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Ref. No. P-14646

February 10, 2015

To: Daniel Orodener, Executive Officer
State Land Use Commission

From: Leo R. Asuncion, Acting Director 

Subject: DR14-52, Petition to Designate Important Agricultural Lands
Petitioner: Trustees of the Estate of Bernice Pauahi Bishop dba
Kamehameha Schools
Location: Kawaihoa and Punaluu, Oahu, Hawaii
Acreage: Approximately 9,171 acres at Kawaihoa and
421 acres at Punaluu

The Office Planning (OP) appreciates the Petitioner's participation in the voluntary process for the designation of important agricultural lands (IAL). The designation of IAL reflects the compelling State interest in conserving the State's agricultural land resource base and assuring the long-term availability of agricultural lands for agricultural use.

Having reviewed the petition after consulting with other agencies and the Petitioner, attending the site visit on February 4, 2015, and applying the available information to the applicable IAL law, OP recommends that the Land Use Commission (LUC) designate the Kawaihoa lands as IAL in its entirety, and designate 290 acres of the proposed 421 acres of the Punaluu lands as IAL. The following is provided in support of this recommendation.

Applicable Law. The State law for important agricultural lands is contained within Hawaii Revised Statutes (HRS) §§ 205-41 through 205-44. Lands being considered for IAL designation must meet the definition of IAL pursuant to HRS § 205-42(a), which provides that IAL lands:

- “(1) Are **capable of producing sustained high agricultural yields** when treated and managed according to accepted farming methods and technology;
- (2) Contribute to the State's economic base and **produce agricultural commodities** for export or local consumption; or
- (3) Are **needed to promote the expansion of agricultural activities** income for the future, even if currently not in production.”
(emphases added)

HRS § 205-44(c) lists eight (8) standards and criteria for the identification of IAL, which will be assessed as part of OP's review. OP recognizes that lands identified as IAL need not meet every standard and criteria listed; however, HRS § 205-44(a) also requires that "the designation of important agricultural lands shall be made by weighing the standards and criteria with each other to meet the constitutionally mandated purposes in article XI, section 3, of the Hawaii Constitution and the objectives, policies, standards, and criteria for important agricultural lands in sections 205-42 and 205-43."

Summary of key elements of the petition. The Petitioner is requesting that the LUC issue a declaratory order designating a total of 9,592.05 acres of land at Kawaiiloa and Punaluu, Oahu, Hawaii as IAL. (Refer to Petitioner's Exhibits A-1 and A-2). OP notes that if the petition is approved, the Petitioner waives all rights to any credits that may be earned under HRS § 205-45(h).

Under HRS § 205-49(a)(3), if a majority of a landowner's holdings are approved for designation as IAL (excluding lands in the State Conservation District), then the county is precluded from designating additional acreage as IAL. According to the letter submitted by the Petitioner to OP on February 10, 2015 in response to OP's inquiries, the proposed IAL designation represents approximately 52% of KS' Agricultural and Urban lands on Oahu and approximately 72% of the Petitioner's Agricultural lands on Oahu. (Refer to the attached Exhibit E).

A general description of the petition area is as follows:

- a. The Kawaiiloa lands consist of 9,171.16 acres of land divided into seven Tax Map Key (TMK) parcels. Of the total land area in Kawaiiloa, approximately 722 acres (7.9%) of land are used for diversified agriculture, 297 acres (3.2%) for livestock, and 0.7 acres for koa windbreak. It is unclear from the petition how many tenants are currently leasing the land for agricultural purposes. The upper area is used primarily for renewable energy production, including a 69-megawatt (MW) wind farm consisting of 30 2.3 MW wind turbines. OP notes the Petitioner has also submitted a Special Permit application to the City and County of Honolulu for a 50 MW solar energy facility on a 500-acre portion of the Kawaiiloa lands. The proposed IAL in Kawaiiloa are comprised of the following geographic areas:

	Acres
Kawaiiloa	6,488.50
Opaeula	2,682.66

- b. The Punaluu lands consist of 420.89 acres of land divided into eight Tax Map Key (TMK) parcels. Of the total land area in Punaluu, approximately 120 acres (28.5%)

of land are used for diversified agriculture, 22 acres (5.2%) for livestock, and 11 acres (2.6%) for aquaculture. It is unclear from the petition how many tenants are currently leasing the land for agricultural purposes.

Basis of review and comments. OP's review is based primarily on the petition, petition exhibits, and public data available on the proposed lands. In addition, OP received comments on the petition from the following entities.

- **U.S. Department of Agriculture Natural Resource Conservation Service (USDA-NRCS), Pacific Islands Area Office** (Refer to the attached Exhibit A). The USDA-NRCS letter confirms the Petitioner's Agricultural Lands of Importance to the State of Hawaii (ALISH) designation and discusses the soil properties of the land within the petition area. The USDA-NRCS acknowledges the area does not meet the State (ALISH) or federal (USDA Prime Farmland) criteria for important agricultural lands, however, they recognize the potential benefits of preserving the petitioned IAL as a large block of contiguous land area.
- **State Department of Agriculture (DOA)** (Refer to the attached Exhibit B). The DOA letter discusses several concerns including the limited percentage of land currently in agricultural production, fair to very poor soil qualities in some areas that would not improve in rating if irrigation was available, and land areas in gulches which makes it difficult for agricultural use. Despite these concerns, the DOA would support the IAL designation for the area proposed for the solar energy facility on the Kawaiiloa lands if the Petitioner commits to using a substantial portion of the energy generated by the solar energy facility directly for agricultural purposes, and/or commits to using a substantial portion of the income derived from the selling of electricity to the utility for agricultural activities within the petitioned area.
- **State Department of Land and Natural Resources Commission on Water Resource Management (DLNR-CWRM)** (Refer to the attached Exhibit C). The DLNR-CWRM indicated that it would be helpful to know: (1) the ultimate quantity of water needed for the proposed IAL; (2) the delivery capacity of the existing irrigation systems; and (3) how much water either of these irrigation systems divert from area streams.

Assessment of petition lands. The following assesses the proposed IAL areas relative to the eight (8) standards and criteria for the identification of important agricultural lands established in HRS § 205-44(c).

1. § 205-44(c)(1), Land currently used for agricultural production.

Kawaiiloa

Based on the Petitioner's information, **1,019.7 acres (11.1%) of the Kawaiiloa lands proposed for IAL designation meet this criterion.** It is unclear from the petition how

many tenants are currently leasing the land for agricultural purposes. Table 1 below summarizes the current uses as provided by the Petitioner's information in Exhibit G. In Kawaiiloa, the lands above 600 feet in elevation are used primarily for renewable energy production, including 30 wind turbines, while the lands below 600 feet in elevation are used primarily for agricultural activities. OP notes that sugarcane was historically cultivated throughout the lower and upper lands of Kawaiiloa. The Petitioner's "Current Agricultural Operation" map for Kawaiiloa indicates that diversified agriculture and livestock is currently occurring in the lower lands exclusively, except for a very small portion of upper Opaepa where there is some diversified agriculture. (Refer to Petitioner's Exhibit G, Figure 1A). As noted above, the Petitioner has submitted an application for a State Special Use Permit for a 50 MW solar energy facility on a 500-acre portion of the Kawaiiloa lands. According to the application, the proposed project would occupy approximately 332.3 acres (66.6%) of land rated "B" by the Land Study Bureau (LSB) overall productivity ratings and 37.9 (7.58%) acres rated "C" land. (Refer to the attached Exhibit D). OP notes that neither the petition to designate IAL nor the application for the solar energy facility state whether the power generated by the wind turbines or the solar farm is or will be used for on-site agricultural activities. Instead, the application for the solar energy facility states that "the proposed project involves installation of a...solar energy facility to provide...renewable power to HECO for integration into their electrical distribution system for delivery to customers on the island of Oahu" (p. 4).

OP further notes that, pursuant to HRS § 205-42(b), in order to achieve the objective for the identification of important agricultural lands, the State shall:

- (1) Promote agricultural development and land use planning that delineates blocks of productive agricultural land and areas of agricultural activity for protection from the encroachment of nonagricultural uses; and
- (2) Establish incentives that promote:
 - (A) Agricultural viability;
 - (B) Sustained growth of the agriculture industry; and
 - (C) The long-term agricultural use and protection of these productive agricultural lands.

OP finds that the existing wind turbines and the proposed solar energy facility do not further the State's objective for the identification of IAL because they are non-agricultural activities that do not promote agricultural development, nor do they promote the incentives listed above.

Punaluu

Based on the Petitioner's information, **153 acres (36.4%) of Punaluu lands proposed for designation meet this criterion.** It is unclear from the petition how many tenants are

currently leasing the land for agricultural purposes. Table 2 below summarizes the current uses as provided by the Petitioner’s information in Exhibit G.

