



O'AHU IMPORTANT AGRICULTURAL LAND MAPPING PROJECT

AUGUST 2018



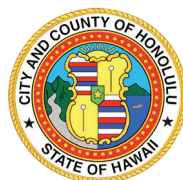
Prepared For

City and County of Honolulu
**Department of Planning
and Permitting**



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ACRONYMS AND ABBREVIATIONS

ADC	State of Hawai'i Agribusiness Development Corporation
ALISH	Agricultural Lands of Importance to the State of Hawai'i
ALUM	Island of O'ahu Agricultural Land Use Map
City	City and County of Honolulu
DLNR	State Department of Land and Natural Resources
DP	development plan
DPP	City and County of Honolulu Department of Planning and Permitting
GIS	geographical information system
HAR	Hawai'i Administrative Rules
HDOA	State Department of Agriculture
HRS	Hawai'i Revised Statutes
IAL	Important Agricultural Land
LUC	State Land Use Commission
LSB	Land Study Bureau
NASS	National Agricultural Statistical Service
NRCS	National Resources Conservation Service
OHA	Office of Hawaiian Affairs
SCP	sustainable communities plan
SLH	Session Laws of Hawai'i
SSURGO	Soil Survey Geographic Database of the USDA NRCS
TAC	Technical Advisory Committee
TMK	tax map key
USDA	United States Department of Agriculture

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EXECUTIVE SUMMARY

This report presents the recommendations of the City and County of Honolulu Department of Planning and Permitting (City) for the lands on O'ahu that meet the statutory requirements for consideration as Important Agricultural Land (IAL) designation in accordance with the county designation process set forth in Chapter 205-47, Hawai'i Revised Statutes (HRS) and Hawai'i Administrative Rules (HAR) 15-15-17. The recommendations presented by the City are to be reviewed by the Honolulu City Council and adopted by resolution with or without changes, then submitted to the LUC for final approval and adoption.

In the context of the State land use system, IAL refers to a State land use designation for a select class of farm land intended to be used in the long-term for active agricultural production. Administered by the State Land Use Commission (LUC), the IAL designation is a supplemental state land use classification for an exclusive sub-set of high-quality farm land within the State Land Use Agricultural District. By granting landowners access to incentives and supportive measures that reduce the cost of farming, the IAL designation seeks to promote the economic viability of farming and to make it possible for landowners to keep agricultural lands active, ultimately leading to the long-term preservation and protection of productive agricultural land (Chapter 205-42, HRS).

Long-Term Goals of IAL

- *Help farming be an economically viable activity*
- *Ensure that the best of O'ahu's high-quality farm land is actively used for agricultural purposes*
- *Guide decision-making in the State Agricultural District*

There are three distinct processes to designate land as IAL. The first allows farmers or landowners to voluntarily petition the LUC for a declaratory ruling (i.e., voluntary designation); the second authorizes the designation of state-owned land; and the third is a mandatory requirement for the counties to prepare recommendations for IAL and submit its findings to the LUC for decision-making.

The City's recommendations for IAL are the result of a strategic, resource-based mapping exercise that used available geographic information system (GIS) datasets to inventory land in accordance with the standards and criteria prescribed by the law. The planning process was structured with various forums for public involvement, including consultation with the project technical advisory committee, a series of focus group meetings and community meetings, two 60-

day public comment periods, and a project website. Two separate mail-outs informing affected landowners of the possible IAL designation were also completed to comply with the legal requirements for landowner notification.

The island of O'ahu comprises an approximate 386,000 total acres, of which roughly 128,000 acres, or 32% of the total acreage, is in the State Land Use Agricultural District. The remaining acreage is designated in the Urban District (102,000 acres, 27%) and the Conservation District (157,000 acres or 41%). Of the 128,000 acres in the State Agricultural District, an approximate 12,300 acres have already been designated as IAL through the landowner-initiated process, accounting for nearly 10% of O'ahu lands in the State Agricultural District.

Following the prescribed methodology for determining which lands were "eligible" to be evaluated for IAL designation by the county (meaning which land met the conditions of ownership and land use classifications for consideration), the City identified a study area of roughly 63,900 acres. An approximate 45,400 acres are being recommended for IAL designation under the county-designation process, which corresponds to roughly 72% of the study area and 12% of O'ahu's total land area. The recommendations articulate a long-term vision for the high quality farm land on O'ahu most suited for farming. While the majority of the recommended land is in Central O'ahu (Mililani, Kunia and Wahiawā) and the North Shore (Hale'iwa and Waialua), there are several large tracts found along the Wai'anae coast and in Ko'olau Loa and Ko'olau Poko. Revisions to the current inventory are possible pending City Council and LUC proceedings.

INTRODUCTION

This report presents the recommendations of the City and County of Honolulu Department of Planning and Permitting (DPP) for the lands on O'ahu that meet the statutory requirements for consideration as Important Agricultural Land (IAL) designation in accordance with the county designation process set forth in Chapter 205-47, Hawai'i Revised Statutes (HRS) and Hawai'i Administrative Rules (HAR) Title 15, Chapter 15, Subchapter 17 Important Agricultural Land Designation and Proceedings.

"IAL" is a legal term that refers to a State land use designation for a select class of farm land intended to be used in the long-term for active agricultural production. In the context of the State land use system, the IAL designation is a supplemental State land use classification for an exclusive sub-set of high-quality farm land within the State Land Use Agricultural District. Administered by the State Land Use Commission, the IAL designation overlays existing State and county land use classifications (i.e., state land use districts, county zoning districts) and does not change existing classifications or affect the range of current permitted land uses. Contrary to popular belief, the IAL designation does not impose a higher level of permanent protection from future development, and it does not simply ensure that agricultural land is preserved in perpetuity. Rather, the premise of the IAL designation is to grant landowners access to incentives and supportive measures that reduce the cost of farming, which in turn promotes the economic viability of farming and makes it possible for landowners to keep agricultural lands active, ultimately leading to the long-term preservation and protection of productive agricultural land (Chapter 205-42, HRS).

Hawai'i State law—Chapter 205, HRS—mandates that each of the four counties in Hawai'i conduct a mapping process to identify lands within their jurisdiction to be recommended to the State Land Use Commission (LUC) for designation as IAL. Upon transmittal of this report to the Honolulu City Council, the City and County of Honolulu (City) will be the first of the four counties to comply with the statutory requirement. Following the prescribed county designation process, the maps and supporting materials presented in this report are to be reviewed by the Honolulu City Council and adopted by resolution with or without changes, then submitted to the LUC for final approval and adoption.

In addition to presenting the City's recommendations for county-designated IAL, this report provides background information about the City's mapping process and the methodology used to develop the recommendations. It also documents the public involvement and input received in response to the DPP's consultation

efforts. This report supersedes the *O'ahu Important Agricultural Lands Phase I Study* (April 2014), and should be referenced in place of the previous version.

The following chapters make up the body of this report:

- Chapter 1 provides a description of the IAL designation and background information about the legal mandates that establish the framework for IAL. Emphasis is placed on the salient points of the law, as it relates to the counties' requirements for IAL mapping.
- Chapter 2 outlines the general structure of the City's approach to prepare the map recommendations and describes the community consultations and the public outreach strategies, the methodology to define and weight (i.e., prioritize) the criteria, and the underlying assumptions that guided the formation of map recommendations.
- Chapter 3 describes the current agricultural industry on O'ahu, including the City's land use planning system and policies for future development, the status of lands available for agriculture production, and recent trends and technological advancements influencing the future of the industry.
- Chapter 4 presents an overview of the lands being recommended by the City for IAL designation. This chapter also documents the issues and concerns raised during the community consultations that are likely to be key topics for future discussions about the viability of Oahu's agricultural industry.

Meeting summaries, background information about the data sources and criteria maps, and legal references are included in the appendices.

1. LEGAL FRAMEWORK FOR THE IMPORTANT AGRICULTURAL LANDS INITIATIVE

The directive to designate agricultural land as IAL is derived from the State Constitution and Chapter 205, HRS (informally referred to as “Hawai‘i’s Land Use Law”). This chapter introduces the State’s land use system and provides an overview of the legal instruments that establish the framework for IAL and the county designation process.

1.1 ARTICLE XI SECTION 3, CONSTITUTION OF THE STATE OF HAWAI‘I

As an outcome of Hawai‘i’s post-statehood shift from a plantation-dominated economy to one of tourism and Federal spending, concerns about the need to promote the viability of agriculture and protect Hawai‘i’s agricultural lands prompted the 1978 State Constitutional Convention to propose a constitutional amendment to identify and designate IAL. The proposed constitutional amendment was subsequently approved by Hawai‘i voters in the same year and enacted as Article XI Section 3 of the Constitution of the State of Hawai‘i (State of Hawai‘i Department of Agriculture website, 2012).

Article XI, Section 3 of the State Constitution sets out the framework for state policies and all subsequent legislation related to IAL (see Figure 1-1). According to the Constitution, the State has a legal responsibility to conserve and protect

Figure 1-1: Article XI Section 3, Constitution of the State of Hawai‘i

“The State shall conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency and assure the availability of agriculturally suitable lands. The legislature shall provide standards and criteria to accomplish the foregoing. Lands identified by the State as important agricultural lands needed to fulfill the purposes above shall not be reclassified by the State or rezoned by its political subdivisions without meeting the standards and criteria established by the legislature and approved by a two-thirds vote of the body responsible for the reclassification or rezoning action.”

agricultural lands and promote the agricultural industry. The constitutional language provides for the following:

- establishes the constitutional mandate to support the long-term viability of agriculture in Hawai'i
- mandates the legislature to provide standards and criteria for identifying lands as IAL and for rezoning and reclassifying lands designated as IAL, and
- specifies a two-thirds vote to reclassify or rezone lands designated as IAL.

1.2 PART I OF CHAPTER 205, HAWAI'I REVISED STATUTES

The State Land Use Law—Part I of Chapter 205, HRS—was originally adopted in 1961 to provide a framework for statewide land use management and regulation. Under the State Land Use Law, all lands in the State are classified into one of four land use districts (Urban, Rural, Agricultural, or Conservation), with specific land uses allowable in each district (see Appendix A). Figure 1-2 provides a graphic representation of the four state land use districts.

Part I of Chapter 205, HRS also establishes the authority of the Land Use Commission (LUC), which is the nine-member board that administers the State Land Use Law. Specific responsibilities of the LUC include establishing the land use district boundaries and the boundaries of the IAL designation, deciding on petitions for district boundary amendments, and issuing special use permits within the Agricultural and Rural Districts (State Land Use Commission website <http://luc.hawaii.gov/about/>).

The following standards are used to determine the boundaries for the State Agricultural District:

- “1) It shall include lands with a high capacity for agricultural production*
- 2) It may include lands with significant potential for grazing or for other agricultural uses*
- 3) It may include lands surrounded by or contiguous to agricultural lands or which are not suited to agricultural and ancillary activities by reason of topography, soils, and other related characteristics, and*
- 4) It shall include all lands designated important agricultural lands pursuant to Part III of Chapter 205, HRS.” (HAR Section 15-15-19)*

Figure 1-2: State Land Use Districts



Permitted and prohibited activities and uses within the State Agricultural District are specified in Chapter 205-2 and 205-4.5, HRS. Permitted uses include the cultivation of crops, aquaculture, pasture or forestry; renewable energy facilities (on land with lower agricultural productivity rating); agriculture-related activities such as farm dwellings, employee housing, agriculture processing and storage facilities, and agricultural tourism on working farms. Utility systems and facilities, and open area recreational facilities such as day camps and parks are also allowed.

Although the primary function of the Agricultural District is to denote farmland traditionally used for agricultural production and related activities, the Agricultural District also contains a large acreage of lands that border productive agricultural areas and lack the characteristics to be designated for the Urban, Rural or Conservation Districts, so that they are notably used as recreational and open space resources (e.g., parks, picnic areas, riding stables, golf courses approved before 2005). The inclusion of “areas that are not used for, or that are not suited to, agricultural and ancillary activities by reason of topography, soils, and other related characteristics” (Chapter 205-2(d), HRS) in the Agricultural District has diluted the integrity of the Agricultural District, particularly since certain non-agricultural uses are allowed on Agricultural-designated land.

1.3 PART III OF CHAPTER 205, HAWAI'I REVISED STATUTES

The intent and purpose of Article XI Section 3 of the State Constitution is codified in Part III of Chapter 205, HRS (see Appendix A). As a result of the State Legislature's passage of Act 183, Session Laws of Hawai'i (SLH) 2005 (“Act 183”) and Act 233, SLH 2008 (“Act 233”), Chapter 205, HRS was amended to define the framework for the identification and designation of IAL. Passed nearly 30 years after Hawai'i's voters ratified the 1978 constitutional amendments, Act 183 and Act 233 are hailed as landmark legislation that led to the establishment of additional incentives and regulations to support the agricultural industry and protect Hawai'i's agricultural lands for agricultural uses.

