



HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

**Beneficiary Meeting #2**  
**‘Ualapu‘e Kuleana Homestead Project**

Virtual Meeting

March 2, 2022, 6:00 PM – 7:30 PM

DEPARTMENT OF HAWAIIAN HOME LANDS – PLANNING OFFICE



# Agenda

- Opening Pule/Introductions
- Meeting Purpose and Outcomes
- Project Background and Planning Process
- Existing Environmental Conditions / Findings
- Next Steps
  - Draft Kuleana Homestead Settlement Plan
  - Draft Environmental Assessment
- Closing



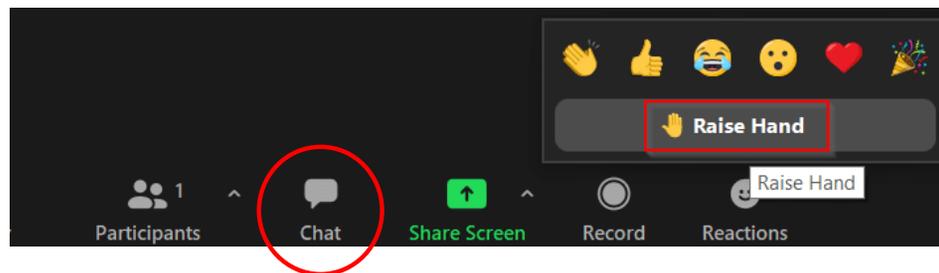
# Meeting Kuleana

- Be respectful of the person talking – please do not interrupt
- Wait for facilitator to call on you or type your question into the chat box
- When addressing other participants, be respectful, show aloha, treat others how you would like to be treated
- Agree to disagree – accept that others may have different perspectives and opinions
- Have an open mind – take home new ideas and information
- Everyone gets a chance to ask/speak/comment, before speaking again

# How to Share Your Input

## During Meeting

- Type into the “Chat” box
- Use “Raise Hand” to ask a question or share your mana‘o



*Presentation slides will be posted to the DHHL page at <https://dhhl.hawaii.gov/po/molokai/ualapue-kuleana-homestead-project/>*

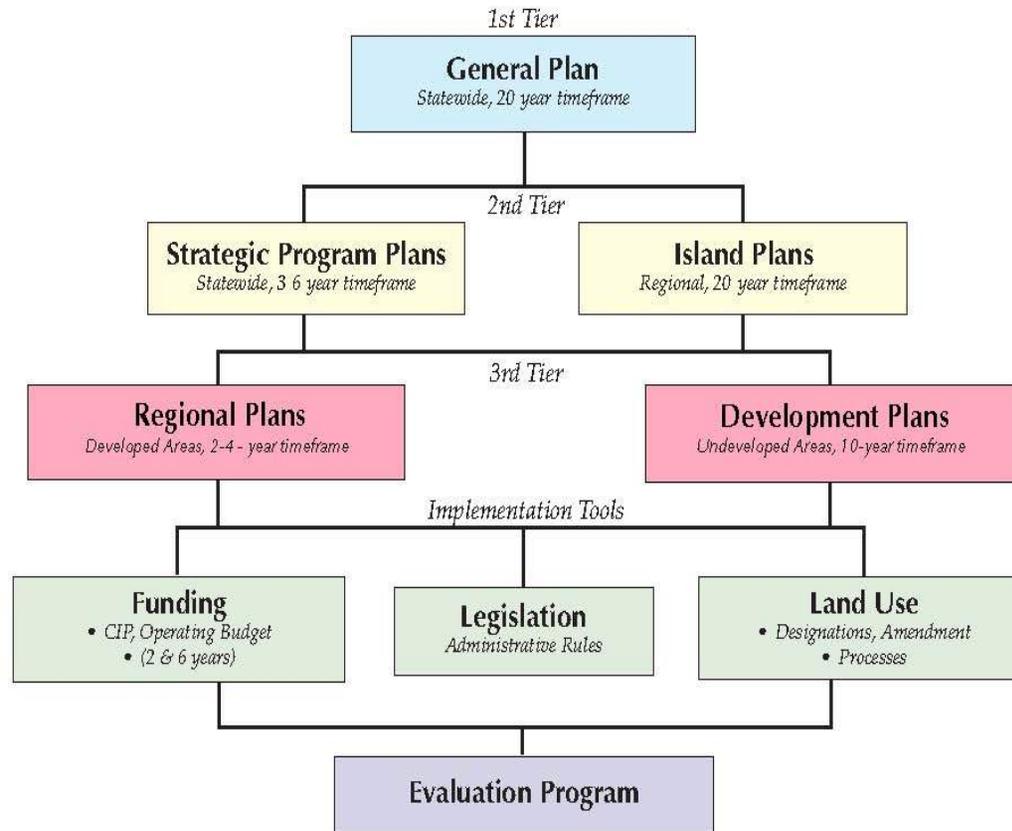
# The Hawaiian Homes Commission Act



Prince Jonah Kūhiō Kalanianaʻole



# The Planning Process



DHHL Planning System



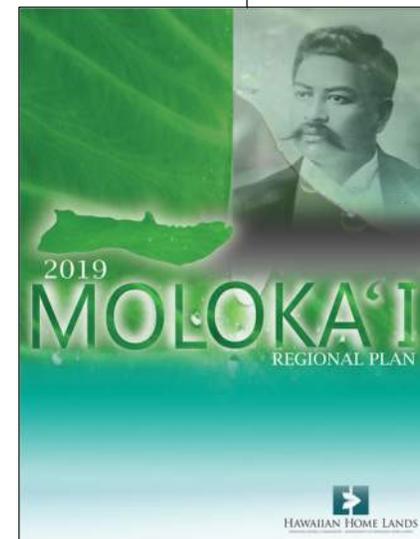
# Planning Process

## Moloka'i Island Plan (2005)

- Land Use was designated as Residential, General Agriculture, Special District and Community Use.
- 'Ualapu'e identified as a high priority development area and was selected as the priority for residential homesteading.

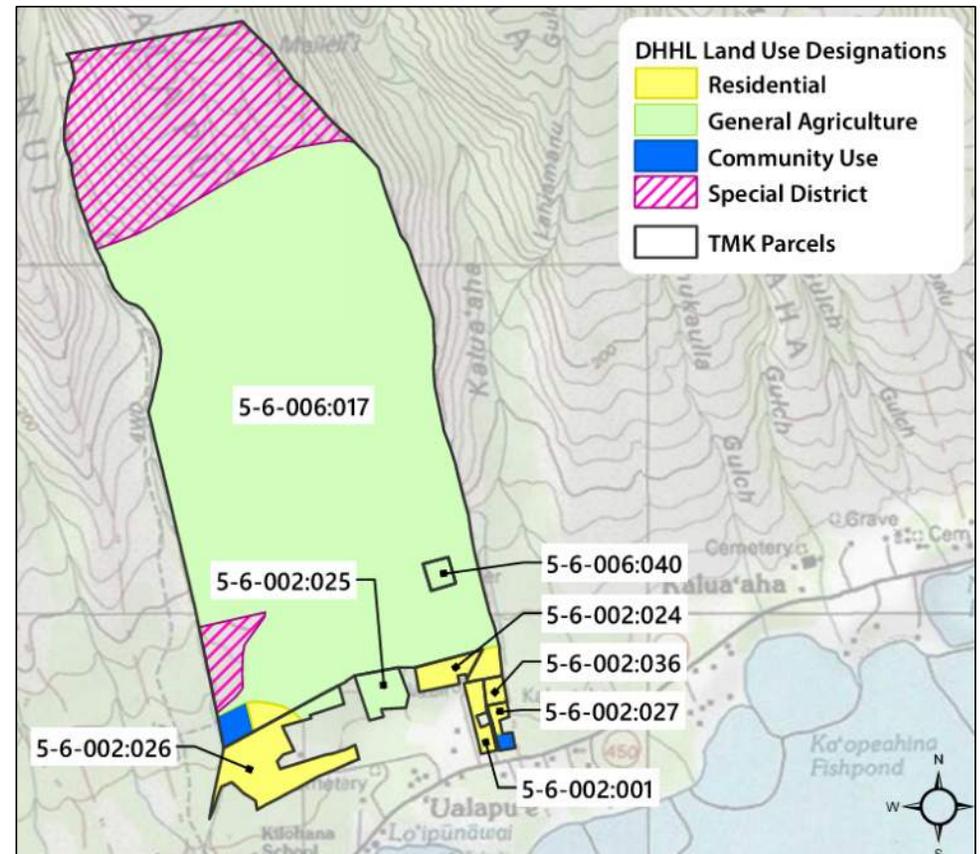
## Moloka'i Regional Plan (2019)

- Updated and approved by Hawaiian Home Commission in Feb 2020.
- 'Ualapue Kuleana Homestead Project was identified as a regional plan priority project.



