# APPLICANT PUBLICATION FORM

| | |
|---|---|
| Project Name: | Pu‘u Kaliu Quarry State Land Use Boundary Amendment |
| Project Short Name: | Pu‘u Kaliu Quarry |
| HRS §343-5 Trigger(s): | HRS §343-5-7, Proposal to reclassify conservation district lands |
| Island(s): | Hawai‘i |
| Judicial District(s): | Puna |
| TMK(s): | (3rd) 1-3-009:005, portion |
| Permit(s)/Approval(s): | State Land Use District Boundary Amendment (Conservation to Agricultural); County Special Permit |
| Approving Agency: | State of Hawai‘i Land Use Commission (LUC) |
| *Contact Name, Email, Telephone, Address* | Daniel Orodenker, Executive Officer<br>State of Hawai‘i Land Use Commission<br>Department of Business, Economic Development & Tourism<br>P.O. Box 2359<br>Honolulu, HI 96804-2359<br>Daniel.E.Orodenker@hawaii.gov, (808) 587-3822 |
| Applicant: | Sanford’s Service Center, Inc. |
| *Contact Name, Email, Telephone, Address* | Sanford Iwata<br>P.O. Box 1321<br>Pahoa, HI 96778<br>Sanscinc.Kim@hawaiiantel.net<br>(808) 965-8144 |
| Consultant: | GK Environmental LLC |
| *Contact Name, Email, Telephone, Address* | Graham Knopp<br>gpknopp@gkenvllc.com<br>(808) 938-8583<br>P.O. Box 1310<br>Honokaa, HI 96727 |

| **Status (select one)** | **Submittal Requirements** |
|---|---|
| ____ DEA-AFNSI | Submit 1) the approving 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. |
| ____ FEA-FONSI | Submit 1) the approving 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 approving 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. |
| __X__ Act 172-12 EISPN (“Direct to EIS”) | Submit 1) the approving 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 approving agency, 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 approving agency, 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 Determination | The approving agency simultaneously transmits to both the OEQC and the applicant a letter 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 | The approving agency simultaneously transmits to both the OEQC and the applicant a notice that it did not make a timely determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and therefore the applicant's FEIS is deemed accepted as a matter of law. |
| ____ Supplemental EIS Determination | The approving agency simultaneously transmits its notice to both the applicant 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**

Sanford's Service Center, in coordination with the property owner Kamehameha Schools, intends to petition the State of Hawai'i Land Use Commission to amend the land use district designation for the 94.107-acre petition area from Conservation to Agricultural. The 694.5-acre property, of which the quarry only occupies 73.075-acre portion, is located within the State Land Use Conservation District, Limited (L) subzone. Mining is only allowed in the Resource (R) subzone of the Conservation District and be conformant with State of Hawai'i Land Use Law.

At the Pu'u Kaliu quarry located in the Puna District of Hawai'i Island, Sanford's Service Center produces cinders highly valued by the nursery industry. The purpose of the proposed boundary amendment is to make the petitioner's use of the petition area consistent with the State and County land use designations, thereby allowing continued use of the Pu'u Kaliu Quarry.

**Dear Librarian:**

Please make available to your patrons the attached Environmental Impact Statement Preparation Notice (EISPN) prepared pursuant to the EIS law (Hawai‘i Revised Statutes, Chapter 343) and the EIS rules (Administrative Rules, Title 11, Chapter 200), along with this notice. We very much appreciate your assistance in the public process for the EISPN

Project Name: **Pu‘u Kaliu Quarry State Land Use Boundary Amendment**

Location: Island: **Hawai‘i** District: **Puna**
Tax Map Key Number: **(3rd) 1-3-009:005, portion**

Your comments must be received or postmarked by: **January 22, 2018**

Please send original comments to the:

| | | |
|---|---|---|
| Consultant: | **GK Environmental LLC** | |
| Address: | **P.O. Box 1310** | |
| | **Hilo HI 96727** | |
| Contact: | **Graham Knopp** | Phone: **808-938-8583** |

Copies of the comments should be sent to:

| | | |
|---|---|---|
| Approving Agency: | **Hawai‘i State Land Use Commission** | |
| Address: | **P.O. Box 2359** | |
| | **Honolulu HI 96804** | |
| Contact: | **Danial Orodenker, Executive Officer** | Phone: **808-587-1834** |

If you no longer need the EISPN, please recycle it. Thank you for your participation in the Environmental Assessment process.

**Dear Participant:**

This notice is to inform you that that an Environmental Impact Statement Preparation Notice/ (EISPN) prepared pursuant to the EIS law (Hawai‘i Revised Statutes, Chapter 343) and the EIS rules (Administrative Rules, Title 11, Chapter 200) is available for review. As of December 23, 2018, the EISPN is available for download at: http://hawaii.gov/health/environmental/oeqc/index.html

Hardcopies of the EISPN have been sent to the Pahoa Public Library, the Hilo Public Library, the Keaau Public Library, and the Hawai‘i State Library. Limited numbers of hardcopies are also available for private distribution (call 808-938-8583 to request).

Project Name: **Pu‘u Kaliu Quarry State Land Use Boundary Amendment**

Location: Island: **Hawai‘i** District: **Puna**
Tax Map Key Number: **(3rd) 1-3-009:005, portion**

Your comments must be received or postmarked by: **January 22, 2018**

Please send original comments to the:

| | | |
|---|---|---|
| Consultant: | **GK Environmental LLC** | |
| Address: | **P.O. Box 1310** | |
| | **Hilo HI 96727** | |
| Contact: | **Graham Knopp** | Phone: **808-938-8583** |

Copies of the comments should be sent to:

| | | |
|---|---|---|
| Approving Agency: | **Hawai‘i State Land Use Commission** | |
| Address: | **P.O. Box 2359** | |
| | **Honolulu HI 96804** | |
| Contact: | **Danial Orodenker, Executive Officer** | Phone: **808-587-1834** |

If you no longer need the EISPN, please recycle it. Thank you for your participation in the Environmental Assessment process.

**DISTRIBUTION LIST**

**PU‘U KALIU QUARRY LAND USE DISTRICT BOUNDARY**

**AMENDMENT PETITION**

**Federal Agencies**
Department of the Interior, Fish and Wildlife Service
Department of the Interior, Geological Survey, Hawaii Volcano Observatory
Department of the Interior, Geological Survey, Biological Resources Division
Department of Agriculture, Natural Resources Conservation Service
Environmental Protection Agency, Region IX

**State Agencies**
Department of Agriculture
Department of Accounting and General Services
Department of Business, Economic Development & Tourism, Office of Planning
Department of Hawaiian Home Lands
Department of Land and Natural Resources
Department of Public Safety
Department of Transportation
Department of Health
Environmental Planning Office
Office of Environmental Quality Control
Office of Hawaiian Affairs
University of Hawai‘i, Environmental Center
State Historic Preservation Division
State Land Use Commission
Office of the Governor, Hawai‘i Island Liaison

**County of Agencies**
Civil Defense Agency
Department of Public Works
Department of Environmental Management
Department of Finance
Department of Water Supply
Fire Department
Police Department
Planning Department

