-6**)** established the creation of a NARS Commission which would act in an advisory capacity for the Board of Land and Natural Resources, which sets policies for the DLNR. HRS §195-7 outlines the powers and duties of the NARS Commission which include:

> *(1) Establish criteria to be used in determining whether an area is suitable for inclusion with the reserves system;*
> *(2) Conduct studies of areas for possible inclusion within the reserves system;*
> *(3) Recommend to the governor and the department areas suitable for inclusion within the reserves system;*
> *(4) Establish policies and criteria regarding the management, protection, and permitted uses of areas which are part of the reserves system;*

> *(5) Advise the governor and the department on any matter relating to the preservation of Hawai'i's unique natural resources;*
> *(6) Develop ways and means of extending and strengthening presently established preserves, sanctuaries, and refuges within the State;*
> *(7) Advise the department and other public agencies managing state-owned land or natural resources regarding areas under their respective jurisdictions which are or may be appropriate for designation as natural area reserves; and*
> *(8) In carrying out the above duties, consult the most comprehensive up-to-date compilation of scientific data on the communities of natural flora and fauna of Hawaii. [L 1970, c 139, pt of §1; am L 1987, c 350, §5]*

In the above-described capacity, NARS Commission meetings are held on a regular basis (approximately once every three months) to address statewide NARS-related issues. Discussion of the Proposed Action, and the associated environmental assessment requirements for its implementation were addressed during the December 14, 2015 NARS Commission meeting.

7. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

During the construction phase of the proposed improvements, resources such as fossil fuels and construction materials (i.e., concrete, rock, steel, striping, etc.) would be irrevocably committed. In addition to the fuels and construction materials involved, approximately $350,000 will be committed to the proposed improvement project. Labor would be required for construction, planning, engineering design, purchasing, and services. Once used, the labor is irretrievable. However, labor effort is also monetarily compensated, thereby supporting the State's economy.

8. PERMITS AND APPROVALS

It is anticipated the Proposed Action will require application for and approval of a State Conservation District Use Permit, County Special Management Area Permit, and requisite County Construction Permits (e.g., Grubbing, Grading).

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10. APPENDICES

Appendix A – Figures
Appendix B – Site Photographs
Appendix C – Biological Resources Survey
Appendix D – Pavement Specifications and Preliminary Drainage Calculations
Appendix E – Archaeological Assessment Survey
Appendix F – Early Consultation and Draft EA Correspondence

APPENDIX A – FIGURES

Figure 1

PROJECT LOCATION MAP

Kanahena, Maui, Hawaii

Environmental Assessment for Proposed Parking Lot at Ahihi Kinau Natural Area Reserve

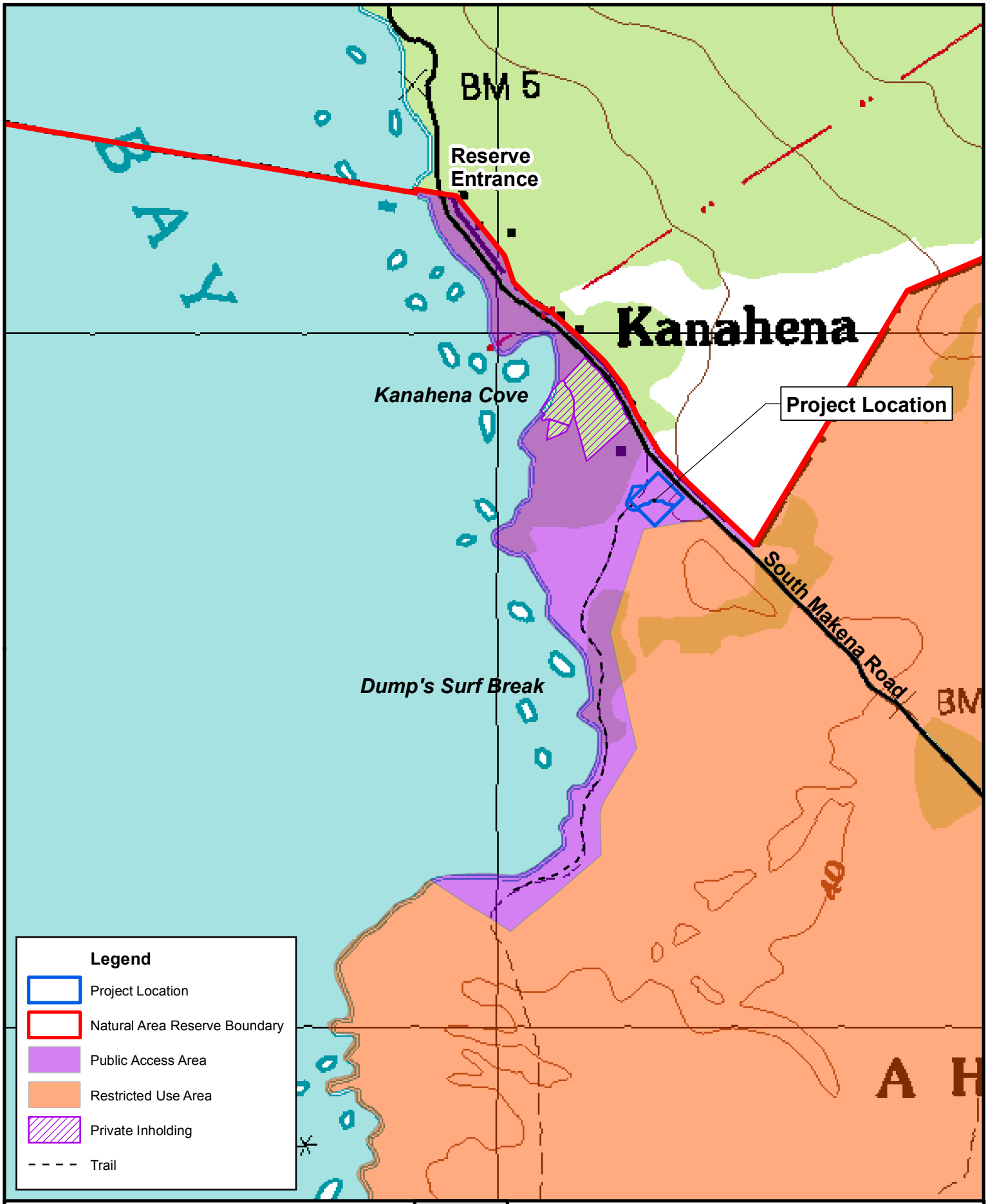


Figure 2

PROJECT VICINITY MAP

Kanahena, Maui, Hawaii

Environmental Assessment for Proposed Parking Lot at Ahihi Kinau Natural Area Reserve

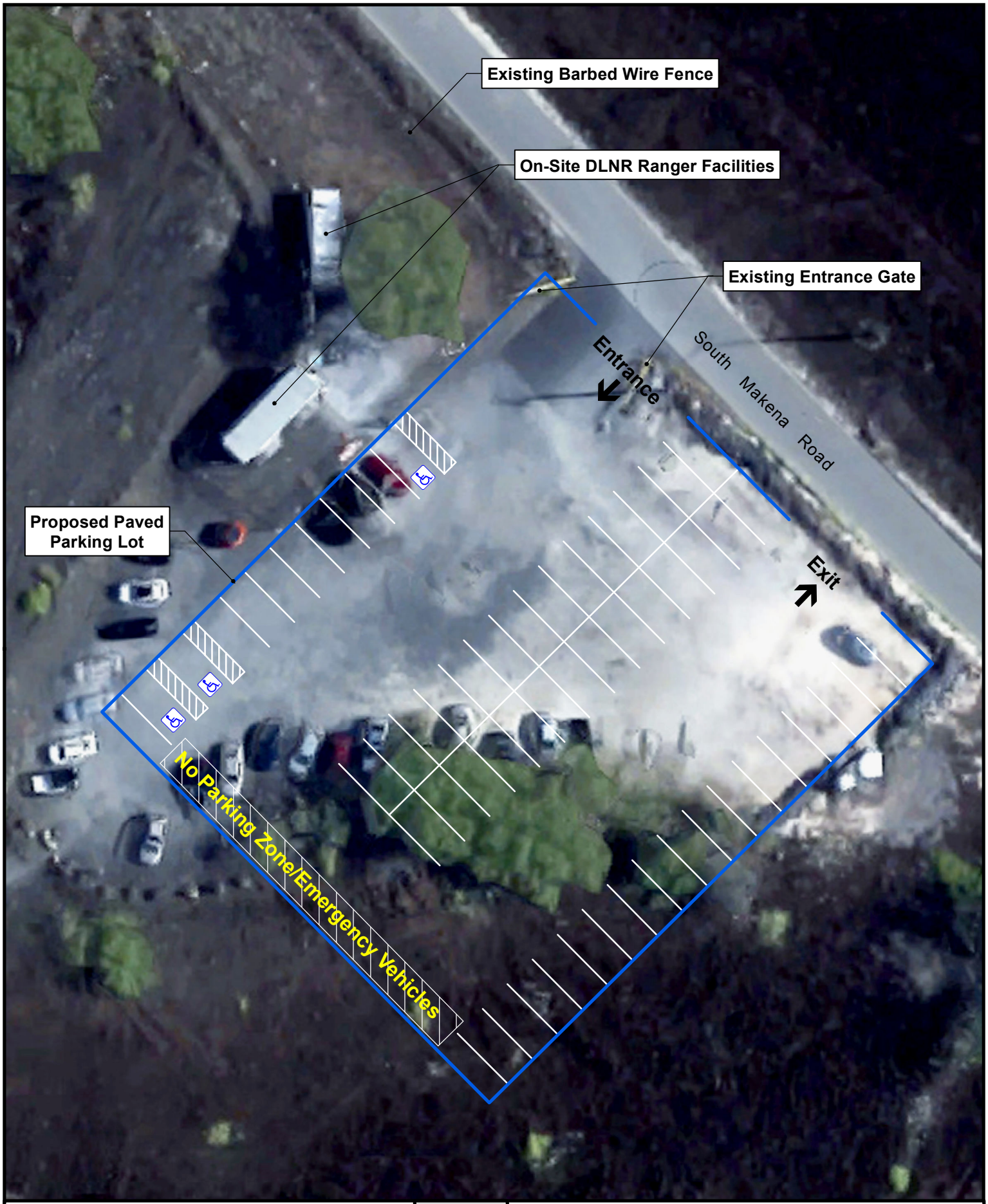


Figure 3

PROJECT SITE AND PROPOSED IMPROVEMENTS

Kanahena, Maui, Hawaii

Environmental Assessment for Proposed Parking Lot at Ahihi Kinau Natural Area Reserve

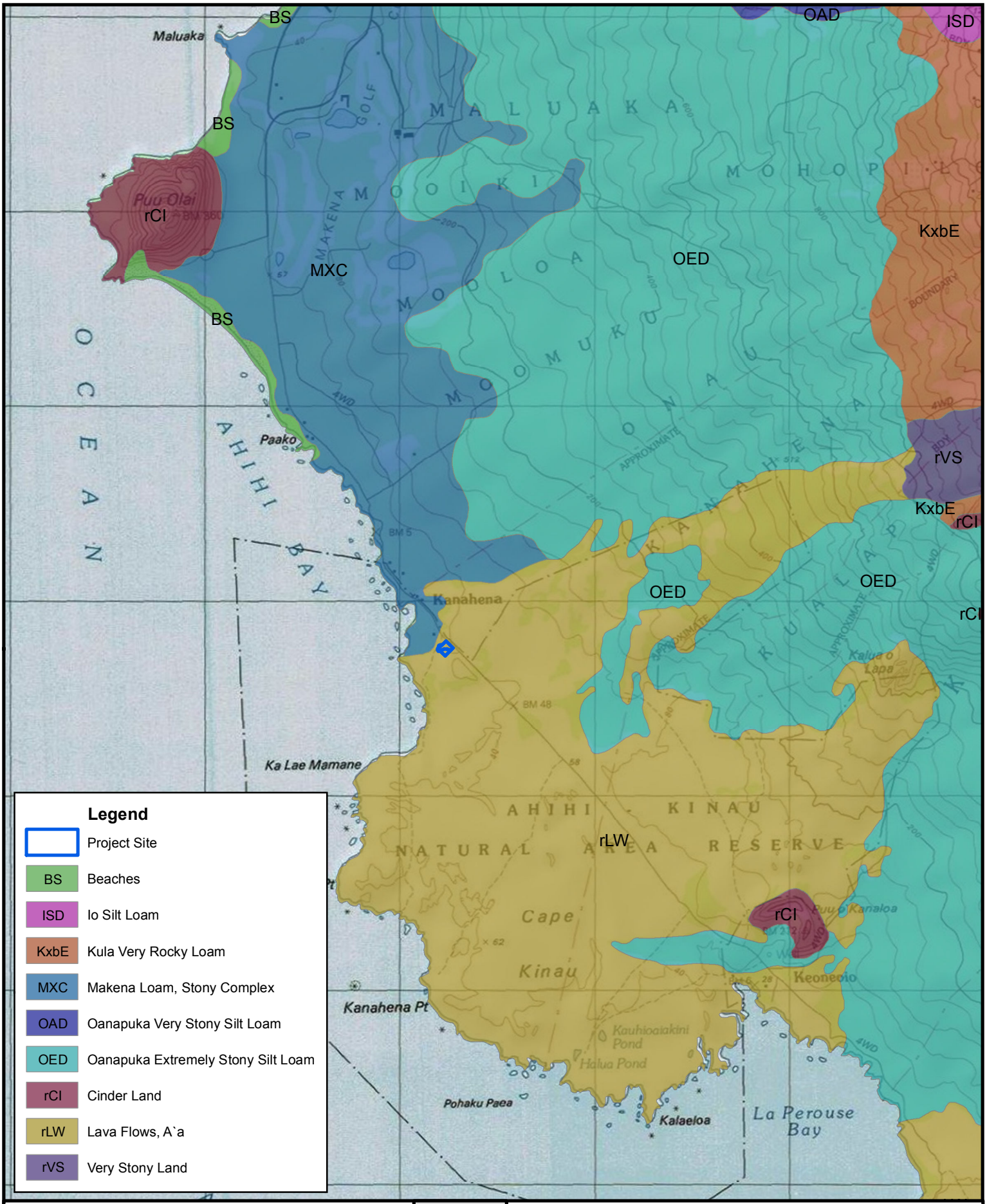


Figure 4

SOILS MAP

Kanahena, Maui, Hawaii

Environmental Assessment for Proposed Parking Lot at Ahihi Kinau Natural Area Reserve


Legend
Project Site
AE Flood Zone
Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods.
VE Flood Zone
Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves.
X Flood Zone
Zone X is an area determined to be outside of the 0.2 percent annual chance floodplain.
Meters
0
295
590
1,180
Figure
5
FLOOD ZONE MAP
Kanahena, Maui, Hawaii
Environmental Assessment for Proposed Parking Lot at
Ahihi Kinau Natural Area Reserve

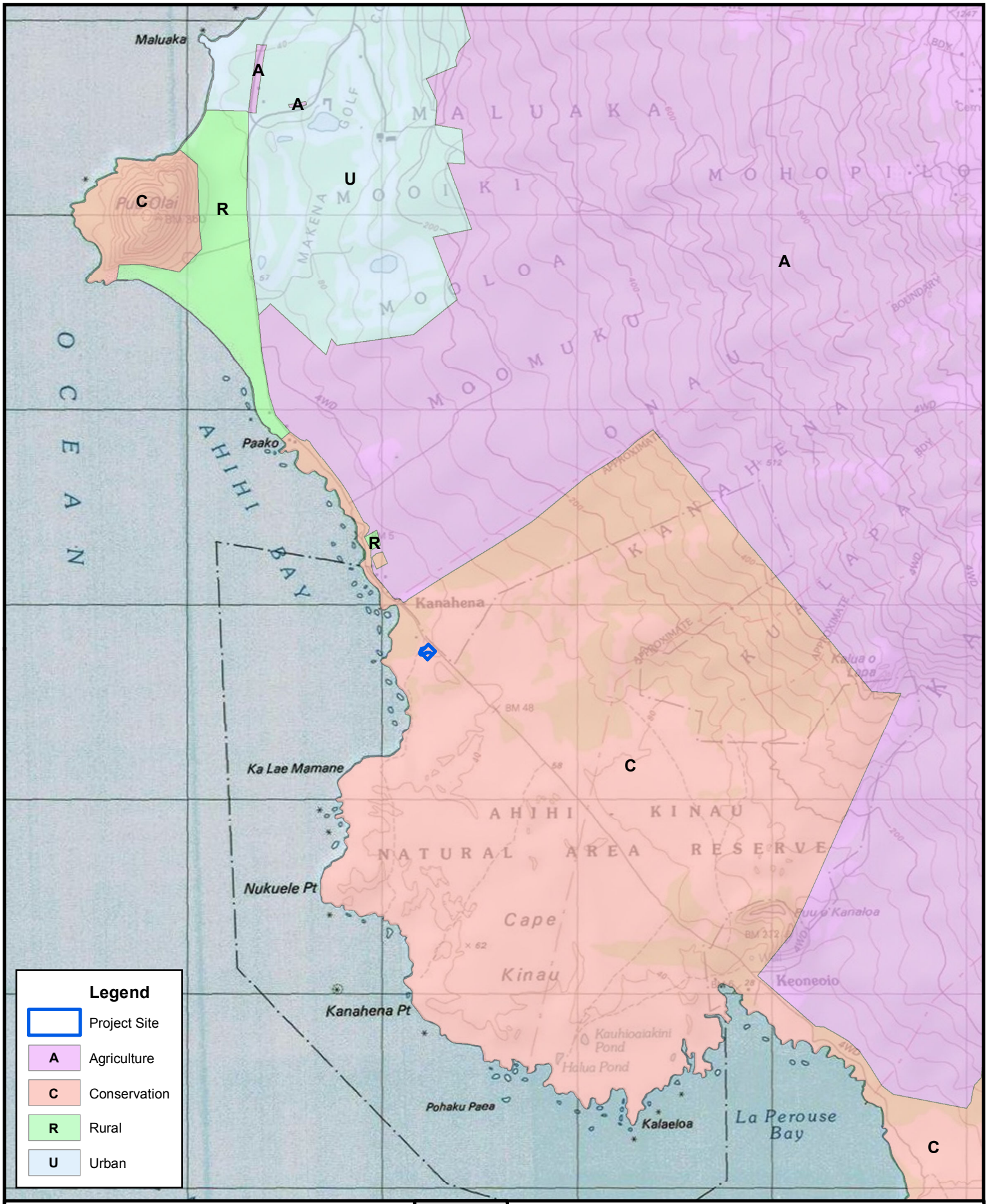


Figure 6

LAND USE DISTRICT MAP

Kanahena, Maui, Hawaii

Environmental Assessment for Proposed Parking Lot at Ahihi Kinau Natural Area Reserve