# 'Ualapu'e Kuleana Homestead Project

- Identified as Priority Project #1 in DHHL Moloka'i Regional Plan
- Went through Beneficiary Consultation process for 15 months (beginning November 2018)
- Beneficiary movement from traditional development (residential neighborhoods) to kuleana homesteads (subsistence agriculture)
- Plan approved by HHC (February 2020)



# What is the Kuleana Homestead Program?

## Hawai'i Administrative Rules §10-3-30:

- Kuleana Homestead leases are designated for available, unimproved Hawaiian home lands
- Suitable for use by lessees who wish immediate access to the land for subsistence uses and who are willing to live on the land and accept an unimproved lot
- Lessee must participate in the Kuleana Homestead Association
- Lessee must maintain rights-of-way and lots



# What are the Responsibilities of DHHL?



- The Hawaiian Homes Commission determines which Waitlist(s) to use to make kuleana awards
- The Department is required to provide:
  - Metes and bounds descriptions of lots; and
  - An unpaved right-of-way to the awarded lots



# What are the Responsibilities of the Lessees?



- Suitable for use by lessees who wish **immediate access** to the land for subsistence uses and who are willing to live on the land and accept an unimproved lot
  - Such parcels only require a right of way to access the site
- Lessees must participate as an active member in the kuleana homestead association to develop and comply with the association's rules and agreements
- Lessees must participate in the maintenance of the right-of-way to the kuleana homestead tract and lots

# Why do I want a Kuleana Homestead Lot?

- Shorter time on the waitlist
- Larger number of leases to be awarded
- Ability for homesteaders to start small and expand their activity over time
- Community-based management





# Kuleana Lease vs Conventional Lease

## KULEANA LEASE

Fast track to get on land  
Un-improved Lot / Off-grid lifestyle  
More responsibility on lessee  
Community Stewardship

## CONVENTIONAL LEASE

Prolonged Development Time  
More responsibility on DHHL  
DHHL develops infrastructure  
(water, sewer, power)

TRADE OFF IS TIME AND RESPONSIBILITY – The more DHHL has to do, the more time development takes

# Kuleana Homestead Settlement Sequence





# 'Ualapu'e Planning Timeline

2nd Beneficiary Meeting (Tonight's Meeting)

2<sup>nd</sup> Community & 4th Beneficiary Meetings to share Draft KHSP (May 2022)

Informational Presentation of Lots Settlement Plan to HHC (July 2022)

**SUBJECT TO CHANGE**

HHC Approval Settlement Plan and Final Environmental Assessment (February 2023)

3rd Beneficiary Meeting to Share Lot Schemes, 30-day comment period (April 2022)

Complete the 'Ualapu'e Kuleana Homestead Lots Settlement Plan (June 2022)

Beneficiary Consultation Meeting: Final Settlement Plan and Draft Environmental Assessment (December 2022)



# Expected Outcomes

## Planning Phase:

- Kuleana Homestead Settlement Plan
- HRS 343 Environmental Assessment
- 2005 Island Plan Amendments  
*(if any, for land use designation)*





# Mentimeter Questions



- Please go to [www.menti.com](http://www.menti.com) (questions 1-4)
- Enter the code: 8160 5081
- Series of questions with responses in live time by all participants
- Responses will become part of the consultation report



# Planning Process

- Natural and Cultural Resources
- Cultural Beliefs and Practices
- Hunting and Gathering Rights
- Erosion and Slope
- Accessibility
- Water Availability
- Wellhead Protection
- Community Engagement
- Infrastructure Options
- Proximity to Emergency Response



# Relationship to Larger Community

## Previous Studies/Relationship to Wahi Pana:

- 1990 Master Plan for 'Ualapu'e Ahupua'a
- 1994 Governors Moloka'i Subsistence Task Force Report
- 2008 Mana'e GIS Mapping Project
- 2009 Moloka'i Forest Reserve Management Plan
- 2017 Pāku'i Watershed Project FEA
- 2018 Moloka'i Island Community Plan Update
  - (including the East End Policy Statement)





# Moku of Mana'e

- Moloka'i's East End
- One of the most intact cultural and subsistence landscapes within Hawai'i
- Entire moku is vital to the subsistence lifestyle of its community and island residents
- Significant decline in the health and abundance of ahupua'a resources

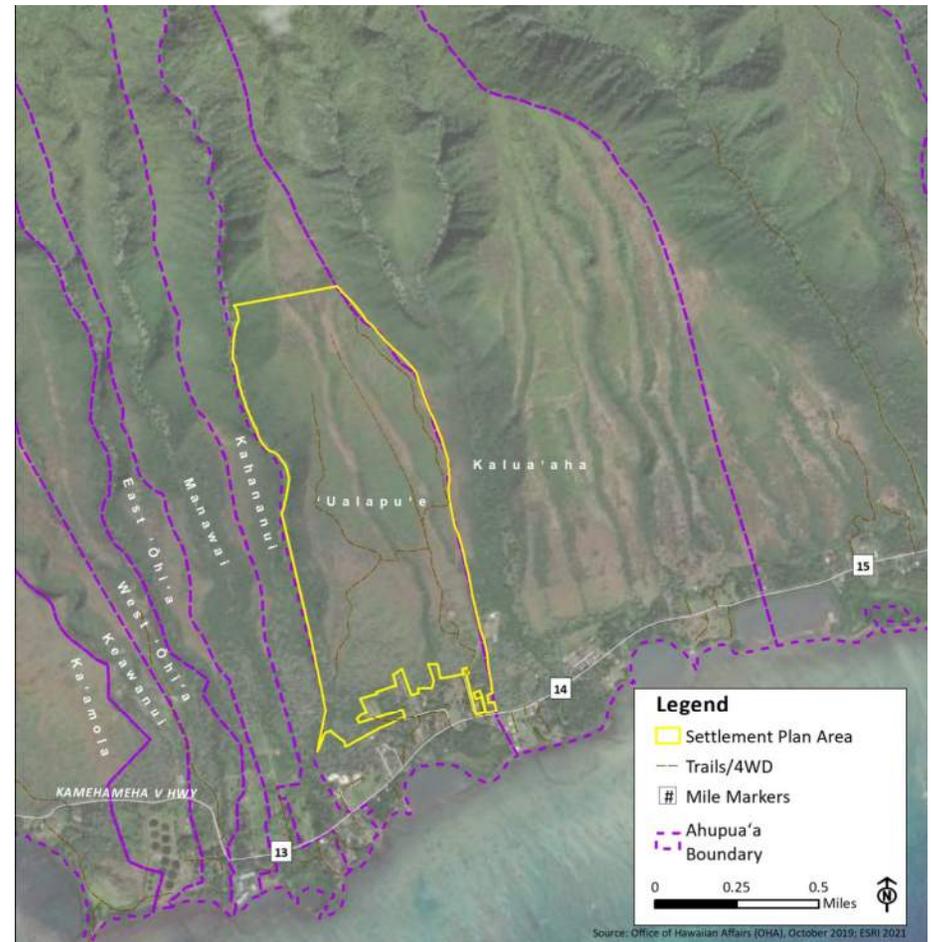


From *Traditional & Customary Practices Report for Mana'e, Moloka'i* (2016)