The Petitioner’s “Current Agricultural Operation” map for Punaluu (Figure 1B) indicates that diversified agriculture and livestock is currently occurring along the interior of the southern and western boundaries of the petition area. According to the Petitioner, however, some portions of the lands still need to be cleared and are not yet in active production, and according to satellite images, there does not seem to be any agricultural activity in these areas; the land appears to be overgrown or covered by shrubbery or trees. As such, current agricultural operations in Punaluu are unclear. OP recognizes that sometimes these images are not current but OP also notes that these areas do not contain any ALISH rated lands, nor do they contain any productive lands according to the LSB overall productivity ratings. The petition provides ALISH and LSB data in Petitioner’s Exhibit G.

Table 1 Agricultural Use of Kawaioloa Lands Petition Area	
Current Use	Approximate Acres
Diversified Agriculture	722
Livestock	297
Koa windbreak	1
Wind Farm	Unknown
Proposed solar farm	500
Total Acres Used:	1,520
Total Proposed IAL Area:	9,171

Table 2 Agricultural Use of Punaluu Lands Petition Area	
Current Use	Approximate Acres
Diversified Agriculture	120
Livestock	22
Aquaculture	11
Total Acres Used:	153
Total Proposed IAL Area:	421

2. § 205-44(c)(2), Land with soil qualities and growing conditions that support agricultural production of food, fiber, or fuel- and energy-producing crops. The petition provides LSB data in Petitioner's Exhibit G. The petition's LSB information is summarized in Tables 3 and 4 below.

Kawailoa

The proposed lands partially meet this criterion. As illustrated in Table 3 below, LSB ratings show 50.9 percent of the soils are rated "A" and "B", 12.4 percent are rated "C", and 35.9 percent are rated "D" and "E." The soils rated "A" and "B" are primarily located in the lower portion of the petition area, while the soils rated "C," "D," and "E" are primarily located in the upper portion of the petition area. The DOA's comment letter states that the majority of "C", "D", and "E" rated lands in Kawailoa would not improve in rating if irrigation was available; soil rockiness and/or unfavorable slope severely limits agricultural use of these lands (p. 3). As noted above, however, sugarcane was historically cultivated throughout the lower and upper lands of Kawailoa despite the fair to poor LSB soil ratings, indicating that viable agriculture is feasible in this location. The petition areas receives annual rainfall ranging between 65 inches at the higher elevations to 35 inches in the lower lands.

Of the 9,171.16 acres, approximately 2,339.02 acres (25.6%) have slopes equal to or greater than 20 percent. This is relevant to agricultural productivity in that steep slopes typically hinder machinery and labor operations due to geographic features such as ravines, gulches, and steep terrain and poorer soil quality.

OP notes that energy-producing facilities, such as the existing wind turbines and the proposed solar energy facility, are not considered "energy-producing crops". According to the Michigan Biomass Energy Program, energy crops are a type of biomass (Energy Crops and their Potential Development in Michigan, 2002). Biomass is any organic matter which is available on a renewable basis through natural processes or as a by-product of human activity such as agricultural crops and crop residues, wood and wood waste, and portions of the municipal solid waste stream.

Punaluu

The proposed lands partially meet this criterion. The proposed lands are mostly of poor soil quality. As illustrated in Table 3 below, LSB ratings show only 9.4 percent of the soils are rated "B" (no A-rated lands). The soils rated "C," "D," and "E" account for 90.5 percent of the petition area. The DOA's comment letter states that the majority of "D" and "E" rated lands in Punaluu would not improve if irrigation was available (p. 3). The petition area receives a sufficient amount of annual rainfall ranging between 100 inches in the western portion of the petition area to 65 inches in the eastern portion of the petition area.

Of the 420.89 acres, approximately 169.68 acres (40.4%) have slopes equal to or greater than 20 percent, and it is within that area where OP does not observe agricultural activity occurring.

3. § 205-44(c)(3), Land identified under agricultural productivity rating systems, such as the Agricultural Lands of Importance to the State of Hawaii (ALISH) system adopted by the Board of Agriculture on January 28, 1977. The petition provides ALISH and LSB data in Petitioner’s Exhibit G. The petition’s ALISH and LSB information is summarized in Tables 3 and 4 below. LSB ratings were described in the previous section.

Kawailoa

The proposed lands appear to meet this criterion. Under the ALISH system, 63.8 percent of the land is classified as Prime and only 2.2 percent is classified as Other (no Unique lands), while 34 percent is not classified under ALISH. The ALISH Prime lands are located throughout the petition area, although the upper reaches of the petition area are particularly fragmented due to steep gulches. The DOA’s finds that the lands that are not in ALISH are generally consistent with the soils rated “E” by the LSB (DOA, p. 3).

Punaluu

The proposed lands partially meet this criterion. Under the ALISH system, 6.0 percent of the land is classified as Prime and 62.4 percent is classified as Other, while 31.6 percent is not classified under ALISH. The lands that are not in ALISH are generally consistent with the soils rated “E” by the LSB.

LSB Rating	Kawailoa Lands		Punaluu Lands	
	Acres	Percent	Acres	Percent
A (Very Good)	3,034.7	33.1%	-	-
B (Good)	1,632.2	17.8%	39.4	9.4%
C (Fair)	1,134.4	12.4%	146.3	34.8%
D (Poor)	241.5	2.6%	51.9	12.3%
E (Very Poor)	3,054.8	33.3%	183.3	43.5%
Not in LSB	73.5	0.8%	0.0	0.0%
Total:	9,171.2	100.0%	420.9	100.0%

Table 4				
ALISH Rating of Petition Area				
ALISH Rating	Kawailoa Lands		Punaluu Lands	
	Acres	Percent	Acres	Percent
Prime	5,852.3	63.8%	25.2	6.0%
Unique	-	-	-	-
Other	198.6	2.2%	262.5	62.4%
Not ALISH	3,120.3	34.0%	133.1	31.6%
Total:	9,171.2	100.0%	420.9	100.0%

4. § 205-44(c)(4), Land types associated with traditional native Hawaiian agricultural uses, such as taro cultivation, or unique agricultural crops and uses, such as coffee, vineyards, aquaculture, and energy production.

Kawailoa

The proposed lands partially meet this criterion. The Petitioner’s Exhibit H indicates that there are currently no traditional native Hawaiian agricultural uses within the petition area. The wind farm and proposed solar farm are energy production uses.

Punaluu

The proposed lands partially meet this criterion. The Petitioner’s Exhibit I indicates that 11 acres (2.6%) of taro is currently being cultivated within the petition area and 11 (2.6%) acres are being used for aquaculture.

5. § 205-44(c)(5), Land with sufficient quantities of water to support viable agricultural production.

Kawailoa

The proposed lands appear to meet this criterion. The entire petition area includes a network of streams, rivers, irrigation ditches, and pipelines that provide the needed infrastructure to irrigate lower elevation lands. Higher elevation lands are naturally irrigated by rainfall, receiving 50 to 80 inches annually.

The Petitioner has invested approximately \$13 million to restore and repair the operational but aging infrastructure. The majority of this investment has been focused on improving the agricultural water sources and the storage and distribution system to support existing and planned agricultural use.

Punaluu

The proposed lands partially meet this criterion. The Punaluu stream and Punaluu irrigation ditch run through the central portion of the petition area but it is unclear whether there are sufficient quantities of water to support viable agricultural production in the southern and northwestern portions of the petition area. The petition area does receive an average of 65 to 120 inches of rain annually, which is a sufficient amount of natural rainfall.

The Petitioner has invested approximately \$1.5 million to upgrade the agricultural irrigation water sources and distribution system within Punaluu by piping over 5,000 linear feet of the former Punaluu irrigation ditch. It is unclear, however, where the new piping is located within the petition area and whether the southern and northwestern portions of the petition area are affected by the upgrades. The petition also states the Petitioner is undertaking stream restoration work for approximately 87 acres of the Punaluu Stream, which is tentatively targeted for completion in 2017–18.

Both the DOA and the DLNR-CWRM letters state that information on the existing and estimated future irrigation water demands for Kawaihoa and Punaluu, and the available amount of water for irrigation per day, is necessary to determine whether or not lands have sufficient quantities of water to support viable agricultural production. The Petitioner submitted this information to OP via email on February 5, 2015 and it was then forwarded it to the DOA and the DLNR-CWRM for their consideration.

The DOA and the DLNR-CWRM also note that for both Kawaihoa and Punaluu, the Petitioner may need to petition the DLNR-CWRM to amend the interim instream flow standard for any new or fexpanded diversions of surface water (DOA, p. 5).

6. § 205-44(c)(6), Land whose designation as important agricultural lands is consistent with general, development, and community plans of the county.

