

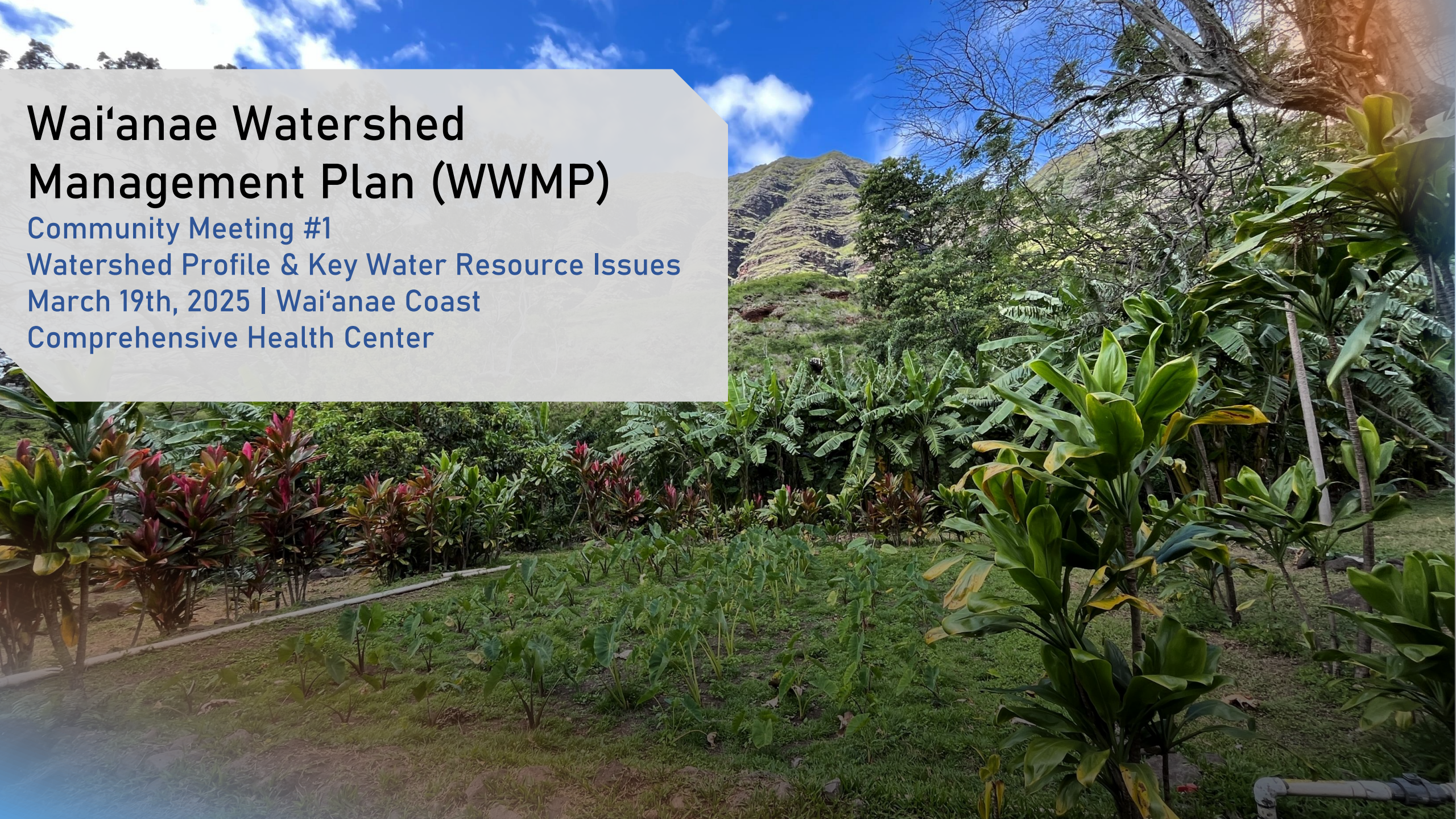
Wai'anae Watershed Management Plan (WWMP)

Community Meeting #1

Watershed Profile & Key Water Resource Issues

March 19th, 2025 | Wai'anae Coast

Comprehensive Health Center



Presentation Agenda

- Background and Overview of the O'ahu Water Management Plan (OWMP)
- Overview of Wai'anae Watershed Management Plan (WWMP)
- Wai'anae Watershed Profile
- Wai'anae Water Resource Issues
- Getting Involved

O'ahu Watershed Management Plan Overview

STATE WATER CODE

O'AHU GENERAL PLAN

Legal/Regulatory/Policy Guidance

HAWAII WATER PLAN

- State Water Projects Plan
- Agricultural Water Use and Development Plan
- Water Quality Plan
- Water Resource Protection Plan
- County Water Use and Development Plans

8 Development Plans (DPs)/ Sustainable Communities Plans (SCPs)

- Act 152: Watershed Protection
- Waiāhole Ditch Decision
- Ch 30, ROH Water Management
- BWS Sustainability Mission
- CCH Mayor's Climate Change & Sea Level Rise Directive (2018)

O'AHU WATER MANAGEMENT PLAN
(BY DP/SCP DISTRICT)

