

Agricultural Land Assessment
For
The Kekaha Agriculture Association
Proposed Important Agricultural Land
Island of Kaua'i

Prepared for:

Prepared by:



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**Agricultural Land Assessment for Kekaha Agriculture Association’s
Proposed Important Agricultural Land**

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1. Introduction/Purpose

This Agricultural Lands Assessment is prepared in support of a Petition for Declaratory Order to Designate Important Agricultural Lands (Petition) to designate certain agricultural lands in West Kaua‘i as Important Agricultural Lands (IAL). The Kekaha Agriculture Association (KAA) seeks the IAL designation.

KAA is an agricultural cooperative organized under Chapter 421, Hawai‘i Revised Statutes (HRS) which manages and operates agricultural infrastructure (e.g., irrigation water, drainage, roadways, and electric power systems) on land on Kaua‘i referred to as the “Kekaha Ag Lands.” The Agribusiness Development Corporation (ADC) controls the Kekaha Ag Lands and licenses land within the Kekaha Ag Lands to KAA farmer members for agricultural activities. The State of Hawai‘i owns the Kekaha Ag Lands.

The Kekaha Ag Lands comprise approximately 12,762.26 acres along the leeward side of West Kaua‘i abutting the town of Kekaha to the south and east. The Kekaha Ag Lands are within all, or portions of, the following ahupua‘a: Pōki‘ikauna, Waiawa, Niu, Mānā, and Ka‘ula‘ula. All the Kekaha Ag Lands are within the State Agricultural District (Agricultural District).

Throughout this report the term:

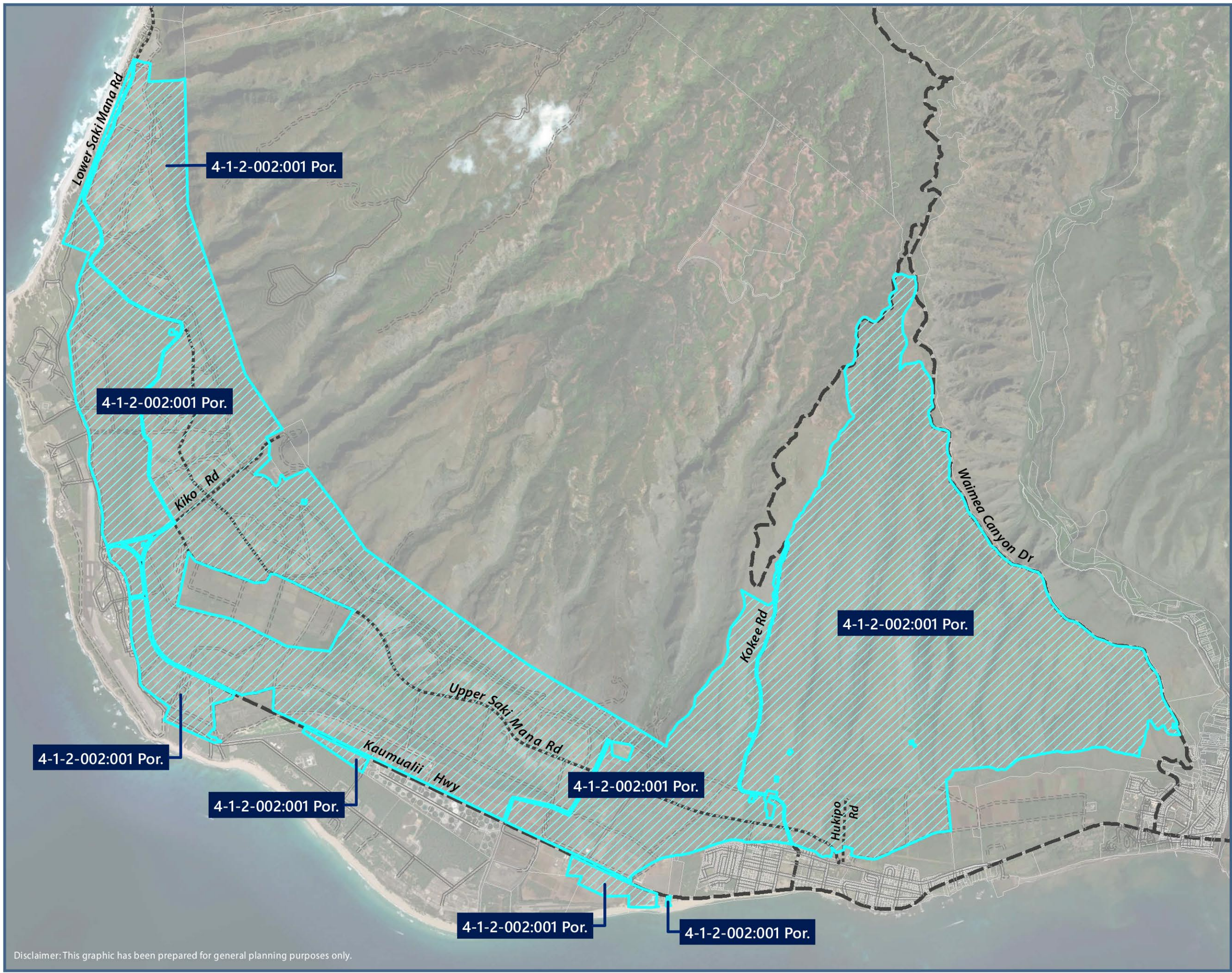
- “Kekaha Ag Lands” refers to the approximately 12,762.26 acres of land along the leeward side of West Kaua‘i controlled by the ADC.
- “Kekaha Agriculture Association” or “KAA” refers to the agricultural cooperative which manages and operates agricultural infrastructure on the Kekaha Ag Lands and whose members are farmers engaged in agricultural activities on the Kekaha Ag Lands.
- “KAA IAL” refers to the Kekaha Ag Lands KAA proposes to designate as IAL.
- The “Remainder Land” refers to Kekaha Ag Lands the KAA is not proposing to designate as IAL.

KAA proposes to designate the vast majority of the Kekaha Ag Lands (approximately 95 percent or 12,123 acres) as IAL. The Kekaha Ag Lands that KAA is not proposing to designate as IAL (the Remainder Land) are approximately 639 acres (approximately 5 percent of the Kekaha Ag Lands).

The Kekaha Ag Lands are a single Tax Map Key (TMK) parcel (TMK 4-1-2-002:001). Figure 1 shows the TMK parcel and indicates the area proposed to be designated IAL. Table 1 (below) shows the TMK number, the area proposed to be designated IAL, and the area that is not proposed to be designated as IAL.

Table 1: TMK and Proposed IAL Areas

Tax Map Key Parcel No.	Total Acres (Kekaha Ag Lands)	IAL Acres (KAA IAL)	Non-IAL Acres (Remainder Land)
4-1-2-002:001 Por.	12,762.26	12,123	639.26
Total Acres	12,762.26	12,123	639.26
Percentage of Total		95%	5%
		100%	



LEGEND

-  Proposed IAL Land
-  Major Road
-  Key Road
-  Paved Road
-  Unpaved Road

Source:
County of Kauai,
ESRI Basemap.

4-1-2-002:001 Por.

4-1-2-002:001 Por.

4-1-2-002:001 Por.

Kiko Rd

4-1-2-002:001 Por.

Waimea Canyon Dr

Kokee Rd

4-1-2-002:001 Por.

Upper Saki Mana Rd

Kaumualii Hwy

4-1-2-002:001 Por.

Hukipo Rd

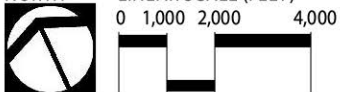

4-1-2-002:001 Por.

4-1-2-002:001 Por.

FIGURE 1
TMK PARCELS AND PROPOSED IAL
KAA IMPORTANT AG LAND

KEKAHA AGRICULTURE ASSOCIATION ISLAND OF KAUAI
NORTH LINEAR SCALE (FEET)

0 1,000 2,000 4,000

Disclaimer: This graphic has been prepared for general planning purposes only.

Standards and Criteria to Identify IAL

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 Hawai'i Constitution; and 2) the objective 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 KAA IAL is consistent with the standards and criteria to identify IAL as set forth in HRS §205-44(c).

2. Current and Future Agricultural Operations

The KAA IAL comprises lands that either are currently in agricultural use or historically have been used for agricultural purposes. Current agricultural operations on the KAA IAL includes cultivation of diversified crops, aquaculture, research crops, and traditional native Hawaiian agricultural crops. Diversified crops include alfalfa, melon, squash, papaya, avocado, banana, mango and other fruits and vegetables. Diversified crops grown on the KAA IAL vary based on growing cycles and market conditions. Research crops and seed production are mostly used for cultivation of corn. Along the makai portions of the KAA IAL, there are various aquaculture ponds used for production of shrimp. In addition, traditional Hawaiian crops such as dryland taro are grown within the KAA IAL with plans to develop lo'i for wetland taro cultivation as well.

