

**Agricultural Land Assessment**  
**For**  
**Monsanto Company's**  
**Proposed Important Agricultural Land**  
**Island of O'ahu**

Prepared for:



Prepared by:



September 7, 2017



**Agricultural Land Assessment for Monsanto Company's  
Proposed Important Agricultural Land, Island of O'ahu**

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Proposed Important Agricultural Land, Island of O'ahu**

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# Agricultural Land Assessment for Monsanto Company's Proposed Important Agricultural Land, Island of O'ahu

## 1. Introduction/Purpose

This Agricultural Lands Assessment: 1) is prepared in support of a Petition for Declaratory Order to Designate Important Agricultural Lands (IAL) for land on O'ahu owned by Monsanto Company (Monsanto); 2) provides an overview of various agricultural and other characteristics of the land that Monsanto proposes to designate as IAL.

### Monsanto's O'ahu Land and Proposed IAL Designation

Monsanto owns approximately 2,150.640 acres of land on O'ahu. Specifically, Monsanto's O'ahu land is in Kunia, west of Kunia Road and north of the Lili'uokalani Freeway (Interstate H-1). The land is approximately three miles north-northwest of Pearl Harbor and 14 miles northwest of downtown Honolulu.

Monsanto proposes to designate approximately 1,550 acres (72 percent) of its total O'ahu land as IAL. The remaining approximately 600 acres (28 percent) is not proposed to be designated IAL at this time.

Throughout this report the term:

- "Kunia Land" refers to Monsanto's total O'ahu land
- "Property" refers to the land Monsanto proposes to designate as IAL
- "Remainder Land" refers to the land that Monsanto is not proposing to be designated as IAL

The table below shows the Tax Map Key (TMK) number of each parcel Monsanto owns on O'ahu, the area of each parcel, the area of each parcel proposed to be designated IAL, and the area of each parcel that is not proposed to be designated as IAL.

Tax Map Key Parcel No.	Total Acres (Kunia Land)	IAL Acres <sup>1</sup> (the Property)	Non-IAL Acres (the Remainder Land)
1-9-2-001:001 Lot A Net Area	1,691.639	1112.458	579.181
1-9-2-001:001 Lot B	21.254	0.000	21.254
1-9-2-001:005	0.392	0.392	0.000
1-9-2-001:016 (Lot 16851-A-2)	0.205	0.000	0.205
1-9-2-004:009	437.150	437.150	0.000
<b>Total</b>	<b>2,150.640</b>	<b>1,550.000</b>	<b>600.640</b>
<b>Percentage of Total</b>		<b>72%</b>	<b>28%</b>

Figure 1 shows the TMK parcels and indicates the area of each parcel proposed to be designated IAL by highlighting in yellow.

<sup>1</sup> For TMK 1-9-2-001:001 Lot A, the proposed IAL area is a portion of the parcel and thus the IAL area is approximated based on Geographical Information Systems (GIS) mapping.

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
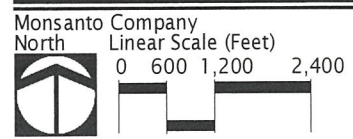
-  Monsanto Property ("Kunia Land")
-  Proposed IAL ("Property")
-  Owned by Others

Figure 1

TMK Parcels and Proposed IAL

# Monsanto IAL



Source: State of Hawaii. City & County of Honolulu. ESRI Basemaps.  
Disclaimer: This graphic has been prepared for general planning purposes only.

# Agricultural Land Assessment for Monsanto Company's Proposed Important Agricultural Land, Island of O'ahu

## Standards and Criteria to Identify IAL

Hawaii Revised Statutes (HRS) §205-44(c) provides standards and criteria to identify IAL. HRS §205-44(a) provides that lands identified as IAL need not meet every standard and criteria, but rather, lands meeting any of the criteria shall be given initial consideration, provided that the designation of IAL shall be made by weighing the standards and criteria with each other to meet: 1) the constitutionally mandated purposes in Article XI, Section 3, of the Hawaii Constitution; and 2) the objectives and policies for IAL set forth in HRS §205-42 and HRS §205-43.

The standards and criteria to identify IAL set forth in HRS §205-44(c) are:

- 1) *Land currently used for agricultural production;*
- 2) *Land with soil qualities and growing conditions that support agricultural production of food, fiber, or fuel-and energy-producing crops;*
- 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;*
- 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;*
- 5) *Land with sufficient quantities of water to support viable agricultural production;*
- 6) *Land whose designation as important agricultural lands is consistent with general, development and community plans of the county;*
- 7) *Land that contributes to maintaining a critical land mass important to agricultural operation productivity;*
- 8) *Land with or near support infrastructure conducive to agricultural productivity, such as transportation to markets, water or power.*

The information in this assessment is provided to demonstrate that the Property is consistent with the standards and criteria to identify IAL as set forth in HRS §205-44(c).

## 2. Agricultural Use History

The Property has been in agricultural production for approximately 120 years. In 1877, James Campbell purchased 41,000 acres of land on O'ahu in 'Ewa and Honouliuli (the Property is in the Honouliuli ahupua'a). In 1889, Campbell leased the Honouliuli land to Benjamin Dillingham, who formed the O'ahu Sugar Company and began sugar operations in 1897.

O'ahu Sugar Company operations continued until 1995, when all sugar cultivation ceased. However, in the mid-1980s, O'ahu Sugar Company had subleased a portion of the Kunia Lands (including a portion of the Property) to Garst Seed Company for seed production.

After O'ahu Sugar Company ceased operations in 1995, portions of the Property were leased to: 1) Del Monte Fresh Produce (Hawaii), Inc, (Del Monte) for pineapple cultivation; 2) Sugarland

## **Agricultural Land Assessment for Monsanto Company's Proposed Important Agricultural Land, Island of O'ahu**

Farms (Larry Jeffs) for vegetable production; 3) Zeneca Inc., doing business as ICI Seeds, as assigned to Syngenta Seeds, LLC, for seed production (Garst Seed had by that time been become part of Zeneca Inc.); and 4) at least one tenant(s) for cattle ranching.

Monsanto acquired the Kunia Land (including the Property) in 2007 and has since used the Kunia Land (including the Property) for agricultural production. Until May of 2017, Syngenta Seeds, LLC leased a portion of the Property for seed production. Currently, Monsanto has two tenants who use portions of the Property for cattle ranching.

### **3. Current and Future Agricultural Operations**

All of the Property is currently in active agricultural production. Approximately 1,158 acres, or 75 percent of the Property is in active crop production on a year-round basis. Of this, approximately 95 percent of the fields are planted with seed corn and the remaining five percent of the fields are planted in soybeans. Each field is used to produce one seed corn or soybean crop per year. Approximately one-third of the fields on the Property are planted at any given time. This allows for year-round crop production with up to three crops per year. During the period between seed corn or soybean production, the fields are planted with cover crops for conservation and crop rotation purposes. Currently, the cover crops used on the Property are a combination of sunflowers, sunn hemp (legume), mustards, buckwheat, flax, clover, guar, and spring lentils. Figure 2 shows the crop production areas on the Property.