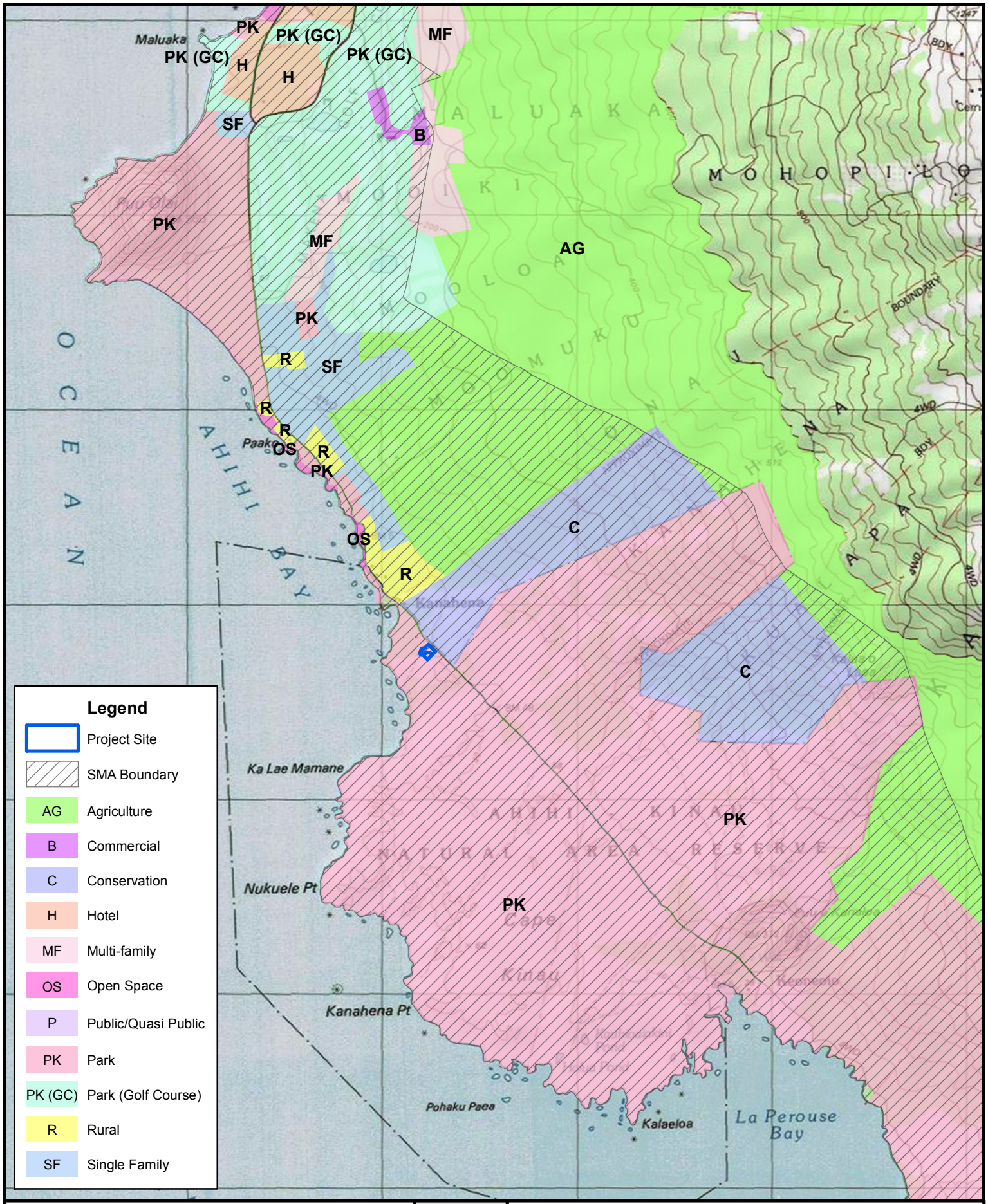


Figure 7

ZONING AND SPECIAL MANAGEMENT AREA MAP

Kanahena, Maui, Hawaii

Environmental Assessment for Proposed Parking Lot at Ahihi Kinau Natural Area Reserve

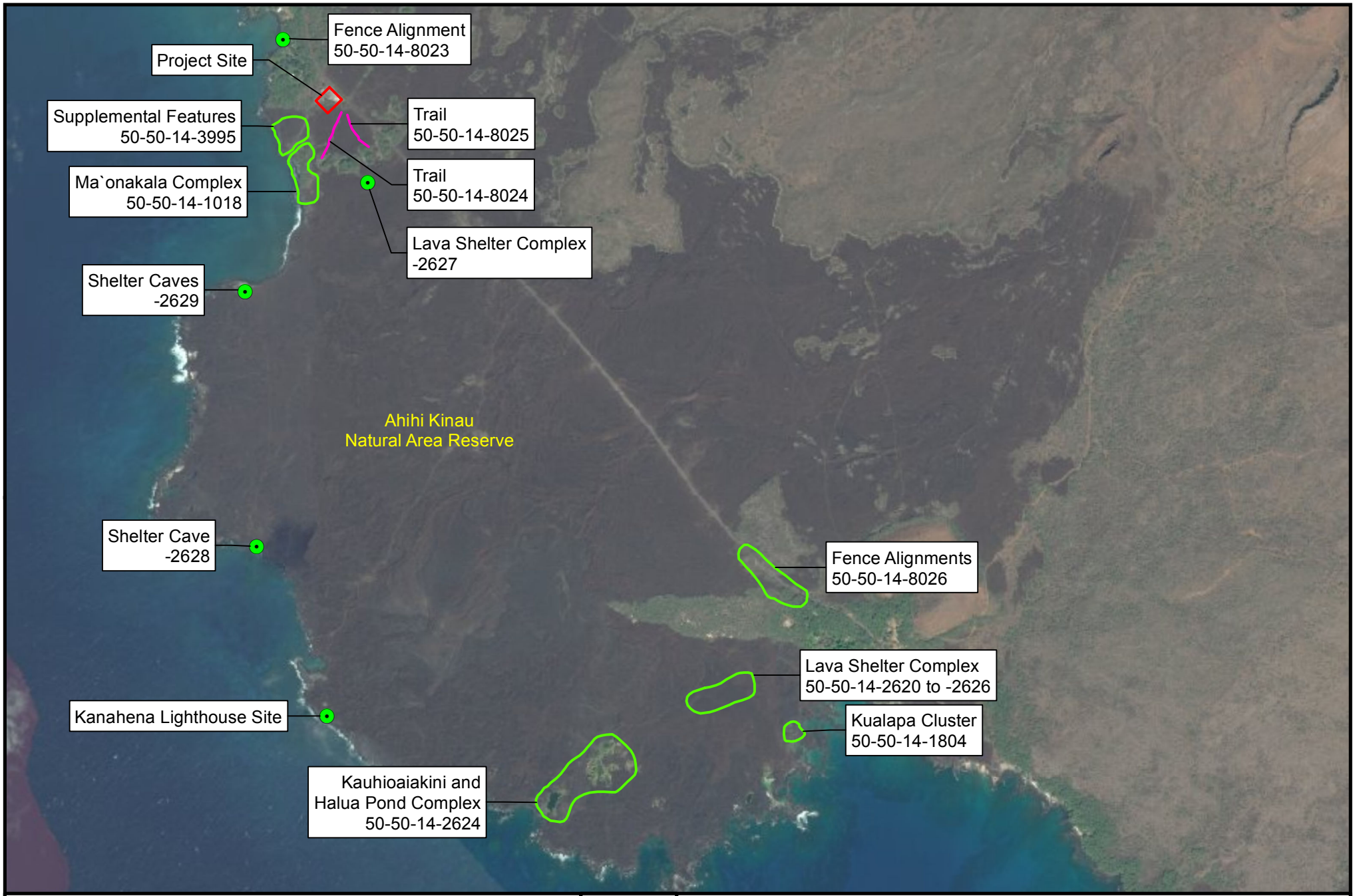


Figure 8

CULTURAL RESOURCES in PROJECT VICINITY

Kanahena, Maui, Hawaii

Environmental Assessment for Proposed Parking Lot at
Ahihi Kinau Natural Area Reserve

APPENDIX B – SITE PHOTOGRAPHS

SITE PHOTGRAPH LOG

November 19, 2015

Photo No.	Photo Description
01	Existing parking lot entry gate (view to southwest)
02	South Makena Road at parking lot entry (view to northwest)
03	DLNR field office facilities from South Makena Road (view to west.
04	Parking lot w/DLNR field office facilities in background (view to northwest)
05	DLNR field office facilities and entry gate from parking lot (view to north)
06	Parking lot (view to northeast)
07	Parking lot surface (rough/uneven graded a`a lava)
08	Parking lot surface (rough/uneven graded a`a lava)
09	Vegetated area within project site (view to south)
10	Typical vegetation found on site
11	Typical vegetation found on site
12	Shoreline access trail entrance (southwest corner of parking lot)
13	Existing signage along shoreline access trail

APPENDIX B – Site Photographs

01

02

03

04

05

06

07

08

09


11/19/2015

10

11


11/19/2015

12


ĀHIHI - KĪNAÚ
NATURAL AREA RESERVE
PLEASE KOKUA!
Help protect this area so future generations may enjoy it's benefits.
PROHIBITED ACTIVITIES
STATE OF HAWAII
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
ADMINISTRATIVE RULES
CHAPTER 209, TITLE 13, OLNR
PENALTY: $1,000 and/or 1 year jail max.
THE FOLLOWING ACTIVITIES
ARE PROHIBITED WITHIN
AHIHI-KINAU NATURAL AREA RESERVE:
13-209-4 (14)
11/19/2015

13

APPENDIX C – BIOLOGICAL RESOURCES SURVEY

DESCRIPTION OF THE VEGETATION AND WILDLIFE
(October 14, 2015)

FAUNA:
In the short early morning observation period only three birds, one herptile, and four obvious arthropods (all butterfly species) were observed in the proposed area. All were non-native taxa. While this is not a representative review of the invertebrate fauna that inhabit the current parking area – it remains unlikely that rare native taxa are present or expected to be present. It is likely that these would be the main affected temporarily displaced fauna during any construction action, with possibly a few more non-native bird species being present at the site [for ex. Myna (*Acridotheres tristis),* Northern Cardinal (*Cardinalis cardinalis*), and House Sparrow (*Passer domesticus*)]. No rare native or endangered species of any taxon were observed in the proposed work site. A review of all host plants for Blackburn's sphinx moth (*Manduca blacburni*) found no evidence of presence or foraging.

SCIENTIFIC NAME	COMMON NAME	STATUS
BIRDS		
COLUMBIDAE (Doves, Pigeons)		
Streptotelia chinensis	spotted dove	non-native
Geopelia striata	barred dove	non-native
THRAUPIDAE (Tanagers)		
Paroaria cristata	red-crested cardinal	non-native
HERPETOFAUNA		
POLYCHROTIDAE (Iguanian lizards)		
Anolis sagrei	brown anole	non-native
ARTHROPODS		
LEPIDOPTERA (Butterflies, moths)		
Abaeis nicippe	sleepy orange	non-native
Pieris rapae	cabbage butterfly	non-native
Brephidium exilis	pigmy blue	non-native
Lampides boeticus	long-tailed blue	non-native
Danaus plexxipus	monarch	non-native

The vegetation of the project area consists primarily of weedy grasses and herbaceous plants with a few scattered trees and shrubs. The vegetation was green and growing vigorously in response to recent rains. A total of 48 plant species were recorded during the survey. Four species were indigenous native plants: Maiapilo (Capparis sandwichiana) – the only endemic detected, kipukai (*Heliotropium curassavicum*), 'ilima (*Sida fallax*) and 'uhaloa (*Waltheria indica*). The remaining species were non-native, including common weedy grasses and other herbaceous species.

SCIENTIFIC NAME	COMMON NAME	STATUS
MONOCOTS		
ARECACEAE (Palm Family)		
Washingtonia robusta H. Wendland	Mexican Washingtonia	non-native
POACEAE (Grass Family)		

Botriochloa pertusa	pitted beard grass	non-native
Cenchrus ciliaris L.	buffelgrass	non-native
Chloris barbata	swollen fingergrass	non-native
Chloris radiata (L.) Sw.	plush grass	non-native
Cynodon dactylon (L.) Pers.	Bermuda Grass	non-native
Digitaria insularis	sour grass	non-native
Eragrostis amabilis	lovegrass	non-native
Eragrostis pectinacea (Michx) Nees	Carolina lovegrass	non-native
Heteropogon contortus	pili	indigenous
Melinis repens	Natal redtop	non-native
Setaria verticillata (L.) P. Beauv.	bristly foxtail	non-native

DICOTS

AMARANTHACEAE (Amaranth Family)

Alternanthera pungens	khaki weed	non-native
Amaranthus viridis L.	slender amaranth	non-native
Chenopodium carinatum R. Br.	keeled goosefoot	non-native

ASTERACEAE (Sunflower Family)

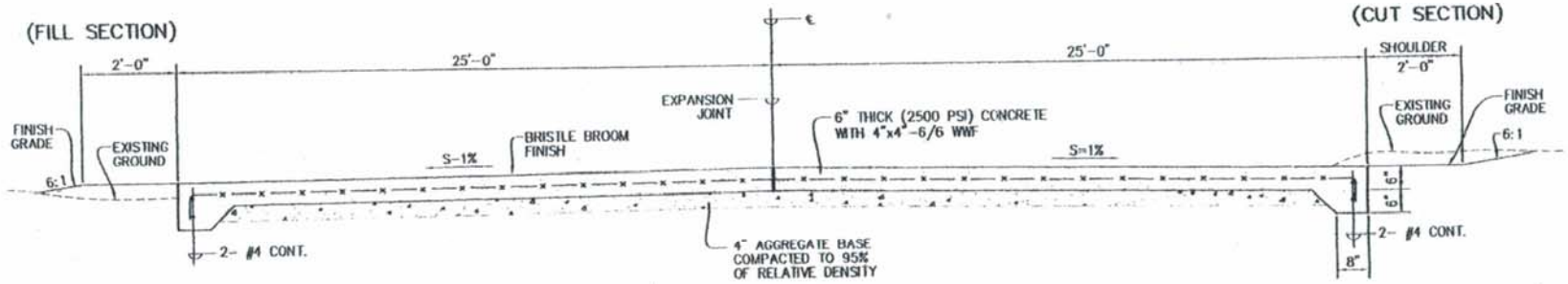
Synedrella nodiflora	node weed	non-native
Tridax procumbens L.	coat buttons	non-native
Verbesina encelioides (Cav.) Benth & Hook.	golden crown-beard	non-native

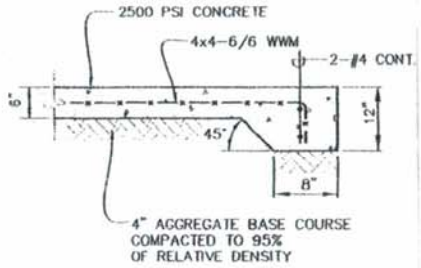
SCIENTIFIC NAME	COMMON NAME	STATUS
BORAGINACEAE (Borage Family)		
Heliotropium curassavicum L.	Kipūkai	indigenous
CAPPARACEAE (Caper Family)		
Capparis sandwichiana DC.	maiapilo	native
CARICACEAE (Papaya Family)		
Carica papaya L.	Papaya	non-native
CONVOLVULACEAE (Morning Glory Family)		
Ipomoea ochracea (Lindl.) G. Don	little bell	non-native
Ipomoea triloba L.	little bell	non-native
CUCURBITACEAE (Gourd Family)		
Momordica charantia L.	bitter melon	
EUPHORBIACEAE (Spurge Family)		
Euphorbia hirta L.	hairy spurge	non-native
Euphorbia prostrata Aiton	prostrate spurge	non-native
FABACEAE (Pea Family)		
Acacia farnesiana (L.) Willd.	klu	Non-native
Crotalaria incana L.	fuzzy rattlepod	non-native
Crotalaria pallida Aiton	smooth rattlepod	non-native
Indigofera suffruticosa Jacq.	upright indigo	non-native
Leucaena leucocephala (Lam.) de Wit	koa haole	non-native
Macroptilium atropurpureum (DC.) Urb.	siratro	non-native
Medicago polymorpha L.	bur clover	non-native
Neonotonia wightii (Wight & Arnott) Lackey	glycine	non-native
Prosopis pallida (Humb. & Bonpl. ex Willd.)		non-native
LAMIACEAE (Mint Family)		
Leonotis nepetifolia (L.) R. Br.	lion's ear	non-native

SCIENTIFIC NAME	COMMON NAME	STATUS
MALVACEAE (Mallow Family)		
Malvastrum cormandelianum (L.) Garckey	False mallow	non-native
Sida rhombifolia L.	Cuban jute	non-native
Sida fallax Walp.	'ilima	indigenous
Waltheria indica L.	'uhaloa	indigenous
NYCTAGINACEAE (Four-o'clock Family)		
Boerhavia coccinea Mill.	scarlet spiderling	non-native
PASSIFLORACEAE (Passionfruit Family)		
Passiflora edulis Sims	passionfruit	non-native
PORTULACACEAE (Purslane Family)		
Portulaca pilosa L.	pigweed	non-native
SOLANACEAE (Nightshade Family)		
Nicotiana glauca R.C. Graham	tree tobacco	non-native
Solanum lycopersicum L.	cherry tomato	non-native
VERBENACEAE (Verbena Family)		
Stachytarpheta cayennensis (L.)	Cayenne porterweed	non-native
Stachytarpheta jamaicensis (Rich.) Kuntze	light blue snakeweed	non-native

APPENDIX D - PAVEMENT SPECIFICATIONS AND PRELIMINARY DRAINAGE CALCULATIONS

Concrete Paving Specs for Ahihi-Kinau Natural Area Reserve Kanahena Parking Improvements





Perimeter Detail

6" Concrete over 4" base

12" thick perimeter

Standard County Class B with possibility of fiber reinforcing in place of welded wire mesh.

Preliminary Storm Water Runoff Calculations
(Summary Table)

Project Site Location	Pre-Development Drainage Area (acres)	Existing Flow (cfs)	Post-Development Drainage Area (acres)	Post-Development Flow (cfs)	Δ Flow (cfs)
Existing Parking Area	0.51	0.31	0.51	0.97	0.66
Existing Undeveloped Lava	0.21	0.12	0.21	0.40	0.28
Total Project Area	0.72	0.43	0.72	1.37	0.94

Source: DLNR, 03/04/2016

EDWIN MATSUDA
3/4/16

AHIHI KINAU PARKING LOT

TMK: (2) 2-1-004: 0073

PROPOSED:

PAVED LOT = 31,619 sf
= 0.72 ACRES

10 YEAR - 1 HOUR PEAK = 2.0 (PLATE 4)

PRE-DEVELOPED

LAVA C = ± 0.35 ~ 0.22

$Q = CiA$
$= (0.3)(2.0)(0.72)$
$= 0.43$

POST-DEVELOPED

AC C = 0.95

$Q = CiA$
$= (0.95)(2.0)(0.72)$
$= 1.37$

INCREASE Q = 1.37 - 0.43
= 0.94
= ± 1 cfs

Table 1

GUIDE FOR THE DETERMINATION OF RUNOFF COEFFICIENTS FOR BUILT-UP AREAS*

WATERSHED CHARACTERISTICS	EXTREME	HIGH	MODERATE	LOW
INFILTRATION	NEGLIGIBLE 0.20	SLOW 0.14	MEDIUM 0.07	HIGH 0.0
RELIEF	STEEP (> 25%) 0.08	HILLY (15-25%) 0.06	ROLLING (5-15%) 0.03	FLAT (0-5%) 0.0
VEGETAL COVER	NONE 0.07	POOR (< 10%) 0.05	GOOD (10-50%) 0.03	HIGH (50-90%) 0.0
DEVELOPMENT TYPE	INDUSTRIAL & BUSINESS 0.55	HOTEL-APARTMENT 0.45	RESIDENTIAL 0.40	AGRICULTURAL 0.15

**NOTE: The design coefficient "c" must result from a total of the values for all four watershed characteristics of the site.*

$Q = CiA$

Table 2

RUNOFF COEFFICIENTS

Type of Drainage Area	Runoff Coefficient C
Business:	
Downtown areas	0.95
Neighborhood areas	0.70
Residential:	
Single-family areas	0.50
Multi-units, detached	0.60
Multi-units, attached	0.75
Suburban	0.40
Apartment dwelling areas	0.70
Industrial:	
Light areas	0.80
Heavy areas	0.90
Parks, cemeteries	0.25
Playgrounds	0.35
Railroad-yard areas	0.40
Unimproved areas	0.30
Streets:	
Asphaltic	0.95
Concrete	0.95
Brick	0.85
Drive and walks	0.85
Roofs	0.95
Lawns:	
Sandy, soil, flat, 2%	0.10
Sandy, soil, avg., 2-7%	0.15
Sandy, soil, steep, 7%	0.20
Heavy soil, flat, 2%	0.17
Heavy soil, avg., 2-7%	0.22
Heavy soil, steep, 7%	0.35