**Elected Officials, Community Organizations, and Other Organizations**

Mayor Harry Kim
County Councilmember-Elect Matt Kanealii-Kleinfelder, County Council District 5
Representative San Buenaventura, State House District 4

Senator Russell Ruderman, State Senate District 2

**Utility Companies**
Hawai‘i Electric Light Company, Inc.
Hawaiian Telcom, Inc.

**Libraries**
Hawai‘i State Library
Hilo Public Library
Keaau Library
Pahoa Public Library

**Newspapers**
Hawai‘i Tribune Herald
West Hawai‘i Today

**Other**
Sierra Club
Puna Community Development Plan Committee
Hawai‘i Island Chamber of Commerce
Association of Hawaiian Civic Clubs
Cave Conservancy of Hawai‘i
Historic Hawai‘i Foundation
Hui Malama I Na Kupuna O Hawai‘i Nei
Sierra Club, Moku Loa Group
Hawai‘i Floriculture and Nursery Association
Hawai‘i Export Nursery Association
Big Island Association of Nurserymen

The above list is a preliminary identification of parties with interests at stake or who may have pertinent information about the area and the proposed project. The applicant welcomes and appreciates any assistance in identifying others who have special information or might be adversely affected by the proposed project, and who should therefore be consulted in the process of preparing the EIS.

The EISPN has been made available at the Pahoa, Keaau, and Hilo Public Libraries and was sent to the *Hawai‘i Tribune Herald* and *West Hawai‘i Today*..

[This page intentionally left blank]

# ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

# PU‘U KALIU QUARRY
# STATE LAND USE DISTRICT BOUNDARY AMENDMENT
# CONSERVATION TO AGRICULTURAL

# PUNA DISTRICT, HAWAI‘I ISLAND
# TMK (3RD) 1-3-009:005, PORTION
# 94.107 ACRES

**Petitioner:**
Sanford’s Service Center, Inc.
P.O. Box 1321
Pahoa, Hawaii 96778

**Accepting Agency:**
State Land Use Commission
Department of Business, Economic Development & Tourism
P.O. Box 2359
Honolulu, Hawaii 96804-2359

**Prepared By:**
Graham Paul Knopp, Ph.D.
GK Environmental LLC
P.O. Box 1310
Honokaa, Hawaii 96727
(808) 938-8583

**December 2018**

**Class of Action:**
Reclassification of Conservation District Land

**ABBREVIATIONS**

| | |
|---|---|
| ALISH | Agricultural Lands of Importance to the State of Hawai‘i |
| CAA | Clean Air Act |
| CDP | Community Development Plan |
| CDUP | Conservation District Use Permit |
| EA | Environmental Assessment |
| EIS | Environmental Impact Statement |
| EISPN | Environmental Impact Statement Preparation Notice |
| FONSI | Finding of No Significant Impact |
| GPS | Global Positioning System |
| HAR | Hawai‘i Administrative Rules |
| HDOH | Hawai‘i Department of Health |
| HRS | Hawai‘i Revised Statues |
| LLC | Limited Liability Corporation |
| MSL | Mean Sea Level |
| NAAQS | National Ambient Air Quality Standards |
| OEQC | Office of Environmental Quality Control |
| SHPD | State Historic Preservation Division |
| SPP | Site Preservation Plan |
| TMK | Tax Map Key |
| USEPA | United States Environmental Protection Agency |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geologic Survey |

# TABLE OF CONTENTS



**LIST OF FIGURES**

[This page intentionally left blank.]

# PART 1.0: INTRODUCTION

This Environmental Impact Statement Preparation Notice (EISPN) was prepared in accordance with the requirements of Hawai‘i Revised Statutes (HRS) §343 and Chapter 200 of Title 11, Hawai‘i Administrative Rules (HAR) in support of a State Land Use District boundary amendment to reclassify lands at Kauea, Puna District, Island of Hawai‘i, from the State Conservation District to the State Argicultural District. This HRS 343 environmental review is required due to the project's proposed reclassification of Conservation District lands.

## 1.1 Project Summary

| | |
|---|---|
| **Project Name:** | Pu‘u Kaliu Quarry |
| **Applicant:** | Sanford's Service Center<br>P.O. Box 1321<br>Pahoa, Hawai‘i 96778 |
| **Location:** | Ahupua‘a of Kauaea, Puna District, Hawai‘i Island |
| **Tax Map Key/<br>Coordinates:** | Portion, (3rd) 1-3-009:005<br>19° 27' 02.20" N, 154° 55' 08.72" W |
| **Project Area** | 94.107 acres |
| **Land Ownership:** | Kamehameha Schools |
| **Class of Action:** | Reclassification of Conservation District Lands |
| **Determination:** | Environmental Impact Statement presumed to be required |
| **Proposed Action:** | Reclassification of 94.107-acres from Conservation District to the Agricultural District to allow continued use of the site for quarrying of cinders |
| **State Land Use District:** | Conservation**:** |
| **Existing Use:** | Quarry |
| **Zoning:** | Agricultural (Ag. 20-a) |
| **Permits Required:** | *County of Hawaii*: Special Permit |
| **Accepting Authority** | State Land Use Commission |

## 1.2 Project Description and Location

Sanford's Service Center, in coordination with the property owner Kamehameha Schools, intends to petition the State of Hawaii Land Use Commission to amend the land use district designation for the 94.107-acre petition area from Conservation to Agricultural The 694.5-acre "parent" property, of which the quarry and Petition Area only occupy portions, is located within the State Land Use Conservation District, Limited (L) subzone, but has a Hawai‘i County Zoning Designation of Agricultural (Ag-20a). Mining is only allowed in the Resource (R) subzone of the Conservation District by Title 13-15-1, Hawaii Administrative Rules (HAR).

For the purposes of this Environmental Impact Assessment the proposed project includes both the procedural change of State Land Use District and the long-term use of the petition area for mining. At the Pu‘u Kaliu Quarry, Sanford's Service Center, Inc. produces a low-density type of black-colored cinder that is highly-valued by the nursery industry. Sanford's Service Center has a license to perform mining activities in a 73.075-acre portion of the petition area, the "license area". Figure 1 presents a Petition Area location map, Figure 2 presents a TMK and Vicinity Map and Figure 3 presents the Petition Area Boundaries.

