Daryn Arai
Land Use Planning Consultant

February 23, 2022

Mr. Zendo Kern, Director
County of Hawai'i Planning Department
101 Pauahi Street, Suite 3
Hilo, HI 96720

Dear Director Kern:

Subject:	Special Permit Application
Applicant:	Yamada and Sons, Inc.
Request	Proposed quarry and related activities on 37.882 acres
TMK:	2-1-013: 002 (portion); Waiākea, South Hilo

Accompanying this letter, we present for your consideration and processing before the Windward Planning Commission a request by Yamada and Sons, Inc. for a Special Permit to allow for the establishment of a quarry and related activities upon 37.882 acres of land within a larger 2,407-acre State-owned parcel. The.

Pursuant to your application requirements to be filed via the EPIC system, please find accompanying this letter the following:

a. Original of the completed Special Permit application form accompanied by supporting information that includes a location map and site plan;
b. List of the surrounding property owners within 1,000 feet of the subject property;
c. FEA-FONSI accepted by State Department of Land and Natural Resources (DLNR); and
d. Land License issued by the State DLNR in support of a quarry on the project site.

Note that this the Project Site occurs on State lands, no Real Property Tax Clearance accompanies this submittal.

Should you have questions on this matter, please feel free to contact me. Thank you very much.

Sincerely,

Daryn Arai

copy via email: Shellbylynn Yamada, President, Yamada and Sons, Inc.

P.O. BOX 4501, HILO HAWAII 96720
PHONE: (808) 895-3218 EMAIL: DARYN.ARAI@OUTLOOK.COM

SPECIAL PERMIT APPLICATION
Applicant: Yamada and Sons, Inc.
Request: Proposed Quarry on 37.882 acres

Tax Map Key: (3) 2-1-013:002 (Portion)
Waiakea, South Hilo District
Hawai'i Island

Prepared by: Daryn Arai, Land Use Planning Consultant
February 2022

SPECIAL PERMIT APPLICATION
COUNTY OF HAWAII
PLANNING DEPARTMENT

(Type or Print the requested information)

APPLICANT: Yamada and Sons, Inc.

APPLICANT'S SIGNATURE: _____ DATE: 2/18/2022

ADDRESS: Attn: Shellbylynn Yamada, President
733 Kanoelehua Avenue
Hilo, Hawaii 96720

LIST APPLICANT'S INTEREST IF NOT OWNER: Licensee

TELEPHONE: (Bus.) (808) 933-8400 (Home) _____ (Fax) (808) 933-8415

REQUEST: To allow the establishment of a quarry and stockpiling operation on 37.882 acres of land

TAX MAP KEY: (3) 2-1-013:002(portion) ZONING: A-20a

AREA OF PROPERTY/AREA OF REQUESTED USE: 2,407.7 acres / 37.882 acres

LANDOWNER: State of Hawaii

LANDOWNER'S SIGNATURE: Land License No. S-359 DATE: _____
(May be by letter)

LANDOWNER'S ADDRESS: State Department of Land and Natural Resources
75 Aupuni Street, Room 204
Hilo, Hawaii 96720

AGENT: Daryn Arai

ADDRESS: PO Box 4501
Hilo, Hawaii 96720

TELEPHONE: (Bus.) (808) 895-3218 (Home) _____ (Fax) _____

Please indicate to whom original correspondence and copies should be sent to:

ORIGINAL: Applicant COPIES: Agent

SPECIAL PERMIT APPLICATION
COUNTY OF HAWAII
PLANNING DEPARTMENT

(Type or Print the requested information)

APPLICANT Yamada and Sons, Inc.

APPLICANT'S SIGNATURE: _____ DATE: 2/18/2022

ADDRESS: Attn: Shellbylynn Yamada, President

733 Kanoelehua Avenue

Hilo, Hawaii 96720

LIST APPLICANT'S INTEREST IF NOT OWNER: Licensee

TELEPHONE: (Bus.) (808) 933-8400 (Home) _____ (Fax) (808) 933-8415

REQUEST: To allow the establishment of a quarry and stockpiling operation on 37.882 acres of land

TAX MAP KEY: (3) 2-10 13002 (portion) ZONING: A-20a

AREA OF PROPERTY/AREA OF REQUESTED USE 2,407.75 acres / 37.882 acres

LANDOWNER: State of Hawaii

LANDOWNER'S SIGNATURE: _____ DATE: 3/7/22

(May be by letter)

LANDOWNER'S ADDRESS: State Department of Land and Natural Resources

75 Aupuni Street, Room 204

Hilo, Hawaii 96720

AGENT: Daryn Arai

ADDRESS: PO Box 4501

Hilo, Hawaii 96720

TELEPHONE: (Bus.) (808) 895-3218 (Home) _____ (Fax) _____

Please indicate to whom original correspondence and copies should be sent to:

ORIGINAL Applicant COPIES: Agent

SUPPORTING INFORMATION
REGARDING SPECIAL PERMIT APPLICATION FOR

YAMADA AND SONS, INC.

Affecting Tax Map Key: (3) 2-1-013: Portion of 002; Waiākea, South Hilo

A. LOCATION OF PROJECT SITE AND LANDOWNERSHIP

1. Applicant's Request

Yamada and Sons Inc. (Applicant), is requesting a Special Permit to allow for the establishment of a quarry on 37.882-acres of land (Project Site) within a larger 2,407-acre State-owned parcel (Parcel 2) that are situated within the State Land Use Agricultural District.

2. Location of Property

The Project Site is situated within the eastern section of the City of Hilo, a little more than one mile east of Kanoelehua Avenue and a little more than one mile south of the Hilo International Airport, within an area that has been historically utilized for various public and private industrial-types activities, such as the Hilo Landfill-Sort Station-Greenwaste facilities, County Skeet Range, and a number of licensed quarry sites, as shown below on Figure 1-Location Map and Figure 2-Vicinity Map below.

3. Landownership and Project site Licensee

The 37.882-acre Project Site is situated within larger 2,407-acre parcel owned by the State of Hawai'i. The State Board of Land and Natural Resources (BLNR) granted a 20-year license to the Applicant in October 2021 to enter and quarry, stockpile, and remove rock and waste deposits for commercial use (see Figure 3-Aerial Site Plan and Exhibit A).

The Applicant, Yamada and Sons, Inc., is a family and locally-owned construction material supplier and general contracting company founded in 1925 and providing 96-years of continuous service to the community that specializes in civil construction work, asphalt paving, excavating, and grading. The Applicant maintains an existing quarry located adjacent to the west of the Project Site that allows them to provide all types of quality aggregate, asphalt concrete, and ready-mixed concrete.

B. STATEMENT OF OBJECTIVES AND PROJECT OPERATIONAL DETAILS

1. Statement of Objectives and reasons for the request

The objective of the proposed rock quarry is to allow the Applicant to continue harvesting the essential rock resource in support of its existing construction material supply and general contracting operations, which includes products such as aggregate materials, concrete and hot-mix asphalt.

The Applicant has effectively exhausted its supply of quality rock material from its existing and adjacent 14.99-acre quarry that began operation in November 2010.

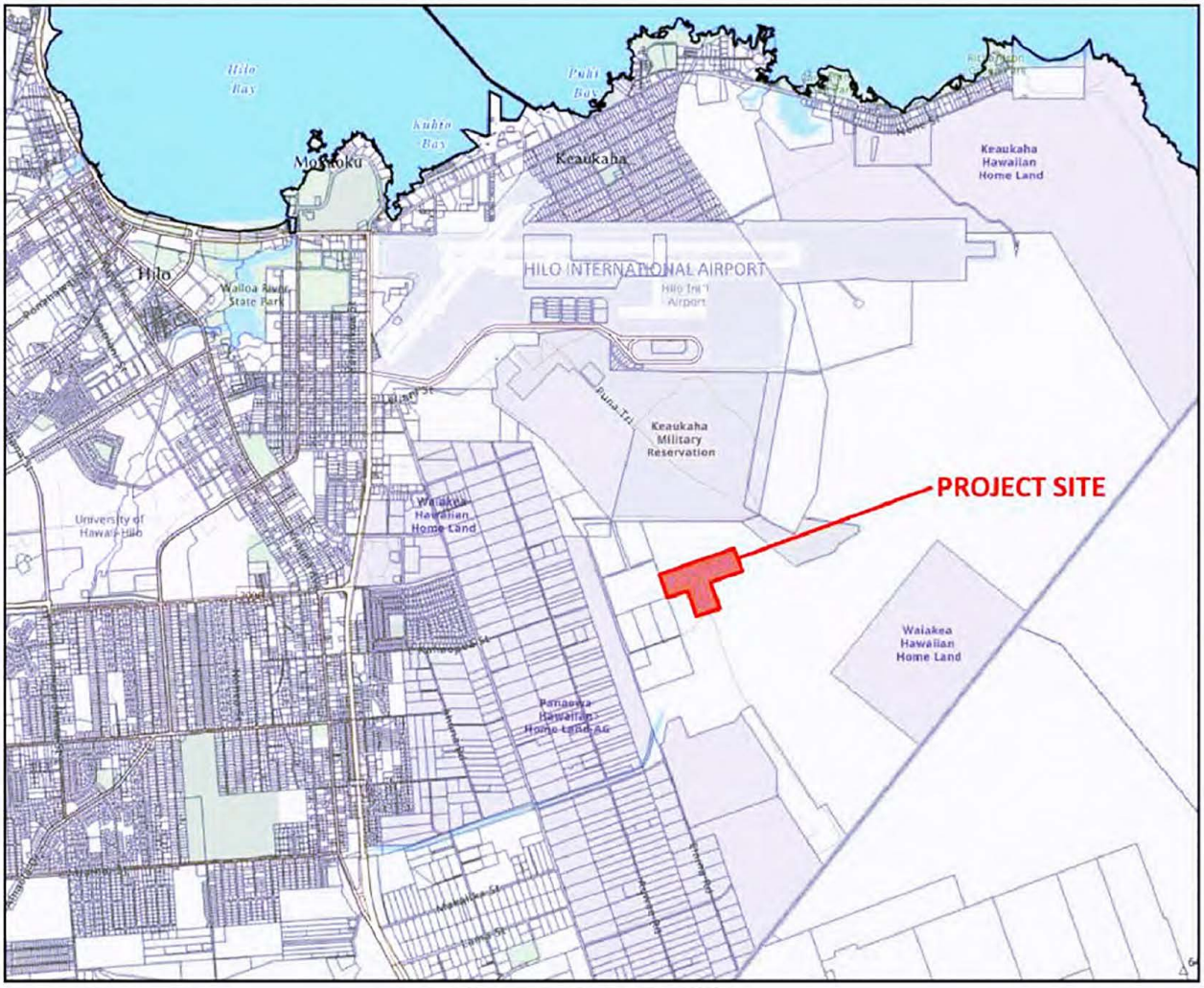

Figure 1 - Location Map

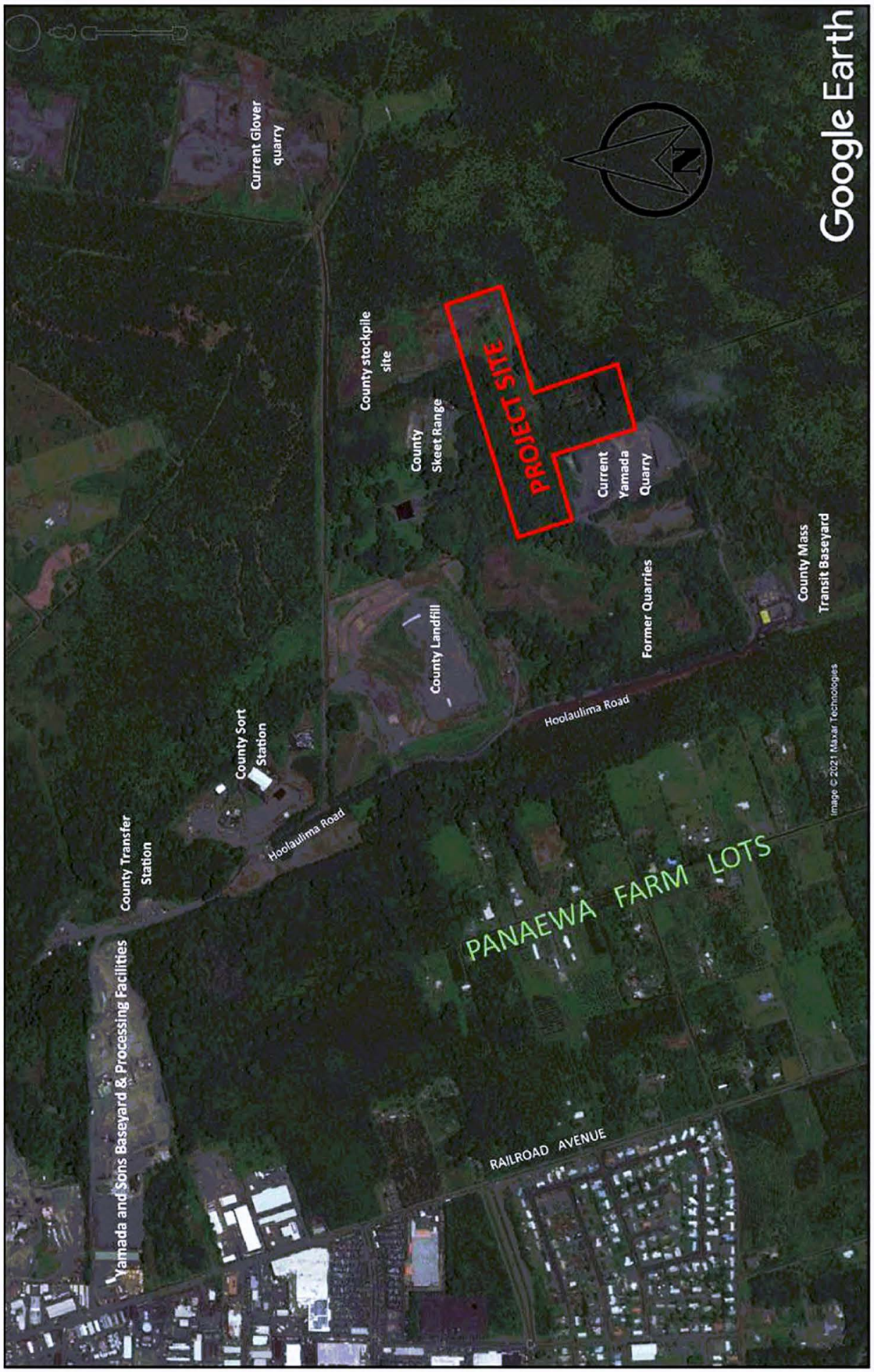

Figure 2 – Vicinity Map

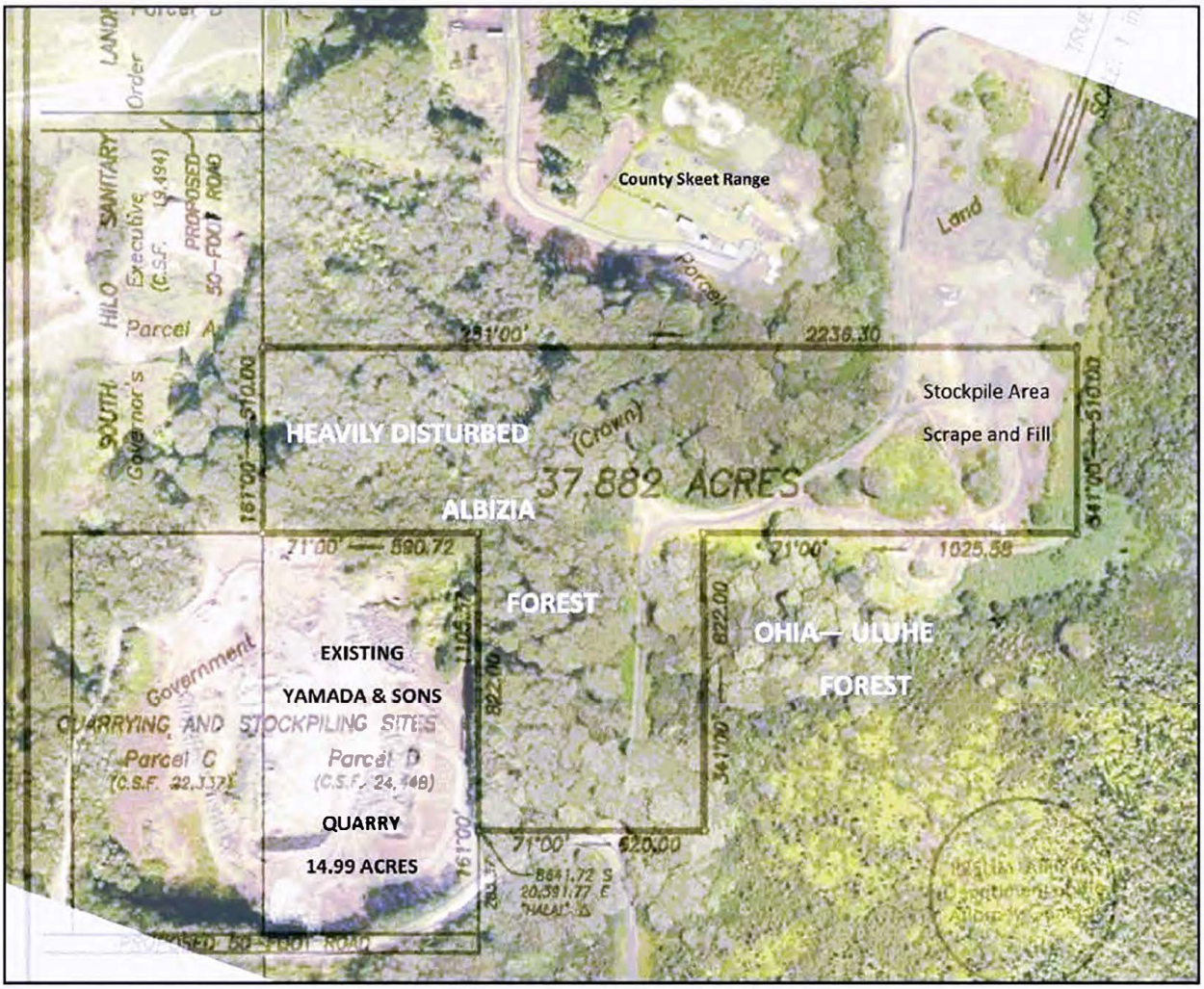

Figure 3 – Aerial Site Plan

2. Proposed Project Operational Details

a. Overall Scope: Approximately 25,000 tons of "raw" rock material will be excavated from the Project Site on a monthly basis, with the excavation reaching a maximum depth of approximately 80 feet from its existing grade. As rock material is excavated, the perimeter of the Project Site will have engineered fill with a 3:1 slope to avoid a sheer drop and facilitate future use should a suitable use be contemplated. A vegetative buffer will also be provided around the perimeter of the Project Site. The amount of rock resource within the Project Site is estimated to provide an active quarry lifetime of approximately 20 to 30 years.

b. Equipment: Excavation of rock will be accomplished through the use of heavy equipment when possible. If impenetrable rock is encountered during excavation activities, drilling and blasting will be performed.

c. Material Transport: Extricated "raw" rock material will be temporarily stockpiled within the Project Site or immediately removed to Applicant's baseyard facilities located along nearby Railroad Avenue for crushing and processing into finish

products. Transport of excavated raw rock material to the Applicant's baseyard facilities will be via Hoolaulima Road between the Project Site and its baseyard facilities. About 4 to 5 rock-hauling trucks, or 8 to 10 tractor trailers will be making about three (3) trips per hour between the proposed quarry and Applicant's baseyard and processing facilities along located.

d. Restricted activities: No crushing, finish processing or sales activities will occur within the Project Site. All such activities will occur at the Applicant's nearby baseyard operations where rock crushing and other aggregate processing will occur.

e. Days/Hours of Operation: All quarry-related access and activity to the Project Site will be confined to the hours from 6:00 a.m. to 6:00 p.m., daily as specified by the State license. The Applicant's typical quarry operations are Monday thru Friday from 7:00 a.m. to 3:30 p.m.. During peak operation, there will be a maximum of ten (10) employees within the Project Site at any given time.

3. Project Timeframe

Upon approval of the Special Permit, the Applicant will immediately apply for Plan Approval, if deemed necessary, and promptly commence quarry operations as its existing quarry adjacent to the Project Site has exhausted its supply of rock material. The Applicant is desperately in need of a new supply of rock material that this new quarry will provide.

C. LAND USE AND OTHER REGULATORY CONSIDERATIONS

1. Chapter 343, HRS: Finding of No Significant Impact

By letter dated January 21, 2020, the State Department of Land and Natural Resources approves of a Final Environmental Assessment (FEA) and issues a Finding of No Significant Impact (FONSI) related to the sale of a license at pubic auction affecting the Project Site that will allow for quarrying and stockpiling activities within the Project Site. The FEA and FONSI determination, in its entirety, accompanies this Special Permit application as Exhibit B.

2. State Land Use Designation: Agricultural

The Project Site is situated within the State Land Use Agricultural District (see Figure 4 – State Land Use), which includes lands for the cultivation of crops, aquaculture, raising livestock, wind energy facility, timber cultivation, agriculture-support activities (i.e., mills, employee quarters, etc.) and land with significant potential for agriculture uses. Uses permitted in the highest productivity agricultural categories are governed by statute. Uses in the lower-productivity categories – C, D, E or U – were established by the Land Use Commission to include those uses allowed on A or B lands as well as those stated under Section 205-4.5, Hawai'i Revised Statutes. Note that agricultural suitability of soils within the Project Site is considered as Class E, or Very Poor.

3. **County Zoning: Agricultural-20 acres minimum lot size (A-20a)**
The Agricultural (A) zoning district provides for agricultural and very low density agriculturally-based residential use, encompassing rural areas of good to marginal agricultural and grazing land, forest land, game habitats, and areas where urbanization is not found to be appropriate. See Figure 5 – Zoning.

4. **General Plan Designation: Important Agricultural Lands**
The County of Hawai'i General Plan is the policy document for the long-range comprehensive development of the island of Hawai'i. The General Plan Land Use Pattern Allocation Guide (LUPAG) map, as shown on Figure 6 – General Plan LUPAG Map, classifies the Project Site as Important Agricultural Lands, and describes these lands as those with better potential for sustained high agricultural yields because of soil type, climate, topography, or other factors.

However, the General Plan also notes that, "*Because of the scale of the Land use Pattern Allocation Guide maps used to designate Important Agricultural Land, the location of these lands should be verified by more detailed mapping when considering specific land use decisions*."

Figure 4 – State Land Use

Figure 5 – Zoning

Figure 6 – General Plan LUPAG Map

5. **Coastal Zone Management, HRS, Chapter 205A**
The entire State of Hawai'i lies within the Coastal Zone Management area. The intent of the Coastal Zone Management Program is to guide and regulate public and private uses in the coastal zone management area with respect to recreational resources, historic resources, public access to the shoreline, scenic and open space resources, coastal ecosystems, marine resources, economic uses, coastal hazards, managing development, public participation, and beach protection.

6. **Special Management Area (SMA)**
The Special Management Area is a part of the Coastal Zone Management Program that is regulated by the County, established to promote the State's policy to preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawai'i. Therefore, special controls on development within the area along the shoreline are necessary to avoid permanent loss of valuable resources and the foreclosure of management options, and to ensure that adequate public access is provided to public-owned or used beaches, recreation areas, and natural reserves, by dedication or other means. The Project Site is located approximately 2.9 miles from the nearest coastline and at least 1.9 miles from the closest SMA boundary.

7. **Integrated Resources and Solid Waste Management Plan (IRSWM) - 2019**
Due to the close proximity of the Hilo Transfer Station, the sort station, green waste facility and recently closed landfill, the IRSWM previously identified existing operational and abandoned quarry sites as a potential location for future expansion of the South Hilo landfill. However, the 2019 IRSWM update noted that a study of this possible expansion into nearby abandoned quarry sites was deemed unfeasible due to the proximity of the Hilo International Airport, among other considerations. Solid waste residuals that are not recycled are transported to the West Hawaii Sanitary Landfill at Puʻuanahulu in North Kona.

D. DESCRIPTION OF PROPERTY AND SURROUNDING AREA

1. **Project Site**
The 37.822-acre Project Site maintains a roughly T-shape as it attempts to work around an existing quarry adjacent to the southwest operated by the Applicant as well as avoiding an existing forest of ʻŌhiʻa trees with a sparse understory of Uluhe fern that is located to the southeast (see Figure 3-Aerial Site Plan).

Conditions within the Project Site include past stockpiling and baseyard activities within its eastern portion that left the land partially barren with the remainder consisting primarily of an albizia and weedy forest with few native trees. The accompanying Environmental Assessment interestingly noted that the Project Site was surface-quarried in the year after the 1960 tsunami to provide fill for the Kaikoʻo area of Hilo, where the State and County buildings now stand.

2. **Parcel Background Information**

   a. January 6, 2011 – Special Permit 10-000110 (see Exhibit C) issued by the Windward Planning Commission to Yamada and Sons, Inc. to allow for the establishment of a quarry and related use on 14.99 acres of land situated immediately adjacent to the southwest of the Project Site, as shown on Figure 3 – Aerial Site Plan. This quarry remains in operation, but its supply of rock material has been exhausted, prompting the need to pursue this Special Permit application.

   b. The parent Parcel 002, consisting of 2,407.75 acres, is encumbered by the existing Yamada 14.99-acre quarry site described above as well as a State-issued revocable permit for the County public skeet shooting range adjacent to the north. The Project Site does not infringe upon the public skeet shooting area.

   c. The Applicant originally considered a quarry license area encompassing 51 acres, but reduced the Project Site to 37.882 acres to exclude the intact ʻŌhiʻa forest and lands south of the access road as shown on Figure 3-Aerial Site Plan.

3. **Surrounding Zoning/Land Uses**

   The Project Site is situated approximately 3.5 miles from Downtown Hilo, within an area that has been witnessed to decades of industrial-type of uses, such as:

   a. Hilo International Airport a little over a mile to the north;
   b. County skeet range adjacent to the north;
   c. existing Yamada and Sons quarry and former quarries adjacent to the west;
   d. County landfill & related solid waste operations about 600 feet to the northwest;
   e. County stockpile area approximately 2,000 feet to the northeast;
   f. County's drag strip about 3,000 feet to the south; and
   g. County's Mass Transit baseyard about 1,500 feet to the southwest.