KAA operates and maintains agricultural infrastructure to serve and support agricultural use on the KAA IAL, which ADC licenses to a mix of large agricultural entities and individual tenant farmers.

Currently there are three large licensees comprising operations that collectively account for the majority of active agricultural operations within the KAA IAL, totaling approximately 3,496 acres. This includes Hartung Brothers, Inc. (2,314 acres), Corteva Agriscience (767 acres), and Kauai Shrimp (415 acres). There are licensees on agricultural fields on the mauka lands, leased to Wines of Kaua‘i (127 acres) and Kokee Farms (62 acres). On the makai portions of the KAA IAL, other agricultural lands (comprising a total of approximately 167 acres) are licensed to smaller farmers actively growing crops, including Becks Ag (10 acres). Several unlicensed fields (comprising approximately 3,894 acres) are fallow but are available for license to new farmers. The remaining approximately 4,377 acres of the KAA IAL are designated for continuity for maintaining critical land mass important to agricultural operation as outlined in standards and criteria. Figure 2 shows the location of each of the licensees currently farming the KAA IAL.

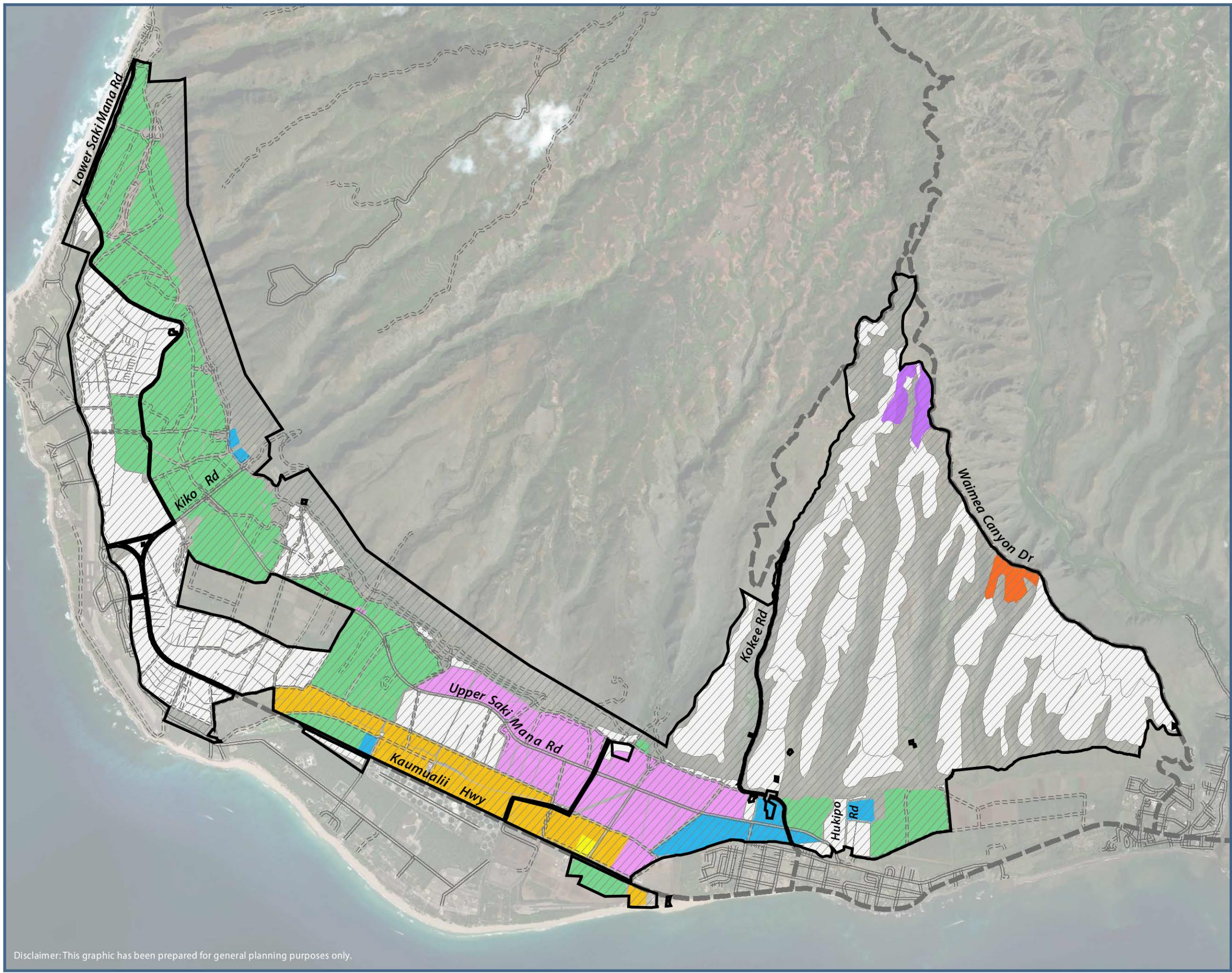
The Statewide Agricultural Land Use Baseline 2015 (Melrose, Peroy, & Cares, 2015) confirms agricultural use on the KAA IAL with seed production on most of the KAA IAL and smaller areas used for cultivation of aquaculture and tropical fruits. In addition, 5,371 acres of the KAA IAL are covered under a restrictive covenant for the protection and preservation of agricultural production through 2029.

Figure 3 shows the KAA IAL topography and illustrates the slopes, showing areas with relatively gentle grades conducive for food crop production and supporting infrastructure such as agricultural buildings across most of the KAA IAL. Approximately 56 percent of the KAA IAL comprises relatively flat lands with less than 10% slope and 77 percent of the KAA IAL comprises lands with less than 20% grade.

Table 2 summarizes the KAA IAL slopes. Most of the KAA IAL is relatively flat, providing ideal topography for various types of crop production. Some areas of the KAA IAL that are not currently cultivated along the mauka segments, especially in the eastern portion, are too steep for certain types of crops grown, or are drainage ways and streambeds. However, these areas support agricultural activities on other parts of the land that are cultivated and are important parts of the overall KAA IAL for: 1) land stewardship, soil conservation, and cohesion and continuity of agricultural uses; and 2) maintaining a critical land mass important to overall agricultural operation productivity.

Table 2: Slope Summary

Slope	Acres	Percent
Less than 10%	6,775	55.9%
10%-20%	2,591	21.4%
20%-25%	596	4.9%
Greater than 25%	2,159	17.8%
Total:	12,123	100%



LEGEND

Proposed IAL Land

Licensees

- Hartung
- Corteva
- Kauai Shrimp
- Kokee Farms
- Wines of Kauai
- Becks
- Others
- Unlicensed

- Major Road
- Key Road
- Paved Road
- Unpaved Road

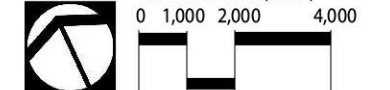
Source:
 Hart Crowser, Inc., 2020.
 Kekaha Agriculture Association, 2021.
 County of Kauai.
 ESRI Basemap.