East
Honolulu

Ko'olau
Loa

Ko'olau
Poko

North
Shore

'Ewa

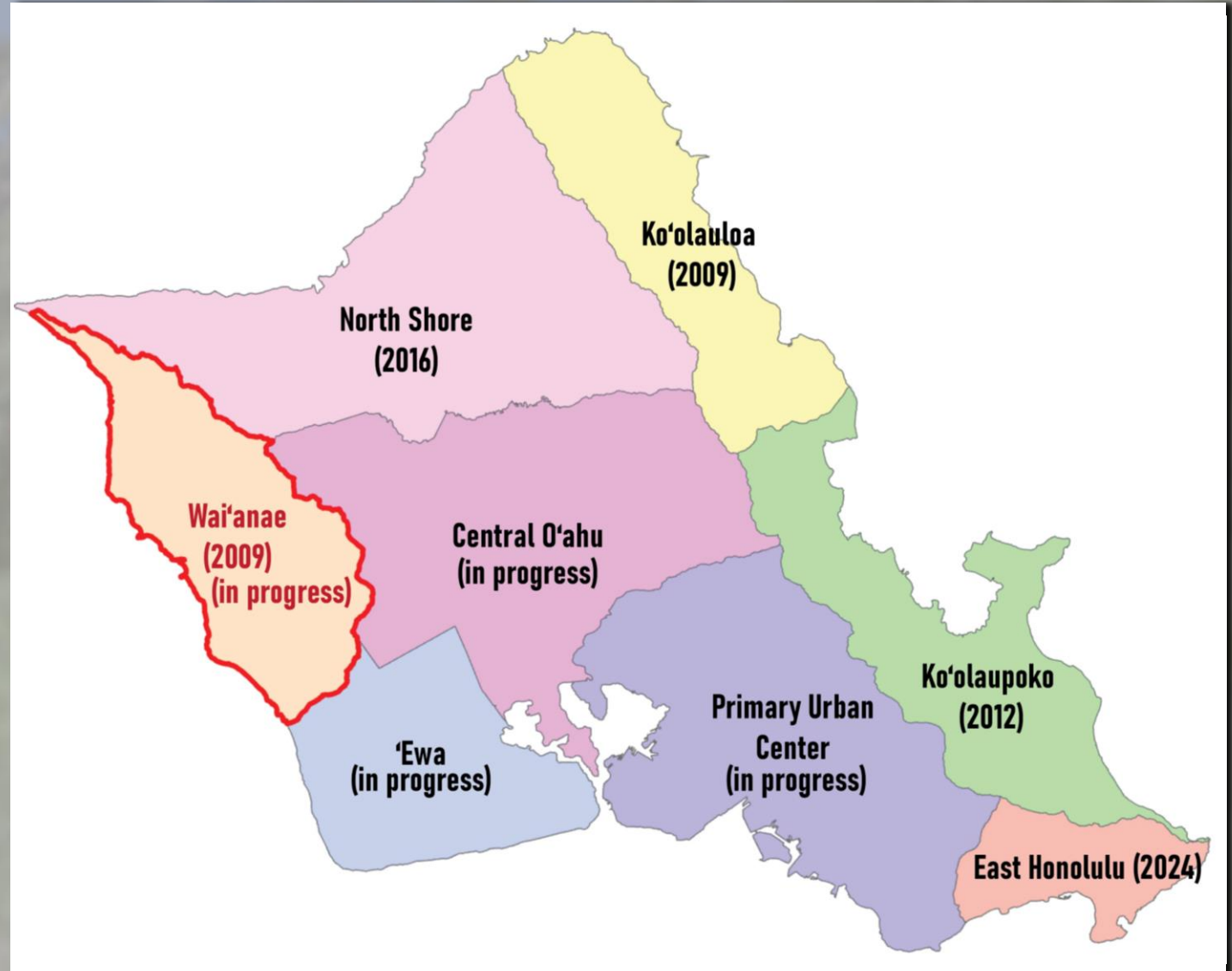
Central
O'ahu

PUC

WAI'ANAE

O'ahu Watershed Management Plan Status

- 5 WMPs completed
 - Wai'anae [update in progress]
 - Ko'olau Loa
 - Ko'olau Poko
 - North Shore
 - East Honolulu
- 3 WMPs in progress
 - Central O'ahu
 - 'Ewa
 - Primary Urban Center