POST
$= (2.0)(.95)(3/4)$
$= 1.43$ cfs

PRE
$= (2.0)(.35)(3/4)$
$= 0.53$

$Q_A = 0.9$ cfs increase
$= 404$ gpm

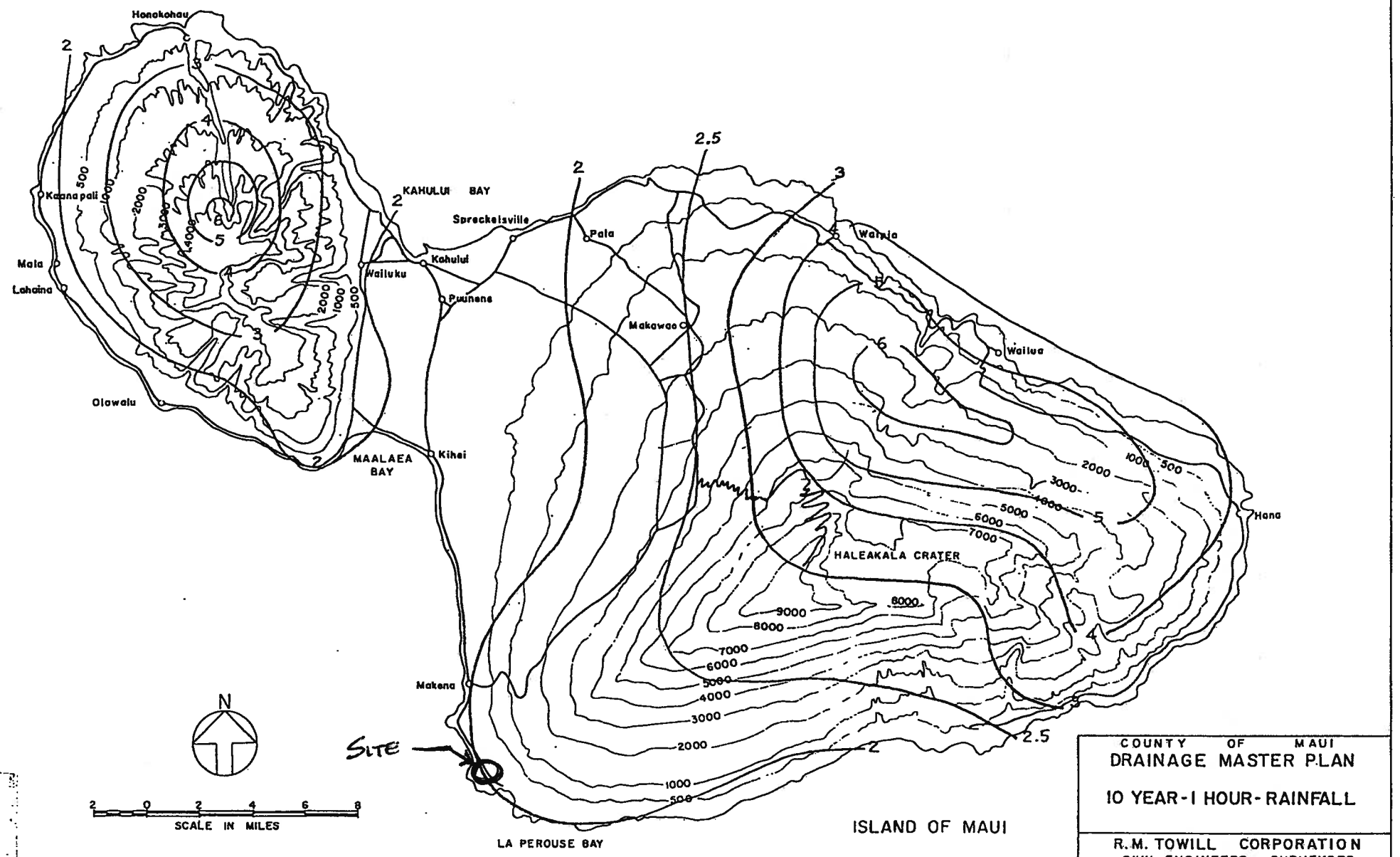

Honokohau
Kaanapali
Mala
Lahaina
Olowalu
KAHULUI BAY
Spreckelsville
Kahului
Wailuku
Puunene
Pala
Makawao
Waiaka
Wailua
Hana
MAALAEA BAY
Kihei
HALEAKALA CRATER
Makena
SITE
LA PEROUSE BAY
ISLAND OF MAUI
N
SCALE IN MILES
2 0 2 4 6 8
COUNTY OF MAUI
DRAINAGE MASTER PLAN
10 YEAR - 1 HOUR - RAINFALL
R.M. TOWILL CORPORATION
CIVIL ENGINEERS - SURVEYORS

PLATE 4

APPENDIX E – ARCHAEOLOGICAL ASSESSMENT SURVEY

DRAFT—Archaeological Assessment in Support of the "Dumps" Parking Lot Paving Project, ʻĀhihi-Kīnaʻu Natural Area Reserve, Kanahena Ahupuaʻa, Makawao District, Island of Maui, Hawaiʻi

TMK (2) 2-1-004:073 (por.)

Prepared For:

Department of Land and Natural Resources
Division of Forestry and Wildlife, Maui Branch Office
54 South High St., Room 101
Wailuku, Hawaiʻi 96793

Prepared By:

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146 Hekili St., Suite 101
Kailua, Hawaiʻi 96734

Hawaiʻi SHPD Permit No. 15-20

GANDA Report No. 2338-1

21 October 2015

MANAGEMENT SUMMARY

At the request of the Hawai‘i Division of Forestry and Wildlife (DOFAW), Garcia and Associates conducted an Archaeological Inventory Survey (AIS) of the “Dumps” parking lot and immediate surrounding area in ‘Āhihi-Kīna‘u Natural Area Reserve, Kanahena Ahupua‘a, Makawao (formerly Honua‘ula) District, Maui (TMK [2] 2-1-004:073 (por.)). The 1.14 acre project area is proposed by DOFAW for paving. The objective of the survey was to identify and record all historic properties within the project area and evaluate their significance.

The AIS produced no evidence of traditional Hawaiian or historic cultural resources.

CONTENTS

FIGURES

TABLES

1.0 INTRODUCTION

At the request of the Hawai‘i Division of Forestry and Wildlife (DOFAW), Garcia and Associates conducted an Archaeological Inventory Survey (AIS) of the “Dumps” parking lot and immediate surrounding area in ‘Āhihi-Kīna‘u Natural Area Reserve (NAR), Kanahena Ahupua‘a, Makawao (formerly Honua‘ula) District, Maui (TMK [2] 2-1-004:073 (por.)). The objective of the survey was to identify and record all historic properties within the project area and evaluate their significance.

The “Dumps” parking lot and surrounding area are proposed by DOFAW for paving. The 1.14 acre (4,600 m²) project area is located at the northeast end of ‘Āhihi-Kīna‘u NAR (Figure 1 and Figure 2). The parking lot is currently graded *‘a‘ā* lava with some sediment accumulation from vehicular traffic. A rock berm extends around the perimeter of the parking lot; outside this is undulating *‘a‘ā* lava. The parking lot will be expanded into the lava, filled to grade with imported material, and then paved with asphalt to catch runoff and waste from rain events. A second entrance will likely be created to facilitate flow and allow emergency vehicles to turn around. A self-service machine or a small booth with a vendor may be installed, but there will not be significant excavations.

1.1 Project Authority

This AIS was conducted in accordance with the Hawai‘i Revised Statutes §6E-8, Review of Effect of Proposed State Projects, and Hawai‘i Administrative Rules (HAR) §13-276, Rules Governing Standards for Archaeological Inventory Surveys and Reports. Since no cultural properties were documented during the archaeological inventory survey, this report is submitted as an Archaeological Assessment in accordance with HAR §13-276-5.

1.2 Personnel Qualifications and Field Schedule

Michael Desilets, MA, served as Principal Investigator for the AIS. Mr. Desilets meets the professional qualifications outlined in Hawai‘i Administrative Rules §13-281-3 and is permitted to conduct archaeological investigations under Hawai‘i State Historic Preservation Division Permit No. 15-20. Amanda Sims, BA, served as field technician and conducted the archaeological field investigations on 24 September 2015.

2.0 BACKGROUND

Background information is presented below to provide context and assist in developing expectations regarding the nature of potential pre-Contact and historic resources in the project area. The section includes summary descriptions of environmental conditions, cultural history, and previous archaeology that are directly related to the project area. Much of this information is taken from ‘Āhihi-Kīna‘u NAR’s Cultural Resource Management Plan (Peterson et al. 2007). The background focuses on resource types that are most relevant to the historic properties recorded in the area.

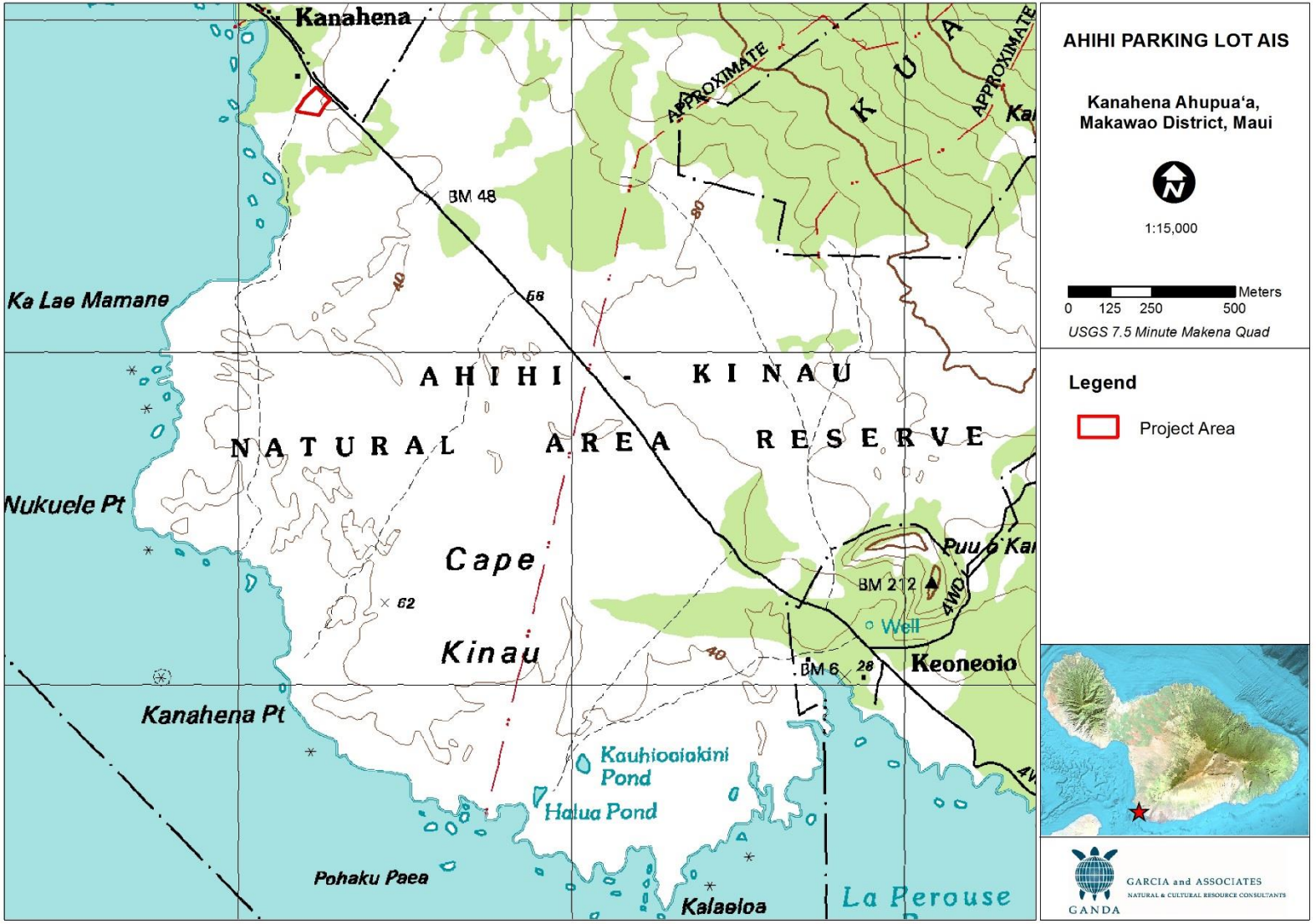

Figure 1. Project area on USGS 7.5 minute Makena quadrangle.

Figure 2. Project area (in red) on Google Earth aerial image. Previously identified sites are in yellow.

2.1 ʻĀhihi-Kīnaʻu Natural Area Reserve

ʻĀhihi-Kīnaʻu NAR consists of 1,238 acres of terrestrial land and 807 acres of submerged land off the leeward coast of east Maui. The area was designated a Natural Area Reserve in 1973 by Executive Order 2668 and was the first reserve in Hawaiʻi's Natural Area Reserve System. ʻĀhihi-Kīnaʻu NAR takes its name from ʻĀhihi Point and Cape Kīnaʻu, both of which are encompassed within the reserve. The reserve's geographic boundaries coincide with two recent lava flows which comprise the vast majority of its terrestrial extent.

Although ʻĀhihi-Kīnaʻu NAR is now within the modern district of Makawao, it was originally in the traditional district of Honuaʻula. Within Honuaʻula, the reserve encompasses the entire coastal sections of both Kanahena and Kualapa Ahupuaʻa.

2.1.1 Geology and Soils

The terrestrial portion of ʻĀhihi-Kīnaʻu NAR is very rugged and almost entirely comprised of recent *pāhoehoe* and *ʻaʻā* lava flows. This material issued from two vents, Puʻu Mahoe and Kaula o Lapa, along a rift on the southwest flank of Haleakalā. Puʻu Mahoe is an old cinder cone situated at 472 meters above sea level. According to Stearns and MacDonald (1942:102), the most recent flow from this vent is 5 to 20 feet thick and added approximately three-quarters of a mile to the coastline. Downslope and southwest of Puʻu Mahoe is Kalua o Lapa spatter cone. Although lava from Kalua o Lapa overlies the Puʻu Mahoe flow, petrologic and weathering similarities suggest that the two eruptions may have been simultaneous (Stearns and MacDonald 1942:103).

The project area is in an *ʻaʻā* lava flow. The only non-lava area nearby is directly to the northwest (Figure 3). This soil is Makena loam, stony complex, 3 to 15 percent slopes, and composed of an equal mix of Makena series soils and Stony land. The Makena soils are derived from volcanic ash. Typical profiles extend from the surface to 58 centimeters (cm) in loam and silt loam before becoming cobbly silt loam. By 110 cm, soils are comprised of extremely cobbly material.

2.1.2 Climate

Rainfall in the reserve ranges from 380 to 500 millimeters (mm) annually creating a highly arid environment (Juvik and Juvik 1998:56). Maps published by geographer John Wesley Coulter in 1853 (Moffat and Fitzpatrick 1995:19), however, indicate that annual rainfall averages were as high as 760 mm in the mid 1800s. Low rainfall, recent lava flows, and annual solar radiation intensity of around 200 w/m^2 (Juvik and Juvik 1998:56) combine to impose severe limitations on the biotic community within the reserve.

2.1.3 Vegetation

Vegetation on ʻĀhihi-Kīnaʻu NAR is very sparse due to its geologic composition. Soil development in the very recent lava flows is poor to nonexistent. This is particularly true where *ʻaʻā* lava is present. In areas of *pāhoehoe* lava, however, colonizing lichens and indigenous *ʻuhaloa* (*Waltheria Americana*) are occasionally found (NARSP 1992). As in most of leeward

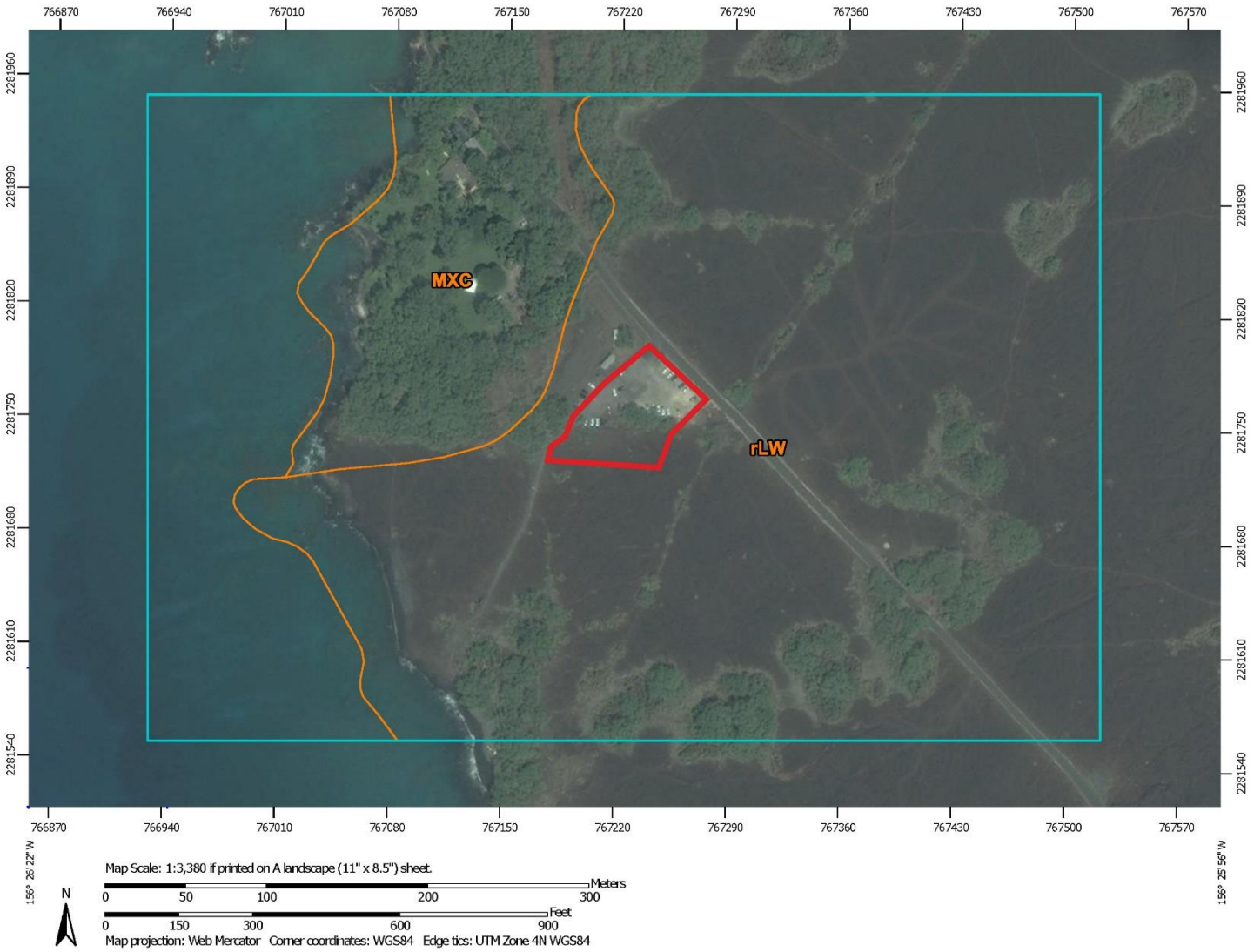

Figure 3. Soils around project area (MXC=Makena loam, stony complex; rLW=lava flows, aa). Project area is in red.

Maui, *kiawe* (*Prosopis pallida*) and *koa haole* (*Leucaena leucocephala*) dominate the arid coastal region with pockets of other plant communities found in special environments such as caves and anchialine pools.

A 1988 survey by The Nature Conservancy identified six classes of natural communities within the reserve (TNCH 1988). These include Kiawe Forest, Koa Haole Forest, and ʻUhaloa Shrubland, all common to leeward east Maui. These communities are mostly restricted to non-lava areas such as the numerous *mauka kīpuka*[1] and the coastal margins on the northwest and southeast edges of the reserve. Although no rare communities were identified, unusual communities such as Anchialine Pools, Neogeoaeolian Pioneers on Lava Flows, and Blind Sheetweb Spider/Blind Isopod Coastal Caves were documented. Anchialine pool ecosystems are described in greater detail below, but it is noted here that the larger pools exhibit the native plants *ʻakulikuli* (*Sesuvium portulacastrum*) and *makaloa* (*Cyperus Laevigatus*). Non-natives such as mangrove (*Rhizophora* sp.) and *Pluchea symphytifloia* have also been observed (TNCH 1988).

2.2 Historical Context

The following historical narrative is taken from the ʻĀhihi-Kīnaʻu NAR CRMP, written by one of the current authors. It is intended to provide a framework within which to understand and interpret data acquired during the archaeological survey. It also serves as a summary of current knowledge about the history of the project area and Honuaʻula District generally. The material below is abstracted from many diverse sources and covers a broad range of topical areas. Although much of the information is of a regional scale, a focus on ʻĀhihi-Kīnaʻu NAR and nearby Keoneʻōʻio is maintained when data permit. Useful background summaries of Honuaʻula and nearby Makena may be found in Cordy and Athens (1988:8–24), Carpenter and Yent (1995:5–16), and Fredericksen and Fredericksen (1997:2–12).

2.2.1 Hawaiian Occupation

The occupational history of ʻĀhihi-Kīnaʻu NAR and Keoneʻōʻio begins when Hawaiian populations first expanded into this relatively dry coastal area. Previous researchers have long wrangled over the timing and pace of settlement expansion on Maui and the topic remains open to debate (see Kirch 2014). Initial settlement of the study area and nearby environs can be estimated from studies of surrounding lands, particularly Kanaio and Kahikinui to the southeast and east, respectively. Although somewhat more remote, these areas are comparable to ʻĀhihi-Kīnaʻu NAR and Keoneʻōʻio in climate, rainfall, and their generally poor lower-slope soils.