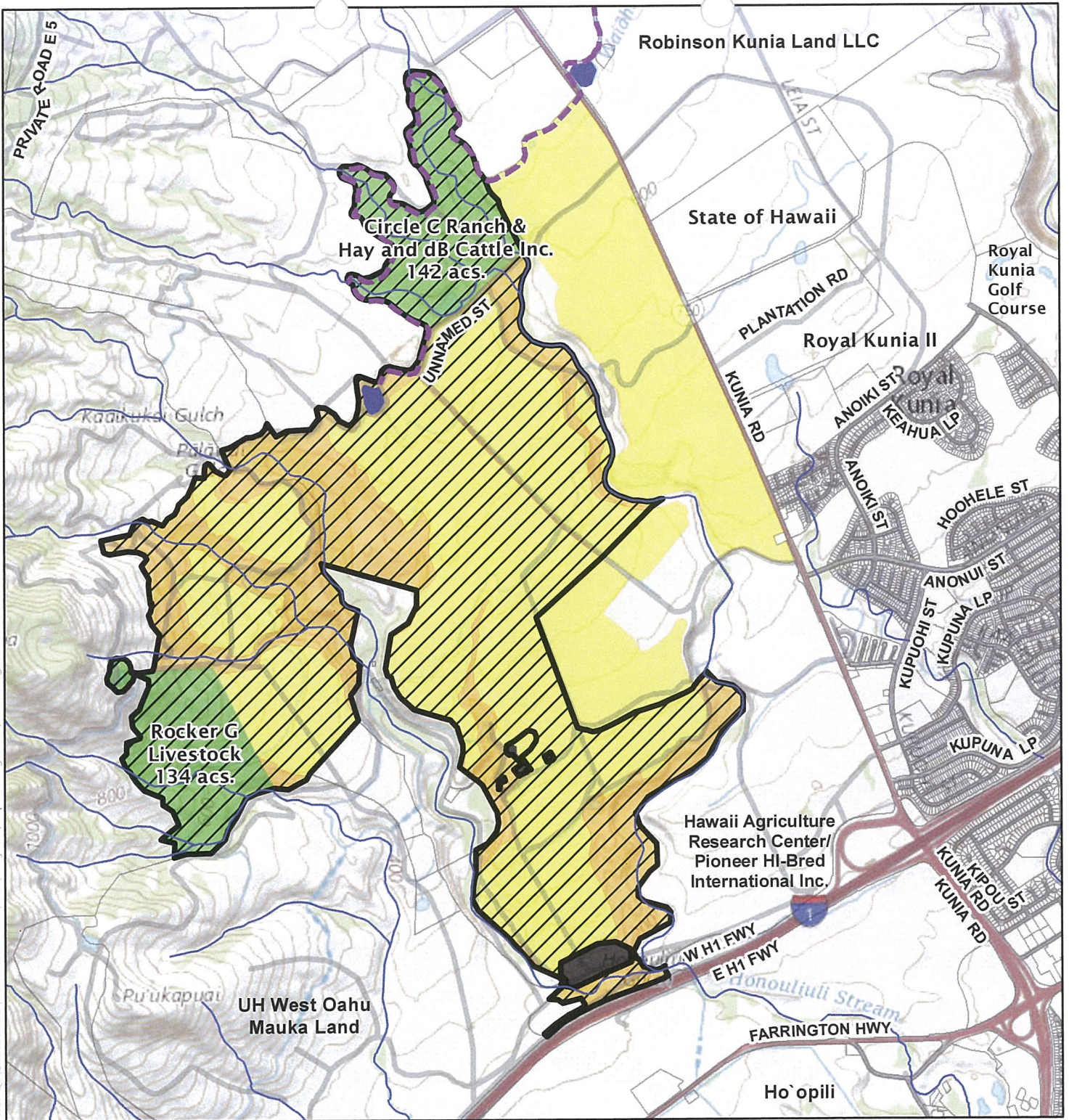
Monsanto's agriculture operations include a comprehensive conservation plan developed in conjunction with the United States Department of Agriculture's Natural Resource Conservation Service, with a goal of soil and water conservation. This plan includes the use of vegetative terraces established across slopes to slow and divert rain water runoff, grassed waterways to channel rain water runoff and slow its flow rate, and sediment basins. In addition, the plan includes use of drip irrigation, cover crops, windbreaks and other tillage and dust mitigation measures. Monsanto's agriculture practices emphasize sustainability, soil and water conservation, and best management practices (Monsanto Hawaii, 2016).

On portions of the Property that are either too steep or otherwise unsuitable for row planted agricultural production (approximately 276 acres, or 18 percent of the Property) Monsanto leases these areas to two tenants for cattle ranching operations (see areas on Figure 2 labeled "Rocker G Livestock" and "Circle C Ranch & Hay and dB Cattle Inc.").

One tenant, H.E. Bud Gibson, doing business as "Rocker G. Livestock" leases approximately 134 acres of the Property for cattle grazing. Depending upon weather and other conditions, Mr. Gibson grazes cattle for anywhere between three and six months per year and has approximately 70 cattle on the Property at a given time. However, he runs a total of approximately 415 head of cattle on 3,000 acres of land, including the portion leased from Monsanto, and adjacent lands not owned by Monsanto. Rocker G. Livestock's lease is on a month-to-month tenancy. However, Rocker G. Livestock has been occupying that of the Property since at least 2006, if not before that time.



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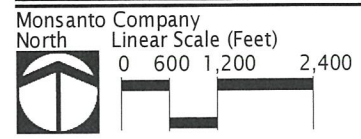
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- |  |                   |  |   |
|--|-------------------|--|---|
|  | Proposed IAL      |  | Crop Production   |
|  | Owned by Others   |  | Cattle Ranching   |
|  | TMK Parcels       |  | Other (agricultural infrastructure, soil conservation, gulch) |
|  | Reservoirs        |  |   |
|  | Waiahole Ditch    |  |   |
|  | Streams / Gulches |  |   |
|  | Roads             |  |   |

Figure 2

Agricultural Areas

**Monsanto IAL**



Source: Monsanto Hawaii (2017). State of Hawaii. City & County of Honolulu. Disclaimer: This graphic has been prepared for general planning purposes only.

## Agricultural Land Assessment for Monsanto Company's Proposed Important Agricultural Land, Island of O'ahu

The other tenant, Circle "C" Ranch & Hay Co., Inc. and dB Cattle Inc., has a year-round cattle ranching operation on approximately 142 acres of the Property. This operation has approximately 40 cattle on Property at a given time. Circle C Ranch & Hay Co., Inc. is on a year-to-year lease, with the current term expiring on December 31, 2018. Monsanto expects to extend Circle "C" Ranch & Hay Co., Inc. and dB Cattle Inc.'s lease so that the cattle ranching operation will continue after December 31, 2018.

The balance of the Property (approximately 116 acres, or seven percent) consists of water infrastructure (such as detention basins, berms, and filter strips), roads, soil conservation measures, and gulch land. All of this area is important to, and used, in relation to the agricultural uses on the Property. Of this land, approximately 2,500 square feet is occupied by the United States Geological Survey of the Department of the Interior for stream monitoring.

The table below summarizes the agricultural uses on the Property:

<b>Agricultural Use</b>	<b>Acres</b>	<b>Percent</b>
Crop Production	1,158	75%
Cattle Ranching	276	18%
Other (agricultural infrastructure, soil conservation, gulch)	116	7%
<b>Total</b>	<b>1,550</b>	<b>100%</b>

Figure 2 shows the areas of the Property used for crop production, cattle ranching, and agricultural infrastructure, soil conservation, and gulch land. Figure 3 shows the Property topography; areas with relatively gentle grades are used for crop production, areas that are either too steep or otherwise unsuitable for row planted agricultural production are used for cattle ranching, and areas with steeper slopes are used for soil conservation measures or are gulch land. The areas with steeper slopes are relatively minimal and are important parts of the overall Property for soil conservation and cohesion and continuity of agricultural uses across the Property. Figure 3 also shows streams through or adjacent to the Property and in the area.