Kawaihoa

The proposed lands appear to meet this criterion. The Kawaihoa lands are primarily zoned AG-1 Restricted Agriculture by the City and County of Honolulu (City), with a small portion of the lands in the P-1 Restricted Preservation zone. The petition area is also designated as Agriculture under the City's North Shore Sustainable Communities Plan, except for the streams and fringes of the streams which are designated as Preservation.

Punaluu

The proposed lands appear to meet this criterion. The Punaluu lands are primarily zoned AG-1 Restricted Agriculture by the City with small portion of the lands in the Country

zone. OP notes that a small portion of the lands on the eastern side of the petition area is within the City's Community Growth Boundary. Under the City's Koolau Loa Sustainable Communities Plan, the area is mostly designated as Agricultural, except for the streams and fringes of streams which is in Preservation.

City and County of Honolulu's Important Agricultural Lands Phase 1 Study

Regarding the City's Important Agricultural Lands Phase 1 Study, the petition states that nearly all of the proposed IAL in Kawaihoa and Punaluu are highlighted on the City's top three and four priority criteria composite maps as agricultural lands that meet one or more priority criteria. Further examination of this by the City would be helpful.

7. § 205-44(c)(7), Land that contributes to maintaining a critical land mass important to agricultural operating productivity.

Kawaihoa

This criterion is not fully met because of extensive fragmentation of productive areas within the upper lands of Kawaihoa due to steep terrain with slopes greater than 20 percent, gulches, and the fair to poor LSB rated soils as illustrated in Tables 3 and 4 above. See the discussion of slopes above in section § 205-44(c)(2). This criterion does apply to the lower lands, though, where the petitioner identifies "diversified agriculture" as the primary use of the land.

According to the DOA:

"The lower two-fifths of Kawaihoa contains nearly all the "A" and "B" rated land and is relatively unbroken by gulches. Similarly, the makai two-thirds of Opaepala possesses all the "A" and "B" rated lands and is relatively unbroken by gulches. The upper reaches of both Kawaihoa and Opaepala appear to have more land area in gulches which makes it difficult for agricultural use in both areas above the ditch system. Further, the Kawaihoa area is entirely separated from the Opaepala area by Opaepala Gulch." (DOA, p. 5)

Punaluu

The proposed Punaluu lands appear to meet this criterion. While a portion of the proposed IAL are within the Koolau Loa Sustainable Communities Plan Agricultural designation, OP recognizes the stream restoration work the Petitioner is pursuing for approximately 87 acres of the Punaluu Stream to mitigate flood impacts on riparian and coastal ecosystems, minimize disruptions to agricultural activities, enhance use of the stream for educational, community and cultural initiatives, install secondary feeder drainage ditches and relocate the farm access road. OP further recognizes that the

Punaluu Stream is fundamental to the agricultural activities in the area and is appropriate to be included in the petition area.

8. § 205-44(c)(8), Land with or near support infrastructure conducive to agricultural productivity, such as transportation to markets, water, or power.

Kawailoa

The proposed lands appear to meet this criterion with respect to the availability of water for irrigation and proximity and access to roads, markets, and power.

Punaluu

The proposed lands partially meet this criterion with respect to water. As noted above, the Punaluu stream and Punaluu irrigation ditch run through the central portion of the petition area but it is unclear whether there are sufficient quantities of water to support viable agricultural production in the southern and northwestern portions of the petition area. Additionally, it is unclear where the new piping of the former Punaluu irrigation ditch is located within the petition area and whether the southern and northwestern portions of the petition area are affected by the upgrades. With respect to roads and power, however, the proposed lands appear to meet this criterion.

Summary and Recommendation

Based on available information and Petitioner representations, and having weighed the IAL standards and criteria in consideration of the constitutionally-mandated purposes in Article XI, Section 3, of the Hawaii Constitution and the objectives and policies for important agricultural lands in HRS §§ 205-41 through 205-44, OP recommends that the LUC approve the designation of the Kawailoa lands as IAL in its entirety. OP recommends that a portion of the Proposed Punaluu lands, consisting of approximately 290 acres (69%) of the proposed 421 acres, be designated as IAL (as illustrated in the attached Figure 2, and supported by Figure 1), for a total of 9,461 acres of the total proposed 9,592 acres (99%). OP further recommends that a condition of approval be imposed on the petition waiving any and all rights to credits under HRS § 205-45(h), as represented by the Petitioner in its Petition.

Kawailoa

OP supports designating the Kawailoa lands as IAL in its entirety. While the majority of the ALISH Prime lands are in the lower portion of the petition area (below about 600 feet in elevation), the upper portion of the petition area does also contain ALISH Prime lands, although the upper lands are significantly more fragmented. Additionally, while the ditch system serves only the lower lands below 600 feet in elevation, natural rainfall and pumped water irrigate the upper lands, providing sufficient quantities of water to support viable agricultural production in those areas. Sugarcane was also historically cultivated throughout the petition area.

OP does note, however, that the upper lands are punctuated by steep gulches with slopes over 20 percent (as illustrated in the attached Figure 3). As defined in HRS § 205-42(a)(1), important agricultural lands, “are capable of producing sustained high agricultural yields when treated and managed according to accepted farming methods and technology.” Portions of the Kawaihoa lands may not be capable of producing sustained high agricultural yields given the steep terrain and where pasturage may be difficult due to the need to fence the gulches to prevent cattle, sheep, or other grazing animals from entering the ravines. While OP would not typically recommend such areas be designated as IAL, the Petitioner has represented in discussions with OP that the upper lands will be leased for pasture use.

Punaluu

OP supports designating 290 acres of the proposed 420.89 acres of the Punaluu lands as IAL. As illustrated in Figure 2, OP supports the designation of the portion of the Punaluu lands that lies west and north of the 200-foot contour line which also correlates with the demarcation between the lands that have less than and greater than 20 percent slope, an area of approximately 290.02 acres. OP also included the small area of land in the western portion of the petition area which has slopes less than 20 percent, fair soil quality, and appears to be actively farmed. These lands recommended for approval by OP contain a majority of the ALISH Other lands, higher LSB ratings, and are served by the Punaluu stream and Punaluu irrigation ditch. Additionally, the recommended IAL area would be situated mostly on slopes with a gradient of 20 percent or less.

OP does not support designating areas of this property considered less productive agricultural lands due to steep land slopes over 20 percent and overall poor soil qualities under the ALISH and LSB systems. As noted above, important agricultural lands, “are capable of producing sustained high agricultural yields when treated and managed according to accepted farming methods and technology.” Portions of the Punaluu lands would not be capable of producing sustained high agricultural yields given the terrain and soil quality.

Thank you for the opportunity to comment on the Petition. If you have any questions, please contact Mr. Rodney Funakoshi or Ms. Katie Mineo of our Land Use Division.

Attachments

Exhibit A – U.S. Department of Agriculture Natural Resource Conservation Service (USDA-NRCS), Pacific Islands Area Office comment letter dated January 22, 2015

Exhibit B – State Department of Agriculture (DOA) comment letter dated January 29, 2015

Exhibit C – State Department of Land and Natural Resources Commission on Water Resource Management (DLNR-CWRM) comment letter dated January 21, 2015

Exhibit D – Kawaihoa Solar Farm LSB Map, submitted by the Petitioner on December 16, 2014

Exhibit E – Response to Office of Planning’s Inquiries Regarding Kamehameha Schools’ (“KS”) Petition for Declaratory Order to Designate Important Agricultural Lands (the “Petition”); Docket No. DR 14-52 letter dated February 10, 2015

Figure 1 – LUC Docket DR14-52 IAL Kamehameha School - Punaluu Petition Area - Land Slope and Contours

Figure 2 – LUC Docket DR14-52 IAL Kamehameha School - Punaluu Petition Area - 200 ft. Contour and OP’s Recommended IAL Boundary

Figure 3 – LUC Docket DR14-52 IAL Kamehameha School - Kawaihoa Petition Area - 100 ft. Contours and Land Slope



United States Department of Agriculture



January 22, 2015

Leo R. Asuncion
Acting Director
Office of Planning
State of Hawaii
PO Box 2359
Honolulu, Hawaii 96804

Mr. Asuncion:

Thank you for providing the NRCS the opportunity to review the Petition for Declaratory Order to Designate Important Agricultural Lands for the Petitioner Kamehameha Schools, Island of O'ahu, Hawai'i. We have confined our comments to issues within the purview of the USDA Natural Resources Conservation Service, specifically those related to soil properties that are typically used to assess the quality of land for agricultural use.

After analysis of the data provided by the petitioner, we agree with the petitioner regarding the respective designations of the lands as "Prime" or "Other Important Agricultural Land" under the Agricultural Lands of Importance to the State of Hawaii (ALISH; map provided by the LUC report). Exclusion of the areas as ALISH within the petition parcel is likely due to soil areas within the parcel which are categorized as having a high slope (>20%)--which limits traditional mechanized agriculture--or low available water capacity, which requires careful water management, if irrigated. A portion of the area designated as ALISH, with slopes ranging from 20% to 30%, has favorable soil conditions for the production of adapted forages that have grazing potential, but which has limited use in traditional mechanized agriculture.