FIGURE 2
LICENSEE MAP

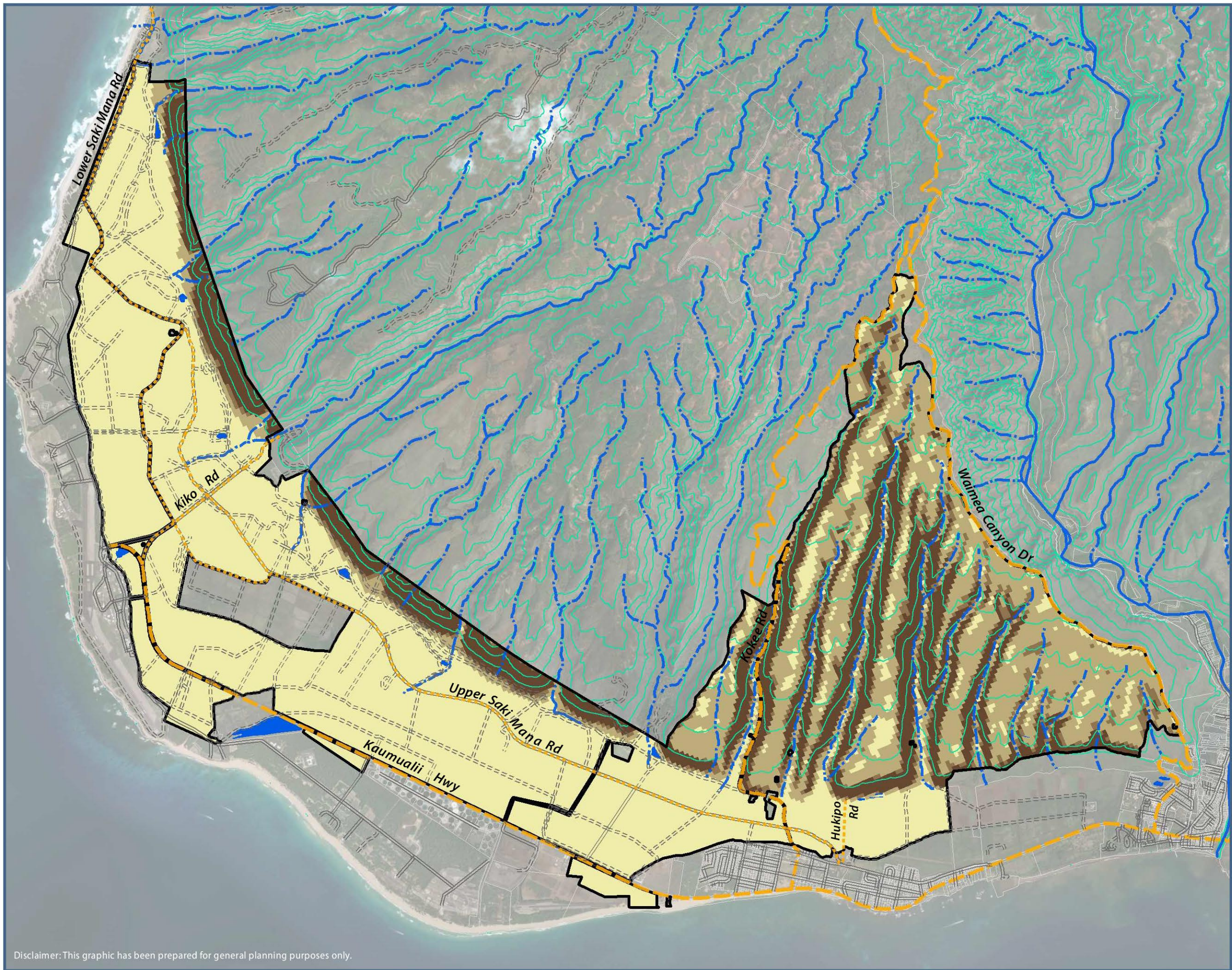
KAA IMPORTANT AG LAND

KEKAHA AGRICULTURE ASSOCIATION
 NORTH

ISLAND OF KAUAI



Disclaimer: This graphic has been prepared for general planning purposes only.



LEGEND

- Proposed IAL Land
- Slope**
- Percent Rise**
- Less than 10%
- 10 - 20%
- 20 - 25%
- Greater than 25%
- 200-ft Contours
- Reservoir
- Intermittent Stream
- Perennial Stream
- Major Road
- Key Road
- Paved Road
- Unpaved Road

Source:
NOAA, 2007.
County of Kauai.
ESRI Basemap.

FIGURE 3
TOPOGRAPHY AND STREAMS

KAA IMPORTANT AG LAND

KEKAHA AGRICULTURE ASSOCIATION
NORTH
LINEAR SCALE (FEET)
0 1,000 2,000 4,000

ISLAND OF KAUAI'
PBR HAWAII
SASSA B. T. LING

3. Agricultural Soils Productivity Ratings

The Detailed Land Classification System and Agricultural Land Productivity Ratings by the Land Study Bureau (LSB) (1967) are based on a five-class productivity rating system using the letters A, B, C, D, and E. The rating is based upon several environmental and physical qualities of the land such as soil condition, climate, surface relief, and drainage.

As shown on Figure 4 and summarized in Table 3, approximately 10.7 percent of the KAA IAL is rated A, 45.6 percent of the KAA IAL is rated B, 6.9 percent is rated C, 2 percent is rated D, 34.2 percent is rated E, and 0.6 percent is unclassified (Land Study Bureau, 1967). According to the LSB, only 2.8 percent and 8.6 percent of the total agricultural land on Kaua‘i is rated A and B respectively. Given the high percentage (56.3%) of the KAA IAL being rated as A and B, the productivity of the soil is strong, and the KAA IAL has been and continues to be used for active agriculture.

Table 3: LSB Productivity Rating

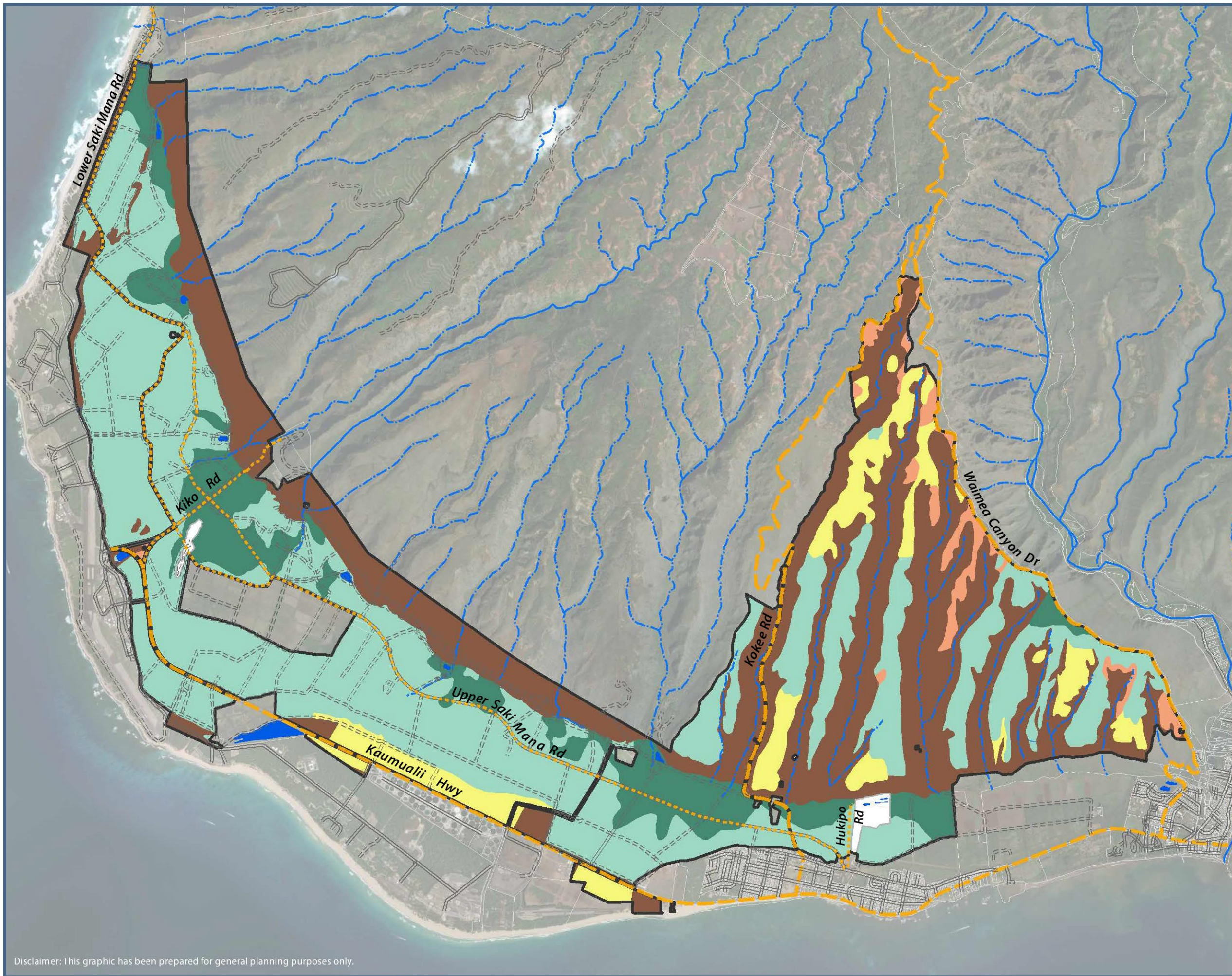
Productivity Rating	Total IAL	
	Acres	% of IAL
A	1,300	10.7%
B	5,525	45.6%
C	834	6.9%
D	244	2.0%
E	4,149	34.2%
Unclassified	71	0.6%
Total	12,123	100%

4. Solar Radiation













The KAA IAL receives sufficient solar radiation to support agricultural production. Mean annual solar radiation on the KAA IAL ranges from 190 to 220 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 (Giambelluca, et al., 2014). Figure 5 shows the solar radiation levels received on the KAA IAL in graphic form.

5. Agricultural Lands of Importance to the State of Hawai‘i (ALISH)

In 1977 the State Department of Agriculture (Hawai‘i State Department of Agriculture, 1977) developed the Agricultural Lands of Importance to the State of Hawai‘i (ALISH) classification system. The ALISH system is 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.