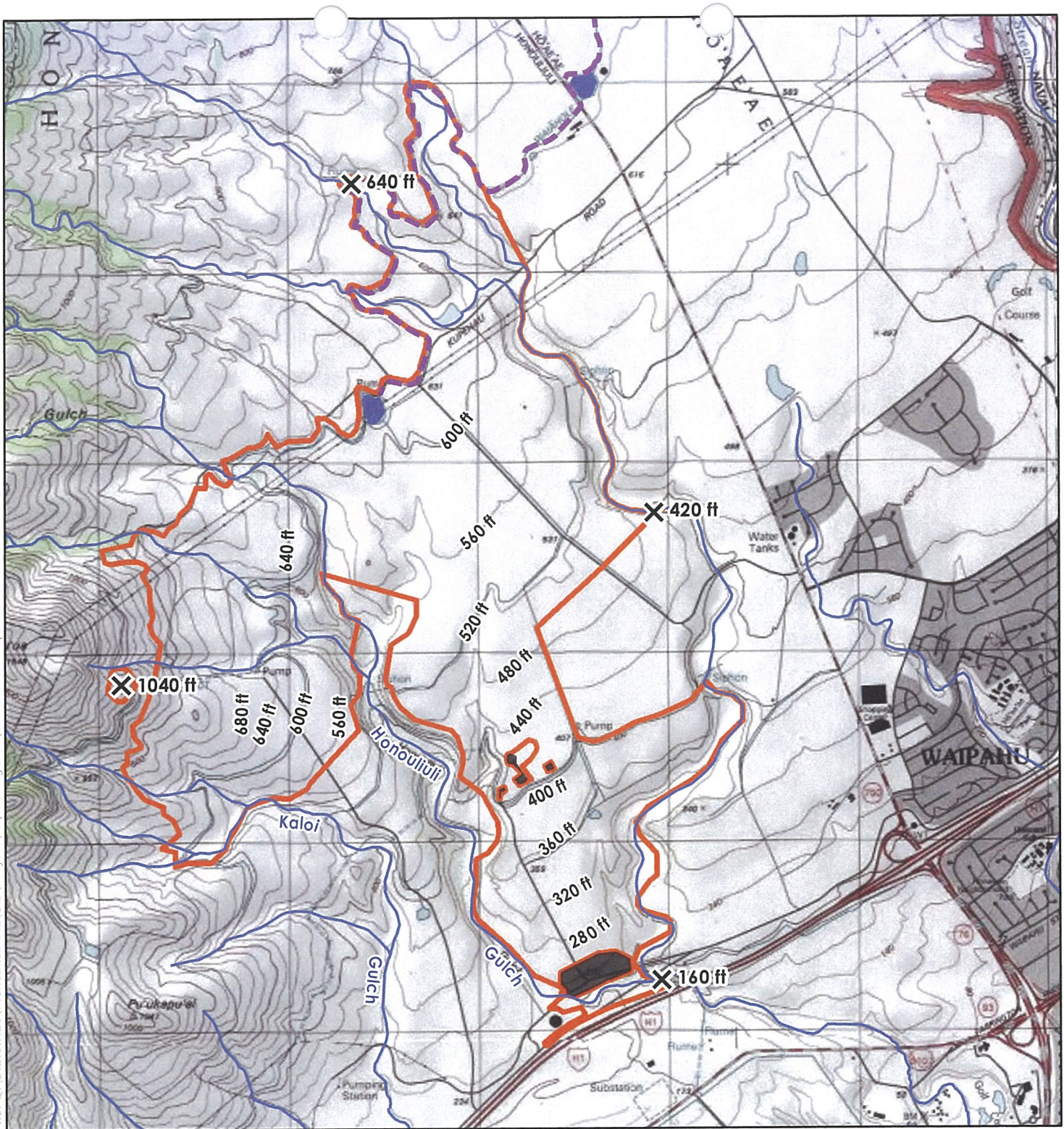
The land Monsanto is not proposing to designate as IAL (the Remainder Land) is approximately 600 acres (28 percent of Monsanto's total Kunia Land) and consists of two main uses: 1) Monsanto's processing facilities and offices; and 2) lands used for seed corn production. These uses are along Kunia Road and are consistent with, and permitted under, applicable land use and zoning laws.

Monsanto fully intends to continue using the Remainder Land for agricultural production and related and permitted agricultural facilities. However, in light of the intended long-term and potentially further restricted nature of IAL designed lands for current and future generations<sup>2</sup>,

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<sup>2</sup> See e.g., HRS §205-42: "The objective for the identification of important agricultural lands is to identify and plan for the maintenance of a strategic agricultural land resource base that can support a diversity of agricultural activities and opportunities that expand agricultural income and job opportunities and increase agricultural self-sufficiency for current and future generations."

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-  Proposed IAL
-  Owned by Others
-  Reservoirs
-  Waiahole Ditch
-  Streams / Gulches

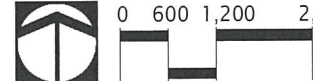
Source: U.S. Geological Survey, State of Hawaii, City & County of Honolulu.  
Disclaimer: This graphic has been prepared for general planning purposes only.

Figure 3

Topography and Streams

# Monsanto IAL

Monsanto Company  
North  
Linear Scale (Feet)  
0 600 1,200 2,400



Island of O'ahu



## Agricultural Land Assessment for Monsanto Company's Proposed Important Agricultural Land, Island of O'ahu

and to preserve flexibility for future uses that are consistent and compatible with ongoing agricultural production both on the Remainder Land and on the Property, Monsanto is not seeking IAL designation for these portions of the Kunia Land at this time.

The Remainder Land also includes a small area (approximately three acres) to be subdivided and dedicated to the Board of Water Supply of the City and County of Honolulu as a water tank site.

Lastly, a portion of the Remainder Land on the western portion of the Kunia Land (approximately 21.254 acres) identified as "Lot B (DPP File No. 2014/SUB-126)" on Figure 1 is being subdivided. Once subdivision is completed, it will be deeded to the National Park Service for inclusion in the Honouliuli National Monument. It is noted that Monsanto previously conveyed the land where the Honouliuli National Monument is located to the National Park Service.

### 4. Agricultural Soils Productivity Ratings

The Detailed Land Classification System and Agricultural Land Productivity Ratings by the Land Study Bureau (LSB), University of Hawai'i (1972) are based on a five-class productivity rating system using the letters A, B, C, D, and E, with A representing the class of highest productivity and E the lowest.

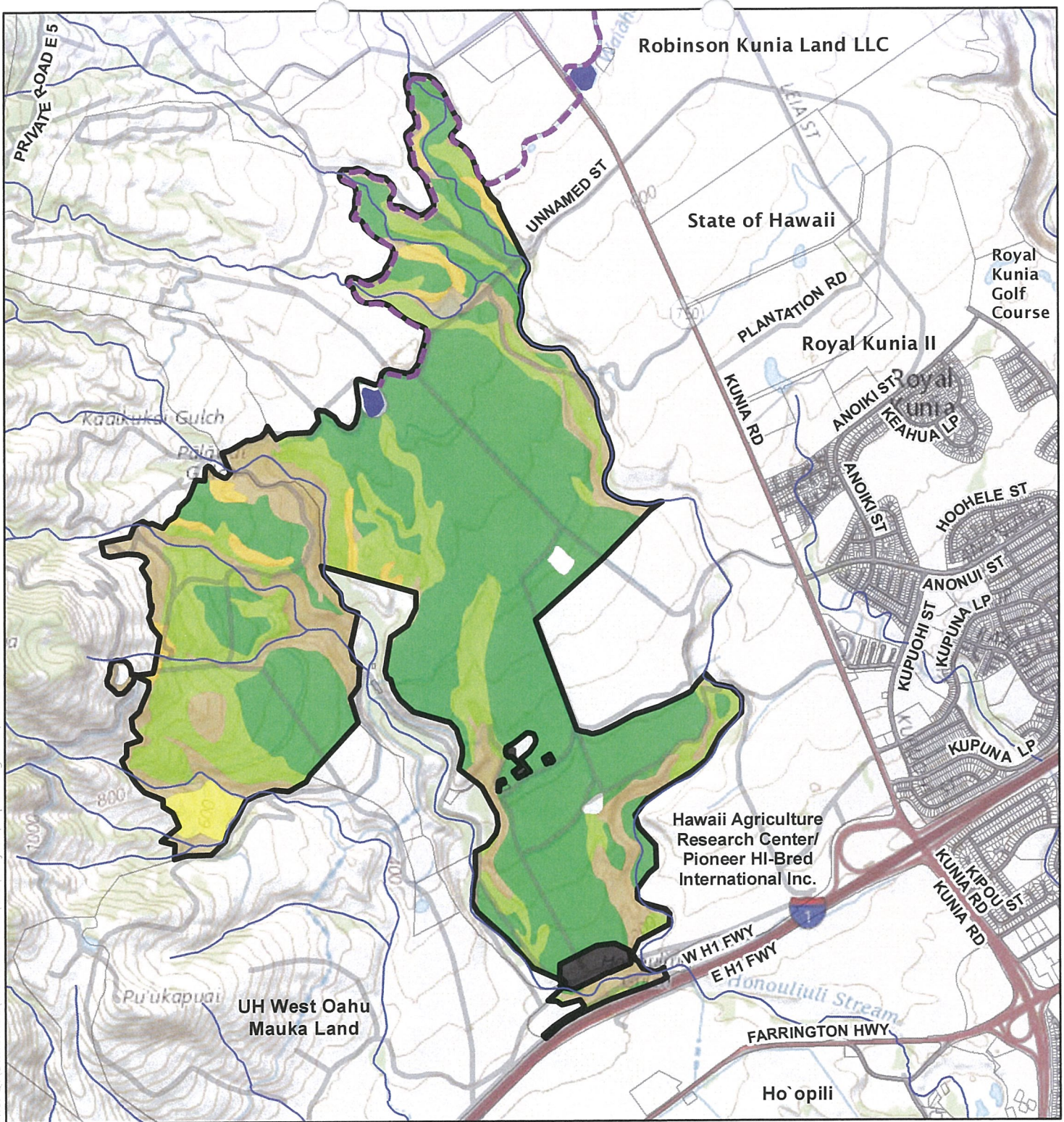
As shown on Figure 4, approximately 76 percent of the Property is rated A or B; approximately 55 percent is rated A, and approximately 21 percent is rated B. The remaining approximately 24 percent of the Property is rated C, D, E, or Unclassified as summarized in the table below (Land Study Bureau (LSB), 1972).