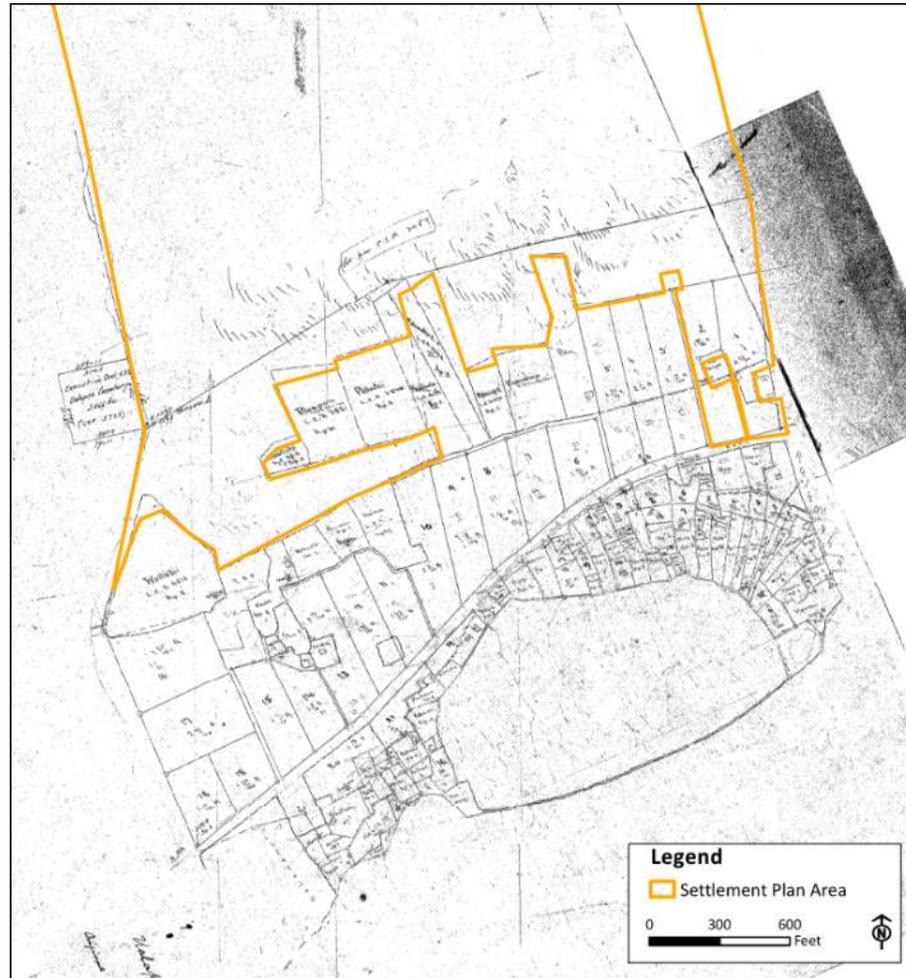
# Ahupua'a

- 'Uala (sweet potato) + Pu'e (mound)
  - Agricultural ahupua'a
- Located between Kahananui and Kalua'aha ahupua'a
- Pu'u Kīlau, Makalihua, Maileli'i
- Mauka - Paku'i Watershed, Forests
- Makai - Springs, Fishponds, Lo'i, Coastal Resources





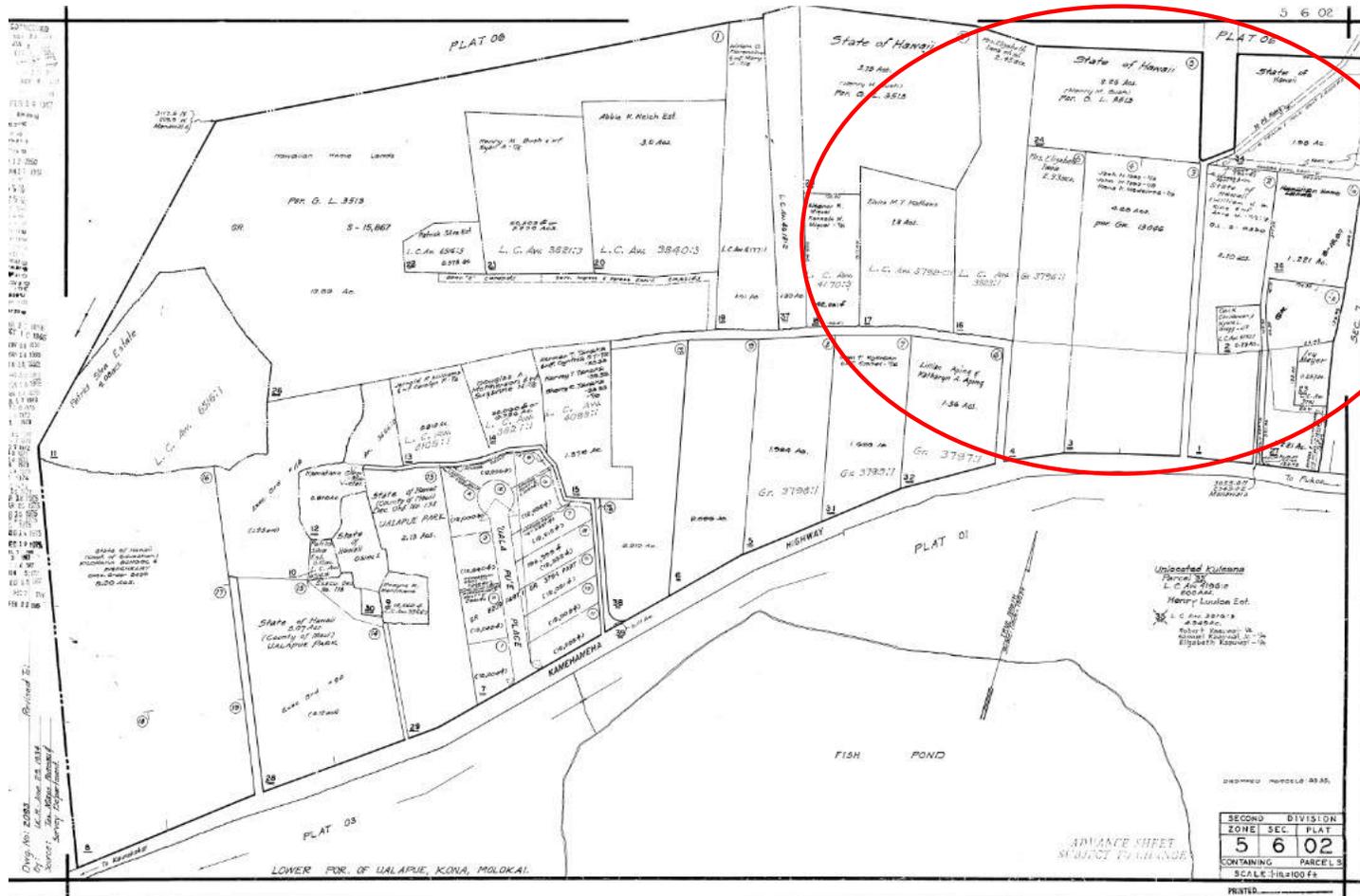
# Land Commission Awards



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# Land Commission Awards



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# Land Commission Awards

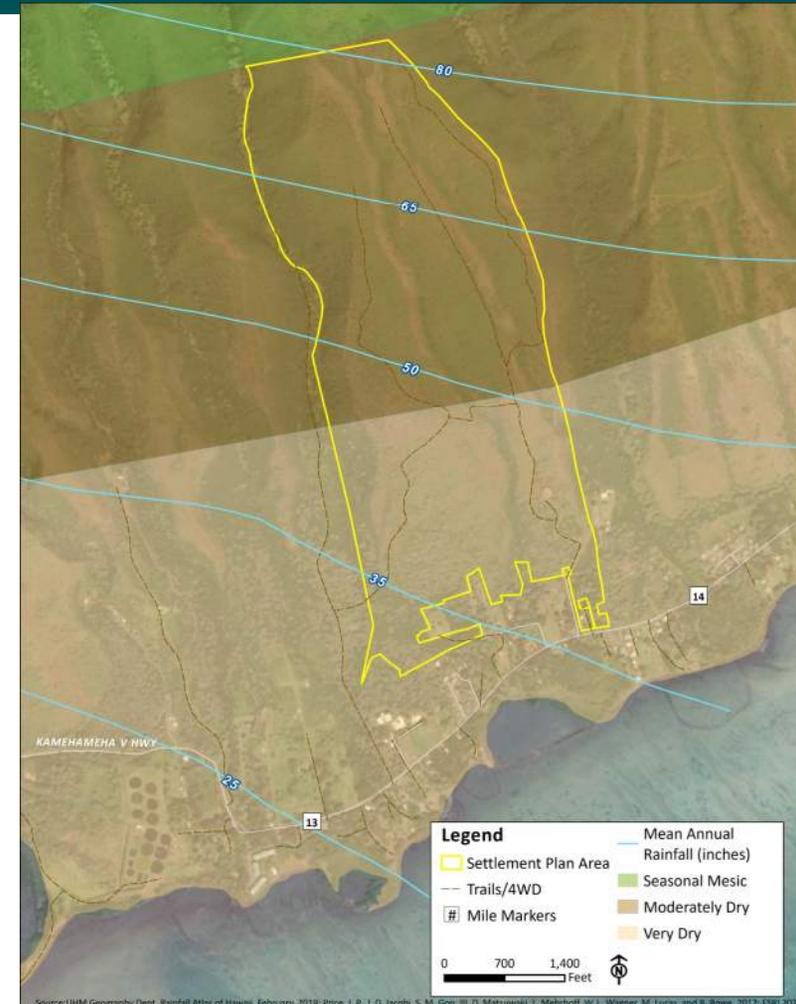


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# Rainfall

- The island of Moloka‘i is characterized by low rainfall
- 35-80” of rainfall per year in project area
- Most rainfall occurs between November and February
- Coastal, very dry to moderately dry, mesic