The ALISH system includes three categories of Important Farmlands: "Prime," "Unique," and "Other Important Agricultural Lands." In considering their quality as agricultural lands, the areas currently classified as ALISH within the Kawailoa petitioned area are predominantly identified as "Prime Farmlands," and--within the Punalu'u petitioned area--are predominantly classified as "Other Important Agricultural Lands". As defined by "Agricultural Lands of Importance to the State of Hawaii Revised" (State Department of Agriculture, November 1977), "Prime Agricultural Land" is:

"...land best suited for the production of food, feed, forage, and fiber crops. The land has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed, including water management, according to modern farming methods."

Natural Resources Conservation Service
Pacific Islands Area
P.O. Box 50004 Rm. 4-118
Honolulu, HI 96850-0050
808-541-2600
An Equal Opportunity Provider and Employer

Designation of Important Agricultural Lands for Kamehameha Schools, Island of O`ahu
January 22, 2015
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The remaining petitioned areas not currently classified as ALISH are generally areas which have either high slopes, or are located along drainageways that tend to be too steep for farming. Although they are not classified as prime, important, or unique under the current ALISH system, most of these areas have the potential to help protect watershed integrity.

Even though all of the land included in the area submitted by the petitioner does not meet either the state (ALISH) or federal (USDA Prime Farmland) criteria for important agricultural lands, USDA-NRCS recognizes the potential benefits of preserving the petitioned IAL as a large block of contiguous land area. Such a contiguous designation could be conducive to environmental protection and healthy integrated resource management.

Please Note: The NRCS Soil Survey is a general planning tool and does not eliminate the need for an onsite investigation. If you have any questions concerning the soils or interpretations for this project, please contact Tony Rolfes, Assistant Director for Soil Science and Natural Resource Assessments, at (808) 541-2600, x119, or by email at Tony.Rolfes@hi.usda.gov.

Sincerely,



CRAIG DERICKSON
Acting Director
Pacific Islands Area

Cc: Bernadette Luncsford, NRCS Pacific Islands Area District Conservationist, Aiea, HI
Tony Rolfes, Assistant Director for Soil Science and Natural Resource Assessments, NRCS Pacific Islands Area State Office, Honolulu, HI
Cheryl Morton, Executive Assistant, NRCS Pacific Islands Area State Office, Honolulu, HI

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January 29, 2015

Mr. Daniel Orodener
Executive Officer
Land Use Commission
235 South Beretania Street, Suite 406
Honolulu, Hawaii 96813

Dear Mr. Orodener:

Subject: Docket No. DR14-52
Petition for Declaratory Order to Designate Important Agricultural Lands in
Kawailoa and Punaluu, Oahu
Tax Map Keys: Kawailoa (9,171.161 acres): 6-1-05: 1(Por.); 6-1-06:
1(Por.); 6-1-07: 1; 6-2-09: 1(Por.); 6-2-10: 1(Por.); 6-2-11: 1(Por.); 6-2-11:
21. Punaluu (420.887 acres): 5-3-01: 41 (Por.); 5-3-03: 1 (Por.); 5-3-04: 5;
5-3-04: 7; 5-3-04- 13; 5-3-04: 18(Por.); 5-3-04: 19; 5-3-07: 23(Por.)
Total Area: 9,592.048 acres

Thank you for the opportunity to comment on this important petition. The Department of Agriculture (DOA) expresses its appreciation to the petitioner for their interest in and effort to identify potential Important Agricultural Lands (IAL). We note that the petitioner is not seeking a reclassification of land pursuant to Section 205-45(b), Hawaii Revised Statutes (HRS) in conjunction with this petition to designate IAL. The petitioner is also voluntarily waiving all rights to claim any credits due pursuant to Section 205-45(h), HRS (Petition, page 23). This is the third IAL petition involving agricultural lands on the island of Oahu and the ninth IAL petition statewide.

In the following, we provide responses to the petitioner's statements as to how the petitioned area meets the eight criteria for identifying IAL (Section 205-44, HRS).



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Land Currently Used for Agricultural Production

Past agricultural production

According to the Agricultural Land Assessment (ALA) found in Appendix G of the petition, the lands of Kawaihoa were used for taro and other various agricultural crops in the 1800's. (ALA, p. 2). Starting in the mid-1800's, sugar cultivation was the primary agricultural crop that was being cultivated by Castle and Cooke and later managed by Waialua Sugar Company. Upon further review by Department staff, sugarcane appears to have been planted throughout Kawaihoa with the exception of the middle section where pineapple also appeared to be cultivated.

Punaluu was also used for taro and other various agricultural crops in the 1800's. (ALA, p. 3). Sugar cultivation was the primary agricultural crop in early 1900's to 1970. Upon further review by Department staff, sugarcane appears to have been planted throughout Punaluu. Taro and pineapple were also produced in smaller quantities. (ALA, p. 3).

Current Agricultural Production

According to the petition, only around 11% of the land in Kawaihoa is currently in agricultural production. Approximately 722 acres (7.8%) of land is utilized for diversified agriculture and include seed corn, banana, taro, papaya, mango, and hydroponic lettuce. (ALA, p. 4). The location of current diversified agricultural production appears to be on the lower half of Kawaihoa (ALA, Figure 1A). Other agricultural uses include approximately 60-80 head of cattle on 297 acres (3%), and 0.7 acres of koa windbreak (Petition, Exhibit H). The livestock use appears to be in the middle of the Kawaihoa area abutting Anahulu Valley (ALA, Figure 1A). All current agricultural uses appear to be on lands that are near existing irrigation infrastructure (ALA, Figure 6A). Approximately 30 wind turbines for electrical generation occupy a portion of the property above 600 feet elevation (Petition, Exhibit H).

According to the petition, around 36% of the land in Punaluu is currently in agricultural production (ALA, p. 5). Approximately 120 acres (29%) of land is utilized for diversified agriculture and include banana, papaya, mango, cucumber, mixed vegetable, taro, and cacao. There also exists approximately 22 acres (5%) of livestock, 11 acres (3%) of aquaculture, and several nurseries. Additional research by Department staff determined that the location of the existing agricultural uses indicated in ALA Figure 1B is generally consistent with the location of past sugarcane cultivation on the land.

Future agricultural production

For Kawaihoa, diversified agriculture will remain the primary focus. (ALA, p. 4). The mauka unirrigated lands are designated for multiple uses consisting of livestock, orchard, forestry and renewable energy (Petition, p. 9). These planned future uses appear to be in consonance with the Moku O Waialua North Shore Plan (Exhibit C, p. 2).

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Petitioner plans to increase renewable energy development by increasing the amount of wind turbines on the land, and is considering a 50MW facility on 500 acres of land which includes sheep grazing. (ALA, p. 4). The DOA notes that according to the Moku O Waialua North Shore Plan, alternative energy development is designated to be located in the eastern region of Kawaiiloa (Exhibit C, p. 2). Petitioner also plans to increase the availability of lands to farmers and provide long term leases (ALA, p. 4).

For Punaluu, diversified agriculture will remain the primary focus (see ALA, Figure 2B). The petitioner's "Punaluu Ahupuaa Plan" (Petition, Exhibit D) states that 175 acres of agricultural use will be added to what we presume to be the existing 133 acres of diversified agriculture, livestock, and aquaculture. This will bring the total area in agriculture to 308 acres, or 73 percent of the petitioned area. Petitioner also plans renovate the agricultural water system in the area, develop an overall agriculture production and land conservation plan, establish longer term leases with tenants, and construct a central agricultural baseyard facility (ALA, p. 5). These planned future uses appear to be in consonance with the Punaluu Ahupuaa Plan (Petition, Exhibit D).

Land with soil qualities and growing conditions that support agricultural production of food, fiber, or fuel- and energy-producing crops

According to the Land Study Bureau's Detailed Land Classification (LSB) for the Island of Oahu, 3,034.663 acres (33.3%) in Kawaiiloa is rated "A", 1,632.211 acres (17.8%) is rated "B", 1,134.423 acres (12.4%) is rated "C", 241.536 acres (2.6%) is rated "D", and 3,054.79 acres (33.3%) is rated "E" (see ALA, Figure 3A). Additional research by Department staff indicates that the majority of "C", "D", and "E" rated lands in Kawaiiloa would not improve in rating if irrigation was available. Soil rockiness and/or unfavorable slope severely limits agricultural use of these lands.

According to the LSB, 39.44 acres (9.4%) in Punaluu is rated "B", 146.313 acres (34.7%) is rated "C", 51.859 acres (12.3%) is rated "D", and 183.257 acres (43.5%) is rated "E" (see ALA, Figure 3B). Additional research by Department staff indicates that the majority of "D" and "E" rated lands in Punaluu would not improve if irrigation was available. The majority of "C" rated lands in Punaluu is already irrigated.