The soil productivity ratings on the Property are strong, and the area has been and continues to be used for active agriculture.

The table below summarizes the productivity rating of the Property:

Productivity Rating	Total IAL	
	Acres	% of IAL
A	849	54.7%
B	328	21.2%
C	22	1.4%
D	42	2.7%
E	297	19.2%
Unclassified	12	0.8%
<b>Total</b>	<b>1,550</b>	<b>100%</b>

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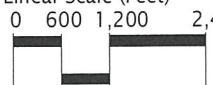

- |   |                   |   |              |
|---|-------------------|---|--------------|
|  | Proposed IAL      |  | A: Excellent |
|  | Owned by Others   |  | B: Good      |
|  | TMK Parcels       |  | C: Fair      |
|  | Reservoirs        |  | D: Poor      |
|  | Waiahole Ditch    |  | E: Very Poor |
|  | Streams / Gulches |  | Unclassified |
|  | Roads             |   |              |

Figure 4  
Detailed Land Classification System  
Land Study Bureau (LSB)

**Monsanto IAL**

Monsanto Company  
Island of O'ahu

North  
Linear Scale (Feet)  
0 600 1,200 2,400

Source: University of Hawaii Land Study Bureau (1972). State of Hawaii. City & County of Honolulu.  
Disclaimer: This graphic has been prepared for general planning purposes only.

## **5. Agricultural Lands of Importance to the State of Hawai'i (ALISH)**

The Agricultural Lands of Importance to the State of Hawai'i (ALISH) classification system was developed in 1977 by the State Department of Agriculture (Hawaii State Department of Agriculture, 1977). The system was primarily, but not exclusively, based on the soil characteristics of lands and existing cultivation. There are three classes of land under the ALISH system: Prime, Unique, and Other.

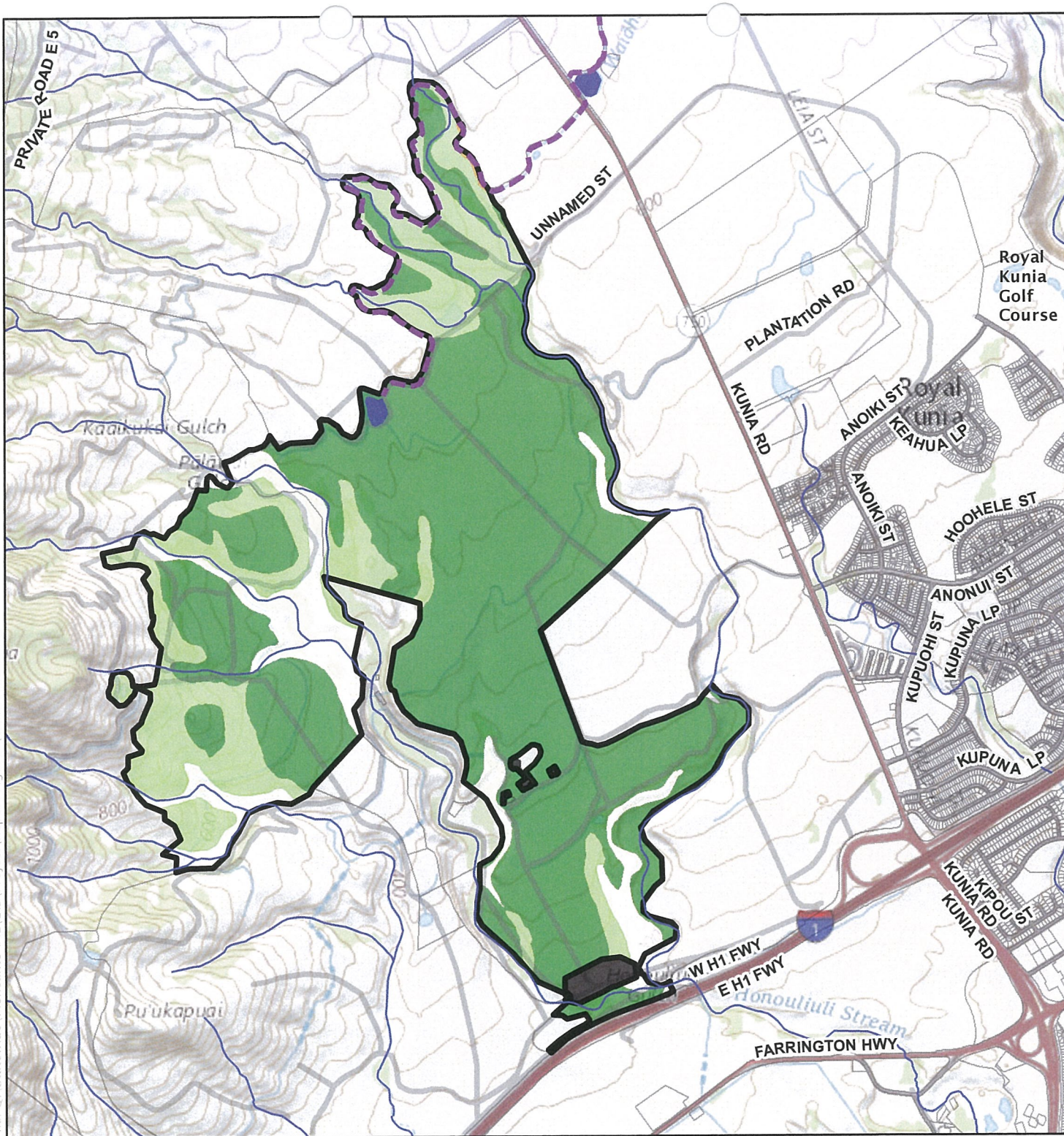
Prime ALISH is land best suited for the production of food, feed, forage and fiber crops. The land has the soil quality, growing season, and moisture supply that are needed to produce high yields of crops economically when the land, including water resources, is treated and managed according to modern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

Unique ALISH is land other than Prime ALISH that is used for the production of specific high-value food crops. The land has the special combination of soil quality, growing season, temperature, humidity, sunlight, air drainage, elevation, aspect, moisture supply, or other conditions, such as nearness to market, that favor the production of a specific crop of high quality and/or high yield when the land is treated and managed according to modern farming methods. In Hawai'i, some examples of such crops are coffee, taro, rice, watercress, and non-irrigated pineapple (Hawaii State Department of Agriculture, 1977).

Other ALISH is land other than Prime or Unique that is of state-wide or local importance for the production of food, feed, fiber, and forage crops. The land is important to agriculture in Hawai'i and yet it exhibits properties, such as seasonal wetness, erodibility, limited rooting zone, slope, flooding, or droughtiness, that exclude the land from Prime or Unique agricultural land use classifications. Two examples are: 1) lands which do not have an adequate moisture supply to be qualified as Prime; and 2) lands which have similar characteristics and properties as Unique, except that the land is not currently in use for the production of a "unique" crop. These Other lands can be farmed sufficiently by applying greater amounts of fertilizer and other soil amendments, drainage improvement, erosion control practices, and flood protection. Other ALISH land can produce fair to good crop yields when managed properly.

As shown on Figure 5, approximately 89 percent of the Property is classified under the ALISH system: 68.7 percent is classified as Prime, 0.1 percent is classified as Unique, and 20.5 is classified as Other.

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**LEGEND**

- |  |                   |  |              |
|--|-------------------|--|--------------|
|  | Proposed IAL      |  | Prime ALISH  |
|  | Owned by Others   |  | Unique ALISH |
|  | TMK Parcels       |  | Other ALISH  |
|  | Reservoirs        |  | Unclassified |
|  | Waiahole Ditch    |  |              |
|  | Streams / Gulches |  |              |
|  | Roads             |  |              |

Figure 5

Agricultural Lands of Importance to the State of Hawaii (ALISH)

**Monsanto IAL**

Monsanto Company  
 North Island of O'ahu

Linear Scale (Feet)  
 0 600 1,200 2,400

Source: State Department of Agriculture (1977). State of Hawaii. City & County of Honolulu.  
 Disclaimer: This graphic has been prepared for general planning purposes only.

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The table below summarizes the ALISH classifications of the Property:

ALISH Classifications	Total IAL	
	Acres	% of IAL
Prime	1,064	68.7%
Unique	2	0.1%
Other	318	20.5%
Not ALISH	166	10.7%
<b>Total:</b>	<b>1,550</b>	<b>100%</b>

The balance of the Property is not classified under the ALISH system but includes essential elements for active agricultural operations, such as streams and drainage ways, water system infrastructure, roadways, and areas for soil conservation.