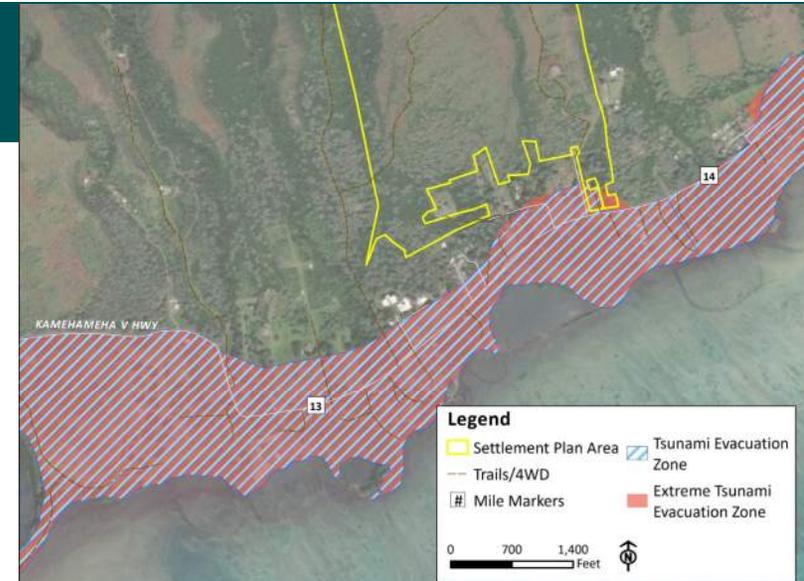


Source: LHM Geography Dept., Rainfall Atlas of Hawaii, February, 2019; Price, J. P., J. D. Jacobs, S. M. Goni, III, D. Matsuwaki, L. Mehrhoff, W. L. Wagner, M. Lucas, and B. Rowe. 2012. 1540-2022



# Tsunami and Sea Level Rise

- Lower portion of Project area within the Extreme Tsunami Evacuation Zone
- Community use of Water Tank Road for evacuation
- Additional access needed for evacuation
- Project area is located outside of the 3.2+ Sea Level Rise Exposure Area (SLR-XA)





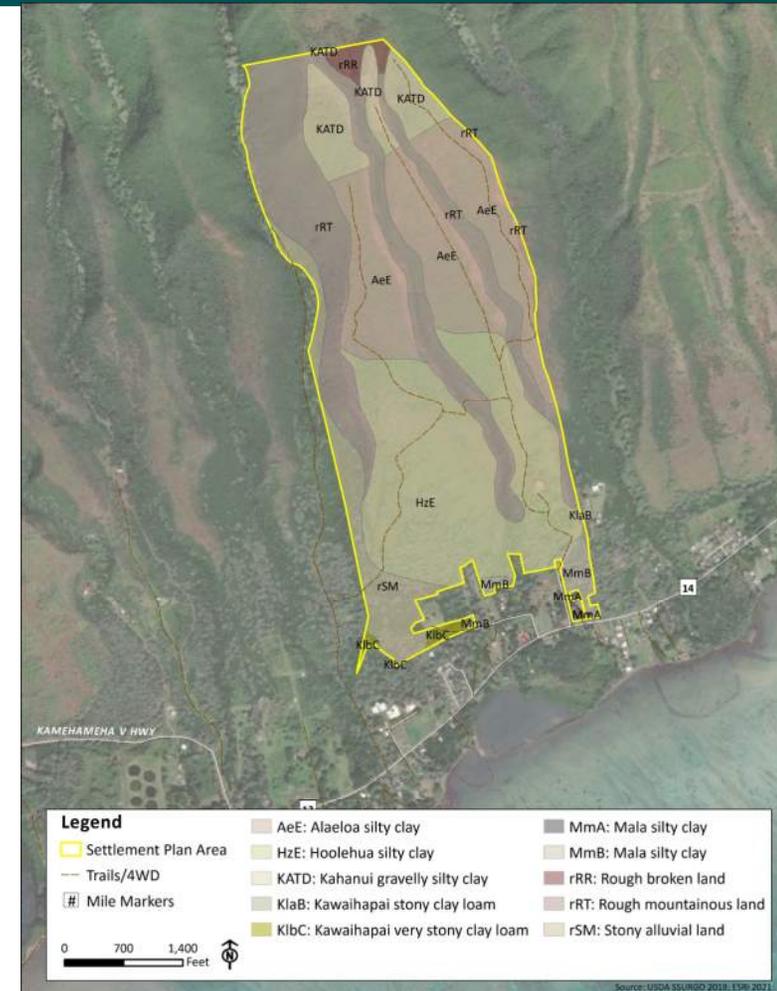
# Soils

## Types of soil:

- Ho'olehua silty clay
- Alaeloa silty clay
- Kahanui gravelly silty clay
- Rough mountainous land

## Soil Characteristics:

- Medium to severe runoff
- Medium to severe erosion
- Best uses include pasture, truck crops, orchards, wildlife habitat, homesites





# Topography

- Elevation ranges from 30 ft to 500 ft
- Steep, ~20% slope
- Three large gulches: Mo‘omuku, Ki‘inohu, and Kahananui
- Landscape altered by ungulates, invasive plants
- High runoff and erosion





# Accessibility

## Access:

- To homestead lots
- Water Tank Access Road
- Hunting Trails
- Alternative routes

## Roads:

- Slope and Grade
- Erosion
- Management





# Natural and Cultural Resources

## Heiau:

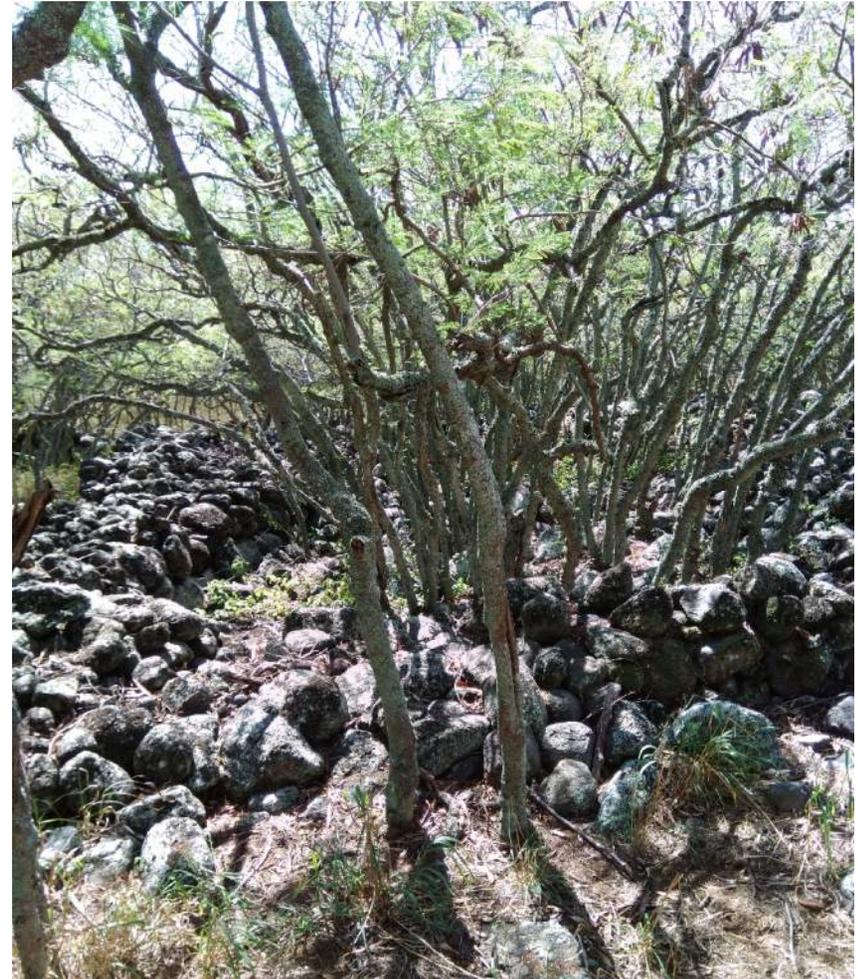
- Presence, Location, Protection
- Composite Heiau in 'Ualapu'e