According to extensive work by Kirch and his colleagues, permanent settlement was first established at Kahikinui to the west around AD 1400 (Kirch et al. 2005:240; Kirch 2014). Dixon et al.'s comparable large-scale study of the *mauka* portion of Kahikinui is in agreement with this date, although there is some evidence suggesting temporary or more limited presence somewhat earlier (Dixon et al. 2000:315). Work on the coastal portion of Kanaio produced a suite of radiocarbon dates derived from coral and cowry shell (Eblé and Cleghorn 1997:107). The earliest calibrated date range for this material was AD 1420–1650. It is therefore likely that the ʻĀhihi-Kīnaʻu NAR and Keoneʻōʻio areas were also permanently settled by at least AD 1400 as

[1] Remnant vegetated areas within a lava flow.

populations expanded from fertile windward and higher elevation areas onto more arid and marginal leeward lowlands. As Eblé and Cleghorn (1997:26) note, rich marine resources may have attracted seasonal or semi-permanent settlement well before this time.

Permanent Hawaiian occupation in the study area was based on exploitation of a combination of marine resources and dryland crops, most likely dominated by sweet potato cultivation in the *kīpuka mauka* of the Kīnau Peninsula and Keone‘ō‘io Bay. Handy and Handy (1991:147, 510) recount stories which suggest sweet potato was a staple crop at Keone‘ō‘io. Other crops, such as dry taro, could be cultivated in the wetter uplands. La Perouse likely had the best view of the produce of this part of Maui when he famously anchored in Keone‘ō‘io Bay in 1786. Hawaiians from nearby villages brought his crew hogs, sweet potatoes, bananas, taro, and *kapa* cloth. Clearly, the inhabitants managed to live in the customary Hawaiian style in this leeward environment. Resources in Honua‘ula Moku were plentiful enough, in fact, to support the “frequent and protracted residences” of Kauholanuimahu, *Moi* of Hawai‘i Island, and his retinue (Fornander 1996:71).

Although not mentioned by La Perouse, fish was certainly an important staple with near shore marine resources likely equal to what they are today. The name Keone‘ō‘io itself refers to the *‘ō‘io*, or ladyfish (*Albula vulpes*), which was once abundant in the bay and harvested year round, typically with a canoe-drawn sweep net (Handy and Handy 1991:510). A fishpond was constructed by Kauholanuimahu in the northwestern corner of the bay, the remains of which can still be seen today. The pond originally had five inlets and fish were driven into it with large-mesh nets (Handy and Handy 1991:510). Fish tended in the pond probably included some combination of mullet (*‘ama‘ama*), mackerel (*‘opelu*), bonito (*aku*), tuna (*‘ahi)*, and scad (*akule*).

Unfortunately, drinking water was not particularly abundant or of high quality along this stretch of coast. Stories from the area recounted by Handy and Handy (1991) speak of Kane and Kanaloa landing at Pu‘u o Kanaloa, just north of Keone‘ō‘io, and finding the groundwater near the beach brackish. La Perouse (1968:350) observed “this part of the coast as altogether destitute of running water.” Furthermore, “The inhabitants have no other drink but a brackish water, obtained from shallow wells, which afford scarcely more than half a barrel a day.” Despite this, pre-Contact Hawaiian occupation in the study area seems to have flourished by exploiting a combination of coastal marine resources and upslope planting areas. At Contact, there were as many as five villages within what are now ‘Āhihi-Kīna‘u NAR and Keone‘ō‘io. These include Ma‘onakala Village at the far northern end of the reserve in ‘Āhihi Bay, as well as four small villages in Keone‘ō‘io Bay observed by La Perouse during his anchorage. He reports that each village was comprised of about 10 to 12 straw houses.

The late 1700s were a time of almost continuous warfare in the islands with various *moi* struggling to expand or defend their domains. As Cordy and Athens (1988:10–12) document, Honua‘ula District was for the most part outside of the political mainstream at this time. The only significant event to impact the district was a plundering attack by Kalaniopuu’s forces around 1777. Constant inter-island warfare probably had important indirect effects on the inhabitants of the district in the form of levies imposed for warriors and provisions. By 1795, however, Kamehameha had consolidated his rule over Maui and ushered in a period of relative peace.

2.2.2 Economic Shift

As European and American merchants, whalers, and missionaries pressed their interests in the Hawaiian Islands, traditional society was quickly drawn into the expanding global market economy. The process by which Hawaiians from outlying rural districts such as Honuaʻula migrated to the bustling port towns of Lahaina and Honolulu in search of employment and adventure is well documented. Equally well known is the fact that disease ravaged the Hawaiian people during this period resulting in a dramatic population decline throughout the 1800s. Although primary documentary evidence is not present for the study area, we can be sure that its two *ahupuaʻa* shared in this fate.

Thanks to census data (Schmitt 1973), we do know that Honuaʻula District experienced a steady decline in population between 1831 and 1836 from 3,340 to 1,911. By 1846, informants reported that the population had dropped to a mere 80 individuals (Resnick 1977:36). In the 1930s, Handy and Handy (1991:510) could report of Keoneʻōʻio that: "There are no people living here now." While census data and oral accounts are often inaccurate, the general trend is clear. The area around the project area had probably reached a peak population at the time of Western contact and declined steadily over the next century.

Those who remained in Honuaʻula in the mid-1800s were mostly employed on ranches or plantations. In the early 1840s, sugarcane cultivation and processing took hold at Ulupalakua. Irish potatoes and cattle were also grown for export to California and were shipped through the landing built at Makena. The potato crop was profitable enough that people immigrated into the district to grow them as 'squatters' on the land. Land and leases in the area changed hands several times during this period due to the business maneuverings of a few key players, most notably M. Nowlein and Burrows, L. Torbert, J. Makee, and W. Goodale. The most historically important transaction was the 1856 purchase of Torbert's plantation by James Makee, who renamed it Rose Ranch.

During this period, Honuaʻula inhabitants made their living through subsistence agriculture and cash labor. The rich fishing grounds off Honuaʻula were also a persistent factor in regional economics. In 1865, Fornander (in Barrere 1975:58) reports: "The population of Honuaʻula—what is not employed on the Makee Plantation—are chiefly fishermen." Fishing, centered at Makena, seems to have been the only viable economic alternative for inhabitants well into the early 1900s (Handy and Handy 1991:510). Despite the somewhat limited employment options, there appear to have been about 150 people living in or very near to ʻĀhihi-Kīnaʻu NAR and Keoneʻōʻio in 1853 (Coulter 1931).

As with much of Hawaiʻi, schools were established early on Maui. Originally run by missionaries, they came under government control in 1840. During his tenure as Inspector General of Schools, Abraham Fornander inspected the schools of Maui in 1865. At this time, there were two schools in or near the present study area: one at Kanahena and the other at Keoneʻōʻio. The schools were constructed of four cobble walls with Pandanus leaf roofs and beach pebble floors (Barrere 1975:57, 58). The Kanahena schoolhouse was situated in "a wilderness of lava rocks and clinkers, . . ." (Fornander in Barrere 1975:57), suggesting it was probably built on the lava flow at the northern end of ʻĀhihi-Kīnaʻu NAR. The Keoneʻōʻio school was constructed in the same manner and was described by Fornander as, "House of cobbles, leaf roof. The site is a perfect mass of black lava clinkers, unrelieved by a single blade of vegetation." Although the location of

this schoolhouse is lost to history, it was likely near the former Keoneʻōʻio Church, whose remains can still be seen. The schoolhouse at nearby Keawekapu in Makena, for example, was also near the local church. Speaking of the Honuaʻula schoolhouses generally, Fornander (in Barrere 1975:57) remarks that, "In all Honuaʻula there are neither windows nor doors, nor decent furniture in those stone hovels, called by courtesy school houses." The schools appear, then, to have been constructed in the early nineteenth century Hawaiian style out of local materials. They were in many cases associated with churches and served the children of local fishermen and ranch laborers.

2.2.3 The Modern Era

Another important late nineteenth century development on NAR land was the installation of Kanahena Lighthouse in 1884. Kitchen lamps used for the beacon were tended by a keeper who lived in Makena and made two daily trips to the lighthouse for which he received $20 (unpublished manuscript on file at NAR office). The light was improved in 1905 and a man named Andersen tended it until his death in 1910. His wife tended the light for the rest of that year. In 1911, Charles Akana was appointed light keeper. The light was in use for another seven years until the installation of a beacon at nearby Hanamanioa in 1918. The Kanahena light thereafter fell into disuse.

Sugarcane continued as the primary industry at Makee's Rose Ranch until the late 1870s when it went into decline with the ranch transitioning fully to cattle by 1884. Rose Ranch (now Ulupalakua Ranch) was the dominant economic force as well as the region's primary employer from the mid-1800s until well into the twentieth century. As noted above, the principle infrastructure for local ranches and plantations was Makena Landing. In 1901, however, J.H. Raymond, the new owner of Rose Ranch, built a boat landing, slaughterhouse, and cold storage plant at Keoneʻōʻio. These facilities were in use for almost 30 years until a new slaughterhouse was built at Ulupalakua and processing and cold storage shifted to Kahului. The Keoneʻōʻio landing and slaughterhouse are thought to be within parcel TMK 2-1-004:046 (Fredericksen and Fredericksen 1997:10), southeast of the project area at the other end of ʻĀhihi-Kīnaʻu NAR.

Ranching continued as the primary economic engine in Honuaʻula throughout much of the twentieth century. With the onset of World War II, however, the U.S. Military began conducting maneuvers in the area (Fredericksen and Fredericksen 1997:10–11). Coastal zones were fortified with bunkers, and amphibious beach landings were made at Makena in preparation for the westward push across the Pacific. According to local informants, the Keoneʻōʻio Bay parcel investigated by Fredericksen and Fredericksen (1997) once contained two buildings and a concrete ramp dating to this era. The structures apparently did not survive the tsunami of 1946.

All the lands currently encompassed by ʻĀhihi-Kīnaʻu NAR were originally leased by Rose Ranch and later Ulupalakua Ranch. Composed of relatively new lava, the Keoneʻōʻio church lands were not particularly useful as pasture, with the exception of several large *kīpuka*. Stone fencelines and cattle trails are still visible in the *mauka* portion of the reserve.

2.3 Māhele and Land Claim Awards

The reserve contains three Māhele land claim awards (LCAs) and a land grant, all of which are in Kanahena Ahupuaʻa, near the edge of the Puʻu Mahoe lava flow at the NAR's northwest

corner (Table 1; Figure 4). These parcels are currently privately owned, although still within reserve boundaries. They are situated on an older flow which is vegetated in *kiawe* and *koa haole*. These parcels represent the last habitable land until La Perouse Bay on the southern side of Cape Kīnaʻu. Numerous other LCAs and land grant parcels are located north and east of these lands. Kapoi and Paele, claimants to ʻĀhihi-Kīnaʻu NAR parcels, were awarded a number of these *mauka* parcels which likely served as sweet potato, and later Irish potato, planting areas.

Land claims and grants constitute a very small fraction of Kanahena Ahupuaʻa and the reserve generally. The bulk of Kanahena was retained as government land during the Māhele. Unclaimed lands in Kanahena were the property of Ruth Keʻelikōlani but were surrendered during the Māhele (in lieu of commutation) to the government on her behalf by Mataio Kekūanāoʻa. The lands were thereafter leased for pasture by Rose Ranch, and later Ulupalakua Ranch, until 1973 when ʻĀhihi-Kīnaʻu NAR was established.

2.4 Previous Archaeology at ʻĀhihi-Kīnaʻu NAR

ʻĀhihi-Kīnaʻu NAR contains a variety of traditional Hawaiian and early historical cultural resource sites (Figure 5). Some sites, such as Maʻonakala Village Complex in Kanahena, are well-known, whereas most are known only to reserve rangers and long-time residents.

Formal archaeological survey in the reserve has been very limited (Table 2). In his 1916 survey of Maui, J.F.G Stokes identified a *heiau* in Kanahena called Koula Heiau, for *houlu ai*[2] (Thrum 1917:127), although he did not actually see it. No further work was conducted until 1971 when a team from the Bernice P. Bishop Museum cleared and mapped the ruins at Maʻonakala (Emory 1972; Emory and Hommon 1972). According to the Bishop Museum reports, the Hawaiian place name "Maʻonakala" was first communicated to Elspeth Sterling in 1961 by long-time La Perouse Bay resident Charles Aikala (Emory and Hommon 1972:53). The Bishop team documented nine major architectural features in the village including a canoe shed, a *heiau*, a well, and several *ʻiliʻili* paved house enclosures (Figure 6). By 1974, Maʻonakala Village Complex was listed in the Hawaiʻi Register of Historic Places as Site 50-50-14-1018.

Table 1. Land Claim Awards and Land Grant within ʻĀhihi-Kīnaʻu NAR

Land Claim Award No.	Claimant	Acreage	Testimony
2605, Ap. 5	Paele	0.67	Bk. 3, pp. 776
5484*, Ap. 2	Kanao	0.13	Bk. 3, pp. 774
3388**	Hoomiliahuhe***	0.23	BK. 3, pp. 815
Land Grant			
Grant 2199, Ap. 3	Kapoi	2.06	

* listed as 5424 in the Indices of Awards. Reason for discrepancy unknown.
** listed as 5388 in the Indices of Awards.
***in Naulalo, possibly an *ʻili* within Kanahena.

[3] *hoʻūlu* – to stir up, inspire, excite; and *ai* – coition, sexual relations (Pukui and Elbert 1986)

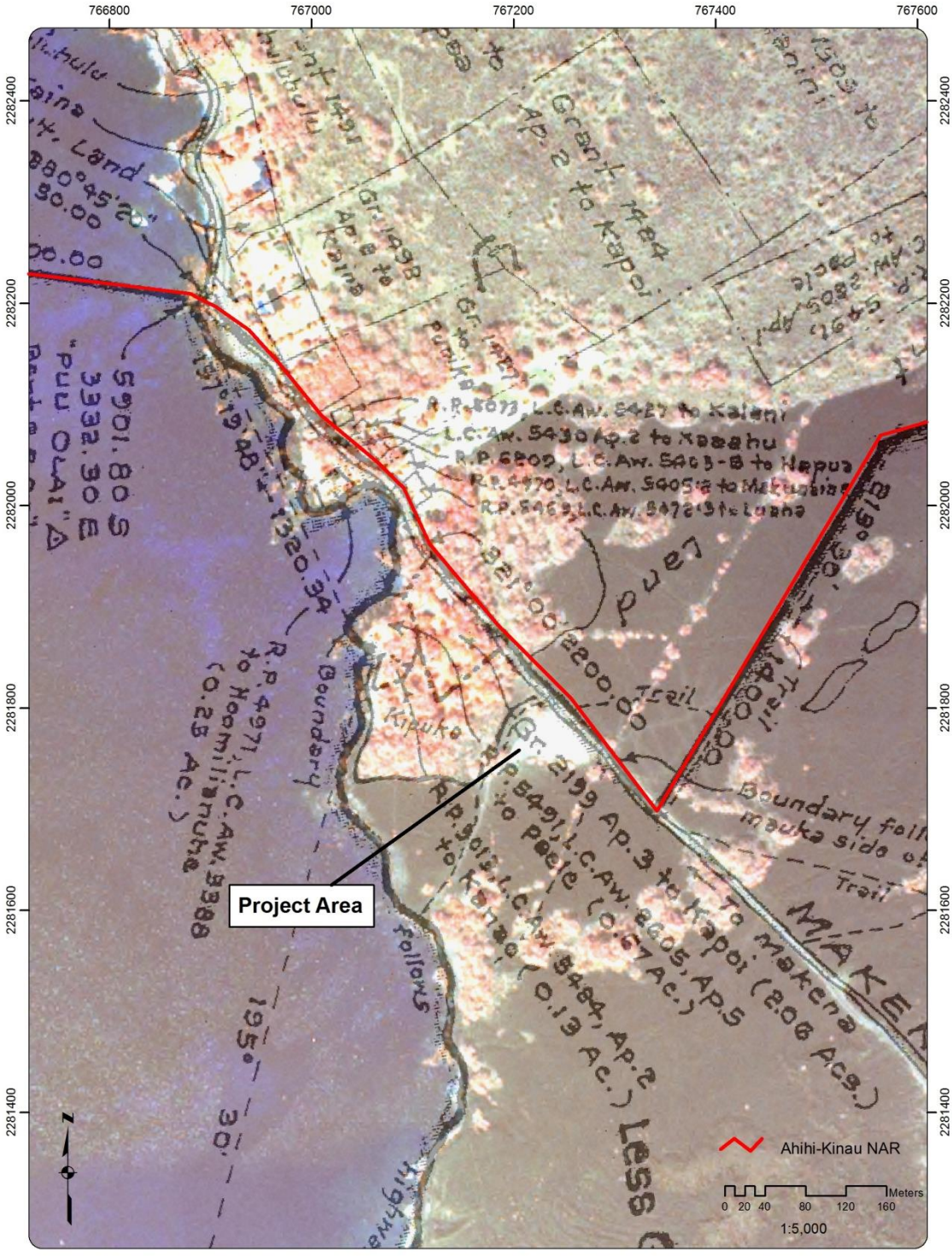

Figure 4. Māhele Land Claim Awards and Land Grant within Kanahena Ahupua‘a. ‘Āhihi-Kīna‘u NAR is below the red line (from Peterson et al. 2007:8).

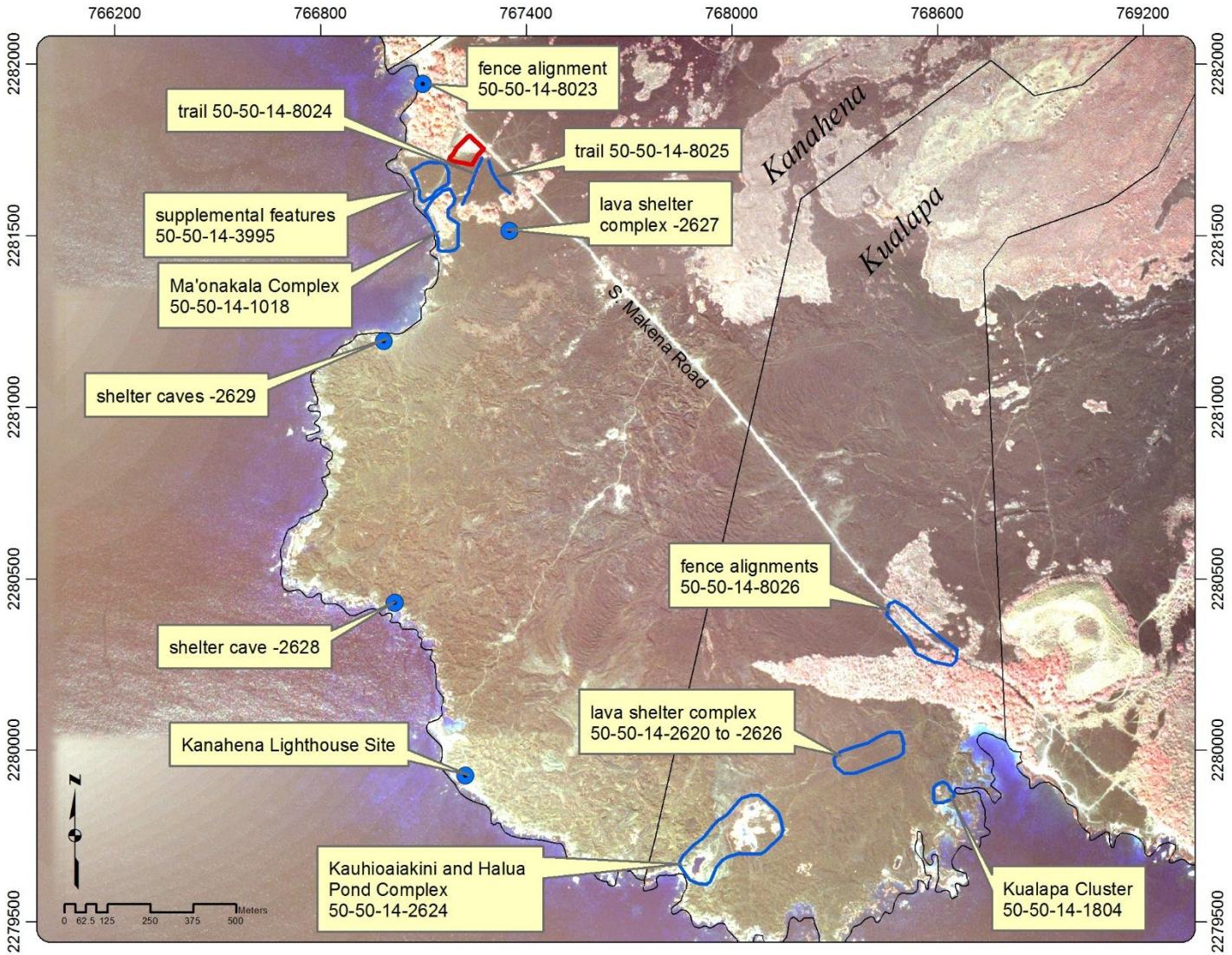

Figure 5. Cultural resources in ʻĀhihi-Kīnaʻu NAR. Project area is in red (from Peterson et al. 2007:12).