## 1.3 Purpose and Need

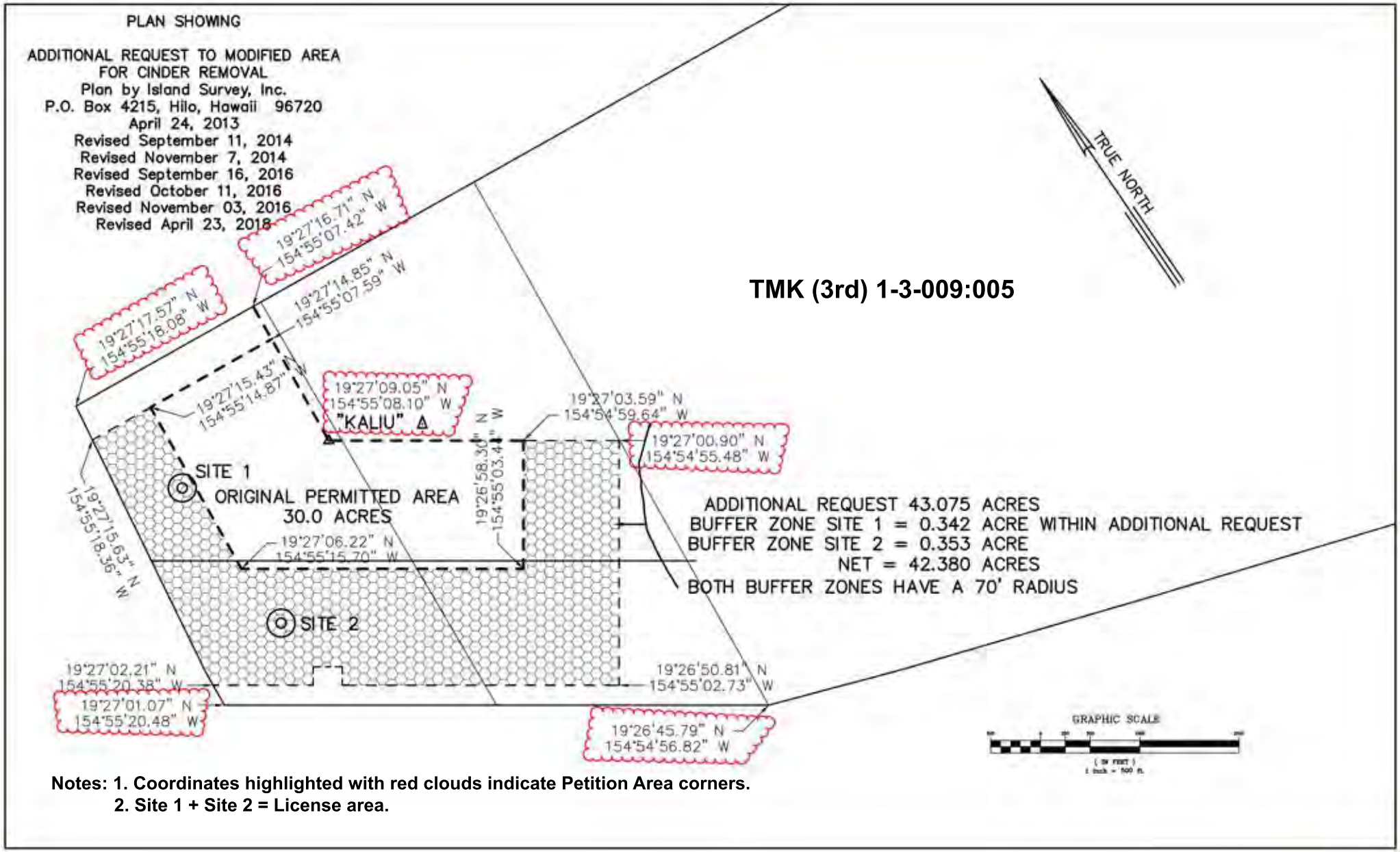
The purpose of the proposed project is to make the petitioner's use of the petition area consistent with the State land use designation and the County of Hawai‘i Zoning designation, thereby allowing continued use of the Pu‘u Kaliu Quarry. Prior to a rules change finalized in 2011 mining was permitted in the Limited (L) Subzone. After a Title 13-15, Hawaii Administrative Rules change in 2011 mining is only a permitted activity in the Resource Subzone (R) of the Conservation District, and is also conformant with the County of Hawai‘i Agricultural Zoning designation with a Special Permit. Mining or quarrying is a permitted activity in the Agricultural District by Hawaii County Code 25-5-72 with a Special Permit.


**Figure 1. Petition Area Location Map**

gk ENVIRONMENTAL LLC


**Figure 2. Petition Area Vicinity and TMK Map**

gk ENVIRONMENTAL LLC




**Notes: 1. Coordinates highlighted with red clouds indicate Petition Area corners.**
**2. Site 1 + Site 2 = License area.**

# Figure 3. Petition Area and License Area Survey Map

ENVIRONMENTAL LLC

### 1.3 Environmental Assessment Process

The Hawai‘i Environmental Policy Act was enacted by the State of Hawai‘i to require State and County agencies to consider the environmental impacts of various actions as part of the decision-making process. This Environmental Impact Statement (EIS) process is being conducted in accordance with Chapter 343 of the Hawai‘i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawai‘i Administrative Rules (HAR), is the basis for the environmental impact assessment process in the State of Hawai‘i. This EISPN has been prepared pursuant to HRS Chapter 343-5, as the project would involve reclassification of conservation district lands under HRS Chapter 205, Land Use Commission.

According to Chapter 343, an EA is prepared to determine impacts associated with an action, to develop mitigation measures for adverse impacts, and to determine whether any of the impacts are significant according to thirteen specific criteria. If a study concludes that no significant impacts would occur from implementation of the proposed action, a Finding of No Significant Impact (FONSI) is prepared and an action will be permitted to occur. If a study finds that significant impacts are expected to occur because of a proposed action, then an Environmental Impact Statement (EIS) is prepared in order to allow deeper investigation of impacts and allow more extensive public involvement.

However, in this case, the applicant desires to advance to the EIS process without EA preparation. The applicant's approach to the EIS process is precautionary; in order to not overlook any potentially significant impacts to the natural and/or human environment, the applicant has chosen to undertake an EIS-level analysis for the project.

The preparation of the Environmental Impact Statement (EIS) begins with publication of the availability of this EIS Preparation Notice (EISPN) in the *Environmental Notice* of the Hawai‘i State Office of Environmental Quality Control (OEQC). The subsequent steps are summarized as follows:

***Scoping:*** Scoping efforts for the EIS will include widespread distribution of the EISPN and small/group meetings with agencies, organizations and individuals.

***Draft EIS:*** The Draft EIS will document the scoping outreach effort as well as summarize the comments received at meetings. The Draft EIS will include copies of all written comments, and HDOT responses, to the EISPN. The Draft EIS will analyze the environmental impacts of the proposed alternatives and the No Action Alternative. The public will have a 45-day period to review the Draft EIS and provide comments. A public hearing will be conducted during the comment period to encourage public participation and comments.

***Final EIS:*** The Draft EIS is revised to respond to the comments received on the Draft EIS. The Final EIS will incorporate the comments, and include copies of the comments and responses.

