

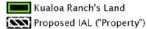
Petition for Declaratory Order to Designate 761.55 acres as Important Agricultural Lands (IAL) DR18-62

State of Hawai'i Land Use Commission August 8, 2018



DATE: 5/21/2018

#### LEGEND



Source: City & County of Honolulu (2017) USDA NRCS (2011). Disclaimer: This graphic has been prepared for general planning purposes only

#### Figure 1

TMK Parcels and Proposed IAL



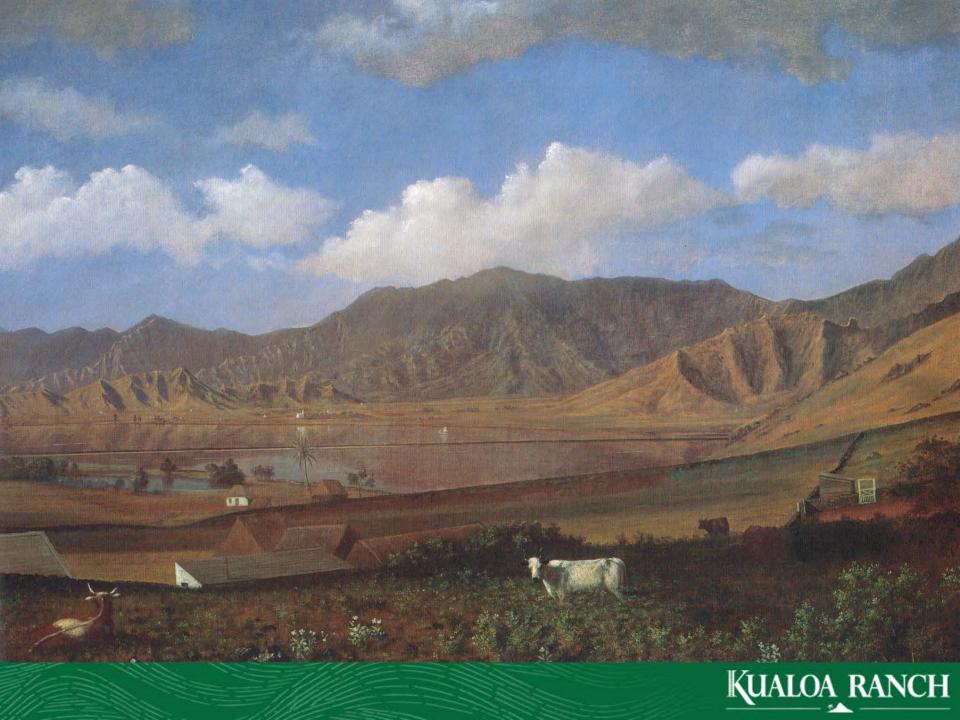
#### **Important Agricultural Lands**

- Kualoa Ranch owns approx. 3,782 acres in Kualoa, Hakipu'u and Ka'a'awa.
- 1,468.5 acres are within the State Agricultural District.
- 2,302.5 acres are within the State Conservation District.
- Proposing 761.55 acres to be designated as IAL.
- 51.5% of total landholdings less conservation land.