Table 2. Previous Archaeological Studies in the Vicinity of the Project Area

Reference	Location	Study Type	Findings
Stokes in Thrum 1917	Throughout Maui	*Heiau* survey	Koula Heiau in Kanahena.
Emory 1972; Emory and Hommon 1972	Maʻonakala Village in Kanahena (Site 50-50-14-1018)	Survey and mapping	Nine architectural structures at Site 50-50-14-1018: canoe shed, *heiau*, well, several house enclosures.
Bordner 1990	Various locations in Kanahena and Kualapa, but primarily coastal Kualapa	Reconnaissance survey	Seven sites, mostly short-term shelters surrounding Halua and Kauhioaiakini Ponds.
Erkelens 1994	Maʻonakala Village in Kanahena (Site 50-50-14-1018)	Survey and mapping	65 additional features at Site 50-50-14-1018. Noted trail systems leading to *kīpuka*.
Peterson et al. 2007	Public access corridors within Kanahena, Kualapa and Keoneoio. Limited *mauka kīpuka* survey	Reconnaissance Survey	18 small enclosures, 7 C-shaped shelters, 1 *koa* shrine, 10 mounds, 11 rockshelters—in Kualapa. Modified *kīpuka*, 3 enclosures (in *mauka kīpuka*), 2 rockshelters—in Kanahena. Extensive interconnected trail network throughout ʻĀhihi-Kīnaʻu NAR.
Cultural Surveys Hawaiʻi (no report available)	Lands *makai* of ʻĀhihi-Kīnaʻu NAR access road	Archaeological monitoring in support of UXO Remedial Investigation	Unknown.
Desilets 2015	ʻĀhihi-Kīnaʻu NAR fenceline	Archaeological Inventory Survey	Two trails, one traditional Hawaiian wall, a complex of five historic wall sections.

In 1994, the Maʻonakala Complex was investigated by Erkelens (1994:85–91). This work documented an additional 65 features immediately north-northwest of the complex. The features were collectively designated Site 50-50-14-3995 and include historic artifact scatters, a possible *heiau*, habitation enclosures, trails, c-shapes, mounds, cairns, bubble shelters, and cupboard storage areas (Figure 6). Erkelens also noted the extensive trail network connecting the nearby *kīpuka*. These *kīpuka* could not be adequately surveyed at the time due to dense vegetation.

Other known archaeological resources in the reserve include the series of sites and site complexes identified by Bordner during his 1990 Chaminade University of Honolulu field school survey (Bordner 1990).

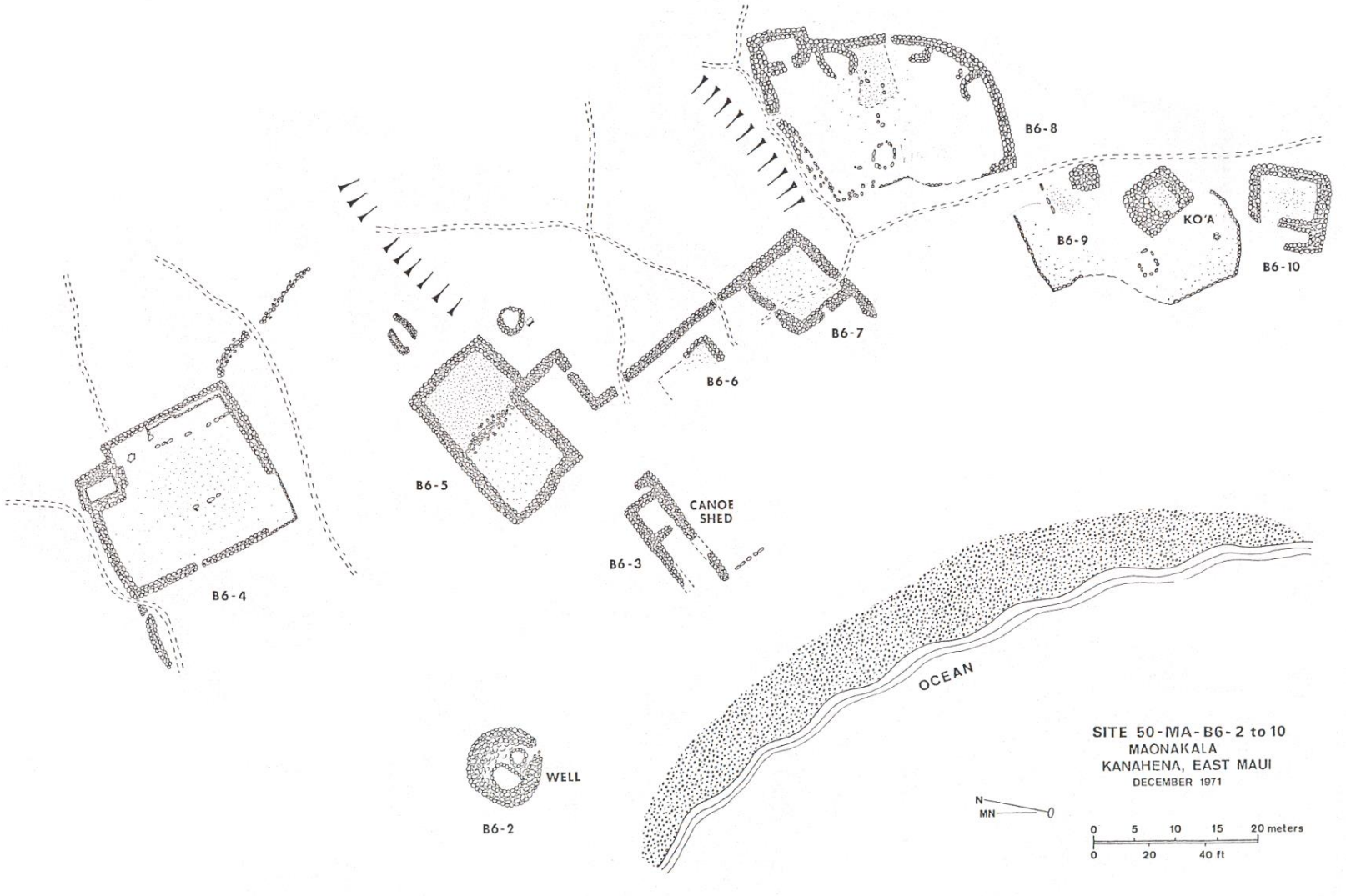

Figure 6. Plan of Maʻonakala Village Complex (from Emory 1972:8).

Reconnaissance survey in Kualapa Ahupuaʻa identified seven sites (Sites 50-50-14-2620 through -2626; see Figure 7), most of which surround Halua and Kauhioaiakini Ponds. According to Bordner (1990:4):

> The entire pond complex [Site 2624] exhibits a number of habitation features along with pond and coastal exploitation, and while it does not exhibit the formal built features of the Kualapa cluster it does have a large number of bubble cave shelters which provide adequate habitation, especially given the persistent high winds at this location.

Most of the other sites recorded by Bordner are small cave shelters located along the traditional trail leading from South Makena Road to Kauhioaiakini Pond. The shelters exhibit very minimal to no modification. Most have cobbles stacked at the opening and some contain shell midden. Bordner also notes that a couple of caves (Sites 2620 and 2623), "would be logical places for either burial or access to seepages." It should be noted, however, that no human remains were found in any of the caves during the survey. Bordner (1990) also recorded a few sites in Kanahena to the north, these being also along traditional trails. As with most of the sites in Kualapa, these consisted of small, lightly modified blister shelters. Although modest in scope, the field school's work is important in that it was the first formal archaeological survey of the interior of the reserve. Findings suggest very short-term habitation within the reserve and a focus on both anchialine and coastal aquatic resources.

One of the most recent archaeological works reported for ʻĀhihi-Kīnaʻu NAR was conducted in association with development of its current Cultural Resources Management Plan (CRMP) (Peterson et al. 2007). The multi-disciplinary studies conducted for the CRMP included archaeological reconnaissance survey of highly trafficked public access corridors, as well as limited survey of the several large *kīpuka* in the *mauka* portion of the reserve. The purpose of the survey was to collect information on the distribution and nature of sites along the access corridors and use it to prioritize the implementation of protection measures. The survey produced a high density of new sites and features in the vicinity of the previously recorded Kualapa Cluster (Site 50-50-14-1804, part of La Perouse Archaeological District) and at Halua and Kauhioaiakini Ponds. Traditional Hawaiian features consisted of mounds, C-shaped shelters and enclosures, modified overhang shelters, a *koa* shrine, and modified inlets and anchialine pools. Like Erkelens, investigators also noted the presence of features and amorphous landscape modification within the *kīpuka*. Very few sites were identified in the central region of the NAR. Major sites and feature clusters seem to be restricted to the northwestern and southeastern coastlines, as well as discrete hydrologic features such as anchialine pools. Functionally, most sites appear associated with temporary habitation by Hawaiians exploiting and maintaining these marine and anchialine pools.

An AIS was conducted last year of a 2.5 kilometer ungulate exclusion fenceline corridor along the seaward side of South Makena Road from Kanahena Cove southeast to Keoneʻōʻio Bay (Desilets 2015). The fenceline was proposed by DOFAW to protect sensitive natural and cultural resources occurring within the lava landscape to the southwest of the government road that bisects ʻĀhihi-Kīnaʻu NAR. Four new sites were recorded along this corridor, including one traditional Hawaiian retaining wall (Site 50-50-14-8023), two traditional Hawaiian trails (Sites 50-50-14-8024 and -8025), and a complex of five historic wall sections (Site 50-50-14-8026).

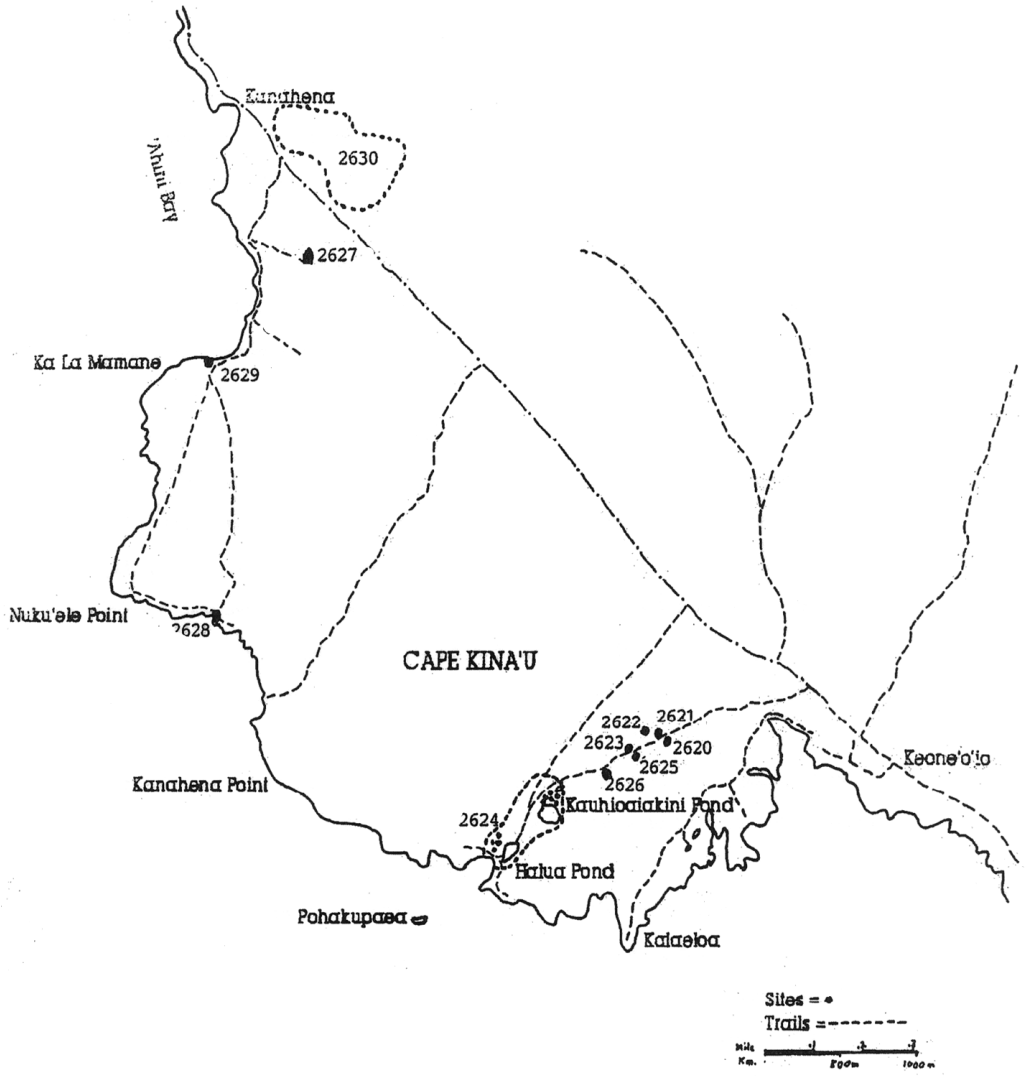

Figure 7. Chaminade University Field School survey findings at Cape Kīnaʻu (from Bordner 1990:Map 1).

Although not investigated or discussed in previous archaeological investigations, it is important to note that the reserve also contains a number of historic era features. Prominent cattle walls traverse much of the reserve's *mauka* portion, for example. The walls are constructed of *ʻaʻā* clinker and appear designed to keep livestock out of the extensive and treacherous lava flow areas. The extensive wall system and associated ranching features are largely unrecorded. Also present are the remains of the Kanahena Point lighthouse in use from 1884 to 1918. The main lighthouse structure is gone, leaving only concrete foundation blocks and some scrap steel.

2.4.1 Sites Near Project Area

According to Desilets (2015:17, 26), Site 8024 is a 1 m wide and 132 m long, straight trail extending from the Maʻonakala Village Complex (Sites 1018 and 3995) to the *mauka* portion of Kanahena Ahupuaʻa. As evidenced by the presence of waterworn stepping- stones spaced at regular intervals, the trail dates originally to the pre-Contact period. But the trail appears to have been used well into the historic period to travel between the coast and Maʻonakala Village and the *mauka* lands. Site 8025 is a 0.6 m wide, 115 m long traditional Hawaiian trail that is similar to Site 8024 but without historic period modifications. The partly destroyed trail still exhibits in situ waterworn stepping-stones that show it dates to the pre-Contact period. Functionally, the trail connects one of the outlying *kīpuka* near Maʻonakala Village with the large and seemingly more highly traveled Site 8024 trail.

The most notable site in the area, and the place where the trails originate, is the Maʻonakala Village complex some 200 m to the south. As noted previously, this complex contains a canoe shed, a *heiau*, a well, and several house enclosures, plus 65 additional features to the north-northwest and an extensive trail network (Erkelens 1994:85–91).

2.4.2 Archaeological Expectations

There is a low likelihood of finding surface sites within the project area. For the parking lot, the *ʻaʻā* lava rock has been graded and any features on the landscape were long since destroyed. Although survey for the ungulate exclusion fenceline corridor by Desilets (2015) identified two traditional Hawaiian trails (Sites 8024 and 8025) nearby, these do not extend into the project area. It is possible that trail segments cut through the unimpacted portions of the project area east of the current parking lot. Other types of constructed traditional Hawaiian features are possible, but unlikely. Any traditional Hawaiian sites or features identified will likely be associated with the Maʻonakala Village Complex (Sites 1018 and 3995), about 200 m to the south.

3.0 SURVEY METHODS

The purpose of the AIS was to evaluate the project parcel for the presence or absence of pre-Contact or historic properties. To accomplish this, a pedestrian survey of the entire project area was conducted with transects oriented parallel with South Makena Road. No test excavation was conducted, as the surface was entirely *ʻaʻā* lava with only slight sediment buildup on the current parking lot from vehicular use. Digital photographs were taken of the project area.

Standards of documentation and recording were in accordance with HAR §13-276. Although not strictly required, investigations were also in accordance with the Secretary of the Interior's *Standards for Archaeological Documentation*. Location reference data for the project were recorded using a sub-meter accurate Trimble GeoXH.

4.0 RESULTS

The AIS revealed that most of the project area has been heavily disturbed by mechanical grading related to construction of the existing parking lot (Figure 8). Grading for the parking lot

Figure 8. Current "Dumps" parking lot, facing northeast.

has leveled most of the project area leaving no vegetation, except for a few trees around the perimeter (Figure 9). Construction also resulted in the build-up of a rock berm and placement of large stones and a metal fence around the perimeter of the parking lot (Figure 10).

Survey of the *ʻaʻā* lava surrounding the parking lot produced no evidence of human modification (Figure 11). This area consists of intact *ʻaʻā* lava with no traditional Hawaiian or historic features or artifacts.

5.0 CONCLUSIONS

Garcia and Associates conducted an AIS of the "Dumps" parking lot and surrounding area in support of DOFAW's proposed paving project. Survey consisted of pedestrian transects within the existing parking lot and intact *ʻaʻā* lava to the southeast.

No traditional Hawaiian or historic cultural sites or artifacts were found within the project area. Two previously documented traditional Hawaiian trails (Sites 8024 and 8025) are located east of the parking lot, but are outside the project area and will not be impacted by the paving project. The proposed paving project will have 'no effect' on historic properties.

Figure 9. Parking lot viewed from end of Site 8024 showing vegetation in area, facing northwest. DOFAW trailer in background.

Figure 10. Parking lot perimeter with trees, large stones, and fencing; facing east.

Figure 11. Area of proposed parking lot extension, facing southwest. Fence on right is edge of current parking lot.

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APPENDIX F – EARLY CONSULTATION AND DRAFT EA CORRESPONDENCE

Draft Environmental Assessment Correspondence

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

EPO 16-021

January 29, 2016

Mr. Richard Stook
WCP, Inc.
99-061 Koaha Way, Suite 208
Aiea, Hawaii 96701

Dear Mr. Stook:

SUBJECT: **Draft Environmental Assessment (DEA) for Ahihi Kinau Natural Area Reserve Parking Lot Makawao, Maui**
TMK: (2) 2-1-004:073

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your DEA to our office via the OEQC link: http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Maui/2010s/2016-1-23-KA-5B-DEA-Ahihi-Kinau-NAR-Parking-Lot.pdf

EPO strongly recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments. EPO has recently prepared draft Environmental Health Management Maps for each county. They are online at: http://health.hawaii.gov/epo/egis

EPO encourages you to examine and utilize the Hawaii Environmental Health Portal. The portal provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings. The Portal is continually updated. Please visit it regularly at: https://eha-cloud.doh.hawaii.gov

You may also wish to review the draft Office of Environmental Quality Control (OEQC) viewer at: http://eha-web.doh.hawaii.gov/oeqc-viewer This viewer geographically shows where previous Hawaii Environmental Policy Act (HEPA) {Hawaii Revised Statutes, Chapter 343} documents have been prepared.