Chapter 205, Part III, HRS, provides for the following:

- a formal definition of IAL
- policy guidance to assure the long-term agricultural use of IAL
- standards and criteria to be used in identifying IAL and assigning land to an IAL designation
- separate processes and responsibilities for landowners, the counties, and the State to identify lands with potential for IAL
- the establishment of a State IAL designation process that encourages landowners to volunteer their lands for IAL designation, and
- incentives for landowners to petition for important agricultural land designation.

1.3.1 LEGAL DEFINITION OF IAL

In identifying lands as IAL, State law defines “important agricultural lands” as those lands that:

- “1) are capable of producing sustained high agricultural yields when treated and managed according to accepted farming methods and technology*
- 2) contribute to the State's economic base and produce agricultural commodities for export or local consumption, or*
- 3) are needed to promote the expansion of agricultural activities and income for the future, even if currently not in production” (Chapter 205-42(a), HRS).*

The law also identifies the desired outcome for the identification of IAL and the overarching implementing actions that form the basis of the IAL program:

“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. To achieve this objective, the State shall:

- 1) Promote agricultural development and land use planning that delineates blocks of productive agricultural land and areas of agricultural activity for protection from the encroachment of nonagricultural uses; and*
- 2) Establish incentives that promote: a) agricultural viability; b) sustained growth of the agriculture industry; and c) the long-term agricultural use and protection of these productive agricultural lands” (Chapter 205-42(b), HRS).*

Policies to guide State and county decisions involving the management and use of IAL-designated lands are also established (see Figure 1-3).

Figure 1-3: HRS, Chapter 205-43 Important Agricultural Lands; Policies

State and county agricultural policies, tax policies, land use plans, ordinances, and rules shall promote the long-term viability of agricultural use of important agricultural lands and shall be consistent with and implement the following policies:

- 1) Promote the retention of important agricultural lands in blocks of contiguous, intact, and functional land units large enough to allow flexibility in agricultural production and management*
- 2) Discourage the fragmentation of important agricultural lands and the conversion of these lands to nonagricultural uses*
- 3) Direct nonagricultural uses and activities from important agricultural lands to other areas and ensure that uses on important agricultural lands are actually agricultural uses*
- 4) Limit physical improvements on important agricultural lands to maintain affordability of these lands for agricultural purposes*
- 5) Provide a basic level of infrastructure and services on important agricultural lands limited to the minimum necessary to support agricultural uses and activities*
- 6) Facilitate the long-term dedication of important agricultural lands for future agricultural use through the use of incentives*
- 7) Facilitate the access of farmers to important agricultural lands for long-term viable agricultural use, and*
- 8) Promote the maintenance of essential agricultural infrastructure systems, including irrigation systems.*



SOURCE: https://upload.wikimedia.org/wikipedia/commons/0/04/Collecting_eggs_on_an_organic_farm.jpg



SOURCE: Starr Environmental.
www.starrenvironmental.com/images/image/?q=25131962262

1.3.2 STANDARDS AND CRITERIA FOR EVALUATION

As designed, the process to evaluate lands proposed for designation as IAL is based on a set of eight specific standards and criteria. These standards and criteria, which for the most part represent the contributing factors to a viable and productive agricultural industry in Hawai'i, are enumerated in Chapter 205-44, HRS (see Figure 1-4).

FIGURE 1-4: HRS, Chapter 205-44 Standards and Criteria for the Identification of Important Agricultural Lands

- 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 Hawai'i (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.

In using the standards and criteria to evaluate the agricultural qualities of the land, there is no requirement that all the standards and criteria have to be applied and met. The enabling legislation only requires a weighted evaluation process. Per Chapter 205-44, HRS, "*Lands identified as important agricultural lands need not meet every standard and criteria [...]. Rather, lands meeting any of the criteria [...] shall be given initial consideration; provided that **the designation of important***

agricultural lands shall be made by weighing the standards and criteria with each other [...]. The enabling legislation does not specify the methodology that should be used to weight the standards and criteria, which allows for flexibility when choosing the applied criteria weighting tool, and when assigning values and ranking the standards and criteria.

1.3.3 PROCESSES TO DESIGNATE IAL

The LUC is the governing body with the authority to approve petitions for IAL designation. There are three distinct processes to designate land within the State Land Use Agricultural District as IAL. The first allows farmers or landowners to voluntarily petition the LUC for a declaratory ruling (i.e., voluntary designation); the second authorizes the designation of state-owned land; and the third is a mandatory requirement for the counties to prepare recommendations for IAL and submit its report, maps and record of the counties' identification of IAL to the LUC for decision-making. The three processes are summarized in this section.

VOLUNTARY DESIGNATION

Private landowners seeking an IAL designation are able to voluntarily petition the LUC for a declaratory ruling. The LUC requires a two-thirds majority vote of Commission members to issue a declaratory order in favor of the landowner. A current inventory of IAL designations is presented in Section 3.4.

The voluntary designation process offers specific incentives to encourage private landowners to voluntarily seek an IAL designation. In addition to having the ability to choose which lands may be considered for IAL, landowners who have a majority of their landholdings designated as IAL are exempt from additional lands being designated via the



IAL at Kawaiiloa, O'ahu

SOURCE: Land Use Commission DR 14-52 Kamehameha Schools Site Visit Photographs, February 4, 2015.

county's process.¹ There is also an expedited land use reclassification allowance—the "85/15 incentive"—that enables the LUC, with the approval of the State legislature, to reclassify or issue future credits to reclassify as much as 15 percent of the petition area to either the State Urban, Rural, or Conservation District, if the remaining portion of the petition area (i.e., at least 85 percent) is designated as IAL and is in the same county as the land proposed for IAL. Reclassifications to the Urban District under this clause are required to be consistent with the relevant county's general plan and regional plan (HAR Section 15-15-122 and 15-15-124).

DESIGNATION OF PUBLIC LANDS

Chapter 205-44.5, HRS identifies a separate process under which public lands as defined under Section 171-2, Chapter HRS are to be identified for IAL designation (see Figure 1-5). The law states that the State Department of Agriculture

FIGURE 1-5: HRS, Chapter 171-2

"Public lands" means all lands or interest therein in the State classed as government or crown lands previous to August 15, 1895, or acquired or reserved by the government upon or subsequent to that date by purchase, exchange, escheat, or the exercise of the right of eminent domain, or in any other manner; including lands accreted after May 20, 2003, and not otherwise awarded, submerged lands, and lands beneath tidal waters that are suitable for reclamation, together with reclaimed lands that have been given the status of public lands under this chapter, except:

- 1) Lands designated in section 203 of the Hawaiian Homes Commission Act, 1920, as amended*
- 2) Lands set aside pursuant to law for the use of the United States*
- 3) Lands being used for roads and streets*
- 4) Lands to which the United States relinquished the absolute fee and ownership under section 91 of the Hawaiian Organic Act prior to the admission of Hawaii as a state of the United States unless subsequently placed under the control of the board of land and natural resources and given the status of public lands in accordance with the state constitution, the Hawaiian Homes Commission Act, 1920, as amended, or other law*
- 5) Lands to which the University of Hawai'i holds title*
- 6) Lands to which the Hawaii housing finance and development corporation in its corporate capacity holds title*
- 7) Lands to which the Hawaii community development authority in its corporate capacity holds title*
- 8) Lands to which the department of agriculture holds title by way of foreclosure, voluntary surrender, or otherwise, to recover moneys loaned or to recover debts otherwise owed the department under chapter 167*
- 9) Lands that are set aside by the governor to the Aloha Tower development corporation; lands leased to the Aloha Tower development corporation by any department or agency of the State; or lands to which the Aloha Tower development corporation holds title in its corporate capacity*
- 10) Lands that are set aside by the governor to the agribusiness development corporation; lands leased to the agribusiness development corporation by any department or agency of the State; or lands to which the agribusiness development corporation in its corporate capacity holds title, and*
- 11) Lands to which the Hawai'i technology development corporation in its corporate capacity holds title.*

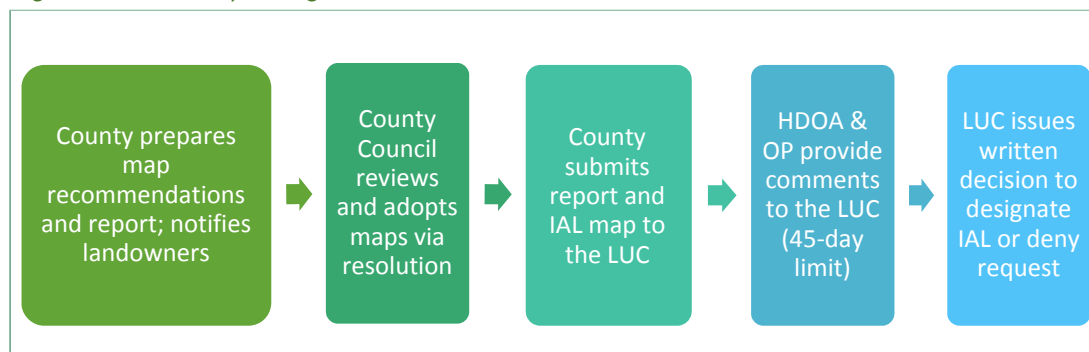
¹ Per Chapter 205-49, HRS, "if the majority of landowners' landholdings is already designated as important agricultural lands, [. . .] the commission shall not designate any additional lands of that landowner as important agricultural lands, except by a petition pursuant to section 205-45."

(HDOA) and the State Department of Land and Natural Resources (DLNR) are to conduct a collaborative mapping effort before December 31, 2009. Unlike both the voluntary landowner designation process and the county-mandated process which are subject to LUC's procedures for district boundary amendments and declaratory orders, public lands recommended for IAL designation are not subject to the LUC's determination reviews. Upon receiving the maps identifying the State agencies' recommendations for IAL, the LUC is to adopt the maps that designate IAL on public lands (i.e., without a formal LUC evaluation). Management responsibility for the public lands designated as IAL is to transfer to the HDOA after the maps are adopted (Chapter 141-1(9), HRS). This process has yet to be completed.

DESIGNATION BY THE COUNTIES

Each county is mandated—through its planning department—to identify lands within its jurisdiction that have potential for IAL designation and to prepare draft maps of their recommendations for LUC approval. The general sequence of actions and the agencies/parties involved in the county designation process are outlined in Figure 1-6.

Figure 1-6: County Designation Process



Chapter 205-47, HRS establishes procedural and content guidance for the counties to follow when preparing the draft maps, including directives for land eligibility, landowner notification, and stakeholder participation and public involvement. The first step in the county process involves the planning department conducting a mapping process to develop draft maps in consultation with their respective stakeholders and agencies, and preparing a report that documents the process. After informing landowners (either by mail or posted notice) of the potential designation of their lands as IAL, the planning department submits their draft

recommendations to the county council for adoption as a resolution (The county council can adopt with or without changes, or return to the planning department un-adopted). Upon approval by the county council, the county then submits the adopted IAL recommendations and map to the LUC. The HDOA and State Office of Planning is provided 45 days to review the IAL recommendations and map and provide comments. A two-thirds majority vote of LUC membership is required for designation as IAL.

Conditions for Eligibility. The county authority to consider land for the IAL designation is limited to certain lands that meet the conditions of ownership and land use classifications set forth in the law. Chapter 205-47(a), HRS states:

“Each county shall identify and map potential important agricultural lands within its jurisdiction based on the standards and criteria in section 205-44 and the intent of this part, except lands that have been designated, through the state land use, zoning, or county planning process, for urban use by the State or county.”

According to the statute, certain categories of land are automatically removed from the county's screening. These include:

- lands outside the county's jurisdictional responsibilities, including land owned by the U.S. Government, land owned by autonomous State agencies (i.e., Department of Hawaiian Home Lands, Office of Hawaiian Affairs, Hawai'i Community Development Authority), and land classified in the State Conservation District
- land within the State Urban District², and
- land designated by county land use plans and zoning for urban use.

Included as being eligible for IAL consideration are lands that are classified as State Land Use Agricultural District but inside the City's growth boundary but designated for agriculture.

Additional categories of land are removed from the county's screening process if they fall under the State's designation of public lands or are owned by a landowner who successfully designated more than 50% of their landholdings as IAL under the voluntary designation process. These include:

² This limitation prevented land in two large development projects from consideration as IAL: Koa Ridge in Mililani and Ho'opili in 'Ewa.

- public lands as defined by Chapter 171-2, HRS to be mapped by the State HDOA and DLNR (see Figure 1.5 and the sub-section entitled “Designation of Public Lands”), and
- all lands owned by an individual landowner if more than 50 percent of that landowner’s property is already designated as IAL.³ This is consistent with the premise of Section 205-49(a), HRS.

Stakeholder Participation and Public Involvement. The statutory requirements for stakeholder participation and execution of an inclusive public involvement process require consultation and cooperation with specific stakeholders and a series of public meetings. Stakeholders that must be consulted are identified:

“.....landowners, the Department of Agriculture, agricultural interest groups, including representatives from the Hawai’i Farm Bureau Federation and other agricultural organizations, the United States Department of Agriculture Natural Resources Conservation Service, the office of planning, and other groups as necessary” (Chapter 205-47(b), HRS).