### 6. Solar Radiation

The Property receives more than sufficient solar radiation to support agricultural production. Mean annual solar radiation on the Property ranges from 187 to 190 watts per square meter per hour, based on information from the *Evapotranspiration of Hawai'i Final Report* prepared in February 2014 by Department of Geography, University of Hawai'i at Mānoa for U.S. Army Corps of Engineers Honolulu District and State of Hawai'i Commission on Water Resource Management (Thomas W. Giambelluca, 2014). Figure 6 shows the solar radiation levels received on the Property in graphic form.

### 7. Water Resources and Agricultural Infrastructure

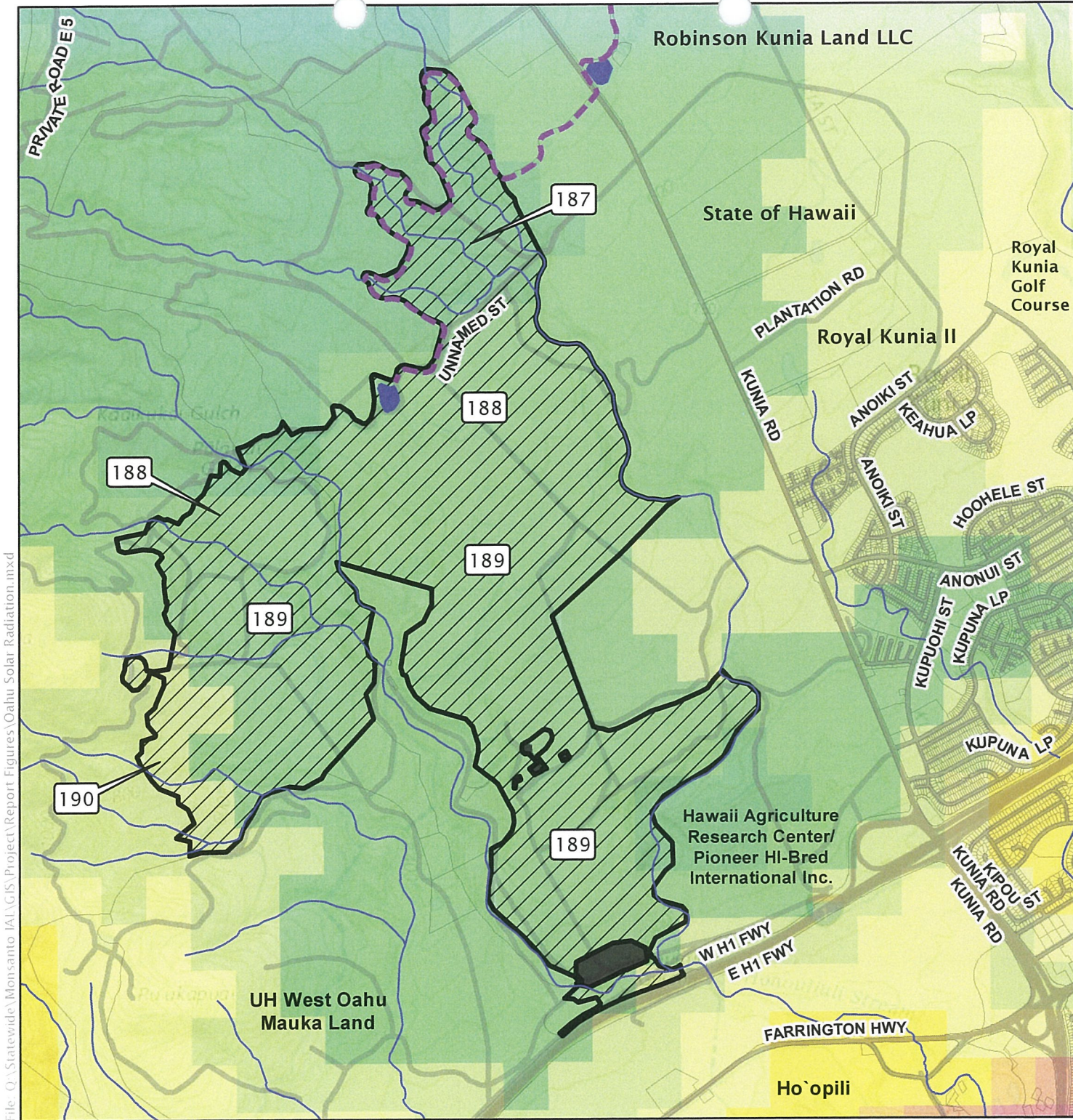
The Property has sufficient quantities of water, water-related infrastructure, and other agricultural-related infrastructure to support viable agricultural production, as summarized below. Figure 7 shows the water resources and agricultural infrastructure on the Property.

#### Water Resources

The large majority of the Property is irrigated by a plantation-era, on-site irrigation system put in place by either O'ahu Sugar Company, Ltd. or by Del Monte Fresh Produce (Hawaii), Inc., or a combination of both. The system includes nine water pumps and filter stations. Each filter station has a liquid fertilizer tank for drip irrigation and is housed in a concrete containment area. One filter station is equipped with a water tower.

The on-site irrigation system draws water from a reservoir (Reservoir 155), operated by the Agribusiness Development Corporation. The reservoir was built in 1927 to store irrigation water for the previous sugarcane cultivation operations on the Property and in the region.





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DATE: 8/30/2017

**LEGEND**

- Proposed IAL
- Owned by Others
- TMK Parcels
- Reservoirs
- Waiahole Ditch
- Streams / Gulches
- Roads

Mean Annual Solar Radiation (Watts/sq.meter/hour)	
	200 - 202
	198 - 200
	196 - 198
	194 - 196
	192 - 194
	190 - 192
	188 - 190
	186 - 188

Figure 6

Solar Radiation

**Monsanto IAL**

Monsanto Company  
 North Island of O'ahu

Linear Scale (Feet)  
 0 600 1,200 2,400

Source: University of Hawaii Evapotranspiration of Hawai'i (2014). State of Hawaii. City & County of Honolulu.  
 Disclaimer: This graphic has been prepared for general planning purposes only.



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The reservoir receives water from the Waiāhole Ditch, the western most portion of which is located on the mauka boundary of the Property. Thus, the Waiāhole Ditch is the source of irrigation water for the Property.

Monsanto has a water use permit (WUP No. 828) issued in 2007 by the Commission on Water Resource Management, State of Hawai'i allowing withdrawal of water from the Waiāhole Ditch irrigation system. The water use permit allows for withdrawal of 2.636 million gallons per day (mgd) of water on a 12-month moving average basis<sup>4</sup>. For the past four years (2013 through 2016), the 12-month moving average collective water use of Monsanto and its tenants has ranged from 1.815 mgd to 2.158 mgd per day. Water use for 2017 is consistent with these numbers.

In addition to water from the Waiāhole Ditch system, the Property receives a mean annual rainfall of approximately 26 to 34 inches annually (Rainfall Atlas of Hawai'i).

The portion of the Property used for cattle grazing by Rocker G. Livestock is not irrigated. For this reason, cattle grazing on this part of the Property is weather dependent and this is why Rocker G. Livestock grazes cattle on this portion of the Property between three and six months per year.

### **Agricultural Infrastructure**

In addition to the water resources infrastructure, the Property contains roads (old cane haul and other roads) between planting and ranching areas and Kunia Road capable of supporting farming equipment and direct road transportation to/from markets. Figure 7 shows the old cane haul roads through the Property; Figure 1 shows other roads between crop areas. The Property also has fences, gates, berms, windbreaks, and beneficial insect refuges to improve agricultural productivity and protect the environment.