   The most notable, non-industrial type use within proximity to the Project Site is the Panaewa Farm Lots located along the east side of Railroad Avenue, approximately 2,000 feet to the west of the Project Site.

   Lands generally to the east and south are State-owned lands which are vacant and designated for agricultural uses.

4. **ALISH: Other Important Agricultural Land**

   Soils within the Project Site are classified as Other Important Agricultural Land according to the Agricultural Lands of Importance to the State of Hawaiʻi. These comprise of lands other than Prime or Unique Agricultural Land that is also of statewide or local importance to agricultural use

5. **Land Study Bureau's Detailed Land Classification System: "E" or "Very Poor"**

   The soils within the Project Site are classified as Class "E" or "Very Poor" for agricultural productivity.

6. **US Soil Survey: Papai extremely stony muck (rPAE)**
The project site soil is classified as Papai extremely stony muck (rPAE), a well-drained, thin (i.e., less than 10 inches thick) extremely stony organic soil overlying 'a'a lava bedrock. These soils are found at elevations ranging from sea level to 1,000 feet and receive between 90 to 150 inches of annual rainfall. Permeability is rapid, runoff is slow, and the erosion hazard is slight for this soil. Areas with this soil are mostly covered in woodland, with some small areas used for pasture, orchards, and truck crops. The Natural Resources Conservation Service classifies it as a class VIIs soil, meaning it has very severe limitations for use for cultivation, and is therefore only useful as pastureland, wildlife or woodland.

7. **FIRM: Zone X**
The entire project site is designed within Zone "X" - determined to be outside the 500-year flood plain. There are no known drainageways traversing through the Project Site.

8. **Flora/Fauna Resources**
A walk-through biological survey of the entire Project Site was performed over the course of five days in April and July 2019. These surveys found that approximately 85% of the Project Site has been disturbed in the past through surface quarrying, stockpiling, roads and other activities. Most of this disturbed area is dominated by a dozen or so non-native trees such as Albizia, strawberry guava, gunpower tree and false kamani, among a few others. The dense canopy of non-native trees results in a sparse understory of mostly invasive tree seedlings. Overall, no listed, candidate or proposed endangered plant species were found.

During three visits in April 2019, only non-native bird species were observed within the Project Site, such as abundant Japanese white-eyes, common mynahs, northern cardinals and various finches and doves. The only native bird observed was the Hawaiian hawk flying above the Project Site. These surveys, as detailed in the EA, concluded that it is "*...unlikely that many other species of native forest birds would be expected to use the Project Site due to its low elevation, alien vegetation and lack of adequate forest resources. However, it is not inconceivable that Hawai'i 'amakihi (Hemignathus virens) are sometimes present, as some populations of this native honeycreeper appear to have adapted to the mosquito-borne diseases of the Hawaiian lowlands. The common migratory shorebird Pacific golden-plover (Pluvialis fulva), which is often seen inland in grassy areas, may occasionally be present.*"

In summary, the studies found no rare, threatened or endangered species of plants or animals or their habitats within the Project Site.

However, in order to avoid impacts to the endangered Hawaiian hawk and the Hawaiian hoary bat, the Applicant will refrain from activities within the Project Site that will disturb or remove shrubs or trees taller than 15 feet between June 1 and September 15, when Hawaiian hoary bats may be sensitive to disturbance. If land clearing occurs between the months of March and September, inclusive, a pre-construction hawk nest

search by a qualified ornithologist using standard methods will be conducted. If Hawaiian hawk nests are present, no land clearing will be allowed until October, when hawk nestlings will have fledged. Finally, the quarry would agree to shield any exterior lighting from shining upward to minimize the potential for disorientation of seabirds, in conformance with the County's outdoor lighting standards.

As the Project Site do contain a few isolated ʻŌhiʻa trees, the Applicant will implement the following mitigation protocols to minimize the spread of Rapid ʻŌhiʻa Death (ROD):

- Prior to clearing the edges of the quarry, any isolated ʻŌhiʻa trees on the boundary will be identified. Any such trees that are not planned for removal on the edges of the quarry will be protected from disturbance entirely or cut and chipped or buried to ensure that they do not present a ready target for ROD infection that could spread to other trees;
- Treat any unavoidable scars on ʻŌhiʻa trees that result from clearing to prevent infestation of the fungus;
- Stack all removed ʻŌhiʻa trees and dispose of by burying or chipping; do not remove from project site. Decontaminate boots and work tools before and after working in an area with ʻŌhiʻa trees;
- Implement any other recommendations imposed as part of the Special Permit.

9. Archaeological Resources

An archaeological inventory survey of the Project Site was conducted by ASM affiliates and detailed in a report dated September 2019 (see Appendix 2 of FEA). Fieldwork consisted of a pedestrian survey that provided 100% coverage of the Project Site. No archaeological sites or other historic properties of any kind were identified. Past ground disturbance activities within the Project Site indicate that the potential for subsurface archaeological resources are unlikely. The study concluded *"that the Yamada & Sons, Inc. quarry and stockpiling project will not impact any know historic properties"* and that *"no further work needs to be conducted within the* [Project Site]...".

10. Cultural or Native Gathering Rights

A cultural impact assessment (CIA) of the Project Site was conducted by ASM affiliates and detailed in a report dated September 2019 (see Appendix 3 of FEA). According to the study, there are no known customary or Native Hawaiian cultural rights exercised within the Project Site. The Hawaiʻi State Supreme Court's "PASH" and "Ka Paʻakai O Ka ʻAina" decisions require decision-makers to consider a project's impact to native Hawaiian gathering and fishing rights. Specifically, there must be a discussion of the cultural, historical, and natural resources and associated traditional and customary practices of this site and the impact of this project to these resources and practices. In addition to the CIA and as part of the environmental assessment process, the Office of Hawaiian Affairs, the Keaukaha-Panaʻewa Farmers Association, and the Sierra Club were also consulted by mail to determine whether they had any information on natural or cultural resources that might be present or affected.

Given the that the Project Site is absent of any archaeological features due to its intensively disturbed condition, it can also be reasonably concluded that native Hawaiian cultural practices are not being exercised within the Project Site. There are no caves, springs, pu'u, native forest groves or other natural features. Combined with the highly disturbed vegetation that is dominated by invasive, weedy species and secondary growth in most areas, the Project Site does not contain the quality of resources that would be important for native gathering. The EA concludes that, "*While the gathering of natural resources from the Pana 'ewa forest remains an important part of the cultural practices of this community, no explicit reference was made to such practices occurring in the actual area proposed for the quarry license, which has experienced extreme disturbance, is dominated by invasive trees, and other than isolated 'ōhi'a and hala trees does not contain other native trees or 'awa. Because of the proposed location outside intact 'ōhi'a forest, it is not anticipated that the proposed quarry project will impact these cultural practices, based on the information obtained through the consultation efforts.*"

11. Public Access

There is no record of a designated public access to the shoreline or mountain areas that traverses through the Project Site.

E. PUBLIC UTILITIES AND SERVICES

1. Access

Access to the Project Site is provided by Hoolaulima Road, historically referred to as "Ammunition Dump Road". Hoolaulima Road is an extension of Leilani Street that also serves the County's Hilo Transfer Station, its sort station, greenwaste and other county-operated facilities within the immediate area (see Figure 2 – Vicinity Map). Hoolaulima Road is County-maintained, two-lane road with a meandering pavement width of about 30 feet that ranges in condition from excellent to poor. The Applicant emphasizes that access between the Project Site and the its baseyard and processing facilities along Railroad Avenue, all quarry associated traffic will be accommodated solely by Hoolaulima Road, thereby keeping all traffic generally within the County's solid waste processing complexes and internal roadway network. Note that no State-owned highways will be accessed by any quarry-related vehicles, and therefore no adverse impact upon State-owned highway facilities is anticipated.

During the early consultation period as part of the environmental assessment process, the Department of Environmental Management (DEM) stated that once consolidation and resubdivision of certain properties in and around the South Hilo Sanitary Landfill is complete, the State will issue a new Executive Order to the County that will require that a new road lot be created and dedicated to the County of Hawai'i, upon which all rock haulers must then be street legal. Once informed by the County, the Applicant will switch to street-legal tractor-trailers for rock hauling, which will double the number of vehicle trips between the quarry and Applicant's processing facilities due to its smaller size.

2. **Traffic**

As previously mentioned, transport of excavated raw rock material to the Applicant's baseyard facilities will be via Hoolaulima Road between the Project Site and its baseyard facilities. About 4 to 5 rock-hauling trucks, or 8 to 10 tractor trailers will be making about three (3) trips per hour. Quarry-related traffic along Hoolaulima Road is not expected to significantly increase since the proposed quarry will simply be replacing the Applicant's existing and adjacent quarry that has practically exhausted its rock resource. Therefore, it is expected that that same rock-transport trucks will be used at the same frequency of travel as it currently exists.

Once a new access road serving the Project Site and nearby County facilities is created transferred to the County, quarry-related traffic will be restricted to street-legal vehicles only, roughly doubling the vehicle trips between the proposed quarry and nearby processing yard. However, overall vehicle trips along any new access to this project area is not expected to increase significantly due to the anticipated reduction in overall vehicle trips due to the recent closure of the South Hilo Sanitary Landfill. The Applicant will continue to coordinate with the County regarding the shared use of Hoolaulima Road and any new access road, as it has done for many years.

3. **Water**

County water service is not needed at the Project Site. Water for dust suppression will either be trucked to the Project Site or an on-site water catchment system will be installed.

4. **Wastewater**

Portable toilet facilities will be provided within the Project Site for employee use.

5. **Solid Waste**

Any solid waste generated by the proposed quarry operations, such as disposal of greenwaste, will be conveniently disposed of at the nearby County solid waste disposal facilities located along Hoolaulima Road. Abandoned man-made material within the Project Site will be removed and properly disposed of within the nearby County solid waste facilities.

6. **Essential Utilities and Services**

Typical utilities, such as electrical and telephone services, are not necessary or required to support the proposed quarry and stockpile operations within the Project Site.

7. **Public Safety**

As the Project Site is located within the City of Hilo, police, medical and fire services are readily available.

F. STATEMENT OF REASONS IN SUPPORT OF GRANTING SPECIAL PERMIT

1. Such use shall not be contrary to the objectives sought to be accomplished by the Land Use Law and Regulations

The request is considered an unusual and reasonable use of agricultural lands. The requested use will not adversely affect the preservation and agricultural use of the County's prime agricultural land and therefore, is not contrary to the objectives sought to be accomplished by the State Land Use Law and regulations. While the General Plan identifies the Project Site as Important Agricultural Lands and its ALISH classification is Other Important Agricultural Lands, the Papai series soils within the Project Site are mostly found covered in woodland, with some small areas used for pasture, orchards, and truck crops. The Natural Resources Conservation Service classifies it as a Class VIIs soil, meaning it has very severe limitations for use for cultivation, and is therefore only useful as pastureland, wildlife or woodland. Finally, the Land Study Bureau finds that the agricultural potential of these soils is Very Poor. Therefore, to commit the Project Site to quarry and stockpile activities is an unusual and reasonable use of very marginal agricultural lands that will not compromise the island's inventory of valuable agricultural lands.

2. The desired use shall not adversely affect surrounding properties

The 37.882-acre Project Site is a portion of an approximately 2,407-acre State-owned parcel that remains largely vacant and in forest, with uses in the immediate vicinity consisting of the Applicant's existing quarry and other abandoned quarries, a landfill and transfer station, greenwaste composting area, a skeet range, a dragstrip, and the County's Mass Transit baseyard. This particular area of Waiakea have been largely used for a myriad of industrial-type of activities with the Project Site well-suited to these neighboring, potentially very noisy activities. The closest dwellings are located within the Panaewa Farm Lots about half a mile to the west of the proposed quarry site, further away than the Applicant's existing and adjacent quarry. Typical impacts associated with quarry and stockpile operations include dust and noise. However, these impacts can be properly mitigated by complying with Department of Health requirements as well as limited quarry-related operations to the hours between 6:00 a.m. to 6:00 p.m., daily. All quarry-related traffic between the Project Site and the Applicant's baseyard facility will be limited to Hoolaulima Road, which is the same road the services all of the surrounding County-operated facilities, such as the landfill and transfer stations, Mass Transit baseyard, skeet range and dragstrip.

While the Hilo International Airport is located about a mile to the north of the Project Site, there are no known operational conflicts anticipated between airport operations and that of the proposed quarry. Due to the nature of the proposed quarry operations as an extension of an existing and adjacent quarry, there does not appear to be any situation that would be cause for concern upon airport operations, such as creating a wildlife attractant, visual glare due to standing water or any aerial obstructions.

3. **Such use shall not unreasonably burden public agencies to provide roads and streets, sewers, water, drainage, school improvements, and police and fire protection**

Access between the Project Site and the Applicant's existing baseyard and processing facilities is provided by Hoolaulima Road, a County-maintained roadway having a meandering pavement width of approximately 30 feet. This road is currently being straightened and improved by the County. Once improved, the State will eventually transfer ownership over to the County, where off-road rock haulers used by the Applicant will no longer be permitted and tractor trailers will be used in its place. The Applicant anticipates that quarry operations will require use of 4 to 5 rock-hauling trucks (or 8 to 10 tractor trailers) making about three trips per hour between the quarry and the crusher site at its baseyard, as it has done for many years during the operation of its adjacent quarry. Therefore, quarry-related traffic will not substantially increase from current levels, especially when taking into account the closure of the South Hilo Sanitary Landfill. Water for dust suppression will either be trucked to the site or provided by catchment tank. Electrical and telephone services are not required for the quarry operation. Portable toilets will be provided and maintained for employees to use at the site. As the Project Site is located in the City of Hilo, medical, police and fire services are all readily available.

4. **Unusual conditions, trends, and needs have arisen since the district boundaries and regulations were established**

Since the district boundaries and regulations were established in the 1960s and 1970s, the State Department of Land and Natural Resources has issued several land licenses in the area for quarry operations because this area has proven to be reliable resources for raw rock material that is widely used in the construction industry. Similarly, the County and State has processed a number of Special Permits to allow quarry activities on these State-owned lands. Through the issuance of a Special Permit, various "non-agricultural" uses may be considered provided that such uses are found to be reasonable but unusual in nature, such as quarries. The immediately surrounding area within this particular section within the City of Hilo has evolved into an area that provides a range of resource opportunities, both natural, recreational and infrastructural, by accommodating an airport, landfill, drag strip, skeet range, military facilities, baseyards and quarries. The proposed quarry is just an extension of existing uses within an area that has seen decades of similar uses.

5. **The land upon which the proposed use is sought is unsuited for the uses permitted within the district**

The Project Site is currently not used for any agricultural purpose. Soils with the Project Site are classified as "E" or "Very Poor" for agricultural productivity. Other studies mentioned earlier find these lands as being severely limited for use for cultivation, and therefore only useful as pastureland, wildlife or woodland. Beyond its classification, what soil that once existed within the Project Site has been significantly disturbed due to past surface quarrying activities by the County. The Project Site, like its surrounding

lands, has proven itself as a reliable source of rock material more than its agricultural potential due to its significantly degraded state.

6. **The proposed use will not substantially alter or change the essential character of the land and the present use**

As mentioned previously, the Project Site is situated within an area that has accommodated a myriad of industrial-type uses and facilities operated by the County, as well as a number of previous quarries as well as the Applicant's existing quarry located immediately adjacent to the west. Historical activities within the Project Site have seen some past surface quarrying, grading and grubbing activities. The landform has been further modified as albizia trees have established itself within much of the Project Site. While approval of request will substantially alter the physical characteristics of the Project Site, the existing industrial character of the surrounding area has long been established. The DLNR land license for the Project Site requires that upon closure or abandonment of the proposed quarry, the Applicant must leave the site in a non-hazardous condition that could support other uses. Such a condition is commonly found in Special Permits issued for similar quarrying activities throughout the island.

7. **The request will not be contrary to the General Plan and official Community Development Plan and other documents such as Design Plans**

In considering the issuance of a Special Permit to allow a particular use, it must be assessed against the applicable goals, policies and standards of the General Plan. It is only through a comprehensive policy analysis approach that evaluations and decisions can be made to better time or stage developments to achieve quality growth. The implications of these evaluations and decisions must also be considered as they may have an impact on other similar areas in the County.

Land use is one of the principal focal points of public concern and policy. The Land Use Element of the General Plan provides the primary basis for direct control and guidance of publicly and privately owned resources. It is also intended to be used as a policy guide for the coordinated growth and development of all sectors of the County. It sets forth goals, policies, standards and courses of action to accommodate growth without congestion, to designate and preserve the lands needed for residential use, commercial and visitor services, industry, agriculture and open space, and to coordinate these uses with the County's service and circulation systems. The overall Land Use goals, policies and standards are set forth to physically plan the lands in the County in the best interest of the island's residents.

In addition to its goals, policies and standards, the General Plan also includes the Land Use Pattern Allocation Guide (LUPAG) Map, which is a graphic representation of the document's goals and policies to guide the coordinated growth and development of all sectors of the County by presenting a graphic depiction of the physical relationship

among the various land uses. The LUPAG Map establishes the basic urban and non-urban form for areas within the County.

While the General Plan LUPAG Map does designate the Project Site as "Important Agricultural Land", it also notes that, "*Because of the scale of the Land use Pattern Allocation Guide maps used to designate Important Agricultural Land, the location of these lands should be verified by more detailed mapping when considering specific land use decisions.*"

Quarries must be located in locations where there is an abundance of essential raw materials. For this reason, while industrial in character, quarries cannot be confined to Industrial-designated areas, as evidenced by the granting of a number of Special Permits for quarries within this particular section of Hilo as well as island-wide. The Project Site and surrounding area has, over many decades, proven itself as a reliable resource for raw rock materials essential for construction projects. The proposed project would complement the following goals and policies of the Land Use and Economic elements of the General Plan:

Land Use - Industrial Element:

- Industrial activities may be located close to raw material or key resources. The ability of the subject property to provide the needed raw material vital to the construction industry while able to absorb the noxious nature of quarries speaks to the appropriateness of the area for such uses.

Economic:

- The County shall strive for diversification of its economy by strengthening industries and attracting new endeavors.

- Economic development and improvements shall be in balance with the physical and social environments of the island of Hawaii.

Natural Resources and Shoreline Elements:

- Ensure that alteration to existing land forms and vegetation, except crops, and construction of structures cause minimum adverse effect to water resources, and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation, or failure in the event of earthquake.

- The County of Hawaii should require users of natural resources to conduct their activities in a manner that avoids or minimizes adverse impacts on the environment.

G. GROUNDS FOR APPROVAL OF A SPECIAL PERMIT (Planning Department Rule Section 6-7)

The Planning Commission shall not approve a Special Permit unless it is found that the proposed use:

1. **Is an unusual and reasonable use of land situated within the Agricultural or Rural District, whichever the case may be.**

   In recognizing that lands within Agricultural districts might not be best suited for agricultural activities and yet classified as such, and in recognition that certain types of uses might not be strictly agricultural in nature, yet reasonable in such districts, the Legislature has provided for the Special Permit process to allow certain unusual and reasonable uses within the Agricultural district. Based on the poor soil conditions within the Project Site for agricultural activities, the Applicant finds that the proposed quarry and stockpile operation is considered an unusual and reasonable use of agricultural land in this location within the State Land Use Agricultural District.

2. **Would promote the effectiveness and objectives of Chapter 205, Hawaii Revised Statutes, as amended.**

   The State Land Use Law and Regulations are intended to preserve, protect and encourage the development of lands for those uses to which they are best suited in the interest of the public welfare of the people of the State of Hawai'i. In the case of the Agricultural District, the intent is to preserve or keep lands of high agricultural potential in agricultural use. Soils within the Project Site are identified as being of the Papai series which are mostly covered in woodland, with some small areas used for pasture, orchards, and truck crops. The Natural Resources Conservation Service classifies it as a class VIIs soil, meaning it has very severe limitations for use for cultivation, and is therefore only useful as pastureland, wildlife or woodland. Soils are classified as "E" or "Very Poor" soil by the Land Study Bureau's Overall Master Productivity Rating.

   The Project Site and surrounding area within this particular section of Hilo has seen a number of industrial-type activities and quarries established over the decades. The very poor agricultural potential of lands within the Project Site and surrounding area has lent itself to supporting a number of various intensive and noxious County-operated waste processing and recreational activities. While soil quality for agricultural purposes is very poor, the Project Site and surrounding lands have become a proven and reliable resource for blue rock that is so essential to the island's construction industry. Therefore, the issuance of a Special Permit to allow the establishment of a quarry and stockpile operation will not displace any existing agricultural activity or diminish the agricultural potential of the Project Site. Therefore, the proposed use will not adversely affect the preservation and agricultural use of the County's prime agricultural lands, and is not contrary to the objectives sought to be accomplished by the State Land Use Law and Regulations.

H. COASTAL ZONE MANAGEMENT

The requested Special Permit, if approved, will not be contrary to Chapter 205A, Hawai'i Revised Statues, relating to Coastal Zone Management. The Project Site is not situated within the Special Management Area, being located at least 2.9 miles from the nearest shoreline and is not subject to any **coastal hazard** nor anticipate to have any adverse impact upon coastal resources such as **coastal recreational** and **marine resources, coastal ecosystems** or the **public use and recreational use of any beach**.

There is no record of a designated public access that traverses the Project Site. As the site has been extensively altered by past grading and surface quarrying activities, and subsequently invaded by non-native vegetation dominated by a heavily disturbed Albizia forest over a significant portion of the Project Site that has not been left barren by past surface quarrying and grading activities. Given the that the Project Site is absent of any archaeological features due to its intensively disturbed condition, it can also be reasonably concluded that native Hawaiian cultural practices are not being exercised within the Project Site. There are no caves, springs, pu'u, native forest groves or other natural features. Combined with the highly disturbed vegetation that is dominated by invasive, weedy species and secondary growth in most areas, the Project Site does not contain the quality of resources that would be important for native gathering. The FEA concludes that, "*While the gathering of natural resources from the Pana 'ewa forest remains an important part of the cultural practices of this community, no explicit reference was made to such practices occurring in the actual area proposed for the quarry license, which has experienced extreme disturbance, is dominated by invasive trees, and other than isolated 'ōhi'a and hala trees does not contain other native trees or 'awa. Because of the proposed location outside intact 'ōhi'a forest, it is not anticipated that the proposed quarry project will impact these cultural practices, based on the information obtained through the consultation efforts*." Therefore, it is not anticipated that the request will have any adverse impact on **cultural or historical resources** in the area.

Historical industrial-type of uses within the immediate area include landfill and transfer station operations, noisy or potentially dangerous recreational uses, baseyard operations and a number of past and on-going quarry operations makes this particular request in this particular location highly suitable. As the Applicant's existing quarry is located immediately adjacent to the Project Site, the transition of existing quarry operations onto the Project Site will be practically seamless from an operational standpoint as well as its effects upon existing public infrastructure and upon surrounding uses. Therefore, this request is supportive of the County's efforts towards properly **managing development**.

Finally, in terms of the **public participation** objective, this is generally a public agency function. This is achieved through the Marine and Coastal Zone Management Advisory Group (MACZMAG) and the public hearing process required pursuant to the Planning Commission's Rules and County Council's meetings on this application. Notices

of this application will become available through the posting of a sign on the property, as well as sending two (2) notices to surrounding property owners, one at the time the application is filed and again, prior to the public hearing.

In view of the Hawai'i State Supreme Court's "PASH" and "Ka Pa'akai O Ka 'Aina" decisions, the issue relative to native Hawaiian gathering and fishing rights must be addressed in terms of the cultural, historical, and natural resources and the associated traditional and customary practices of the site. As the Project Site is located about 2.9 miles from the shoreline and has been significantly altered in the past, the FEA found that no valued cultural, historic, or natural resources related to traditional and customary practices were identified within the project site, and no traditional and customary native Hawaiian rights are exercised therein. Archaeological and biological surveys conducted by the Applicant and included within the FEA could not identify any such valued resources within the Project Site. For these reasons, the Applicant could find no evidence of any possible significant adverse effects or impairments that will occur to any valued resources should this Special Permit request be approved. Should the Applicant inadvertently encounter any remains of historic sites, such as rock walls, terraces, platforms, marine shell concentrations or human burials, the Applicant agrees to cease work in the immediate area and contact the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-HPD), resuming activities only upon securing archaeological clearance from DLNR-HPD when it finds that sufficient mitigation measures have been taken.

I. CONCLUSION

Based on the discussion above, the Applicant finds that the issuance of a Special Permit to allow for the establishment of quarrying and stockpiling activities within the Project Site consisting of 37.882 acres and situated within the State Land Use Agricultural District would support the objectives sought to be accomplished by the State Land Use Law and Regulations.

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

LAND LICENSE NO. S-359

KNOW ALL MEN BY THESE PRESENT:

The STATE OF HAWAII, by its Board of Land and Natural Resources ("Board"), hereinafter referred to as the "Licensor," pursuant to Section 171-14, Hawaii Revised Statutes, as amended and Section 171-54, Hawaii Revised Statutes, as amended, and for and in consideration of the fees to be paid and the terms, conditions, and agreements herein contained, all on the part of the Licensee to be kept, observed, and performed, does hereby grant said License to YAMADA AND SONS, INC., a Hawaii corporation, whose address is 733 Kanoelehua Ave., Hilo, HI 96720, hereinafter referred to as the "Licensee," to enter and quarry, stockpile, and remove rock and waste deposits for commercial use ("material") on an "AS NEEDED" basis from State land situate at Waiakea, South Hilo, Island of Hawaii, Hawaii, being identified as "Land License Quarrying and Stockpile Site, Parcel E," containing an area of 37.882 acres, more particularly described in Exhibit "A" and delineated on Exhibit "B," both of which are attached hereto and made parts hereof, said exhibits

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PRELIM. APP'R'D.
Department of the Attorney
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Planning Dept.
Exhibit 1

EXHIBIT A

being respectively, a survey description and survey map prepared by the Survey Division, Department of Accounting and General Services, State of Hawaii, designated C.S.F. No. 25,805 and dated July 31, 2020, and TMK No. (3) 2-1-013:002 portion, hereinafter referred to as the "License Area."