Facilitation of *“an inclusive process for public involvement, [...] including a series of public meetings throughout the identification and mapping process”* is required, and establishment of *“one or more citizen advisory committees [...] to provide further public input”* is suggested, although there is flexibility to use an existing planning process or an existing and adopted plan or map.⁴

³ HRS, 205-49(a) *“In designating important agricultural lands in the State, pursuant to the recommendations of individual counties, the commission shall consider the extent to which: [...] (3) The commission has designated lands as important agricultural lands, pursuant to section 205-45; provided that if the majority of landowners' landholdings is already designated as important agricultural lands, excluding lands held in the conservation district, pursuant to section 205-45 or any other provision of this part, the commission shall not designate any additional lands of that landowner as important agricultural lands except by a petition [...]”*

⁴ HRS, Chapter 205-47(c). *“Each county, through its planning department, shall develop an inclusive process for public involvement in the identification of potential lands and the development of maps of lands to be recommended as important agricultural lands, including a series of public meetings throughout the identification and mapping process. The planning departments may also establish one or more citizen advisory committees on important agricultural lands to provide further public input, utilize an existing process (such as general plan, development plan, community plan), or employ appropriate existing and adopted general plan, development plan, or community plan maps.”*

Landowner Notification. In the course of transmitting their recommendations to the county council, the county planning department is required to take reasonable action to inform landowners that their land is being recommended for IAL designation:

“Upon identification of potential lands to be recommended to the county council as potential important agricultural lands, the counties shall take reasonable action to notify each owner of those lands by mail or posted notice on the affected lands to inform them of the potential designation of their lands” (Chapter 205-47(d), HRS).

1.3.4 IAL INCENTIVES

The premise of the IAL program is that a viable agricultural industry will keep agricultural land in agricultural use and will ensure the long-term protection of the land from urban development.⁵ To promote the long-term agricultural productivity and use of important agricultural lands, the IAL legislation calls for streamlined, coordinated state and county incentives and protections that address the high cost of farming and the profitability of farmers on IAL. The law also requires the State and the counties to ensure that their agriculture-related policies and permitting procedures enable and promote the economic sustainability of agriculture (Chapter 205-26(a), HRS).

The mandate to establish IAL incentives is derived from Chapter 205-46, HRS:

*“b) State and county incentive programs shall provide preference to important agricultural lands and agricultural businesses on important agricultural lands. **The State and each county shall cooperate in program development to prevent duplication of and to streamline***

⁵ HRS, Chapter 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, the State shall:*

- (1) Promote agricultural development and land use planning that delineates blocks of productive agricultural land and areas of agricultural activity for protection from the encroachment of nonagricultural uses; and*
- (2) Establish incentives that promote: (a) agricultural viability; (b) sustained growth of the agriculture industry; and (c) the long-term agricultural use and protection of these productive agricultural lands.*

and consolidate access to programs and services for agricultural businesses located on important agricultural lands.

- c) Incentive and protection programs shall be designed to provide a mutually supporting framework of programs and measures that enhance agricultural viability on important agricultural lands, including but not limited to:*
 - 1) Grant assistance*
 - 2) Real property tax systems that support the needs of agriculture, including property tax assessments based on agricultural use valuation*
 - 3) Reduced infrastructure requirements and facilitated building permit processes for dedicated agricultural structures*
 - 4) Tax incentives to offset operational costs, promote agricultural business viability, and promote the long-term protection of important agricultural lands*
 - 5) Agricultural business planning, marketing, and implementation grants*
 - 6) Tax incentives and programs for equity investments and financing for agricultural operations, including agricultural irrigation systems*
 - 7) Other programs and mechanisms that promote investment in agricultural businesses or agricultural land protection, such as the purchase of development rights*
 - 8) State funding mechanisms to fund business viability and land protection programs*
 - 9) Water regulations and policies that provide farmers of important agricultural lands access to adequate and cost-effective sources of water*
 - 10) Other measures that would ensure that state capital investments, projects, programs, and rules are consistent with this part, and*
 - 11) Agricultural education and training for new farmers; upgrading the skills of existing farmers and other agriculture-related employees through the use of mentoring, business incubators, and public or private scholarships; and increasing the returns of farming by adding value to food processing and other tools and methods."*

IAL incentives currently offered by the State include the ability to construct on-site farm dwellings and employee housing, income tax credits for agricultural costs, financing opportunities and loan guarantees, and expedited permitting for agricultural processing facilities. On June 29, 2018, Act 87 extended the income tax credit for agricultural costs to December 31, 2021. The City and County of Honolulu currently provides the following reductions in governmental requirements for agricultural land, irrespective of IAL designation: relaxed infrastructure standards for agricultural subdivisions, property tax assessments at a substantially reduced rate for lands dedicated to agricultural use, a reduced water rate for agricultural properties, and an exemption from building codes and permitting approvals for certain farm structures. The feasibility of offering benefits specific for IAL-designated properties is being addressed by the City administration.



Agricultural Lands, Central O'ahu

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2. CITY'S APPROACH TO IDENTIFY AND MAP RECOMMENDATIONS FOR IAL DESIGNATION

This chapter outlines the City's approach to comply with the statutory requirement for the counties to prepare recommendations identifying lands within their jurisdiction for designation as IAL. The first section presents the overall planning process, including an outline of the various community consultations and public participation forums that were conducted during the course of the project. The second section describes the methodology that was used to define and weight (i.e., prioritize) the criteria and develop the City's recommendations.

2.1 OVERVIEW OF THE PLANNING PROCESS

The City and County of Honolulu is the second of the four counties to initiate a process to identify and map recommendations for county-designated IAL (Kaua'i County being the first). Upon transmittal of this report to the Honolulu City Council, the City will be the first county to seek county council approval for the county-prepared recommendations.

The purpose of the O'ahu IAL Mapping Project is to identify recommendations for IAL designation, in compliance with Section 205-47, HRS.

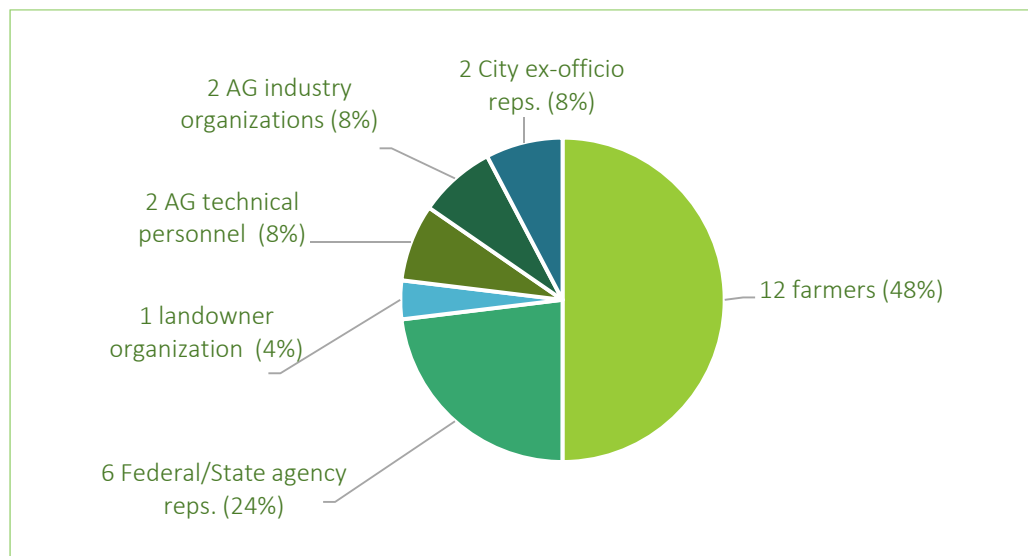
As described in Section 1.3.3, State law prescribes certain procedural and content requirements that need to be followed when petitioning the LUC for an IAL designation. For the county designation process, the law provides specifications for conditions of eligibility, a set of standards and criteria to be used in evaluating eligible lands for IAL, and guidance for stakeholder participation and public involvement. However, there is no prescriptive formula or illustrative methodology that the individual counties must follow when preparing their mapping recommendations, and each county has the flexibility to develop an individualized approach that best suits their particular needs. This allows each county to structure a level of community participation that reflects their constituents' priorities (i.e., project funding, staffing, scheduling, community politics).

The process to develop the City's recommendations consisted of two major phases, Internal Technical Review and Community Engagement, which were each defined by distinct scopes and work products. A third phase, Policy Formation, which has not been completed and is pending future action, will involve City Council and LUC approval. Figure 2-1 presents a graphic illustration of the major tasks and the public participation program as they relate to each phase.

The first phase involved an internal technical review to define the criteria and their use in identifying lands eligible for IAL designation. Specific tasks of the technical review were to:

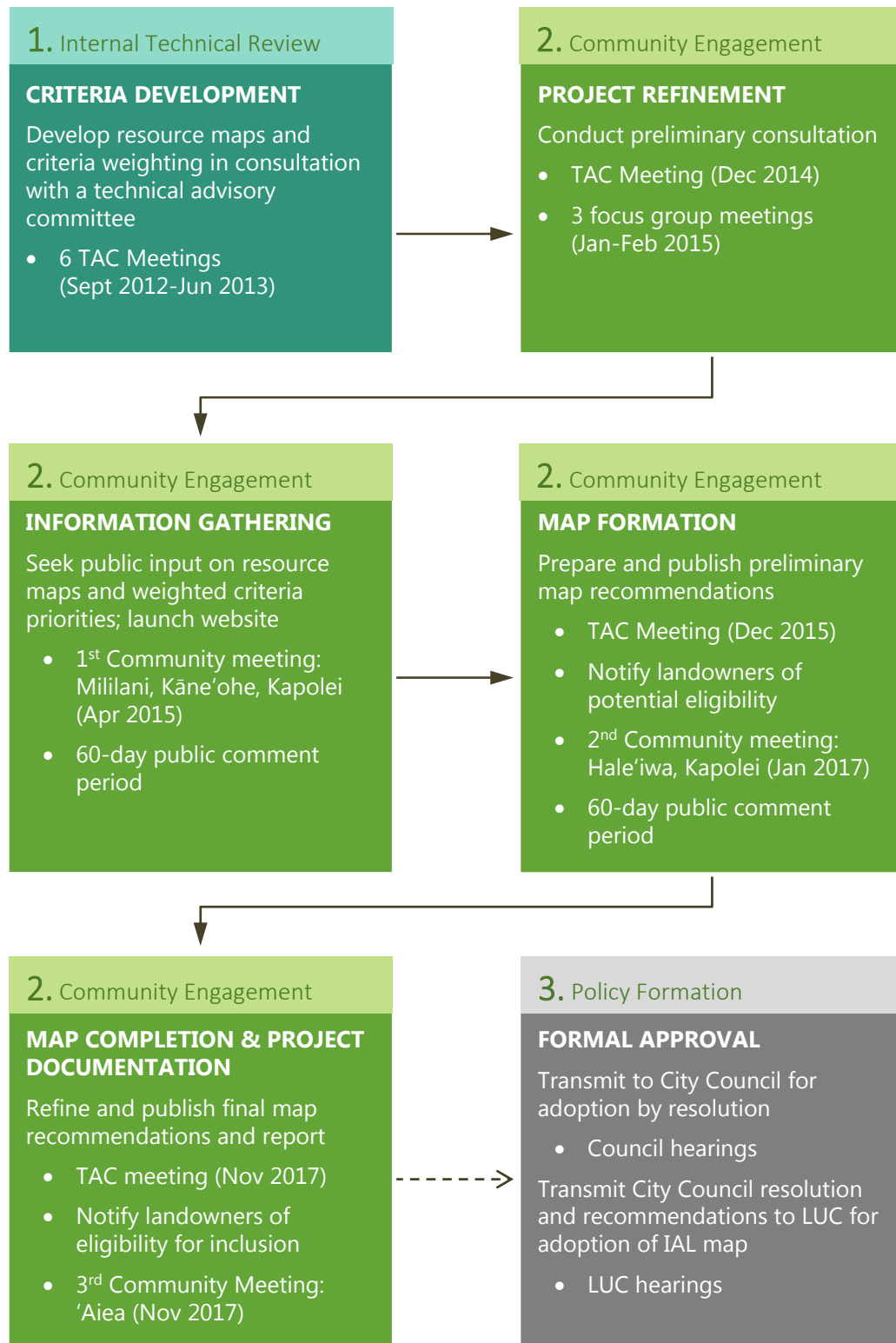
- identify available data sources to be used in defining the criteria
- develop resource maps based on the criteria definitions, and
- determine how to weight (i.e., rank) the criteria.

Consultation with a technical advisory committee (TAC) comprised of agricultural interests, policy makers, agency representatives, agricultural specialists and scientists, and landowner representatives (including the organizations specified in Chapter 205-47(b), HRS) was a major component of this phase. Given the specialized aspects of farming and the complex, theoretical nature of the subject matter, the ability to hold focused, technical discussions with such a small, dedicated group of agricultural experts allowed for in-depth, thorough examination of the criteria and weighting methodology (see Section 2.2 for the mapping methodology). A roster of TAC members is provided in Appendix B.