The following entities have received copies of the EISPN or notifications of the availability of the EISPN and are formally invited to participate in the EIS process:

**Federal Agencies**
Department of the Interior, Fish and Wildlife Service
Department of the Interior, Geological Survey, Hawaii Volcano Observatory
Department of the Interior, Geological Survey, Biological Resources Division
Department of Agriculture, Natural Resources Conservation Service
Environmental Protection Agency, Region IX

**State Agencies**
Department of Agriculture
Department of Accounting and General Services
Department of Business, Economic Development & Tourism, Office of Planning
Department of Hawaiian Home Lands
Department of Land and Natural Resources
Department of Public Safety
Department of Transportation
Department of Health
Environmental Planning Office
Office of Environmental Quality Control
Office of Hawaiian Affairs
University of Hawai‘i, Environmental Center
State Historic Preservation Division
State Land Use Commission
Office of the Governor, Hawai‘i Island Liaison

**County of Agencies**
Civil Defense Agency
Department of Public Works
Department of Environmental Management
Department of Finance
Department of Water Supply
Fire Department
Police Department
Planning Department

**Elected Officials, Community Organizations, and Other Organizations**

Mayor Harry Kim
County Councilmember-Elect Matt Kanealii-Kleinfelder, County Council District 5
Representative San Buenaventura, State House District 4
Senator Russell Ruderman, State Senate District 2

**Utility Companies**
Hawai‘i Electric Light Company, Inc.
Hawaiian Telcom, Inc.

**Libraries**
Hawai‘i State Library
Hilo Public Library
Keaau Library
Pahoa Public Library

**Newspapers**
Hawai‘i Tribune Herald
West Hawai‘i Today

**Other**
Sierra Club
Puna Community Development Plan Committee
Hawai‘i Island Chamber of Commerce
Association of Hawaiian Civic Clubs
Cave Conservancy of Hawai‘i
Historic Hawai‘i Foundation
Hui Malama I Na Kupuna O Hawai‘i Nei
Sierra Club, Moku Loa Group
Hawai‘i Floriculture and Nursery Association
Hawai‘i Export Nursery Association
Big Island Association of Nurserymen

The above list is a preliminary identification of parties with interests at stake or who may have pertinent information about the area and the proposed project. The applicant welcomes and appreciates any assistance in identifying others who have special information or might be adversely affected by the proposed project, and who should therefore be consulted in the process of preparing the EIS.

The EISPN has been made available at the Pahoa, Keaau, and Hilo Public Libraries and was sent to the *Hawai‘i Tribune Herald* and *West Hawai‘i Today*.

## 1.4 Alternatives

The Environmental Impact Statement (EIS) will identify and assess alternatives, including the "no action" alternative. The No Action Alternative provides a reference base to measure impacts to the social and physical environment, both beneficial and adverse. Under the No Action Alternative, the Land Use District would not be amended and changed from Conservation to Agricultural. The quarrying activities would remain non-conformant with allowed activities in the Conservation District Limited (L) subzone, and mining activities would cease.

Sanford's Service Center has considered other means to achieve conformance with land use laws. Principally, this includes change of the conservation district subzone from Limited (L) to Resource (R). Mining and extraction of any material or natural resource under a management plan approved simultaneously with the permit is allowed in the Resource (R) subzone with a Land Board permit. However, as the activity is more consistent with the allowed uses of the Agricultural District, the applicant views the proposed action as preferable.

# PART 2: ENVIRONMENTAL SETTING AND POTENTIAL ISSUES

The petition area is located within the ahupua‘a of Kauaea on the flank of Kilauea volcano at an elevation of 574 to 1,079 feet above mean sea level (MSL). The climate in this part of Puna is warm and wet, averaging about 115 to 120 inches of rain annually, with a mean annual temperature of approximately 76 degrees Fahrenheit (Giambelluca et al. 2013). The community of Pahoa is located about three (3) miles to the northeast. The petition area occupies the far eastern portion of the 694.5-acre “parent” parcel TMK (3rd) 1-3-009:005. The petition area is accessed by a private road that extends from Pahoa-Kalapana Road (State Route 130), crossing two nearby privately-owned parcels.

Areas surrounding the petition area are primarily absent of active uses and are forested. The remainder of the “parent” parcel is unused. The northern boundary of the petition area adjoins the southern boundary of the Leilani Estates subdivision lots along Malama Street. Some structures and agricultural uses are present to the south of the petition area, with several homesteads and farms along Malama Road and Kamaili Road, within approximately 0.25-mile of the southern boundary of the petition area. The 206.17-acre property located to the west of the petition area is apparently unused and is owned by Kamehameha Schools.

## 2.1 Physical Environment

### 2.1.1 Geology and Geohazards

A portion of the petition area straddles the East Rift Zone of Kilauea Volcano and therefore the proposed project site is subject to geohazards commensurate with this context. The majority of the proposed project site is underlain by pahoehoe and ‘a‘a lava flows 400 to 750 years of age with cinders of Puu Kaliu of 400 to 750 years of age. Most areas away from Pu‘u Kaliu are dated older than 10,000 years (Wolfe and Morris 1996). One small area of 1955 lava flow is located on the southwestern flank of Puu Kaliu and two areas mapped of spatter or tuff cones of 750 to 1,500 years of age are found within the petition area. The petition area is located almost entirely within lava flow hazard zone 1 (Wright et al. 1992), which includes summits and rift zones of Kilauea and Mauna Loa, where vents have been repeatedly active in historical time.

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. The U.S. Geological Survey classifies the petition area, which is virtually all located within the East Rift Zone of Kilauea Volcano as within Lava Flow Hazard Zone 1, on a scale of ascending risk 9 to 1 (Wright et al. 1992). In terms of seismic risk, the entire Island of Hawai‘i is rated Zone 4 Seismic Hazard (Uniform Building Code, Appendix Chapter 25, Section 2518). Zone 4 areas are at risk from earthquake damage, especially to structures that are poorly designed or poorly constructed. The vicinity of the petition area has seen recently seen large earthquakes, including the magnitude 7.7 Kapalana earthquake in 1975 (USGS 2017) and the May 4, 2018 6.9 magnitude earthquake with an epicenter about 10.5 miles southwest of the petition area (USGS 2018). The proximity of the petition area to the lower East Rift Zone implies that the vicinity is subject a relatively larger intensity and probability of shaking from earthquakes with a peak ground acceleration 2% probability in 50 years of 1.25 g (1.25 times normal gravitation acceleration).

On April 30, 2018, after a period of enhanced summit inflation indicated by tiltmeter and GPS data, magma beneath Pu‘u O‘o drained and triggered the collapse of the crater floor (USGS 2018). Within hours, earthquakes began migrating towards the east. On May 2 ground cracks began appearing in and adjacent to Leilani Estates with the first lava appearing on May 4. Kilauea

Volcano then entered a dramatic eruption phase, with lava, as well as gases, being effusive from a number of fissures in the lower East Rift Zone, particularly Fissure 8 located in Leilani Estates, approximately 0.7-mile northeast of Puʻu Kaliu. Activity from Fissure 8 ceased on August 5, 2018. The petition area, to date, has not been inundated by lava with the exception of a small area in the far northwest corner, although the petition area was impacted by volcanic gases (Figure 2).

*Potential Issues:* Geologic conditions impose no substantial constraints on the proposed project. While the petition area is affected by earthquakes and lava flows, being located within the East Rift Zone of Kilauea volcano, the mining activity utilizes equipment that would not vulnerable to major earthquakes, and would be easily removed if threatened by lava flow inundation. The quarrying equipment is mobile, and can quickly be relocated to a safe area in the event of threat from lava flow inundation. Generally, all equipment on site can be mobilized in a short period of time. Lava flow inundation would obstruct mining only temporarily, as equipment could be returned to the site after hazards diminish.

The question of whether the proposed project should be considered reasonable given the close proximity to the 2018 eruption should be seriously considered. Fissure 8 is only about 0.7 mile away from the petition area, yet the petition area was never impacted by lava inundation, apart from a small area located in the northwest corner. During the eruption, activities at the Puʻu Kaliu quarry were halted temporarily because of poor air quality. Because of the nature of the mining activity, it is not an inappropriate activity to site near the East Rift Zone and active areas of Kilauea Volcano. In fact, because the activity is industrial, makes use of almost no permanent structures, requires very little infrastructure, and rapid evacuation of personnel and equipment is feasible, quarrying in this area is an appropriate activity and could be viewed as relatively more appropriate than uses that require fixed structures, utilities, and infrastructure.