Lands identified under agricultural productivity ratings systems, such as the Agricultural Lands of Importance to the State of Hawaii (ALISH) system adopted by the Board of Agriculture on January 28, 1977

According to the Agricultural Lands of Importance to the State of Hawaii (ALISH) classification system, the Kawaiiloa site is comprised of 5,852.319 acres (63.8%) in "Prime", 198.572 acres (2.2%) is in "Other Important", and 3,120.27 acres (34%) is not classified according to ALISH (see ALA, Figure 5A). The lands in Kawaiiloa that are not in ALISH are generally consistent with the lands designated as "E" by the LSB.

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For the Punaluu site, 25.243 acres (6%) is in "Prime", 262.547 acres (62.4%) is in "Other Important", and 133.097 (31.6%) is not classified according to ALISH (see ALA, Figure 5B). Some of lands in Punaluu that are not in ALISH are not consistent with the lands designated as "E" by the LSB.

Land types associated with traditional native Hawaiian agricultural uses, such as taro cultivation, or unique agricultural crops and uses, such as coffee, vineyards, aquaculture, and energy production

The Kawaihoa and Punaluu areas have been historically associated with traditional native Hawaiian agricultural uses. In Kawaihoa, archaeological surveys indicate that traditional native Hawaiian agricultural uses were limited to the lower lands and gulches, while the upper table lands did not exhibit any traditional sites (Petition, p. 14). Historic native Hawaiian uses included taro pond fields, water courses/ditches, and dry planting fields for cultivation of taro, awa, hala, ipu, kukui, koa, banana, sugarcane, sweet potato, and wauke (Petition, p. 14).

In Punaluu, archaeological surveys and cultural impact assessments indicated that traditional native Hawaiian uses were prevalent in (Petition, p. 15). Historic native Hawaiian uses include taro pond fields, water courses/ditches, and dry planting fields for cultivation of taro, awa, hala, ipu, kukui, koa, banana, noni, olona, sweet potato, and wauke (Petition, p. 15). Approximately 11 acres (Petition, Exhibit I) is currently being used to cultivate taro, and approximately 11 acres is in aquaculture (ALA, p. 5).

Lands with sufficient quantities of water to support viable agricultural production

Along with good quality soil, a reliable and sufficient supply of irrigation water is critical for maximal agricultural production. Irrigation water should be available in a quantity that meets the maximum daily demand over a sustained period of time which usually occurs during the summer months. Information on the location and total acreage of irrigated lands, the existing and estimated future irrigation water demands, and the available amount of water for irrigation per day is necessary to determine whether or not lands have sufficient quantities of water to support viable agricultural production.

The existing irrigation system services all of the southern portion (Opae'ula) of the Kawaihoa area, but only services approximately 2/5ths of the makai half of the northern portion (Kawaihoa). The irrigation system in Kawaihoa connects Waimea River, Ka'alaea Stream, Kawaihoa Stream, Laniakea Stream, and Anahulu River with ditches, pipelines and reservoirs (see ALA, Figure 6A). Petitioner plans to maintain and fix aging irrigation infrastructure and has recently expended over \$13 million to improve agricultural water resources for current and planned future irrigation needs (ALA, p. 7). Kawaihoa receives between 35 to 80 inches of rain per year (see ALA, Figure 6A).

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The petition states that the proposed IAL lands in Punaluu are primarily irrigated by the Punaluu Stream and ditches that are connected to the stream. Petitioner has upgraded the existing water system by piping over 5,000 linear feet of the former Punaluu irrigation ditch (ALA, p. 8). Petitioner states that from 2009 to 2014, approximately \$1.5 million has been invested in upgrading the irrigation system in Punaluu, and plans to invest another \$5 million for stream restoration work (ALA, p. 8). Punaluu receives between 65 to 120 inches of rain per year.

The DOA notes that for both the Kawaihoa and Punaluu areas, the petitioner may need to petition the Commission on Water Resource Management to amend the interim instream flow standard for any new or expanded diversions of surface water.

Land whose designation as Important Agricultural Lands is consistent with general, development, and community plans of the County

The petition area is fully within the State Agricultural District. The Kawaihoa area is zoned as AG-1 (Restricted Agriculture) by the City and County of Honolulu, and the Punaluu area is zoned as AG-2 (General Agriculture). The Kawaihoa area is primarily designated as Agricultural in the North Shore Sustainable Communities Plan, except for the streams and fringes of the streams which are designated as Preservation. The Punaluu area is largely designated as "Agricultural" in the Koolau Loa Sustainable Communities Plan, except for the streams and fringes of streams which is in Preservation. The Punaluu lands appears to abut the Urban District on the makai edges of the petition area.

Land that contributes to maintaining a critical land mass important to agricultural operating productivity

The Kawaihoa/Opaepala area (9,171.161 acres) has a history of sugarcane and pineapple cultivation on the lands that were level enough to support agricultural activity. The lower two-fifths of Kawaihoa contains nearly all the "A" and "B" rated land and is relatively unbroken by gulches. Similarly, the makai two-thirds of Opaepala possesses all the "A" and "B" rated lands and is relatively unbroken by gulches. The upper reaches of both Kawaihoa and Opaepala appear to have more land area in gulches which makes it difficult for agricultural use in both areas above the ditch system. Further, the Kawaihoa area is entirely separated from the Opaepala area by Opaepala Gulch. We note what appears to be a large number of kuleana properties within the Gulch. With the exception of Drum Road on the mauka edge of both areas, there are no roadways connecting Kawaihoa and Opaepala.

The petitioner's "North Shore Plan – Paalaa to Kapaeloa" states that the upper reaches of Kawaihoa and Opaepala are to be used for "Establish alternative energy uses" such as solar energy, wind, and hydro-power (Petition, Exhibit C), and leaves the lower lands for diversified agriculture. There are 30 wind turbine operating in upper Kawaihoa, on

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plateaus between the gulches. Given the agricultural history and the land use plan for Kawaihoa/Opaeula, the "critical land mass" criterion would clearly apply to the lower elevations where the petitioner identifies "Diversified Agriculture" as the primary use of the land (Petition, Exhibit C).

The Punaluu area (420.887 acres) appears to have been the eastern terminus of the former Kahuku Plantation Company. Unlike the Kawaihoa/Opaeula site, Punaluu has a substantial acreage classified as Preservation along the branches of the Punaluu Stream, according to the Koolauloa Sustainable Communities Plan (Petition, Exhibit G, Figure 7B). The property also abuts the Urban District along the makai edge (Petition, Exhibit G, Figure 8B). The current agricultural operations (Petition, Exhibit G, Figure 1B) is largely verified by recent satellite imagery. There appears to be agricultural activity in lands adjacent and to the northwest of the Punaluu site. There is a relatively steep area along the southern boundary that forms an arc.

The petitioner's "Punaluu Ahupuaa Plan" (Petition, Exhibit D) states that 175 acres of agricultural use will be added to what we presume to be the existing 133 acres of diversified agriculture, livestock, and aquaculture. This will bring the total area in agriculture to 308 acres, or 73 percent of the petitioned area. The Punaluu stream is fundamental to the agricultural activities in the area and is appropriate to be included in the petition. Given the agricultural history and the agricultural land use plan for the Punaluu site, the "critical land mass" criterion would to most of the petitioned area.

Land with or near support infrastructure conducive to agricultural productivity, such as transportation to markets, water, or power

Kawaihoa is near Kamehameha Highway and Haleiwa Village. In the future, petitioner plans to increase the residential and commercial areas in Haleiwa Village. (Petition, Exhibit C). The service area for the existing irrigation system in the northern Kawaihoa area (Kawaihoa) appears to be limited to approximately 2/5ths of the makai half of the proposed designation.

CONCLUSION

The DOA supports the majority of the petitioner's request to have 9,592 acres of agricultural land in the Kawaihoa/Opaeula and Punaluu areas designated as Important Agricultural Land.

In the Kawaihoa/Opaeula site, the petitioner's plan for the eastern part of the property is to undertake alternative energy uses such as wind, hydro, and solar energy. Specifically, the petitioner states that 500 acres will be set aside for a 50MW solar energy facility with compatible sheep grazing. This area is also the most poorly suited to agricultural use because of the numerous gulches, poorer soil quality, and lack of

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supplemental irrigation water supply. Further, we do not recall any other request for IAL designation that included acreage for a utility-scale solar energy facility.

Notwithstanding our concerns, if the petitioner confirms and commits to using a substantial portion of the energy generated by the proposed solar energy facility directly for agricultural purposes, and/or confirms and commits to using a substantial portion of the income derived from the selling of electricity to the utility for agricultural activities within the petitioned area, the Department would support IAL designation for the area proposed for the solar energy facility as described in the petition (Exhibit C, "Plan Map and Projects").