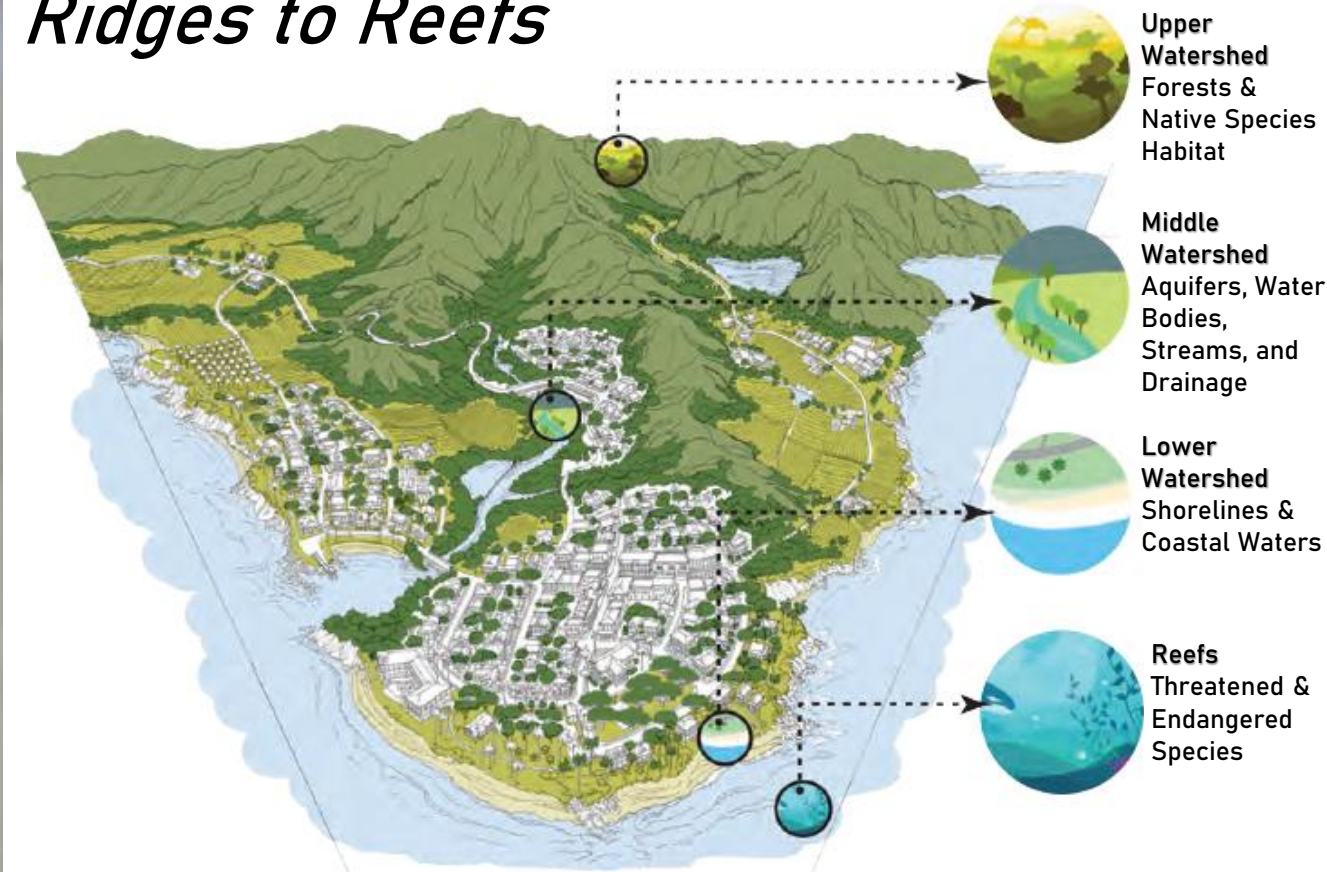


Ahupua'a Model

Planning concept influenced by Native Hawaiian systems-thinking, emphasizing:

- Watershed health
- Holistic resource management
- Self-sufficient and sustainable communities
- Inter-relationship of mauka and makai resources
- Stewardship and kuleana of land, people, and culture

Ridges to Reefs



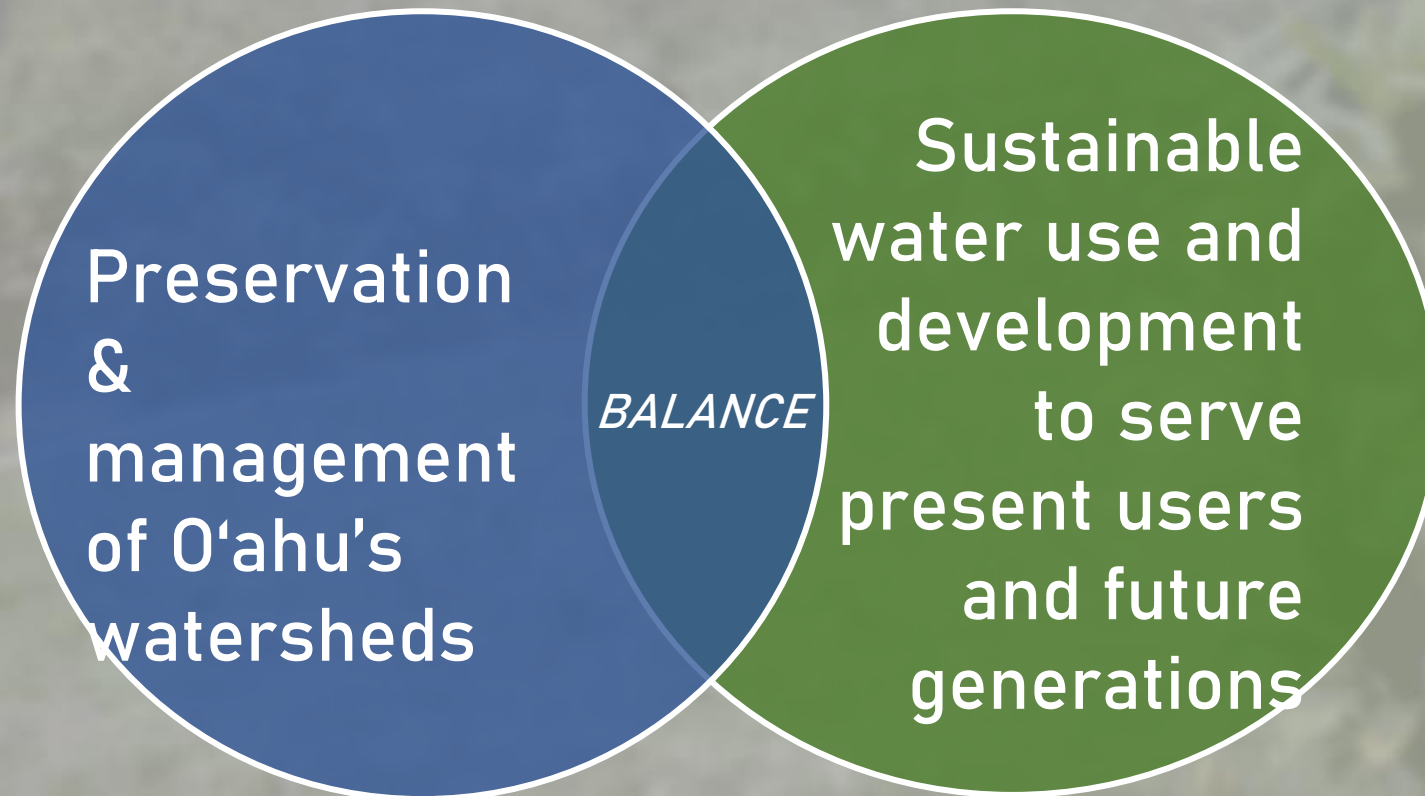
One Water Approach



O'ahu Water Management Plan

Goal

To formulate an environmentally holistic, community-based, and economically viable watershed management plan that will provide a balance between:



O'ahu Watershed Management Plan

Objectives

1. Promote sustainable watersheds

2. Protect and enhance water quality and quantity

3. Protect native Hawaiian rights and traditional and customary practices

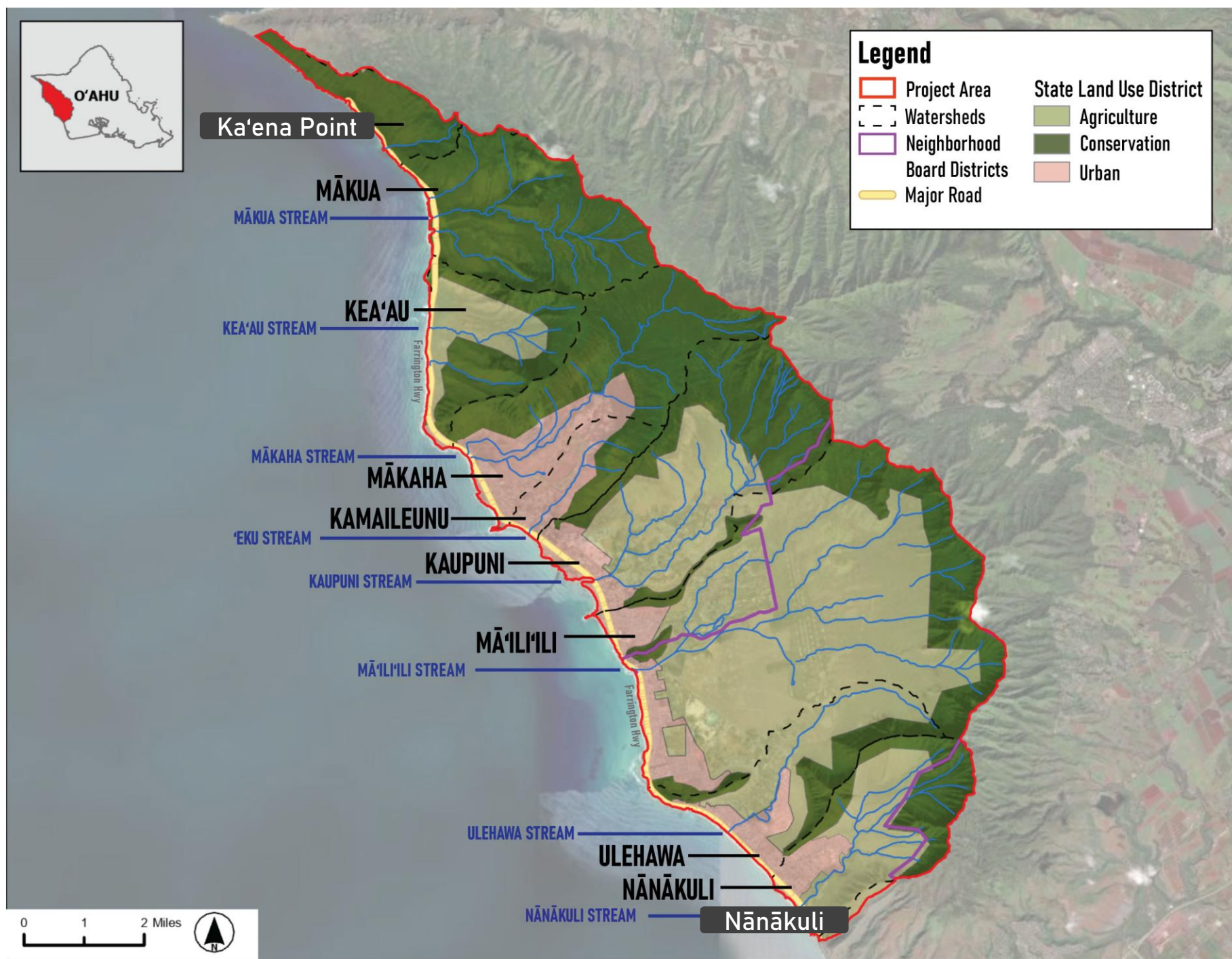
4. Facilitate public participation, education, and project implementation

5. Meet future water demands at reasonable costs

WWMP Overview



Wai'anae Planning District: Ka'ena Point to Nānākuli



Elements of the WWMP

The WWMP:

- Manages and protects watershed health from a holistic, mauka to makai perspective
- Recommends policies, strategies & projects ensure adequate and sustainable water supply for Wai'anae for the next 20 years & the ultimate 2100 sea level rise scenario
- Identify 'Projects with Champions' that have an agency / organization who is currently working on the project

- **Ch. 1:** O'ahu-Wide Overview
- **Ch. 2:** Wai'anae Watershed Profile & Critical Issues
- **Ch. 3:** Wai'anae Water Demand/Supply & Growth Scenarios
- **Ch. 4:** Policies, Projects & Strategies
- **Ch. 5:** Implementation

WWMP Planning Process

Research & Identify Key Water Resource Issues

We Are
Here

Community
Meeting #1

Preliminary Watershed Analysis &
Water Demand Forecasting

Community
Meeting #2

Water Supply Options & Watershed
Management Policies, Projects & Strategies

Community
Meeting #3

Agency Review & Public Review Draft WWMP

Community
Meeting #4

Final WWMP

Community Input & Consultation

Related Initiatives

Wai'anae Sustainable Communities Plan (SCP) Update

- The City and County of Honolulu Department of Planning and Permitting (DPP)
- Last SCP adopted in 2012.
- Assesses the appropriateness of the WSCP's regional vision, policies, guidelines, and implementing actions, as well as its consistency with the City's General Plan.
- The WWMP will align with the updated WSCP, which is expected to be complete in 2025.