### 2.1.2 Hydrology and Water Quality

Because of the youthful and porous nature of the geology in the project vicinity, surface water features are not found in the area, and are likely to only result from transient ponding after heavy rainfall. Additionally, areas that are not being actively mined become vegetated very quickly, enhancing the infiltration of rainfall. The ocean is located approximately three (3) miles southeast of the petition area. Although quarrying activities are, by nature, soil disturbing, it is highly unlikely that polluted stormwater runoff from the quarry areas could adversely impact water quality. No impacts to stream banks, stream waters, wetlands, or any other waters of the U.S. would occur, as none are located near the petition area. Floodplain status for the petition area is zone X unmapped

*Potential Issues:* As mining is a soil-disturbing activity the potential for water quality impacts due to sediment-laden storm water runoff exists, as well as from other sources including contaminants associated with heavy equipment and other sources, solids from tire and pavement wear, brake show and drum wear, rust, exhaust, etc. The Draft EIS will discuss erosion control measures and mitigation of impacts that may affect water quality.

### 2.1.3 Biological Resources

The Puna District contains some of Hawaiʻi's last remaining native lowland wet forests (Dupuis 2012). Gagne and Cuddihy (1990) classified the vegetation in areas with a similar geology, elevation and rainfall as the proposed project site as Lowland Wet ʻŌhiʻa/Lama Forest dominated

by ʻŌhiʻa (*Metrosideros polymorhpa*) and lama (*Diospyros sanwicensis),* generally occurring on young volcanic terrains in windward Hawaiʻi Island.

Over the last 100 years, the conversion of land to agriculture and residential development has fragmented the landscape in Puna's lowland wet forests. This has led to invasion by alien plant species and degradation of native plant communities (Cuddihy and Stone 1990; Dupuis 2012). In Dupuis' survey of lowland wet forest reserves, she found the following proportions of absolute canopy cover: ʻōhiʻa (44%), strawberry guava (*Psidium cattleianum*) (30%), hala (*Pandanus tectorius*) (30% strictly in the lowest 100 meters elevation zone), lama (8%), kōpiko (*Psychotria hawaiiensis*) (8%), albizia (*Falcataria moluccana*) (8%), cecropia (*Cecropia obtusifolia*) (7%), *Melastoma septemnervium* (5%), and ironwood (*Casuarina equisetifolia*) (3%) (Dupuis 2012).

In 2013 Ron Terry, Ph.D. and Patrick J. Hart, Ph.D. of Geometrician Associates, LLC (Terry & Hart 2013) performed a biological survey of a 309-acre area of the property encompassing the 95-acre petition area. This work described the canopy as 10 to 15 meters high with a well-developed shrub and fern layer of native and alien species, with scattered emergent ʻohe (*Tetraplasandra hawaiiensis*). Anthropogenic, or human-caused, disturbance has been a critical factor influencing the vegetation. The 309-acre property is a mosaic of patches with undisturbed surface along with areas affected by sugar cane cultivation, roads and railroad beds, papaya farming and cinder mining. More subtle disturbance is found in the form of faint remnants of ancient Hawaiian cultivation or wild tree crops and modern marijuana cultivation. Particularly important are the pervasive effects of invasive species that have spread throughout the property from footholds near and far. Of the 130 plant species observed within the 309-acre study area, 20 are indigenous (found in Hawaiʻi and elsewhere) and 20 are endemic (found only in Hawaiʻi). Of particular note is the large number of individuals of rare species in forests dominated by ʻōhiʻa, including *tetraplasandra hawaiensis* and the listed endangered species of *Cyrtandra nanawalensis.*

The biological survey is ongoing and is focused on portions of the petition area with identified populations of *Cytandra nanawalensis* and other rare native plants. This supplemental work is required in part to evaluate the effects of the 2018 Kilauea eruption, but also to further explore plant populations in extremely rugged portions of the petition area. The results of this supplemental biological survey work will be presented in the Draft EIS.

The faunal survey focused on native vertebrates, including birds and the Hawaiian hoary bats, because of their conservation value. It is recognized that non-native birds, mammals and reptiles have values for various purposes and may also merit attention for the negative interaction with native plants and animals.

Twelve species of birds were detected either opportunistically during plant surveys or as part of the systematic birds counts. Three native birds, Hawai'i ʻAmakihi (*Hemignathus virens*), the ʻApapane (*Himatione sanguinea*) and the Hawaiian Hawk (*Buteo solitarius)*, were detected. All other birds seen or heard were non-native introductions. A total of 90 individuals from eight species were detected with the two native Honeycreeper species comprising almost half (44/90) of the total detections, with Hawaiʻi ʻAmakihi accounting for 31 individuals present at 6 stations, and the ʻApapane for 13 individuals at 5 stations. The most common non-native species was the Japanese White-eye, with 26 individuals at 6 stations. Other native forest birds could possibly be present, although the lowland elevation (maximum 1,071 above sea level atop Puʻu Kaliu) precludes heavy use by those native forest bird species mostly restricted to elevations above 4,000 feet where the vegetation is more intact and mosquitos and the diseases they cause less prevalent.

Based on its prominent elevation and potentially suitable habitat (over an acre of ʻuluhe fern near the summit), it is possible that it might be suitable nesting habitat for three species of rare seabirds: the federally endangered Hawaiian Petrel (ʻUaʻu; *Pterodroma phaeopygia sandwichensis*), the federally threatened Newell's Shearwater (ʻAʻo; *Puffinus auricularis newelli*), and the Band-rumped Storm-Petrel (*Oceanodroma castro*), which is listed as endangered by the State of Hawaiʻi. Nocturnal surveys over several nights during the breeding season for Newell's Shearwater in 1993 by the U.S. Geological Survey, Biological Resources Division detected the calls of two individuals (Reynolds and Ritchotte 1997).

The endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) is often found in alien as well as native vegetation in a variety of locations throughout the island of Hawaiʻi. These solitary bats are widely scattered and roost almost undetected in tall shrubs and trees. Although no bat surveys were performed, and no bats were observed during survey work, they have been observed in many areas of Puna and should be presumed to be present at least occasionally and to roost somewhere in the area around Puʻu Kaliu. All other mammal species found on the island are alien species (introduced to Hawaiʻi by man). In the project area these may include feral goats, donkeys, dogs, cats, rats, mice and mongooses.

*Potential Issues*. The Draft EIS will include the results of botanical and faunal surveys that will focus especially on the presence of species listed as endangered, threatened, or proposed by the USFWS and/or DLNR that are likely to occur in the project area. The Draft EIS will discuss, and compare by alternative, direct impacts to specific biotic components as well as secondary and cumulative impacts, such as wildfire hazard, and will propose minimization and mitigation measures as necessary. The applicant will establish fenced buffer zones around areas with known *Cyrtandra nanawaleenis*, an endangered species.