## Fishponds:

- Mauka to Makai connectivity, subsistence resources

## 'Ualapu'e Cemetery:

- Care, Maintenance
- Possible Expansion





# Technical Work To Date

- Aerial Survey
- Biological Assessment
- Wildfire Assessment
- Honuiaiākea Process





# Aerial Survey

- Resource Mapping Hawaii (RMH)
- High-resolution imaging:
  - Terrain
  - Erosion
  - Vegetative cover





# Aerial Survey



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# Aerial Survey



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# Biological Assessment

## Plant Survey

- 56 plant species total
- 75% introduced, 25% native
- Majority of Area: Waiwi scrub
- Lower portion: Kiawe forest and koa haole scrub
- Upper Portion: Grass meadow and paperbark forest
- Gulches: Riparian Forests





# Biological Assessment

## Native:

- Kukui, carex, ‘uhaloa, ‘ūlei, uluhe, ‘ākia, pala‘ā, moa, wiliwili

## Non-Native:

- Kiawe, koa haole, paperbark, lantana, waiwī, christmas berry, java plum, octopus tree, koster’s curse, rat-tail grass, etc.





# Biological Assessment

## Avian/Mammalian Surveys:

17 naturalized bird species

- Mynah, cardinal, finch, cattle egret, francolin, chickens, etc.

6 species of naturalized animals

- Mongoose
- Cat
- Dog
- Axis Deer
- Cattle
- Pig





# Deer Management

## Alternative Priority Projects, Moloka'i Regional Plan (2020)

- Cross-Fencing and Deer Fencing
- Deer Management Plan
  - Management Alternatives
  - Funding Strategies

## Management Recommendations

- Target smaller agricultural and native reforestation areas for fencing (+8ft) and ungulate removal





# Water and Stream Conditions

35-80" of rainfall per year

## Mo'omuku and Ki'inohu Gulch:

- Ephemeral
- Flows after a 2 to 4-day rain event

## Kahananui Gulch:

- Interrupted perennial stream
- Flows after every rain event
- May be categorized by USACE as jurisdictional waters

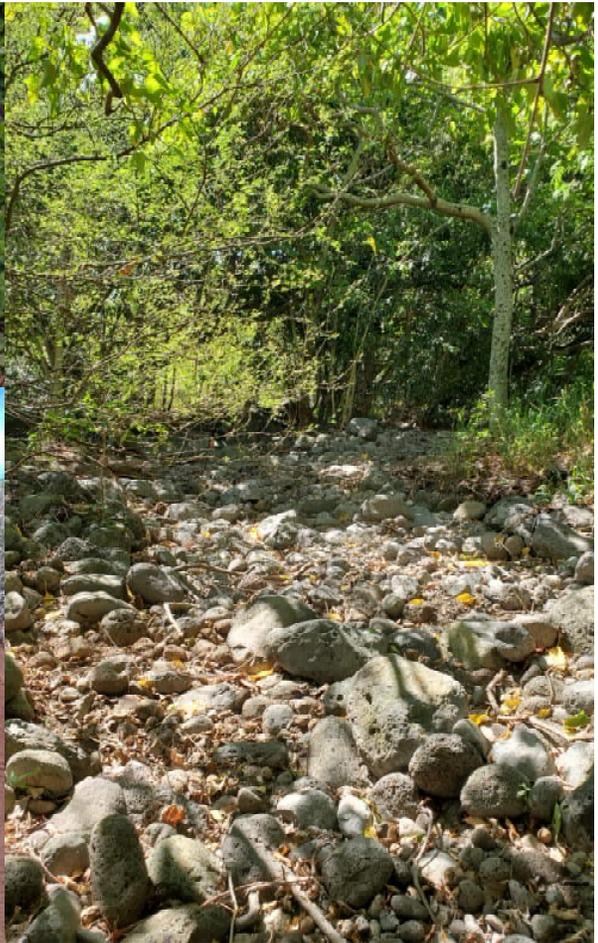




# Biological Management Recommendations

## Management Recommendations

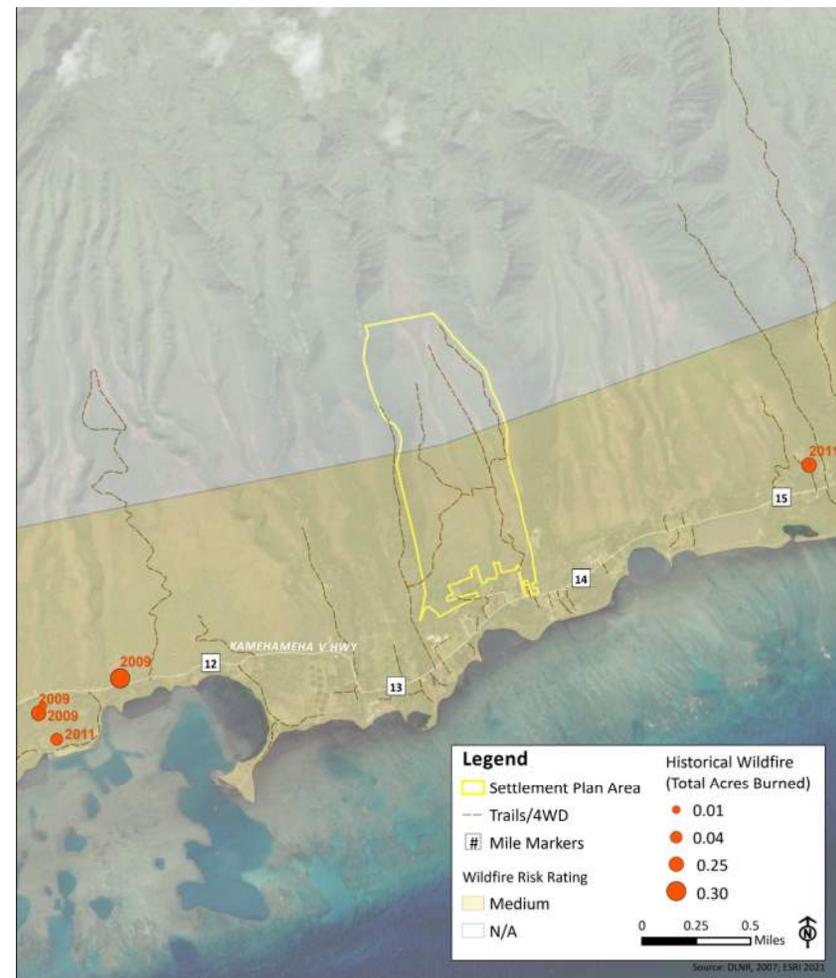
- Best Management Practices (BMPs) for erosion control
- BMPs for seabirds/‘ōpe‘ape‘a
- Replace exotic trees with native and culturally-relevant species
- Utilize new roads / ditches / culverts to control surface water
- Avoid locating homes in flood zone





# Wildfire

- 98% of wildfires in Hawai'i are human-induced or accidental
- Limited water availability in Project Area
- Concentration of flammable material
- Management Recommendations:
  - Clearing of roads and access ways
  - Creation of fire breaks and buffers
  - Protection of existing native plants





# Honuaiākea Process

- Workshop held with Edith Kanaka‘ole Foundation (EKF) on November 20th & 21st, 2021
- Analyze mele, oli, mo‘olelo, ka‘ao unique to ‘Ualapu‘e
- Formalize Kapu and Kānāwai for best management of ‘āina





# Honuaiākea Process

## Kapu

- Resources crucial for ecosystem stability and community survival

## Kānāwai

- Actions needed to maintain said resources





# Honuaiākea Process

## Kapu #1:

Ua ka ua, Kahe ka wai

*Water needs to flow to all inhabitants of the 'ahupua'a. Mauka forests hold the water then flows down to inhabitants.*



## Kānāwai:

Kū'ula Uka, Kū'ula Kai – Growth must happen up uka as it does in the kai.