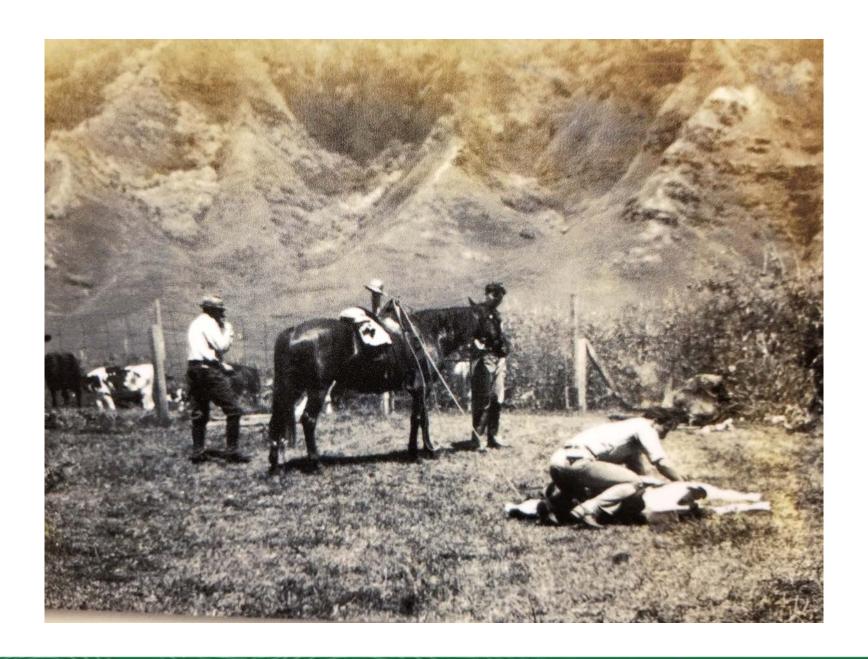


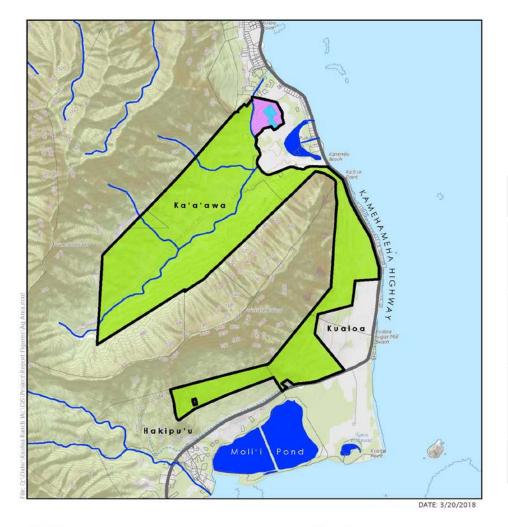
# David Morgan

Director of Strategic Planning Kualoa Ranch



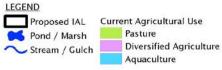






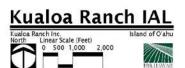
#### **Land Use**

Agricultural Use	Acres	Percent
Diversified Agriculture	17.67	2.3%
Aquaculture	4.37	0.6%
Pasture	739.51	97.1%
Total	761.55	100%

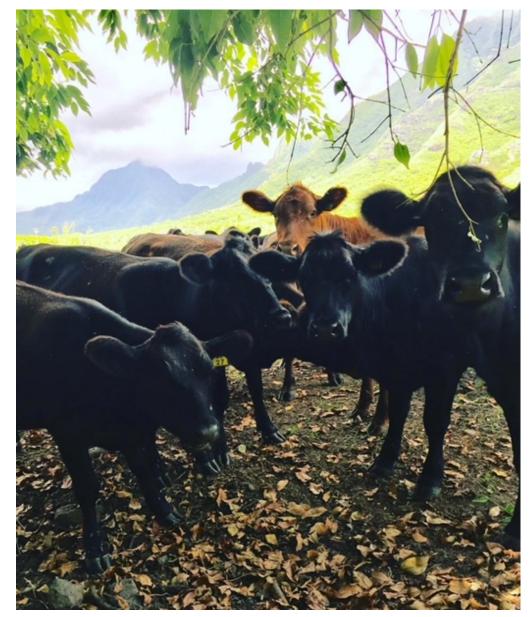


Source: Kualoa Ranch Inc. City & County of Honolulu, State of Hawaii, ESRI Basemap. Disclaimer. This graphic has been prepared for general planning purposes only.