LEGEND

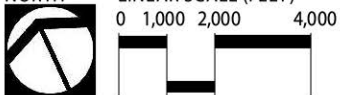

-  Proposed IAL Land
- LSB Land Classifications**
-  A - Very Good
-  B - Good
-  C - Fair
-  D - Poor
-  E - Very Poor
-  Unclassified
-  Reservoir
-  Intermittent Stream
-  Perennial Stream
-  Major Road
-  Key Road
-  Paved Road
-  Unpaved Road

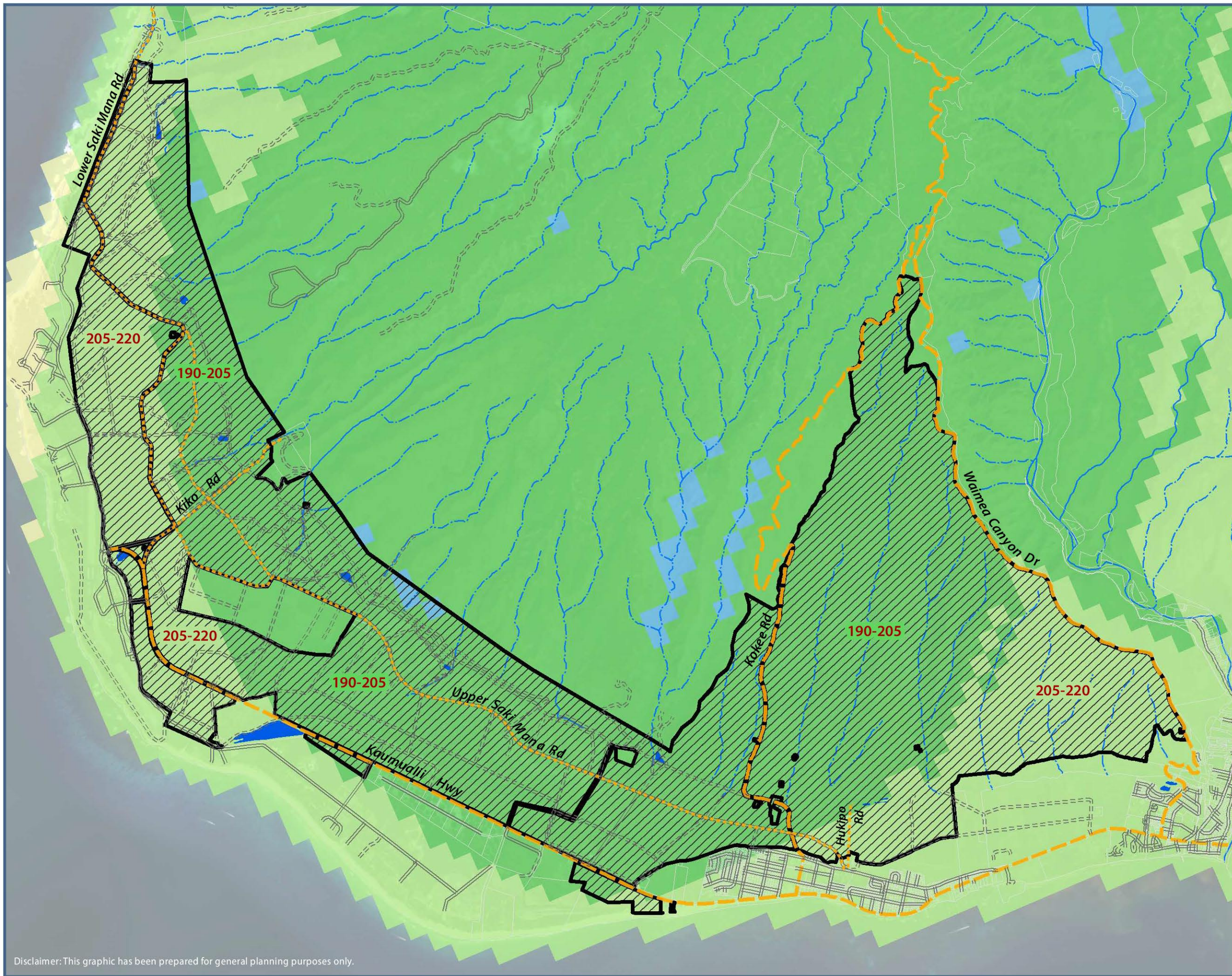
Source:
University of Hawaii Land Study Bureau, 1967.
County of Kauai.
ESRI Basemap.

FIGURE 4
DETAILED LAND CLASSIFICATION SYSTEM (LSB)







KAA IMPORTANT AG LAND

KEKAHA AGRICULTURE ASSOCIATION ISLAND OF KAUAI
NORTH LINEAR SCALE (FEET)
0 1,000 2,000 4,000



LEGEND

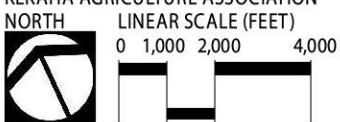
-  Proposed IAL Land
- Mean Annual Solar Radiation (W/m²)
 -  130 - 160
 -  160 - 175
 -  175 - 190
 -  190 - 205
 -  205 - 220
 -  220 - 235
 -  235 - 250
 -  250 - 265
 -  265 - 280
 -  280 - 300
-  Reservoir
-  Intermittent Stream
-  Perennial Stream
-  Major Road
-  Key Road
-  Paved Road
-  Unpaved Road

Source:
UH Solar Radiation of Hawaii, 2014.
County of Kauai.
ESRI Basemap.

FIGURE 5
SOLAR RADIATION

KAA IMPORTANT AG LAND

KEKAHA AGRICULTURE ASSOCIATION
NORTH
LINEAR SCALE (FEET)
0 1,000 2,000 4,000



ISLAND OF KAUAI
PBR HAWAII
SASSA B. T. INC.



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

The Unique ALISH rating is applied to lands other than Prime ALISH lands, that are used for production of specific, high-value food crops. Such lands have 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. Examples of such crops are coffee, taro, rice, watercress, and non-irrigated pineapple (Hawai‘i State Department of Agriculture, 1977).

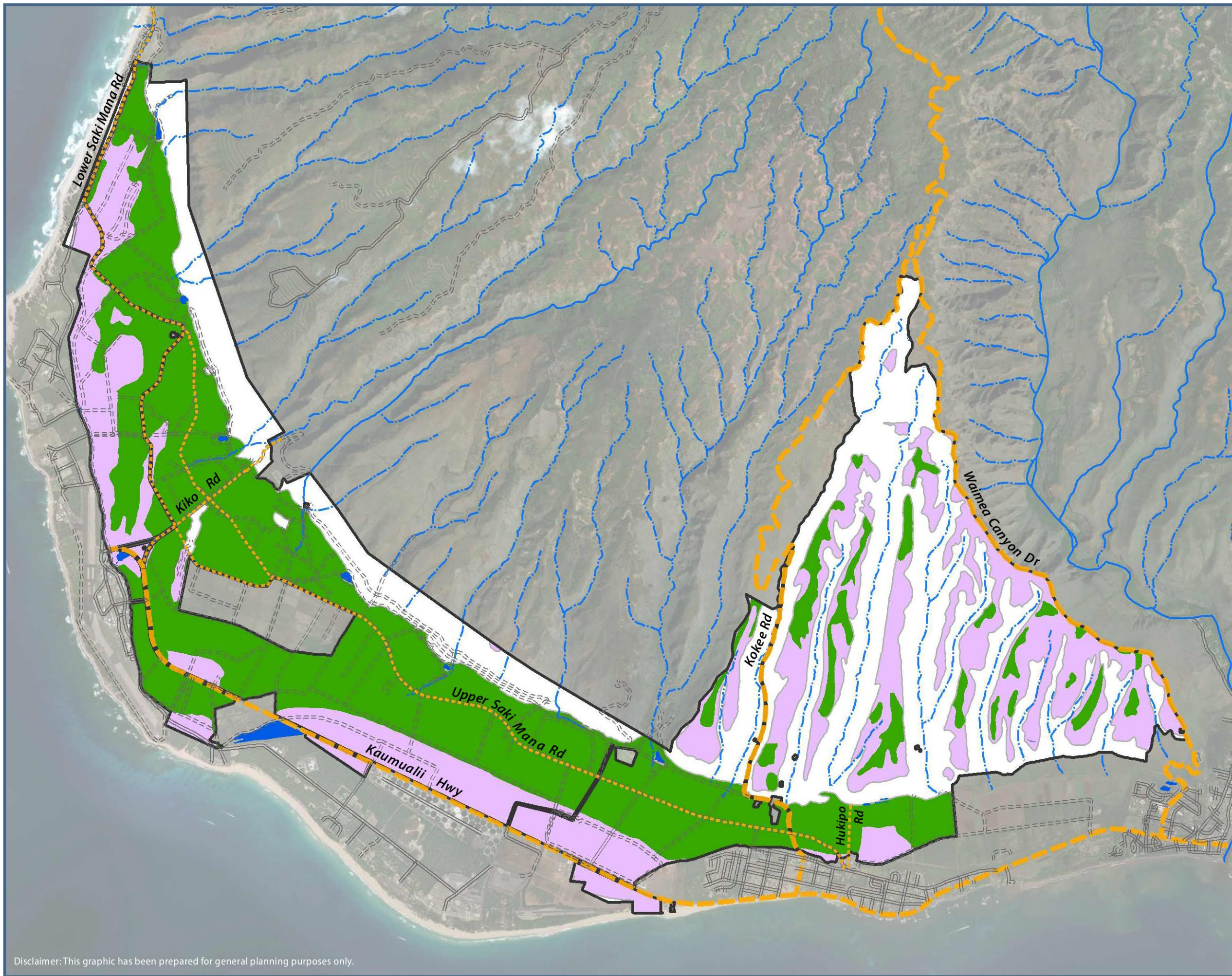
The Other ALISH ratings is for lands other than Prime or Unique that are of state-wide or local importance for production of food, feed, fiber, and forage crops. Such lands are important to agriculture in Hawai‘i and yet they exhibit properties such as seasonal wetness, erodibility, limited rooting zone,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