Also for the Kawaihoa/Opaeula site, the petitioner should provide the Commission with information showing that the irrigation water system and improvements will provide a quantity of irrigation water sufficient to maintain plant and animal health during dry periods.

In the Punaluu site, there appears to be abundant irrigation water supply, fairly productive soils, and 120 acres of existing diversified agricultural activities. We note from Exhibit I of the petition that there is existing agricultural activity on some of the LSB "E" rated land that is also not classified by the Agricultural Lands of Importance to the State of Hawaii. There appears to be agricultural land to the north of the petitioned area that are in crop production. The Department believes that the Punaluu site, in its entirety, should be designated as IAL.

Sincerely,



Scott E. Enright, Chairperson
Board of Agriculture

c: Office of Planning

DAVID Y. IGE
GOVERNOR OF HAWAII



CARTY S. CHANG
ACTING CHAIRPERSON

DENISE ANTOLINI
KAMANA BEAMER
MICHAEL G. BUCK
MILTON D. PAVAO
VIRGINIA PRESSLER, M.D.
JONATHAN STARR

WILLIAM M. TAM
DEPUTY DIRECTOR


STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

P.O. BOX 621
HONOLULU, HAWAII 96809

January 21, 2015

REF: RFD.4113.3

TO: Leo R. Asuncion, Acting Director
Office of Planning

FROM: William M. Tam, Deputy Director 
Commission on Water Resource Management

SUBJECT: Petition for Declaratory Order to Designate IAL LUC Docket No. DR14-52, Kamehameha Schools

FILE NO.: P-14612

TMK NO.: 9,171.161 acres at Kawailoa, Oahu identified by TMK Nos. (1) 6-1-005: 001 (por.); 6-1-006: 001 (por.); 6-1-007: 001; 6-2-009: 001 (por.); 6-2-010: 001 (por.); 6-2-011: 001 (por.); 6-2-011: 021 and approximately 420.887 acres at Punaluu, Oahu identified by TMK Nos. (1) 5-3-001: 041 (por.); 5-3-003: 001 (por.); 5-3-004: 005; 5-3-004: 007; 5-3-004: 013; 5-3-004: 018 (por.); 5-3-004: 019; 5-3-007: 023 (por.)

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://www.hawaii.gov/dlnr/cwrn>.

Our comments related to water resources are checked off below.

- 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/lead>. A listing of fixtures certified by the EPA as having high water efficiency can be found at <http://www.epa.gov/watersense/>.
- 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://hawaii.gov/dbedt/czm/initiative/lid.php>.
- 6. We recommend the use of alternative water sources, wherever practicable.

DRF-IA 03/20/2013

Leo R. Asuncion, Acting Director
 Page 2
 January 21, 2015

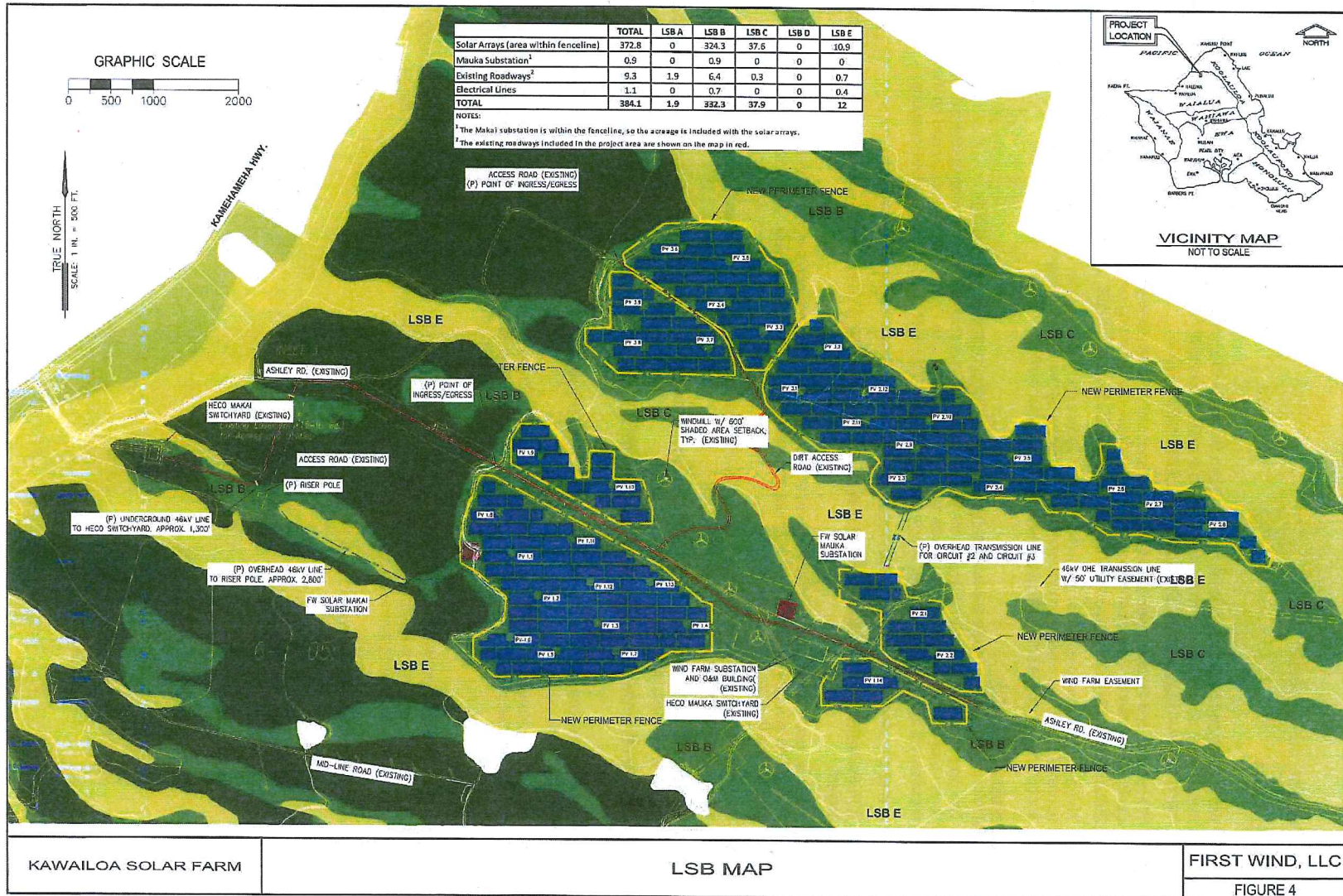
- 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at <http://energy.hawaii.gov/green-business-program>
- 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf
- 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:

Additional information and forms are available at http://hawaii.gov/dlnr/cwrn/info_permits.htm.

- 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- 11. A Well Construction Permit(s) is (are) required before any well construction work begins.
- 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 14. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.
- 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.
- 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- OTHER:
 It would be good to know the ultimate quantity of water needed for the proposed IAL and the delivery capacity of the existing irrigation systems. Also, we don't know how much water either of these irrigation systems divert from area streams.

If there are any questions, please contact Neal Fujii at 587-0216.



ca des schutte

a limited liability law partnership

February 10, 2015

Calvert G. Chipchase
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U.S. MAIL AND EMAIL (VIA BRYAN.C.YEE@HAWAII.GOV)

Mr. Bryan Yee
Office of Planning
P.O. Box 2359
Honolulu, Hawai'i 96804-2359

Re: Response to Office of Planning's Inquiries Regarding Kamehameha Schools' ("KS") Petition for Declaratory Order to Designate Important Agricultural Lands (the "Petition"); Docket No. DR 14-52

Dear Mr. Yee:

This letter is in response to the inquiries set forth in your January 29, 2015 email regarding the Petition. The proposed important agricultural lands ("IAL") designation represents approximately 52% of KS' agriculture and urban lands on O'ahu and approximately 71.5% of KS' agriculture lands on O'ahu. In response to inquiries 1.a and 4, a copy of the GIS shapefile map of KS' lands on O'ahu and the Kawailoa Solar Farm project is enclosed herewith.

- **How many acres are in each of the land use districts?**

On O'ahu, KS has approximately 13,404 acres of agriculture lands, 4,834 acres of urban lands, and 30,364 acres of conservation lands. These areas were calculated using GIS. The difference between the current figures and the figures listed in KS' 2008 Strategic Agricultural Plan are the result the condemnation of land in Halawa Valley and the use of real property tax classifications instead of State Land Use District classifications for Kawailoa when the Strategic Agricultural Plan was prepared.

- **How many acres in the State Agricultural District are ALISH rated?**

KS has approximately 7,503 acres of land designated as ALISH rated (Prime = 6,642 acres; Other = 861 acres) on O'ahu. KS is proposing to designate approximately 5,878 acres of Prime and 461 acres of Other as IAL.