Figure 2 Agricultural Areas































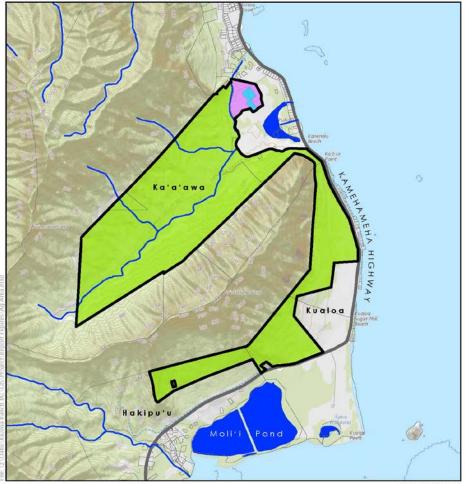




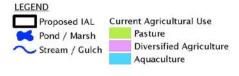


# Taylor Kellerman

Director of Diversified Agriculture and Land Stewardship Kualoa Ranch



DATE: 3/20/2018



Source: Kualoa Ranch Inc. City & County of Honolulu, State of Hawaii, ESRI Basemap, Disclaimer, This graphic has been prepared for general planning purposes only.

Figure 2 Agricultural Areas

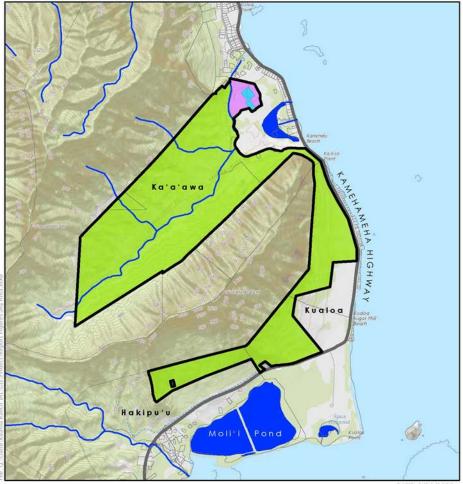




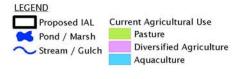








DATE: 3/20/2018



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

Figure 2 Agricultural Areas

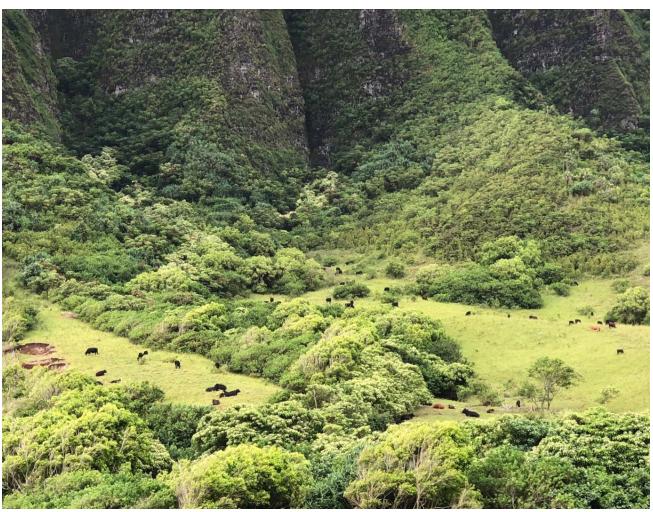




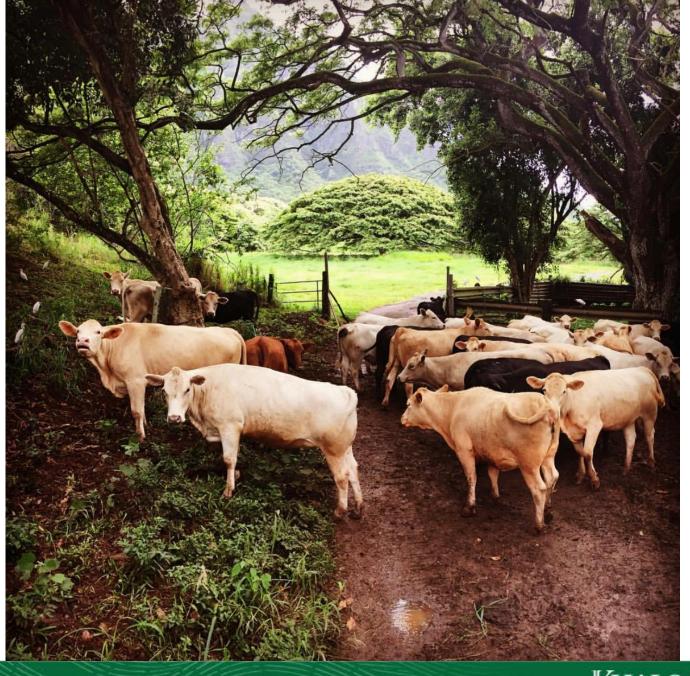
























































## **Tom Schnell**

Principal PBR HAWAII & Associates

#### **Agricultural Land Assessment**

For

#### Kualoa Ranch's Proposed Important Agricultural Land

Island of O'ahu

Prepared for:

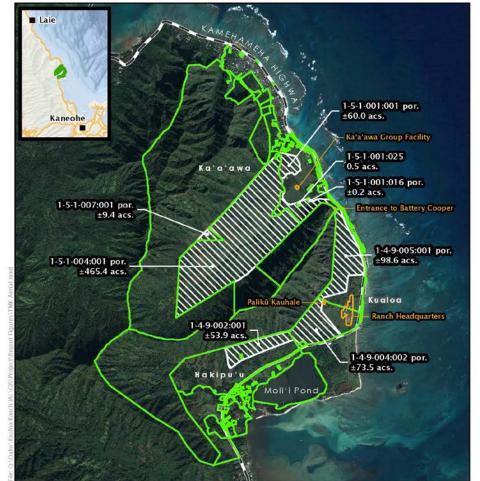


Prepared by:



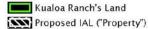
June 2018





DATE: 5/21/2018

#### LEGEND



Source: City & County of Honolulu (2017) USDA NRCS (2011). Disclaimer This graphic has been propared for general planning purposes only

#### Figure 1

TMK Parcels and Proposed IAL

### Kualoa Ranch IAL Kualoa Ranch Inc. North Linear Scale (Feet) 0 750 1,500 3,000

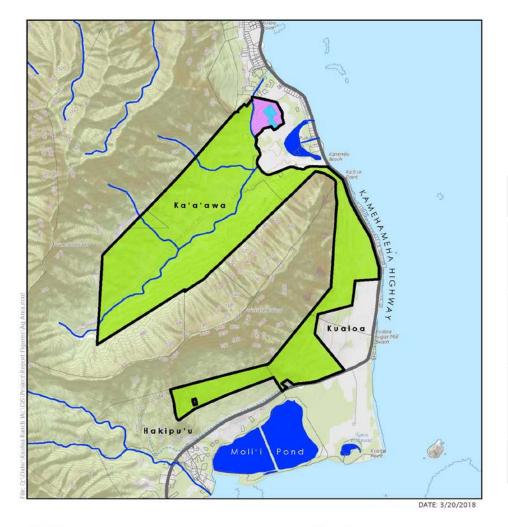
#### **Important Agricultural Lands**

- Kualoa Ranch owns approx. 3,782.01 acres in Kualoa, Hakipu'u and Ka'a'awa.
- 1,468.53 acres are within the State Agricultural District.
- 2,302.69 acres are within the State Conservation District.
- 10.79 acres are within the State Urban District
- Proposing 761.55 acres to be designated as IAL.
- 51.5% of total landholdings less conservation land.

## § 205-44. Standards and criteria for the identification of important agricultural lands

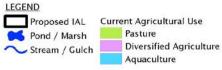
- (c) The standards and criteria shall be as follows:
- (1) Land currently used for agricultural production;
- (2) Land with soil qualities and growing conditions that support agricultural production of food, fiber, or fuel- and energy-producing crops;
- (3) Land identified under agricultural productivity 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 operating productivity; and
- (8) Land with or near support infrastructure conducive to agricultural productivity, such as transportation to markets, water, or power.





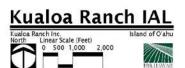
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Source: Kualoa Ranch Inc. City & County of Honolulu, State of Hawaii, ESRI Basemap. Disclaimer. This graphic has been prepared for general planning purposes only.