Hina-ulu-Ohi'a – The moon controls the growth of our forests as it controls the movement of water in the ohi'a.



*– from oli Kīauau, line 9 and the story of Kū'ula kai, first paragraph*



# Honuaiākea Process

## Kapu #2:

### Ko‘a (āko‘ako‘a, pūko‘a)

*Succession. Teaching the community and next generations the traditions gathering of fish, gathering of community, providing nutrients to people and fish*



## Kānāwai:

**Ki‘au‘au** – Coming together and being prepared. Reach a place of healing and reconciliation to move forward as a lāhui.

**Hina-puku-i‘a** – Feeding community members with ‘ike, food security, kuleana, skills, and traditions that allow them to give back to the ‘āina.

*– from oli Kīauau, line 9 and the story of Kū‘ula kai, first paragraph*



# Honuaiākea Process

## Kapu #3:

### Kui ka ‘ina

*Growth and birth cycle of the marine life of the shore break and kai koholā are free to proceed without hindrance.*



## Kānāwai:

‘Ai-‘ai – Managing abundance for this era and future generations. Sustainability through practice, practice based on community tradition and knowledge of place.

Pupuhi ke kukui malino ke kai – the process to see below the surface, observation is key to understanding your coastline. Also a reference to managing externalities and external powers.

*– from oli Kīauau, line 9 and the story of Kū‘ula kai, first paragraph*



# Forthcoming Work

- Archaeology
- Cultural and Historic Resources
- Potential Water Sources
- Public Access and Safety
- Economic and Community-Based Uses





# Mentimeter Questions



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# Settlement Plan

Applicants, together with DHHL, must develop a plan for settlement and development of the designated tract (HAR §10-3-30). The Settlement Plan must include:

- Location and description of the tract of land
- Size and number of lots to be awarded
- Location of community center and common areas
- Proposals for community management and economic development
- Preservation of significant historical archaeological, and biological sites
- Settlement timetable



# Selection and Planning Criteria

CRITERIA	VALUE
Topography	Less than 15% slopes, away from drainage ways and flood hazards
Proximity to Roadways	Existing dirt roads but manage erosion concerns, provide emergency access
Size	X-acre subsistence agriculture
Proximity to Water	DWS, Rainfall
Wildfire Risk	Sited away from fuel sources
Proximity to Natural and Cultural Resources	Sited away from denser areas of intact native forested areas, and traditional, cultural sites and features
Beneficiary Preferences	General consensus on lot scheme



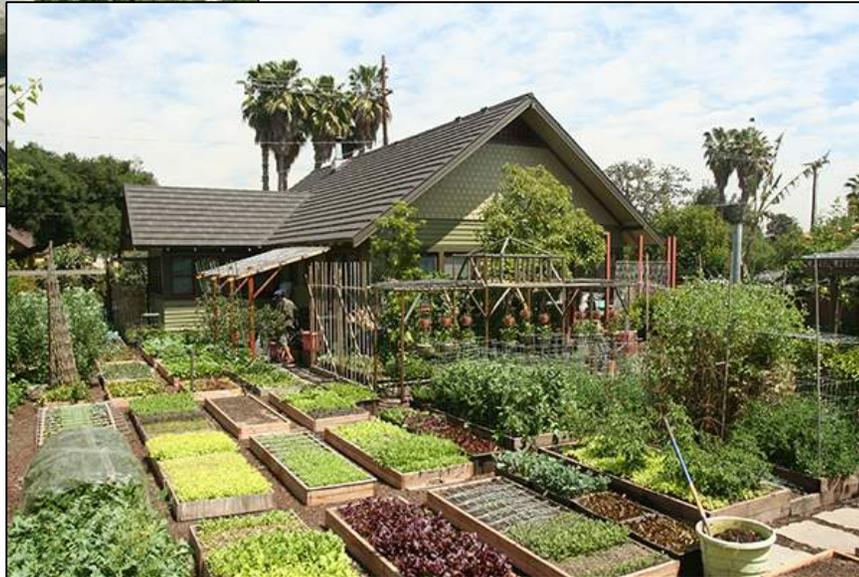
# Evaluating Lot Schemes

- Number of lots awarded
- Size of parcels
- Layout
- Sharing burdens of maintenance and improvements
- Activities/uses adjacent to lots
- Future build-out needs





# One-Fifth Acre



- **Property size:** 1/5 acre (8,712 sq ft)
- **Garden size:** 1/10 acre (3,900 sq ft)
- **Garden diversity:** ~400 different vegetables, herbs, fruits, berries
- **Food Production:** ~6,000 lbs annually / 90% of family's produce needs / \$75,000 savings
- **Water Usage:** 175,000 gallons per year
- **Energy Usage:** 6.0 kwh/day
- **Solar Power Produced:** 12,410 kwh/day
- **Gallons of Biodiesel Made:** 5,000 gallons



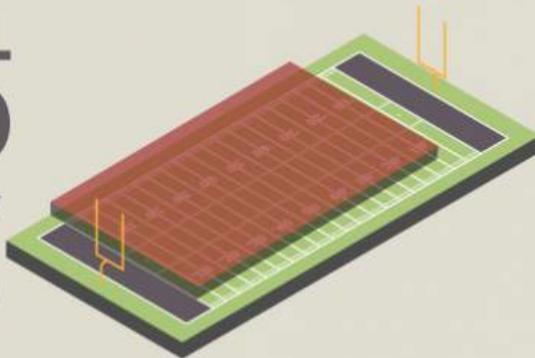
# How Big Is an Acre?

## WHAT EQUALS AN ACRE?

It was commonly known as the amount of land a farmer could plow in one day with a yoke of oxen. It took the real estate agent a lot longer. A look online will tell you an acre is equal to 43,560 square feet, but how big is that?