The terms and conditions under which this License is issued are as follows:

TO HAVE AND TO HOLD the License Area unto the Licensee for the term of twenty (20) years, commencing on the 1st day of October, 2021, up to and including the 30th day of September, 2041, unless sooner terminated as hereinafter provided, the Licensor reserving and the Licensee yielding and paying to the Licensor at the Office of the Department of Land and Natural Resources, Honolulu, Oahu, State of Hawaii, a license fee as provided hereinbelow, payable in advance, without notice or demand, in equal semi-annual installments on October 1st and April 1st of each and every year during the term as follows:

A.e For the first ten (10) years, the sum of THIRTYe TWO THOUSAND DOLLARS ($32,000.00) per annum, or a royalty rate of the sum of SIXTY FIVE CENTS ($.65) per ton of material removed per annum as may be retroactively adjusted, whichever is higher ("license fee").

B.e The license fee shall be reopened and redeterminede on the tenth (10^{th}) year of the license term.

C.e Determination of fee upon reopening of the licensee fee. The license fee for any ensuing period shall be the fair market rental at the time of reopening. Except as provided herein, the provisions in Hawaii Revised Statutes chapter 658A, shall be followed. At least six (6) months prior to the time of reopening, the fair market rental shall be determined by a staff appraiser or independent appraiser, as allowed by law, whose services shall be contracted for by the Licensor, and the Licensee shall be promptly notified by certified mail, return receipt requested, of the fair market rental as determined by Licensor's appraiser; provided, that should the Licensee fail to notify Licensor in writing within thirty (30) days after receipt thereof that Licensee disagrees with the fair market rental as determined by Licensor's appraiser and that Licensee has appointed its own appraiser to prepare an independent appraisal report, then the fair market rental as determined by Licensor's appraiser shall be deemed to have been accepted by Licensee and shall be the fair market rental as of the date of reopening. If Licensee has notified Licensor and appointed his appraiser as

stated hereinabove, Licensee's appraiser shall complete his appraisal and the two appraisers shall then exchange their reports within forty-five (45) days from the date of Licensee's appointment of the appraiser.

The two appraisers shall review each other's reports and make every effort to resolve whatever differences they may have. However, should differences still exist fourteen (14) days after the exchange, the two appraisers shall within seven (7) days thereafter appoint a third appraiser who shall also prepare an independent appraisal report based on the review of the two appraisal reports prepared and any other data. Copies thereof shall be furnished to the first two appraisers within forty-five (45)e days of the appointment. Within twenty (20) days aftere receiving the third appraisal report, all three shall meet ande determine the fair market rental in issue. The fair market rentale as determined by a majority of the appraisers shall be final ande binding upon both Licensor and Licensee, subject to vacation,e modification or correction in accordance with the provisions ofe chapter 658A, Hawaii Revised Statutes. Each party shall pay fore its own appraiser and the cost of the services of the thirde appraiser shall be borne equally by the Licensor and thee Licensee. All appraisal reports shall become part of the public record of the Licensor.e

In the event that the appraisers are unable to determine the fair market rental before the reopening date, or by the foregoing prescribed time, whichever is later, the Licensee shall pay the fair market rental as determined by Licensor's new appraised value until the new license fee is determined and the fee paid by Licensee shall then be subject to retroactive adjustments as appropriate to reflect the fair market rental determined as set forth hereinabove or material removed under this License. However, Licensee or Licensee's appraiser's failure to comply with the procedures set forth above shall constitute a waiver of Licensee's right to contest the new license fee, and the Licensee shall pay the greater fee as determined by Licensor's appraiser without any retroactive adjustments or royalty rate based on material removed. Alternatively, Licensor may treat this failure as a breach of this License and terminate the License.

D.e The interest rate on any and all unpaid ore delinquent license fee shall be at one percent (1%) per month, plus a service charge of FIFTY AND NO/100 DOLLARS ($50.00) a month for each delinquent payment.

1. The Licensee shall confine operations strictly to

the License Area and shall take all necessary precautions to protect adjoining property from damage or injury. Any interference with or damage to property under the control of the State of Hawaii incident to the exercise of the privilege granted shall be promptly corrected and repaired or both by the Licensee at its own expense to the satisfaction of the Chairperson of the Board of Land and Natural Resources.

2. This License is non-transferable. If the Licensee is a partnership, joint venture or corporation, the sale or transfer of 20% or more of ownership interest or stocks by dissolution, merger or any other means shall be deemed a transfer for purposes of this paragraph and subject to the right of the Licensor to terminate this License effective of the date of sale or transfer.

3.e The Licensor reserves on to itself the right toe sell or grant to others similar rights or privileges; PROVIDED, HOWEVER, that the rights herein reserved shall not be exercised by the Licensor, or by any other licensee(s) of the Licensor in such a manner as to interfere unreasonably with the herein Licensee in the free use of said License Area for the purpose herein specified.

4.e The use and enjoyment of the License Area shalle not be in support of any policy which discriminates against anyone based upon race, creed, sex, color, national origin, religion, marital status, familial status, ancestry, physical handicap, disability, age or HIV (human immunodeficiency virus) infection.

5.e The Licensee shall procure and maintain, at itse cost and expense and acceptable to the Licensor, in full force and effect throughout the term of this License, general liability insurance, or its equivalent, with an insurance company or companies licensed or authorized to do business in the State of Hawaii with an AM Best rating of not less than "A- VIII" or other comparable and equivalent industry rating, in an amount of at least $1,000,000.00 for each occurrence and $2,000,000.00 aggregate, and with coverage terms acceptable to the Chairperson of the Board. The policy or policies of insurance shall name the State of Hawaii as an additional insured. A copy of the policy or other documentation required by the Licensor shall be filed with the State of Hawaii, Department of Land and Natural Resources. The insurance shall cover the entire License Area, including all buildings, improvements, and grounds and all roadways or sidewalks on or adjacent to the premises in the use or control of the Licensee.

The Licensee, prior to entry and use of the License Area or within fifteen (15) days from the effective date of this License, whichever is sooner, shall furnish the Licensor with a policy(s) or other documentation required by the Licensor showing the policy(s) to be initially in force, keep the policy(s) or other documentation required by the Licensor on deposit during the entire license term, and furnish a like policy(s) or other documentation required by the Licensor upon each renewal of the policy(s). This insurance shall not be cancelled, limited in scope of coverage, or nonrenewed until after thirty (30) days written notice has been given to the Licensor. The Licensor may at any time require the Licensee to provide Licensor with copies of the insurance policy(s) that are or were in effect during the license period or other documentation required by the Licensor.

The Licensor shall retain the right at any time to review the coverage, form, and amount of the insurance required by this License. If, in the opinion of the Licensor, the insurance provisions in this License do not provide adequate protection for the Licensor, the Licensor may require Licensee to obtain insurance sufficient in coverage, form, and amount to provide adequate protection. The Licensor's requirements shall be reasonable but shall be designed to assure protection for and against the kind and extent of the risks which exist at the time a change in insurance is required. The Licensor shall notify Licensee in writing of changes in the insurance requirements and Licensee shall deposit copies of acceptable insurance policy(s) or other documentation required by the Licensor thereof, with the Licensor incorporating the changes within thirty (30) days of receipt of the notice.

The procuring of the required policy(s) of insurance shall not be construed to limit Licensee's liability under this License nor to release or relieve the Licensee of the indemnification provisions and requirements of this License. Notwithstanding the policy(s) of insurance, Licensee shall be obligated for the full and total amount of any damage, injury, or loss caused by Licensee's or the Licensee's employees, agents, officers, or invitees' negligence or neglect connected with this License.

It is agreed that any insurance maintained by the Licensor will apply in excess of, and not contribute with, insurance provided by Licensee's policy.

6.e The Licensee shall observe and comply with alle laws, ordinances, rules and regulations of the federal, state, municipal or county governments now in force or which may

hereinafter be in force, affecting the License Area.

7.e The Licensee shall permit the Licensor and itse agents, at all reasonable times during the license term, to enter the License Area and examine the state of its repair and condition.

The Licensor shall have the right to authorize any person or persons to enter upon and inspect the License Area at all reasonable times following a published notice for its proposed disposition for purposes of informing and apprising that person or persons of the condition of the License Area preparatory to the proposed disposition; provided, however, that any entry and inspection shall be conducted during reasonable hours after notice to enter is first given to the Licensee, and shall, if the Licensee so requires, be made in the company of the Licensee or designated agents of the Licensee; provided, further, that no authorization shall be given more than two years before the expiration of the term of this License.

8.e The Licensee shall not do, commit, permit ore suffer to be done any willful or voluntary waste, spoil, or destruction in and upon the License Area or any part thereof.

9.e The Licensee shall fill, finish, clear, or smoothe the area in which the material is taken to a condition satisfactory to the Licensor, as set forth in paragraphs 23 and 25 below.

10.e All work incident to the removal of material shalle be accomplished without cost to the Licensor.

11.e All activity and access to the License Area shalle be confined to the hours of 6:00 A.M. to 6:00 P.M. daily.

12.e Upon termination, abandonment, or expiration, thee Licensee shall not be relieved of any and all claims or demands accrued, including claims for property damage, personal injury or death, caused by any act or omission of the Licensee, or for any breach of the terms and conditions of this License.

13. Verified reports of the quantity of materiale removed from the License Area shall be in the form of certified weight slips from a vehicle weight station. Each verified report shall be signed by the Licensee and include verification that the amount of material removed, as indicated in the report, is true and correct to the best of its knowledge.

14.e At the end of each month that the License is ine effect, and prior to the tenth (10th) day of the succeeding month, the Licensee shall transmit to the Hawaii District Land Agent, certified reports of the quantity and weight of material removed from the License Area.

15.e The Licensee shall release, indemnify, defend, ande hold Licensor harmless from and against any claim or demand for loss, liability or damage, including claims for bodily injury, wrongful death, or property damage, arising out of or resulting from: 1) any act or omission on the part of Licensee relating to Licensee's use, occupancy, maintenance, or enjoyment of the License Area; 2) any failure on the part of the Licensee to maintain the License Area, and including any accident, fire or nuisance growing out of or caused by any failure on the part of Licensee to maintain any of Licensee's equipment within the License Area in a safe condition; and 3) from and against all actions, suits, damages, and claims by whomsoever brought or made by reason of the Licensee's non-observance or non-performance of any of the terms, covenants, and conditions of this License or the rules, regulations, ordinances, and laws of the federal, state, municipal or county governments.

16.e In case the Licensor shall, without any fault one its part, be made a party to any litigation commenced by or against the Licensee (other than condemnation proceedings), the Licensee shall pay all costs, including reasonable attorney's fees, and expenses incurred by or imposed on the Licensor; furthermore, the Licensee shall pay all costs, including reasonable attorney's fees, and expenses which may be incurred by or paid by the Licensor in enforcing the terms and conditions of this License, in recovering possession of the License Area, or in the collection of delinquent license fee, taxes, and any and all other charges.

17.e The Licensee shall remove from the License Areae all equipment, machinery and improvements of every kind and nature within ten (10) calendar days after receiving notice of termination, or upon expiration, or abandonment of this License.

The Licensee shall, at its sole cost and expense, restore the License Area to a condition satisfactory to the Chairperson of the Board upon termination, abandonment, or expiration of this License.

18.e The Licensee shall, at its own cost and expense, within fifteen (15) days from the effective date of this License, procure and deposit with the Licensor and thereafter keep in full

force and effect during the term of this License a good and sufficient surety bond, conditioned upon the full and faithful observance and performance by Licensee of all the terms, conditions, and covenants of this License, in an amount equal to two times the license fee then payable. This bond shall provide that in case of a breach or default of any of the License terms, covenants, conditions, and agreements, the full amount of the bond shall be paid to the Licensor as liquidated and ascertained damages and not as a penalty.

19.e The Licensee shall pay all cost and expense incurred by the issuance of this License.

20.e The Licensor, its agents and employees, shall ate any reasonable time upon twenty-four (24) hours notice to the Licensee, have access to all books, accounts, records, and reports of the Licensee relating to the material removed from the License Area herein described for the purpose of inspection, examination or audit. If the audit by Licensor shall disclose that the royalty rate has been underpaid by five percent (5%) or more for the period under examination, the Licensor shall have the right to terminate this License.

21.e Licensee shall not cause or permit the escape,e disposal or release of any hazardous materials except as permitted by law. Licensee shall not allow the storage or use of such materials in any manner not sanctioned by law or by the highest standards prevailing in the industry for the storage and use of such materials, nor allow to be brought onto the License Area any such materials except to use in the ordinary course of Licensee's business, and then only after written notice is given to Licensor of the identity of such materials and upon Licensor's consent which consent may be withheld at Licensor's sole and absolute discretion. If any lender or governmental agency shall ever require testing to ascertain whether or not there has been any release of hazardous materials by Licensee, then the Licensee shall be responsible for the reasonable costs thereof. In addition, Licensee shall execute affidavits, representations and the like from time to time at Licensor's request concerning Licensee's best knowledge and belief regarding the presence of hazardous materials on the License Area placed or released by Licensee.

Licensee agrees to release, indemnify, defend, and hold Licensor harmless, from any damages and claims resulting from the release of hazardous materials on the License Area occurring while Licensee is in possession, or elsewhere if caused by Licensee or persons acting under Licensee. These covenants shall

survive the expiration or earlier termination of the License.

For the purpose of this License "hazardous material" shall mean any pollutant, toxic substance, hazardous waste, hazardous material, hazardous substance, or oil as defined in or pursuant to the Resource Conservation and Recovery Act, as amended, the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, the Federal Clean Water Act, or any other federal, state, or local environmental law, regulation, ordinance, rule, or by-law, whether existing as of the date hereof, previously enforced, or subsequently enacted.

22.e Time is of the essence in this License and if thee Licensee shall fail to pay the license fee, or any part thereof, at the times and in the manner provided within thirty (30) days after delivery by the Licensor of a written notice of breach or default, or if the Licensee shall become bankrupt, or shall abandon the License Area, or if this License and License Area shall be attached or taken by operation of law, or if Licensee shall fail to observe and perform any of the covenants, terms, and conditions contained in this License and on its part to be observed and performed, and this failure shall continue for a period of more than sixty (60) days after delivery by the Licensor of a written notice of breach or default, by personal service, registered mail or certified mail to the Licensee at its last known address and to each mortgagee or holder of record having a security interest in the License Area, the Licensor may, subject to the provisions of Section 171-21, Hawaii Revised Statutes, at once re-enter the License Area, or any part, and upon or without the entry, at its option, terminate this License without prejudice to any other remedy or right of action for arrears or for any preceding or other breach of contract; furthermore Licensor shall retain all license fee paid in advance to be applied to any damages.

23.e Closure plans for the License Area shall require that the remaining quarry face will be stepped back, with a maximum twenty (20) foot rise ate¼: 1 slope and minimum ten (10) foot wide benches between each rise. This bench is provided to break up the vertical drop of the pit wall, provide safe access for quarry activities, and to control rockfall. All sides of the quarry shall be required to be left as a clean stabilized slope face without any protruding or perched rocks that may contribute to a rock fall problem.

24. In the event any historic properties or burial sites, as defined in section 6E-2, Hawaii Revised Statutes, are found on the License Area, the Licensee and the Licensee's

agents, employees and representatives shall immediately stop all land utilization or work or both and contact the Historic Preservation Office in compliance with chapter 6E, Hawaii Revised Statutes.

25.e Rock will be excavated with heavy equipment whene possible, and by drilling and blasting when necessary. Excavated rock will either be stockpiled on site or trucked to other sites for further crushing/processing and sale. No crushing or sales will be done on the License Area. The quarry will have engineered fill with a 3:1 slope on the edges to avoid a sheer drop. A non-invasive vegetative buffer will be maintained around the periphery of the site.

26.e Prior to termination or revocation of the subject License, Licensee shall conduct a Phase I environmental site assessment and conduct a complete abatement and disposal, if necessary, satisfactory to the standards required by the Federal Environmental Protection Agency, the Department of Health, and the Department of Land and Natural Resources. Failure to comply with the provisions of this paragraph shall not extend the term of this License or automatically prevent termination or revocation of the License. The Board, at its sole option, may refuse to approve termination, revocation, or assignment unless this evaluation and abatement provision has been performed. In addition or in the alternative, the Board may, at its sole option if Licensee does not do so, arrange for performance of the provisions of this paragraph, all costs and expenses of such performance to be charged to and paid by Licensee.

27.e The Licensor does not warrant the conditions ofe the License Area, as the same are being licensed as is.

28.e Licensee shall have the non-exclusive right toe access the License Area over the existing unimproved gravel road which crosses tax map key no. (3) 2-1-013:002. Licensee shall use the gravel road at its own risk. The road shall be available for use on an "as-is" basis. Licensor makes no representations as to the condition of the road or its suitability for the Licensee's purposes. Licensee's right of access is further subject to the County of Hawaii's control of access to the gravel road from the County-maintained paved road.

29.e Yamada and Sons, Inc., a Hawaii corporatione ("Yamada and Sons") has performed and published an environmental assessment on the License Area and has paid for a metes and bounds survey. In the event Yamada and Sons is not the successful bidder at public auction, the successful bidder shall

reimburse Yamada and Sons the costs associated with the environmental assessment and survey which are FORTY EIGHT THOUSAND TWO HUNDRED AND NO/100 DOLLARS ($48,200.00) and THREE THOUSAND FIVE HUNDRED AND NO/100 DOLLARS ($3,500.00) respectively. Paid receipts will be provided by Yamada and Sons for the costs.

30.e This License or any rights hereunder shall not bee sold, assigned, conveyed, leased, mortgaged, or otherwise transferred or disposed of.

31.e If any term, provision, covenant or condition ofe this License should be held to be invalid, void or unenforceable, the remainder of this License shall continue in full force and effect and shall in no way be affected, impaired or invalidated thereby.

32.e The acceptance of license fee by the Licensore shall not be deemed a waiver of any breach by the Licensee of any term, covenant, or condition of this License, nor of the Licensor's right of re-entry for breach of covenant, nor of the Licensor's right to declare and enforce a forfeiture for any breach, and the failure of the Licensor to insist upon strict performance of any term, covenant, or condition, or to exercise any option conferred, in any one or more instances, shall not be construed as a waiver or relinquishment of any term, covenant, condition, or option.

33.e Any bonds required by this License shall bee supported by the obligation of a corporate surety organized for the purpose of being a surety and qualified to do business in the State of Hawaii, or by not less than two personal sureties, corporate or individual, for which justifications shall be filed as provided in Section 78-20, Hawaii Revised Statutes; provided, however, the Licensee may furnish a bond in like amount, conditioned as aforesaid, executed by it alone as obligor, if, in lieu of any surety or sureties, it shall also furnish and at all times thereafter keep and maintain on deposit with the Licensor security in certified checks, certificates of deposit (payable on demand or after a period the Licensor may stipulate), bonds, stocks or other negotiable securities properly endorsed, or execute and deliver to the Licensor a deed or deeds of trust of real property, all of a character which is satisfactory to Licensor and valued in the aggregate at not less than the principal amount of the bond. It is agreed that the value of any securities which may be accepted and at any time thereafter held by the Licensor shall be determined by the Licensor, and that the Licensee may, with the approval of the Licensor, exchange other

securities or money for any of the deposited securities if in the judgment of the Licensor the substitute securities or money shall be at least equal in value to those withdrawn. It is further agreed that substitution of sureties or the substitution of a deposit of security for the obligation of a surety or sureties may be made by the Licensee, but only upon the written consent of the Licensor and that until this consent is granted, which shall be discretionary with the Licensor, no surety shall be released or relieved from any obligation.

34.e Upon substantial compliance by the Licensee withe the terms, covenants, and conditions contained in this License on its part to be observed or performed, the Licensor at its discretion may in writing, waive or suspend the performance bond or improvement bond requirements or both or may, in writing, modify the particular bond(s) or liability insurance requirements by reducing its amount; provided, however, that the Licensor reserves the right to reactivate the bonds or reimpose the bond(s) or liability insurance in and to their original tenor and form at any time throughout the term of this License.

35.e The Licensee shall, at the end of the term ore other sooner termination of this License, peaceably deliver unto the Licensor possession of the License Area in a clean and orderly condition, together with all improvements existing or constructed thereon or Licensee shall remove such improvements, at the option of the Licensor. Furthermore, upon the expiration, termination, or revocation of this License, should the Licensee fail to remove any and all of Licensee's personal property from the License Area, after notice thereof, the Licensor may remove any and all personal property from the License Area and either deem the property abandoned and dispose of the property or place the property in storage at the cost and expense of Licensee, and the Licensee does agree to pay all costs and expenses for disposal, removal, or storage of the personal property. This provision shall survive the termination of the License.

36.e Unless the text indicates otherwise, the use ofe any gender shall include all genders and, if the Licensee includes more than one person, the singular shall signify the plural and this Permit shall bind the persons, and each of them jointly and severally.

IN WITNESS WHEREOF, the STATE OF HAWAII, the Licensore herein, by its Board of Land and Natural Resources, has caused the seal of the Department of Land and Natural Resources to be hereunto affixed and these present to be duly executed this 28th day of October, 2021, and the Licensee herein, has caused these presents to be duly executede this 21st day of October, 2021.

STATE OF HAWAII

Approved by the Board of Land and Natural Resourcese at its meeting held on June 12, 2020.

By _____
SUZANNE D. CASE
Chairperson
Board of Land ande
Natural Resourcese

APPROVED AS TO FORM:

_____
LAUREN K. CHUN
Deputy Attorney General

Dated: 10/12/2021

LICENSOR

YAMADA AND SONS, INC., a Hawaiie corporation

By _____
SHELLYLYNN K.M. YAMADA
Its PRESIDENT

By _____

Its _____

LICENSEE

PRELIM. APPR'D.
Department of the Attorney General
37

STATE OF HAWAII)
) SS.
COUNTY OF HAWAII)

On this 21st day of October, 2021, before me appeared Shellbylynn K.M. Yamada and —— to me personally known, who being by me duly sworn did say that they are the President and ——, respectively, of YAMADA AND SONS, INC., a Hawaii corporation, and that said instrument was signed in behalf of said corporation by authority of its Board of Directors, and the said Shellbylynn K.M. Yamada and —— acknowledged said instrument to be the free act and deed of said corporation.

SARA A. HAMASAKI NOTARY PUBLIC Comm. No. 14-80 STATE OF HAWAII

Sara A. Hamasaki
Notary Public, State of Hawaii

SARA A. HAMASAKI

My Commission Expires: 3/23/2022

Doc. Date: Undated **# Pages:** 17
Notary Name: Sara A. Hamasaki **3rd Circuit**
Doc. Description: Land License No. S-359

Sara A. Hamasaki 10/21/21
Notary Signature **Date**

SARA A. HAMASAKI NOTARY PUBLIC Comm. No. 14-80 STATE OF HAWAII

PRELIM. APPR'D. Department of the Attorney General

STATE OF HAWAI'I
SURVEY DIVISION
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
HONOLULU

C.S.F. No. 25,805o

July 31, 2020

LAND LICENSE
QUARRYING AND STOCKPILING SITE

PARCEL E

Waiakea, South Hilo, Island of Hawaii, Hawaii

Being a portion of Parcel A of the Government (Crown) Land of Waiakea.

Beginning at the south corner of this parcel of land and on the east boundary of Parcel D of Quarrying and Stockpiling Site, the coordinates of said point of beginning referred to Government Survey Triangulation Station "HALAI" being 8641.72 feet South and 20,391.77 feet East, thence running by azimuths measured clockwise from True South:-

1.o	161°	00'o	822.00	feet along Parcel D of Quarrying and Stockpiling Site;
2.	71°	00'o	590.72	feet along Parcel D of Quarrying and Stockpiling Site;
3.o	161°	00'o	510.00	feet along Parcel A of South Hilo Sanitary Landfill, Governor's Executive Order 3975;
4.	251°	00'o	2236.30	feet along the remainder of Parcel A of the Government (Crown) Land of Waiakea;

PREEUM APPR'D
Department of the Attorney General

EXHI 39"A"

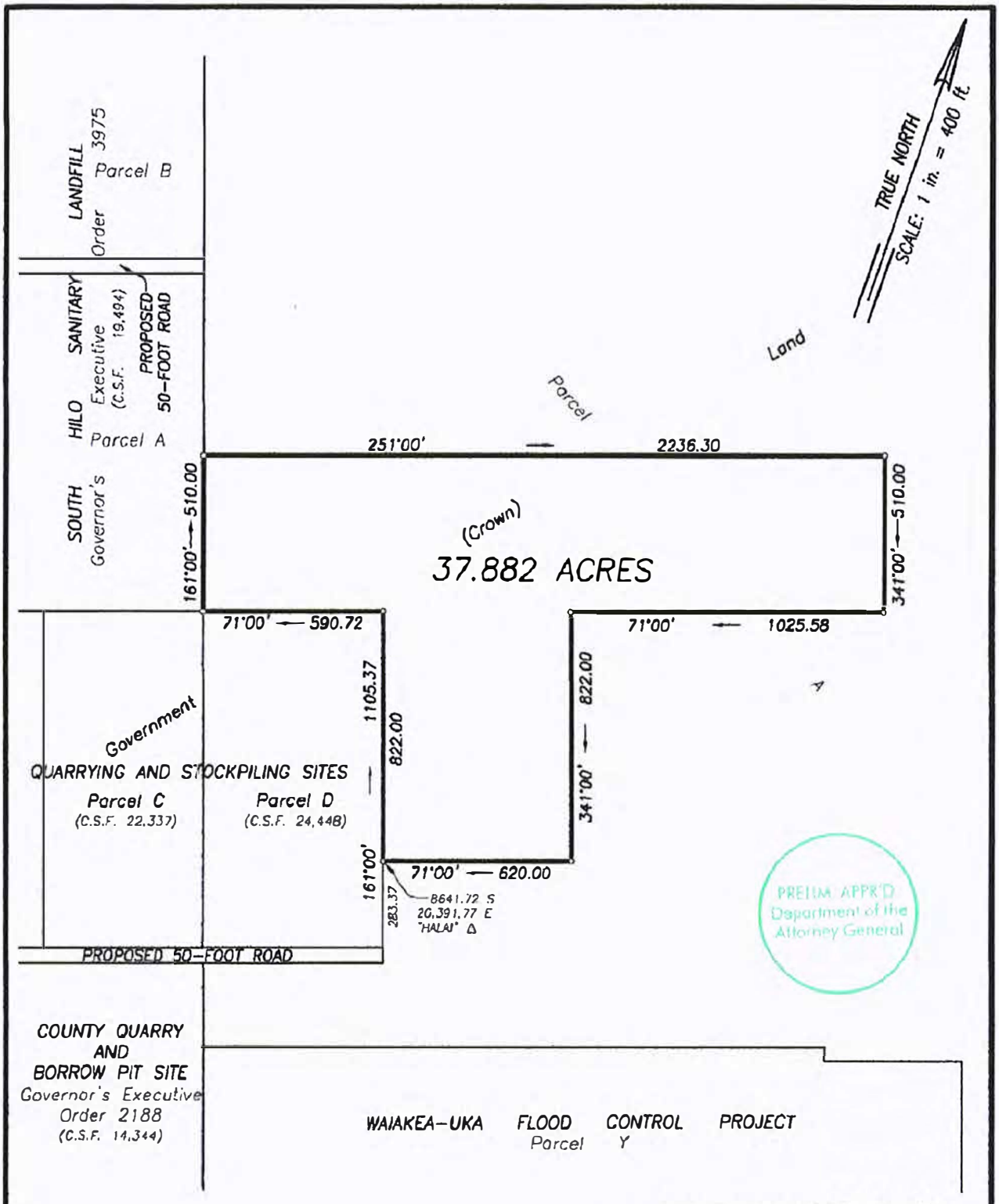
5.	341°	00'	510.00 feet along the remainder of Parcel A of the Government (Crown) Land of Waiakea;
6.	71°	00'	1025.58 feet along the remainder of Parcel A of the Government (Crown) Land of Waiakea;
7.	341°	00'	822.00 feet along the remainder of Parcel A of the Government (Crown) Land of Waiakea;
8.	71°	00'	620.00 feet along the remainder of Parcel A of the Government (Crown) Land of Waiakea to the point of beginning and containing an AREA OF 37.882 ACRES.