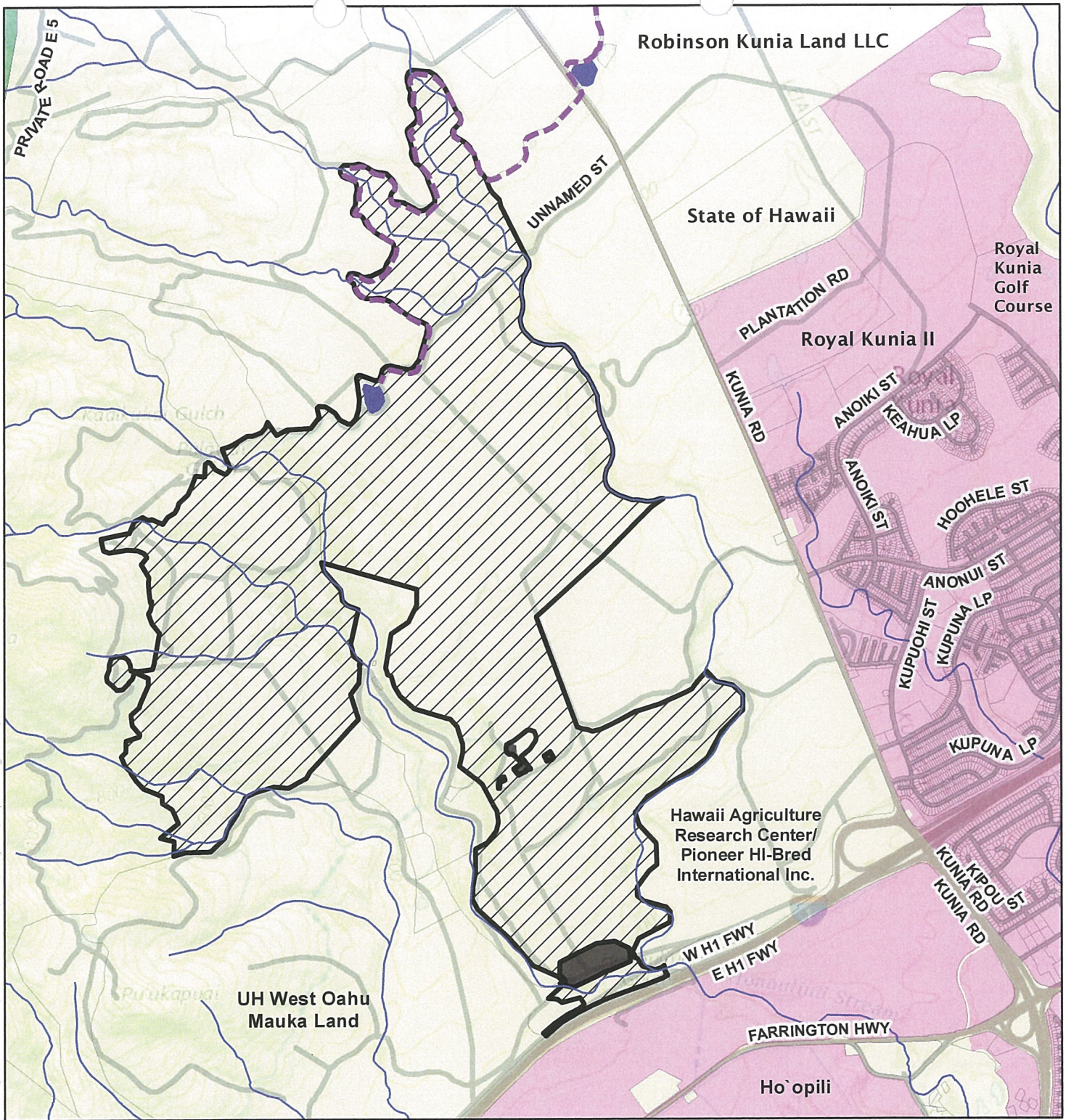
## **8. State Land Use District Boundaries**

The State Land Use Law (HRS Chapter 205) establishes the State Land Use Commission and authorizes this body to designate all lands in the State into one of four districts: Urban, Rural, Agricultural, and Conservation. Monsanto's O'ahu land is located within the State Agricultural District (Figure 8). HRS §205-2(d) specifies that lands within the State Agricultural district shall include (among other things): 1) activities or uses as characterized by the cultivation of crops, crops for bioenergy, orchards, forage, and forestry; and 2) farming activities or uses related to animal husbandry and game and fish propagation. Current uses on Monsanto's O'ahu lands are consistent with these uses.

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<sup>4</sup> The University of Hawai'i West O'ahu mauka lands are included within Monsanto's WUP No. 828 (issued in 2007), and those mauka lands have been included in the predecessor water use permits for many years.

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DATE: 8/29/2017

**LEGEND**

- |   |   |
|---|---|
|  Proposed IAL      |  State Land Use District |
|  Owned by Others   |  Agricultural            |
|  TMK Parcels       |  Conservation            |
|  Reservoirs        |  Urban                   |
|  Waiahole Ditch    |   |
|  Streams / Gulches |   |
|  Roads             |   |

Source: State Land Use Commission (2016). State of Hawaii, City & County of Honolulu.  
 Disclaimer: This graphic has been prepared for general planning purposes only.



Figure 8

State Land Use Districts

**Monsanto IAL**

Monsanto Company  
 North Island of O'ahu

Linear Scale (Feet)  
 0 600 1,200 2,400

○ ○

**Agricultural Land Assessment for Monsanto Company's  
Proposed Important Agricultural Land, Island of O'ahu**

## **9. General Plan for the City and County of Honolulu**

The General Plan for the City and County of Honolulu (2002) (General Plan) is a comprehensive statement of objectives and policies which sets forth the long-range aspirations of O'ahu's residents and the strategies of actions to achieve them. The General Plan includes 11 subject areas that provide the framework for the City's expression of public policy concerning the needs of the people and the functions of government.

Under the "Economic Activity" section of the General Plan is an objective and several polices to maintain the viability of agriculture on O'ahu. The designation of the Property as IAL is consistent with this objective and these polices in that the designation of the Property as IAL will: 1) contribute toward the continuation of agriculture as an important source of income and employment; 2) help to ensure sufficient agricultural land in 'Ewa and Central O'ahu to encourage the continuation of agriculture in these areas; and 3) encourage more intensive use of productive agricultural land.

As of August 2017, the City and County of Honolulu is in the process of updating the General Plan. In March 2017, the City and County of Honolulu presented the Second Public Review Draft of the General Plan (Draft General Plan). The Draft General Plan includes an objective and several polices to ensure the long-term viability and continued productivity of agriculture on O'ahu. The designation of the Property as IAL is consistent with this objective and these polices in that the designation of the Property as IAL will: 1) help to ensure the continuation of agriculture as an important component of O'ahu's economy; 2) encourage active use of high quality agricultural land for agricultural purposes; 3) permanently preserve agricultural land with high productivity potential for agricultural production; 4) contribute toward lessening the urbanization of high-value agricultural land located outside the City's growth boundaries; 5) encourage investment to improve and expand agricultural infrastructure, such as irrigation systems, agricultural processing centers, and distribution networks.

## **10. City and County of Honolulu: 'Ewa Development Plan and Central O'ahu Sustainable Communities Plan**

The City and County of Honolulu's Development Plans and Sustainable Communities Plans are policy documents that are intended to guide the County's land use approvals, infrastructure improvements, and private sector investment decisions for the enhancement and improvement of life on O'ahu. The Island of O'ahu is organized into eight regions. The Property is located mostly within the 'Ewa Development Plan ('Ewa DP) region, with a smaller portion in the Central O'ahu Sustainable Communities Plan (Central O'ahu SCP) region.

## **Agricultural Land Assessment for Monsanto Company's Proposed Important Agricultural Land, Island of O'ahu**

The 'Ewa DP (2013) ('Ewa DP) includes a series of maps with for various designations within the 'Ewa DP area. All of the 'Ewa DP maps designate the area of the Property that is in the 'Ewa DP region as "Agricultural Areas" of some type. Similarly, Central O'ahu SCP (2002) also contains a series of maps and all of the Central O'ahu SCP maps designate the area of the Property that is in the Central O'ahu SCP area as "Agricultural Areas" of some type. Additionally, all of the 'Ewa DP and the Central O'ahu SCP maps show growth boundaries<sup>5</sup>. The Property is not within the growth boundaries on any of the 'Ewa DP and the Central O'ahu SCP maps. Figure 9a shows the 'Ewa DP (2013) and Central O'ahu SCP (2002) land use maps.

The City and County of Honolulu is currently in the processing of updating the Central O'ahu SCP. In the Central O'ahu SCP Proposed Revised Plan (2016), the maps continue to designate the area of the Property that is in the Central O'ahu SCP area as "Agricultural Areas" of some type. Figure 9b shows the 'Ewa DP (2013) and Central O'ahu SCP Proposed Revised Plan (2016) land use maps.

In addition to maps, the 'Ewa DP (2013), the Central O'ahu SCP (2002), and the Central O'ahu SCP Proposed Revised Plan (2016) include objectives and policies regarding retaining "prime," "unique," "high-quality," or "high-value" agricultural lands.