### 2.1.4 Air Quality and Noise

Air pollution in the Puna District is mainly derived from volcanic emissions containing sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze, or "vog". Typically, the northeast-tending trade winds blow the volcanic emissions away from the petition area in towards the Kau District, however, during periods of so-called *kona*, or westerly, winds, or southerly winds, the vog may blanket the Puna District.

The Clean Air Act of 1972 and its 1990 Amendments (CAA) and subsequent legislation regulate air emissions from area, stationary, and mobile sources. Both the U.S. Environmental Protection Agency (USEPA) and the State of Hawaiʻi have instituted Ambient Air Quality Standards (AAQS) to maintain air quality in the interest of public health and secondary public welfare. At the present time, seven parameters are regulated including: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone and lead. The Hawaiʻi AAQS are in some cases considerably more stringent than the comparable National Ambient Air Quality Standards (NAAQS). In particular, the Hawaiʻi 1-hour AAQS for carbon monoxide is four times more stringent than the comparable national limit.

It should be noted that, while the 2018 Kilauea eruption caused severe air quality impacts that temporarily halted quarry activities, the overall volcanic emissions from Kilauea volcano in November 2018 are now lower than at any time since late 2007, as noted in the Hawaiian Volcano Observatory Daily Update (USGS 2018). HDOH maintains a network of air quality monitoring stations with the two following stations in the project vicinity: Leilani Estates, Pahoa

High School, and Kalapana. These stations usually report no $S0_2$ (sulfur dioxide) detected, with occasional detections of concentrations below 1ppm.

Quarrying and mining activities may produce minor impacts to air quality that are not apparent beyond the property boundary. These include fugitive dust emissions from excavation and vehicle movement, as well as emissions of vehicle exhaust that include particulates, carbon monoxide (CO) and carbon dioxide ($CO_2$). Factors particular to the Puu Kaliu quarry mean that air quality impacts are normally very minor. These include nearly daily rainfall, the small number of trucks accessing the site, and the particular method of mining. The Puu Kaliu quarry does not use a rock crusher, and only screens are used to process excavated material. Also, no blasting is performed because of the soft and easily extractable nature of the cinders.

The Pu‘u Kaliu Quarry does not produce much dust, as the material mined has only a small fines content. As the material mined contains very few small particles, dust is only produced from physical disturbance of cinders or by vehicle wheels. Additionally, areas not being actively mined are revegetated quickly. While the generally wet climate reduces dust emissions, all truck loads removed from the petition area are covered. Because levels of criteria pollutants in Hawai‘i are consistently below Federal and State AAQS, and because the prevailing trade winds rapidly carry pollutants offshore limiting the effect on receptors, increases in levels of criteria pollutants in the petition area and at the locations of sensitive receptors nearby would not be observed.

*Potential Issues*: The Draft EIS will evaluate the potential for fugitive dust emissions from the project site and necessary mitigation.

### 2.1.5 Hazardous Substances, Toxic Waste and Hazardous Conditions

A review of land use history and site reconnaissance revealed no evidence of hazardous materials. The proposed project is not likely to encounter any hazardous substances, toxic waste, or hazardous conditions. Construction activities would use small quantities of fuels to power generators and construction equipment. These would be stored away from equipment and potential sources of ignition. Vehicles and equipment are fueled using portable fuel tanks. Vehicles and equipment area serviced off-site and are well-maintained. Drip pans are used to minimize the potential for fluid releases during fueling activities and storage.

*Potential Issues:* The Draft EIS will discuss development of “Good Housekeeping” and Spill Prevention plans for emergency spill treatment, storage, and disposal of all hazardous materials.

### 2.1.6 Scenic Resources

The County of Hawai‘i General Plan identifies sites and vistas of natural beauty. In general, the scenic values here are derived from the wide vistas of volcanoes, grasslands, and coastal waters, and the high contrast between the moist uplands and arid lowlands, and between the stark lava flows and the windswept grasslands. In particular, the General Plan does not note specific viewplanes or sites in the project area but does state that the coast of Puna, as well as the inland volcanic regions, are significant. Viewed from the north the viewplane towards the petition area has been changed by the 2018 eruption with the addition of the taller Fissure 8 spatter cone located about 0.7-mile to the northeast of Pu‘u Kaliu. Quarrying activities would not impact the profile of Pu‘u Kaliu; one of the lease conditions prohibits the applicant from impacting the summit and overall profile of the cinder cone.

*Potential Issues*: The Draft EIS will include an evaluation of the scenic impacts of the project, including the opportunities to provide new scenic vistas and the impacts on *pu'u* (cinder cones) within the petition area.

### 2.1.7 Noise

Noise during industrial activities is normally mitigated through compliance with the Department of Health Community Noise Control Rules which define maximum permissible noise levels for construction equipment and prescribe mitigation measures to achieve these levels. Noise-sensitive receptors in the project area are not found nearer than ½ mile, located in either Leilani Estates or along Kamali'i Rd. (Opihikao Rd), and noises from mining activities appear to adequately reduced by a combination of distance, vegetation and topography.

*Potential Issues:* The Draft EIS will evaluate whether noise due to ongoing mining activities have the potential to impact sensitive receptors nearby.

## 2.2 Social Environment

### 2.2.1 Socioeconomic Characteristics

Because of the gradual occupation of lots developed during widespread land subdivision about fifty years ago, the Puna District has been the Big Island's fastest-growing district over the last thirty years. Population as measured in the 2010 U.S. Census was 45,326, a 66 percent increase over the 2000 count of 27,232. Despite a lack of basic infrastructure such as paved roads and water in most subdivisions, the relatively inexpensive lots typically range in size from one to three acres and have attracted residents from the U.S. mainland and other parts of the State of Hawai'i who seek affordable property. The basis of the economy of Puna has evolved from cattle ranching and sugar to diversified agriculture, various services for the growing populations, commuting to Hilo, and tourism, which has been stimulated by being home to Kīlauea, one of the world's most active volcanoes. Some towns and subdivisions in Puna such as Mt. View, Hawaiian Acres, Fern Acres, and Eden Roc, are now partially bedroom communities for Hilo's workforce. This is evidenced by the heavy flow of Hilo-bound traffic during the AM rush hour, which is also derived from school traffic.

*Potential Issues:* The Draft EIS will investigate the socioeconomic and cultural characteristics of the project vicinity and evaluate the proposed project's impacts.

### 2.2.2 Economic

The Pu'u Kaliu Quarry produces a low-density type of black-colored cinder that is highly-valued by the nursery industry, being almost exclusively used by Hawai'i Island nurseries. There are 92 State Plant Industry Division Certified nurseries on Hawaii Island, 3 on Kauai, 16 on Maui, one on Molokai and 25 on Oahu. Nurseries are certified by the State in order to export products from the State.

Unfortunately, there is a paucity of information concerning the economic productivity of mines, in general, as government agencies consider mining and construction to be part of the same activity and engineered material is essential to the construction industry. Therefore, data sources including the State Department of Business, Economic Development and Tourism (DBEDT) have values for total employed for "Natural Resource, Mining & Construction." The Hawaii County Data Book states that the total value of crops including greenhouse & nursery crops (i.e., crops excluding

livestock and poultry) was $156.4 million in 2012 (County of Hawai‘i 2018). Therefore, apart from direct employment by Sanford’s Service Center, which employs a total of 25-30 people, the proposed project would support an important industry in the County and State of Hawai‘i.