SURVEY DIVISION
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII

By: _____
Gerald Z. Yonashiro
Land Surveyor rm

Compiled from map and description furn. by Inaba Engineering, Inc. Said map and desc. have been examined and checked as to form and mathematical correctness but not on the ground by the Survey Division.

PRELIM. APPR'D.
Department of the Attorney General



REDUCED NOT TO SCALE

LAND LICENSE
QUARRYING AND STOCKPILING SITE
PARCEL E

Waiakea, South Hilo, Island of Hawaii, Hawaii

Scale: 1 inch = 400 feet

EXHIBIT "B"

Job H-132(20)
C. BK.

TMK: 2-1-13: Por. 02

SURVEY DIVISION
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII

41

C.S.F. NO. 25,805

RDW July 31, 2020

FILE COPY

FEB - 8 2020

DAVID Y. IGE
GOVERNOR OF HAWAI

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

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
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

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 21, 2020

Director
Office of Environmental Quality Control
Department of Health, State of Hawaii
235 S. Beretania Street, Room 702
Honolulu, Hawaii 96813

Subject: Final Environmental Assessment (FEA)
Applicant: Yamada and Sons
Project: Rock Quarry
TMK: (3) 2-1-013:002 portion

Dear Director:

With this letter, the Department of Land and Natural Resources hereby transmits the Final Environmental Assessment and Finding of no Significant Impact (FEA-FONSI) for the proposed sale of a quarry license at public auction on a portion of State lands situated at TMK: (3) 2-1-013:002, in the South Hilo District on the island of Hawaii for publication in the nexta available edition of the Environmental Notice.a

We are submitting the electronic version of the OEQC Publication Form and final environmental assessment both in PDF format simultaneously with this letter through the online submission platform.

If there are any questions, please contact Candace M. Martin at (808) 961-9590 or by email Candace.M.Martin@hawaii.gov.

Sincerely,

Suzanne D. Case
Chairperson

Enclosures

Planning Dept.
Exhibit 1

20-198
42

From: webmaster@hawaii.gov
To: HI Office of Environmental Quality Control
Subject: New online submission for The Environmental Notice
Date: Monday, February 3, 2020 8:55:09 AM

Action Name

YAMADA AND SONS ROCK QUARRY

Type of Document/Determination

Final environmental assessment and finding of no significant impact (FEA-FONSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

South Hilo, Hawai'i

Tax Map Key(s) (TMK(s))

(3) 2-1-013:002

Action type

Applicant

Other required permits and approvals

Board of Land and Natural Resources: Approval of License for Quarrying • Windward Planning Commission and State Land Use Commission: Special Permit • State DOH: National Pollutant Discharge Elimination System Permit (NPDES) (potential) • County Department of Public Works: Grubbing and Grading Permits

Discretionary consent required

License for use of State land for rock quarry

Approving agency

Department of Land and Natural Resources

Agency contact name

Candace Martin

Agency contact email (for info about the action)

candace.m.martin@hawaii.gov

Email address or URL for receiving comments

candace.m.martin@hawaii.gov

Agency contact phone

(808) 961-9590

Agency address

1151 Punchbowl Street
Honolulu, HI 96813

United States
Map It

Applicant

Yamada and Sons, Inc.

Applicant contact name

Harry Yada

Applicant contact email

yadah001@hawaii.rr.com

Applicant contact phone

(808) 640-7813

Applicant address

733 Kanoelehua Avenue
Hilo, HI 96720
United States
Map It

Was this submittal prepared by a consultant?

Yes

Consultant

Geometrician Associates

Consultant contact name

Ron Terry

Consultant contact email

rterry@hawaii.rr.com

Consultant contact phone

(808) 969-7090

Consultant address

PO Box 396
Hilo, HI 96721
United States
Map It

Action summary

Yamada and Sons proposes to develop a 37.882-acre portion of a State property for use as a rock quarry. The site is adjacent to their existing quarry, a landfill, a stockpile area, skeet range and baseyard. It is undeveloped and vegetated primarily with large, invasive trees that grew up after decades of surface quarrying. The quarry would allow the manufacture of base course, hot mix asphalt and concrete needed for the construction of many public and private projects. Yamada and Sons would acquire a license with the DLNR and pay royalties to the State. Excavated rock would either be stockpiled on-site or removed and trucked off-site to Yamada and Sons' quarry baseyard located off of Railroad Avenue for crushing/processing and sale. 25,000 tons would be extracted per month, and with the excavation reaching a depth of 80 feet, the quarry is expected to have an active lifetime of roughly thirty years. No

significant water, biological, historic or cultural resources are present.

Reasons supporting determination

Chapter 11-200.1-13, Hawai'i Administrative Rules, outlines those factors agencies must consider when determining whether an Action has significant effects:

(a) In considering the significance of potential environmental effects, agencies shall consider and evaluate the sum of effects of the proposed action on the quality of the environment.

(b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected impacts, and the proposed mitigation measures. In most instances, an action shall be determined to have a significant effect on the environment if it may:

1. Irrevocably commit a natural, cultural, or historic resource. No valuable natural or cultural resource would be committed or lost. Although some remnant native plants are present, no valuable natural or cultural resources would be committed or lost, as the project site contains none. No valuable cultural resources and practices such as forest access, fishing, gathering, hunting, or access to ceremonial sites would be affected in any way.
2. Curtail the range of beneficial uses of the environment. The land has poor potential for other uses as it is unsuited for most agriculture and is surrounded by industrial land uses. Some restriction of future beneficial uses would occur, as the surface rock and soil (already surface quarried in many locations) will be removed, but the quarried area would retain value for future industrial, public and even agricultural uses that did not rely on surface soil.
3. Conflict with the State's environmental policies or long-term environmental goals established by law. The State's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The project is minor and fulfills aspects of these policies calling for an improved social environment. It is thus consistent with the State's long-term environmental policies.
4. Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.. The project would not have any adverse effect on the economic or social welfare of the County or State and would benefit the economy of the Hilo area.
5. Have a substantial adverse effect on public health. The proposed project would be subject to environmental, health and safety permits and restrictions and would not be detrimental to public health in any way.
6. Involve adverse secondary impacts, such as population changes or effects on public facilities. No adverse secondary effects are expected to result from the proposed action.
7. Involve a substantial degradation of environmental quality. The project site would not cause a substantial degradation of environmental quality, and mitigation for storm water runoff, as well as dust emissions, would be required.
8. The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions. The project is not related to other activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions. The only adverse local effects of the project – continuing traffic and minor disturbance to air quality, noise, and visual quality– are very restricted in severity, nature and geographic scale, with limited potential to accumulate with impacts from other actions. Furthermore, the proposed quarry represents a continuation of uses at a directly adjacent location, rather than new impacts to be added. There has been and will continue to be some accumulation of dust, noise and traffic impacts from continuing operations at County solid waste facilities, the Mass Transit baseyard, the public works stockpiling area, and the skeet range and drag strip, all occurring within a half-mile of the proposed quarry. This interaction is already occurring at the same levels, and coordination among these agencies has avoided issues or problems.
9. Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat. The project site supports overwhelmingly alien vegetation. With timing of vegetation removal/species surveys to avoid impacts to Hawaiian hawks and Hawaiian hoary bats, no impacts to rare, threatened or endangered species of flora or fauna would occur.

10. Have a substantial adverse effect on air or water quality or ambient noise levels. No adverse effects on these resources would occur. Implementation of a Storm Water Pollution Prevention Plan will mitigate impacts to water quality. There are no sensitive receptors in the project area, and hence noise produced would not be detrimental.
11. Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters. Although the project is located in an area with volcanic and seismic risk, the entire Island of Hawai'i shares this risk, and the project is not imprudent to construct. The project site is more than 90 feet above sea level and will not be affected directly by sea level rise.
12. Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies. No scenic vistas and viewplanes will be adversely affected by the project.
13. Require substantial energy consumption or emit substantial greenhouse gases. The operation of any aggregate quarry requires energy consumption that because of its nature involves fossil fuels and therefore greenhouse gas emissions. The emissions of the proposed quarry would not be significant on a State scale, as the roughly 2,000 Mtpa CO2-e of emissions would represent only 0.094% of the State of Hawai'i's 21.28 million Mtpa CO2-e output. Furthermore, the emissions would not be added to the total, but would represent a continuation of an existing activity of the same scale. It is also important to note that one of the major factors in the greenhouse emissions of the use of aggregates, once they are quarried and processed, is transport to the use site. Transportation of quarry products is relatively costly, greenhouse gas-intensive activity. Therefore, a range of benefits is achieved if a quarry is located close to its markets, as is the case with the proposed quarry location. Yamada and Sons proposed to continue and/or adopt a suite of innovative energy-saving practices endorsed by professional trade organizations for aggregates that can cumulatively substantially reduce greenhouse gas emissions of rock quarries.

For the reasons above, the proposed action would not have any significant effect in the context of Chapter 343, Hawai'i Revised Statues and section 11-200.1-13 of the State Administrative Rules.

Attached documents (signed agency letter & EA/EIS)

- Final-EA-Yamada-Rock-Quarry.pdf
- FEA-FONSI-YAMADA.pdf

Shapefile

- The location map for this Final EA is the same as the location map for the associated Draft EA.

Authorized individual

Ron Terry

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

FINAL ENVIRONMENTAL ASSESSMENT

YAMADA AND SONS ROCK QUARRY

Portion of TMK (3rd) 2-1-013:002
Waiākea, South Hilo District, Hawai'i Island, State of Hawai'i

February 2020

Prepared for:

Yamada and Sons, Inc.
733 Kanoelehua Avenue
Hilo, Hawai'i 96720

and

Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, Hawai'i 96813

FINAL ENVIRONMENTAL ASSESSMENT

YAMADA AND SONS ROCK QUARRY

Portion of TMK (3rd) 2-1-013:02
Waiākea, South Hilo District, Island of Hawai'i, State of Hawai'i

APPLICANT:

Yamada and Sons, Inc.
733 Kanoelehua Avenue
Hilo, Hawai'i 96720

APPROVING AGENCY:

Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, Hawai'i 96813

CONSULTANT:

Geometrician Associates LLC
PO Box 396
Hilo HI 96721

CLASS OF ACTION:

Use of State Land

This document is prepared pursuant to:
The Hawai'i Environmental Policy Act,
Chapter 343, Hawai'i Revised Statutes, and
Chapter 11, Title 200.1, Hawai'i Administrative Rules

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TABLE OF CONTENTS

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SUMMARY OF THE PROPOSED ACTION, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Yamada and Sons, Inc. ("Yamada and Sons") proposes to acquire a license to develop a 37.882-acre portion of a State property for use as a rock quarry. The project site is adjacent to existing quarries and is presently vacant, vegetated primarily with large, invasive trees, and undeveloped. Yamada and Sons requires a new quarry because their existing quarry has nearly exhausted its supply of adequate quality material. The quarry would allow the manufacture of engineered products, including base course and components of hot mix asphalt and concrete, that are necessary for the construction of a wide variety of Hawai'i County projects, both public and private. Yamada and Sons would acquire a license with the Department of Land and Natural Resources for use of the site and would pay royalties to the State for materials extracted from the quarry. The proposed quarrying activities would be identical in nature to the ongoing quarrying activities located on adjacent parcels; rock would be excavated with heavy equipment when possible, and when impenetrable rock is encountered, drilling and blasting would be performed. Excavated rock would either be stockpiled on-site or removed and trucked off-site to Yamada and Sons' quarry baseyard located off of Railroad Avenue for crushing/processing and sale. No crushing or sales will be done at the new rock quarry. They anticipate that about 25,000 tons of material would be extracted per month, and with the excavation reaching a maximum depth of about 80 feet, the quarry is expected to have an active lifetime of roughly twenty to thirty years.

Yamada and Sons will prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to contain sediment and storm water runoff from leaving the project site. Furthermore, construction equipment would be kept in good working condition to minimize the risk of fluid leaks that could enter runoff and groundwater. Significant leaks or spills, if they occur, would be properly cleaned up and disposed of at an approved site. Use of hazardous materials on the site, including materials used for blasting, would require a number of permits and licenses. Also, in order to protect public safety, the quarry will have engineered fill with a 3:1 slope on the edges, a vegetative buffer will be maintained around the periphery of the site, and access routes to the interior of the site will be kept gated.

Surveys have determined that no significant biological, historic or cultural resources are present. If archaeological resources or burials are encountered during land-altering activities associated with construction, work in the immediate area of the discovery will be halted and the State Historic Preservation Division would be contacted.

PART 1: PROJECT LOCATION, DESCRIPTION, AND ENVIRONMENTAL ASSESSMENT PROCESS

1.1 Project Location and Ownership

Yamada and Sons, Inc. ("Yamada and Sons") proposes to acquire a license to develop a rock quarry on undeveloped State lands located adjacent to their existing active quarry near the South Hilo Sanitary Landfill (Figs. 1-3). The project site is a 37.882-acre portion of TMK 2-1-013:002, owned by the State of Hawai'i, on the eastern edge of Hilo on the Island of Hawai'i, approximately one mile east of Kanoelehua Avenue (State Highway 11). A portion of the proposed license area is currently part of a larger area under a Revocable Permit to the County of Hawai'i for use as a skeet range, but within an area not used or needed by the County as part of range operations. Public road access is via Leilani Street, which connects to a County driveway informally called Ammunition Dump Road, which continues past the South Hilo Solid Waste Convenience Center, the East Hawai'i Regional Sort Station and greenwaste facility, the South Hilo Sanitary Landfill, and the County Mass Transit Agency Baseyard, to the project site. South of this point Ammunition Dump Road continues to the Hilo Dragstrip and associated facilities. Yamada and Sons access the quarry via a shortcut driveway on Ammunition Dump Road from their baseyard, which is located behind Railroad Avenue, thus avoiding traffic impacts on Leilani Street.

1.2 Project Description

Yamada and Sons requires a new quarry because their existing quarry has nearly exhausted the supply of adequate quality material. The quarry would allow the continuing manufacture of engineered products, including base course and components of hot mix asphalt and concrete, that are necessary for the construction of a wide variety of Hawai'i County projects, both public and private.

The project site is ideally located for a quarry because the area has a proven rock resource, has all necessary road infrastructure and is situated amidst land uses that already generate substantial noise – quarries, a landfill, a stockpile area, a skeet range, a baseyard and a dragstrip – and the noise it generates will not affect sensitive uses.

Yamada and Sons would acquire a license with the Board of Land and Natural Resources (BLNR) for use of the site and would pay royalties to the State for materials extracted from the quarry. The quarrying activities would be identical to the ongoing quarrying activities located on adjacent sites; rock would be excavated with heavy equipment when possible, and when impenetrable rock is encountered, by drilling and blasting. Excavated rock would either be temporarily stockpiled on-site or immediately removed and trucked off-site to Yamada and Sons' quarry baseyard located off of Railroad Avenue for crushing/processing and sale. No crushing or sales will be done at the new rock quarry. About 25,000 tons of material would be extracted per month, and with the excavation reaching a maximum depth of about 80 feet, the quarry is expected to have an active lifetime of roughly 20-30 years. The quarry will have engineered fill with a 3:1 slope on the edges to avoid a sheer drop and facilitate future use should future suitable

Figure 1. Project Location

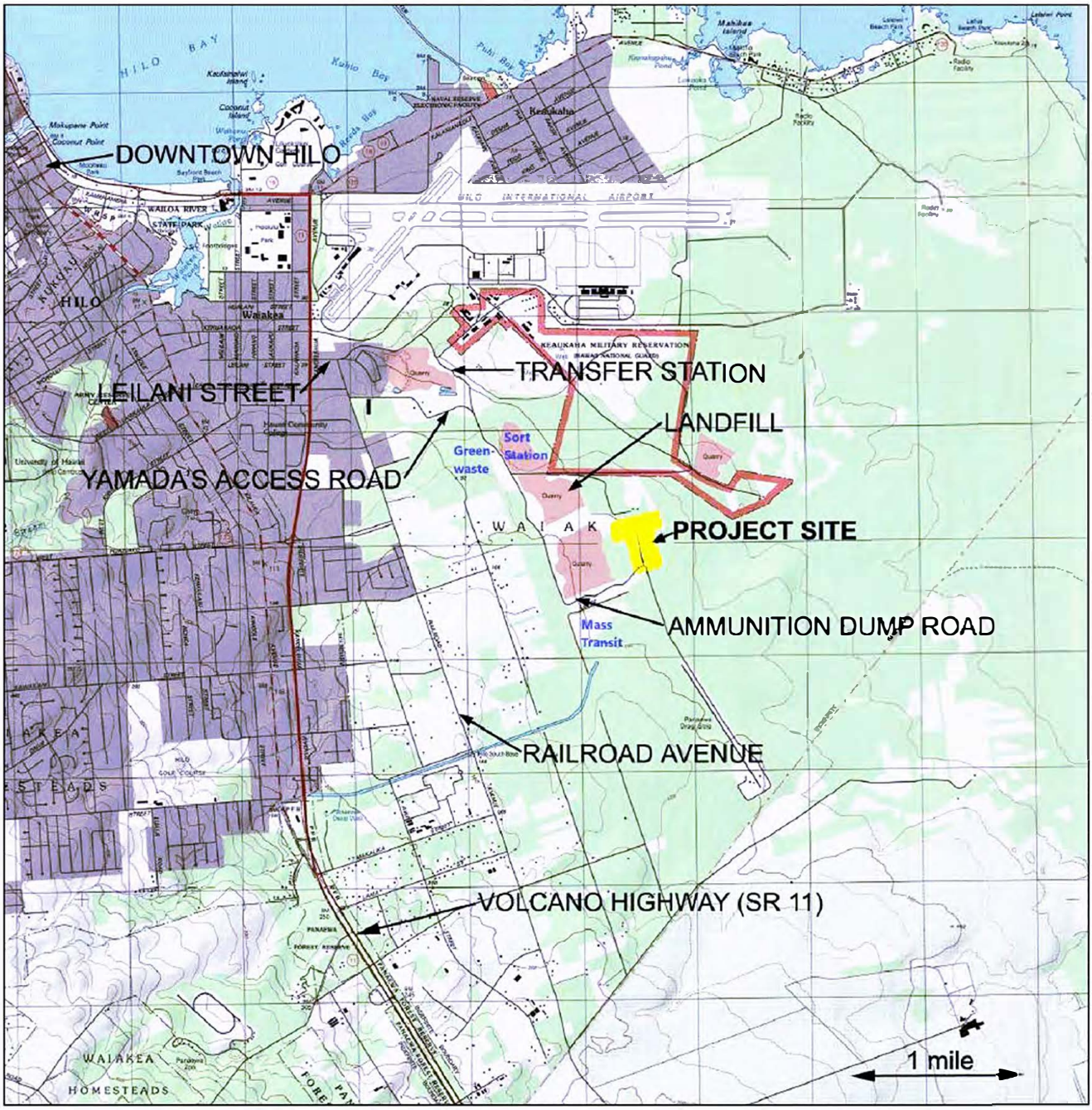
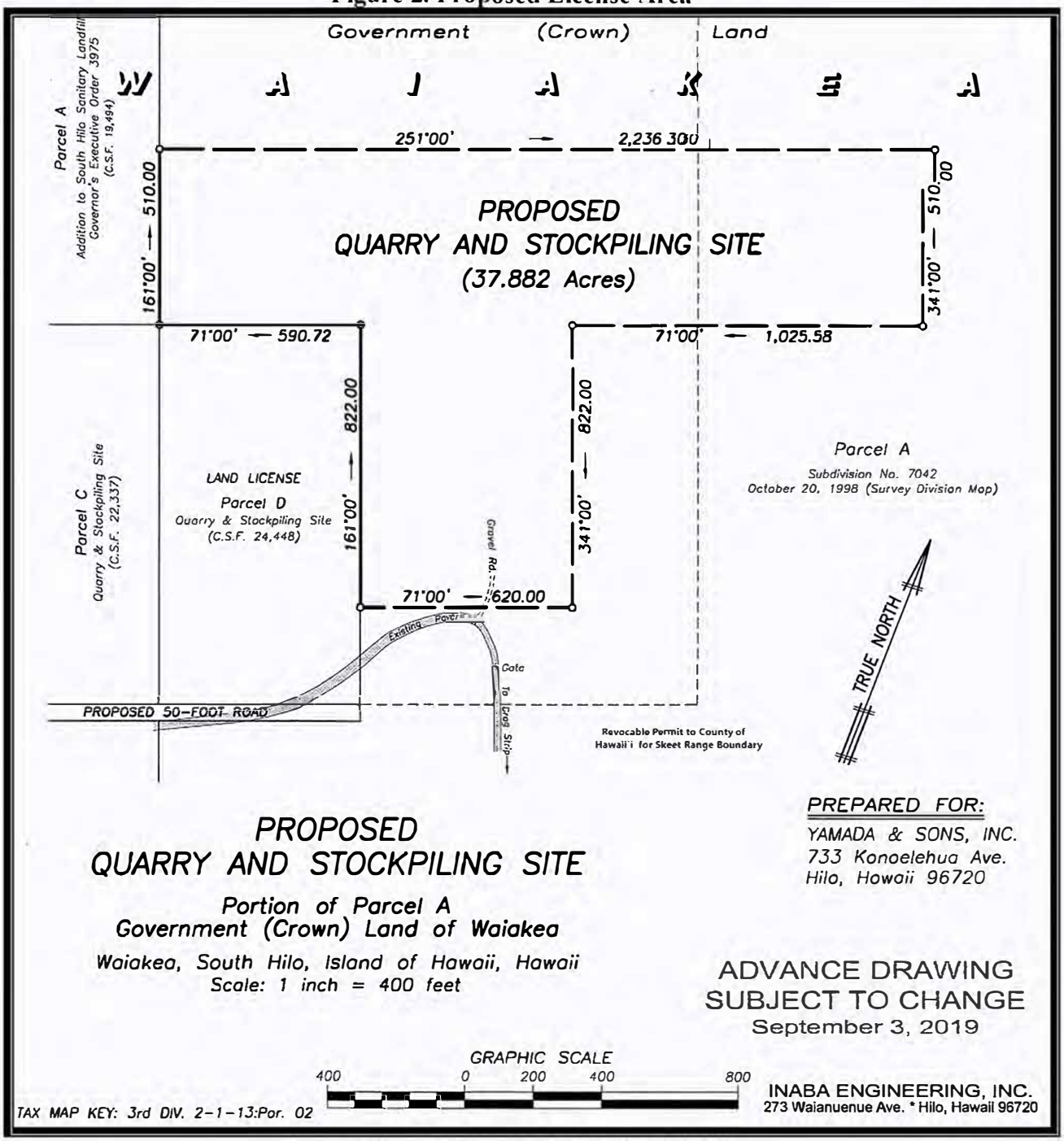
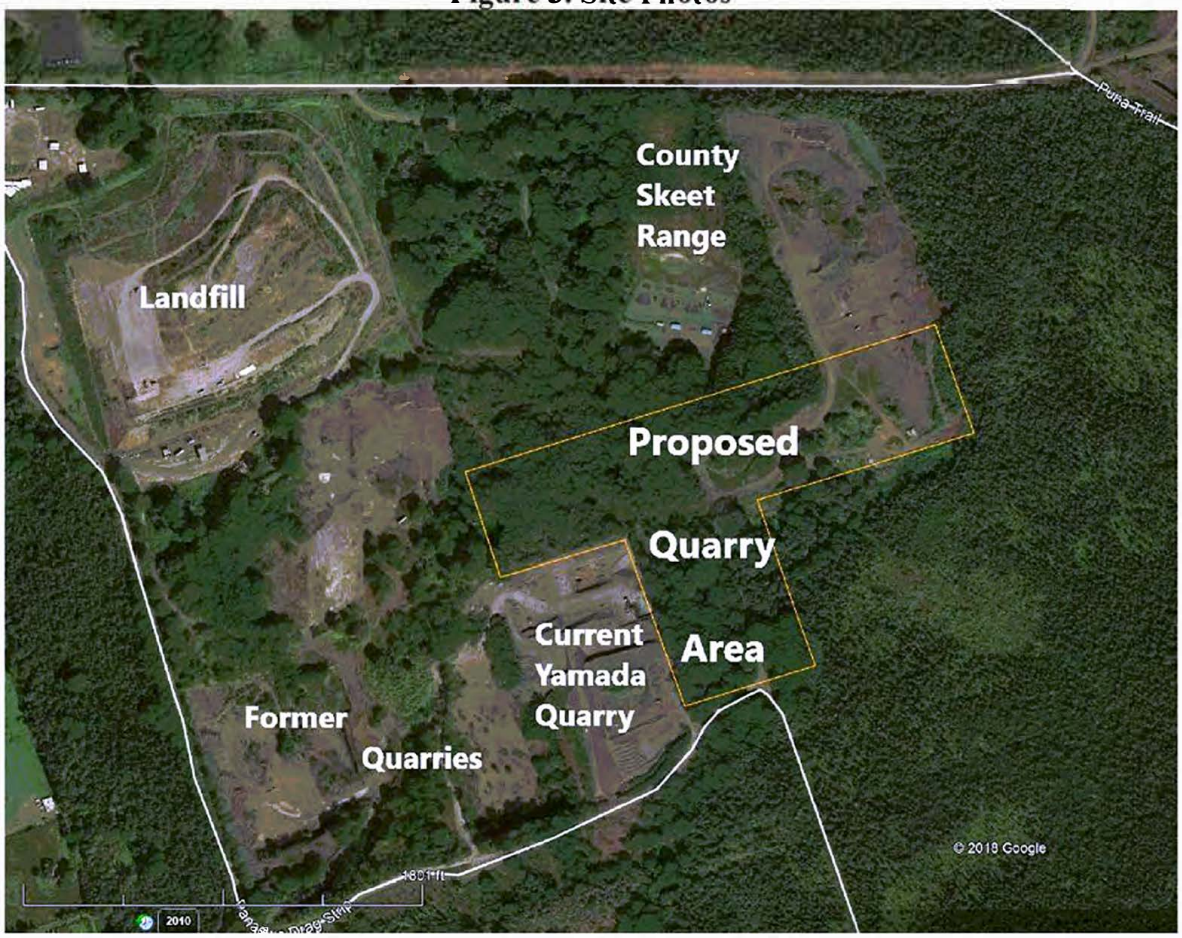


Figure 2. Proposed License Area



Source: Adapted from Survey by Inaba Engineering

Figure 3. Site Photos



2a, Above: Aerial image. 2b, Below: Road bisecting area.