### **11. City and County of Honolulu Zoning**

The City and County zoning of Monsanto's O'ahu land is AG-1, Restricted Agricultural District (AG-1) (Figure 10). According to the Revised Ordinances of Honolulu (ROH) §21-3.50(b), the intent of the AG-1 District is to "conserve and protect important agricultural lands for the performance of agricultural functions by permitting only those uses which perpetuate the retention of these lands in the production of food, feed, forage, fiber crops and horticultural plants." Current uses on Monsanto's O'ahu lands are consistent with this intent.

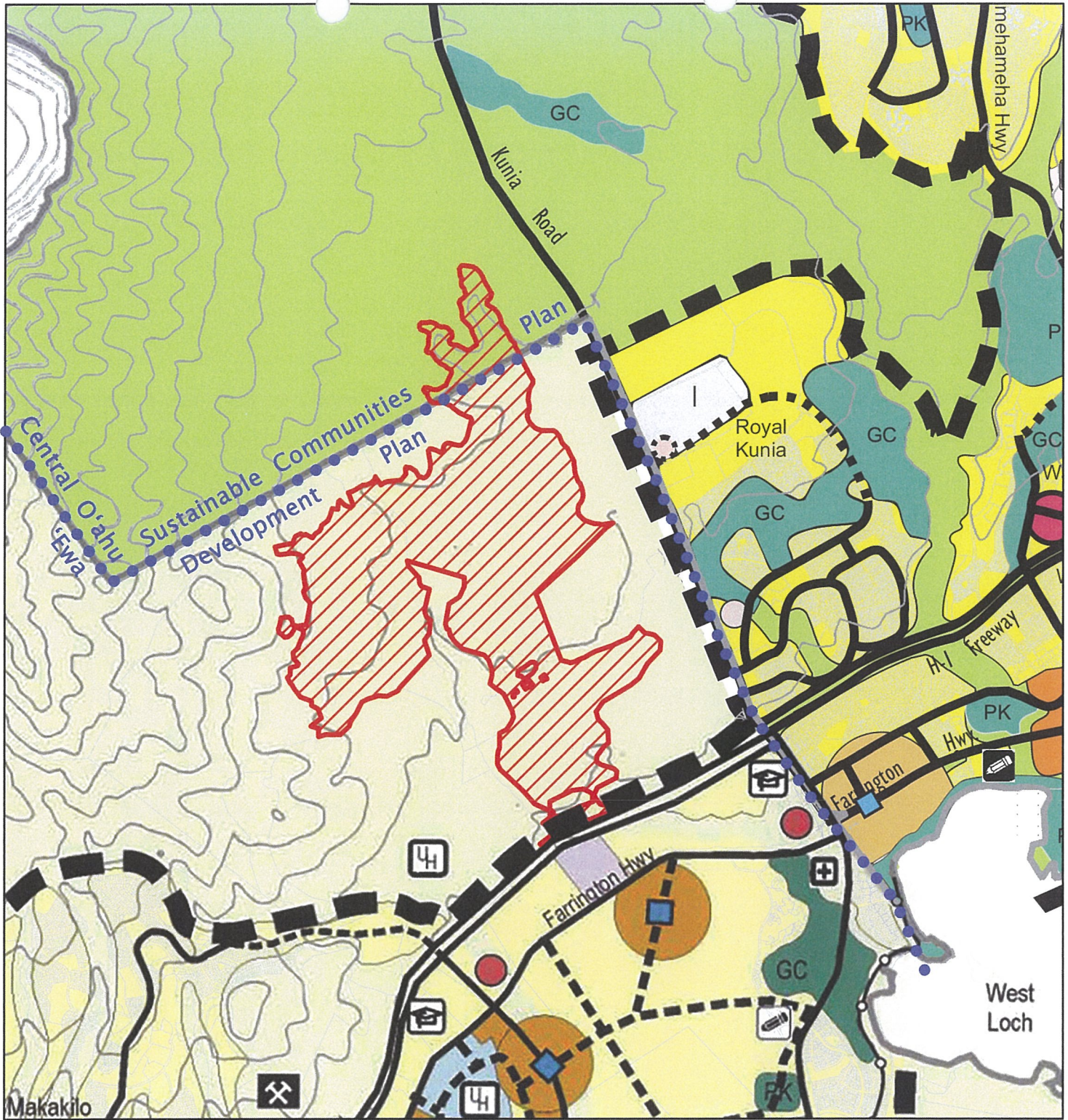
### **12. City and County of Honolulu Important Agricultural Lands Study**

In July 2012, the City and County of Honolulu (City) Department of Planning and Permitting (DPP) initiated the City's Important Agricultural Land Study (Study) to identify the City's candidate lands for IAL designation. The Study consists of two phases.

DPP completed Phase I in April 2014. Phase I tasks included: 1) defining the IAL site selection criteria 2) identifying available data sets to assist in mapping the defined criteria; and 3) developing methodology for weighing or ranking the criteria. Formal public review, a

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<sup>5</sup> The Ewa DP maps refer to a "Community Growth Boundary" and the Central SCP maps refer to an "Urban Community Boundary."



DATE: 8/30/2017

**LEGEND**








-  Proposed IAL
- 'Ewa Development Plan (2013) 
-  Agricultural and Preservation Area
-  Community Growth Boundary
-  U.H. West Oahu
- Central O'ahu SCP (2002)  Agricultural and Preservation Area
-  Urban Community Boundary

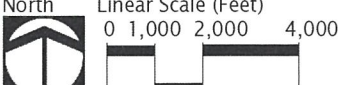

Figure 9a

'Ewa Development Plan (2013) and Central O'ahu Sustainable Communities Plan (2002)