Original TAC Composition (2012)

Figure 2-1: City's IAL Process



The second phase was characterized by a community engagement process that validated how the weighted criteria would be used to develop the City's recommendations for IAL. Major tasks conducted during this phase included:

- publicizing the resource maps and criteria weighting approach, and gathering public input from the larger community about the work done during the first phase
- developing preliminary map recommendations of land for consideration as IAL, and
- finalizing the City's recommendations in consultation with the general public.

Compliance with the requirements of Chapter 205, HRS was the principal objective of the community engagement process, and the planning process was structured to incorporate the legal requirements for content, stakeholder participation and public involvement, and landowner notification. The public participation program consisted of various forums to foster transparency in the City's decision-making process, including consultation with the project technical advisory committee, a series of focus group meetings with a cross section of individuals who were invited to provide feedback on the public outreach strategy, community meetings, two 60-day public comment periods, and a project website that featured an interactive map viewer of the preliminary map.

Table 2-1 lists the public participation program elements and the legal requirements that each element satisfies. Appendices B to D include the meeting summaries and related meeting materials from the TAC meetings, focus group meetings and community meetings. Appendix E includes a summary of public comments.



Community Meeting at Hale'iwa, January 2017

Table 2-1: Public Participation Program Compliance with HRS, Chapter 205

ELEMENT	PURPOSE	STATUTORY COMPLIANCE
TAC meetings	Provide technical assistance in developing the community participation process and IAL maps	<ul style="list-style-type: none"> • HRS § 205-47(b). TAC members represented all of the interests specified: <i>"landowners, department of agriculture, Hawai'i Farm Bureau Federation, US Department of Agriculture Natural Resources Conservation Service, the office of planning, and other agricultural organizations and interest groups."</i> • HRS § 205-47(c). <i>"Planning departments may also establish one or more citizen advisory committees..."</i>
3 focus group meetings	Validate criteria weighting, receive input on the public outreach strategy, and gauge reactions to the discussion topics proposed for the community meetings. Meetings were designed for 12-15 participants each, with a different group of participants invited to each meeting.	<ul style="list-style-type: none"> • HRS § 205-47(b). Focus group participants represented a large cross-section of the larger community, including Neighborhood Board members, representatives of community organizations, and <i>"landowners, ...Hawai'i Farm Bureau Federation,.... and other agricultural organizations and interests groups."</i> • HRS § 205-47(c). <i>"Planning departments may also establish one or more citizen advisory committees..."</i>
<ul style="list-style-type: none"> • 3 rounds of community meetings • 2 60-day public comment periods 	Inform and seek input from interested stakeholders	<ul style="list-style-type: none"> • HRS § 205-47 (c). <i>"Each county, through its planning department, shall develop an inclusive process for public involvement,...including a series of public meetings...."</i>
Website	Provide an on-line presence to inform and seek input from interested stakeholders	<ul style="list-style-type: none"> • HRS § 205-47(c). <i>"Each county, through its planning department, shall develop an inclusive process for public involvement..."</i>
Landowner notification	Inform landowners that their land is recommended for IAL designation	<ul style="list-style-type: none"> • HRS § 205-47(d). <i>"Upon identification of potential lands to be recommended to the county council as potential important agricultural lands, the counties shall take reasonable action to notify each owner of those lands by mail or posted notice on the affected lands to inform them of the potential designation of their lands."</i>

2.2 MAPPING METHODOLOGY

This section describes the technical mapping process to prepare the City's recommendations for county-designated IAL. While the process may appear straightforward, the methodology to map the criteria (i.e., develop the resource maps) and select the priority criteria was demanding and rigorous, involving in-depth discussion of agricultural issues and a comprehensive analysis of the law. The series of steps that make up the mapping methodology are briefly described below:

1. Define the criteria and identify data sources to develop resource maps
2. Assign criteria weighting and select weighted criteria priorities
3. Use the priority criteria to prepare preliminary map recommendations
4. Refine and complete City's map recommendations.

The technical advisory committee, serving an instrumental role in the mapping, provided substantive input into the analysis of the criteria and the data sources applied to the resource maps and the recommendations for weighting and prioritizing the criteria (see Appendix B for TAC meeting materials). Input received from the focus group members and from the larger community was valuable for validating the weighted criteria, identifying issues and concerns, and refining the map recommendations (see Appendix C and D for focus group and community meeting materials; see Appendix E for summary of public comments). The focus groups were helpful for developing a deeper understanding of individuals' opinions and reactions, and provided a comfortable, personalized venue to introduce or "test" public outreach materials, while the community meetings were beneficial for reaching a large number of people at once.

2.2.1 DEVELOP RESOURCE MAPS

This first step involved reviewing the eight standards and criteria ("criteria") that must be considered when evaluating lands for IAL designation (see Section 1.3.2), and crafting definitions that outlined the characteristics desired for each criterion. Understanding the criteria and providing specificity about the physical attributes and defining features of the criteria was critical because the law presents the criteria and standards as broad-based, generalized policy statements.

Once the criteria were defined, the definitions were used to locate Geographical Information System (GIS) spatial datasets (i.e., data sources) that were available

or could be readily developed. The GIS datasets were organized to create a series of resource maps that illustrated the areas with the characteristics of each criterion. In general, mapping of the criteria relied heavily on existing datasets and did not include extensive original research.

A total of nine criteria were considered, including the eight criteria identified by law and an additional criterion for agricultural easements that was added at the request of the technical advisory committee (see Appendix B: TAC Meeting Materials). Table 2-2 presents a summary of the criteria and their accepted definitions, and the specific GIS datasets that were used to create the resource maps. All but one of the resource maps were prepared using multiple datasets (Criterion #2 was the only one to use just one data source).

A summary of the criteria definitions and the individual resource maps is presented in Appendix F. Maps are included for Criteria 1, 2, 3, 4, 5, 6 and 9; maps for Criteria 7 and Criteria 8 were not prepared due to difficulties with quantifying the criteria into measurable parameters.

2.2.2 SELECT PRIORITY CRITERIA

This step involved a criteria weighting exercise to assign weights to the criteria and to identify the priority criteria that would be used to determine the City's recommendations for IAL designation.

Similar to the provisions that make it possible for each county to develop an individualized community participation program, the counties have the autonomy to devise their own method of weighting the criteria because the law does not prescribe a specific methodology for determining the weighting of the criteria. In addition, strict application of all eight criteria is not a requirement for assessing the agricultural qualities of the land to be designated as IAL since Chapter 205-44, HRS only specifies that a weighted evaluation process be used (see Section 1.3.2).

Criteria weighting methods differ in many aspects, including the complexity of the method, the theoretical application, accuracy, and ease of use and understanding for the decision maker and participants. Selecting a weighting method that is relevant to the situation and results in an effective comparison between the alternatives is critical to ensuring a quality decision outcome. Given the importance of selecting a method that is appropriate for the given situation, the City chose to employ a simple point allocation rating method which scores the criteria and ranks them according to their given score. This method was chosen

Table 2-2: Criteria Mapping References

HRS, CHAPTER 205-44 STANDARDS AND CRITERIA	DEFINING ATTRIBUTES AND FEATURES	GIS DATA SOURCES / REFERENCES	DESCRIPTION OF DATASETS
1. Land currently used for agricultural production	Either currently being used for farming or grazing/ranching activities, or currently fallow but part of a near-term (three year or less) field rotation, or has the potential to be returned to active production which conveys the notion of historic use.	2011 aerial imagery. State Office of Planning and the U.S. Geological Survey.	2011 aerial imagery was compared to the 1980 ALUM and analyzed to identify active and fallow agricultural lands.
		Ko'olau Poko Watershed Management Plan. Prepared by Townscape for the Honolulu Board of Water Supply, September 2012.	Agricultural areas (active and fallow lands) identified as part of the Ko'olau Poko Watershed Management Plan.
		Island of O'ahu Agricultural Land Use Map (ALUM), 1978-1980. State Office of Planning, GIS data. 2011 Real Property Taxation Database. City Department of Budget and Fiscal Services Real Property Assessment Division.	To identify areas used for grazing and ranching, parcels included in the O'ahu ALUM as having current agriculture use were identified; then compared against current county tax records. Parcels receiving AG exemptions were included in this dataset.
2. Land with soil qualities and growing conditions that support agricultural production of food, fiber, or fuel- and energy-producing crops	Soil properties and agricultural productivity Solar radiation Slopes	Soil Survey Geographic (SSURGO) Database. USDA Natural Resources Conservation Service.	Land classifications of Irrigated and Non-Irrigated Capability (Classes I, II, and III)
3. Land identified under agricultural productivity rating systems, such as the agricultural lands of importance to the State of Hawaii (ALISH) system	Land Study Bureau (LSB) ratings range from "A" (Very Good) to "E" (Not Suitable), with land types/ratings based on soil and productive capabilities for certain crop types.	Overall Productivity Rating, Detailed Land Classification – Land Study Bureau, 1965 - 1972. State Office of Planning, GIS data.	Lands that met the LSB Overall Productivity Ratings of A: Very Good and B: Good

HRS, CHAPTER 205-44			
STANDARDS AND CRITERIA	DEFINING ATTRIBUTES AND FEATURES	GIS DATA SOURCES / REFERENCES	DESCRIPTION OF DATASETS
adopted by the Board of Agriculture on January 28, 1977	<p>ALISH ratings identify three classes of important agricultural lands based on soil, climate, moisture supply, slope and production factors:</p> <ul style="list-style-type: none"> • Prime—best suited for production of food, feed, forage and fiber crops • Unique—useful for specific high-value food crops (e.g., coffee, taro, rice, watercress); and • Other—not prime or unique, but is farmland of statewide or local importance 	ALISH - State Department of Agriculture, 1977. State Office of Planning, GIS data.	ALISH ratings of Prime and Unique classifications
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	Land currently in wetland and dryland taro production or with physical features to support future taro production	Ko'olau Poko Watershed Management Plan. Prepared by Townscape for the Honolulu Board of Water Supply, September 2012.	Areas currently in wetland taro production were identified as part of the Ko'olau Poko Watershed Management Plan.
	No unique crops and uses, per TAC meeting #3	Ladefoged, Thegn, Patrick V. Kirch, Samuel M. Gon III, et al. "Opportunities and constraints for intensive agriculture in the Hawaiian archipelago prior to European contact." Journal of Archaeological Science, 2009. [This GIS model/report prepared for The Nature Conservancy "compared physical characteristics (i.e. proximity to natural sources of water, elevation, slope, riparian corridors, and soil type) with archaeological studies that	Areas that were likely to have been in wetland and dryland taro cultivation prior to western contact

HRS, CHAPTER 205-44 STANDARDS AND CRITERIA	DEFINING ATTRIBUTES AND FEATURES	GIS DATA SOURCES / REFERENCES	DESCRIPTION OF DATASETS
		"influenced [the authors'] notions about where such agricultural activity was possible.]"	
5. Land with sufficient quantities of water to support viable agricultural production	<ul style="list-style-type: none"> • Irrigation (available infrastructure) • Access to streams • Ability to take water from streams • Quality of water = not brackish • Agricultural water rates • Rainfall (mostly for grazing) <p>*An ideal definition of "sufficient quantities" should address: (1) availability; (2) adequate supply; (3) connection to supply source (meter ready or needs infrastructure improvements?); (4) reliability (not affected by drought); and (5) efficiency (amount of water loss, cost of transferring water to the site)</p>	Water Use Permit Records, State Commission on Water Resources Management.	Water Use Permits by TMK parcel (excludes salt water or brackish water systems used primarily for aquaculture)
		Irrigation System Data, State Department of Agriculture.	<ul style="list-style-type: none"> • Waiāhole Ditch System service area • Waimānalo Ditch System service area • Wahiawā Ditch System service area • Wahiawā Reservoir Ditch 2 System service area
		Punalu'u Irrigation System Data, Kamehameha Schools Land Assets Division	Punalu'u Irrigation System service area
		Water Rate Inventory, Honolulu Board of Water Supply.	Agricultural water rates by TMK parcel
6. Land whose designation as IAL is consistent with general, development, and community plans of the county	Lands (1) designated for Agricultural Use by approved Development Plans/Sustainable Communities Plans Land Use Maps; and (2) zoned either AG-1 Restricted Agricultural or AG-2 General Agricultural	Development Plans/Sustainable Communities Plans Land Use Maps, various. City Department of Planning and Permitting	Agriculture, Preservation, Rural or Rural Residential Land Use Designations
		Zoning Designations. Department of Planning and Permitting, Honolulu Land Information System	<ul style="list-style-type: none"> • AG-1 Restricted Agricultural zoning • AG-2 General Agricultural zoning • P-2 General Preservation zoning

HRS, CHAPTER 205-44 STANDARDS AND CRITERIA	DEFINING ATTRIBUTES AND FEATURES	GIS DATA SOURCES / REFERENCES	DESCRIPTION OF DATASETS
7. Land that contributes to maintaining a critical land mass important to agricultural operating productivity	Proximity (i.e., adjacency) to agricultural lands and other lands with important ecological functions	No data or map associated with this criterion. Concept of proximity could not be quantified as a numeric value for mapping purposes.	
8. Land with or near support infrastructure conducive to agricultural productivity, such as transportation to markets, water, or power	Degree of accessibility to roads and the transportation network Status of existing potable water and electrical infrastructure systems	No data or map associated with this criterion. The entire island of O'ahu was determined to have equal status with regard to access to transportation, markets and infrastructure systems. Water availability was addressed under Criterion 5.	
9. Land with agricultural easements	Government programs to protect AG lands in perpetuity that are recorded	Farm and Ranch Lands Protection Program. USDA Natural Resources Conservation Service	Farm and Ranch Lands Protection Program easements
		State of Hawai'i Legacy Lands Conservation Program. Department of Land and Natural Resources	Legacy Land Conservation Program easements
		Hawaiian Islands Land Trust	Easements created by the Land Trust

because of its straightforward and logical approach, and its relative ease to be understood by farmers and the general public which leads to greater transparency. It also allows for the expression of individual judgments and an unlimited number of scoring combinations, as individuals are allowed to allocate points according to their personal preferences.