*Potential Issues:* The Draft EIS will evaluate the economic impact of the proposed project, and the impact of the No Action Alternative.

### 2.2.3 Cultural and Historic Resources

The project area is situated in the *ahupua‘a* of *Kauaea* in the Puna District. There is little mention of Kauaea, as well as the Puna District in general, found in Hawaiian traditional and legendary accounts, possibly because of intensive missionary work by Reverend Titus Coan in the 1800s (Crozier and Barrere 1971) or the dominating influence of ruling families in the neighboring districts of Hilo and Ka‘u.

Shortly before the historic period, ‘Umi-a-Liloa seized control of Puna from Hua‘a, thereby unifying control of the Island. During Kalani‘opu‘u’s rule, the Puna chief I-maka-koloa, attempted a rebellion, seizing valuable products from Puna including ‘o‘o and *mamo* bird features, hogs, lau hala mats, and tapa cloths. A conflict over ascendancy erupted after Kalani‘opu‘u’s death in 1782 culminating in the battle of Moku‘ohai (Kamakau 1961, Kuykendall 1938). Following this battle Keoua Ku‘ahulu‘ula held K‘u and a portion of Puna, Keawema‘uhili controlled the remainder of Puna, Hilo and southern Hamakua, and Kamehameha controlled northern Hamakua, Kohala, and Kona. The Island was was finally re-unified in 1791 when Kamehameha killed Keoua at Kawaihae.

Early historic accounts describe Puna as well populated an intensively cultivated. In 1823 Ellis reported a sandy beach and settlement at Kaimu with an estimated 725 occupants, along with plantations and groves of coconuts and *kou.* Ellis also described a village at Kamaili where his group was given taro and potatoes, and noted the cultivation of bananas and sugar cane. Ellis estimated that the total population of Kaimu and vicinity was approximately 2,000.

Prior to the 1870s, most foreign influence in Puna was due to missionary presence. In the late 1870s Robert Rycroft moved to Pohoiki and built a home, wharf, sawmill, jail and courthouse, and cultivated coffee. In the mid-1880s the Government began selling land in Puna for homesteads, however, it appears that only one Land Commission Award (LCA) was awarded in Kauea, to Victoria Kamamalu, Kuhina Nui of the Hawaiian Islands between 1855 and 1863.

An 1895 Hawaii Government Survey map of Puna depicts a network of roads and paths, three of which were labeled as roads, consisting of the Government Road paralleling the shoreline, the Puna Road located in Kaiahiku and Keahialaka Ahupua‘a, and Rycroft’s Road in Pohoiki. Several of the trails are listed as ancient in origin including the Kauaea Trail in Kauaea ahupua‘a and the Kipapaia Trail in Kamaili. The Kauaea Trail originicates at a coconut grove and community name Kikiikii located makai of the petition area. However, none of these trails enters the petition area.

*Potential Issues*. The Draft EIS will present a Cultural Impact Assessment performed in a manner consistent with Chapter 343, HRS, and OEQC’s Guidelines for Assessing Cultural Impacts (November 1997). This EISPN is one of a number of outreach techniques for identifying such people and encouraging their involvement. The cultural investigation that will be performed for the Draft EIS will include intensive surveys of all affected areas, investigation of records, and discussions with appropriate experts, residents and practitioners.

### 2.2.4 Archaeological Resources

In 2012 Haun & Associates performed an archaeological inventory survey, which identified four sites are located within the petition area. These features and sites are described as follows:

- Site 29727 is a historic triangulation station located at the summit of Puu Kaliu, which has been used for this purpose from as early as 1895 (Swanson et al. 1976). This triangulation station supported both surveys by the U.S. Coast and Geodetic Survey in 1958 and 1961, and ground movement measurements by the U.S. Geological Survey in 1970 and 1971 by personnel from the Hawaii Volcano Observatory. A sign marking this survey data point was located during the 2012 AIS;
- Site 29725, a historic survey marker located near the access road;
- Site 29724, a complex of four historic roads; and
- Site 29723 is a portion of a prehistoric trail located in the southwestern corner of the project area.

Subsequently, Haun and Associates prepared a Site Preservation Plan (SPP), which was approved by the State Historic Preservation Division on September 13, 2013. The SPP primarily concerning the prehistoric trail (Site 29723), proposing to preserve the trail segment with implementation of buffers and fencing. The Draft EIS will document consultation and concurrence with the State Historic Preservation Division and will discuss in detail the Site Preservation Plan.

### 2.2.5 Public Facilities, Infrastructure and Utilities

No utilities are provided to the site. Nor is waste water treatment provided to the site and wastewater is contained within porta-potties on site which re regularly serviced. Solid waste is collected in trash bins, regularly removed from the site and disposed of appropriately. No other public facilities are present. No adverse impact to public facilities or utilities would occur.

### 2.2.6 Recreational Resources

Although there are no public parks within the project area, the lower Puna shoreline is located several miles makai.

*Potential Issues*. The Draft EIS will analyze impacts on recreational and hunting areas.

### 2.2.7 Agricultural Value of Land

Of the three categories of valuable agricultural land identified in Hawai‘i through the *Agricultural Lands of Importance to the State of Hawaii* (ALISH) map series (Baker 1976), Ke‘āmuku contains some Other Important Agricultural Lands but no Prime or Unique Agricultural Lands. Other Important Agricultural Lands are those lands of statewide or local importance for agricultural use, other than those classified as Prime or Unique. They make up roughly 18 percent of the county’s land area.

*Potential Issues*: The Draft EIS will evaluate the agricultural value of the land through map data, including soil types, ALISH, and Land Study Bureau, and also through consultation with federal, State, and local agricultural officials and organizations.

## 2.3 Secondary and Cumulative Impacts

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. The adverse effects of the project – minor and temporary disturbance to air quality and noise – are limited in severity, nature, and geographic scale. At the current time there are no known planned projects near the project site.

*Potential Issues:* The Draft EIS will evaluate planned and proposed projects in the vicinity of the petition area in order to determine the potential for secondary and cumulative impacts.

## 2.4 Required Permits and Approvals

State of Hawai‘i

State Land Use Boundary Amendment

SHPD Site Preservation Plan Approval (received)

County of Hawai‘i

Special Permit

## 2.5 Consistency with State Land Use Plans, Policies and Controls

Various State and County plans, policies, and land use controls determine guidelines for land use and development within the State, including the Hawaii State Plan, State Functional plans, and the State Land Use Plan. The Draft EIS will contain a discussion of the consistency of the project with a number of County and State plans and policies, including a discussion of past permitting and compliance activities. Those discussed are summarized as follows:

*State of Hawaii Land Use Law*

All land in the State of Hawai‘i is classified into one of four land use categories – Urban, Rural, Agricultural, or Conservation – by the State Land Use Commission, pursuant to Chapter 205, HRS. Highways are permissible uses in all State Land Use Districts. The Draft EIS will include a map depicting State Land Use Districts in the project area. The State Land Use Commission, pursuant to Chapter 205 and 205A, HRS, and Chapter 15-15, HAR, is empowered to classify all lands in the State into one of four land use districts: Urban, Rural, Agricultural, and Conservation. The project area is currently in the Conservation District.