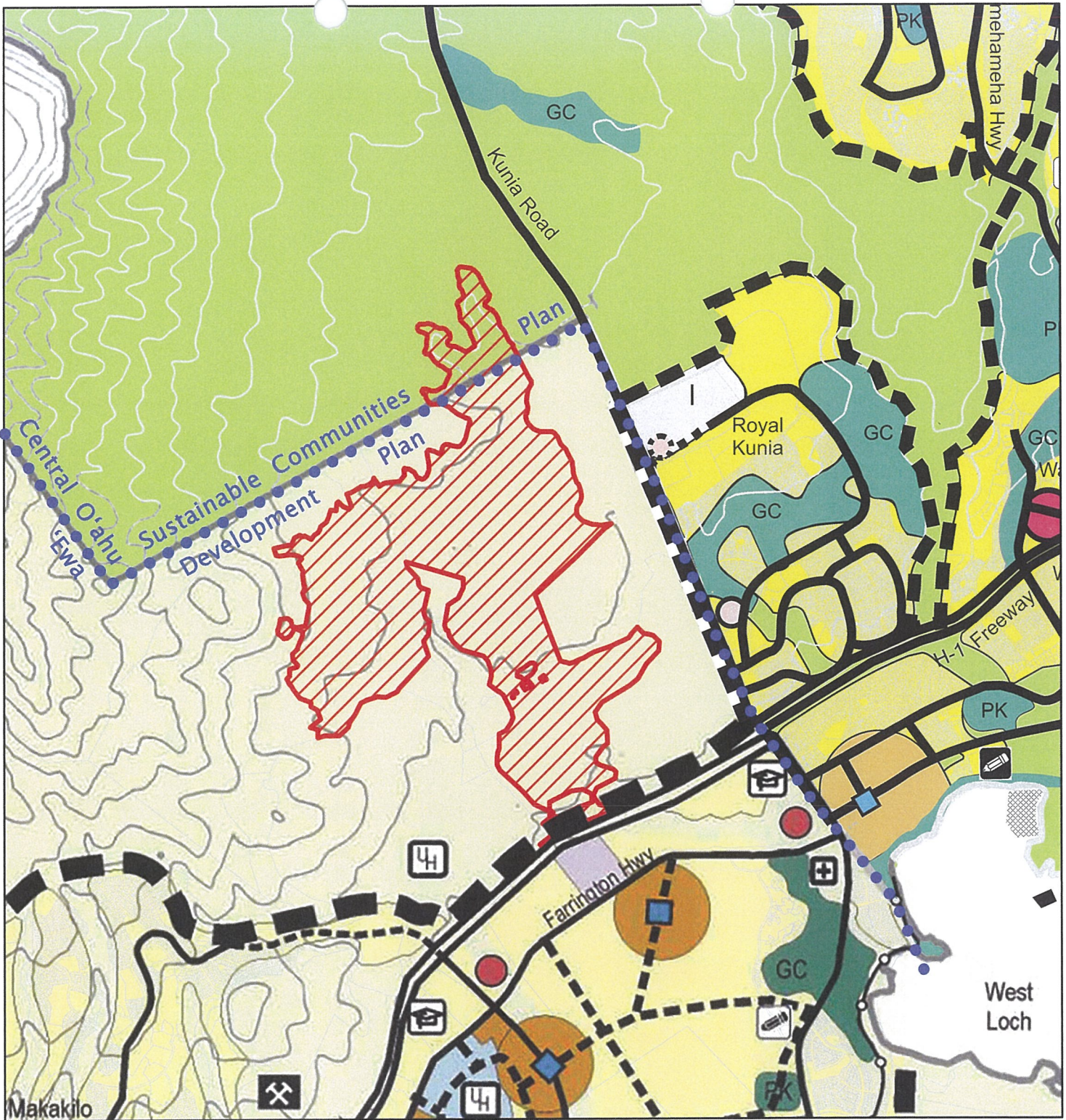
**Monsanto IAL**

Monsanto Company North Island of O'ahu

Linear Scale (Feet)  
0 1,000 2,000 4,000











Source: City & County of Honolulu. Disclaimer: This graphic has been prepared for general planning purposes only.



DATE: 8/30/2017

**LEGEND**

-  Proposed IAL
- 'Ewa Development Plan (2013)  Central O'ahu SCP (2016 DRAFT)
-  Agricultural and Preservation Area
-  Agricultural and Preservation Area
-  Community Growth Boundary
-  Community Growth Boundary
-  U.H. West Oahu

Source: City & County of Honolulu.  
 Disclaimer: This graphic has been prepared for general planning purposes only.

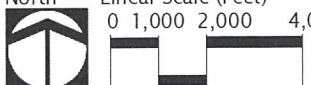

Figure 9b

'Ewa Development Plan (2013) and  
 Central O'ahu Sustainable  
 Communities Plan (2016 DRAFT)

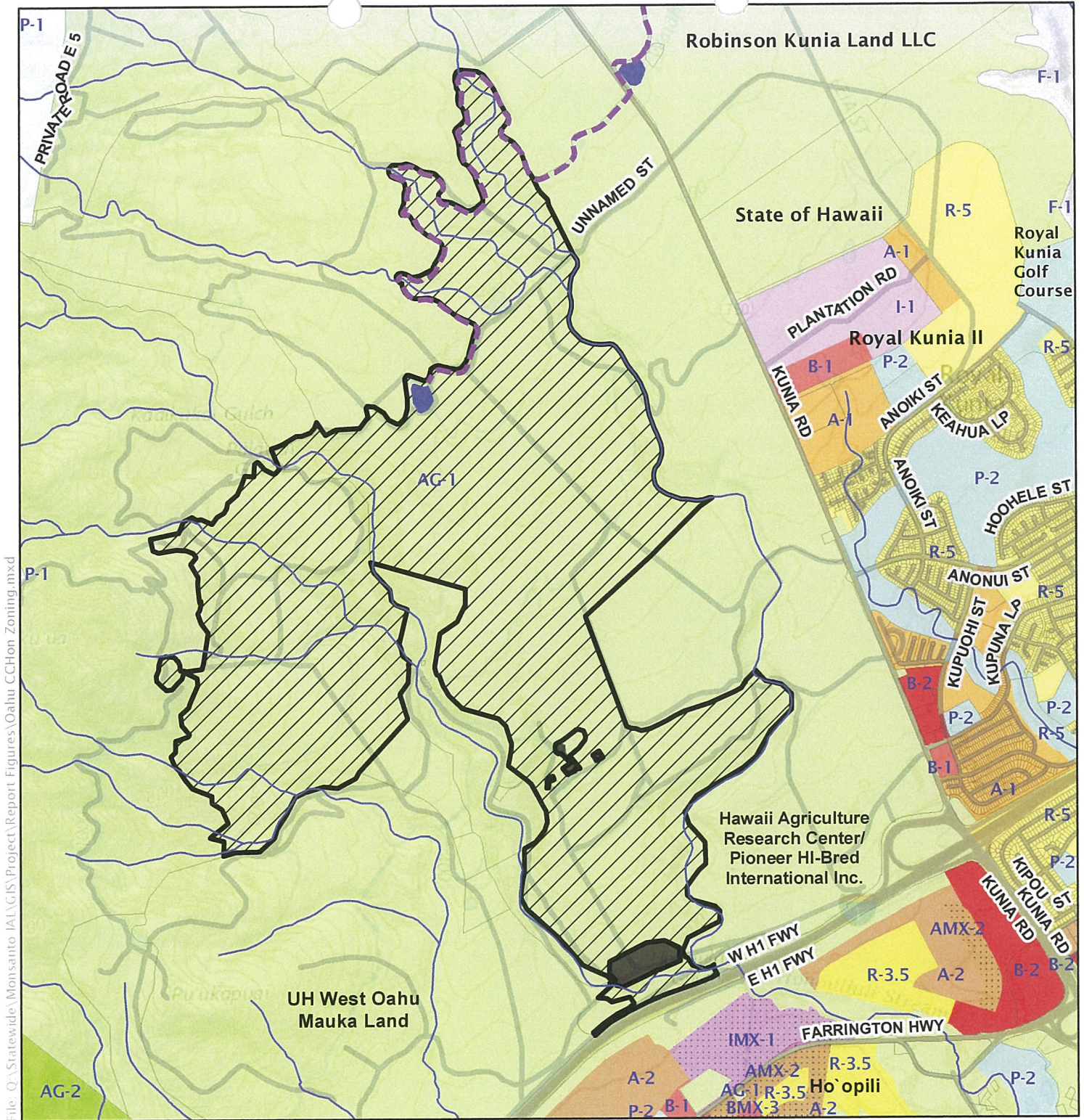
**Monsanto IAL**

Monsanto Company  
 North Island of O'ahu

Linear Scale (Feet)  
 0 1,000 2,000 4,000





File: O:\Statewide\Monsanto IAL\GIS\Project\Report\Figures\Oahu CCHon Zoning.mxd

DATE: 8/30/2017

**LEGEND**

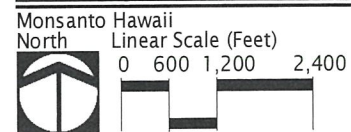
	Proposed IAL	<b>Zoning</b>		
	Owned by Others	P-1		R-5
	TMK Parcels	P-2		R-3.5
	Reservoirs	F-1		A-1
	Waiahole Ditch	AG-1		A-2
	Streams / Gulches	AG-2		B-1
	Roads			B-2
				BMX-3
				I-1
				IMX-1

Source: City & County of Honolulu (2017). State of Hawaii.  
 Disclaimer: This graphic has been prepared for general planning purposes only.

Figure 10

City and County of Honolulu Zoning

**Monsanto IAL**



## **Agricultural Land Assessment for Monsanto Company's Proposed Important Agricultural Land, Island of O'ahu**

comment period, and notification to affected land owners was not a part of the Phase I tasks. Although the City's proposed IAL were not defined in the Phase I study, the DPP prepared a series of criteria maps and came up with two composite maps of the City's top three and four priority criteria using a geographic information system (GIS).

DPP began Phase II of the Study after the completion of Phase I in 2014, with public meetings held as recently as January 2017. In Phase II, the DPP is devising incentives for landowners to designate their lands as IAL, and has produced draft maps of proposed IAL lands on O'ahu based on the City's top three criteria: 1) land currently used for agricultural production, 2) land with soil qualities and growing conditions suitable for agricultural production, and 3) land with sufficient quantities of water to support viable agricultural production. Figure 11 shows the Property in relation to the City's proposed IAL lands. As shown on Figure 11, 100 percent of the Property is consistent with the City's proposed IAL.

Since the publication of the City's draft maps of proposed IAL lands, DPP has presented the draft maps at public meetings, received comments from the public and affected landowners, and notified affected property owners. As of September 2017, DPP is in the process of refining the proposed IAL maps and finalizing their recommendations before formally presenting them to the City and County of Honolulu Council (Council). DPP's tentative schedule is to present their IAL recommendations to the Council by the end of 2017. The Council would then review the proposed IAL recommendations and maps and make any adjustments before the City would present the recommendations and maps to the State Land Use Commission for review and adoption.



# Agricultural Land Assessment for Monsanto Company's Proposed Important Agricultural Land, Island of O'ahu

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