Using a 100-point scale, TAC members were asked to identify their personal criteria preferences by distributing the total 100 points across the criteria set. Points could be allocated in any manner, as long as all points were accounted for. For example, 100 points could be assigned to a single criterion, split equally between two criteria, or distributed among any combination of criteria. All points assigned to the individual criteria sets were tallied, and the cumulative points were used to form a single score for each criterion that reflected the larger group's combined preference. Criteria with more cumulative points received a higher score and were considered to have a greater degree of importance. Average and median scores for each criterion were calculated, and the median scores were used to rank the criteria and identify criteria groupings. Criteria with the highest values were identified as priority criteria based on the natural grouping of scores.

Figure 2-2 is a sample of the criteria weighting ballot that was used to identify personal preferences. Because the TAC members were directly involved in developing the criteria definitions and the resource maps, their familiarity with the criteria made them the natural prospect for the balloting process. The criteria weighting ballot was circulated to TAC members via e-mail following the third TAC meeting (November 2012). Of the 25 ballots that were distributed, 23 ballots were returned, representing a 92% participation rate. A description of the TAC balloting procedures, including the results of the individual points assigned to each criterion and the cumulative scores, is presented in Appendix G.

Figure 2-3 is a graph of the resulting median and average scores for the criteria. The distribution of the median scores reveals three distinct groupings: the first grouping comprised of criteria with 15 points each; the second grouping of criteria ranged from 10 to 8 points, and the third grouping received 5 points each.

Based on the obvious grouping of median scores, the three criteria receiving the highest scores were selected as the priority criteria (see Appendix G for details of selection process). The priority criteria—which coincidentally are identical to the top three criteria used in Kaua'i County's IAL mapping project—are as follows:

- Criteria 1: Current agricultural production
- Criteria 2: Soil qualities and growing conditions, and
- Criteria 5: Availability of water.

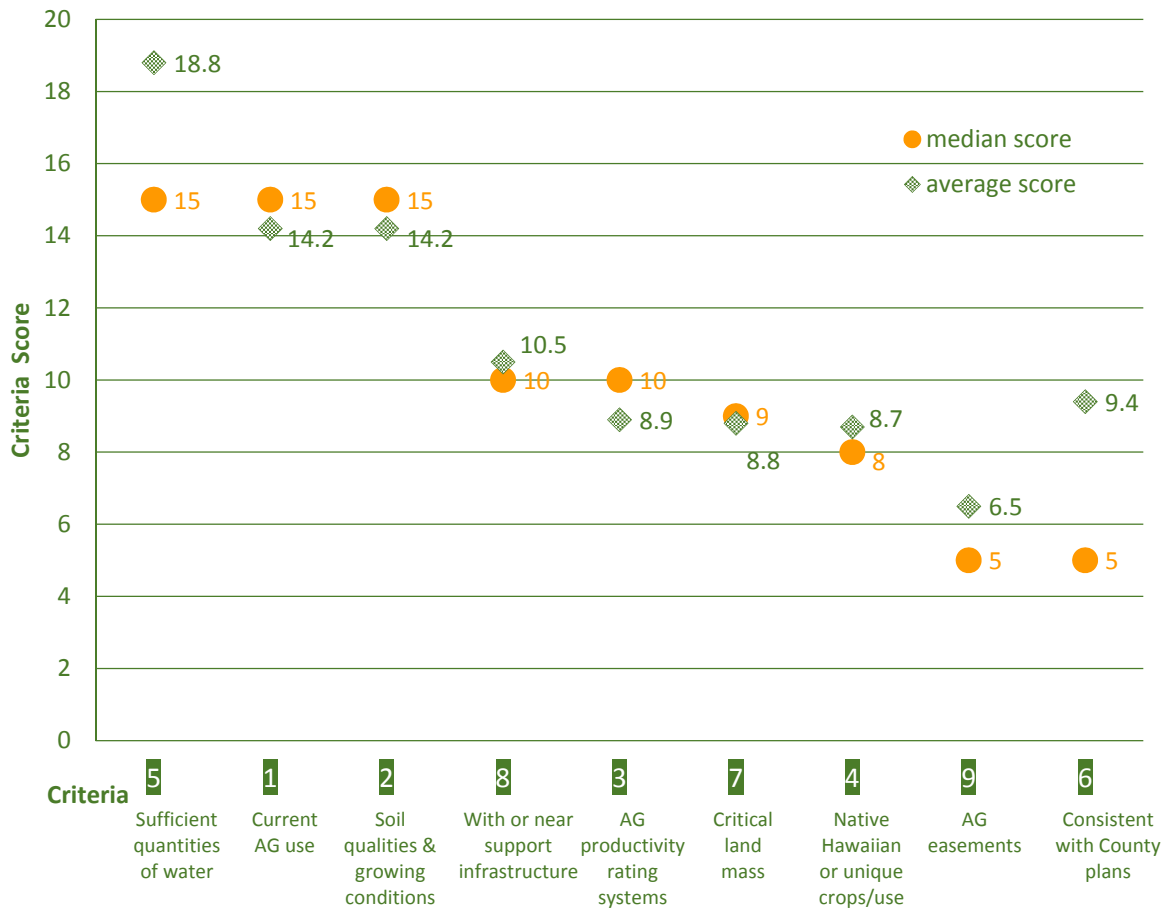
Figure 2-2: Sample Criteria Weighting Ballot

Use this ballot to indicate your preference for ranking the IAL criteria. Start with a total of 100 points, then allocate the 100 points among the criteria in the way that best reflects your opinion about the criteria's importance. The number of points given to a criterion reflects its importance. (The more points given, the more important you consider the criteria to be. Less points means less important; a value of zero points means the criteria should not be considered).

CRITERIA AND STANDARDS	POINTS
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 Hawai'i (ALISH)	
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 IAL 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	
8. Land with or near support infrastructure conducive to agricultural productivity, such as transportation to markets, water, or power	
9. Government programs to protect AG lands in perpetuity that are recorded*	
TOTAL POINTS	100

**Criterion #9 is added as a result of discussion with the technical advisory committee.*

Figure 2-3: Comparison of Criteria Scores



2.2.3 PREPARE PRELIMINARY MAP RECOMMENDATIONS

This step involved analyzing the different combinations of priority criteria to determine their preferred application for mapping, followed by preparation of the preliminary map that represented the basis of the City's recommendations for IAL.


To determine how the priority criteria would be used to qualify land for the IAL designation, consideration was given to all possible combinations. The scenarios, which presented different alternatives based on the number and composition of criteria that had to be satisfied, included the following variations:

- Meet any 1 of the 3 priority criteria in any combination
- Meet any 2 of the 3 priority criteria in any combination

- Meet 2 of the 3 priority criteria in a specific combination
- Meet all 3 priority criteria

The scenarios represented a range of possibilities for mapping, ranging from being as inclusive as possible (i.e., land could have any one of the criteria to be eligible for the IAL designation), to selective (i.e., land had to have a defined set of criteria to be eligible), to exclusive (i.e., land had to have all three criteria to be eligible). Table 2-3 lists the range of possible scenario combinations that were considered, and also describes the variations of criteria sets associated with each scenario. The preferred scenario selected to prepare the City's preliminary map involved applying the three priority criteria in an inclusive approach, where land with the attributes of any one of the three criteria—meaning land was either currently in agricultural production, had soil qualities and growing conditions to support agricultural production, or had sufficient quantities of water—was considered eligible for IAL designation.

Table 2-3: Possible Criteria Combinations

	Scenario	Criteria Set Required for IAL Designation
	Meets any 1 of the 3 priority criteria	AG PROD or SOILS or WATER
	Meets any 2 of the 3 priority criteria in any combination	AG PROD and SOILS + AG PROD and WATER + SOILS and WATER + SOILS and AG PROD
	Meets 2 of the 3 priority criteria in a specific combination	If AG PROD is a prerequisite, then: AG PROD and SOILS + AG PROD and WATER
		If SOILS is a prerequisite, then: SOILS and WATER + SOILS and AG PROD
		If WATER is a prerequisite, then: AG PROD and WATER + SOILS and WATER
	Meets all 3 priority criteria	AG PROD and SOILS and WATER
AG PRODUCTION = Criterion 1 Currently Used for Agricultural Production SOILS = Criterion 2 Soil Qualities and Growing Conditions that Support Agricultural Production of Food, Fiber, or Fuel- or Energy-Producing Crops WATER = Criterion 5 Sufficient Quantities of Water to Support Viable Agricultural Production		

Tax map key (TMK) parcel information to indicate land ownership was added at this point in the mapping process. Prior to this, the analysis and mapping of the criteria focused on the physical characteristics of the land, and ownership was not identified as part of the resource-based criteria as a factor for consideration. However, given the statutory requirement to inform landowners of the potential to be designated IAL, the TMK parcel information was critical for identification and notification purposes. Because the TMK parcel boundaries resulted in some configurations where the land areas identified for IAL designation within the parcel boundaries were too small to be favorable for IAL (since IAL coverage is specific to the land and does not necessarily encompass the entire TMK parcel), parcels with 5% or less of their land area in IAL were eliminated, as were parcels that were less than 1 acre in size. Additional qualitative judgements were made to remove isolated parcels that did not contribute to the larger pattern of agricultural use. Thus, the resulting preliminary IAL map contained both whole parcels and portions of parcels.



Portion of Preliminary Map to illustrate extent of IAL coverage. IAL coverage is specific to the land and does not necessarily follow the same geographic boundaries defined by TMK parcel lines.

Public review of the preliminary map of recommendations included notification via mail to roughly 1,800 landowners, presentation at a community meeting (November 2017; see Appendix D), and a 60-day formal public comment period (see Appendix E for summary of comments). A web-based, interactive map viewer was also attached to the project website, allowing individuals to examine the map and the supporting criteria data at the parcel level. The preliminary map was presented as a working draft that required landowner and public input to verify

the accuracy of the mapping related to individual properties, and thus ensure a quality mapping product.

2.2.4 REFINE FINAL MAP RECOMMENDATIONS

This final step involved refining the preliminary map to prepare the City's final recommendations, then documenting the process in a written report.

Comments received during the public comment period were compiled and analyzed to identify any necessary map refinements and any other issues and concerns. The preliminary map was refined, with some parcels added due to their proximity to other IAL-designated parcels or because they were previously excluded in error, while other parcels were eliminated in response to landowner justifications. Several parcels found to be inconsistent with the conditions for eligibility (i.e., not included in the county's IAL screening process as described in Section 1.3.3. Designation by the Counties, see *Conditions of Eligibility* section) were also removed. Given the TAC's preference for the City's IAL recommendations to be resource-based and not project- or owner-based, revisions to the preliminary map were based on changes to the selection criteria and not because of individual project location.

The City's recommendations for IAL designation, including a summary of the major comments received during the public comment period and the final map for City Council review, are presented in Chapter 4.



Community Meeting at Kapolei, January 2017

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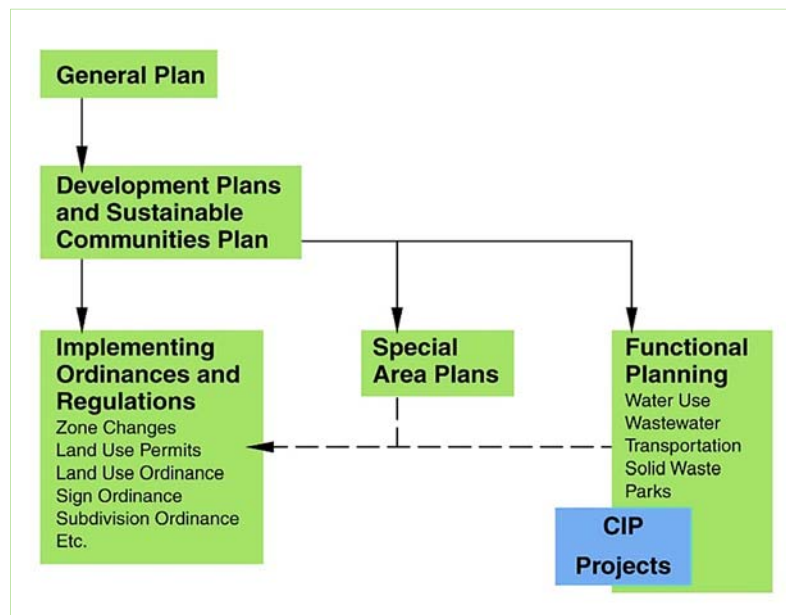
3. AGRICULTURE ON O'AHU

This chapter presents information about the current agricultural industry on O'ahu, including the City's land use planning system and policies for future development, the status of lands available for agriculture production, and recent trends and technological advancements influencing the future of the industry. An inventory of the lands designated as IAL by the LUC is also provided.