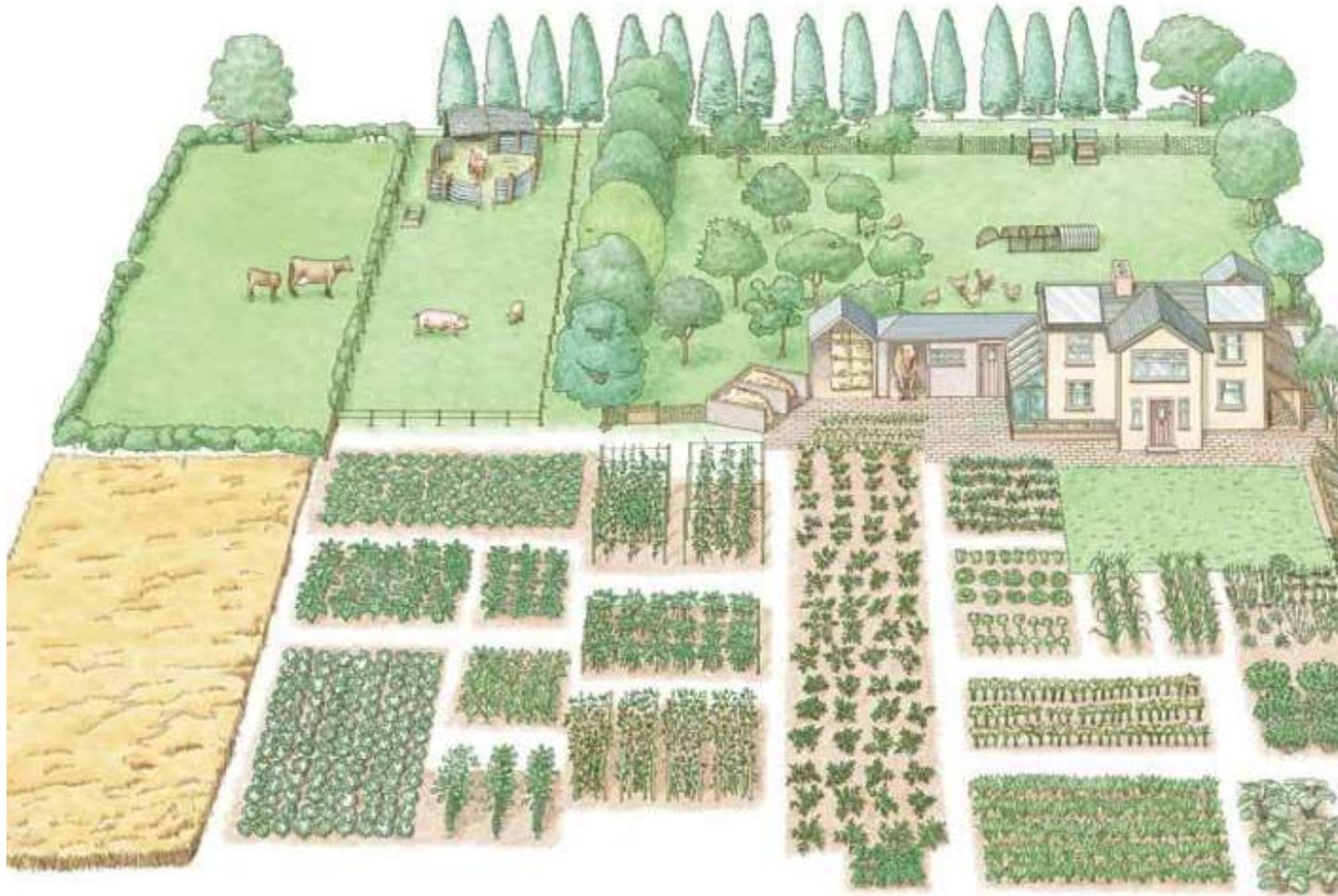
## 1 FOOTBALL FIELD

An acre of land is roughly the size of a football field  
1 acre = 43,560 sq ft  
Football field = 48,000 sq ft (w/o endzones)





# What Can I Do With One Acre?



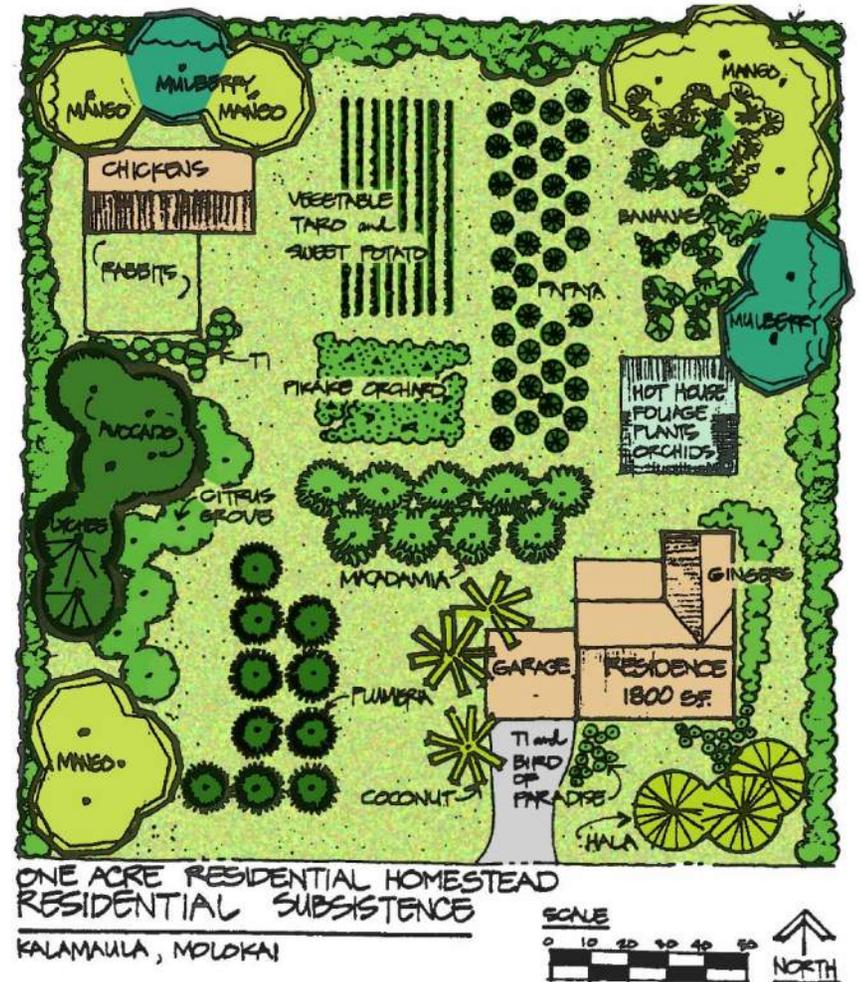
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# With One Acre...

Example taken from Kalama'ula, Moloka'i

- 1800 sq ft home
- Vegetable Gardens
- Fruit Trees
- Greenhouse
- Small Livestock





# Two-Acre Lots

## HOW BIG A BACKYARD DO YOU NEED TO LIVE OFF OF THE LAND?

More and more people are turning away from grocery stores and utility companies in favor of their own back yard. The idea of becoming self-sufficient is an enticing one, but exactly how much land would you need? Assuming a family of four, here are the land requirements to sustain yourself for one year:

**AVERAGE U.S. ROOF SIZE: 2,000 SQ FT**

**1 YEAR OF ELECTRICITY: 375 SQ FT**

According to the EPA the average home in the U.S. will consume 11,082 kWh of electricity in one year. It may fluctuate higher or lower depending on your heating or cooling needs. Assuming the house is being heated and there is 7 hours of sun light, it would take about 25 solar panels (using panels of average efficiency) to hold those energy requirements, which would take about 375 square feet of roof space.

**9,200 CALORIES FOR A FAMILY OF FOUR, PER DAY: 76,666 SQ FT**

Maintaining a vegetarian diet of 2,000 calories per person, per day requires 40 acres per person. This includes fruits, grains and of course, vegetables. In an ideal setting, suitable trees and other plant species to provide a well-rounded diet. Some vegetables require much more land than others, including potatoes and cucumbers.

**IF YOU EAT MEAT, EGGS AND/OR DAIRY: 1 YEAR OF MEAT: 207 SQ FT**

If you wish to add a little bacon to your self-sustained diet, then starting off with 3 pigs can feed a family of four twice a week, for a year. If you wish to add some piglets to the mix allow 8 square feet per pig or piglet.

**1 YEAR OF DAIRY: 100 SQ FT**

If you wish to add dairy to your diet forget about getting a cow for they are not land-efficient. Think about a milk goat instead. A mature goat can produce 1,800 lbs of milk a year. Keep in mind that goats, like cows, do require some grazing land and companionship.

**1 YEAR OF WHEAT: 12,012 SQ FT**

The average person 1.5 pounds of wheat a week. In order to maintain that diet of wheat you must allow for at least 3,000 square feet of wheat per person. If some of this wheat is going to livestock, adjust for the extra.

**1 YEAR OF EGGS: 65 SQ FT**

A hen can lay anywhere from 80 to 280 eggs in one year. The average American eats about four eggs a week. For a family of four eating 1,600 eggs in a year it would require 13 birds to put out enough eggs on the table in the morning.

**1 YEAR OF CORN: 2,640 SQ FT**

Corn is a multi-functional product that is necessary when growing animals in your backyard farm. However, corn is not land efficient. You would need at least 2,640 sq ft of corn to produce enough for your family and animals. We did not include corn in our final calculations, assuming instead that you'd prefer to buy livestock of corn feed (a bushel of corn is 56 pounds but costs \$3 each).

**YOU WILL NEED A BACKYARD THAT IS AT LEAST 89,050 SQ FT THIS IS ABOUT 2 ACRES**

IF OUR FAMILY OF FOUR WAS WILLING TO BUY FLOUR INSTEAD OF GROWING THEIR OWN WHEAT THEY'D ONLY NEED ABOUT 100 SQ FT TO MAKE A MIXED DIET OF VEGGIES, EGGS, MEAT AND MILK.