Figure 2. Site Photos

2c, Above: Typical Vegetation. 2d, Below: Occasional hala are with invasives.

uses ever be proposed, and a vegetative buffer will be maintained around the periphery of the site. The quarry will take access from the existing Ammunition Dump Road (see Figure 2). Access routes to the interior of the site will be kept gated when not in use.

1.3 Environmental Assessment Process

This Environmental Assessment (EA) process is being conducted in accordance with Chapter 343 of the Hawai'i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200.1, of the Hawai'i Administrative Rules (HAR), is the basis for the environmental impact process in the State of Hawai'i. According to Chapter 343, an EA is prepared to determine impacts associated with an action, to develop mitigation measures for adverse impacts, and to determine whether any of the impacts are significant according to thirteen specific criteria. Part 4 of this document states the anticipated finding that no significant impacts are expected to occur; Part 5 lists each criterion and discusses conformity of the project with each.

If after considering comments to the Draft EA, the approving agency, the Board of Land and Natural Resources (BLNR), concludes that, as anticipated, no significant impacts would be expected to occur, then it will issue a Finding of No Significant Impact (FONSI), and the action will be permitted to proceed to permits and approvals. If the BLNR concludes that significant impacts are expected to occur as a result of the proposed action, and the applicant decides to proceed with the action, then an Environmental Impact Statement (EIS) must be prepared.

1.4 Public Involvement and Agency Coordination

The following agencies and organizations, which were selected based on their expertise, jurisdiction or presumed interest, were consulted by letter or email in development of this document.

Federal:

U.S. Department of Transportation, Federal Aviation Administration

State:

Department of Defense
Department of Hawaiian Home Lands
Department of Health
Department of Land and Natural Resources
Department of Transportation
Land Use Commission
Office of Hawaiian Affairs

County:

Civil Defense Agency
County Council
Department of Environmental Management, Solid Waste and Wastewater Divs.

Department of Parks and Recreation
Department of Public Works
Fire Department
Mass Transit Agency
Planning Department
Police Department

Private:

Keaukaha-Pana'ewa Farmers Association
Kanoelehua Industrial Area Association
Hawai'i Island Chamber of Commerce
Sierra Club
Jas. W. Glover Ltd.

Copies of communications received during early consultation are contained in Appendix 1a. Notice of the availability of the Draft EA was published in the September 8, 2019 *OEQC Environmental Notice*. Appendix 1b contains written comments on the Draft EA and the responses to these comments. Various places in the EA have been modified to reflect input received in the comment letters; additional or modified non-procedural text is denoted by double underlines, as in this paragraph.

PART 2: ALTERNATIVES

2.1 No Action

Under the No Action Alternative, the quarry operation would not be undertaken. Yamada and Sons would, at some point, be unable to provide rock products, Because quarrying is critical to their business, Yamada and Sons considers the No Action Alternative highly undesirable. While the No Action alternative would avoid direct and physical impacts to the project site, it could lead to shortages of products essential for construction of Hawai'i County projects, both public and private, unless alternate sites become available in a timely manner. The State land could then perhaps be used for other purposes, but because of its context between quarries, a landfill and a skeet range, its history of surface quarrying, and its vegetation of large invasive trees, it is suitable for only a limited set of uses, and only then with costly site preparation actions.

2.2 Alternative Quarry Locations and Sizes

If the selected quarry site were unavailable for a license, Yamada and Sons would seek to lease, license or buy another quarry site. A number of factors must be in place for a quarry to be feasible, and additional factors are highly desirable to have for economic or environmental reasons. The site must have appropriate geology with dense bluerock (found within the core of 'a'a flows) to supply suitable product, and the history of excavation at adjacent quarries indicates that this rock is available on the proposed quarry. It is also must have ready truck access and no conditions that would preclude or make surface disturbance highly infeasible – e.g., endangered species, significant historic sites, or streams, lakes or wetlands. It is desirable to be relatively

near the major markets for crushed rock and to have no nearby noise, dust or blast-sensitive uses. Relatively few locations have all these characteristics, and as such, major rock quarries in East Hawai'i are restricted to the area near the Hilo International Airport. Because the proposed project site is highly suitable for the proposed use – known and acceptable rock type, adjacent to ongoing quarry operations and baseyard, away from sensitive resources and land uses – Yamada and Sons has not systematically investigated other location. Any alternative location would likely be nearby to the east or south, where road infrastructure is lacking and more sensitive vegetation is present. Systematic understanding of nearby alternative sites would require detailed investigations that have not been conducted.

A variation of the proposed action would be an alternative quarry size. Initially, a 14.99-acre quarry was investigated, which because of land use regulations in agriculturally classified land, is often the typical quarry size. Early consultation with various parties was conducted on the basis of this size. After discussion with the Hawai'i County Planning Department, it became apparent that an extended land-use approval process involving the State Land Use Commission would be required regardless of the quarry size, owing to previous quarrying increments on the subject State property. Therefore, Yamada and Sons sought an area for the quarry that could occupy primarily land that had already been disturbed. The optimal size was one that could be quarried at an annual rate that would likely be absorbed by the foreseeable market over a period of about twenty to thirty years, during which time the technological and economic conditions that provide sufficient value to crushed rock would presume to remain reasonably stable. A second early consultation letter was sent out to inform parties of the larger area, then proposed at about 51 acres. Later, after biological and cultural survey, Yamada and Sons decided to exclude areas with somewhat intact 'ōhi'a forest. The resulting optimal quarry was on land east and north of the existing Yamada and Sons quarry and was approximately 38 acres. Under these circumstances, although smaller quarry sizes would still be feasible, the proposed area was determined to be optimal.

PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Basic Geographic Setting

The proposed Yamada quarry license area is referred to in this EA as the *project site*. The term *project area* is used to describe the general environs of Waiākea, and, in some cases, the entire South Hilo District.

The project site is located at approximately 90-100 feet in elevation about 3.5 miles southeast of downtown Hilo (see Fig. 1). The surface is gently undulating terrain interrupted by several bulldozer pushpiles and lava ridges. Vegetation is primarily secondary weedy forest with a few native trees, except where bare within a temporary County stockpile/baseyard area and where bisected by access roads. Portions of the project site were surface quarried in the year after the devastating tsunami of 1960 to provide fill for the Kaiko'o area of Hilo, where the State and County buildings now stand.

Nearby land use is primarily industrial or solid waste related, with some vacant lands and other public uses (see Fig. 1). Uses include:

- Directly adjacent to the east and south: vacant and undeveloped land;
- Directly adjacent to the west: a 15-acre rock quarry operated by Yamada and Sons;
- Directly adjacent to the northeast, Department of Public Works stockpile area;
- Directly adjacent to north: Hilo Trap and Skeet Range;
- The Hawai'i County Mass Transit Agency baseyard, 1,400 feet to southwest;
- The South Hilo Sanitary Landfill, located about 1,200 feet to the northwest, beyond which are the greenwaste mulching site, a scrap metal salvage facility, the County's Hilo Convenience Center, and the East Hawai'i Regional Sort Station;
- Keaukaha Military Reservation, located about 1,800 feet to the north, beyond which is the Hilo International Airport;
- The Pana'ewa Drag Strip and associated facilities, approximately one mile south; and
- About 2,200 feet to the west, beyond three current/former quarries, a strip of Department of Hawaiian Home Lands (DHHL) undeveloped land, beyond which are the Pana'ewa Farm Lots.

3.1 Physical Environment

3.1.1 Climate, Geology, Soils and Geologic Hazards

Environmental Setting

The average maximum daily temperature in this part of Hilo is approximately 81 degrees F., with an average minimum of 67 degrees, and annual rainfall averages about 130 inches (U.H. Hilo-Geography 1998:57).

The project site is located on the lower flank of Mauna Loa Volcano. The surface consists of basalt lava flows of the Ka'u Basalt series with an age of 1,500 to 750 years before the present (Wolfe and Morris 1996). The project site contains both 'a'ā and pāhoehoe lavas flows. Collectively these lava flows have been designated by Trusdell and Lockwood (2017) as the Pana'ewa picrate flow. The basalt in the area has proven highly suitable for rock quarries.

The project site soil is classified as Papai extremely stony muck (rPAE), a well-drained, thin (i.e., less than 10" thick) extremely stony organic soil overlying 'a'a lava bedrock. These soils are found at elevations ranging from sea level to 1,000 feet and receive between 90 to 150 inches of annual rainfall. Permeability is rapid, runoff is slow, and the erosion hazard is slight for this soil (U.S. Soil Conservation Service 1973). Areas with this soil are mostly covered in woodland, with some small areas used for pasture, orchards, and truck crops. The NRCS classifies it as a class VIIs soil, meaning it has very severe limitations for use for cultivation, and is therefore only useful as pastureland, wildlife or woodland. The agricultural suitability of this soil is considered Class "E" (Very Poor), by the University of Hawai'i Land Study Bureau's Soil Survey Report (University of Hawai'i 1965), the lowest possible rating. Notwithstanding these ratings, the project site lies within an area considered in the State of Hawai'i's (ALISH)

Agricultural Land of Importance classification as "Other Important Agricultural Land".

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. The volcanic hazard as assessed by the U.S. Geological Survey in this area of Hilo is Zone 3 on a scale of ascending risk of Zone 9 to Zone 1 (Heliker 1990:23). The relatively high hazard risk is based on the fact that Mauna Loa is an active volcano. Volcanic hazard Zone 3 areas have had 1-5% of their land area covered by lava or ash flows since the year 1800 but are at lower risk than Zone 2 areas because of their greater distance from recently active vents and/or because the local topography makes it less likely that flows will cover these areas.

The Island of Hawai'i experiences high seismic activity and is at risk from earthquake damage (USGS 2000), especially to structures that are poorly designed or built, as the 6.7-magnitude quake of 2006 and the 6.9-magnitude quake of 2018 demonstrated for many areas of the island, although the existing quarry was not affected. The project site does not appear to be subject to subsidence, landslides or other forms of mass wasting.

Impacts and Mitigation Measures

The project would alter the geology by removing rock and soil from the surface, much of which has been subject to surface quarrying or material stockpiling in the past and is only marginally suitable for farming. The project site is susceptible to lava flow and seismic hazard. However, as much of East Hawai'i has similar hazard levels, geologic hazards impose no particular constraints on the proposed action and the project is not imprudent to undertake. All facilities will be built in conformance with the Uniform Building Code's seismic standards. The quarry will have engineered fill with a 3:1 slope on the edges to avoid a sheer drop and facilitate future use should future suitable uses ever be proposed.

According to the U.S. Environmental Protection Agency (EPA), global climate change could mean an increase in sea level rise that could worsen Hawai'i's existing coastal hazards, including waves, hurricanes, and tsunamis, and extreme tides (EPA 2016).

Rainfall in Hawai'i has been variable in the recent past with some years considerably drier and some much wetter than average. The El Niño Southern Oscillation (i.e., periodic variation in winds and sea surface temperatures in the Pacific, the warming phase of sea temperature known as El Niño and the cooling phase as La Niña) will likely continue to dominate precipitation patterns from year to year in the tropical Pacific. Climate change-related increases in air temperatures will lead to more evaporation and more moisture in the air. As a result, the variability in El Niño-related precipitation is likely to increase, making rainfall predictions difficult (EPA 2016). In addition, increasing numbers and severity of tropical storms are increasing wind speeds. The project, which occurs essentially within a pit, is not one which is vulnerable to creating or being subject to damage by flooding or high winds, and no mitigation is necessary. As shown in Figure 4, the elevation of over 90 feet above sea level and the distance to the sea will protect the area from sea level rises of at least 90 feet, meaning that in the short to medium term of 30 years, there is no risk from sea level rise.

Figure 4. Sea Level Rise Exposure Map

The aggregate material that would be produced by the proposed quarry is critical for construction and thus the social and economic health of Hawai'i, and there are no feasible substitutes. However, mining, processing and transporting the material is a significant source of energy use, much of it tied to fossil fuels (Carbon Trust 2019). This has implications for carbon use and resulting greenhouse gas emissions.

Greenhouse gases in Earth's atmosphere absorb the long wave radiation released by the Earth's surface and then radiate some heat back towards the ground, increasing the surface temperature. Many human activities are increasing the concentration of greenhouse gases, thereby increasingly warming the Earth. The most common and important greenhouse gas we produce is carbon dioxide (CO2). Fossil fuels such as coal, oil and natural gas are the product of ancient deposits of organic matter. When combusted, their stored carbon is released again to the atmosphere at an extremely rapid rate in comparison to the rate at which it became stored. Methane (CH4), nitrous oxide (N2O) and various synthetic gases such as hydrofluorocarbons (HFCs) are also important greenhouse gases. They vary in effect and longevity in the atmosphere, but scientists have developed a system that compares them in equivalent terms to CO2, called equivalent carbon dioxide emissions (CO2-e). A unit of one metric ton of CO2-e is the basic unit used in carbon accounting. An emissions inventory, or 'carbon footprint', is calculated as the sum of the emission rate of each greenhouse gas multiplied by the global warming potential. For the purposes of greenhouse gas production from the quarry, CO2 is the only significant source.

Globally, aggregate, including crushed rock, is responsible for about 7% of total global energy consumption, and nearly half of that is consumed by transport of materials both before and after being processed (Mankelow et al 2010). The world faces a challenge in reducing carbon emissions from aggregate production and use, especially considering accelerating demand for commodities and construction materials into the foreseeable future.

Carbon emissions as a result of construction and operation of the project, along with the uses to which the quarried materials are put, are not insubstantial. Although the greenhouse gas output of the proposed Yamada quarry was not specifically calculated, estimates from the large Gold Coast Quarry in Australia, a much larger project that was subject to detailed greenhouse gas auditing, were consulted to gain an idea of the scale (Katestone Environmental Pty Ltd. 2013). That analysis also suggested potential opportunities for mitigating the increase in carbon emissions.

The Gold Coast Quarry has a production capacity of about 2.2 million tons of rock per year, roughly 7.5 times the capacity of the proposed Yamada quarry, and was projected to last almost fifty years. The development and construction phase of the quarrying involved establishing access roads and a facilities area, dams and sediment ponds, vegetation clearing, topsoil and overburden removal, mobile crushing operations, construction of a permanent fixed crushing plant, and set-up of stockpile operations. (Many of these activities will also occur at the Yamada quarry, but the facilities area is already established, and no sediment ponds are required). Greenhouse gas emissions during the construction phase would be mainly from land clearing, fuel usage, electricity consumption and blasting. It should be noted that existing vegetation sequesters carbon and that removing it returns carbon to the atmosphere.

The greenhouse gas analysis considered both direct emissions from sources within the boundary of the facility as a result of the facility's activities, as well as emissions from the offsite production of electricity the facility will consume. Total emissions for the construction phase of the Gold Coast Quarry, which required seven years with variable levels of emissions, were about 27,000 metric tons CO2-e, or about 2,700 metric tons CO2-e per year (Mtpa). The mining, crushing and transport of rock was estimated to involve a steady amount of 10,300 Mtpa CO2-e. The total estimated greenhouse gas emissions per year over the course of the project was thus approximately 13,000 Mtpa CO2-e. By far the largest source was use of electricity and diesel fuel (Ibid).

Only a detailed comparison of the differences and similarities of the Gold Coast and Yamada quarry operations would allow a precise analysis of the greenhouse gas emissions from the latter. However, a rough assessment is readily available. The Yamada quarry rock output would be about 7.5 times smaller than the Gold Coast quarry and would not involve construction of sediment ponds or new crushing facilities, which together would indicate emissions that would be lower by roughly an order of magnitude. Otherwise, the existing land cover in both areas is forest, and operations would be fairly similar. Thus, it is conservatively estimated that emissions for the Yamada quarry would be on the order of 2,000 Mtpa CO2-e or less. To provide some scale, the annual emissions from a typical commuter driving 30 miles round-trip to work in an average car is 4.3 Mtpa. The proposed quarry would thus emit the amount of emissions similar to 465 such commuters. One passenger's share of a 5,000-mile roundtrip airline flight is 2.23 tons

CO2-e Mt; the proposed quarry over the course of the year would emit the same emissions as 870 passengers on such a flight.

The Gold Coast analysis indicated that predicted annual emission rates were not significant on a national or state scale, representing only 0.002% of Australia's estimated greenhouse gas emissions for the year and 0.008% of Queensland's annual emissions. A similar conclusion can be reached about the proposed Yamada quarry, since the roughly 2,000 Mtpa CO2-e of emissions would represent 0.094% of the State of Hawai'i's 21.28 million Mtpa CO2-e output. Furthermore, the emissions *would not be added to the total greenhouse gas emissions of the State* but would represent a continuation of an existing activity of the same scale. It is also important to note that one of the major factors in the greenhouse emissions of the use of aggregates, once they are quarried and processed, is transport to the use site. Transportation of quarry products is relatively costly, greenhouse gas-intensive activity. Therefore, a range of benefits is achieved if a quarry is located close to its markets. This economic and environmental savings is one of the main reasons to locate a quarry focused on the East Hawai'i market near the economic activity centers of Hilo and Puna, rather than in more distant Hamakua or Ka'u.

Despite the lack of significant impacts, and the critical importance of supplying aggregate for construction, it is incumbent on the aggregate industry as well as every business to reduce greenhouse gas emissions to the minimum practicable level. Professional trade organizations for aggregates are developing innovative methods to save energy and reduce greenhouse gas emissions (e.g., see Carbon Trust Organization 2019). The Gold Coast Quarry emissions analysis included among its recommendations the following practices, which have been, are being, or will be adopted by Yamada and Sons in its quarrying operations. Cumulatively, these measures can substantially reduce greenhouse gas emissions of rock quarries.

- Optimize the movement of material onsite to reduce distances traveled and ensure optimal loading of mobile equipment.
- Incorporate energy efficiency goals into procurement criteria for plant items such as crushers and conveyors. Select equipment on a net present value basis that includes operation, maintenance and energy costs. Yamada and Sons have just completed a major project to upgrade the generators for its crusher and AC plant to Tier 4 generators, which are much more fuel efficient and produce fewer emissions. The company also converted its aggregate drier at the AC plant from diesel to propane.
- Design all site buildings to provide adequate worker comfort and heat protection for equipment with minimum electricity requirements. Techniques include (to the extent relevant):
    - o Considering whole-of-life costs in air-conditioning plant selection.
    - o Providing thermally efficient design including building orientation and opportunities for natural ventilation and use of electric fans.
    - o Include shaded outdoor common areas for meals and breaks.
    - o Provide for natural light indoors that minimizes addition to heat load (e.g. use window film).
    - o Install energy efficient lighting, separation of lighting bank controls and automatic timers.

- Consider on-site renewable energy generation to provide part of load requirements on land particularly for infrastructure buildings. Solar power is normally relatively expensive; however, there are sometimes site and load-specific circumstances that make it commercially advantageous, such as reducing peak demand and sharing the benefit of this with the electricity distributor.
- Ensure that water pumping operations are matched with usage requirements to minimize energy use. Choose pumps of appropriate type and capacity for the application.
- Identify activities that can be carried out during off-peak periods to reduce peak demand, this will reduce costs and better utilize electrical infrastructure, an added benefit to electricity suppliers.
- Implement recommended operation, maintenance and replacement regimes for assets and equipment (e.g. conveyors) to ensure that equipment continues to operate to design expectations for energy demand.
- Match processing operations with demand for specific products to avoid over crushing of rock.
- Stage equipment start-up to limit peak demand and associated electricity cost as an integral part of an electricity demand management program.
- Maximize the efficiency of distribution operations through the optimization of delivery schedules matched to vehicle capacity; including the use of articulated haul trucks where practical.
- Ensure lighting is only on when necessary and select energy efficient public lighting (considering whole-of-life costs including maintenance and energy consumption).
- Incorporate driver training and awareness as part of operational requirements. This has been found (Carbon Trust, 2011) to lead to reduced idle time, improved maintenance regimes (e.g. tire pressure), and improved haulage routes all related to fuel efficiency.

3.1.2 Drainage, Water Features and Water Quality

Existing Environment

Floodplain status for the project area has been determined by the Federal Emergency Management Agency (FEMA), which has mapped the area as part of the National Flood Insurance Program's Flood Insurance Rate Maps (FIRM). A summary of applicable Special Flood Hazard Area (SFHA) designations in the Hilo area is as follows:

- Zone A: SFHAs subject to inundation by the 100-year flood. Because detailed hydraulic analyses have not been performed, no base flood elevation or depths are shown.
- Zone AE: SFHAs subject to inundation by the 100-year flood determined in a Flood Insurance Study by detailed methods. Base flood elevations are shown within these zones.
- Zone AH: SFHAs subject to inundation by 100-year shallow flooding (usually areas of ponding where average depths are between 1 and 3 feet. Base flood elevations derived from detailed hydraulic analyses are shown in this zone.
- Zone VE: the 100-year coastal, high hazard flood plain, incorporating storm surges. Base flood elevations derived from detailed hydraulic analyses are shown in this zone.

- Zone X: Areas identified in the community flood insurance study as areas of minimal flood hazard.

The Flood Insurance Rate Maps (FIRM) 885C and 895C (9/16/88) show that the entirety of the proposed project site is in Flood Zone X (http://gis.hawaiinfip.org/FHAT/).

No natural streams, pools, springs, or wetlands are present within at least two miles. The Waiākea-Uka Flood Control Channel that was meant to deal with runoff from Ka'ahakini Stream is located about a half mile southwest of the project site, and a levee was constructed to keep any flooding away from the quarry and landfill areas (Fig. 1). The location of the levee downslope from the Flood Control Channel suggests it served to define the boundaries of a ponding basin, which was intended to contain flood waters during periods of excessive rainfall. The levee and Flood Control Channel were likely constructed between 1965 and 1981.

Impacts and Mitigation Measure

Because of the limited scale of construction and the environmental setting, the risks for flooding or impacts to water quality are negligible. There does not appear presently to be any risk for flooding from streams or drainage channels. No impacts to stream banks, stream waters, wetlands, or any other waters of the U.S., will occur, as none are located near the project site.

A grading and grubbing permit will be required. This would involve development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) to contain sediment and storm water runoff during quarrying activities. In addition, in order to minimize the potential for sedimentation and erosion, the contractor shall perform all earthwork and grading in conformance with Chapter 10, Erosion and Sediment Control, Hawai'i County Code. In order to properly manage storm water runoff, the SWPPP will describe the emplacement of a number of Best Management Practices (BMPs) for the project. These BMPs may include measures such as the following:

- Minimization of soil loss and erosion by revegetation and stabilization of slopes and disturbed areas of soil, possibly using hydromulch, geotextiles, or binding substances, as soon as possible after working;
- Minimization of sediment loss by emplacement of structural controls possibly including silt fences, gravel bags, sediment ponds, check dams, and other barriers in order to retard and prevent the loss of sediment from the site;
- Minimizing disturbance of soil during periods of heavy rain;
- Phasing of the project to disturb the minimum area of soil at a particular time;
- Application of protective covers to soil and material stockpiles;
- Construction and use of a stabilized construction vehicle entrance, with designated vehicle wash area that discharges to a sediment pond;
- Washing of vehicles in the designated wash area before they egress the project site;
- Use of drip pans beneath vehicles not in use in order to trap vehicle fluids;
- Routine maintenance of BMPs by adequately trained personnel;
- Coordination of storm water BMPs and wind erosion BMPs whenever possible; and

- Proper cleanup and disposal at an approved site if there are any significant leaks or spills.

The Department of Health, Clean Water Branch stated in a letter of August 6, 2019, in response to early consultation (see Appendix 1a) that the quarry developer may be required obtain an NPDES permit. The State Department of Health is continuing to be consulted as part of the EA process to verify permit requirements and mitigation measures.

3.1.3 Flora, Fauna and Ecosystems

Existing Environment

The natural vegetation of this part of Hilo was most likely lowland rain forest dominated by ʻōhiʻa (*Metrosideros polymorpha*) and hala (*Pandanus tectorius*) (Gagne and Cuddihy 1990). These original communities, however, have been destroyed or heavily degraded by quarrying, cattle grazing, landfills and industrial operations, clearing for farms and residences and other activities. A walk-through biological survey of the project site was performed by biologists Ron Terry, Patrick J. Hart and Layne Yoshida over the course of five days in April and July 2019.