CS

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Brian Yee
February 10, 2015
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- **How many acres in the State Agricultural District are designated as LSB A or B?**

KS has approximately 3,478 acres of land designated LSB A and 1,883 acres of land designated LSB B in the State Agricultural District on O'ahu. KS is proposing to designate approximately 3,035 acres of LSB A lands and approximately 1,672 acres of LSB B lands as IAL.

- **How many acres are in the State Agricultural District and designated as either ALISH or LSB A or B?**

On O'ahu, KS has approximately 7,806 acres of land designated as either ALISH or LSB A or B. KS is proposing to designate approximately 6,512 acres of these lands as IAL.

- **Provide updated information of the actual current uses in occurring along the interior of the southern and western boundaries of the Punalu'u petition area.**

Currently, the area along the interior of the southern boundary of the Punalu'u area proposed for IAL designation is used for cattle grazing. The area along the western boundary is used for diversified agriculture under agreements with farmers who grow fruits, vegetables, orchard crops and ornamental flowers. Some portions of their lands still need to be cleared and are not yet in active production. Other parcels remain available, and KS is actively seeking farmers for them.

- **What is KS' best estimate as to the quantity of water needed for the entire proposed IAL?**

The answer to this question varies depending on the type of crop cultivated. Currently, water demand for Kawaihoa ranges between 1.0 and 1.5 mgd while the water demand for Punalu'u ranges between 1.5 and 2.5 mgd.

- **What is KS' best estimate as to the delivery capacity of the existing irrigation systems?**

Kawaihoa. The water system for the irrigated area (below Ditch B) has a capacity of 6.0 mgd and the system has the ability to service roughly 2,400 acres of planned cultivated lands. There is sufficient annual rainfall to support pasture, orchards, and forestry uses for the unirrigated areas (above Ditch B). In addition, irrigation water could be pumped to higher elevations to service portions of the unirrigated areas.

Punalu'u. The Punalu'u water system has a design capacity of 4.5-5.0 mgd and serves approximately 28 users on approximately 174 acres. The total area serviced will likely change following completion of the stream restoration project. Punalu'u also receives a significant amount of annual rainfall.

Brian Yee
February 10, 2015
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- **What is KS' best estimate as to the amount of water these irrigation systems currently divert from area streams?**

Kawailoa. The diverted water from various streams is approximately 3.5 to 5.0 mgd. In addition to the diverted surface water sources, there are two groundwater wells that have a permitted pump capacity to deliver an additional 3 mgd.

Punalu'u. All irrigation water for the Punalu'u area proposed for IAL designation comes from the Punalu'u stream diversion.

Please do not hesitate to contact me should you have any further questions.

Very truly yours,



Calvert G. Chipchase






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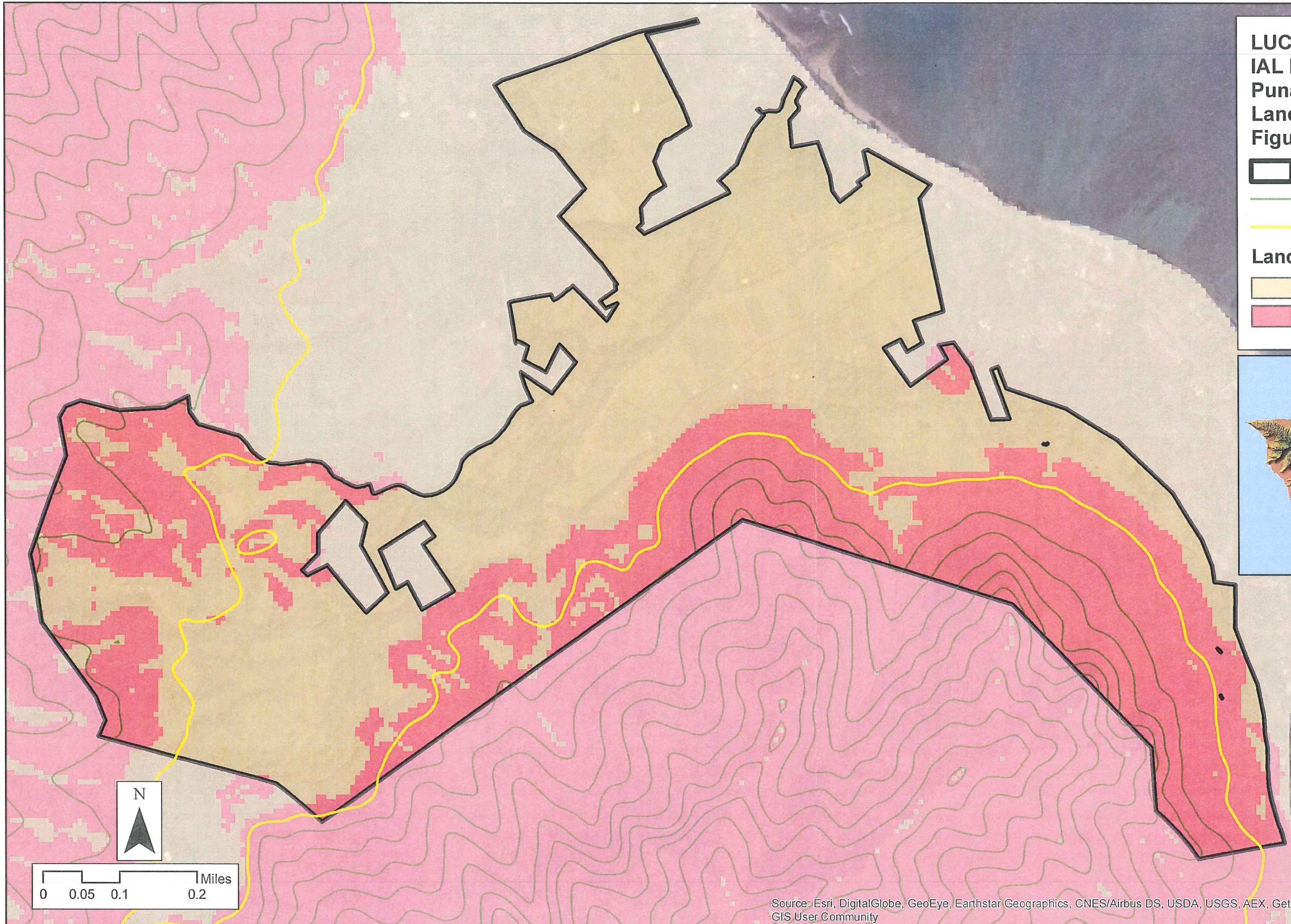
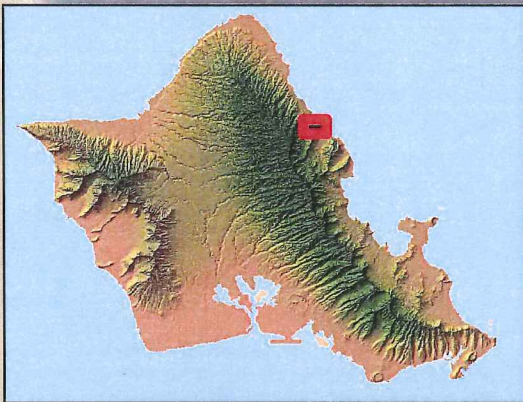
CADES SCHUTTE