Wai'anae Groundwater Management Area Designation

- BWS is petitioning the State Commission on Water Resource Management (CWRM) to designate the Wai'anae Aquifer Sector Area as a Ground Water Management Area.
- BWS is seeking this designation to ensure a sustainable water supply for the community in the face of development pressures & uncertainties such as climate change (decreasing rainfall, groundwater levels and stream flows) and increasing temperatures that will drive up water demand as evapotranspiration rates increase.

WWMP Schedule



Community Meeting

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Wai'anae Watershed Profile



Wai'anae Planning District Overview

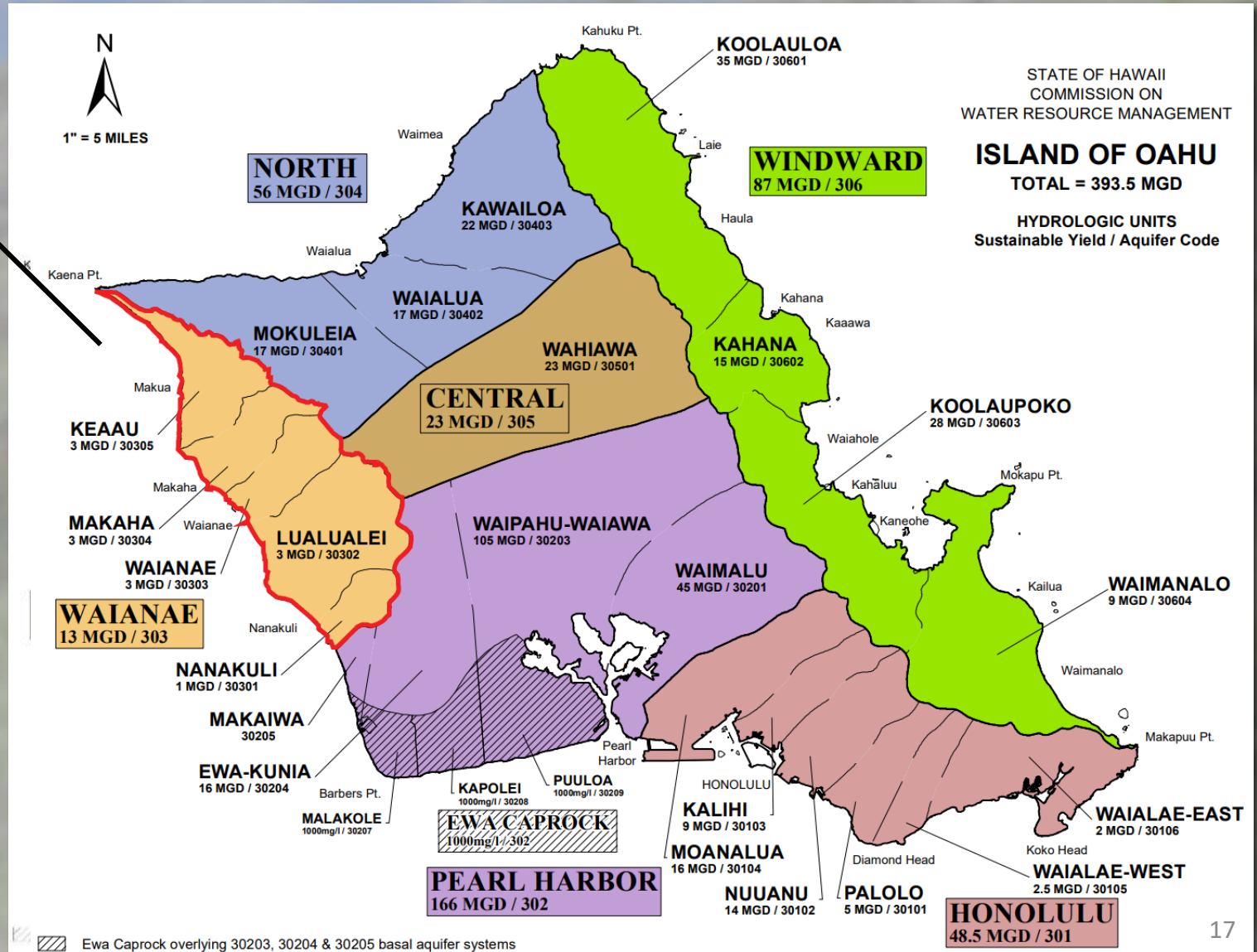


- Land Area: 39,070 acres
- Population: 51, 965 (2020)
- ~47% of Wai'anae is Conservation Land
- ~ 40% of Wai'anae is Agriculture Land
- ~ 13% of Wai'anae is Urban Land
- 9 Watersheds
- 8 Ahupua'a
- 2 Neighborhood Boards
- Strong presence of community organizations

O'ahu Groundwater Aquifer Systems

Wai'anae is within:

- Wai'anae Aquifer Sector Area
- Nānākuli, Lualualei, Wai'anae, Mākaha & Kea'au Aquifer System Areas