Figure 2 Agricultural Areas







#### **Typography & Streams**

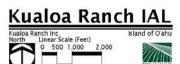
Slope	Acres	Percent
Less than 10%	180.29	23.7%
10%-20%	231.16	30.4%
20%-25%	95.35	12.5%
Greater than 25%	254.75	33.5%
Total	761.55	100%

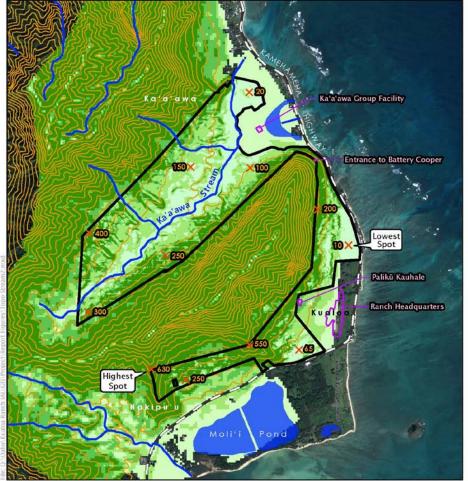
DATE: 6/28/2018

# LEGEND Proposed IAL ("Property") Slope in Kualoa Ranch's Land Pond / Marsh Less than 10% Stream / Gulch 10 - 20% 100-Ft Contours Greater than 25%

Source: NOAA (2005). City & County of Honolulu (2017). State of Hawaii (2008). USDA NRCS (2011). Disclaimer: This graphs: has been prepared for general planning purposes only.

Figure 3
Topography and Streams





DATE: 6/28/2018



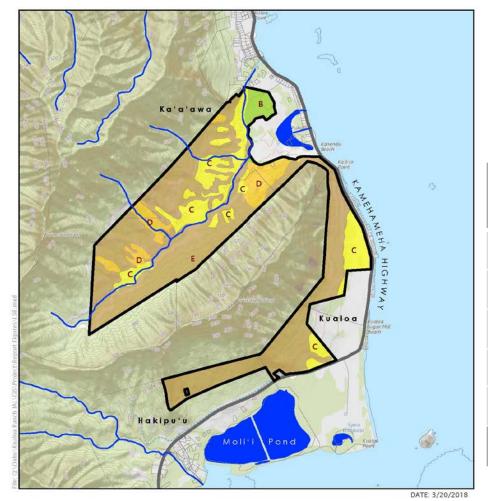
Source: NOAA (2005). City & County of Honolulu (2017). State of Hawaii (2008). USDA NRCS (2011). Disclaimer: This graphic has been prepared for general plunning purposes only.

Figure 3
Topography and Streams









## <u>Land Study Bureau (LSB)</u> Detailed Land Classification System

Productivity	Tota	IAL	
Rating	Acres	% of IAL	
A	0.00	0%	
В	20.17	2.7%	
С	144.96	19.0%	
D	62.40	8.2%	
E	534.04	70.1%	
Total	761.55	100%	

LEGEND Proposed IAL LSB Land Classification A: Excellent Pond / Marsh B: Good Stream / Gulch C: Fair D: Poor E: Very Poor

Unclassified Source: University of Hawaii Land Study Bureau (1972). City & County of Honolulu. State of Hawaii. ESRI Basemap. Disclamer: This graphic has been prepared for general planning purposes only. Figure 4

**Detailed Land Classification System** 





# Kualoa Hakipu'u DATE: 3/20/2018

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

ALISH Classifications	Total IAL	
	Acres	% of IAL
Prime	157.41	20.7%
Unique	0.00	0.0%
Other	479.19	62.9%
Not ALISH	124.95	16.4%
Total	761.55	100%