A Limited Liability Law Partnership

Enclosure






**LUC Docket DR14-52
IAL Kamehameha Schools
Punaluu Petition Area
Land Slope and Contours
Figure 1**

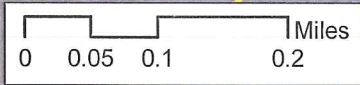
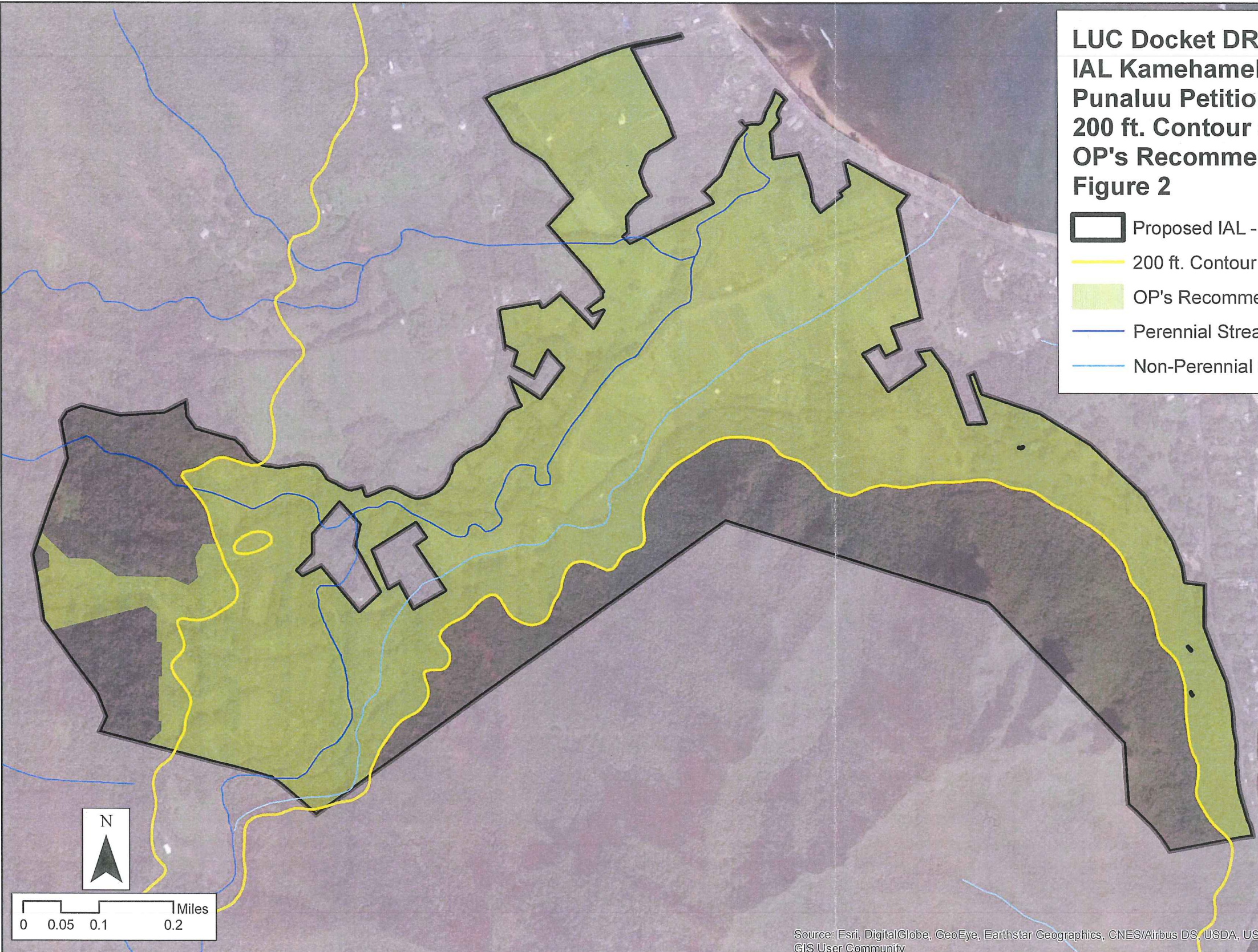
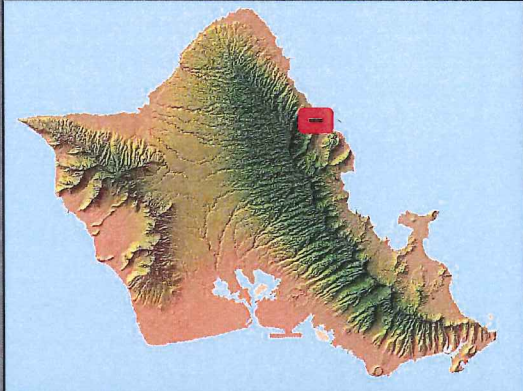
-  Proposed IAL - Punaluu
-  100 ft. Contours
-  200 ft. Contour
- Land Slope**
-  0 - 20%
-  20 - 40%



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



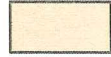

**LUC Docket DR14-52
IAL Kamehameha Schools
Punaluu Petition Area
200 ft. Contour and
OP's Recommended IAL Boundary
Figure 2**

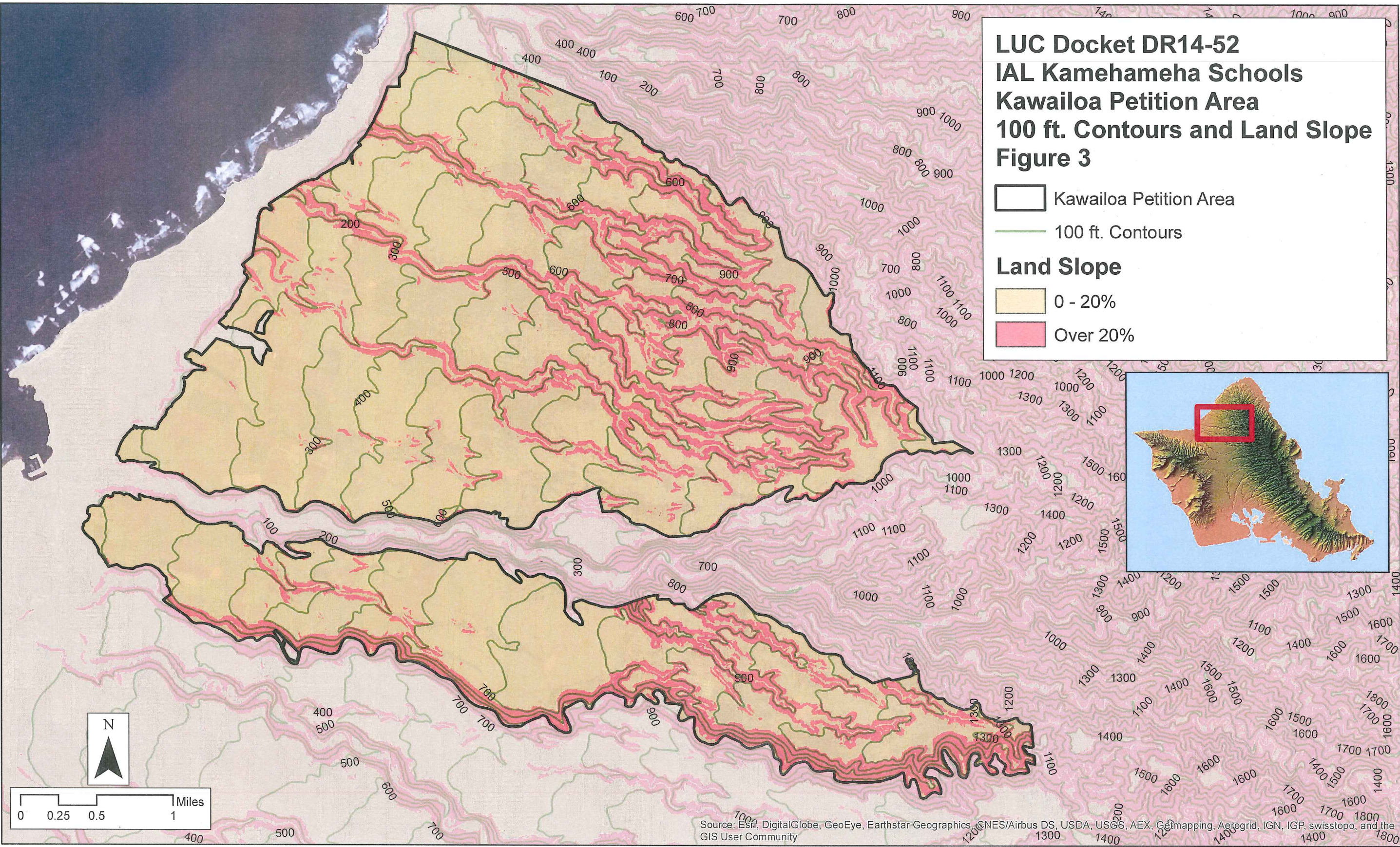
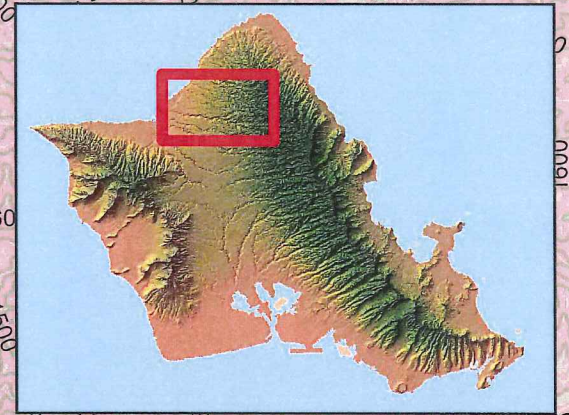
-  Proposed IAL - Punaluu
-  200 ft. Contour
-  OP's Recommended Boundary Area (290.02 acres)
-  Perennial Streams
-  Non-Perennial Streams



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

**LUC Docket DR14-52
IAL Kamehameha Schools
Kawailoa Petition Area
100 ft. Contours and Land Slope
Figure 3**

-  Kawailoa Petition Area
-  100 ft. Contours
- Land Slope**
 -  0 - 20%
 -  Over 20%



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Geomatics, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community