In order to better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed a new environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: http://www2.epa.gov/ejscreen

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

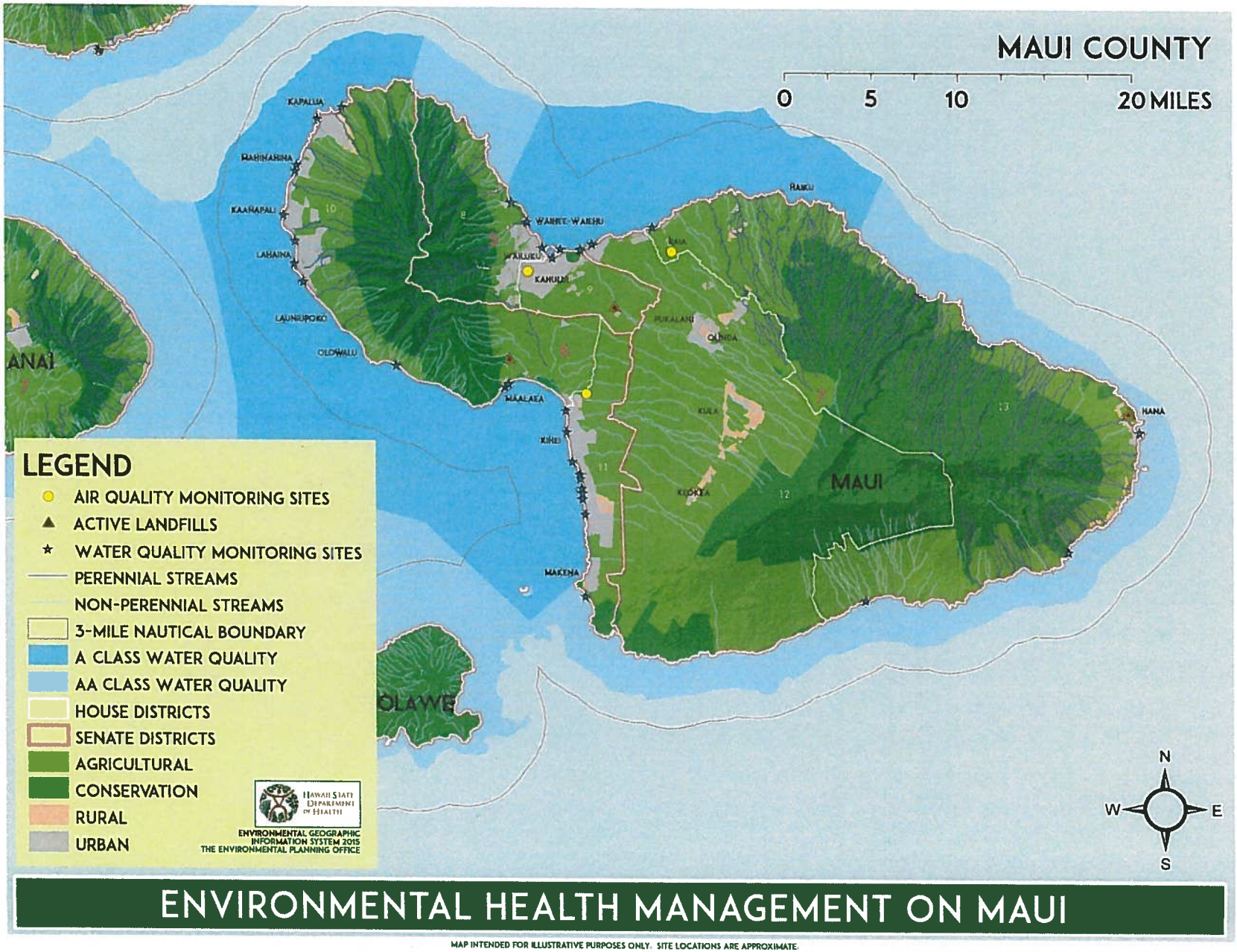
Mahalo nui loa,

Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

LM:nn

Attachment 1: EPO Draft Environmental Health Management Map
Attachment 2: OEQC Viewer Map of Area
Attachment 3: U.S. EPA EJSCREEN Table

c: Peter Landon, Department of Land and Natural Resources
DOH: DHO Maui {via email only}



ENVIRONMENTAL HEALTH MANAGEMENT ON MAUI

MAP INTENDED FOR ILLUSTRATIVE PURPOSES ONLY. SITE LOCATIONS ARE APPROXIMATE.

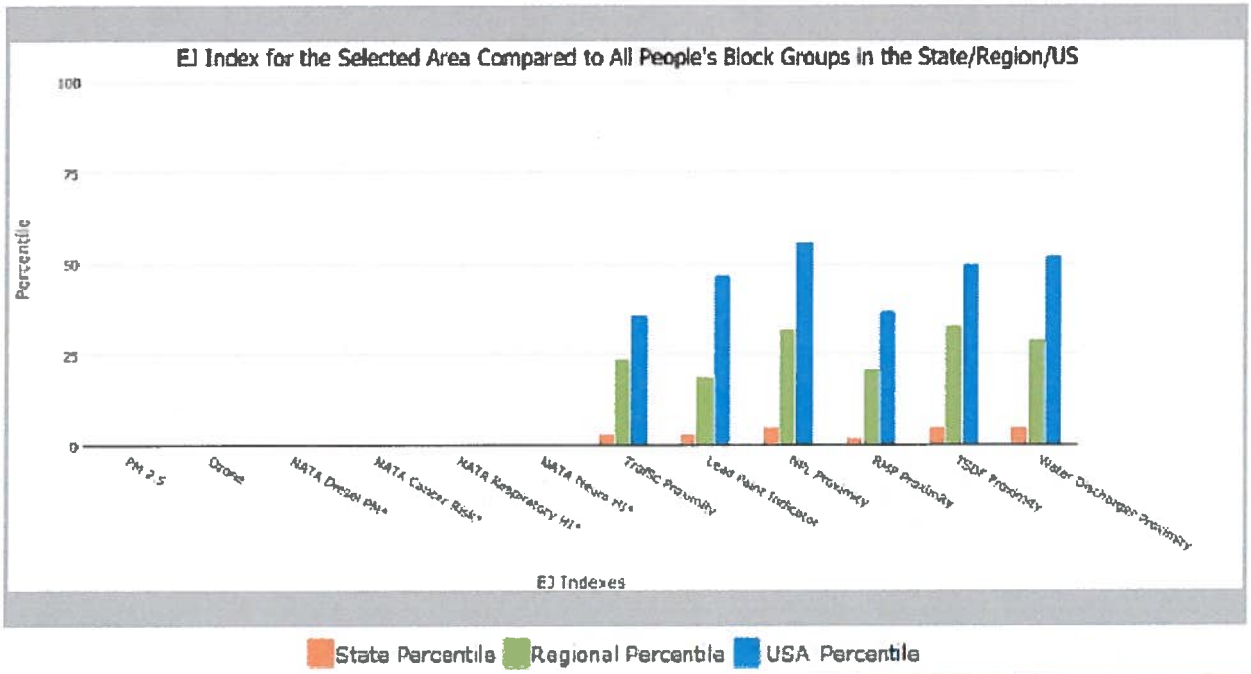

hawaii.gov
Stay Connected
OEQC Viewer
makawao
0 sites found
Results
Filter
Show sites with no location
Hybrid
Cape Kinau
Makena Rd
Makena Rd
Kanahena Point
Ahihi-Kinau Natural Area Reserve
Kanaherra Point
Makena Stables
Lava Fields
La Perouse Bay
Pohaku Pana
Map data ©2016 Google Imagery ©2016 , DigitalGlobe
Report a map erro

EJSCREEN Report

for 1 mile Ring around the Corridor, HAWAII, EPA Region 9

Approximate Population: 72

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	3	24	36
EJ Index for Lead Paint Indicator	3	19	47
EJ Index for Proximity to NPL sites	5	32	56
EJ Index for Proximity to RMP sites	2	21	37
EJ Index for Proximity to TSDFs	5	33	50
EJ Index for Proximity to Major Direct Dischargers	5	29	52



This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report

for 1 mile Ring around the Corridor, HAWAII, EPA Region 9

Approximate Population: 72

EJSCREEN Report

for 1 mile Ring around the Corridor, HAWAII, EPA Region 9

Approximate Population: 72

Selected Variables	Raw Data	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	N/A	N/A	9.95	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	49.7	N/A	46.1	N/A
NATA Diesel PM (µg/m³)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Cancer Risk (lifetime risk per million)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	23	280	25	190	23	110	39
Lead Paint Indicator (% Pre-1960 Housing)	0.041	0.17	31	0.25	32	0.3	23
NPL Proximity (site count/km distance)	0.0052	0.092	16	0.11	5	0.096	1
RMP Proximity (facility count/km distance)	0.13	0.18	65	0.41	34	0.31	46
TSDF Proximity (facility count/km distance)	0.0056	0.092	17	0.12	1	0.054	12
Water Discharger Proximity (facility count/km distance)	0.038	0.33	8	0.19	8	0.25	7
Demographic Indicators							
Demographic Index	19%	51%	0	46%	12	35%	30
Minority Population	10%	77%	0	57%	3	36%	26
Low Income Population	28%	25%	64	35%	45	34%	46
Linguistically Isolated Population	0%	6%	25	9%	20	5%	45
Population With Less Than High School Education	0%	10%	3	18%	3	14%	4
Population Under 5 years of age	0%	6%	2	7%	4	7%	4
Population over 64 years of age	27%	14%	92	12%	94	13%	94

* The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: http://www.epa.gov/ttn/atw/natamain/index.html.

For additional information, see: www.epa.gov/environmentaljustice

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF FORESTRY AND WILDLIFE
1955 MAIN STREET, SUITE 301
WAILUKU, HAWAII 96793

March 23, 2016

Laura Leialoha Phillips McIntyre, Program Manager
State of Hawaii – Department of Health
Environmental Planning Office
Post Office Box 3378
Honolulu, HI 96801

Subject: *Draft Environmental Assessment for Proposed Parking Area Improvements at the Ahihi Kinau Natural Area Reserve, Maui, Hawaii TMK: (2)2-1-004:073.*

Dear Ms. Phillips McIntyre:

We thank you for your comment letter to our WCP, Inc. (File: EPO 16-021), dated January 29, 2016, regarding the subject project.

We thank the Environmental Planning Office (EPO) for recommending the review of standard comments and available strategies to support sustainable and healthy design online resources available through the EPO and the Hawaii Environmental Health Portal websites. We also thank you for encouraging the review of additional online resources available at the websites of Department of Health Hawaii Environmental Health Portal, Office of Environmental Quality Control, and the U.S. Environmental Protection Agency, in the planning of the subject project to increase sustainable, innovative, inspirational, transparent, and healthy design. Lastly, we thank you for providing hardcopy attachments of the OEQC Viewer Map of the project area, EPO Draft Environmental Health Management Map, and the U.S. EPA EJSCREEN Table.

The above-mentioned online resources will be taken into consideration during the preparation of the final environmental assessment which will be available for your review when published. We thank you again for your comments, suggestions, and interest in the proposed project and for your participation in the environmental review process.

Sincerely,

Scott Fretz
Maui District Manager
cc: WCP, Inc.

STATE OF HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Ref: OCCL:LY

CORR: MA 16-82

FEB 22 2016

MEMORANDUM

TO: Scott Fretz, Maui District Manager
Division of Forestry and Wildlife

FROM: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

SUBJECT: Comments on the Draft Environmental Assessment (EA) for the Proposed Parking Area Improvements at the Ahihi Kina'u Natural Area Reserve, Honua'ula, Maui
Tax Map Key (TMK): (2) 2-1-004:073

Based on the information provided in the Draft EA, the Division of Forestry and Wildlife (DOFAW) is proposing to improve its existing parking lot area in the Ahihi Kina'u Natural Area Reserve (NAR). Proposed improvements include the following:

- Construction a concrete-paved parking lot approximately 30,000 square feet in size with a one-way internal traffic circulation pattern. The proposed parking lot will consist of 55 delineated parking stalls, including three (3) accessible stalls that meet the requirements of the American with Disabilities Act;
- Installation of a toll booth or an automated parking fee machine (for non-resident visitors);
- Installation of separate ingress and egress gates; and
- Creation of an emergency vehicle access/staging area.

The project is intended to comply with the established goals, objectives, and strategic actions identified in the Ahihi Kina'u NAR Management Plan.

The OCCL notes that the project area is located within the Protective Subzone of the State Land Use Conservation District. Based on review of our records, the existing, approximately 3,750 square foot un-paved parking lot site was approved on September 13, 1974 via Conservation District Use Permit (CDUP) MA-593. Currently the existing parking lot is 22,400 square feet and remains unpaved. As the current project being proposed increases the parking lot size to 31,000 square feet and proposes the entire lot to be paved, OCCL anticipates that the project will require a Conservation District Use Departmental Permit pursuant to Hawai'i Administrative Rules (HAR) §13-5-22, P-8 STRUCTURES AND LAND USES, EXISTING (C-1) *Moderate alternation of existing structures, facilities, uses, and equipment.* Please note that this letter does not constitute the

Department's final decision regarding the level of permitting required for the subject project. We reserve the right to change our decision dependent on the final project description presented to us by DOFAW and/or their consultant when they have submitted their Conservation District Use Application for our review and processing.

In addition, the OCCL offers the following comments on the Draft EA:

- As this area is highly sensitive, we have concerns regarding potential strormwater run-off impacts to both the known endangered species of flora and fauna found in the surrounding areas as well as the potential impacts to nearshore waters caused by the increase in impermeable surface areas. Please include in the Final EA, a discussion of how drainage at the site will be managed and how impacts from increased drainage flow will be mitigated.

- The *Ahihi Kina'u Management Plan* was approved by the Board of Land and Natural Resources on October 12, 2012. The plan identifies improvements to the parking lot as strategic action under *Action H1(a) – Manage visitors and access points . (Priority).* Specifically this action directs DOFAW to *"set parking limits by establishing parking stalls with low tech, attractive, practical materials for unpaved parking area at Kanahena."*

Should you have any questions regarding this correspondence, please contact Lauren Yasaka of our Office at (808) 587-0386.

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF FORESTRY AND WILDLIFE
1955 MAIN STREET, SUITE 301
WAILUKU, HAWAII 96793

March 23, 2016

MEMORANDUM

TO: SAM J. LEMMO, ADMINISTRATOR
STATE OF HAWAII – OFFICE OF CONSERVATION AND COASTAL LANDS

FROM: SCOTT FRETZ, MAUI DISTRICT MANAGER

SUBJECT: COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED PARKING AREA IMPROVEMENTS AT THE AHIHI KINAU NATURAL AREA RESERVE, MAUI, HAWAII.

Thank you for your memorandum (CORR: MA 16-82), dated February 22, 2016, commenting on the subject project.

We confirm that the existing parking lot site was approved on September 13, 1974 via Conservation District Use Permit (CDUP) MA-593, and we acknowledge that OCCL anticipates that the project will require a Conservation District Use Departmental Permit pursuant to Hawaii Revised Statutes (HAR) 13-5-22, P-8 STRUCTURES AND LAND USES, EXISTING (C-!) *Moderate alteration of existing structures, facilities, uses, and equipment*. Furthermore, we note that your memorandum does not constitute OCCL's final decision regarding the level of permitting required for the subject project and that OCCL reserves the right to change their decision dependent upon the final project description presented with the submittal of the CDUP application.

We acknowledge OCCL's concerns regarding potential stormwater run-off impacts to the surrounding environment resulting from the increase in impermeable surface area. Though the proposed project is only in its conceptual stages, the final environmental assessment (EA) will include additional preliminary design and drainage details to more adequately address storm water runoff generated by the proposed project and potential environmental impacts.

Lastly, OCCL notes that the Ahihi Kinau Management Plan was approved by the Board of Land and Natural Resources on October 12, 2012, and that the Plan identifies improvements to the parking lot as *Strategic Action H1(a) – Manage visitors and access*

points (Priority) specifically to *"set parking limits by establishing parking stalls with low tech, attractive, practical materials for unpaved parking area at Kanahena."*

We also note that the draft EA recognizes and identifies Strategic Action H1(a) in relation to the proposed project's *Purpose and Need* and *Relationship to Plans Policies and Controls*, sections 2.2 and 5.0, respectively. DOFAW is proposing the subject project to comply with *Strategic Action H1(a)* by "*setting parking limits"* and "*establishing parking stalls"* for the existing "*unpaved parking area at Kanahena*". The methods and materials were considered not only in the context of compliance with Strategic Action H1(a), but also in the broader context of other related Management Plan goals, objectives, and strategic actions as summarized in Section 5.4 of the EA. As such, DOFAW feels that the proposed project is the preferred alternative method to meet the requirements of the action's purpose and need.

The Final Environmental Assessment will be available for your review when published. We thank you again for your comments, suggestions, and interest in the proposed project and for your participation in the environmental review process.

cc: WCP, Inc.

February 19, 2016

State Department of Land and Natural Resources
Division of Forestry and Wildlife
1955 Main Street, Room 301
Wailuku, Hawaii 96793

Re: Draft Environmental Assessment (EA) for *Proposed Parking Area Improvements at Ahihi-Kinau Natural Area Reserve*.

Dear Dr. Scott Fretz,

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (EA) for *Proposed Parking Area Improvements at ʻĀhihi-Kīnau Natural Area Reserve*. I commend the Division's successful efforts to implement the Āhihi-Kīnau Management plan MP (2012).

I support the concept of building a parking area at Kanahena and collecting a fee from non-residents consistent with the MP, however, the EA is lacking a detailed plan and design that is necessary to evaluate certain aspects of the project that may impact the environment.

As it is currently represented in the EA, the proposed project lacks consideration of design features suited to the surrounding environment, does not contribute to the natural beauty and sense of place of one of Hawaii's greatest natural and cultural treasures, and does not take into account important elements of the management plan that should be integrated. The parking area is more than a utilitarian space – it is the first place where the public exits their car and enters the unique environment of the Reserve. The design of the parking area should meet and reflect the look and feel of the surrounding environment. I offer the following comments and considerations to address these concerns:

Management plan actions that should be considered for integration with planning for the parking area include, Action M3 (a) Complete the Reserves facility and infrastructure planning & (c) Improve and maintain on-site facilities; M4 (a) Identify strategic partnership needs under the plan & (b) Recuit partners in support of the plan's implementation; H1 (a) Manage visitors and access points & (b) Establish and Maintain trails and boundaries; H2 (a) Establish and interpretive program & (c) Increase a sense of place and awareness of cultural and historical significance.

Professional design services should be retained. The County requires parking areas to have landscaping plans. The current proposal, in which a concrete slab is placed in the middle of a lava flow, would benefit from a landscaping plan that would help with its integration into the landscape. Native vegetation should be part of the landscaping plan, consistent with species that are known from the area, and including those that create shade and habitat for reserve species and do not attract unwanted alien species. Under a landscaping plan the parking area could follow the natural contours of the existing cleared

area and wrap around and utilize existing elements like the kiawe shade trees that would be removed in the current plan.

Color of the concrete – the color and rock content should be chosen in consideration of solar radiation and refection. For example if the material is too light, the glare will be blinding, and if it's too dark (like asphalt) it will be very hot.

Sense of place – the parking area is adjacent to many remarkable landscape features, including Maonakala Village Complex, historic rock walls, and the landscape vistas of the southwest rift zone, the ocean, and Kahoolawe Island. The built environment should complement and enhance (rather than detract from) these attributes.

I'd like to echo the comments made by the Maui County Department of Planning: 5. Attempt to include any additional improvements envisioned for this area as part of this EA, even if you do not have funds for these improvements now –rather than doing another EA in the future for additional work.

Facilities and interpretation– I do not see toilet facilities mentioned in the EA, nor is there mention of where interpretation activities take will place, or where persons utilizing the ADA parking spaces would go after they park. The parking area improvements are a great opportunity to think about educational opportunities, interpretation opportunities, flow of people within the space for various uses, and placement of signage. In addition, the existing office ranger facilities deserve to be upgraded. All of these considerations should involve planning and interpretation professionals, and the convening of skilled partners and volunteers that can contribute to the careful and creative thinking on these important matters.

Without these important design considerations, the proposed parking area does not meet the criteria cited in the Draft EA on pages 35-36:

Protect the Natural Environment **Goal:** *County's natural environment and distinctive open spaces will be preserved, managed and cared for in perpetuity.*
Objective 1: *Improve the opportunity to experience the natural beauty and native biodiversity of the islands for present and future generations.*
Policy: *Preserve and provide ongoing care for important scenic vistas, view planes, landscapes, and open-space resources.*
Objective 2: *Improve the quality of environmentally sensitive, locally valued natural resources and native ecology of each island.*
Policy: *Improve the connection between urban environments and the natural landscape, and incorporate natural features of the land into urban design.*

Thank you for your consideration,

Emily J Fielding
Maui Marine Program Director

The Nature Conservancy
P.O. Box 1716
121 Apau Place
Makawao, Hawai‘i 96768

Office: 808-856-7668
Fax: 808-572-1375
Cell: 808-284-3961

efielding@tnc.org
nature.org/hawaii

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DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

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CONSERVATION AND COASTAL LANDS
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DEPARTMENT OF LAND AND NATURAL RESOURCES

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1955 MAIN STREET, SUITE 301
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March 23, 2016

Emily J Fielding, Maui Marine Program Director
The Nature Conservancy
P.O. Box 1716
121 Apau Place
Makawao, Hawaii 96768

Subject: *Draft Environmental Assessment for Proposed Parking Area Improvements at the Ahihi Kinau Natural Area Reserve, Maui, Hawaii.*

Dear Ms. Fielding:

We thank you for your comment letter, dated February 19, 2016, regarding the subject project.

We appreciate your support of the concept of building a parking area at Kanahena and collecting a fee from non-residents consistent with the Ahihi Kinau Management Plan (MP). However, we acknowledge your opinion that the EA is lacking a detailed plan and design necessary to evaluate certain aspects of the project that may impact the environment. For ease of reference, we address your comments in the order they appear in your letter.