3.1 CITY AND COUNTY OF HONOLULU'S LONG-RANGE PLANS AND POLICIES

Land use and development for the City and County of Honolulu is guided through a three-tier planning system comprised of: (1) an island-wide General Plan; (2) secondary regional plans; and (3) the implementing ordinances and regulations (including the Land Use Ordinance, or zoning code) (see Figure 3-1).

FIGURE 3-1: Honolulu's Planning System

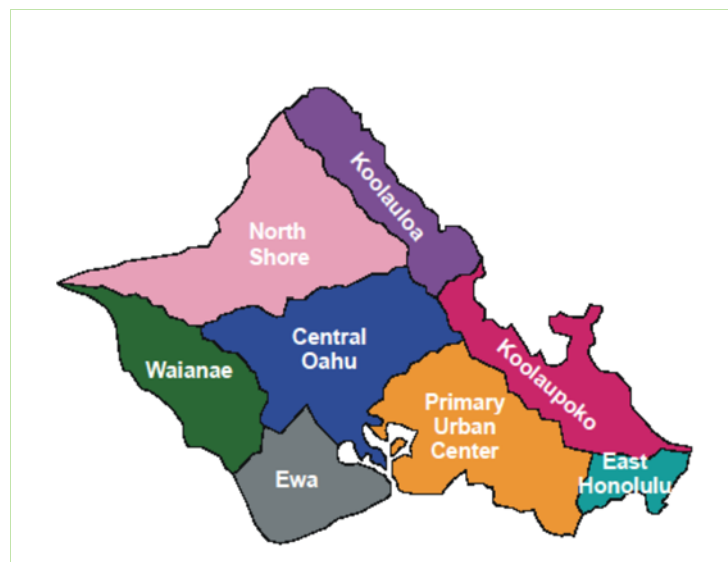


The General Plan and the regional plans express the City's policies for development and growth over a 20-year time frame. The General Plan establishes the long-range objectives and policies for the physical, social, economic, and environmental conditions desired for the future of O'ahu. It consists of objectives and policy statements across eleven subject areas, and a map of O'ahu showing

the rough location of urban, urban-fringe and rural areas. The regional plans—known as development plans and sustainable communities plans (DPs/SCPs)—lay out the defining policies and guidelines for the future development pattern, community characteristics, and infrastructure improvements envisioned for the specific region. Each DP/SCP includes a set of regional maps that conceptually indicate open space features, land use patterns, significant views, and locations of public facilities. The DP/SCP maps also include a community growth boundary that conceptually outlines the areas intended for urban/residential development, while areas outside the boundary are generally intended for agricultural and preservation uses.

The City's directed growth policy set forth in the General Plan and the DPs/SCPs has been guiding land use and infrastructure decisions on O'ahu since the General Plan was adopted in 1977. To provide adequate land area for the future development needs of the island's projected population growth, the City's approach has been to direct growth to 'Ewa, Central O'ahu and the Primary Urban Center, and to support the development of Kapolei in 'Ewa as O'ahu's second city (see Figure 3-2).

FIGURE 3-2: City and County Development Plan and Sustainable Communities Plan Regions



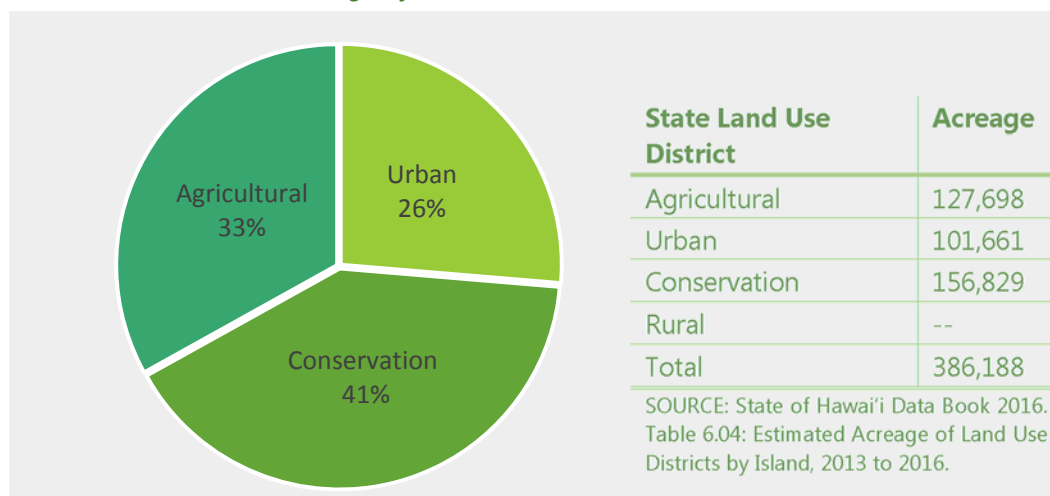
This strategy provides land area for community needs (e.g., housing, commercial and industrial areas, infrastructure) within a concentrated core, maintains O'ahu's suburban and rural areas from more intense development, and preserves high-

quality agricultural land in outlying areas. Within this context, some high-quality agricultural land within the community growth boundary has been and will be developed for urban use in order to preserve large tracts of high-quality agricultural land in Kunia and on the North Shore, and to "keep the country country."

3.2 LANDS AVAILABLE FOR AGRICULTURE PRODUCTION

All lands in the State are classified into one of four state land use districts: Urban, Rural, Agricultural, or Conservation (see Section 1.2). O'ahu is the only island that does not have any lands designated in the Rural District (i.e., only Agricultural, Conservation, and Urban District designations on O'ahu). An inventory of State land use districts on O'ahu includes roughly 128,000 acres designated in the Agricultural District, 157,000 acres in the Conservation District, and 102,000 acres in the Urban District. With roughly 386,000 total acres across the island, an estimated 32% is in the Agricultural District, 41% in the Conservation District, and 27% in the Urban District (see Figure 3-3).

FIGURE 3-3: O'ahu's Acreage of State Land Use Districts

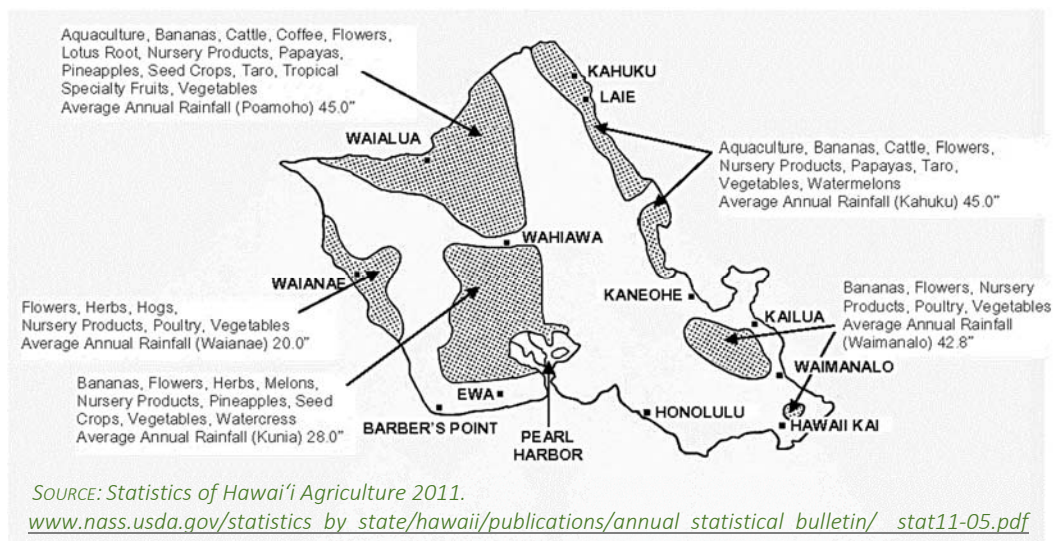


Besides farmland suitable for crops, pasture or forestry, the legal description of the State Agricultural District allows for the inclusion of Federally-owned land that is not made available for agricultural use, and land that does not have the qualities necessary to be classified as one of the other land use districts but may be suitable for parks, golf courses and open space relief. Of the roughly 128,000 acres on O'ahu in the Agricultural District, about 13,700 acres in 'Ewa, Makakilo, Central

O'ahu, Hale'iwa and Pūpūkea (11% of the total State Agricultural District acreage) are within the City's community growth boundary as areas for future urbanization. The remaining 109,000 acres outside the community growth boundary (89%) is primarily for agricultural and preservation use, and protected from urban development for the foreseeable future (City and County of Honolulu Department of Planning and Permitting, February 2011). When the inventory of Federally-owned lands is subtracted from the Agricultural District acreage, the acreage of agricultural land consists of roughly 88,000 acres, including both farmland and grazing land. An estimated 56,600 acres are useable farmland, of which roughly 44,400 acres have high soil ratings (i.e., rated A or B by the Land Study Bureau (LSB) ratings, Prime or Unique by the Agricultural Lands of Importance to the State of Hawai'i (ALISH), or I or II by the NRCS).

Figure 3-4 shows the general location of major agricultural areas on O'ahu and the associated agricultural products grown in those areas in 2011. Agricultural areas occupy large segments of West O'ahu (Wai'anae), Central O'ahu ('Ewa, Kunia, Wahiawā) and the North Shore (Waialua, Hale'iwa, Kahuku). Smaller pockets of agricultural areas are found in Kāhala'u/Kāne'ohe, Waimānalo and Hawai'i Kai.⁶

Figure 3-4: O'ahu's Major Agricultural Areas, 2011



⁶ The Statewide Agricultural Land Use Baseline 2015 (State of Hawai'i Department of Agriculture, 2016) also provides an inventory of agricultural areas on O'ahu.



Galbraith Lands, Wahiawa, O'ahu

SOURCE: Honolulu Advertiser, Dec 19, 2007.

the.honoluluadvertiser.com/dailypix/2007/Dec/19/hawaii712190398AR.jpg

In 2012, the State acquired roughly 1,700 acres of agricultural land in Wahiawā previously owned by the Estate of George Galbraith. The acquisition of the Galbraith lands, which was the result of a \$25 million public-private partnership brokered by the Trust for Public Lands, transferred 1,207 acres to the State Agribusiness Development Corporation (ADC) and 495 acres to the Office of Hawaiian Affairs (OHA). Since completing this first

step to protect high-quality agricultural land in perpetuity, the State has since acquired additional acreage to expand its' agricultural footprint in Central O'ahu. Additional land acquisitions and investments in infrastructure and facility improvements (i.e., irrigation systems, workforce housing, warehouses/storage units, consolidated agricultural processing and packaging facilities) to support an agricultural hub are also being pursued (Whitmore Village Agriculture Revitalization Plan, 2017).

3.3 RECENT TRENDS INFLUENCING O'AHU'S AGRICULTURAL INDUSTRY

Statistical information reported in this section is based on a report prepared for the City and County of Honolulu Department of Planning and Permitting in February 2011 entitled "O'ahu Agriculture: Situation, Outlook and Issues." Efforts were taken to update the information where current figures were readily available. However, data from the 2011 report is used where updated figures could not be found. Data sources at the county level are limited because HDOA and the National Agricultural Statistical Service (NASS) no longer monitor the agricultural industry or conduct in-depth reporting formerly done.

3.3.1 DIVERSIFIED AGRICULTURE

Agriculture has historically been an important activity in Hawai'i for both subsistence and economic purposes, largely due to factors such as the islands' moderate climate, year-round growing conditions, and the availability of water.