As shown on Figure 6 and summarized in Table 4, approximately 67.1 percent of the KAA IAL is classified under the ALISH system: 41.1 percent is classified as Prime, and 26 percent is classified as Other.

Table 4: ALISH Rating

ALISH Classifications	Total IAL	
	Acres	% of IAL
Prime	4,979	41.1%
Unique	0	0%
Other	3,155	26.0%
Not ALISH	3,989	32.9%
Total:	12,123	100%

The balance of the KAA IAL is not classified under the ALISH system but: 1) is integral to overall use of the KAA IAL for agricultural operations and to KAA’s land stewardship; and 2) provides for a unified and clearly defined IAL area.



LEGEND

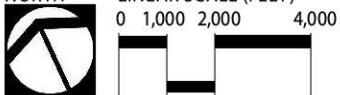

-  Proposed IAL Land
- ALISH Classifications**
-  Prime ALISH
-  Other ALISH
-  Unclassified
-  Reservoir
-  Intermittent Stream
-  Perennial Stream
-  Major Road
-  Key Road
-  Paved Road
-  Unpaved Road

Source:
State Department of Agriculture, 1977.
County of Kauai.
ESRI Basemap.

FIGURE 6
AGRICULTURAL LANDS OF IMPORTANCE
TO THE STATE OF HAWAII (ALISH)

KAA IMPORTANT AG LAND

KEKAHA AGRICULTURE ASSOCIATION ISLAND OF KAUAI
NORTH LINEAR SCALE (FEET)
0 1,000 2,000 4,000

6. Agricultural Use History

The Kekaha Ag Lands have a long history of agricultural use dating back to the pre-Contact era. Traditional accounts and conditions indicate agricultural use in the Kekaha region prior to European arrival, as part of the traditional Hawaiian ahupua‘a system. However, historical accounts suggest intensive agricultural uses on the KAA IAL were concentrated in the southeastern section of the Lands. These accounts from the mid-18th and 19th centuries described the Kekaha region as rich with taro patches, fishponds, and coconut trees. Here the wetlands were fed in part by a natural spring at the base of the cliffs which supported the taro lo‘i of Kekaha. Other springs supported cultivatable lands at the base of the Pali bordering the Mānā Plain, but the region northwest of Kekaha was traditionally referred to as Mānā (arid) and described as a hot and dry place with large sections of marshlands.

The Mānā Plain is not flat. Two shallow, saucer-shaped depressions, >100 ft high sand dunes and alluvial fans at the mouths of gulches draining high-elevation land above the Pali are among the most prominent topographic features. No streams cross the depressions or are present elsewhere on the plain, and prior to the excavation of the agricultural drainage ditch system evaporation and lateral groundwater flow were the only means of evacuating accumulated water from groundwater seepage, direct precipitation, and storm runoff. These and other low-lying regions on the Mānā Plain formerly supported perennial wetlands that expanded in wet and contracted in dry periods. The wetlands began to be drained after sugar cane started to be planted on a commercial scale in the 1870s. An initial connection to the ocean was established at Kawai‘ele in 1878; First Ditch was completed by 1907; Cox Drain and Kīkīaola Harbor Drain were in use by 1910; and Nohili Ditch was excavated in 1922 when large-capacity drainage pumps were installed. The wetlands surrounding the loko pu‘uone (ponds) at Kawai‘ele, Kolo, and Nohili had been drained by 1931, and what remains the largest reclamation project in State history was completed when the final parcel was drained and planted in 1959.

Commercial agriculture on the Mānā Plain began with rice cultivation around the fringes of the perennial, depressional wetlands in the 1860s. After the treaty which removed the import tax on Hawaiian products entering the United States was ratified in 1875, sugar cane began to be grown commercially in 1878, and the Kekaha Sugar Company was created in 1898.

Groundwater was initially used to irrigate the cane fields and rice paddies, with spring water being supplemented by well water from 1890. However, crop failures caused by drought and irrigation water shortages motivated the construction of irrigation ditch systems that drew water from the perennial Waimea River. The six-mile-long Waimea Ditch was constructed in 1903 and the 20-mile-long Kekaha Ditch, which connected with the pre-existing Mānā Pump Ditch, was completed in 1907. By 1920, water from Kekaha Ditch was being used to irrigate some 3,000 acres of land, and it is still the primary source of the irrigation water that supports diversified agriculture on the Mānā Plain.

Under the operation of the Kekaha Sugar Company, sugar cane cultivation became the main agricultural operation on the KAA IAL, although dairy and beef cattle have historically been raised on the land. Sugar operations flourished over the first half of the twentieth century until broader

economic factors and shifts in agricultural production led to the decline and eventual closure of the Kekaha Sugar mill in 2000.

7. Water Resources

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

KAA, under the control of ADC, has access to irrigation water provided by the Kōke‘e Ditch Irrigation System (KODIS) and Kekaha Ditch Irrigation System (KEDIS). Water rights for the KAA IAL from the Kōke‘e and Kekaha irrigation ditches are granted by Governor’s Executive Order No. 4287.

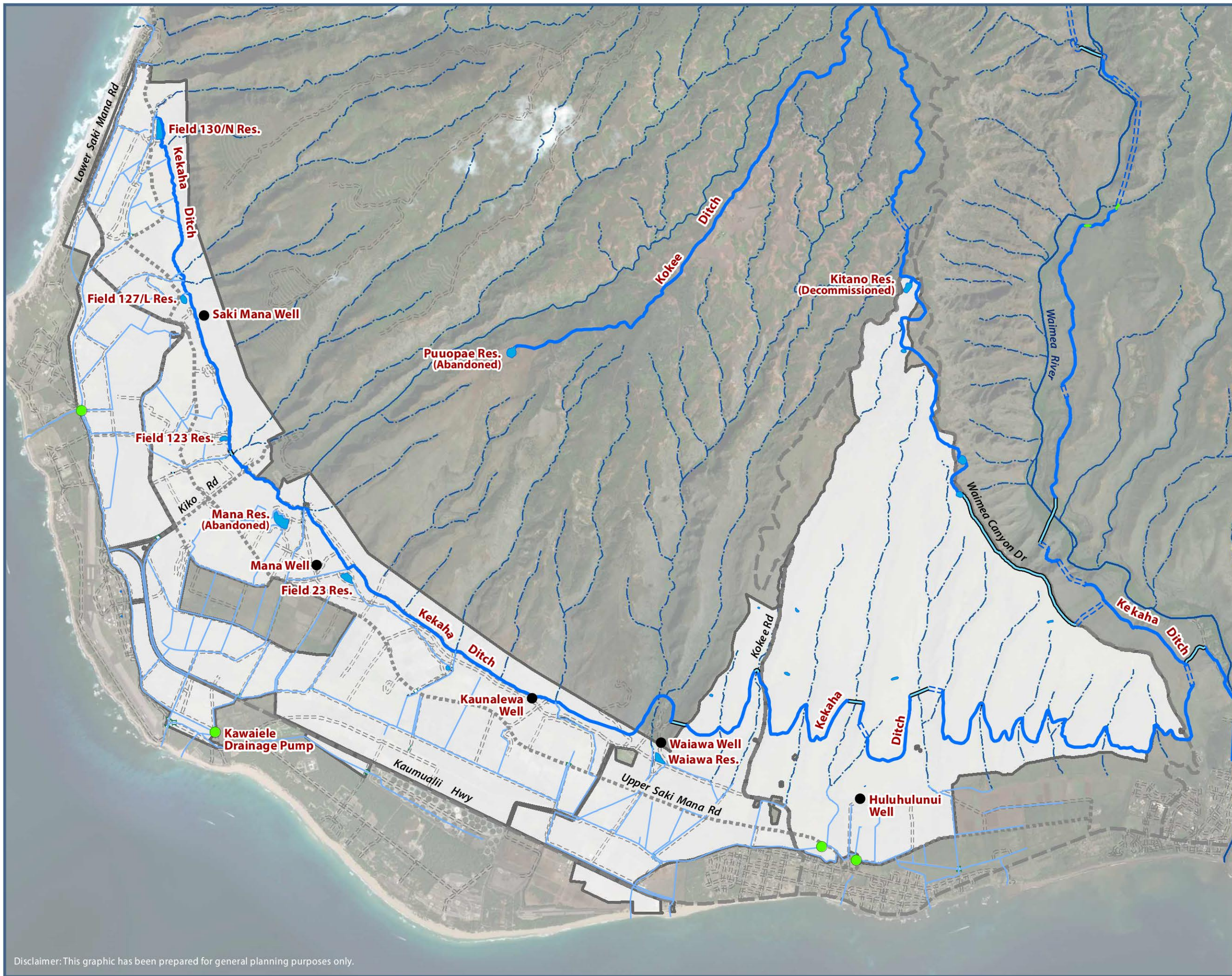
The Kekaha Ditch was originally constructed in the early 1900s to supply sufficient water to the former sugar cane fields managed and operated by the Kekaha Sugar Company. Following the success and improvements to the Kekaha Ditch, the Kekaha Sugar Company initiated construction of the Kōke‘e Ditch (constructed between 1923 and 1925), resulting in the existing ditch systems that provide significant water resources to the KAA IAL.