1) Management plan actions that should be considered for integration with planning for the parking area include, Action M3 (a) Complete the Reserves facility and infrastructure planning & (c) Improve and maintain on-site facilities; M4 (a) Identify strategic partnership needs under the plan & (b) Recruit partners in support of the plan's implementation; H1 (a) Manage visitors and access points & (b) Establish and Maintain trails and boundaries; H2 (a) Establish and interpretive program & (c) Increase a sense of place and awareness of cultural and historical significance.

In assessing improvements to the existing parking area DOFAW considered alternatives in the broad context of applicable goals, objectives, and strategic actions as presented in the MP. As such, Actions M3 (a)(c) and H1 (a) are addressed in Sections 2.2 and 5.0 of the EA Actions M4(a)(b), H1(a), and H2(a)(c) have been and continue to be considered by DOFAW not only in relation to the proposed project but also with respect to the overall long-term management of the Reserve as a whole.

DOFAW is actively addressing interpretive program improvements as we are currently in the process of over-hauling the entire signage system for the Reserve. The new signage program will incorporate a much more extensive signage system relative to the existing signage in the Reserve. The new signage program will include, but may not be limited to, establishing signage along the Reserve boundary marker posts within the Reserve, and interpretive signage at the Kanahena parking lot and La Perouse Bay presenting visitors with relevant information on both natural and cultural resources within the Reserve.

Furthermore, DOFAW is actively identifying and developing strategic partnerships with public, private and commercial entities (e.g., public safety/emergency service providers, the hotel industry, and tourist activity businesses) in support of the MP's implementation.

For example, DOFAW has partnered with state parks, the county, as well as other state and private programs (Hawaii Tourism Authority, Na Ala Hele, and Hawaii Community Foundation) to produce 25,000 informational maps containing resource and activity-related information for the South Maui area. The overall intent of this partnering effort and informational map project is to alleviate visitor pressure on the Reserve by promoting recreational alternatives to the Reserve in the South Maui area. In addition, the maps will contain both information about the Reserve's natural/cultural resources and information regarding permissible and prohibited areas and activities. The maps will be locally distributed (throughout the hotel and tourist activities industries) and will also be available at the Kanahena parking lot (i.e., the project site).

As such, implementation of the proposed project, which would serve as a central access/focal point for Reserve visitors, in conjunction with the above-described interpretive signage program and partnering efforts will collectively function to address and effectively implement the MP Actions you have noted.
We appreciate your comments and expertise regarding interpretive design features and will continue to look forward to working with you and other knowledgable professionals on this in the near future.

2) We understand and concur with your appreciation for and usefulness of vegetated landscaping in parking lot facilities. However, we note that the standards identified in the County of Maui Parking Lot - Landscape Planting Plan Application Packet (LPAP) as well as the purpose and intent of its implementing sources of authority (i.e., Maui County Planting Plan as amended, County Code Title 19.36A.070) are applicable to and are intended to provide guidance for parking lot facilities in the context of urban development projects and growth.

Landscaping requirements and standards identified in the LPAP including, but not limited to, installation and automated irrigation systems, fencing/visual screening, and setback requirements for adjacent properties, tree size, number, location and type, and protection measures for adjacent pavements and roadways, are not directly applicable

to the proposed project due to its unique location, surrounding natural environmental conditions, and overall intended purpose.

As discussed in section 3.1.3 of the EA, the natural dry, low-land ecotype at the project site and most of the Reserve is almost entirely comprised of un-vegetated lava. Due to the environmental conditions natural occurrence of trees is extremely limited to non-existent at the project site and throughout much of the Reserve. The only existing trees at the project site consist of a few scattered, non-native *kiawe* trees which will be removed.

Furthermore, the LPAP states that specific considerations (e.g., "invasiveness, planting zones, water tolerance, salt and wind tolerance, etc.") should be taken into account when evaluating the "appropriateness" of trees. In the context of *appropriateness,* the un-natural introduction of trees for the purpose of shade or to address county landscaping and/or irrigation requirements is not only inapplicable to the proposed project, but more importantly, would be inconsistent with the natural surrounding dry, low-land ecotype, detract from a *sense of place*, and contradict the overlying purpose of the Reserve to protect and preserve such native ecological and geological systems.

We do, however, recognize and appreciate that the proposed parking improvements may benefit from the incorporation of landscape design considerations that integrate biologically and culturally appropriate features for the overall benefit of the user experience and reserve resource management. To this end, we will explore opportunities to retain the services of qualified contractors or partners to assist in those aspects of planning and design.

3) We agree with your points regarding the color of concrete to be used. Asphalt will not be used and the color of concrete, with respect to minimizing impacts from heat retention and/or light reflection will be taken into consideration during the design phase of the project. Similarly, we agree that maintaining a *sense of place* is of the utmost importance when considering improvements to the Reserve (as discussed above). Regarding your concern about toilet facilities, please note that portable toilet facilities, similar to those at the existing parking lot, will continue to be available after the parking lot has been paved.

Thank you for your recommendation to involve planning and interpretation professionals, and convening skilled partners and volunteers to contribute to the development of facility improvements at the Reserve. In addition to the goals and project-related benefits identified in section 2.2 of the EA, and the ongoing improvements to the Reserve's interpretive program and partnering opportunities discussed earlier in this letter, DOFAW continues to consider and develop management strategies and prioritize future Reserve facility improvements in precisely such a manner. Furthermore, we also agree with your opinion that "the parking area improvements are a great opportunity to think about educational opportunities, interpretation opportunities, flow of people…and placement of signage". We note that the opportunities you mention are precisely those for which the proposed project

improvements are intended.

Lastly, we acknowledge your concern that the proposed project comply with the goals and objectives of the CPP pertaining to *Protection of the Natural Environment*. We feel that the information presented in the EA, including revisions to address the helpful comments we have received, will demonstrate that the proposed project meets the intent of and is in full compliance with the policies and objectives you reference in section 5.5 of the EA.

We thank you again for your comments, suggestions, and interest in the proposed project and for your participation in the environmental review process. Please note that the Final Environmental Assessment will be available for your review when published.

Sincerely,

Scott Fretz
Maui District Manager

cc: WCP, Inc.

Mary M. Evanson
PO Box 694
Makawao, Hi 96768

February 22, 2016

State of Hawaii Department of Land and Natural Resources
Kalanimoku Building
1151 Punchbowl Street, Rm. 325
Honolulu, HI 96813

RE: Comments on Ahihi-Kinau Natural Area Reserve Parking Lot Improvements DEA (AFNSI)

I have been working with others to protect and preserve this area for over 30 years. I am disappointed but, not shocked to hear that DLNR proposes this project despite the facts thereby again calling into question their ability to act as good stewards of our lands and waters.

This project is not needed or wanted and is a waste of taxpayer dollars.

The DEA is contradictory, erroneous and incomplete as well as not truthful or transparent.

First the Project Summary (p. 5) mischaracterizes the Project as "Improve an existing unpaved public parking lot ...). It actually includes bulldozing 8,600 sq. ft. of more lava not currently available for parking. Not what anybody who helped contribute to the Management Plan, including myself, wanted to see.

An important part of the NARS Mandate (p.8) has been omitted from the DEA which states "to preserve in perpetuity ... as relatively unmodified as possible..." (HRS 195-1)

Project alternatives evaluated (p. 10) are erroneous and incomplete since simple additional grading of site was not considered. The site had been bulldozed and graded at least twice over the years and additional grading or geotechnical work could further reduce any uneven surfaces to a more even surface.

The proposed Project contradicts the 2012 Management Plan which specifically states "unimproved unpaved parking" (Management Plan; p. 91). The Reserve 2012 Management Plan calls for "improvements to parking lot" but, specifically references "unpaved parking".

The Project Proposal fails to note their currently is one paved ADA approved parking stall in the unimproved parking area and the fact that given the area is not a park but, for resource protection, that ADA requirements for access are now few and limited to those found in "wilderness" or "unimproved areas". Improvements to the area may indeed trigger more ADA requirements for access but, few if any. Otherwise, what's next? A sidewalk to the shoreline or a boardwalk to the anchialine pools? Where does it stop? Not well thought out.

RE: Comments on Ahihi-Kinau Natural Area Reserve Parking Lot Improvements DEA (AFNSI)

Proposed Action/Preferred Alternative (p. 10) references the 8,600 sq. ft. area to be bulldozed as "presently unused" which denotes a lack of awareness or careless disregard for the area! It is supposed to be and remain "unused", since that is the purpose of the place, for preservation and not for recreational development.

Existing Site conditions (p. 10) notes "numerous public safety-related issues" due to "lack of individually marked parking stalls" as follows: 1) "Number of vehicles exceeding capacity"; 2) "lack of controlled internal traffic circulation pattern"; 3) "vehicles parked in a haphazard and uncontrolled manner" and 4) "inability of emergency vehicles to effectively access and stage within the site." Only one of these is truly safety related, the last one noted, inability of emergency vehicles to effectively access and stage within site and that has never been a problem that I know of with no data presented or example given to support this contention.

The Proposal references "fulfilling specific , established goals, objectives and strategic management actions in the Management Plan ..." but fails to note major portions of the Management Plan that repeatedly call for maintaining the wilderness/open space and scenic values of the area and the threat of development, such as this.

The "threat of development" is listed as a major concern throughout the Management Plan, yet DLNR fails to recognize this.

No details or specific information is given on how impacts from run-off or drainage from this sizeable (31,000 sq. ft.) non-permeable surface will be dealt with when emptying into the "highly porous lava" situated just 200m from the nearly pristine marine waters.

Information provided regarding the nearest anchialine pool, a resource noted as of "global significance" is erroneous and closer as noted in the Management Plan.

Either DLNR is not reading and following their own Management Plan for this area or they just do not care.

Sincerely,

Mary M. Evanson

Cc: WCP Inc.

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
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DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF FORESTRY AND WILDLIFE
1955 MAIN STREET, SUITE 301
WAILUKU, HAWAII 96793

March 23, 2016

Mary M. Evanson
P.O. Box 694
Makawao, Hawaii 96768

Subject: *Draft Environmental Assessment for Proposed Parking Area Improvements at the Ahihi Kinau Natural Area Reserve, Maui, Hawaii.*

Dear Ms. Evanson:

We thank you for your comment letter, dated February 22, 2016, regarding the subject project.

We acknowledge, and very much appreciate, your interest, time, and effort which you have devoted to the protection and preservation of the Ahihi Kinau Natural Area Reserve (Reserve) area for over 30 years. However, we acknowledge your disagreement with the implementation of the Proposed Action and your comments pertaining to the draft environmental assessment (EA). For ease of reference, we address your comments in the order they appear in your letter.

1) We respectfully disagree with your opinion that the statement "improve an existing unpaved public parking lot" mischaracterizes the proposed project. The proposed project's purpose and need is to improve the existing unpaved parking area for the reasons and proposed methods described in sections 2.2 through 2.4 of the EA. As discussed in the EA a component of the proposed improvements will include the conversion of approximately 8.600 square feet of currently undeveloped a'a lava vegetated with primarily non-native plant species. The conversion of this area is necessary to accommodate the required number of marked parking stalls.

2) The text you reference from the NARS Mandate (HRS 195-1) pertaining to "preserve in perpetuity…as relatively unmodified as possible…" has been added to section 2.2.1 of the EA. As noted in the EA the Reserve 2012 Management Plan (MP) was developed to fulfill the mandate of HRS 195-1, including the afore-mentioned text you referenced. With respect to the proposed project we feel that it is keeping with this mandate due to the fact that under existing conditions approximate 22,400 of the proposed projects 31,000 square foot area has already been modified from its natural

state. When considering the project site's existing use and current size, the continued use of the site (including the proposed 8,600 square foot expansion) for the same purpose does not constitute a significant modification relative to either existing land use or total Reserve land area of approximately 1,238 acres (approx. 54, 000,000 square feet) which will remain almost entirely unmodified.

3) Further grading of the existing parking area was not a viable alternative because it would not effectively meet some of the MP's goals, objectives, management actions, as well as many of the related benefits as discussed in section 2.2.2 of the EA. Furthermore, public safety and ADA accessibility issues as discussed in the EA (and in responses 5 and 7 below) would not be adequately address by further grading of the project site.

4) We acknowledge that the MP specifically states ""unimproved" and "unpaved parking". However, we feel that the proposed project does not contradict the MP. The MP refers to the conditions of the existing Kanahena parking lot area in the context of management of and improvements to the site. When considering the effective methods and viable long-term solutions to "improve and maintain visitor facilities within the Reserve, including parking, lavatories, informational stations, and interpretive areas", the MP does not preclude paving nor does it stipulate that the existing "unimproved, unpaved parking lot" is required to remain in such a state.

5) Thank you for noting that the draft EA did not identify the existing, single ADA compliant parking stall. We apologize for this oversight and will include this information in the forthcoming final EA. However, we note that due to the existing uneven surface conditions further access beyond this paved ADA stall may still be restricted and/or precluded from further exploring the natural resources in the immediate Kanahena parking lot area as well as enjoying the sweeping landscape vistas as viewed from many locations within the parking lot. The proposed project would provide greater and safer accessibility to persons with disabilities allowing them to also enjoy the natural beauty of the Reserve, to the extent practicable.

Lastly, we note that as acting managers, and in accordance with MP goals, objectives, and strategic actions, we are obligated to address the improvement of Reserve facilities and the management of its visitors. To that end, we must address accessibility to the Reserve for all visitors including those with physical disabilities. As such, future ADA compliant improvements may be implemented. However, such improvements would be localized, minor in scale, and independent of the proposed project. The EA will be revised to include a discussion of reasonably foreseeable improvements within the proposed project area.

6) We acknowledge your concerns for the use of the term "unused" as it pertains to the ungraded 8.600 square foot portion of the project site. We have revised the text in the EA to "undeveloped".

7) We acknowledge your opinion, but respectfully disagree that only one of the issues identified in section 2.3.2 of the EA is "truly safety related". The circulation of numerous motor vehicles in a given area operating in an uncontrolled and/or unmanaged manner results in potential safety risks.

8) As you point out, we recognize that the MP calls for "maintaining the wilderness/open space and scenic values of the area and the threat of development". DLNR recognizes the "threat of development" in the context of natural resources preservation. As such, DLNR will continue to protect, preserve, and restrict development within the Reserve. We respectfully disagree with your interpretation that the proposed project constitutes "development". On the contrary, we feel that per the MP the proposed project "improves and maintains visitor facilities within the Reserve, including parking" As discussed in the EA, the proposed project directly fulfills the specific established goals, objectives, and strategic management actions in the MP. Moreover, the proposed project indirectly fulfills the overlying goal of maintaining the wilderness /open space and scenic values of the area and the threat of development precisely by providing an improved parking area to serve as a central focal point for visitors to access the Reserve. The proposed project will help to discourage and prevent prohibited activities and access to areas of the Reserve which are to remain and be protected for their wilderness, open space, and scenic value.

9) We acknowledge your concerns regarding potential storm water run-off impacts to the surrounding environment resulting from the increase in impermeable surface area. Though the proposed project is only in its conceptual stages, the final EA will include additional preliminary design and drainage detail to more adequately address storm water runoff generated by the proposed project and potential environmental impacts.

10) We note that the distances pertaining to the location of anchialine pools in relation to the project site are approximate. The important point the EA presents is that there are no anchialine pools present within the project site or in its immediate vicinity and are at such a distance from the project site that they will not be adversely affected by project-related activities.

We thank you again for your comments, suggestions, and interest in the proposed project and for your participation in the environmental review process. Please note that the Final Environmental Assessment will be available for your review when published.

Sincerely,

Scott Fretz
Maui District Manager

cc: WCP, Inc.

Early Consultation Correspondence

EA for Parking Area Improvements at Ahihi Kinau Natural Area Reserve
Early Consultation Distribution List

	Consulted Party	Person	Title	Phone Number	Street Address	City & Zip Code	Date Sent
	State Agencies						
1	State Department of Business, Economic Development & Tourism Office of Planning	Jesse K. Souki	Director		235 South Beretania Street, 6th Floor	Honolulu, HI 96813	10/27/15
2	State Department of Business, Economic Development & Tourism Coastal Zone Management Program	Leo Asuncion	Acting Director	587-2846	P.O. Box 2359	Honolulu, HI 96813	10/27/15
3	State Department of Health Environmental Health Administration	Keith Kawaoka	Deputy Director	586-4424	P.O. Box 3378	Honolulu, HI 96801	10/27/15
4	State Department of Land and Natural Resources Division of Conservation and Resource Management	Clarence Yamamoto	Branch Chief	587-0400	175 South Puunene Avenue	Kahului, HI 96732	10/27/15
5	State Department of Land and Natural Resources Historic Preservation Division	Alan Downer, PhD	Administrator	692-8015	601 Kamokila Boulevard, Rm. 555	Kapolei, HI 96707	10/27/15
6	State Department of Land and Natural Resources Office of Conservation and Coastal Lands	Samuel J. Lemmo	Administrator	587-0377	1151 Punchbowl Street, Rm. 131	Honolulu, HI 96813	10/27/15
7	State Department of Hawaiian Home Lands	Jobie Masagatani	Chairperson		P.O. Box 1879	Honolulu, HI 96805	10/27/15
8	Office of Hawaiian Affairs	Dr. Kamana'opono Crabbe	Chief Executive Officer		560 North Nimitz Highway, Ste. 200	Honolulu, HI 96817	10/27/15
	County of Maui Agencies						
9	Maui County Department of Transportation	Jo Ann Johnson Winer	Director	270-7511	2145 Kaohu Street David Trask Building Ste. 102	Wailuku, HI 96793	10/27/15
10	Maui County Department of Fire and Public Safety	Jeffrey A. Murray	Fire Chief	270-7561	200 Dairy Road	Kahului, HI 96733	10/27/15
11	Maui County Police Department	Tivoli Faaumu	Police Chief	244-6400	55 Mahalani Street	Wailuku, HI 96793	10/27/15
12	Maui County Department of Environmental Management	Kyle Ginoza	Director	270-8230	2050 Main Street, Ste. 1C	Wailuku, HI 96793	10/27/15

EA for Parking Area Improvements at Ahihi Kinau Natural Area Reserve
Early Consultation Distribution List

	Consulted Party	Person	Title	Phone Number	Street Address	City & Zip Code	Date Sent
13	Maui County Planning Department	William Spence	Director	270-7736	220 Main Street, Ste. 315	Wailuku, HI 96793	10/27/15
14	Maui County Department of Parks and Recreation	Kaala Buenconsejo	Director	270-7230	700 Halia Nakoa Street War Memorial Complex	Wailuku, HI 96793	10/27/15
15	Maui County Civil Defense Agency	Anna Foust	Emergency Management Officer	270-7385	200 South High Street Kalana O Maui Building, 1st Floor	Wailuku, HI 96793	10/27/15
16	Maui County Mayor's Office Environmental Program	Rob Parsons	Environmental Coordinator	270-8250	200 South High Street Kalana O Maui Building, 9th Floor	Wailuku, HI 96793	10/27/15
	Federal Agencies						
17	U.S. Department of the Interior, National Park Service National Register of Historic Places	Paul Loether	National Register Chief		1849 C Street NW (2280)	Washington, DC 20240	10/27/15
18	U.S. Department of the Interior, Geological Survey Pacific Islands Water Science Center				1845 Wasp Boulevard, Building 176	Honolulu, HI 96818-5007	10/27/15
19	U.S. Department of the Interior, Fish and Wildlife Service Pacific Islands Office	Loyal Merhoff	Pacific Island Field Supervisor	792-9400	300 Ala Moana Boulevard Rm 3-122, Box 50088	Honolulu, HI 96850-0056	10/27/15
20	U.S. Department of Commerce, National Marine Fisheries Service Pacific Island Regional Office	Michael Tosatto	Pacific Islands Regional Administrator	944-2200	1611 Kapiʻolani Boulevard, Ste. 1110	Honolulu, HI 96814	10/27/15
	AKNAR Advisory and Working Group (Organizations and Individuals)						
21	Makena Resort	Declan McCarthy					10/28/15*
22	Makena Stables	Pat Borge					10/28/15*
23	The Nature Conservancy	Roxy Silva					10/28/15*
24	The Nature Conservancy	Karen Osuga					10/28/15*
25	The Nature Conservancy	Alana Yurkanin					10/28/15*
26	The Nature Conservancy	Emily Fielding					10/28/15*
27	The Nature Conservancy	Ann Fielding					10/28/15*

Note* - Early consultation letters distributed to individuals at the 10/28/15 AKNAR Advisory Group meeting

→ Fern

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Pacific Islands Water Science Center
1845 Wasp Boulevard, Building 176
Honolulu, Hawaii 96818

Phone: (808) 690-9600/Fax: (808) 690-9599

November 5, 2015

Mr. Scott Fretz, Maui District Manager
State of Hawaii
Department of Land and Natural Resources
Division of Forestry and Wildlife
1955 Main Street, Room 301
Wailuku, Hawaii 96793

Dear Mr. Fretz:

Subject: Early Consultation Request for the Environmental Assessment (EA) for Proposed Parking Area Improvements at the Ahihi Kinau Natural Area Reserve

Thank you for forwarding the subject EA for review and comment by the staff of the U.S. Geological Survey Pacific Islands Water Science Center. We regret however, that due to prior commitments and lack of available staff, we are unable to review this document.