- o Family of 4
- o 2,000 sq ft home
- o 375 sq ft south-facing roof for solar
- o Medium-sized livestock
- o Fruit trees
- o Vegetable garden
- o Green House



# Five Acres

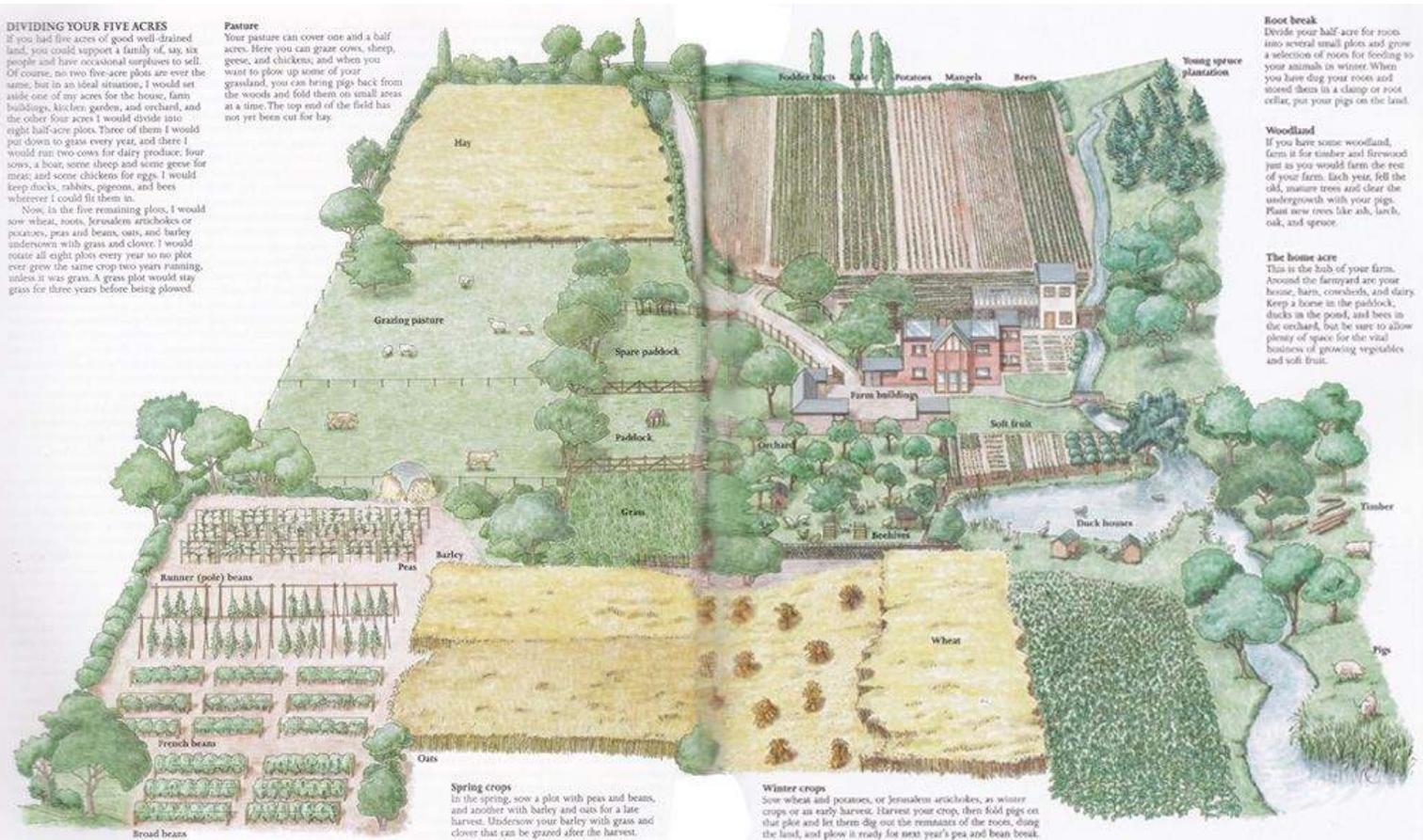
## DIVIDING YOUR FIVE ACRES

If you had five acres of good well-drained land, you could support a family of six, people and have occasional surplus to sell. Of course, no two five-acre plots are ever the same, but in an ideal situation, I would set aside one of my acres for the house, farm buildings, kitchen garden, and orchard, and the other four acres I would divide into eight half-acre plots. Three of them I would put down to grass every year, and three I would run two cows for dairy produce; four sows, a boar, some sheep and some geese for meat; and some chickens for eggs. I would keep ducks, rabbits, pigeons, and bees wherever I could fit them in.

Now, in the five remaining plots, I would sow wheat, roots, Jerusalem artichokes or potatoes, peas and beans, oats, and barley underseeded with grass and clover. I would rotate all eight plots every year so no plot ever grew the same crop two years running, unless it was grass. A grass plot would stay grass for three years before being plowed.

## Pasture

Your pasture can cover one and a half acres. Here you can graze cows, sheep, geese, and chickens; and when you want to plow up some of your grassland, you can bring pigs back from the woods and fold them on small areas at a time. The top end of the field has not yet been cut for hay.



## Root break

Divide your half-acre for roots into several small plots and grow a selection of roots for feeding to your animals in winter. When you have dug your roots and stored them in a clamp or root cellar, put your pigs on the land.

## Woodland

If you have some woodland, farm it for timber and firewood just as you would farm the rest of your farm. Each year, fell the oak, mature trees and clear the undergrowth with your pigs. Plant new trees like ash, larch, oak, and spruce.

## The home acre

This is the hub of your farm. Around the farmhouse are your house, barn, cowsheds, and dairy. Keep a horse in the paddock, ducks in the pond, and bees in the orchard, but be sure to allow plenty of space for the vital business of growing vegetables and soft fruit.

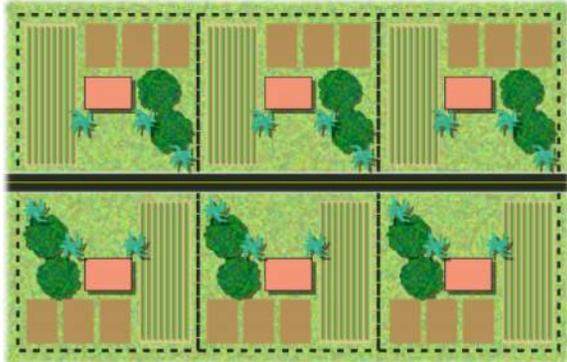
**Spring crops**  
In the spring, sow a plot with peas and beans, and another with barley and oats for a late harvest. Underseed your barley with grass and clover that can be grazed after the harvest.

**Winter crops**  
Sow wheat and potatoes, or Jerusalem artichokes, as winter crops or an early harvest. Harvest your crop, then fold pigs on that plot and let them dig out the remnants of the roots, dung the land, and plow it ready for next year's pea and bean break.

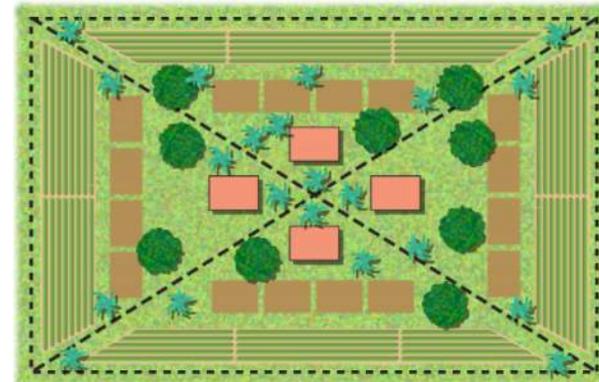
- Large house
- Barn
- Food processing area
- Large livestock
- Feed crops
- Dairy
- Fruit orchards
- Beehives
- Woodland for timber or firewood
- Seasonal crops-rotating



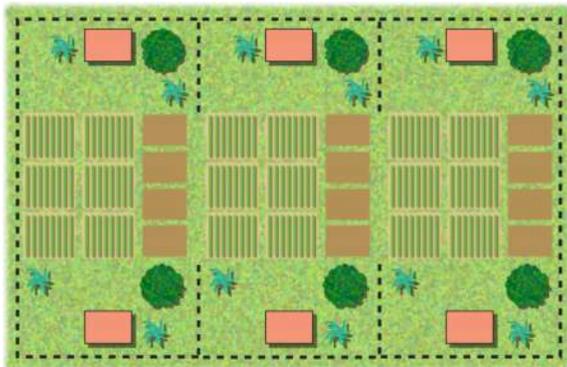
# Lot Configuration



Individual Lots



Clustered Homes w/ Individual Agriculture



Shared Agriculture



Clustered Homes w/ Shared Agriculture



# Mentimeter Questions



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# Questions?



DEPARTMENT OF HAWAIIAN HOME LANDS

**Contact:**

[dhhl.planning@hawaii.gov](mailto:dhdl.planning@hawaii.gov)

**Project Information Website:**

[dhhl.hawaii.gov/po/molokai](http://dhhl.hawaii.gov/po/molokai)