The KEDIS diverts water from the Waimea River supplying water along the approximate 27-mile ditch as far west as the reservoirs abutting Polihale State Park. The KODIS supplies water to the reservoirs on the mauka lands and is presently sourced from four major streams at the headwaters of the Waimea River watershed in Kōke‘e State Park: Waikoali Stream, Kawaikōi Stream, Kauaikananā Stream, and Kōke‘e Stream.

Under the terms of the 2017 Waimea Watershed Agreement: 1) Koke‘e Ditch supplies 0.5 mgd to the mauka lands; and 2) flows in Kekaha Ditch cannot exceed: a) 10 mgd (as measured at Hukipo Flume); and b) 6 mgd at times when flows in the Waimea River (measured at USGS gage 16031000) are less than 25 mgd. Based on data collected from 2017 to present by KAA and reported to the Commission on Water Resource Management, the mean monthly flow in the: 1) Kōke‘e Ditch is 0.5 mgd; and 2) Kekaha Ditch is 9.1 mgd.

In addition to water resources provided by the existing irrigation ditches, supplemental water is provided by existing wells within the KAA IAL. Since the 1890s, over 60 wells and shafts have been drilled on the KAA IAL, five of which remain in active use and supply <0.5 mgd. The other wells and shafts have been capped to prevent possible degradation of the groundwater.

Figure 7 shows the irrigation ditches, reservoirs, water infrastructure, well locations, and drainage pumps providing water resources across the KAA IAL. In addition to water from the Kōke‘e and Kekaha irrigation systems and wells, the KAA IAL receives a mean annual rainfall of approximately 18 to 30 inches which varies by elevation, providing supplemental water resources for agricultural production.



LEGEND

- Proposed IAL Land
- Water Resource Type
 - Well/ Shaft
 - Drainage Pump
 - Reservoir
 - Irrigation Ditch
 - Drainage Ditch
 - Tunnel
 - Pipeline
 - Flume
 - Culvert
 - Intermittent Stream
 - Perennial Stream
- Roadway
 - Major Road
 - Key Road
 - Minor Road

Source:
 KBAY Environmental Services LLC, 2021.
 Kekaha Agriculture Association, 2021.
 Hart Crowser, Inc., 2020.
 County of Kauai,
 State of Hawaii.
 ESRI Basemap.

FIGURE 7
WATER RESOURCES

KAA IMPORTANT AG LAND

KEKAHA AGRICULTURE ASSOCIATION
 NORTH
 LINEAR SCALE (FEET)
 0 1,000 2,000 4,000



8. General Plan for the County of Kaua‘i

The General Plan for the County of Kaua‘i (2018) (“General Plan”) establishes priorities for managing growth and community development over a 20-year planning timeframe with policies to guide County decision-making by mapping land use patterns, describing what type of development is desirable, and by setting high-level priorities for infrastructure and programs. The General Plan includes 10 sectors that provide the framework for the County’s expression of public policy concerning the needs of the people and the functions of government.

The “Economy” portion of the General Plan includes a section on “Agriculture” which lists an objective to ensure long-term viability and productivity of agricultural lands. In addition, the section outlines policies to maintain the viability of agriculture on Kaua‘i, including a specific policy for “Protecting Important Agricultural Lands (IAL).” The designation of the KAA IAL as IAL is consistent with this objective and these policies as the designation of the land as IAL will: 1) contribute toward the continuation of agriculture as an important source of income and employment; 2) help ensure sufficient agricultural lands in Kekaha by encouraging the continuation of agriculture activity in these areas; and 3) encourage more intensive use of productive agricultural lands.

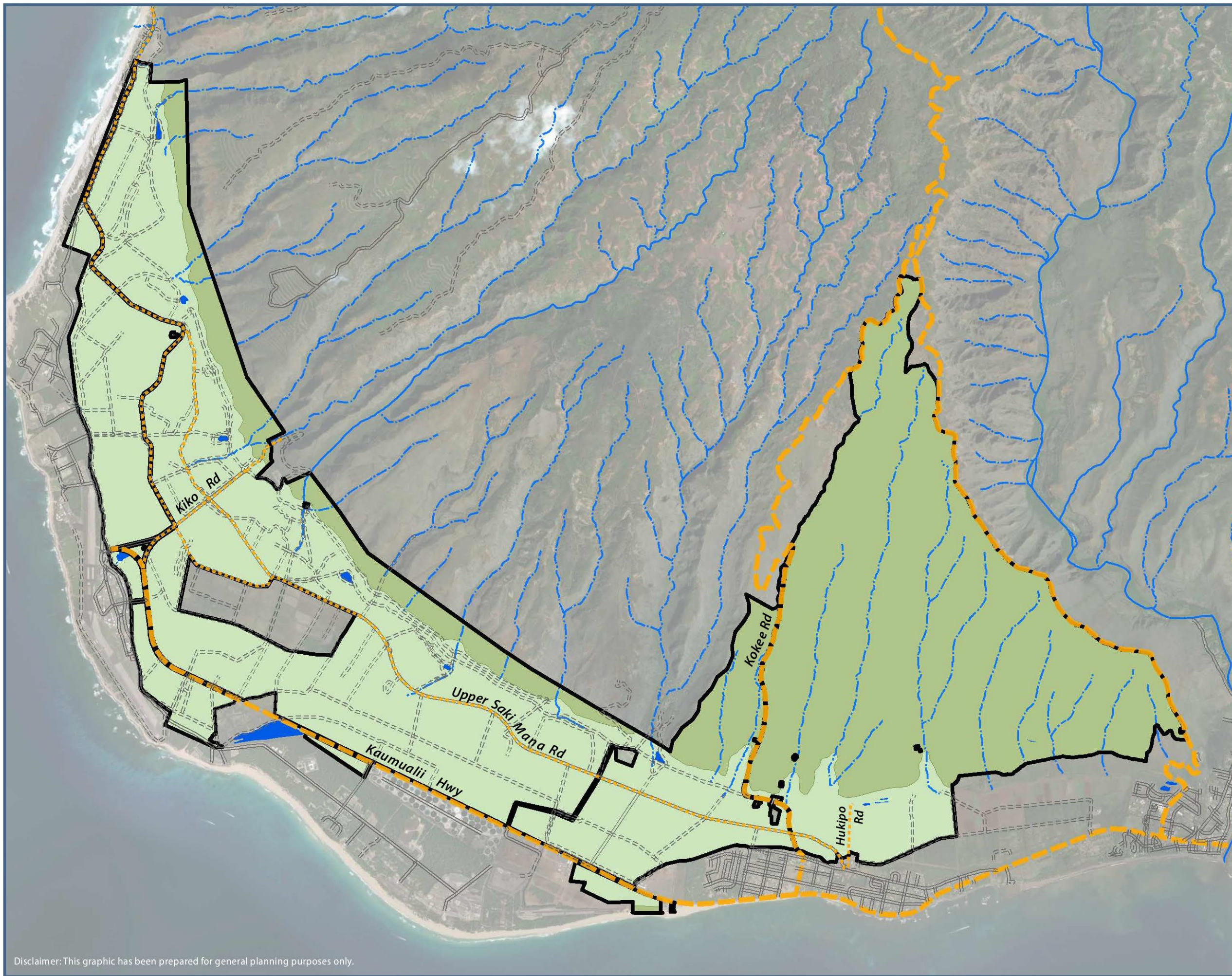
After a four year process of engaging with residents, community leaders, government officials, business owners and landowners, Kaua‘i Planning Commission transmitted the General Plan Update to the Kaua‘i County Council in June 2017. The Kaua‘i County Council approved the General Plan in February 2018 and the mayor signed it into law on March 15, 2018.