Beginning with the traditional farming practices of the first Polynesian settlers to the subsequent arrival of American and European interests and the evolution of modern-day Hawai'i, agriculture—and the agricultural interests seeking to maintain viable agricultural operations—has profoundly influenced the history of Hawai'i. This is evidenced in the various events and political, cultural and physical landscapes that define each phase of Hawai'i's history, the key points which are summarized:

1. Prior to the introduction of Western culture, subsistence agriculture formed the basis of Native Hawaiian society.
2. Private land ownership rights were introduced in the mid-1800s, which enabled foreigners to own land for sugar plantations and other agricultural activities.
3. The Hawaiian Kingdom signed a free trade agreement with the United States in 1875, which allowed duty-free export of sugar and other products grown in Hawai'i in exchange for the U.S. Navy's use of Pearl Harbor.⁷
4. The construction of extensive irrigation systems supported the growth of sugar plantations.
5. The overthrow of Hawai'i's monarchy in 1893 and the resulting annexation to the United States in 1897 was motivated in part by a group of American sugar planters seeking to improve the competitive position of Hawai'i's sugar industry.
6. The demand for plantation laborers during the second half of the 19th century prompted the influx of Asian and European immigrants to Hawai'i.
7. Following Hawai'i's induction into the United States in 1959, the five largest sugar producers emerged as the state's leading corporate entities with subsidiaries in major industries of shipping/importing, and real estate development.
8. A number of towns and urbanized areas throughout the state trace their origins back to the plantation camps (i.e., housing areas) for the immigrant workers.

⁷ The Reciprocity Treaty was ratified in 1875.

Beginning in the mid-19th century through the last quarter of the 20th century, O'ahu's agricultural industry (and the state as a whole) was heavily dominated by commercial sugar cane and pineapple plantations. The O'ahu Sugar Company farmed lands in 'Ewa, Kunia and Wahiawā; Waialua Sugar Company grew sugar cane on the North Shore; and Dole (Castle & Cooke) and Del Monte occupied higher elevation fields in Central O'ahu and the North Shore to grow pineapple. Most of the Del Monte fields were located to the west of Kamehameha Highway, and except for mid-elevation fields on the North Shore, most of Dole's fields were east of the highway. With the plantations occupying the major portions of the prime agricultural lands, diversified crops (meaning all crops other than sugarcane and pineapple) were relegated to outlying areas with lesser quality agricultural land.



Sugar plantation at Aiea, O'ahu and Pearl Harbor in the distance, 1915. Photo by J.J. Williams.

SOURCE: Hawai'i State Archives. http://gallery.hawaii.gov/gallery2/main.php?g2_view=core.DownloadItem&g2_itemId=846&g2_serialNumber=3

With stronger mainland and foreign competition diminishing the profitability of Hawai'i's sugar cane and pineapple crops in the last quarter of the 20th century, tracts of prime agricultural land were left vacant, allowing new diversified crops to access former plantation lands. The recent composition of the agricultural industry reflects this shift from sugar and pineapple production to diversified agricultural commodities: a new era of smaller farms is growing a variety of crops, including fruits and vegetables for local consumption, niche crops such as coffee and specialty exotic fruits, traditional Native Hawaiian crops, nursery plants, and flowers. International seed corn producers have also purchased or leased large tracts for research and production.

In 1980, approximately 47,900 acres were in crop production on O'ahu, including about 33,100 acres in sugarcane (69% of total crop acreage), 11,500 acres in pineapple (24%), 1,400 acres in other crops (seed corn, taro, flowers and nursery products, feed crops, etc., amounting to 3%), 1,100 acres in vegetables and

melons (3%), and 800 acres in fruits other than pineapple (2%). In the almost 30 years between 1980 and 2008, the acreage in crop production fell from 47,900 acres in 1980 (16% of the State's total crop acreage) to approximately 11,000 acres in 2008 (about 12% of the State's total crop acreage). The loss in production acreage, which reflects the steady decline and eventual closure of sugarcane and pineapple plantations, comprised roughly 37,000 acres, or 77% of the 1980 inventory. Of the 11,000 acres in crop production on O'ahu in 2008, more than half of the acreage (about 56% or 6,200 acres) was used to grow specialty crops such as seed corn, floriculture and nursery products. Despite the decline in total acreage, the number of acres in vegetable and melon crops increased from 1,100 acres in 1980 to 3,900 acres in 2008, accounting for 35% of O'ahu's total crop acreage, while fruits other than pineapple reported a slight increase of 100 acres from 800 acres in 1980 to 900 acres, or about 8% of O'ahu's total crop acreage, in 2008 (City and County of Honolulu Department of Planning and Permitting, February 2011).⁸

Table 3-1 compares the statewide total of farm revenues for 2011 and 2015. The value of crop, livestock, and aquaculture sales in 2015 totaled \$604.1 million, compared to 2011 sales which totaled \$719.5 million. This represents a decline of \$115.4 million from 2011, due to a \$156.0 million revenue decline in crop sales that was slightly offset by increases in livestock revenue (\$4.3 million) and aquaculture revenue (\$36.3 million).

Table 3-1: Farm Revenues, State Totals 2015 and 2011

Year	All crops, livestock, aquaculture (\$1,000)	Crops			Livestock	Aquaculture
		All crops	Sugar cane	Other crops		
2015	604,052	446,850	48,148	398,702	80,968	76,234
2011	719,474	602,881	78,100	524,781	76,623	39,970

SOURCE: State of Hawai'i Data Book 2016. Table 19.10: Value of Crop, Livestock, and Aquaculture Sales: 1989 To 2015

⁸ The Statewide Agricultural Land Use Baseline 2015 (State of Hawai'i Department of Agriculture, 2016) provides the most current available data. In 2015, roughly 40,800 acres were in production on O'ahu, representing 4% of the statewide acreage of 913,300 acres. O'ahu's total production included 22,500 acres in crops and 18,400 acres in pasture. Of the 22,500 acres in crop production, diversified agriculture crops accounted for 9,900 acres (44%).

Table 3-2 presents the state's top twenty agricultural commodities for 2011 and 2016, which is the most current year of data compiled by the United States Department of Agriculture National Agricultural Statistics Service (NASS).

Table 3-2: Top 20 Commodities, State Totals 2016 and 2011

Commodity	Rank		Value of production (\$1,000)	
	2016	2011	2016	2011
Seed crops	1	1	145,300	242,970
Coffee	2	5	48,856	31,540
Sugar cane	3	2	48,148	78,100
Cattle	4	3	45,209	46,369
Macadamia nuts	5	4	42,000	38,220
Other aquaculture	6	--	41,361	--
Algae	7	6	34,349	25,230
Landscape plant material	8	--	23,064	--
Papayas	9	8	9,713	9,722
Milk	10	9	9,318	9,547
Lettuce	11	12	9,270	5,453
Cucumbers	12	--	6,490	--
Palms, potted	13	13	5,737	3,736
Bananas	14	7	5,592	11,310
Honey	15	17	4,176	3,137
Cabbage, head	16	19	3,805	2,790
Dendrobiums, potted	17	14	3,280	3,400
Plant rentals	18	--	3,193	--
Hogs	19	--	2,745	--
Anthuriums, cut	20	18	2,743	3,115
TOTAL			494,349	573,390*

** Four crops ranked in the Top 20 commodities in 2011 were not ranked in 2016. These include: sweet potatoes ranked 10th (\$7,348); basil ranked 11th (\$6,225); dry onions ranked 15th (\$3,267); and potted dracaena ranked 16th (\$3,164)*

In both 2011 and 2016, the seed industry was the leading agricultural commodity statewide, accounting for \$145.3 million (29.4%) of the combined \$494.3 million collected for the top 20 commodities. Revenues from coffee accounted for \$48.8

million (9.9%) of the \$494.3 million total, making coffee the second highest-ranked commodity statewide. Sugar cane production accounted for \$48.1 million (9.7%) and was the third-highest ranked commodity statewide in 2016, falling from the second-highest ranked commodity in 2011. This represents a significant decline in sugar cane revenues since 1990, when the farm value of sugar cane accounted for \$213.8 million, or 36%, of the statewide revenue of \$595.9 million (United States Department of Agriculture National Agricultural Statistics Service, 2009).

3.3.2 INCREASED FOOD SELF-SUFFICIENCY

Due to competition across the international marketplace and efficiencies in shipping logistics, Hawai'i residents consume mostly imported food products that can be grown in better conditions and at lower costs than in the islands. Less than 15,000 acres of the 91,500 acres farmed in 2008 (roughly 16%) were used to supply food to Hawai'i markets (City and County of Honolulu Department of Planning and Permitting, 2011). Available estimates indicate that Hawai'i imports between 85-90% of the food consumed locally, while the majority (as much as 85%) of the agricultural crops grown in Hawai'i is exported (City and County of Honolulu Department of Planning and Permitting 2011). Measurements of self-sufficiency and import dependency from a study of Hawai'i's food consumption and supply sources published in *Agriculture and Food Economics* (Loke and Leung, 2013) estimates that only 11.6% of food available for Hawai'i consumption in 2010 came from local production, and that 88.4% of the available food came from imports. Of the estimated 966.6 million kilograms (1,065,494 tons) available in 2010, which corresponds to a per capita consumption of 657.9 kilograms, 81% was imported from the continental United States, with 6% imported from foreign countries. Study findings indicate that local production supplied 30% of the total market requirement for fresh vegetables, 38% for fresh fruits, 12.4% of the total fresh milk available, and 9.3% for beef, poultry and nuts (Loke and Leung, 2013).

Recent campaigns have fostered public consciousness about the ethic of sustainability and positively raised awareness about minimizing society's impact on the environment to ensure that resources are available for future generations.



SOURCE: realfoodforlife.com/wp-content/uploads/2013/04/Depositphotos_6500963_XL.jpg

The increased consciousness is yielding a number of societal changes, such as the use of low-impact and renewable technologies and alternative energy sources, improved land use and transportation patterns, and lifestyle modifications to reduce consumption and practice ethical consumerism (University of Hawai'i at Hilo Geography and Environmental Studies Department, 2012). For Hawai'i—which is 2,500 miles from the continental United States and is recognized as the most geographically isolated land mass in the world—additional emphasis is placed on increasing self-sufficiency and local self-reliance. This includes using local energy resources to reduce dependence on imported fossil fuels and increasing production and demand for locally-grown food to reduce reliance on imported foods. Within this context, the State is leading a sustainability commitment that seeks to double local food production by 2030, with a goal of 20-30% of the food consumed in Hawai'i grown locally.

The State Office of Planning has prepared a strategic/functional plan, *Food Security and Food Self-Sufficiency Strategy* (2012), which outlines objectives, policies and actions to increase the amount of locally grown food consumed by Hawai'i's residents. While former plantation lands have become available for diversified agricultural operations and the consumer demand for locally-grown products continues to grow, systemic challenges prevent the agricultural industry from achieving higher rates of local food production. Such challenges range from the high cost of land and infrastructure which make it difficult for farmers to acquire land, the need for a larger pool of qualified, skilled farmers, and the competitive prices of imported crops. Even for crops that can be grown profitably for local consumption, Hawai'i's growers face challenges from a number of factors that limit their market share, including:

- (1) local varieties that may not be equal or comparable substitutes for imported products (e.g., inexpensive, imported storage onions vs. premium-priced sweet Maui onions)
- (2) low-cost imported fruits and vegetables make it difficult for farmers to produce profitable crops during the summer months, and
- (3) depressed pricing and lower profit margins resulting from over-production and fluctuating demand.

3.3.3 URBANIZATION OF AGRICULTURAL LANDS

O'ahu is the most heavily populated and developed island of the eight main Hawaiian islands, reporting a population in 2010 of roughly 953,200 residents and

337,000 housing units which represents roughly 70% of the State's total population and 64% of the State's total housing units (State of Hawai'i Data Book 2016. Table 21.20: Housing Units, by County: 2000 to 2016). In the 50+ years between 1960 and 2012, O'ahu's population nearly doubled from an estimated 500,000 residents in 1960 to roughly 976,000 residents in 2012 (see Figure 3-5 for population trend).

To accommodate population growth, lands that were once used for agricultural purposes have steadily been converted for urban uses. Across the island, stretching outward from Honolulu's urban core, residential subdivisions have historically replaced productive farming operations (e.g., Kaimukī, Hawai'i Kai/Kalama Valley, Kailua, Kāne'ohe, 'Aiea, Mililani, Kapolei, etc).

Figure 3-6 traces the estimated acreage of State Land Use Districts from 1970 through 2016. Since 1970, an estimated 18,000 acres in the State Agricultural District on O'ahu were reclassified to the Urban District, and the acreage in the Conservation District remained relatively constant. In 2016, the share of lands in the Urban District accounted for 26% (101,661 acres) of the island's total land area (386,188 acres), compared to the acreage in the Agricultural and Conservation Districts accounting for 74% of the total land area (more than 284,527 acres).



Monsanto Hawai'i Agricultural Park, Kunia

SOURCE: www.monsantohawaii.com/community/agriculture/kunia-ag-park/



Kamehameha Schools Punalu'u Ahupua'a Farms

SOURCE: www.ksbe.edu/windward_oahu/punaluu/

While the rate of urbanization since 2000 has slowed in comparison to the period between 1970 and 2000 (1,975 acres reclassified to the Urban District between 2000-2012, as compared to 16,788 acres between 1970-2000), recent decisions to urbanize large tracts of agricultural lands in Central O'ahu and 'Ewa spurred community concerns about the need to protect remaining agricultural lands. Additional questions about the City's long-standing directed growth policy are also being raised, as the recent urbanization decisions are consistent with City policy to develop within the community growth boundary in order to preserve high-quality farmland in Kunia, the North Shore and the rural communities (see Section 3.1).