Wai'anae Water Resource Issues

Photos Source: Jonathan Dial, Flickr

Preliminary Water Resource Issues & Concerns

**Climate
Change**

**Nearshore
and Stream
Water
Quality**

**Water
Supply,
Demand and
Conservation**

**Drought,
Wildfires and
Other
Natural
Disasters**

**Watershed
Health**

**Flooding
and
Drainage**

**Protecting
Traditional
and
Customary
Practices**

**Rainfall
Capture and
Collection**

**Groundwater
and Surface
Water**

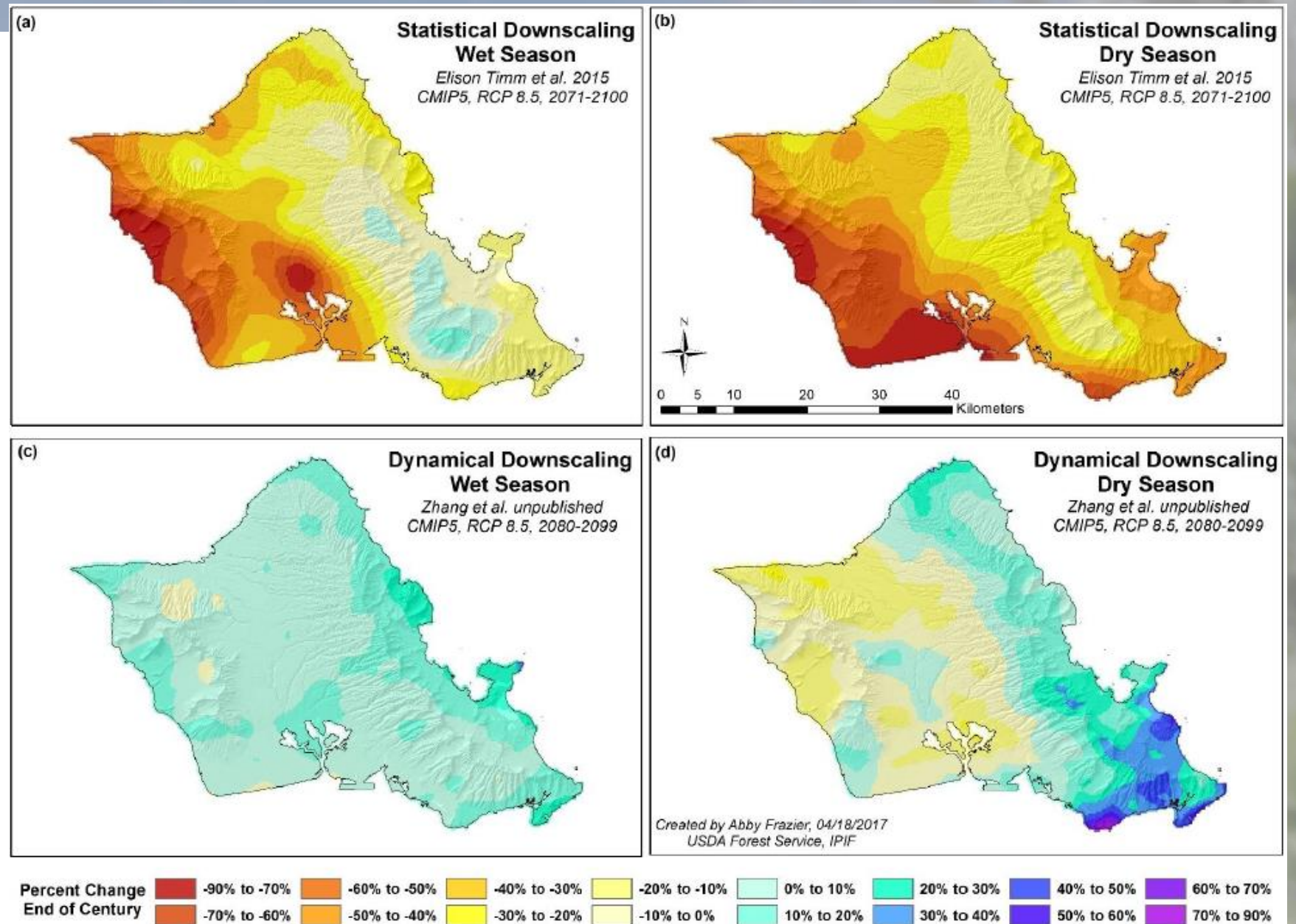
**Access to
Mauka
Lands**

Issue:

Climate Change

Areas of Concern:

- Amount of rainfall & impacts on drinking and ag water supply
- Coastal flooding & erosion
- Flora & Fauna



2100 O'ahu Rainfall
Scenarios

Source: Zhang et al.
(unpublished)

Issue:

Nearshore &
Stream Water
Quality

Areas of Concern:

- Erosion from upland areas
- Polluted runoff from development
- Sewage spills & cesspools



Upland land uses impact
nearshore water quality

Photo: Surfrider Foundation



Wai'anae Wastewater



Source: State of Hawai'i GIS Program

Issue:

Water Supply,
Demand and
Conservation

Areas of Concern:

- Agricultural lands
- Pono water stewardship & equitable water access/use
- Projected population increase



Issue:

Drought,
Wildfires and
Other Natural
Disasters

Areas of Concern:

- Upland forests
- Wai'anae Mountain Range
- Urban & Coastal areas

2019 Fire – Nānākuli & Wai'anae



Photo Source: Hawai'i News Now

Issue:

Watershed Health

Areas of Concern:

- Invasive species
- Wai'anae Forest Reserves/
Range
- Trail Management

Mokulē'ia Forest Reserve



Photo Source: Alltrails.com

Kuaokalā Forest Reserve

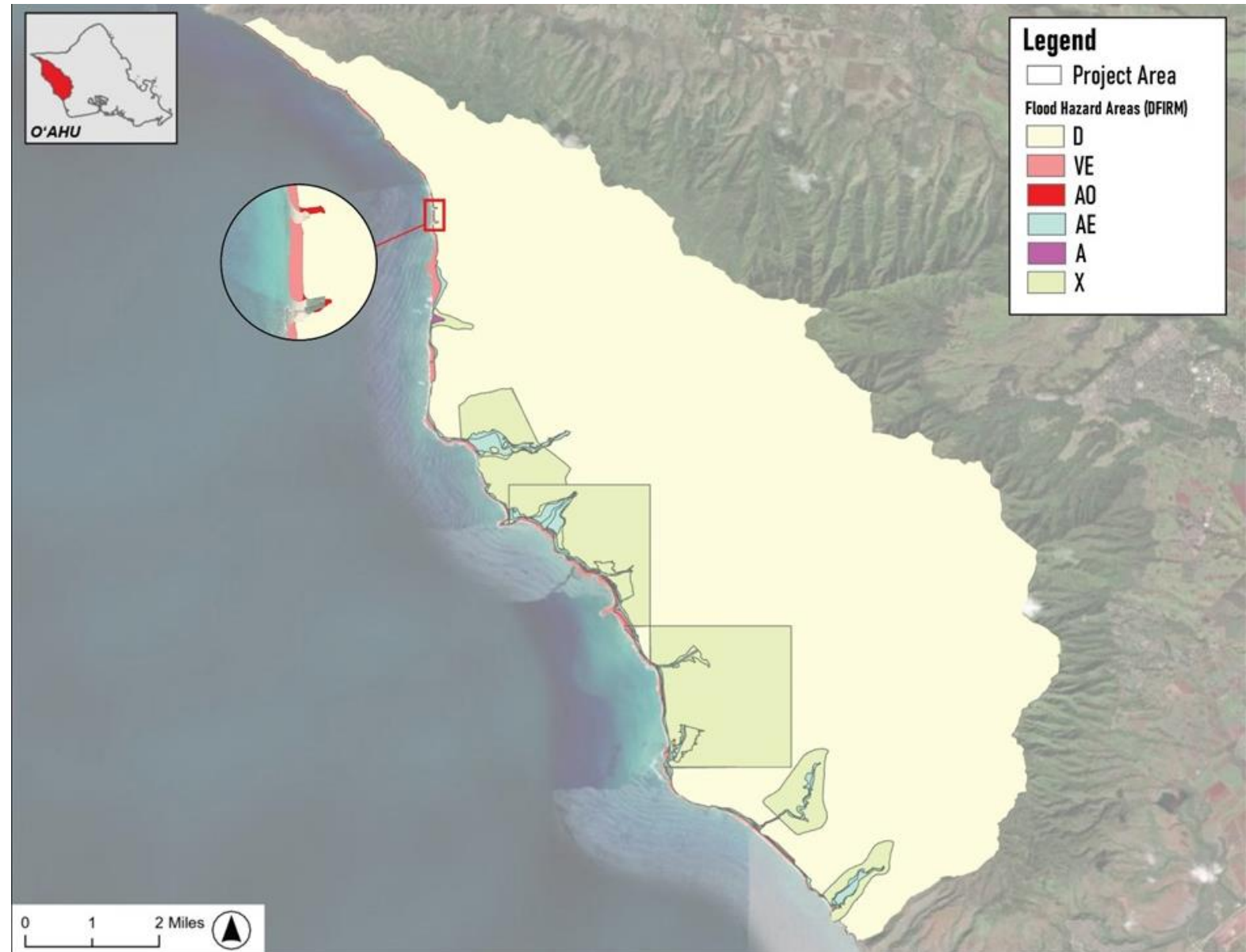
Wai'anae Flood Insurance Rate Map

Issue:

Flooding & Drainage

Areas of Concern:

- Coastal areas
- Farrington Hwy
- Drainage Improvements



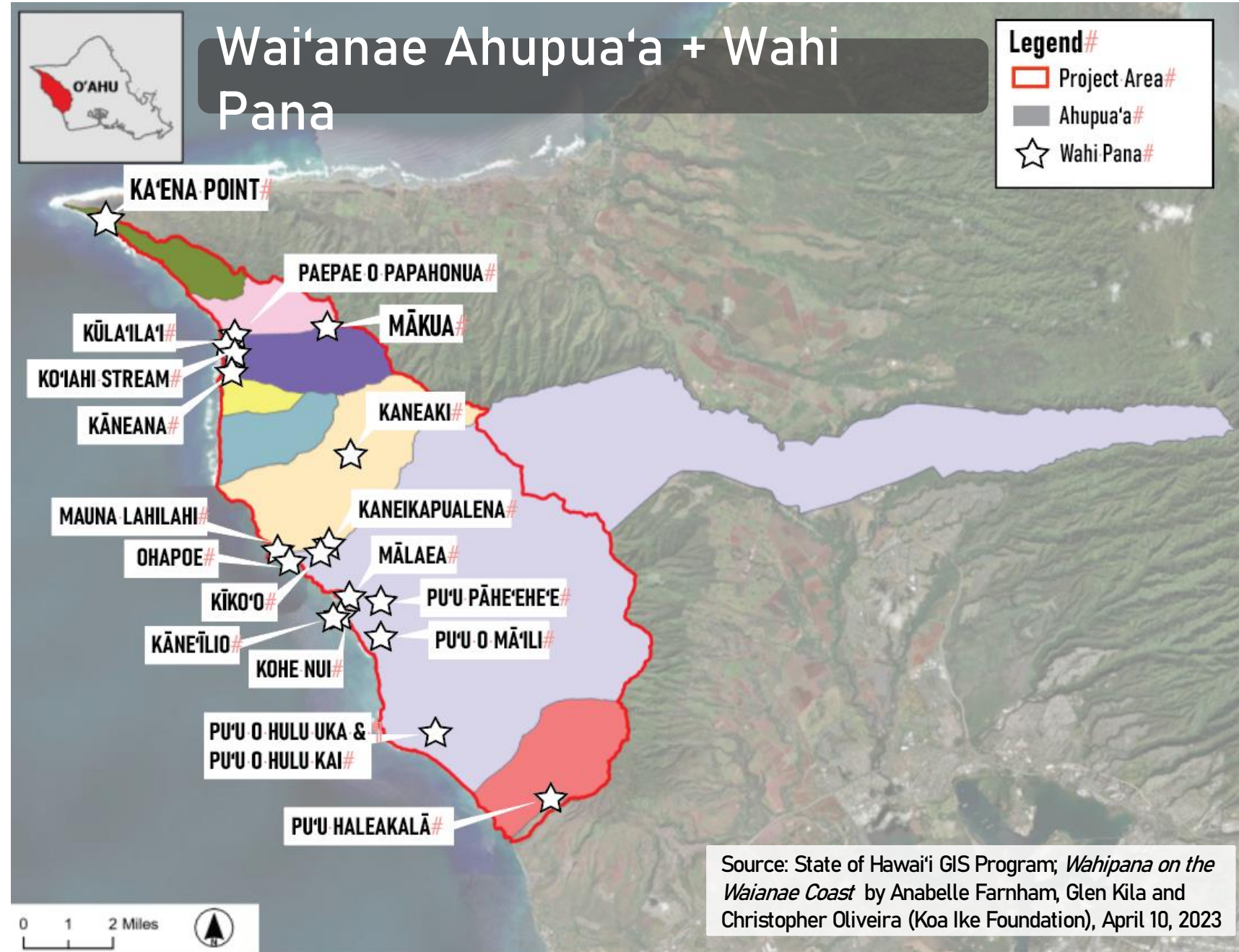
Source: Federal Emergency Management Agency

Issue:

Protecting
Traditional and
Customary
Practices

Areas of Interest:

- Cultural sites and landscapes
- Mākua Valley



Issue:

Rainfall Capture
and Collection

Areas of Concern:

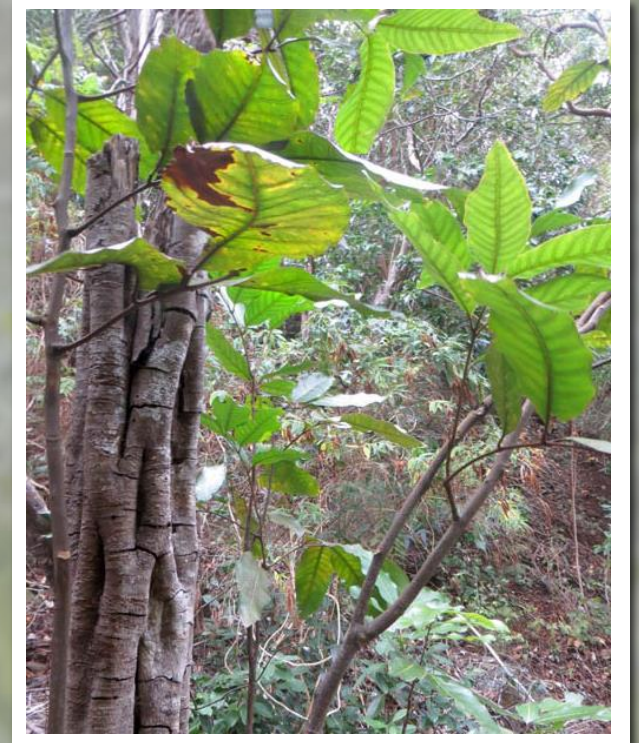
- Mauka areas
- Wai'anae Mountain Range



Kāmakahala



Mēhamehame



Māhoe

Issue: Groundwater and Surface Water

Areas of Concern:

- Mākaha Stream
- Kaupuni Stream



Issue:

**Access to Mauka
Lands**

**Areas of
Concern:**

- Mākaha and
Mākua Valley
- Nānākuli
Valley



Wai'anae Stakeholder Outreach

Stakeholder
Consultations



Neighborhood
Boards / Elected
Officials Meetings



4 Community
Meetings

Community Organizations:

Round 1 (2024):

- Gill 'Ewa Lands/Olson Trust
- Hoa'Āina o Mākaha
- Kingdom Pathways
- Kuleana Coral
- Mālama Learning Center
- MA'O Farms
- Mohala I Ka Wai
- Nā Kama Kai
- Wai'anae Mountains Watershed Partnership

Round 2 (2025):

- Care for 'Āina Now
- DHHL
- Hawai'i Wildfire Management Association/Firewise
- KAHEA
- Kamehameha Schools
- Mālama Makua
- Nānākuli Middle and HS
- Shade Trees for School
- Wai'anae Coast Comprehensive Health Center
- Wai'anae Coast Kupuna Council

Neighborhood Boards / Elected Officials / Agencies:

- Nānākuli Neighborhood Board No. 36
- Wai'anae Neighborhood Board No. 24
- Andria Tupola (Councilmember)
- Chris Muraoka (HI Rep. District District #1)
- Darius Kila (HI Rep. District #44)
- Samantha Decorte (HI Senate District #22)
- CCH Department of Planning & Permitting
- Commission on Water Resource Management

Questions? Stay Connected



Honolulu Board of Water Supply

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For more information, please visit:
<https://boardofwatersupply.com/water-resources/water-planning/watershed-management-plan/waianae-plan>