Proposed IAL ALISH
Pond / Marsh
Stream / Gulch
Other ALISH
Other ALISH

**LEGEND** 

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

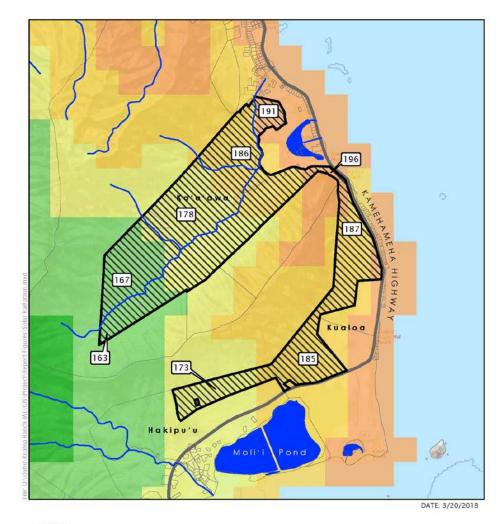
Unclassified

Figure 5

Agricultural Lands of Importance to the State of Hawai'i (ALISH)

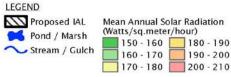




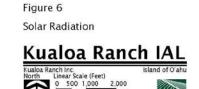


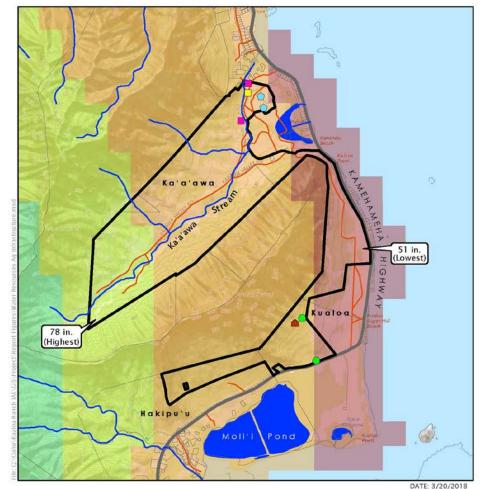
#### **Solar Radiation**

Mean annual solar radiation: 163 to 196 to watts per square meter per hour.



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







Source: Kualoa Ranch Inc., University of Hawaii Ranfal (Atlas of Hawaii (2011), State of Hawaii, City's County of Honolulu, https://www.higo.hawaii.edu/hagarc/projects/hawaiiistah-waterwells/, ESRI Basemap, Disclamir: This graych cas been propured for general planning purposes only.

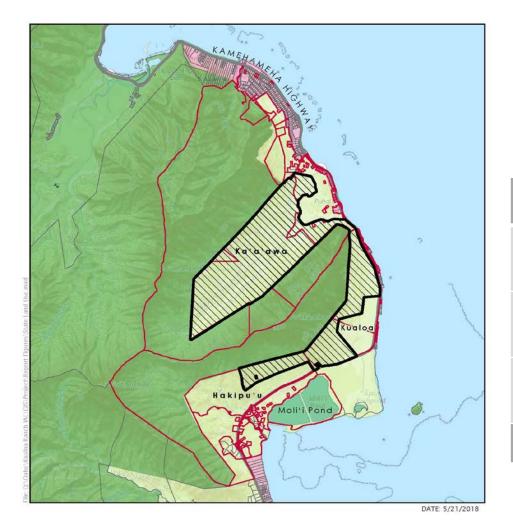
Figure 7

Water Resources and Agricultural Infrastructure

## Kualoa Ranch IAL Kualoa Ranch Inc. North Linear Scale (Feet) 0 500 1,000 2,000

#### Water Resources & Agricultural Infrastructure

- Main source of agricultural water: City & County of Honolulu Board of Water Supply
  - (Potable water)
- Other sources: Streams
  - (Existing non-potable water collection and storage system)
- Other sources: Ka'a'awa Wells
  - (Existing drilled and alluvial wells; Planned drilled well)
- Mean annual rainfall: 51" to 78"
- 14 miles of fencing and cross-fencing
  - 30 paddocks
- Extensive network of farm roadways that connect all areas of the property
- Adjacent to Kamehameha Hwy. for access to markets beyond on-site market



#### **State Land Use Districts**

State Land Use District	Acres	Percent
Conservation	2,302.5	60.9%
Agricultural	1,468.5	38.8%
Urban	11	00.3%
Total	3,782	100%