The vegetation of the general area varies from completely disturbed to partially intact to largely intact, depending on the history of past disturbance. The 37.882-acre project site itself is a microcosm of this continuum. About 85% of the project site has been disturbed through surface quarrying, stockpiling, roads and other activities (see Figure 5). Some is still nearly bare, while most is heavily dominated by a dozen or so non-native trees (most of them invasive), including albizia (*Falcataria moluccana*), strawberry guava (*Psidium cattleianum*), Asian melastome (*Melastoma candidum*), cecropia (*Cecropia obtusifolia*), common guava (*Psidium guajava*), macaranga (*Macaranga mappa* and *M. tanarius*), gunpowder tree (*Trema orientalis*) and false kamani (*Terminalia catappa*) (see Figure 2a-c). Non-native pilau maile (*Paederia foetida*), pothos (*Epipremnum aureum*), woodrose (*Merremia tuberosa*) and other vines heavily festoon the trees. The dense canopy allows only a sparse understory of mostly invasive tree seedlings, except at road edges, which contain thick guinea grass (*Megathyrsus maxima*) patches and other weeds. Despite the heavy disturbance there are scattered ʻōhiʻa and hala trees and even the occasional small hala grove. The land to the southeast of the proposed quarry license area is dominated by a mixture of hala, ʻōhiʻa and strawberry guava, with some nearly all native areas of hala or ʻōhiʻa with uluhe fern (*Dicranopteris linearis*) and a variety of grasses, sedges and ferns (only a few of them natives) make up the herb story. Aside from a few ferns, no understory trees, shrubs or herbs typically associated with a healthy lowland ʻōhiʻa forest, such as *Myrsine*, *Diospyros*, *Psychotria*, etc., are present. Although this ʻōhiʻa forest in only marginally intact, it was purposely excluded from the proposed quarry license area.

Table 1 is a list of plant species detected. No listed, candidate or proposed endangered plant species (USFWS 2019) were found during the survey in either area. In terms of conservation value, no botanical resources requiring special protection are present.

Figure 5. Vegetation Types on/near Project Site

During three visits in April 2019, we observed primarily non-native birds – abundant Japanese white-eyes (*Zosterops japonicus*) and common mynas (*Acridotheres tristis*), as well as northern cardinals (*Cardinalis cardinalis*), house finches (*Haemorhous mexicanus*), yellow-fronted canaries (*Serinus mozambicus*), saffron finches (*Sicalis flaveola*), spotted doves (*Spilopelia chinensis*), striped doves (*Geopilia striata*), and house finches (*Carpodacus mexicanus*). The only native bird observed was a Hawaiian hawk (*Buteo solitarius*) flying above the property. This listed endangered bird is very commonly seen in forest, agricultural areas, and even towns throughout East Hawai'i. It is unlikely that many other species of native forest birds would be expected to use the project site due to its low elevation, alien vegetation and lack of adequate forest resources. However, it is not inconceivable that Hawai'i 'amakihi (*Hemignathus virens*) are sometimes present, as some populations of this native honeycreeper appear to have adapted to the mosquito-borne diseases of the Hawaiian lowlands. The common migratory shorebird Pacific golden-plover (*Pluvialis fulva*), which is often seen inland in grassy areas, may occasionally be present.

Table 1. Plant Species List on Project Site

Scientific Name	Family	Common Name	Life Form	Status
Acacia confusa	Fabaceae	Formosan Koa	Tree	A
Adiantum hispidulum	Pteridaceae	Rough Maidenhair	Fern	A
Ageratum conyzoides	Asteraceae	Ageratum	Herb	A
Alpinia zerumbet	Zingiberaceae	Shell Ginger	Herb	A
Alstonia macrophylla	Apocynaceae	Devil Tree	Tree	A
Ardisia elliptica	Myrsinaceae	Shoebutton Ardisia	Tree	A
Arundina graminifolia	Orchidaceae	Bamboo Orchid	Herb	A
Asplenium sp.	Aspleniaceae	Asplenium	Fern	I (?)
Asplenium nidus	Aspleniaceae	ʻĒkaha	Fern	I
Begonia reniformis	Begoniaceae	Grape-leaf Begonia	Herb	A
Blechnum appendiculatum	Blechnaceae	Blechnum	Fern	A
Buddleia asiatica	Buddleiaceae	Dog Tail	Shrub	A
Bulbostylis capillaris	Cyperaceae	Bulbostylis	Sedge	A
Castilleja arvensis	Scrophulariaceae	Indian Paintbrush	Herb	A
Cecropia obtusifolia	Cecropiaceae	Cecropia	Tree	A
Chamaecrista nictitans	Fabaceae	Partridge Pea	Herb	A
Chloris sp.	Poaceae	Chloris	Herb	A
Cibotium glaucum	Dicksoniaceae	Hapuʻu Pulu	Fern	E
Citharexylum spinosum	Verbenaceae	Fiddlewood	Tree	A
Citrus sp.	Rutaceae	Citrus	Tree	A
Clidemia hirta	Melastomataceae	Koster's Curse	Shrub	A
Clusia rosea	Clusiaceae	Autograph Tree	Tree	A
Crotalaria pallida	Fabaceae	Rattlepod	Herb	A
Cucurbita pepo	Cucurbitaceae	Squash	Vine	A
Cuscuta sandwichiana	Cuscutaceae	Kaunaoa	Vine	E
Cuphea carthagenensis	Lythraceae	Tarweed	Herb	A
Cyclosorus dentatus	Thelypteridaceae	Downy Wood Fern	Fern	A
Cyperus halpan	Cyperaceae	Cyperus	Herb	A
Desmodium cajanifolium	Fabaceae	Desmodium	Shrub	A
Desmodium triflorum	Fabaceae	Desmodium	Herb	A
Dicranopteris linearis	Gleicheniaceae	Uluhe	Fern	I
Digitaria sp.	Poaceae	Digitaria	Herb	A
Dioscorea pentaphylla	Dioscoreaceae	Hoʻi	Vine	A
Dissotis rotundifolia	Melastomataceae	Dissotis	Herb	A
Dracaena massangeana	Agavaceae	Corn Plan	Tree	A
Drymaria cordata	Caryophyllaceae	Pipili	Herb	A
Emilia sonchifolia	Asteraceae	Pualele	Herb	A
Epidendrum sp.	Orchidaceae	Epidendrum	Herb	A
Epipremnum aureum	Araceae	Pothos	Vine	A
Eragrostis tenella	Poaceae	Lovegrass	Herb	A
Erechtites hieracifolia	Asteraceae	Fireweed	Herb	A
Euphorbia hirta	Euphorbiaceae	Garden Spurge	Herb	A
Euphorbia hypericifolia	Euphorbiaceae	Graceful Spurge	Herb	A
Falcataria moluccana	Fabaceae	Albizia	Tree	A

Table 1, continued				
Scientific Name	**Family**	**Common Name**	**Life Form**	**Status**
Ficus microcarpa	Moraceae	Banyan	Tree	A
Fimbristylis dichotoma	Cyperaceae	Fimbristylis	Herb	I
Hedychium sp.	Zingiberaceae	Ginger	Herb	A
Hibiscus rosa-sinensis	Malvaceae	Hibiscus	Shrub	A
Hyptis pectinata	Lamiaceae	Comb Hyptis	Shrub	A
Justicia betonica	Acanthaceae	White Shrimp Plant	Shrub	A
Lantana camara	Verbenaceae	Lantana	Shrub	A
Lepisorus thunbergianus	Polypodiaceae	Pleopeltis	Fern	I
Macaranga mappa	Euphorbiaceae	Bingabing	Tree	A
Macaranga tanarius	Euphorbiaceae	Parasol Leaf Tree	Tree	A
Machaerina sp.	Cyperaceae	Machaerina	Herb	I
Macroptilium lathyroides	Fabaceae	Cow Pea	Herb	A
Mangifera indica	Anacardiaceae	Mango	Tree	A
Megathyrsus maximus	Poaceae	Guinea Grass	Herb	A
Melastoma sp.	Melastomataceae	Melastoma	Shrub	A
Melinis minutiflora	Poaceae	Molasses Grass	Herb	A
Melinis repens	Poaceae	Natal Redtop	Herb	A
Melochia umbellata	Sterculiaceae	Melochia	Tree	A
Metrosideros polymorpha	Myrtaceae	ʻŌhiʻa	Tree	E
Miconia calvescens	Melastomataceae	Miconia	Tree	A
Mimosa pudica	Fabaceae	Sleeping Grass	Herb	A
Momordica charantia	Cucurbitaceae	Balsam Pear	Vine	A
Monstera deliciosa	Araceae	Monstera	Vine	A
Musa sp.	Musaceae	Banana	Herb	A
Nephrolepis multiflora	Nephrolepidaceae	Sword Fern	Fern	A
Oplismenus hirtellus	Poaceae	Basket Grass	Herb	A
Paederia foetida	Rubiaceae	Maile Pilau	Vine	A
Pandanus tectorius	Pandanaceae	Hala	Tree	I
Paspalum conjugatum	Poaceae	Hilo Grass	Herb	A
Paspalum urvillei	Poaceae	Vasey Grass	Herb	A
Passiflora edulis	Passifloraceae	Passion Fruit	Vine	A
Pennisetum purpureum	Poaceae	Napier Grass	Herb	A
Phaius tankervilleae	Orchidaceae	Chinese Ground Orchid	Herb	A
Phlebodium aureum	Polypodiaceae	Hare's Foot Fern	Fern	A
Phymatosorus grossus	Polypodiaceae	Maile Scented Fern	Fern	A
Pityrogramma calomelanos	Pteridaceae	Silver Back Fern	Fern	A
Pluchea carolinensis	Asteraceae	Sourbush	Shrub	A
Polygala paniculata	Polygalaceae	Milkwort	Herb	A
Psidium cattleianum	Myrtaceae	Strawberry Guava	Tree	A
Psidium guajava	Myrtaceae	Guava	Tree	A
Psilotum nudum	Psilotaceae	Moa	Fern Ally	I
Pteris cretica	Pteridaceae	ʻOali	Fern	I
Pycreus polystachyos	Cyperaceae	Sedge	Herb	I

Table 1, continued				
Scientific Name	**Family**	**Common Name**	**Life Form**	**Status**
Ricinus communis	Euphorbiaceae	Castor Bean	Tree	A
Sacciolepis indica	Poaceae	Glenwood Grass	Herb	A
Schefflera actinophylla	Araliaceae	Octopus Tree	Tree	A
Schinus terebinthifolius	Anacardiaceae	Christmas Berry	Shrub	A
Scleria testacea	Cyperaceae	Nutgrass	Herb	I
Spathodea campanulata	Bignoniaceae	Africa Tulip	Tree	A
Sphagneticola trilobata	Asteraceae	Wedelia	Herb	A
Sphenomeris chinensis	Lindsaeaceae	Pala'a	Fern	I
Sporobolus indicus	Poaceae	Smutgrass	Herb	A
Stachytarpheta jamaicensis	Verbenaceae	Jamaica Vervain	Herb	A
Synedrella nodiflora	Asteraceae	Nodeweed	Herb	A
Terminalia catappa	Combretaceae	False Kamani	Tree	A
Tetrazygia bicolor	Melastomataceae	Tetrazygia	Tree	A
Tibouchina herbacea	Melastomataceae	Cane Tibouchina	Shrub	A
Trema orientalis	Ulmaceae	Gunpowder Tree	Tree	A
Urochloa mutica	Poaceae	California Grass	Herb	A

A = alien, E = endemic, I = indigenous

As with all of East Hawai'i, several other endangered native terrestrial vertebrates may be present in the general area and may overfly, roost, nest, or utilize resources of the project site. These include the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), the endangered Hawaiian petrel (*Pterodroma sandwichensis*), the endangered band-rumped storm petrel (*Oceanodroma castro*), and the threatened Newell's shearwater (*Puffinus auricularis newelli*).

Aside from bats, the other mammals in the project area are all introduced species, including feral cats (*Felis catus*), feral pigs (*Sus scrofa*), mongooses (*Herpestes* spp.) and various species of rats (*Rattus* spp.). Several species of non-native reptiles and amphibians may also be present. None are of conservation concern and all are deleterious to native flora and fauna.

Impacts and Mitigation Measures

No rare, threatened or endangered plant species are present. The project site is dominated by alien vegetation, with a few scattered, isolated 'ōhi'a trees; the only native vegetation on the property are a few small, scattered hala stands. Construction and use of the quarry would destroy some common native plants, but it would not affect rare, threatened or endangered plants, nor would it intrude into a sensitive native ecosystem.

An issue for construction in properties with 'ōhi'a trees has recently surfaced. Two species of fungus called *Ceratocystis lukuohia and C. huliohia* produce a disease that is new to science and new to Hawai'i – Rapid 'Ōhi'a Death (ROD) (Hawai'i DOFAW 2017). This disease has killed hundreds of thousands of 'ōhi'a trees across more than 34,000 acres of the Big Island. It was first discovered in Lower Puna. Although the proposed quarry area is overwhelmingly vegetated with

non-native, invasive trees, some isolated ʻōhiʻa trees are present in the area planned for quarrying. Projects that harm or relocate ʻōhiʻa trees can spread the disease, and certain mitigation measures are recommended, although it is important to recognize that treatment protocols are evolving. The following mitigation protocol is proposed and has been supplied to DOFAW for comment as part of the Draft EA review process:

- Prior to clearing the edges of the quarry, any isolated ʻōhiʻa trees on the boundary will be identified. Any such trees that are not planned for removal on the edges of the quarry will be protected from disturbance entirely or cut and chipped or buried to ensure that they do not present a ready target for ROD infection that could spread to other trees;
- Treat any unavoidable scars on ʻōhiʻa trees that result from clearing to prevent infestation of the fungus;
- Stack all removed ʻōhiʻa trees and dispose of by burying or chipping; do not remove from project site. Decontaminate boots and work tools before and after working in an area with ʻōhiʻa trees;
- Implement any other recommendations imposed as part of the CDUP.

As noted in the DOFAW letter in response to early consultation (see Appendix 1a), another concern for the movement of products is the spread of invasive species, particularly little fire ants and coqui frogs, both of which are rampant in the general area. Coqui frogs are generally not present in the areas actively being quarried and in any case area do not survive the quarrying, transport, and crushing process. Yamada and Sons specifically works to keep the entire operation as free of fire ants as possible, conducting perimeter inspection and treatment, active quarry area treatment and finished product inspection and treatment. Because of this, they have been able to supply crushed rock for use in sensitive areas such as Hawaiʻi Volcanos National Park. The Draft EA was to DOFAW and the Big Island Invasive Species Council for comment as part of the Draft EA review process in order to solicit comment and potential additional measures that could reasonably be adopted.

In order to avoid impacts to the endangered but regionally widespread terrestrial vertebrates listed above, Yamada and Sons will commit to several conditions. Specifically, construction will refrain from activities that disturb or remove shrubs or trees taller than 15 feet between June 1 and September 15, when Hawaiian hoary bats may be sensitive to disturbance. If landclearing occurs between the months of March and September, inclusive, a pre-construction hawk nest search by a qualified ornithologist using standard methods will be conducted. If Hawaiian hawk nests are present, no land clearing will be allowed until October, when hawk nestlings will have fledged. Finally, the quarry would agree to shield any exterior lighting from shining upward, in conformance with Hawaiʻi County Code § 14 – 50 et seq., to minimize the potential for disorientation of seabirds.

3.1.4 Air Quality, Noise, and Scenic Resources

Environmental Setting

The entire State of Hawai'i is located within an attainment area (i.e., meeting federal ambient air quality standards), as defined in the Clean Air Act, in accordance with the State Implementation Plan. Air quality in the area is generally excellent, due to its rural nature and minimal degree of human activity, although vog from Kilauea volcano is occasionally blown into this part of the island when this volcano is erupting, which it currently is not. Even during eruptions, the persistent trade winds keep the project area relatively free of vog for most of the year. Nearby quarrying activities generate some dust, which is generally confined to the quarries or immediate areas because of their presence below the elevation of the surrounding land, flanked by dense vegetation.

Noise on the project site is moderate to periodically high due to nearby quarrying activities, the Hilo International Airport, the Mass Transit baseyard, activities at the South Hilo Sanitary Landfill and associated facilities, and a nearby skeet range.

The site is not generally accessible to the public, and no important viewplanes or scenic sites recognized in the Hawai'i County General Plan are present in the area.

Impacts and Mitigation Measures

Quarrying activities involve excavation, blasting, milling of materials, and the operation of multiple units of heavy equipment. These activities frequently generate noise exceeding 95 decibels at times. However, the nearest homes are about a half mile away to the west, where noise from the nearby elevated landfill and the airport has been a much greater factor than the more distant and sunken quarries. There are no other sensitive receptors near the proposed project site, which instead is surrounded by other quarries, solid waste facilities, a drag strip, a shooting range, and an airport. Because of the topography and nature of quarrying on this landscape, which occurs in a pit that deepens over time as materials are excavated, amidst a dense forest, quarry noise is generally confined to existing quarries and their immediate environment. In fact, Yamada's quarrying of their existing license area adjacent to the project site will soon cease because of the depletion of appropriate rock and the proposed project will effectively relocate quarrying activities even farther away from sensitive receptors. Because of this context, no noise impacts are expected.

Quarrying activities also have to potential to produce fugitive dust emissions. Mitigation for dust generated during initial clearing operations would be part of the Best Management Practices described above in Section 3.1.2. Water trucks for spraying are available during unusually dry periods, during which operations may generate dust. Offsite dust at the existing crushing location is mitigated for by Best Management Practices that are part of permit conditions for the covered and non-covered source permits presently held by Yamada and Sons for rock crushing and milling equipment. These include, e.g., water sprayers at the crusher. These conditions will

continue to be in place for the new quarry. Yamada and Sons have also periodically cleaned the road of mud left by large vehicle tires, thus avoiding dust generation as the mud dries.

Removal of vegetation (primarily invasive trees) would be required in order to quarry the property. As the general area is already the site of industrial activities including quarrying, these modifications would be in character with adjacent properties. No important viewplanes or scenic sites recognized in the Hawai'i County General Plan would be affected.

3.1.5 Hazardous Substances, Toxic Waste and Hazardous Conditions

Existing Conditions

Although much of the area appears to have been surface quarried and/or used for stockpiling and marshalling yards in the past, and very minor amounts of trash are present in a few locations, the land use history and site reconnaissance do not suggest the presence of hazardous materials. State databases did not indicate any Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LUSTs), or records of incidents or releases on the project site or in surrounding properties (https://eha-cloud.doh.hawaii.gov/iheer/#!/viewer).

The South Hawai'i Sanitary Landfill, which is currently preparing for imminent closure, is located about a half mile northwest.

Impacts

Informal inspection has shown that is unlikely that any potentially hazardous, toxic or radioactive waste would be found on the project site. Reasonable precautions will be undertaken in the context of the project construction Best Management Practices to include provisions for the appropriate reporting to the State and readiness for response and remediation should any such hazardous, toxic, or radioactive material be encountered during the construction phase of the project.

The landfill and other solid waste operations in the vicinity pose no health or safety risks to quarry operations, and the proposed quarry would not affect solid waste operations (several quarries separate the two sites). The landfill is slated within the next year to begin the year-long official closure process. Transportation, storage, and use of hazardous materials at the proposed quarry would may require the following:

- Compliance with applicable federal regulations, including 55 CFR Title 27 (implementing Title XI of the Organized Crime Control Act of 1970) regulating interstate commerce in explosives;
- Licensing for personnel using explosives by the State Department of Labor & Industrial Relations, Occupational Safety & Health Division (DOSH);
- Compliance with applicable State Department of Transportation regulations concerning transportation of hazardous materials on public roadways;

- Compliance with conditions of a generator permit from the State Department of Health, in the case of the non-exempt generation of hazardous waste;
- Compliance with the hazardous material transportation, storage and disposal (TSD) requirements of the Resource Conservation and Recovery Act (RCRA); &
- Compliance with applicable OSHA regulations.

Compliance with the requirements of the above permits, regulations, and licenses will minimize the risk of release of hazardous materials and the risk to workers and the general public.

3.2 Socioeconomic and Cultural

3.2.1 Socioeconomic Characteristics

The project would affect and benefit Hilo and, more generally, East Hawai'i. Table 2 shows socioeconomic characteristics of Hilo and the County of Hawai'i from the 2010 U.S. census.

Impacts

The proposed project would have a positive economic impact for Hawai'i County, particularly in that it would provide essential material for both public and private projects as well as continuing employment for Yamada and Sons employees and businesses dependent upon a steady supply of rock products. The project would also provide revenue for the State of Hawai'i, through leasing and royalties for material extracted.

The closest current or proposed residential area is the Pana'ewa Farm Lots, about 2,200 feet to the west. The project was sited to keep former quarries, the current landfill, the Mass Transit baseyard, the County dragstrip, the skeet range, and the airport between itself and any nearby residential or farm lot areas. No adverse effects to any neighborhoods or any residential, recreational, or commercial uses would occur.

Table 2: Selected Socioeconomic Characteristics of Hilo

SUBJECT	NUMBER	PERCENT
SEX AND AGE		
Total population	43,263	100.0
Median age (years)	40.5	(X)
16 years and over	35,193	81.3
65 years and over	7,807	18.0
85 years and over	1,382	3.2
RACE		
Total population	43,263	100.0
One Race	29,199	67.5
White	7,617	17.6
Black or African American	227	0.5
American Indian and Alaska Native	132	0.3
Asian	14,833	34.3
Asian Indian	49	0.1
Chinese	645	1.5
Filipino	2,637	6.1
Japanese	9,550	22.1
Korean	419	1.0
Native Hawaiian	4,467	10.3
Two or More Races	14,064	32.5
Black or African American alone	198	0.5
American Indian and Alaska Native alone	82	0.2
Asian alone	14,450	33.4
Native Hawaiian and Other Pacific Islander alone	5,771	13.3
Some Other Race alone	51	0.1
Two or More Races	11,316	26.2
HOUSEHOLDS BY TYPE		
Total households	15,483	100.0
Family households (families)	10,287	66.4
With own children under 18 years	3,766	24.3
Husband-wife family	7,034	45.4
With own children under 18 years	2,307	14.9
Male householder, no wife present	975	6.3
With own children under 18 years	432	2.8
Female householder, no husband present	2,278	14.7
With own children under 18 years	1,027	6.6

Source: U.S. Census Bureau

3.2.2 Cultural and Historic Resources

A cultural impact assessment of the proposed action and an archaeological inventory survey of the project site were conducted by ASM Affiliates, Inc. The reports are attached as Appendices 2 and 3, respectively, and are summarized in this section. Research for the reports included primary fieldwork, review of archaeological and ethnographical studies and also primary documents including maps and Mahele testimony, and consultation of informants. In the interest of readability, the summary below does not include all scholarly references; readers interested in extended discussion and sources may consult these appendices. Separately, the Office of Hawaiian Affairs, the Keaukaha-Pana'ewa Farmers Association, and the Sierra Club were also consulted by mail as part of the EA to determine whether they had any information on natural or cultural resources that might be present or affected.

Existing Environment

The project site area is situated in the Pana'ewa forest region in Waiākea Ahupua'a along the eastern coast of Hawai'i Island, within the present-day district of South Hilo, and the traditional *moku* (district) of Hilo, one of six *moku* of Hawai'i Island. As described by Handy and Handy:

> Hilo as a major division of Hawai'i included the southeastern part of the windward coast most of which was in Hamakua, to the north of Hilo Bay. This, the northern portion, had many scattered settlements above streams running between high, forested kula lands, now planted with sugarcane. From Hilo Bay southeastward to Puna the shore and inland are rather barren and there were few settlements. The population of Hilo was anciently as now concentrated mostly around and out from Hilo Bay... (1991:538)

Traditionally, the *moku* of Hilo was divided into three *'okana* (land divisions) with place names that have their origins in legendary times. The three divisions are (from north to south): Hilo Palikū, Hilo One, and Hilo Hanakahi. The location of the project site coincides best with Hilo Hanakahi or "Hilo [land of] chief Hanakahi" (Pukui and Elbert 1986:129), which extends from the Wailoa River to include Keaukaha. According to Pukui et al. (1974:220), the name Waiākea literally translates as "broad waters," likely a reference to the bays and freshwater streams and rivers that water this land. Theodore Kelsey, who conducted ethnographic research in Hilo in 1921, however, suggests (in Maly 1996:6) that "Waiākea was so named 'because you could dig anywhere and find water," but Maly (1996:11) alternatively suggests that "The lands of Waiākea were named for the high chief Waiākea-nui-kumuhonua, the brother of Pi'ihonua-a-ka-lani [k] and Pana'ewa-nui-moku-lehua [w]."

The abundant marine resources of Hilo Bay, extensive spring-fed fishponds and waterfowl, and wetland and dryland agricultural resources sustained the population of the *moku* of Hilo, and it was to this general environmental setting that the first Polynesians in Hawai'i arrived. Over generations they shaped and utilized the natural environment to provide all they needed for sustenance and survival. In the process they created a uniquely Hawaiian culture that was wholly adapted to the environment. The chronological summary presented below begins with the peopling of the Hawaiian Islands and includes the presentation of a generalized model of

Hawaiian Prehistory and a discussion of the general settlement patterns for South Hilo. This discussion is followed by a brief sampling of the legends and *mo'olelo* (stories) of the area to supplement the understanding of potential cultural resources and practices. This is followed by a summary of Historic-era events in the district that begins with the arrival of foreigners in the islands and then continues with the history of land use in South Hilo after contact. The summary includes a discussion of the changing lifeways and population decline of the early Historic Period, a review of land tenure in the study *ahupua'a* during the *Māhele 'Āina* of 1848, the transition to the commercial sugar industry from the last quarter of the nineteenth century into the twentieth century, and finally the development of the Hawaiian Homestead community within Pana'ewa. This information, coupled with the review of the findings of previously conducted archeological studies discussed in Appendix 3, provided a means for predicting the types and significance of archaeological features that might be found here, as well as a foundation for analysis of cultural resources.

The first inhabitants of Hawai'i were believed to be settlers who had undertaken difficult voyages across the open ocean. For many years, researchers have proposed that early Polynesian settlement voyages between Kahiki (the ancestral homelands of the Hawaiian gods and people) and Hawai'i were underway by A. D. 300, although recent work suggests that Polynesians may not have arrived in Hawai'i until at least A. D. 1000 (Kirch 2012).

The initial inhabitants of Hawai'i are believed to have come from the southern Marquesas Islands and settled initially on the windward side, eventually expanding to leeward areas. Early Hawaiian farmers developed new strategies and tools for their new environment. Societal order was maintained by their traditional philosophies and by the conical clan principle of genealogical seniority. Universal Polynesian customs brought from their homeland included the observance of major gods Kane, Ku, and Lono, the *kapu* system of law and order; cities of refuge and the concepts of *mana* and *'aumakua*.

The Development Period, believed under Kirch's new concept to have occurred from A. D. 1100 to 1350, brought an evolution of traditional tools, including a variation of the adze (*ko'i*), and some new Hawaiian inventions such as the two-piece fishhook and the octopus-lure breadloaf sinker. That was followed by the Expansion Period (A. D. 1350 to 1650), which saw greater social stratification, intensive land modification, and population growth. This was also the era of the second major migration to Hawai'i, this time from Tahiti. Also established during this period was the *ahupua'a*, a land-use concept that incorporated all of the eco-zones from the mountains to the shore and beyond. The nominally wedge-shaped *ahupua'a* provided a diverse subsistence resource base and added another component to what was already becoming a well-stratified society.