Conservation Districts are further divided into the following five subzones: Protective, Limited, Resource, General and Special. The petition area is located entirely within the Limited Conservation District subzone. The objective of the Limited (L) subzone, described by HAR 13-5-12, is to “limit uses where natural conditions suggest constraints on human activities. The (L) subzone shall encompass: (1) Land susceptible to floods and soil erosion, lands undergoing major erosion damage and requiring corrective attention, as determined by the county, state, or federal government; and (2) Land necessary for the protection of the health, safety, and welfare of the public by reason of the land's susceptibility to inundation by tsunami, flooding, volcanic activity, or landslides, or which have a general slope of forty per cent or more. (c) Identified land uses in the limited (L) subzone are restricted to those listed in section 13-5- 23.

Section 13-5-23 HAR lists permitted activities in the Limited subzone, which are supplemental to those activities permitted in the Protective subzone. Mining or quarrying is not a permitted activity

in either the Limited or Protective subzone. This non-conformance with current activities appears to originate in the Conservation District rule revision of 2011, although t/he ongoing mining activities were permitted by a prior Conservation District Use Permit CDUP-1957.

HRS 205-4.5 enumerates permissible uses within the agricultural districts. Approval of the Petition would result in the petition area being conveyed to the State Land Use Agricultural District. Although the planned use is not a conformant use of the Agricultural District as per HRS 205-2, State Land Use law allows for further definition by County ordinance, which allows for quarrying on agricultural lands. However, a Special Permit from the Hawai‘i County Planning commission would be required for the proposed use.

*Potential Issues:* The Draft EIS will also discuss past issues relating to conformance of mining at the Pu‘u Kaliu Quarry with State Land Use Law, including a list of past permits.

*The Hawai‘i State Plan*

The Hawaii State Plan, embodied in Chapter 226, Hawaii Revised Statutes (HRS), serves as a guide for goals, objectives, policies, and priority guidelines for the State. The State Plan provides a basis for determining priorities, allocating limited resources, and improving coordination of State and County plans, policies, programs, projects, and regulatory activities. The proposed project is consistent with the following applicable goals, objectives, policies, and priority guidelines of the Hawaii State Plan. A discussion of the proposed project’s relevancy with the applicable State Plan goals, objectives, policies, and priority guidelines will be included in the Draft EIS.

*Hawai‘i State Functional Plans*

The Hawai‘i State Plan provides for the preparation of Functional Plans by the State agencies responsible for certain program areas. There are twelve Functional Plans dealing with specific areas of concern, and each contains objectives, policies, and implementing actions necessary to accomplish the goals of the plan. State Functional Plans cover the program areas of agriculture, transportation, conservation lands, housing, tourism, historic preservation, energy, recreation, education, health, human services and employment. Applicable Functional Plans will be discussed.

*Coastal Zone Management.* The purpose of Chapter 205A, HRS, is to preserve, protect, develop and where possible, enhance the resources of the coastal zone. The Draft EIS will address the conformity of the project with the relevant sections of Chapter 205A, HRS.

*Hawai‘i County General Plan.* The General Plan for the County of Hawai‘i is a policy document expressing the broad goals and policies for the long-range development of the Island of Hawai‘i. The plan was adopted by ordinance in 2005. The General Plan itself is organized into thirteen elements, with policies, objectives, standards, and principles for each. There are also discussions of the specific applicability of each element to the nine judicial districts comprising the County of Hawai‘i. Section 4 of the General Plan includes a discussion of general goals. In Section 5, courses of action for individual districts are proposed, and the Land Use Pattern Allocation Guide (LUPAG) map component guides development of various areas. The Draft EIS will address the goals, objectives, standards, and courses of action in the General Plan. It will also discuss the Puna Community Development Plan, which was developed under the framework of the General Plan. Community Development Plans are intended to translate broad General Plan Goals, Policies, and Standards into implementation actions as they apply to specific geographical regions around the

County. CDPs are also intended to serve as a forum for community input into land-use, delivery of government services and any other matters relating to the planning area.

## PART 3: DETERMINATION

The applicant has determined that the potential for significant impacts due to the proposed project exists, and will therefore prepare an Environmental Impact Statement.

## 8.0 REFERENCES


County of Hawai‘i. 2018. The Hawai‘i County Data Book. Retrieved Novemeber 15, 2018 from: http://www.hawaiicounty.gov/rd-information-resources

Crozier, N., & Barrere, D. 1971. Archaeological and Historical Survey of the Ahupuaa of Pualaa, Puna District, Island of Hawaii. Bishop Museum, Honolulu.

Cuddihy, L.W., & Stone, C.P. 1990. Alteration of Native Hawaiian Vegetation-Effects of Humans, Their Activities and Introductions. University of Hawaii Cooperative National Park Resources Studies Unit, Honolulu.

Duipuis, C.J. 2012. Vegetation Patterns in Lowland Wet Forests of Hawaii. Presendted to the Faculty of the Tropical Conservation Biology and Environmental Science Program, University of Hawaii at Hilo.

Gagne, W., and L. Cuddihy. 1990. “Vegetation,” pp. 45-114 in W.L. Wagner, D.R. Herbst, and S.H. Sohmer, eds., *Manual of the Flowering Plants of Hawai‘i*. 2 vols. Honolulu: University of Hawai‘i Press.

Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J.K. Eischeid, and D.M. Delparte, 2013: Online Rainfall Atlas of Hawai‘i. *Bull. Amer. Meteor. Soc.* 94, 313-316, doi: 10.1175/BAMS-D-11-00228.1.

United States Geological Survey, May 12, 2017. Damaging Earthquakes – A Common Hazard in Hawaii. Retrieved from https://volcanoes.usgs.gov/observatories/hvo/hazards_earthquakes.html

Reynolds, M.H., and G.L. Ritchotte. 1997. “Evidence of Newell’s Shearwater breeding in Puna District, Hawaii.” *Journal of Field Ornithology* 68:26-32.

United States Geological Survey, May 4, 2017. M 6.9 – 19km SSW of Leilani Estates, Hawaii. Retrieved from https://earthquake.usgs.gov/earthquakes/eventpage/us1000dyad#executive

U.S. Fish and Wildlife Service (USFWS). 2018. *USFWS Threatened and Endangered Species System (TESS).* Washington: GPO. http://ecos.fws.gov/tess_public/StartTESS.do.

United State Geological Survey, September 9, 2018. Hawaiian Volcano Observatory Daily Update. Retrieved from: https://volcanoes.usgs.gov/volcanoes/kilauea/status.html

Wolfe, E.W., and J. Morris. 1996. *Geologic Map of the Island of Hawai`i*. USGS Misc Investigations Series Map i-2524-A. Washington, D.C.: U.S. Geological Survey.

Wright, T.L., Chun, J.Y.F. ,Exposo, Jean, Heliker, Christina, Hodge, Jon, Lockwood, J.P., and Vogt, S.M., 1992, Map showing lava-flow hazard zones, Island of Hawaii: U.S. Geological Survey Miscellaneous Field Studies Map MF-2193, scale 1:250,000.