Proposed IAL

Kualoa Ranch's Land

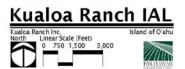
Kualoa Ranch's Land

Conservation

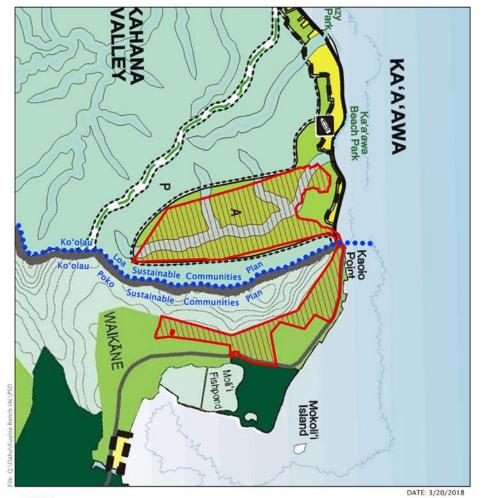
Urban

ource: State Land Use Commission (2016). City & County of Honolulu. ESRI Basemap is claimer. This graphic has been prepared for general planning purposes only.

Figure 8
State Land Use Districts

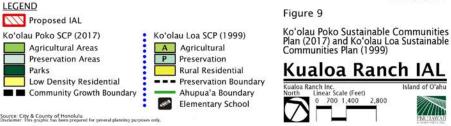


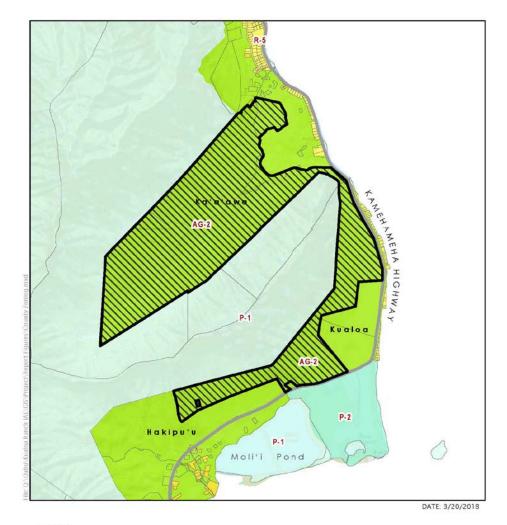




Koʻolau Poko Sustainable Communities Plan (2017) and Koʻolau Loa Sustainable Communities Plan (1999)

- Agricultural Areas and Agriculture.
- Outside of Community Growth Boundary and Preservation Boundary.

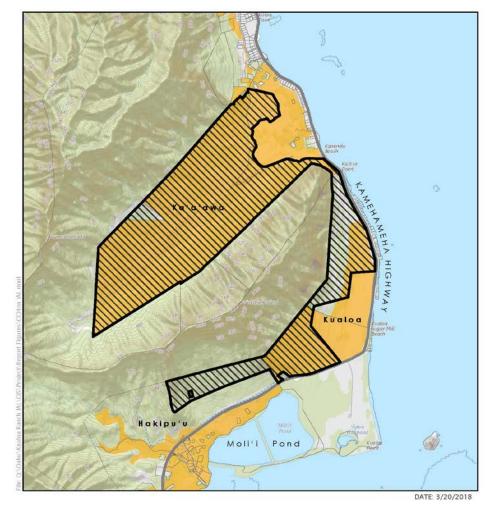




#### **City & County Zoning**

• Restricted Agricultural (AG-2)





LEGEND
Proposed IAL
City Proposed IAL Lands

Figure 12
City and County of Honolulu
Important Agricultural Lands Overlay



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

#### Important Agricultural Lands Overlay

- City's proposed designation prioritizes 3 criteria:
  - (1) Land currently used for agriculture;
  - (2) Soil productivity;
  - (3) Sufficient water to support agricultural use.
- Kualoa Ranch's proposed designation accounts for the current and actual use of the land.



# John Morgan

President, CEO & General Manager Kualoa Ranch