Ahupua'a were ruled by *ali'i 'ai ahupua'a* or lesser chiefs and managed by a *konohiki*. *Ali'i* and *maka'ainana*, or commoners, were not confined to the boundaries of *ahupua'a* as resources were shared when a need was identified. *Ahupua'a* were further divided into smaller sections such as *'ili, mo'o'aina, pauku'aina, kihapai, koele, hakuone* and *kuakua*. The chiefs of these land units had their allegiance to a territorial chief or *mo'i* (literally translated as king). Waiākea, one of the largest *ahupua'a* in all the Hawaiian Islands, stretches from the eastern shores of Hilo Bay up the

slopes of Mauna Loa to an elevation of 6,000 feet and is markedly broader than its neighboring *ahupua'a* to the north. As Waiākea Ahupua'a encompasses both *mauka* agricultural and forest resources and *makai* fisheries, residents were once able to procure nearly all that they needed to sustain their families and contribute to the larger community from within the land division.

As cultivation extended inland, population growth ensued, as did political and social stresses. During the Proto-Historic Period (A. D. 1650-1795), wars reflective of a complex and competitive social environment are evidenced by *heiau* building. During this period, sometime during the reign of Kalaniopu'u (A. D. 1736-1758), Kamehameha I was born in North Kohala.

Historical accounts (McEldowney 1979) place the project site in a zone of agricultural productivity, where patches of forest were burned to create an open plain for planting crops such as taro, bananas, sugarcane, breadfruit, and *kukui*, and where scattered dwellings were also present. Handy and Handy (1972) also describe the general region as an agricultural area:

> "On the lava strewn plain of Waiākea and on the slopes between Waiākea and Wailuku River, dry taro was formerly planted wherever there was enough soil. There were forest plantations in Panaewa and in all the lower fern-forest zone above Hilo town along the course of the Wailuku River" (Handy and Handy 1972:539).

McEldowney (1979:20-21) noted that the Pana'ewa forest extended *makai* almost as far as the sea in the early 1800s. This reinforces the idea that rather than large-scale burning to remove forests to provide land for crops as practiced in other parts of Waiākea, farming was conducted in small clearings within the Pana'ewa forest. Nineteenth century maps reproduced in Appendix 3 show the project area *mauka* of the "hala forest" section of the Pana'ewa forest.

Maly (1996a:A-6) translates the name Pana'ewa to mean "crooked or unjust place". The following Hawaiian proverbs recorded by Pukui (1983) recorded the poetic expression of how the 'ōhi'a lehua blossoms from the Pana'ewa forest would fall into the ocean in great numbers, indicating that this celebrated forest extended to the coast.

> *He kai lū lehua ko Pana'ewa.*
> Pana'ewa shakes down the lehua fringes into the sea.
> Once, when the forest of Pana'ewa extended to the sea, fringes of *lehua* blossoms were seen floating about in the water. (ibid.:74)

> *Ke kai kua'au lehua o Pana'ewa.*
> The sea where lehua fringes float about in the shallows.
> Long ago, when *lehua* tree grew down to the shore at Puna and Hilo, the fringes of the flower often fell into the sea, reddening the surface. (ibid.:186)

Ethnographer Abraham Fornander noted that Waiākea was known for a specific type of *'ōhi'a* called 'ōhi'a puakea (white-blossom *lehua*), which was named after a beautiful maiden, Puakea,

who lived in Waiākea. In describing the characteristics and traditional uses of this unique type of ʻōhiʻa, Fornander (1918–1919:621–622) wrote:

> This tree has white flowers, and its fruit is also white when it is ripe; it is palatable when eaten. It has one round seed split in two parts; the birds are fond of the nectar of its flowers. The bird snarers used the branches on which the flowers were thick to put their gum on, and when a bird was caught the snarer would call out, "Snared, snared is my bird." The bird must be secured as quickly as possible. Its trunk, as also its branches, is used for firewood.

Although renowned for its extensive and tall stands of ʻōhiʻa lehua, Panaʻewa is also celebrated in many traditional poetic compositions for its *maile* (*Alyxia stellata*), hala (*Pandanus tectorius*), and ʻawa (*Piper methysticum*) that grew in the trees, and an array of native birds. Pukui (1983) retold *ʻōlelo noʻeau* of native species used by the people:

> *Lei Hanakahi i ka ʻala me ka onaona o Panaʻewa.*
> Hanakahi is adorned with the fragrance and perfume of Panaʻewa.
> The forest of Panaʻewa was famous for its *maile* vines and *hala* and *lehua* blossoms, well liked for making *lei*, so Hilo (Hanakahi) was said to be wreathed with fragrance. (ibid:212)

> *Na manu leo nui o Panaʻewa.*
> Loud-voiced birds of Panaʻewa.
> Loud talkers. Panaʻewa, Hilo, was famous for its *lehua* forests that sheltered the honey-sucking birds. Here people went to gather *lehua* and *maile*. (ibid.:247)

Reference to the mystical and potent *ʻawa* of Panaʻewa is described in the account of Keaunini (Westervelt 1915). After receiving orders from his brother, Ke-au-miki was sent to fetch small black and white pebbles from Hāʻena in Keaʻau, Puna and *ʻawa* from Panaʻewa. In describing the ʻawa of Panaʻewa, Ke-au-miki's brother explained:

> Get thirteen stones—seven white and six black. Make them fast in a bundle, so they cannot be lost, then come back by Panaʻewa and get awa...which man did not plant, but which was carried by the birds to the trees and planted there.

Ke-au-miki, with his supernatural powers, hastened over the lands of Hāmākua and arrived at Wailuku River where he defeated the *kupua* (demigod) that attempted to block his pathway over the river. Having arrived at Pa-ai-ie [Pāʻieʻie] in Waiākea, Ke-au-miki began his search for the objects that were requested by his brother.

> Then Ke-au-miki rushed over the river and up the precipices, speeding along to Pa-ai-ei, where the long ohia point of Pana-ewa is found, then turned toward the sea and went to Haena, to the place where the little stones aala-manu are found. He picked up the stones and ran to Pana-ewa and got the awa hanging on the tree, tied up the awa and stones and hurried back.

Unfortunately, disturbance on the project site along with rampant growth of invasive species has removed all such valuable flora from the area with the exception of ʻōhiʻa and hala, which are found in a few locations.

Appendix 3 contains a number of *moʻolelo* of the area involving diverse characters including Pele, her sister Hiʻiaka, and fearsome *moʻo* or dragon-like lizards. Other tales compiled by Maly and Maly (2006:13) tell the story of two supernatural brothers:

> ... Ka-Miki (The quick, or adept, one) and Maka-ʻiole (Rat [squinting] eyes), who traveled around the island of Hawaiʻi along the ancient ala loa and ala hele (trails and paths) that encircled the island. During their journey, the brothers competed in contests alongside the trails they traveled, and in famed kahua (contest arenas) and royal courts, against ʻōlohe (experts skilled in fighting or in other competitions, such as running, fishing, debating, or solving riddles, that were practiced by the ancient Hawaiians). They also challenged priests whose dishonorable conduct offended the gods of ancient Hawaiʻi. Ka-Miki and Maka-ʻiole were empowered by their ancestress, Ka-uluhe-nui-hihi-kolo-i-uka (The great entangled growth of uluhe fern which spreads across the uplands), a body-form of the goddess Haumea (the creative force of nature—also called Papa and Hina—who was a goddess of priests and competitors).

Fornander's (1918–1919) *Legend of Halemano* described the forested lands of Panaʻewa as the place where Halemano and his wife, Kamalālāwalu set up their home before she was taken by Huaʻā, a chief from Puna. A portion of the story describes their time in Panaʻewa:

> They went from Kohala to Waimea where they spend the night; from this place they continued to Hamakua and spent the night at Kaumoali; from this place they proceeded on to Uluomalama in Waiakea, Hilo Hanakahi where they staid [*sic*]. After living in this place for twenty days, Huaa the king of Puna, heard that Kamalalawalu was in Hilo, so he sent a messenger to Kamalalawalu and she was taken to the king of Puna. When she was being taken by the messenger of Huaa, she instructed her brother Kumukahi to take good care of Halemano.

After Kamalālāwalu was enticed away from her husband and taken captive by Huaʻā, Halemano yearns for her. He is consumed by sorrow and despair dies, only to be brought back to life again by his supernatural sister, Laenihi. Desperate to bring his wife back, Halemano engages his wife in the game of *kilu*. As they play, Halemano attempts to woo her by invoking memories of their time together at Uluomalama and utters a poetic chant describing their home being in Panaʻewa.

Traditional life in Hawaiʻi' took a sharp turn on January 18, 1778 with the arrival of British Capt. James Cook in the islands. During Cook's return trip to Hawaiʻi ten months later, Kamehameha visited Cook aboard his ship the *Resolution* off the east coast of Maui and helped Cook navigate his way to Hawaiʻi Island. Cook exchanged gifts with Kalaniopuʻu at Kealakekua Bay the following January and attempted to leave Hawaiʻi in February. However, his ship immediately sustained damage to a mast in a severe storm off Kohala and returned to Kealakekua, setting the stage for his death on the shores of the bay.

Hilo was one of the largest settlements on the Island of Hawai'i, and also an area frequented by the *ali'i*. Captain George Vancouver, an early European explorer who met with Kamehameha I at Waiākea in 1794, recorded that Kamehameha was there preparing for his invasion of the neighbor islands, and that Hilo was an important center because his *peleleu* fleet of 800 canoes was being built there. The people of Hilo had long planned for Kamehameha's arrival and had collected many hogs and a variety of plant foods to feed the ruler and his large retinue. The people of Hilo may have actually prepared for a year prior to Kamehameha's visit and expanded their fields into the open lands behind Hilo to accommodate the increased number of people that would be present.

The early 1800s heralded a new era in Hilo marked by rapid change. During the first two decades, sandalwood began to be harvested and shipped from Hilo Bay, and whaling ships stopping for supplies became common sights. Some of the earliest written descriptions of Hilo come from the accounts of the first Protestant Missionaries to visit the island, who noted the beauty and fertility of the region. In 1823, British missionary William Ellis and members of the American Board of Commissioners for Foreign Missions (ABCFM) toured the island of Hawai'i seeking out communities in which to establish church centers for the growing Calvinist mission. Ellis recorded observations made during this tour in a journal. He described Waiākea as a well-watered place with some of the heaviest rains and densest fog he had encountered on the island (Ellis 1963). He considered the inhabitants lucky because of their access to well-stocked fishponds, fertile soil, and nearby woods as a source of timber. He estimated that at least 2,000 inhabitants lived in nearly 400 houses clustered along and behind the beach.

Between 1824 and 1848, Hilo became a significant center for the growing population of foreigners. Many were associated with the new stations of American missionaries, the first of which was located within the *'ili* of Pi'opi'o near the bayfront. The first vocational school in what is now the United States was established in Hilo in 1837. Measles and smallpox epidemics decimated the local population and led to a consolidation of settlement along the northern half of the bay.

The *Mahele 'Aina* took place in 1848, placing all land in Hawai'i into three categories: Crown Lands, Government Lands and Konohiki Lands. Ownership rights were "subject to the rights of the native tenants," or those individuals who lived on the land and worked it for their subsistence and for their chiefs. Native tenants could claim and acquire title to *kuleana* parcels that they actively lived on or farmed at the time of the Māhele. The Kuleana Act of December 21, 1849 provided the framework by which native tenants could apply for and receive fee-simple interest in their *kuleana* lands from the Land Commission. The Board of Commissioners oversaw the program and administered the lands as Land Commission Awards (LCAw.).

Waiākea Ahupua'a became part of Kamehameha I's personal land holdings. As a result of the *Mahele* in 1848, nearly all land in this *ahupua'a* became Crown Lands (for the occupant of the throne). According to Moniz (n.d.:12) 26 *kuleana* claims were registered for lands in Waiākea; most of them were located along fishponds or major inland roads, and none were in the immediate vicinity of the proposed quarry site. Following the *Mahele,* Kamehameha IV leased

large portions of Waiākea (not including the project site) to outside interests for the production of sugar.

A pier built in 1863 near the mouth of the Wailuku River became the focus for trade and commerce. During this time, Hilo Bay was the third most frequented port in Hawai'i for whaling vessels needing repairs and re-provisioning. Fertile uplands, plentiful water supply, and a good port helped Hilo become a major center for sugarcane production and export, which spanned the era from the 1850s to the 1990s. An important sugarcane center was Waiākea, the site of Waiākea Mill Company and hub of infrastructure. Railroad tracks extended into Puna and Hāmākua across the bayfront (where Bayfront Highway is now aligned), with bridges over the Wailoa and Wailuku Rivers, wharves at Waiākea, and a roundhouse near Ho'olulu Complex. Construction of the Hilo Breakwater on Blonde Reef took place between 1908 and 1929.

The Pana'ewa area was very rocky and not utilized for sugarcane or plantation infrastructure. However, by 1921, the large tracts of land within and below the Pana'ewa forest were being recognized as a potential "agricultural and pastoral region" and it was opined that "in time to come great enterprise will be built up among the kipukas found all through the Panaewa and Puna sections of this island" (Hilo Daily Tribune, October 2, 1921, p. 1). In an effort to help Native Hawaiians maintain their traditional ties to the land, the U.S. Congress passed the Hawaiian Homes Commission Act in 1920. This law set aside approximately 200,000 acres in the Territory of Hawai'i as a land trust for homesteading by native Hawaiians, to be administered by the Hawaiian Homes Commission. Included in this initial distribution of land were two tracts in Pana'ewa totaling 2,000 acres located to the west of the project site. The first awarding of these Hawaiian homestead lots – the Pana'ewa Farm Lots – occurred in the 1940s.

Although far-removed from the Hilo Bayfront, the project site has an important connection to it. On April 1, 1946, a *tsunami* triggered by an earthquake in the Aleutian Islands slammed into the Hawai'i Island. It claimed the lives of 61 people, destroyed more than 500 buildings, and caused millions of dollars in property damage. The coastal community of Waiākea was decimated by the *tsunami*, which inundated the coast from central Hilo eastward to Keaukaha. The waves crushed numerous structures and lifted others off their foundations and swept them inland. An entire span of the Wailuku Bridge was torn out and washed away. So complete was the destruction that Waiākea Town was never rebuilt. This devastation in Hilo Bay was repeated a mere 14 years later with a tsunami from an earthquake from Chile on May 23, 1960.

Between 1962 and 1963 the County of Hawai'i exercised eminent domain to acquire numerous parcels of land in the tsunami-affected areas of Hilo as part of the Hawai'i Redevelopment Agency's Kaiko'o Project. The goal of this project was to "designate lands...for such reuse as will minimize the danger of loss of life or damage to property in areas subject to possible inundation and flooding from future seismic waves" (Hawaii Redevelopment Agency 1965:3). Project activities included acquisition of property, relocation assistance for affected residents and business owners, property management, demolition and building removal, re-zoning of land use and preparation (clearance, grading, and filling) for new development, and disposition of acquired lands by sale or lease at a fair price for new development.

The portion of TMK (3) 2-1-013:002 that contains the project site was designated as a 113.382-acre "Borrow Pit Site. Yamada and Sons, Inc., and the County of Hawai'i also had 40-acre borrow pit sites located to the southwest of the project site, adjacent to a roughly 192-acre strip of land that was deeded to the Department of Hawaiian Home Lands (DHHL) by the State of Hawai'i on January 8, 1962. Another 40-acre parcel of land adjacent to the northern edge of the borrow pit site eventually became the location of the South Hilo Sanitary Landfill. By 1965, quarrying activities within the Hawai'i Redevelopment Agency borrow pit had commenced, and had intruded slightly into the northern portion of the project site. Between 1965 and 1970, the leased lands were also used to stockpile sugarcane bagasse. Five years later in 1975, Yamada and Sons reduced the amount of leasehold lands to encompass only 180 acres, of which 150 acres was used for agricultural purposes with 30 acres was being used as a quarry site. During that year, most of the leased lands were mechanically cleared and turned to pastureland.

In a seven-year span between 1970 and 1977, much of the project site appears to have been cleared of vegetation, and a 1977 orthographic photo-quadrangle indicates that quarrying activities occurring on the original borrow pit had expanded into the southwestern corner of the project site (see Figure 31 of Appendix 3). That photo also shows the road that still bisects the project site as well as a now overgrown connector road that extends northwest to southeast across the northern portion of the area of the proposed quarry site. Although activities associated with quarrying of the project site appear to have ceased by the early 1990s, as evidenced in a 1992 USGS aerial photograph (see Figure 32 of Appendix 3), quarrying activities continued and expanded on the 50 acres to the west of the project site. Additionally, that operation expanded its scope in 2007 to include the 14.99-acre "Parcel D" situated directly adjacent to the project site to the west.

Existing Resources, Archaeology and Historic Sites

Fieldwork for the archaeological study was conducted on April 23, and July 9, 12, and 23, 2019. by 'Iolani K. Ka'uhane, B.A., Lauren Kepa'a, Lyle Auld, B.A., Johnny Dudoit, B.A., Ivana Hall, B.A., and Genevieve Glennon, B.A., under the direction of Principal Investigator Matthew R. Clark, M.A. Fieldwork consisted of an intensive (100% coverage) pedestrian survey of the entire project site.

As revealed in the background discussion above, the project site's location in what was once known as the Pana'ewa forest is within a region area rich in cultural history and traditional lore. On the ground, there would have been scattered gardens and residences and collection of forest resources during the Pre-Western contact period. Intense disturbance of the project site occurred in the decades following the 1960 tsunami, when the land in and around it was designated as a borrow site and intensively cleared and surface-quarried. Previous archaeological studies have shown that while Pre-Western contact archaeological features have been identified within Pana'ewa, they are seldom found within the highly disturbed lands surrounding the proposed quarry. As fieldwork began, it appeared highly unlikely that Pre-Western contact foot trails, habitation sites, or agricultural features, or early Historic sites such as house foundations, roads, railroad spurs, or sugarcane related infrastructure, would be encountered, as the project site was fully within the area of modern intense disturbance.

As expected in this context, the fieldwork identified no archaeological sites or other historic properties of any kind within the area. Field observation revealed abundant evidence of modern disturbance, including grubbing, grading, and quarrying activities. In addition, the intensity of the ground disturbance, combined with the results of prior studies conducted in the general area, indicate that subsurface archaeological resources are unlikely to be encountered in the area proposed for quarry development and expansion.

Impacts and Mitigation Measures to Archaeological Sites

Given the finding of no archaeological resources, the archaeologists concluded that the proposed quarry and stockpiling project would not impact any known historic properties. The determination of effect for the proposed project is "no historic properties affected." With respect to the historic preservation review process of the DLNR State Historic Preservation Division (SHPD), the archaeologists recommended that no further work needed to be conducted at the project site prior to or during project implementation. The survey was provided to SHPD for their review and comment as part of the Draft EA submittal, and the Final EA was to report on the agency's response. As of January 14, 2020, there has been no response. In the unlikely event that any unanticipated archaeological resources are unearthed during development activities, work in the immediate vicinity of the finds will be halted and SHPD contacted in compliance with HAR 13§13-280-3.

Existing Cultural Resources and Practices

As discussed above, no significant archaeological remains reflecting cultural history or supporting cultural values appear to be present due to the intense disturbance of the area. Furthermore, no caves, springs, *pu'u*, native forest groves, gathering resources or other natural features are present on or near the project site. The vegetation is highly disturbed, dominated by invasive, weedy species, and secondary growth in most areas, and does not contain the quality and quantity of resources that would be important for native gathering.

Appendix 3 details the consultation process for the cultural impact assessment, which involved a notice in the May 2019 *Ka Wai Ola* newspaper of the Office of Hawaiian Affairs (OHA), as well as email, mail, and/or phone outreach to nine individuals and three organizations. These included William Ailā from the Department of Hawaiian Home Lands; Maile Lu'uwai, President of Keaukaha-Pana'ewa Farmers Association; Patrick Kahawaiola'a, President of the Keaukaha Community Association; William Brown, President of the Pana'ewa Hawaiian Home Lands Community Association; and a representative of the Office of Hawaiian Affairs (OHA). This outreach resulted in several brief comments, referrals, or accepted interview requests.

Of the three individuals who were interviewed or supplied detailed comments, Nāko'olani Warrington stated that she has lived on Auwae Road since 1983 and has heard of folks who would gather maile lau li'i from the Pana'ewa forest, but with the expansion of houses and stores, this practice has ceased. With respect on ongoing cultural practices, Nāko'olani stated that "Taking care of our 'āina and our people/family (neighbors taking care of neighbors) since we

are indeed family here in Pana'ewa, just like those practices of old. Here also, we are constantly thinking and working towards making Railroad Avenue safe because the practice of being responsible for safety belongs to us."

Interviews with several other residents with direct experience with the Pana'ewa forest were conducted. On April 23 and July 12, 2019, Grant Kainalu "Nalu" Borges, a Pana'ewa resident and a current board member of the Keaukaha-Pana'ewa Farmers Association (KPFA) was interviewed. Nalu's family is recognized in the community as being one of the first to move into the Pana'ewa Hawaiian Homestead community. Nalu spent the majority of his life in Pana'ewa, where he learned to gather for subsistence and traditional cultural practices. When asked about recommendations for the proposed quarry site, Nalu would like to see all large 'ōhi'a trees, especially those that do not show signs of ROD, preserved in place. Nalu stated that if the trees cannot be preserved in place then the project managers should contact the Pana'ewa community so that the trees can be collected and repurposed.

An interview was also conducted on July 13, 2019, with Maka'ala Rawlins, another Pana'ewa resident and KPFA board member. Maka'ala is the grandson of Genesis Namakaokalani Lee Loy and Elizabeth Genevieve Luahiwa Ho'opi'i and currently lives on the Hawaiian Homestead lot that was granted to his grandparents in the early 1970s. Maka'ala expressed that his grandfather had discovered the 'awa in a part of the Pana'ewa forest that he utilizes for collecting native plants and seeds. He mentioned that there are many native plants in the area including 'ōhi'a, maile, and lama. Maka'ala is concerned with the growing development will disturb these undisturbed areas of forest serve as seed banks for the Pana'ewa community.

While the gathering of natural resources from the Pana'ewa forest remains an important part of the cultural practices of this community, no explicit reference was made to such practices occurring in the actual area proposed for the quarry license, which has experienced extreme disturbance, is dominated by invasive trees, and other than isolated 'ōhi'a and hala trees does not contain other native trees or 'awa. Because of the proposed location outside intact 'ōhi'a forest, it is not anticipated that the proposed quarry project will impact these cultural practices, based on the information obtained through the consultation efforts. It is not possible in a quarry that reaches depths of 80 feet to preserve individual trees. As discussed in Section 3.1.3, above, removal of 'ōhi'a trees is not recommended by DOFAW and will not be allowed in order to restrict the spread of ROD.

Impacts and Mitigation Measures

The cultural impact assessment determined that the proposed development of the quarry will have almost no direct impact on any cultural resources or traditional and customary native Hawaiian practices, because it would occur almost exclusively on disturbed land in non-native forest that lacks crucial gathering resources. However, the assessment further recommended that Yamada and Sons make efforts to preserve or avoid disturbing the small and seemingly healthy portion of intact native 'ōhi'a forest – even if it lacks important resources other than 'ōhi'a trees – that is present within the southeast section of the proposed quarry site. Based on community consultation, the preparers of the assessment believed this exclusion would serve to mitigate any

potential impacts to the valued cultural and natural resources that may result from the action. The proposed project would then appear not to impact any culturally valued resources or cultural practices. In response, Yamada and Sons decided to exclude the intact ʻōhiʻa forest and as well as an area south of Ammunition Dump Road with more disturbed vegetation. This resulted in a proposed quarry license area of about 38 acre rather than 51 acres. The KPFA, OHA and SHPD were supplied a copy of the Draft EA, which is also being reviewed by agencies and the general public, in order to help verify or correct the findings contained in the CIA and this EA. No party reviewing the Draft EA supplied any additional cultural information.

3.3 Infrastructure

3.3.1 Utilities

Existing Facilities and Services

There are currently no utility services to the site.

Impacts and Mitigation Measures

Yamada and Sons does not require utilities for the quarry, and the proposed action would not have any impact on existing utilities.

Water that is very occasionally required for dust suppression will be either trucked to the site or provided by catchment. In addition, portable toilets will be provided and maintained for employee use.

3.3.2 Traffic

Existing Environment

The project site is accessed via a two-lane, paved County driveway commonly called Ammunition Dump Road. Yamada and Sons trucks utilize a private access road that leads from the rear of their baseyard along Railroad Avenue to a point along Ammunition Dump Road located just south of the Hilo Convenience Center (see Fig. 1), which avoids affecting traffic on Railroad Avenue, Leilani Street and the busiest portion of Ammunition Dump Road, namely the recycling and transfer station areas.

Impacts and Mitigation Measures

For essentially the same operations as those proposed, Yamada and Sons currently utilizes three to four to five 50-ton rock hauler trucks making three trips per hour between the quarry and their baseyard, between the hours of 7:00 am and 5:00 pm on weekdays, although this schedule varies depending on demand and equipment type. Yamada and Son's trucks utilize a segment of Ammunition Dump Road that is shared only with other quarry operations, the County Mass Transit Agency, the County Drag Strip (which is open only occasionally), as well as greenwaste

haulers and County and commercial trash haulers in transit to and from the South Hilo Sanitary Landfill. Therefore, truck traffic from the proposed project will likely not affect the busiest portion of Ammunition Dump Road, which has traffic from users of the Convenience Center and the Recycling Center.

In a letter of May 29, 2019 in response to early consultation (see Appendix 1a), the Hawai'i County Department of Environmental Management (DEM) stated that once consolidation and resubdivision of certain properties in and around the South Hilo Sanitary Landfill is complete, the current access road will be dedicated to the County of Hawai'i and will not be available for off-road rock hauling trucks, and all haulers will be required to use highway-legal equipment to haul materials. As soon as the road is dedicated, Yamada and Sons will switch to tractor-trailers for hauling. Although this will necessitate twice the number of trips as current operations, the level of traffic will still be modest at roughly six trips per hour, and with the landfill closed, traffic may actually be reduced relative to current levels.