We appreciate the opportunity to participate in the review process.

Sincerely,

SSA

Stephen S. Anthony
Center Director

rcvd: 11/16/15 08:00
11/25/15 response formulated

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

In Reply Refer To:
01EPIF00-2016-TA-0028

NOV 12 2015

Mr. Scott Fretz
The State Department of Land and Natural Resources
Division of Forestry and Wildlife
1955 Main Street, Room 301
Wailuku, Hawaii 96793

Subject: Request for Comments on Proposed Parking Area at Ahihi Kinau Natural Area Reserve, Maui

Dear Mr. Fretz:

The U.S. Fish and Wildlife Service (Service) received correspondence on October 29, 2015 from Mr. Richard Stook of WCP Inc. requesting preliminary comments on a proposed parking area improvement at Ahihi Kinau Natural Area Reserve south of Makena Beach Park on the island of Maui. The proposed action is to improve an unpaved, uncovered lava parking area. Improvements include an approximately 30,000 square foot concrete parking lot with 55 delineated parking stalls, a toll booth and emergency vehicle access area, and separate ingress and egress gates. Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity Program (ECP), there are 3 listed species possibly in the vicinity of the project area that are of concern: the federally endangered Blackburn's sphinx moth (*Manduca blackburni*), and Hawaiian petrel (*Pterodroma sandwichensis*), the federally threatened Newell's shearwater (*Puffinus newelli*).

Blackburn's sphinx moth

The Blackburn's sphinx moth could potentially be in the vicinity of the proposed project area given the proximity of Blackburn's sphinx moth critical habitat. Adult moths feed on nectar from native plants, including beach morning glory (*Ipomoea pes-caprae*), iliee (*Plumbago zeylanica*), and maiapilo (*Capparis sandwichiana*); larvae feed upon non-native tree tobacco (*Nicotiana glauca*) and native aiea (*Nothocestrum latifolium*). To pupate, the larvae burrow into the soil and can remain in a state of torpor for up to a year (or more) before emerging from the soil. Soil disturbance can result in death of the pupae. The Service recommends that a qualified biologist survey areas of proposed construction activities for Blackburn's sphinx moth and its host plants prior to work initiation. We recommend these surveys be conducted during the wettest portion of the year (usually November-April or several weeks after a significant rain) and immediately prior to construction. Surveys should include searches for eggs, larvae, and signs of larval feeding (chewed stems, frass, or leaf damage). Any host plants of Blackburn's sphinx moth identified should not be cut or disturbed.

Hawaiian Seabirds

Seabirds, including the Newell's shearwater, Hawaiian petrel, and band-rumped storm-petrel, fly at night and are attracted to artificially-lighted areas resulting in disorientation and subsequent fallout due to exhaustion. Seabirds are also susceptible to collision with objects that protrude above the vegetation layer, such as utility lines, guy-wires, and communication towers. Additionally, once grounded, they are vulnerable to predators and are often struck by vehicles along roadways. To reduce potential impacts to seabirds, we recommend the following minimization measures be incorporated into your project description:

- Construction activities should only occur during daylight hours. Any increase in the use of nighttime lighting, particularly during peak fallout period (September 15 through December 15), could result in additional seabird injury or mortality.

- If lights cannot be eliminated due to safety or security concerns, then they should be positioned low to the ground, be motion-triggered, and be shielded and/or full cut-off. Effective light shields should be completely opaque, sufficiently large, and positioned so that the bulb is only visible from below.

Implementation of these measures will minimize but does not ensure that take of listed species associated with this proposed action will be fully avoided. Thank you for your efforts to conserve listed species and native habitats. Please contact Fish and Wildlife Biologist Jon Sprague (808-792-9573) if you have any questions or for further guidance.

Sincerely,

Michelle Bogardus
Island Team Leader
Maui Nui and Hawaii Island

DAVID Y. IGE
GOVERNOR OF HAWAI'I

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
EPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHO'OLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Ref: OCCL:LY

CORR: MA 16-82

MEMORANDUM

TO: Scott Fretz, Maui District Manager
Division of Forestry and Wildlife

NOV 20 2015

FROM: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

SUBJECT: Early Consultation for the Environmental Assessment for the Proposed Parking Area Improvements at the Ahihi Kina'u Natural Area Reserve, Honua'ula, Maui
Tax Map Key (TMK): (2) 2-1-004:073

Based on the information provided, the Division of Forestry and Wildlife (DOFAW) is proposing to improve its existing parking lot area in the Ahihi Kina'u Natural Area Reserve (NAR). Proposed improvements include the following:

- Construction a concrete-paved parking lot approximately 30,000 square feet in size with a one-way internal traffic circulation pattern. The proposed parking lot will consist of 55 delineated parking stalls, including three (3) accessible stalls that meet the requirements of the American with Disabilities Act;
- Installation of a toll booth or an automated parking fee machine (for non-resident visitors);
- Installation of separate ingress and egress gates; and
- Creation of an emergency vehicle access/staging area.

The project is intended to comply with the established goals, objectives, and strategic actions identified in the Ahihi Kina'u NAR Management Plan which includes, but is not limited to:

- Providing necessary on-site infrastructure to meet management needs;
- Improve and maintain on-site facilities, infrastructure, and equipment;
- Improve and maintain visitor facilities within the NAR (including parking areas);
- Manage visitors and access points;
- Limiting the number of vehicles in the Kanahena parking area by establishing parking stalls;
- Reduce the negative impacts of visitors and increase safety; and
- Charging a nominal parking fee for non-residents.

The OCCL notes that the project area is located within the Protective Subzone of the State Land Use Conservation District. As this area is highly sensitive, we have concerns regarding potential strormwater run-off impacts to both the known endangered species of flora and fauna found in the surrounding areas as well as the potential impacts to nearshore waters caused by the increase in impermeable surface areas.

Based on review of our records, the existing, approximately 3,750 square foot un-paved parking lot site was approved on September 13, 1974 via Conservation District Use Permit (CDUP) MA-593. In addition, the *Ahihi Kina'u Management Plan* was approved by the Board of Land and Natural Resources on October 12, 2012. The plan identifies improvements to the parking lot as strategic action under *Action H1(a) – Manage visitors and access points . (Priority)*. Specifically this action directs DOFAW to *"set parking limits by establishing parking stalls with low tech, attractive, practical materials for unpaved parking area at Kanahena."* Please include in the Draft Environmental Assessment (EA) a discussion of why it is necessary that the proposed parking be paved rather than leaving it unpaved state as indicated in the strategic action.

We will reserve further comments for the forthcoming Draft EA. Please send us a copy of the Draft EA when it becomes available. Should you have any questions regarding this correspondence, please contact Lauren Yasaka of our Office at (808) 587-0386.

OFFICE OF PLANNING
STATE OF HAWAII

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
ACTING DIRECTOR
OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: http://planning.hawaii.gov/

Ref. No. P-14944

November 9, 2015

To: Suzanne Case, Chairperson
Department of Land and Natural Resources

From: Leo R. Asuncion, Acting Director

Attention: Scott Fretz, Maui District Manager
Division of Forestry and Wildlife

Subject: Early Consultation Request for the Environmental Assessment for the Proposed Parking Area Improvements at the Ahihi Kinau Natural Area Reserve, Maui

Thank you for the opportunity to provide comments on the early consultation request for the parking lot improvements project for the Ahihi Kinau Natural Area Reserve proposed by the State of Hawaii, Department of Land and Natural Resources, Division of Forestry and Wildlife (DLNR-DOFAW). The pre-consultation review material was transmitted to our office by letter dated October 27, 2015.

It is our understanding that the DLNR-DOFAW is proposing the construction of a new parking lot to serve this natural area reserve. Improvements to the existing parking area include constructing a concrete-paved parking lot; the delineation of 55 parking stalls (including three that are compliant with the Americans with Disabilities Act), a toll-booth or automated parking fee machine, an emergency vehicle access staging area, separate ingress and egress gates, and a one-way internal traffic circulation pattern.

The current parking lot that serves the Ahihi Kinau Natural Area Reserve is an unpaved, uncovered, and graded ʻaʻā lava parking area. It has some ancillary support facilities such as a small portable trailer, which functions as a small field office. The parking area is equipped with an iron gate that is secured nightly.

The project is needed to comply with the established goals, objectives, and strategic actions identified in the Ahihi Kinau Natural Area Reserve Management Plan.

The Office of Planning (OP) has reviewed the transmitted material and has the following comments to offer:

1. Pursuant to the Hawaii Administrative Rules (HAR) § 11-200-10(4) – technical, economic, social, and environmental characteristics – this project must demonstrate

that it is consistent with a number of state environmental, social, and economic goals and policies for land-use development. OP provides technical assistance to state and county agencies in administering the statewide planning system in Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Plan. The Hawaii State Plan provides goals, objectives, policies, and priority guidelines for growth, development, and the allocation of resources throughout the State. The Hawaii State Plan includes diverse objectives and policies of state interest including but not limited to the economy, agriculture, the visitor industry, federal expenditure, the physical environment, facility systems, socio-cultural advancement, climate change adaptation, and sustainability.

The Draft Environmental Assessment (Draft EA) should include an analysis that addresses whether the proposed project conforms or is in conflict with the goals, objectives, policies, and priority guidelines listed in the Hawaii State Plan.

2. The coastal zone management area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" see HRS § 205A-1 (definition of "coastal zone management area").

   HRS Chapter 205A requires all state and county agencies to enforce the coastal zone management (CZM) objectives and policies. The Draft EA should include an assessment as to how the proposed project conforms to the CZM objectives and its supporting policies set forth in HRS § 205A-2. The assessment on compliance with HRS Chapter 205A is an important component for satisfying the requirements of HRS Chapter 343. These objectives and policies include recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

3. It is noted that the proposed project site is within the Special Management Area (SMA) delineated by the County of Maui, Department of Planning. This project may be subject to the requirements for a SMA Permit. Please consult with said agency on the policies and procedures for SMA permitting.

4. Pursuant to HAR § 11-200-10(4) and HAR § 11-200-10(6) – the summary of impacts and alternatives considered; in order to ensure that the natural resources of South Maui remain protected, the negative effects of stormwater runoff originating from human land-based activities should be evaluated. The Draft EA should summarize

the potential impact to nearshore marine resources and actions proposed to ensure the coastal ecosystem is protected and potential hazards mitigated. Issues that should be examined in the Draft EA include, but are not limited to, land use classification and density, hydrologic resources (wetlands, perennial streams, and channels), tsunami inundation areas, and current erosion controls in place for flood prone areas. These items, as well as the marine water quality classification, should be considered when developing mitigation measures to protect the coastal ecosystem.

The review material indicated that this project is located close to Ahihi Bay, is located in the Conservation District, has vast undeveloped open spaces surrounding this project site, and located adjacent to a County of Maui owned roadway. The Draft EA should examine the proposed project's cumulative impact on coastal resources from polluted runoff and sediment loss. It should examine the natural process of the land such as water resources, topographic contours, undeveloped open spaces, vegetated versus hardened land surfaces, soil absorption rates, the connecting non-permeable roadways, and any existing drainage infrastructure that may directly connect the proposed parking area to the coastline and vulnerable marine resources of Ahihi Bay.

Furthermore, since this project involves the rebuilding of a parking lot, please consider the use of permeable surfaces, vegetated filter strips, and landscaping to treat the water in place, rather than allow the rainfall to flow into storm drains or pond on the roadway. Permeable parking lot materials, such as porous concrete pavers, will allow rainfall to be filtered on site, rather than to sheet flow offsite and ultimately inundate the marine resources of Ahihi Bay.

OP has a number of resources available to assist in the development of projects which ensure sediment and stormwater control on land, thus protecting the nearshore environment. OP recommends consulting these guidance documents and stormwater evaluative tools when developing strategies to address polluted runoff. They offer useful techniques to keep soil and sediment in place and prevent contaminating nearshore waters, while considering the practices best suited for each project. The three evaluative tools that should be used during the design process include:

- Hawaii Watershed Guidance provides direction on site-appropriate methods to safeguard Hawaii's watersheds and implement watershed plans http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/HI Watershed Guidance Final.pdf

- Stormwater Impact Assessments can be used to identify and evaluate information on hydrology, stressors, sensitivity of aquatic and riparian resources, and management measures to control runoff, as well as consider secondary and cumulative impacts to the area http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_imapct/final_stormwater_impact_assessments_guidance.pdf

- Low Impact Development (LID), A Practitioners Guide covers a range of structural best management practices (BMP's) for stormwater control management, roadway development, and urban layout that minimizes negative environmental impacts http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid_guide_2006.pdf

If you have any questions regarding this comment letter, please contact Josh Hekekia of our office at (808) 587-2845.

ALAN M. ARAKAWA
Mayor

KYLE K. GINOZA, P.E.
Director

MICHAEL M. MIYAMOTO
Deputy Director

MICHAEL RATTE
Solid Waste Division

ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2050 MAIN STREET, SUITE 1C
WAILUKU, MAUI, HAWAII 96793

November 19, 2015

Mr. Scott Fretz
Maui District Manager
State of Hawaii
Department of Land and Natural Resources
Division of Forestry and Wildlife
1955 Main Street, Room 301
Wailuku, Hawaii 96793

SUBJECT: EARLY CONSULTATION REQUEST FOR THE ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED PARKING AREA IMPROVEMENTS AT THE AHIHI KINAU NATURAL AREA RESERVE MAUI, HAWAII

We reviewed the subject application and have the following comments:

1. Solid Waste Division comments:

   a. None.

2. Wastewater Reclamation Division (WWRD) comments:

   a. None.

If you have any questions regarding this memorandum, please contact Michael Miyamoto at 270-8230.

Sincerely,

KYLE K. GINOZA, P.E.
Director of Environmental Management

ALAN M. ARAKAWA
Mayor

JO ANNE JOHNSON-WINER
Director
MARC I. TAKAMORI
Deputy Director
Telephone (808) 270-7511

DEPARTMENT OF TRANSPORTATION

COUNTY OF MAUI
200 South High Street
Wailuku, Hawaii, USA 96793-2155

November 13, 2015

Mr. Scott Fretz
DLNR
Division of Forestry and Wildlife
1955 Main Street
Room 301
Wailuku, HI 96793

Subject: EA for Proposed Parking Area at Ahihi Kinau Area Reserve

Dear Mr. Fretz,

Thank you for the opportunity to comment on this project. We have no comments to make at this time.

Please feel free to contact me if you have any questions.

Sincerely,

Marc Takamori
Deputy Director

ALAN M. ARAKAWA
Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director

COUNTY OF MAUI

DEPARTMENT OF PLANNING

November 24, 2015

Mr. Scott Fretz
Maui District Manager
State of Hawaii
Department of Land and Natural Resources
Division of Forestry and Wildlife
1955 Main Street Room 301
Wailuku, Hawaii 96793

Dear Mr. Fretz:

SUBJECT: EARLY CONSULTATION REQUEST REGARDING ENVIRONMENTAL ASSESSMENT (EA) FOR PROPOSED PARKING AREA IMPROVEMENTS, LOCATED AT AHIHI KINAU NATURAL AREA RESERVE, MAKENA, ISLAND OF MAUI, HAWAII; TMK: NOT LISTED (RFC 2015/0173)

In response to your request dated October 27, 2015, the County of Maui Department of Planning (Department) provides you with the following eleven (11) comments regarding the subject request:

1. The project is located in the County of Maui Special Management Area (SMA) and will require a SMA Permit;

2. Include the TMK for all parcels subject to the proposed action on all documents and maps included in the EA;

3. Since the parcel is owned and managed by the State of Hawaii, the Maui Planning Commission (Commission) most likely will not be the accepting authority for the Final EA;

4. Consult early in the public engagement process with the Kihei Community Association and the Wailea Community Association, as well as attempt to hold a meeting with the local user community. Each of these groups can provide valuable input in order to improve the project;

5. Attempt to include any additional improvements envisioned for this area as part of the EA, even if you do not have funds for these improvements now or plan to make these additional improvements as part of this project. In this way, the EA will cover the required review criteria and public review process now rather than undertaking an additional EA to complete these separate actions at a later date;

6. Consider drainage improvements to include consideration of pervious concrete. From the Department's understanding, equipment and resources to use this type of surface is available on Maui now. Include a drainage report as part of the EA;

7. Consider any additional American Disabilities Act (ADA) access from the parking lot to close-by areas that can possibly be accessed by disabled persons to improve their quality of experience -- ideally, a path to the shoreline. Consider additional amenities, such as including at least one (1) ADA accessible picnic table, benches, and barbecue pit that would be included as part of the parking lot upgrade – the goal of the ADA parking stalls should be to get disabled persons out of the parking lot and as far as possible within the natural reserve;

8. Consider at least portable restroom facilities as part of the project;

9. Consider including interpretive signage about the history and geology of the area, as well as signage regarding protecting and respecting the native landscape and reefs in this area;

10. Consider referencing parking lot improvements and additional amenities being constructed in the near future, including ADA compatible facilities, at Makena Landing area, TMK: (2) 2-1-007:094; and

11. During the construction phase, require that Best Management Practices (BMPs) be implemented to ensure that water quality and marine resources are protected. These BMPs include that: No construction materials shall be stockpiled in the aquatic environment. All construction-related materials shall be free of pollutants and placed or stored in ways to avoid or minimize disturbance. No debris, petroleum products, or deleterious materials or wastes shall be allowed to fall, flow, leach, or otherwise enter near-shore waters. Any turbidity and siltation generated from activities proposed at the site shall be minimized and contained in the immediate vicinity of construction through the use of effective silt containment devices. Construction during adverse weather conditions shall be curtailed to minimize the potential for adverse water quality impacts. Appropriate measures to minimize dirt and water runoff, noise, and dust must be used.

Thank you for your cooperation. If additional clarification is required, please contact Staff Planner James Buika at james.buika@mauicounty.gov or at (808) 270-6271.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

for WILLIAM SPENCE
Planning Director

xc: John S. Rapacz, Planning Program Administrator (PDF)
James A. Buika, Staff Planner (PDF)
Keith C. Scott, Staff Planner (PDF)
Sam Lemmo, DLNR-OCCL (PDF)
Daniel Ornellas, DLNR Maui – Land Agent (PDF)
Richard Stook, Project Manager
2015/RFC Project File
General File

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44 Aheahe Place
Pukalani, HI 96768

rcvd: 11/16/15 7:57
11/25/15 response formulated

November 9, 2015

Subject: Proposed Parking Area Improvements at the ʻĀhihi Kīnaʻu Natural Area Reserve.

Scott,

In response to the proposed parking area improvements, I would suggest to consider either after hours construction work, afternoon work (when visitor numbers are lower), or plan ahead to provide temporary parking in another site during construction. Also, if shaded trees are required for the parking lot, keep in mind the water resources for the maintenance of those trees.

Another thing I would like to mention is allowing the parking lot flow to be in a loop, with one entry/exit. This would help on days where there is surf, when residents are utilizing the parking lot in addition to visitors. In case the lot is full, and a space on the other side opens up, a looping parking lot would allow a person to swing back around without having to go out of the gate, then back in again, having to pay another entry fee (?), and possibly crowding the main road (I can imagine this could cause a hassle for folks).

Creating diagonal lined spaces may make it easier for visitors to park as well, despite these large spaces. It will also add a few more stalls, a win-win opportunity. Adding a few more handicap spaces may be of great use for those needing it. Adding a few handicap stalls near the trail to the surf area, and a few handicap stalls near the parking lot entry, for those wanting to visit the bay.

Are you folks adding any trash cans in the parking lot? I think it would be helpful, but I can see how staff/volunteers would be affected by maintaining these cans daily. If the stalls in the middle of the lot were separated by about 5-10', it would give a safe gap between vehicles and provide a space to add a trash can or 2. I would also suggest moving the portable toilets closer to the handicap stalls since it's on the way in/out from the surf break, and would make it a lot easier for visitors.

Mahalo for the opportunity to provide comments,
Roxie Sylva
Pukalani Resident