The designation of the KAA IAL as IAL is consistent with the General Plan’s objectives and policies regarding maintaining the viability of agriculture. According to the General Plan’s Land Use Map, roughly half of the KAA IAL is designated as “Agricultural” with the remaining half designated as “Natural.” Designating the KAA IAL as IAL is consistent with this General Plan’s Land Use Map as the lands will be preserved for agricultural production and natural areas for contiguous preservation of agricultural uses across the KAA IAL. Figure 8 shows the General Plan land use map illustrating land use designations for the KAA IAL.

9. County of Kaua‘i: West Kaua‘i Community Plan

The County of Kaua‘i’s Community Plans are policy documents intended to guide the County’s land use approvals, infrastructure improvements, and private sector investment decisions for the enhancement and improvement of the people of Kaua‘i. The County of Kaua‘i is organized into six regions. The KAA IAL is located within the West Kaua‘i Community Plan (WKCP) region.

The WKCP represents the County’s land use policy at the regional level. It is a long-range plan that considers a 20-year planning timeframe to the year 2040. The WKCP (2021) contains a map for various designations within the WKCP region. The WKCP map designates roughly half of the KAA IAL as “Agriculture” with portions along the mauka boundary and the segment extending mauka of Kekaha and Waimea along the mountain slopes designated as “Natural.” Figure 9 shows the WKCP (2021) land use map illustrating land use designations for the KAA IAL. The County adopted the WKCP in December 2020 (County of Kaua‘i, 2021).



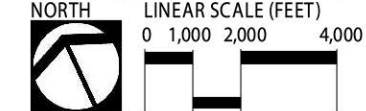

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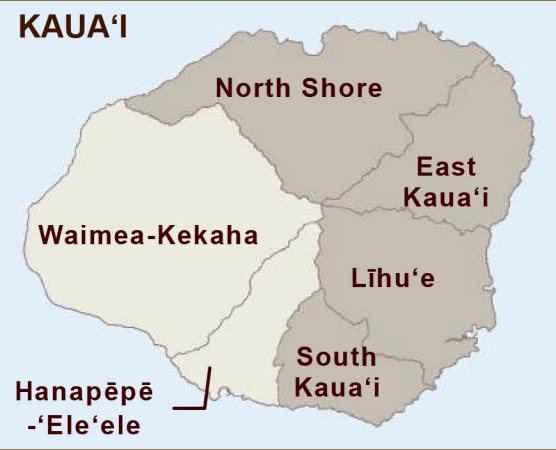
-  Proposed IAL Land
- General Plan
 -  Agricultural
 -  Natural
 -  Residential Community
-  Reservoir
-  Intermittent Stream
-  Perennial Stream
-  Major Road
-  Key Road
-  Paved Road
-  Unpaved Road

Source:
County of Kauai,
ESRI Basemap.

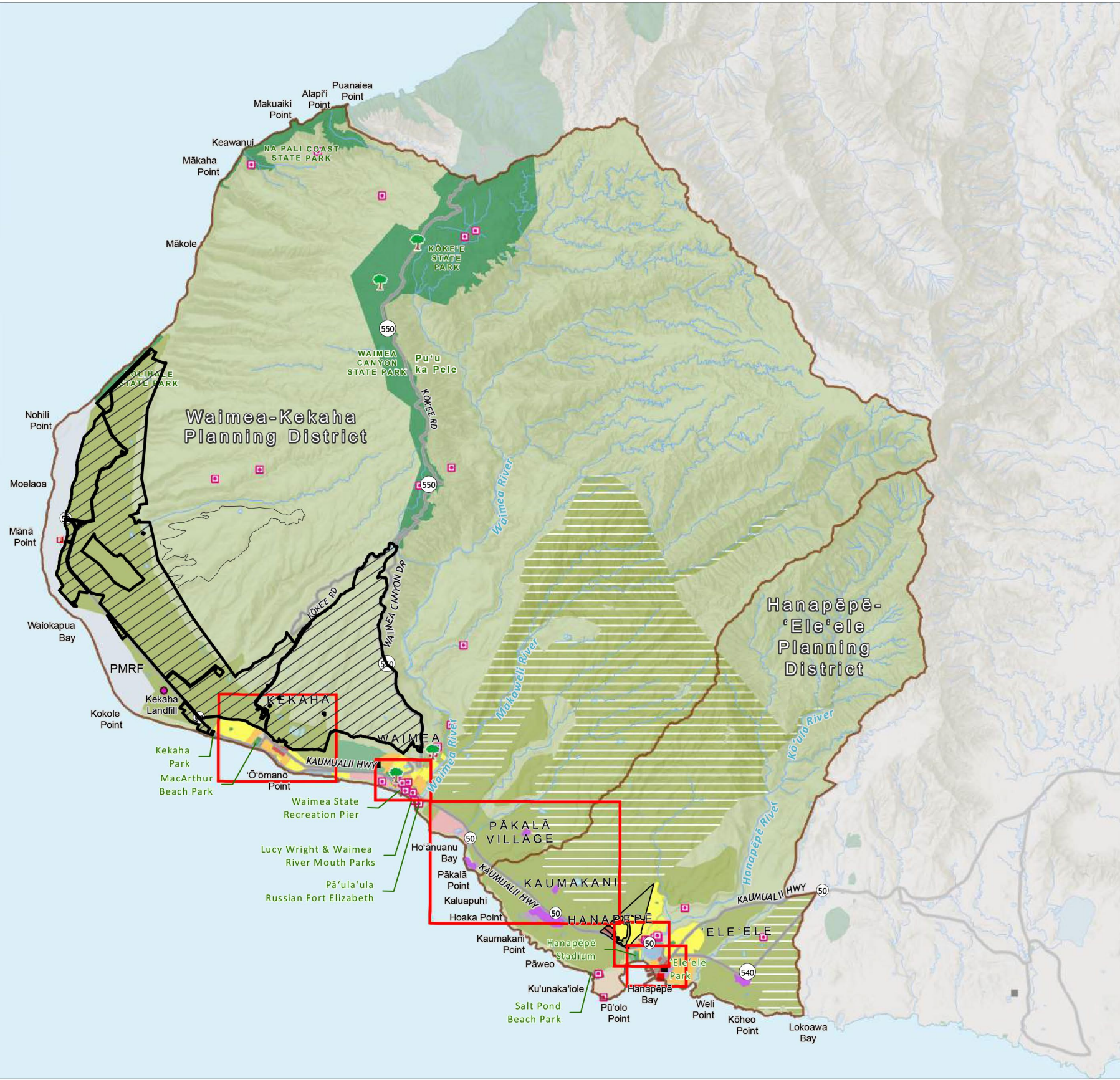
FIGURE 8
KAUAI COUNTY GENERAL PLAN
KAA IMPORTANT AG LAND

KEKAHA AGRICULTURE ASSOCIATION ISLAND OF KAUAI
NORTH LINEAR SCALE (FEET)
0 1,000 2,000 4,000

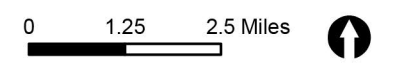


WEST KAUA'I REGIONAL MAP SHOWING TOWN PLAN AREAS



Legend

- Proposed IAL Land
- Town Center
- Walkable Neighborhood
- Residential Neighborhood
- Public Facilities
- Coastal Edge
- Plantation Camp
- Agriculture
- Agriculture (IAL)
- Park
- Natural
- Resort
- Industrial
- Transportation
- Military
- Planning District Boundary
- DHHL Homestead Project Areas
- Registered Historic Properties
- Exceptional Trees
- Fire Station
- Landfill
- Refuse Transfer Station
- Electric Power Plant
- Wastewater Treatment Plant
- Streams and Rivers
- Reservoirs and Ponds
- Highways



Data Sources: County of Kaua'i, Hawai'i State GIS Program, USGS National Map, and ESRI Basemaps

FIGURE 9
WEST KAUA'I COMMUNITY PLAN

10. 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.