In a letter of May 22, 2019 in response to early consultation (see Appendix 1a), the Hawai'i Department of Transportation, Highways Division (HDOT-H) indicated that the project would not have a significant impact on State highways. HDOT-H also stated that the District Engineer may require mitigation for issues arising from the operation of the quarry or conveyance of material to the baseyard at no cost to the State. As the project will not involve any State highways, it is unlikely that any interaction with State highway facilities would occur, and currently no impacts or mitigation are foreseen.

3.3.3 Airports

The proposed quarry is approximately 1.75 miles from the centerline of Runway 8/26 at Hilo International Airport. For reference, the airport is the same distance or closer to the Banyan Drive hotel zone, the Port of Hilo facilities, and the industrial areas of Hilo. Unlike much of those developed areas, however, the proposed quarry site does not underlie any approach or departure tracks, nor would it contain tall structures.

In a letter of May 22, 2019 in response to early consultation (see Appendix 1a), the Hawai'i Department of Transportation advised that the applicant consult the Technical Assistance Memorandum by the FAA for guidance and requirements for developments near airports. This documents details the issues that facilities may involve for airports, including attracting hazardous wildlife, posing a glint/glare hazard, or presenting an aerial obstruction hazard to existing flight paths. Certain types of construction projects that propose significant vertical structures or mobile uses are required to file a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA). The proposed project does not appear to require such a notice, and it involves no hazardous wildlife attractants such as standing water, nor any glint or glare hazards or aerial obstructions. No effect to the facilities or operation of Hilo International Airport is anticipated.

3.3.4 Other Public Facilities and Services

All needed public facilities and services are readily present nearby. Police, fire and emergency medical services are available from facilities in Hilo within five road miles. No impact to these services or other public facilities or services would occur.

Most of the proposed license area – about 31 acres – is currently part of a large area that has long been included in a Revocable Permit by the State to the County for use as a skeet range, as partially depicted by the dashed lines in Figure 2. The proposed license area is south of the actual skeet range, as well as its access road and buffer area. Consultation with the Department of Parks and Recreation (P&R) has determined that the area requested for the quarry is not used or needed by the County as part of their skeet range operations. P&R have indicated that it would consent to the removal or withdrawal of this southern acreage from the existing revocable permit. P&R was supplied a copy of the Draft EA for their review and comment.

3.4 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 only adverse local effects of the project – continuing traffic and minor disturbance to air quality, noise, and visual quality – are very restricted in severity, nature and geographic scale, with limited potential to accumulate with impacts from other actions. Furthermore, the proposed quarry represents a continuation of uses at a directly adjacent location, rather than new impacts to be added. There has been and there will continue to be some accumulation of dust, noise and traffic impacts from continuing operations at County solid waste facilities, the mass transit baseyard, the public works stockpiling area, and the skeet range and drag strip, all occurring within a half-mile of the proposed quarry. This interaction is already occurring at the same levels, and coordination among these agencies has avoided issues or problems.

In the long term, these impacts will be substantially reduced by the impending closure of the South Hilo Sanitary Landfill, which is the primary source of dust, noise and traffic in the area. The County Department of Environmental Management (DEM) will be permanently closing the SHSL in accordance with Resource Conservation and Recovery Act (RCRA) Subtitle D requirements (Hawai'i County DEM 2018)). Based on the available airspace and current daily loads, the SHSL was expected to reach its permitted maximum capacity in about 2020. Closure will involve installing a final cover system on the top and side slopes of the landfill, installing a new passive landfill gas venting system, and constructing a new storm water detention and infiltration basin and other storm water management structures. Prior to installation of the final cover, the landfill will be slightly regraded and a maintenance access road will be provided along with a perimeter swale to facilitate the control and containment of storm water runoff on-site. Final closure of the landfill is anticipated to cost approximately $20 million, including the costs associated with the ongoing work to prepare the landfill for closure. Once regulatory approvals have been granted, it is estimated that construction will take another 18 months following the issuance of the notice to proceed.

The exact timing of the closure period has not yet been determined. A recent press release from the DEM providing a schedule update was summarized in a local newspaper article:

> The Hawai'i County Environmental Management Department is currently in the process of finalizing a contract with a construction company to start the work this summer to cover the Hilo landfill with an impermeable liner. It may take a full year. (Hawai'i Tribune Herald 2019).

Depending on whether the year-long landfill closure process involves more intensive use by heavy vehicles, there may be potential for traffic interaction with the quarry. In general, however, it is expected that landfill closure activities will not generate higher levels of traffic than that associated with the existing landfill. As Yamada and Sons plan to continue to access the project site via their own gated access route, there would be only the continuation of the existing level of industrial traffic even during the closure process, which would not require mitigation other than communication and coordination among all road users, which currently occurs and is expected to continue.

3.5 Required Permits and Approvals

The following permits and approvals would be required:

- Board of Land and Natural Resources: Approval of License for Quarrying
- Windward Planning Commission and State Land Use Commission: Special Permit
- State DOH: National Pollutant Discharge Elimination System Permit (NPDES) (potential)
- County Department of Public Works: Grubbing and Grading Permits

3.6 Consistency with Government Plans and Policies

3.6.1 Hawai'i State Plan

Adopted in 1978 and last revised in 1991 (Hawai'i Revised Statutes, Chapter 226, as amended), the Plan establishes a set of themes, goals, objectives and policies that are meant to guide the State's long-run growth and development activities. The three themes that express the basic purpose of the *Hawai'i State Plan* are individual and family self-sufficiency, social and economic mobility and community or social well-being. The proposed project is consistent with this plan. Specific relevant sections of the Plan are cited in more detail below.

§226-4. State goals. In order to ensure, for present and future generations, those elements of choice and mobility that ensure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:

(1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii's present and future generations.

(2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
(3) Physical, social, and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring, and of participation in community life.

The proposed project would provide products essential to infrastructural improvements and maintenance in Hawai'i County and is therefore important to community well-being and economic mobility. No substantial environmental impact would occur.

§226-6 Objectives and policies for the economy--in general. (a) Planning for the State's economy in general shall be directed toward achievement of the following objectives:

(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.
(2) A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.

(b) To achieve the general economic objectives, it shall be the policy of this State to:
(1) Promote and encourage entrepreneurship within Hawaii by residents and nonresidents of the State.
(2) Expand Hawaii's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.
(3) Promote Hawaii as an attractive market for environmentally and socially sound investment activities that benefit Hawaii's people.
(4) Transform and maintain Hawaii as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawaii.
(6) Seek broader outlets for new or expanded Hawaii business investments.
(7) Expand existing markets and penetrate new markets for Hawaii's products and services.
(8) Assure that the basic economic needs of Hawaii's people are maintained in the event of disruptions in overseas transportation.
(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.
(10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawaii's small scale producers, manufacturers, and distributors.
(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.

(12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawaii.
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawaii's employment and economic growth opportunities.
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.
(15) Maintain acceptable working conditions and standards for Hawaii's workers.
(16) Provide equal employment opportunities for all segments of Hawaii's population through affirmative action and nondiscrimination measures.
(17) Stimulate the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.
(18) Encourage businesses that have favorable financial multiplier effects within Hawaii's economy, particularly with respect to emerging industries in science and technology.
(19) Promote and protect intangible resources in Hawaii, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.
(20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new or innovative potential growth industries in particular.
(21) Foster a business climate in Hawaii--including attitudes, tax and regulatory policies, and financial and technical assistance programs--that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.

Any one business cannot satisfy all objectives of a State's economic policy, but the project is not inconsistent with any aspect of the policy and satisfies a number of objectives related to local production, satisfying jobs for local residents, and cooperation between government and the private sector.

§226-13 Objectives and policies for the physical environment--land, air, and water quality.
(a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:

(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.
(2) Greater public awareness and appreciation of Hawaii's environmental resources.

(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:

(1) Foster educational activities that promote a better understanding of Hawaii's limited environmental resources.
(2) Promote the proper management of Hawaii's land and water resources.
(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.

(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.
(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.
(7) Encourage urban developments in close proximity to existing services and facilities.
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawaii's people, their cultures and visitors.

The proposed project involves a necessary use of local resources in a sensible location that has been shown through systematic resource surveys to not degrade the environment in any way.

3.6.2 Hawai'i County Zoning and General Plan

Hawai'i County Zoning

The project site is zoned Agricultural (A-20a), where quarrying of an area of 37.882 acres is a permitted activity, but one requiring a Special Permit from the Hawai'i County Planning Commission, which needs subsequent approval from the State Land Use Commission. The Special Permit process would begin after Chapter 343, HRS, is complete.

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 (County of Hawai'i 2005). The plan was adopted by ordinance in 1989 and revised in 2005 (Hawai'i County Planning Department). The *General Plan* itself is organized into thirteen functional elements. In general, the proposed project would be consistent with the goals, policies and objectives, standards, and principles for several functional areas. This section addresses the consistency of the proposed action with relevant policies of the County.

Economic Goals

- Provide residents with opportunities to improve their quality of life through economic development that enhances the County's natural and social environments.
- Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawaii.
- Strive for diversity and stability in the economic system.
- Provide an economic environment that allows new, expanded, or improved economic opportunities that are compatible with the County's cultural, natural and social environment.
- Strive for an economic climate that provides its residents an opportunity for choice of occupation.
- Strive for diversification of the economy by strengthening existing industries and attracting new endeavors.
- Strive for full employment.

Economic Policies

- Identify and encourage primary industries that are consistent with the social, physical, and economic goals of the residents of the County.

Environmental Quality Goals:

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

Environmental Quality Policies:

- Take positive action to further maintain the quality of the environment.

Flood Control and Drainage Goals

- Protect human life.
- Prevent damage to man-made improvements.
- Control pollution.
- Prevent damage from inundation.
- Reduce surface water and sediment runoff.
- Maximize soil and water conservation.

Flood Control and Drainage Policies

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

Flood Control and Drainage Standards

- "Storm Drainage Standards," County of Hawaii, October, 1970, and as revised.
- Applicable standards and regulations of Chapter 27, "Flood Control," of the Hawaii County Code.
- Applicable standards and regulations of the Federal Emergency Management Agency (FEMA).
- Applicable standards and regulations of Chapter 10, "Erosion and Sedimentation

Control," of the Hawaii County Code.
- Applicable standards and regulations of the Natural Resources Conservation Service and the Soil and Water Conservation Districts.

Historic Sites Goals:

- Protect and enhance the sites, buildings and objects of significant historical and cultural importance to Hawai'i.
- Appropriate access to significant historic sites, buildings and objects of public interest should be made available.

Natural Beauty Goals:

- Protect scenic vistas and view planes from becoming obstructed. Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

Land Use Goals:

- Designate and allocate land uses in appropriate proportions and mix and in keeping with the social, cultural, and physical environments of the County.
- Protect and preserve forest, water, natural and scientific reserves and open areas.

Discussion: The project site is ideally located in an area of existing quarrying and solid waste uses lacking sensitive environmental resources or issues such as flooding, streams or wetlands, rare native species, native ecosystems, or scenic views. The proposed quarry would provide much needed construction materials for public and private sector projects, supporting the Big Island economy with a crucial material that is extremely expensive to import. No archaeological sites or cultural sites or practices are present on the property and none will be affected. The project would satisfy all relevant aspects of the General Plans goals, objectives and policies.

The *Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG, Hawai'i County Planning Department 2006)*. The LUPAG map component of the *General Plan* is a graphic representation of the Plan's goals, policies, and standards as well as of the physical relationship between land uses. It also establishes the basic urban and non-urban form for areas and specifies planned public and cultural facilities, public utilities and safety features, and transportation corridors. The project site is classified as Important Agricultural Lands in the LUPAG. The General Plan defines these as those lands with "better potential for sustained high agricultural yields because of soil type, climate, topography, or other factors" (p. 14-8). Generally, these lands have been identified through maps from the previous General Plan, the U.S. Natural Resource Conservation Service, the UH Land Study Bureau, or similar studies. However, as recognized in the General Plan, some areas so designated may be inappropriately classified because of the scale of previous mapping, and the location of these lands requires verification by more detailed mapping when considering specific land use decisions. It is expected that the Special Permit process will consider the rather poor agricultural potential of the proposed quarry area when considering the permit application.

3.6.3 Hawai'i State Land Use Law and Coastal Zone Management

Chapter 205 Hawai'i Revised Statutes, Hawai'i State Land Use Law

Chapter 205 HRS classifies All land in the State of Hawai'i into one of four land use categories – Urban, Rural, Agricultural, or Conservation. The property is in the State Land Use Agricultural District. Although the planned quarrying is not a conformant use according of this State Land Use District designation, State Land Use law allows for further definition by County ordinance, which allows for quarrying on agricultural lands. However, as discussed above, a Special Permit from the Hawai'i County Planning Commission and the Land Use Commission would be required for the proposed use.

The criteria for approving a Special Permit are based on Rule 6 in the Planning Commission Rules. Section 6-6 states that the Planning Commission shall not approve a Special Permit unless it is found that the proposed use (a) is an unusual and reasonable use of land situated within the Agricultural or Rural District, whichever the case may be; and (b) the proposed use would promote the effectiveness and objectives of Chapter 205, Hawai'i Revised Statutes, as amended. In addition to the above listed criteria, the Planning Commission shall also consider the criteria listed under Section 6-3(b)(5) (A) through (G). This EA is not the venue for detailed analysis of the permit criteria, but the following may be noted:

> Section 6-6 (a): *The proposed use appears to be an unusual and reasonable use of land situated within the Agricultural District.* In recognizing that lands within the Agricultural District might not be best suited for agricultural activities and yet classified as such, and in recognition that certain types of uses might not be strictly agricultural in nature, yet reasonable in such districts, the legislature has provided for the Special Permit process to allow certain unusual and reasonable uses within the Agricultural district. Based on the poor agricultural soil conditions, the availability of much better agricultural land nearby, and the utility of aggregates for not only urban but also agricultural activity, the proposed request may be considered an unusual and reasonable use of agricultural land in this location within the State Land Use Agricultural District.
>
> Section 6-6 (b): *The granting of this request would also appear to promote the effectiveness and objectives of Chapter 205, Hawai'i Revised Statutes, as amended.* The State Land Use Law and Regulations are intended to preserve, protect and encourage the development of lands for those uses to which they are best suited in the interest of the public welfare of the people of the State of Hawai'i. In the case of the Agricultural District, the intent is to preserve or keep lands of high agricultural potential in agricultural use. Soils on the project site are identified by the USDA Soil Survey Report as Paipai series (rPAE), which consist of well drained, thin, extremely stony organic soils over fragmented a'a lava. The Land Study Bureau's Overall Master Productivity Rating for the site is "E" or "Very Poor" for agricultural production. Notwithstanding, the property is classified as Other Important Agricultural Land by the Department of Agriculture's ALISH system. As the site is currently vacant and is not in active

agricultural use, the use will not displace any existing agricultural activity or diminish the agricultural potential of the site. It is also important to note that much of the original soil of the area was scraped off and/or placed in push-piles as part of the extensive surface quarrying that occurred in the Kaiko'o project. Therefore, the proposed use will not adversely affect the preservation and agricultural use of the County's prime agricultural lands and is not contrary to the objectives sought to be accomplished by the State Land Use Law and Regulations.

Section 6-3(b)(5)(A): *Such use shall not be contrary to the objectives sought to be accomplished by the Land Use Law and Regulations*. The request appears to be considered an unusual and reasonable use of agricultural lands. The requested use will not adversely affect the preservation and agricultural use of the County's prime agricultural land; thus, the request is not contrary to the objectives sought to be accomplished by the State Land Use Law and regulations.

Section 6-3(b)(5)(B) *The desired use would not adversely affect surrounding properties*. The project site is a 37.882-acre portion of an approximately 2,407-acre State-owned parcel. The project site is ideally located in terms of avoiding impacts to surrounding properties because it is situated in the midst of land uses that already generate substantial noise – quarries, a landfill, a shooting range, the Mass Transit baseyard, a stockpile area, and a dragstrip – and the noise it generates will not affect sensitive uses. The closest dwellings are located about half a mile from the proposed quarry site. Potential impacts typically associated with quarry operations include dust and noise. However, these impacts can be mitigated by complying with Department of Health rules and regulations related to air quality and noise. A condition of approval will also limit hours of operation to between 6:00 a.m. to 6:00 p.m., daily.

Section 6-3(b)(5)(C): *Such use shall not unreasonably burden public agencies to provide roads and streets, sewers, water, drainage, school improvements, and police and fire protection*. Access to and from the site is via the two-lane Ammunition Dump Road. The paved portion of the road varies in width but is mostly 30 feet wide and ranges in condition from excellent to poor. The road is currently being straightened and improved by the County for its own purposes. Yamada and Sons estimates that the quarry operation will require use of 4 to 5 rock-hauling trucks (or 8 to 10 tractor trailers) making about three trips per hour between the quarry and the crusher site at its baseyard, which is located between Railroad Avenue and Ammunition Dump Road on TMKs 2-1-025:001, 041, and 042. Traffic will not substantially increase on the Ammunition Dump Road since the new quarry site is replacing another site presently used by Yamada and Sons that is also accessed via the same road using the same trucks and frequency of travel. Electrical and telephone services are not required for the quarry operation. Water for dust suppression will either be trucked to the site or provided by catchment tank. Portable toilets will be provided and maintained for employees to use at the site. Medical, police and fire services are all available nearby in Hilo.

Section 6-3(b)(5)(D) *Unusual conditions, trends, and needs have arisen since district boundaries and regulations were established.* Since the district boundaries and regulations were established in the 1960s and 1970s, the State DLNR has issued several land licenses in the area for quarry operations because this area has proven to be a valuable and critically important source of raw material used in the construction industry. Through the issuance of a Special Permit, a community may establish various "non-agricultural" services that are reasonable but unusual in nature, such as quarries.

Section 6-3(b)(5)(E) *The land upon which the proposed use is sought is unsuited for the uses permitted within the district.* The proposed quarry site is currently not used for agricultural purposes. As previously mentioned the lands are rated "E" or "Very Poor" for agricultural productivity and classified as Other Important Agricultural Land by the ALISH Map. Other Important Agricultural Land is land other than Prime or Unique Agricultural Land that is of statewide or local importance for the production of food, feed, fiber and forage crops. The lands in this classification are important to agriculture in Hawai'i but exhibit properties such as seasonal wetness, erodibility, limited rooting zone, slope, flooding, or droughtiness, that exclude them from the Prime or Unique Agricultural Land classifications. The soils in this area are not suitable for many types of agricultural uses, which may explain why the site has not historically been used for agricultural purposes although it is classified for such use.

Section 6-3(b)(5)(F) *The use will substantially alter or change the essential character of the land and the present use.* Removal of rock to a depth of 80 feet will substantially alter the essential character of the land, although this vacant land has already been intensively grubbed, graded and surface-quarried over much of its extent. Furthermore, the project site is flanked in several directions by deep quarries and other industrial-type land uses. Therefore, although the character of the project site will be substantially altered, the proposed use is consistent with historical use on the land and nearby land uses. Also, the DLNR land license for the site requires that upon closure or abandonment, the applicant leave the site in a non-hazardous condition that could support other uses.

Section 6-3(b)(5)(G) *The request will not be contrary to the General Plan.* Although the proposed land use does not match the General Plan LUPAG Map "Important Agricultural Land" designation, it does meet many key goals and policies of the General Plan, as discussed in Section 3.6.2.

Furthermore, the request will not have a significant adverse impact to traditional and customary Hawaiian rights. In view of the Hawai'i State Supreme Court's "PASH" and *"Ka Pa 'akai O Ka 'Aina"* decisions, the issue relative to native Hawaiian gathering and fishing rights must be addressed in terms of the cultural, historical, and natural resources and the associated traditional and customary practices of the site. Intensive archaeological survey, documentary research and cultural consultation determined that no archaeological sites or cultural resources or practices are present. Biological survey found only a few species of native plants, all of which are common and available for gathering elsewhere. The following findings are expected to be proposed for consideration by the Board of Land and Natural Resources:

(1) *The identity and scope of valued cultural, historical, or natural resources in the proposed license area.* There is no evidence that the flora or fauna in the area are particularly desired or used for cultural practices. The site is not adjacent and/or proximate to the shoreline. As such, gathering of marine life, fishing and coastal access is not an issue. No valued cultural, historic, or natural resources related to traditional and customary practices were identified on the project site, and no traditional and customary native Hawaiian rights are exercised therein.
(2) *The extent to which those resources, including traditional and customary native Hawaiian rights, will be affected or impaired by the proposed action.* No resources or rights are present and none will be affected.
(3) *The feasible action, if any, to be taken by the BLNR to reasonably protect native Hawaiian rights if they are found to exist.* The proposed action will not affect traditional Hawaiian rights and no action is necessary to protect these rights.

Based on the above considerations, it likely that the approval of the request would support the objectives sought to be accomplished by the Land Use Laws and Regulations. As stated above, the consistency of the project with the criteria of the Special Permit will be explored in greater detail in the Special Permit application that will follow the Chapter 343 process.

Chapter 205A, Hawai'i Revised Statutes, Coastal Zone Management Program

HRS 205A defines the coastal zone as "all the 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 United States territorial sea." Accordingly, the project site is located in the coastal zone management area.

The project site is located approximately 2.6 miles *mauka* of the shoreline, at an elevation of 90-100 feet above mean sea level, with no surface drainage to the ocean; quarrying here would not influence coastal process or conditions. The proposed project would also have no impact to coastal recreation opportunities, historic resources, public access, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources (HAR § 205A-2). Detailed explanations of potential impacts are described above in the environmental impacts sections. As the project site and actions on it are not likely to influence coastal processes or conditions within coastal areas, no potential impacts are anticipated. The property is not situated within the County's Special Management Area (SMA) and would not require an SMA Permit. In sum, no impact to Coastal Zone resources is expected.

PART 4: DETERMINATION

Based on the findings below, and upon consideration of comments to the Draft EA, the applicant expects that the State of Hawai'i, Board of Land and Natural Resources, will determine that the proposed action will not significantly alter the environment, as impacts will be minimal, and that the Board will accordingly issue a Finding of No Significant Impact (FONSI).

PART 5: FINDINGS AND REASONS

Chapter 11-200.1-13, Hawai'i Administrative Rules, outlines those factors agencies must consider when determining whether an Action has significant effects:

> (a) In considering the significance of potential environmental effects, agencies shall consider and evaluate the sum of effects of the proposed action on the quality of the environment.
>
> (b) In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected impacts, and the proposed mitigation measures. In most instances, an action shall be determined to have a significant effect on the environment if it may:

1. *Irrevocably commit a natural, cultural, or historic resource.* No valuable natural or cultural resource would be committed or lost. Although some remnant native plants are present, no valuable natural or cultural resources would be committed or lost, as the project site contains none. No valuable cultural resources and practices such as forest access, fishing, gathering, hunting, or access to ceremonial sites would be affected in any way.
2. *Curtail the range of beneficial uses of the environment.* The land has poor potential for other uses as it is unsuited for most agriculture and is surrounded by industrial land uses. Some restriction of future beneficial uses would occur, as the surface rock and soil (already surface quarried in many locations) will be removed, but the quarried area would retain value for future industrial, public and even agricultural uses that did not rely on surface soil.
3. *Conflict with the State's environmental policies or long-term environmental goals established by law.* The State's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The project is minor and fulfills aspects of these policies calling for an improved social environment. It is thus consistent with the State's long-term environmental policies.
4. *Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State..* The project would not have any adverse effect on the economic or social welfare of the County or State and would benefit the economy of the Hilo area.
5. *Have a substantial adverse effect on public health.* The proposed project would be subject to environmental, health and safety permits and restrictions and would not be detrimental to public health in any way.
6. *Involve adverse secondary impacts, such as population changes or effects on public facilities.* No adverse secondary effects are expected to result from the proposed action.
7. *Involve a substantial degradation of environmental quality.* The project site would not cause a substantial degradation of environmental quality, and mitigation for storm water runoff, as well as dust emissions, would be required.

8. *The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* The project is not related to other activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions. The only adverse local effects of the project – continuing traffic and minor disturbance to air quality, noise, and visual quality– are very restricted in severity, nature and geographic scale, with limited potential to accumulate with impacts from other actions. Furthermore, the proposed quarry represents a continuation of uses at a directly adjacent location, rather than new impacts to be added. There has been and will continue to be some accumulation of dust, noise and traffic impacts from continuing operations at County solid waste facilities, the Mass Transit baseyard, the public works stockpiling area, and the skeet range and drag strip, all occurring within a half-mile of the proposed quarry. This interaction is already occurring at the same levels, and coordination among these agencies has avoided issues or problems.
9. *Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat.* The project site supports overwhelmingly alien vegetation. With timing of vegetation removal/species surveys to avoid impacts to Hawaiian hawks and Hawaiian hoary bats, no impacts to rare, threatened or endangered species of flora or fauna would occur.
10. *Have a substantial adverse effect on air or water quality or ambient noise levels.* No adverse effects on these resources would occur. Implementation of a Storm Water Pollution Prevention Plan will mitigate impacts to water quality. There are no sensitive receptors in the project area, and hence noise produced would not be detrimental.
11. *Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.* Although the project is located in an area with volcanic and seismic risk, the entire Island of Hawai'i shares this risk, and the project is not imprudent to construct. The project site is more than 90 feet above sea level and will not be affected directly by sea level rise.
12. *Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies.* No scenic vistas and viewplanes will be adversely affected by the project.
13. *Require substantial energy consumption or emit substantial greenhouse gases.* The operation of any aggregate quarry requires energy consumption that because of its nature involves fossil fuels and therefore greenhouse gas emissions. The emissions of the proposed quarry would not be significant on a State scale, as the roughly 2,000 Mtpa CO2-e of emissions would represent only 0.094% of the State of Hawai'i's 21.28 million Mtpa CO2-e output. Furthermore, the emissions would not be added to the total, but would represent a continuation of an existing activity of the same scale. It is also important to note that one of the major factors in the greenhouse emissions of the use of aggregates, once they are quarried and processed, is transport to the use site. Transportation of quarry products is relatively costly, greenhouse gas-intensive activity. Therefore, a range of benefits is achieved if a quarry is located close to its markets, as is the case with the proposed quarry location. Yamada and Sons proposed to continue

and/or adopt a suite of innovative energy-saving practices endorsed by professional trade organizations for aggregates that can cumulatively substantially reduce greenhouse gas emissions of rock quarries.

For the reasons above, the proposed action would not have any significant effect in the context of Chapter 343, Hawai'i Revised Statues and section 11-200.1-13 of the State Administrative Rules.

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