Figure 3-5: Resident Population, 1900-2012

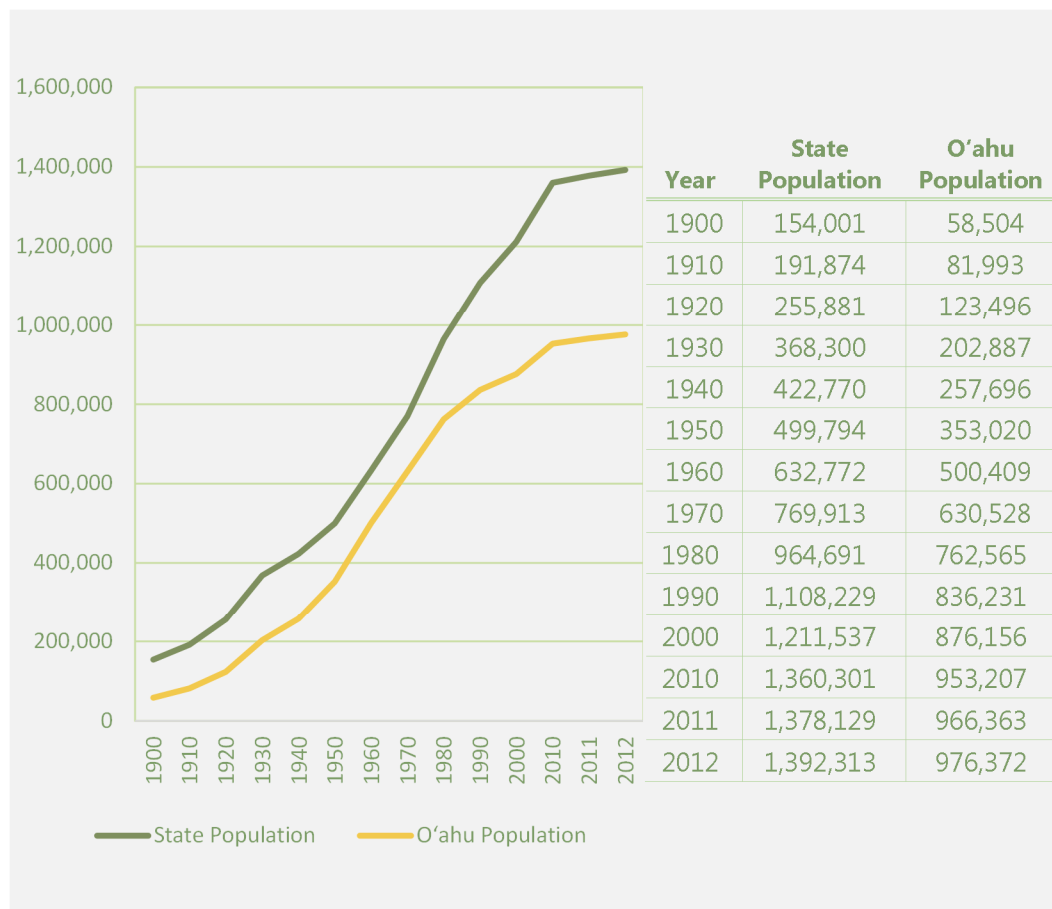
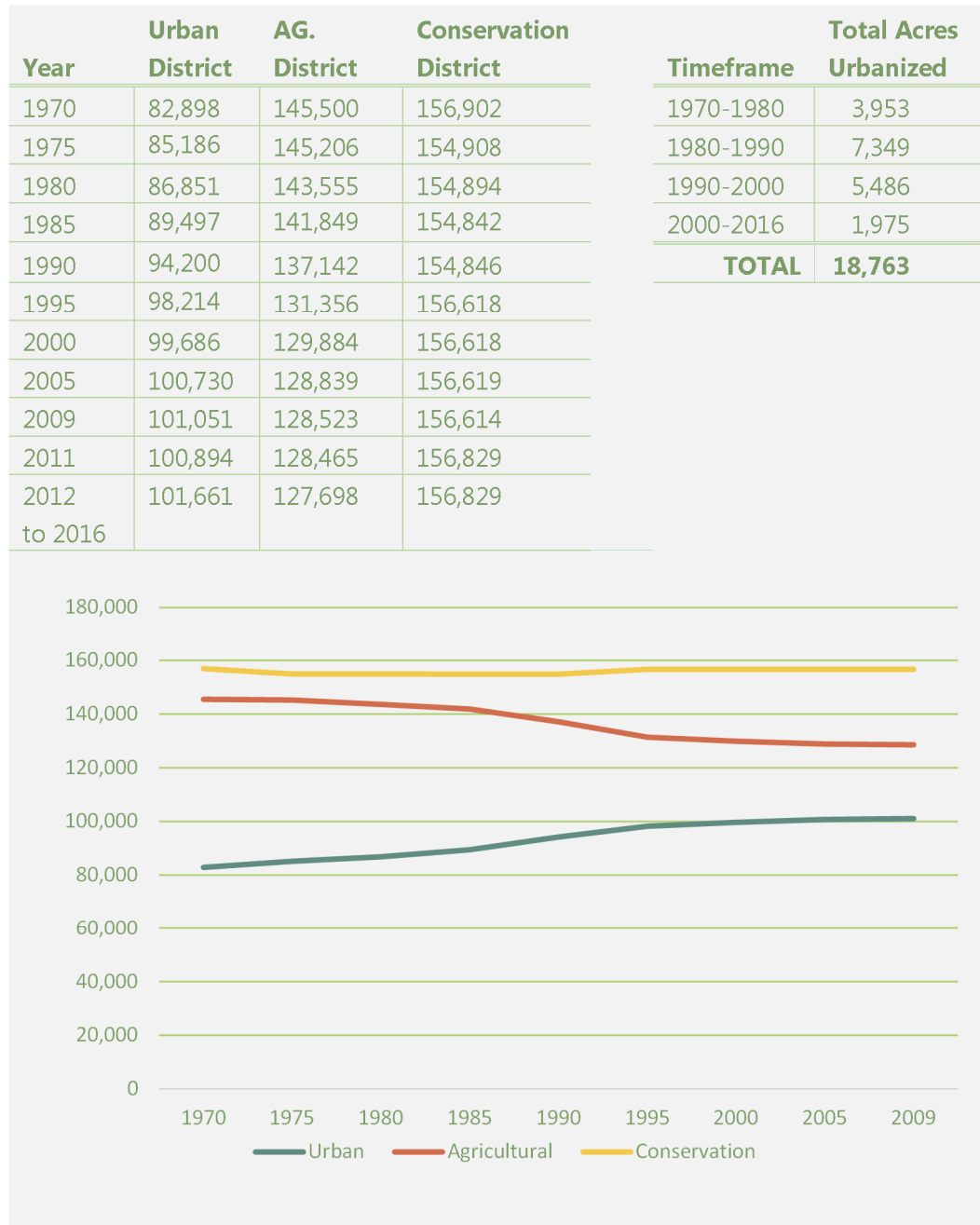


Figure 3-6: Inventory of O'ahu State Land Use Districts



3.4 INVENTORY OF CURRENT IAL DESIGNATIONS

Roughly 134,000 acres statewide have been designated as IAL as of December 2017 (HDOA 2018), which accounts for a small percentage (less than 7%) of the total acreage statewide in the State Agricultural District (1,928,034 acres statewide). On O'ahu, roughly 12,280 acres have already been designated as IAL, including land owned by Castle & Cooke Homes Hawai'i, Kamehameha Schools, Monsanto Company and Hartung Brothers Hawai'i. Lands with an IAL designation on O'ahu are identified in Figures 4-1 and 4-2. Table 3-3 lists the landowner-initiated petitions that have been approved by the LUC. None of the approved voluntary petitions to date have exercised the "85/15 incentive" (see Section 1.2.3).

Table 3-3: Inventory of Acres Designated as IAL, Statewide (July 2018)

Island, Region	Landowner /Farm Name	Acres	LUC Approval
Kaua'i, Kōloa	Alexander & Baldwin/Kauai Coffee	3,869	March 2009
Kaua'i, Kōloa	Māhā'ulepū Farm (Grove Farm)	1,533	May 2011
Kaua'i, Hā'upu/Līhu'e	Grove Farm Company	11,206	February 2013
Kaua'i, Lumaha'i/Waipā	Kamehameha Schools	190	January 2014
Kaua'i, Makaweli	Robinson Family Partners	20,888	September 2016
O'ahu, Waialua, Mililani and Whitmore	Castle & Cooke Homes Hawai'i	679	March 2011
O'ahu, Punalu'u and North Shore	Kamehameha Schools	9,591	March 2015
O'ahu, Kunia	Monsanto Company	1,550	October 2017
O'ahu, Kunia	Hartung Brothers Hawai'i	463	June 2018
Maui, Central	Alexander & Baldwin/HC&S Plantation	27,294	June 2009
Hawai'i, South Kohala	Parker Ranch	56,772	September 2011
TOTAL ACREAGE		134,035	

SOURCE: Department of Agriculture https://hdoa.hawaii.gov/wp-content/uploads/2013/02/IAL-voluntary-summary.e14_rev-11-03-17.pdf Website accessed March 2018.

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4. RECOMMENDATIONS FOR IAL DESIGNATION

This chapter presents maps of the study area and the City's recommendations for lands to be considered for IAL designation, including a summary of the public comments received during preparation of the City's recommendations. The City Council will review the City's recommendations and following the Council's proceedings and adoption via resolution, will submit its recommendations to the LUC for final approval. In anticipation of the public dialogue that will ensue at the City Council and LUC hearings, this chapter also documents the issues and concerns that dominated the community consultations and are likely to continue as topics of discussion during future public venues.

4.1 MAP OF RECOMMENDATIONS FOR IAL DESIGNATION

The City's recommendations for IAL are the result of a strategic, resource-based mapping exercise to inventory land with the qualities necessary to support active agricultural use. The recommendations articulate a long-term vision for the high-quality farm land most suited for farming. Secondly, the recommendations provide policy guidance to reconcile the varied quality of land classified in the State Agricultural District (since not all the land in the State Agricultural District is suitable for farming).

Figure 4-1 is a map of the study area showing the land "eligible" to be considered for IAL designation by the county; meaning the land that meets the conditions of ownership and land use classifications specified in Chapter 205, HRS (see Section 1.3.3 "Conditions of Eligibility" for study area exclusions). The study area consists of approximately 63,800 acres that passed the initial screening process, which represents approximately 17% of O'ahu's total land area. An approximate 12,300 acres currently designated as IAL through the landowner-initiated process are shown (3% of O'ahu's total land area), alongside an additional 11,400 acres in the State Land Use Agricultural District owned by the State of Hawai'i (3% of O'ahu's total land area). Ineligible land, or land excluded from the county designation process, represent some 298,700 acres, or 77% of the island-wide total.

- *Help farming be an economically viable activity*
- *Ensure that the best of O'ahu's high-quality farm land is actively used for agricultural purposes*
- *Guide decision-making in the State Agricultural District*

Long-Term Goals of IAL

Figure 4-2 is an island-wide map showing the City's recommendations for IAL through the county-designation process. Figures 4-3 through 4-8 are regional profiles showing the recommendations for IAL at a closer view. The current map includes roughly 45,400 acres recommended for IAL designation, which corresponds to roughly 72% of the study area and 12% of O'ahu's total land area. While the majority of the recommended land is in Central O'ahu (Mililani, Kunia and Wahiawā) and the North Shore (Hale'iwa and Waialua), there are several large tracts found along the Wai'anae coast and in Ko'olau Loa and Ko'olau Poko. A list of the TMK parcels being recommended for IAL is presented in Appendix H; future revisions are possible pending City Council proceedings.

Public input into the preparation of the City's recommendations for IAL involved presentation of the preliminary (draft) recommendations at two community meetings (January 2017, Hale'iwa and Kapolei), a mail-out to inform affected landowners, and a 60-day public comment period. Written comments received during the public comment period were compiled and analyzed, and recommendations were refined accordingly. A total of 93 written comments were received from various government agencies, community organizations and landowners (see Table 4-1). Of the 93 comments, nearly 80% (74) were from landowners, 12% (11) from government agencies, and the remaining 8% (8) represented concerned individuals or community organizations. A summary of the written comments and the City's response/action is provided in Appendix E.

Table 4-1: Inventory of Public Comments

CATEGORY	COUNT
State agencies	4
County agencies	7
Individuals	7
Community organizations	1
Landowners (individuals + corporations)	74
TOTAL	93

Of the 74 landowners that responded with written comments, 90% (67) expressed dissatisfaction with the preliminary IAL designation and requested exclusion from the City's IAL process. Landowners seeking to be excluded from the City's IAL process offered specific rationale to support their request, although a recurring theme among landowners was that their land was not in current agricultural use or not intended for future agricultural use, or did not have the qualities to support productive agricultural use. After reviewing the requests on a case-by-case basis, the City complied with more than half of the landowner requests (57%, 38 of 74) for exclusion.