The Kekaha Ag Lands are completely within the Agricultural District (Figure 10). 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; 2) farming activities or uses related to animal husbandry; 3) aquaculture; 4) agricultural tourism conducted on a working farm or a farming operation; and 5) open area recreational facilities. Current uses on the KAA IAL are consistent with these authorized agricultural uses.

11. County of Kaua‘i Zoning

The County of Kaua‘i’s Comprehensive Zoning Ordinance (CZO) designates the majority of the KAA IAL as Agriculture District (A) with smaller portions of the KAA IAL as Open District (O). While most of the KAA IAL is within the Agriculture District, portions of the KAA IAL along the mauka boundary to the north and east and steeper section of the mauka lands comprising drainageways are zoned Open District.

According to the Kaua‘i County Code (KCC) §8-8.1, the purpose of the Agriculture District is to “protect the agriculture potential of lands within the County of Kaua‘i,” “assure a reasonable relationship between the availability of agriculture lands for various agriculture uses and the feasibility of those uses,” and “limit and control the dispersal of residential and urban use within agriculture lands.”

The KCC §8-9.1, states that the purpose of the Open District is to “preserve, maintain or improve the essential characteristics of land and water areas that are of significant value to the public as scenic or recreational resources” and “preserve, maintain or improve the essential functions of physical and ecological systems, forms or forces which significantly affect the general health, safety and welfare.”

Current uses on the KAA IAL are consistent with the purposes of the Agriculture District and the Open District.

12. Agricultural Infrastructure

In addition to the water resources infrastructure, as shown in Figure 7, the KAA IAL contains, gates, fencing, greenhouses, electrical infrastructure, storage facilities, shade/rain shelters for field workers, a base yard facility, and agricultural roads to facilitate agricultural production. In addition, there are aquaculture-related facilities and infrastructure for shrimp cultivation, including earthen ponds, breeding and production facilities, and packing buildings.

Agricultural roads within the KAA IAL have nine direct access points to Kaumuali‘i Highway, two direct access points to Kōke‘e Road, and three direct access points to Kekaha Road for:

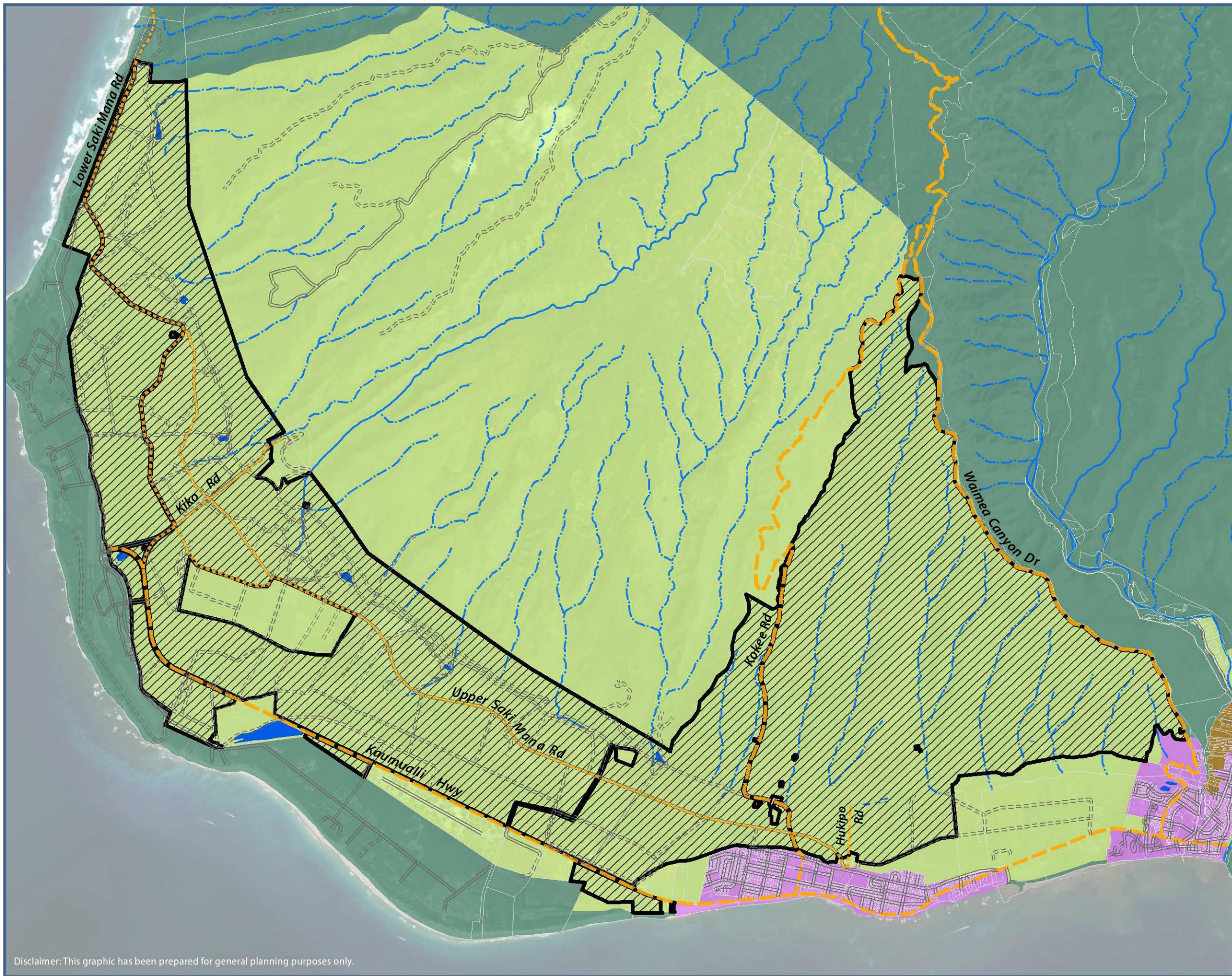
1) transportation of agricultural products to/from markets; 2) access to/from the KAA IAL for agricultural equipment.

As described in Section 7, there is significant water infrastructure for distributing and managing irrigation water across the vast area within the bounds of the KAA IAL. The KEDIS is comprised of a series of ditches, tunnels, and siphons that stretches approximately 27 miles, providing water resources to the majority of the agricultural fields along the Kekaha-Mānā plains. The State has provided funding for the ADC to upgrade to the existing KEDIS, including \$5 million worth of new piping to replace portions of the system along the Mānā Plain.


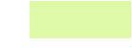









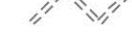
The KODIS is comprised of a series of ditches that terminates along the upper mauka agricultural fields within the KAA IAL. On the mauka lands, there are three irrigation basins with gravity distribution systems for irrigation water. Plantation-era irrigation supply lines are present but will need repair and refurbishment in the future. While the mauka lands receive limited water from the Kōke‘e Ditch irrigation system, a water pump with a 500,000 gpd capacity and irrigation force main pipeline have been purchased pending installation for future expansion of water resources on these lands.

There are six irrigation reservoirs, three basins (smaller reservoirs in mauka fields), six pumping and filtering stations, two deep wells, and three Maui-style well shafts/pumping stations located across the KAA IAL. The KAA IAL also includes a significant network of drainage ditches and canals throughout the makai fields, providing additional water infrastructure conducive to agricultural productivity.

The KAA IAL includes various agricultural roads, providing transportation access to all the agricultural fields. A key road (called Main Track from Kekaha to Kiko Road and Upper Saki Mānā Road from Kiko Road (in Mānā) to the 130 Reservoir) runs the length of the Kekaha-Mānā plains and connects to most of the fields along the makai portions of the KAA IAL. Supplemental agricultural roadways interconnect to the key road, creating an internal network within the KAA IAL for distribution of goods and materials. Many agricultural roads within the KAA IAL feed into the major roadways of the West Kaua‘i region, including Kaumuali‘i Highway, Waimea Canyon Drive, and Kōke‘e Road. These roads provide sufficient access points to transport agricultural goods to markets and consumers throughout the County and beyond.



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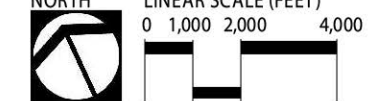
-  Proposed IAL Land
- State Land Use Districts
 -  Agricultural
 -  Conservation
 -  Rural
 -  Urban
-  Reservoir
-  Intermittent Stream
-  Perennial Stream
-  Major Road
-  Key Road
-  Paved Road
-  Unpaved Road

Source:
State Land Use Commission, 2016.
County of Kauai.
ESRI Basemap.

FIGURE 10
STATE LAND USE DISTRICTS

KAA IMPORTANT AG LAND

KEKAHA AGRICULTURE ASSOCIATION
NORTH
LINEAR SCALE (FEET)
0 1,000 2,000 4,000



ISLAND OF KAUAI
PBR HAWAII
PLANNING



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