

DHHL Wai`anae Moku Future Water Needs and Possible Designation of a Wai`anae Ground Water Management Area (GWMA)

HHC Regular Meeting – Video Conference -- 9:30 am

Nānākuli Community Meeting - Interactive Conferencing Technology – 6:00 p.m.

Jonathan Likeke Scheuer, Ph.D.

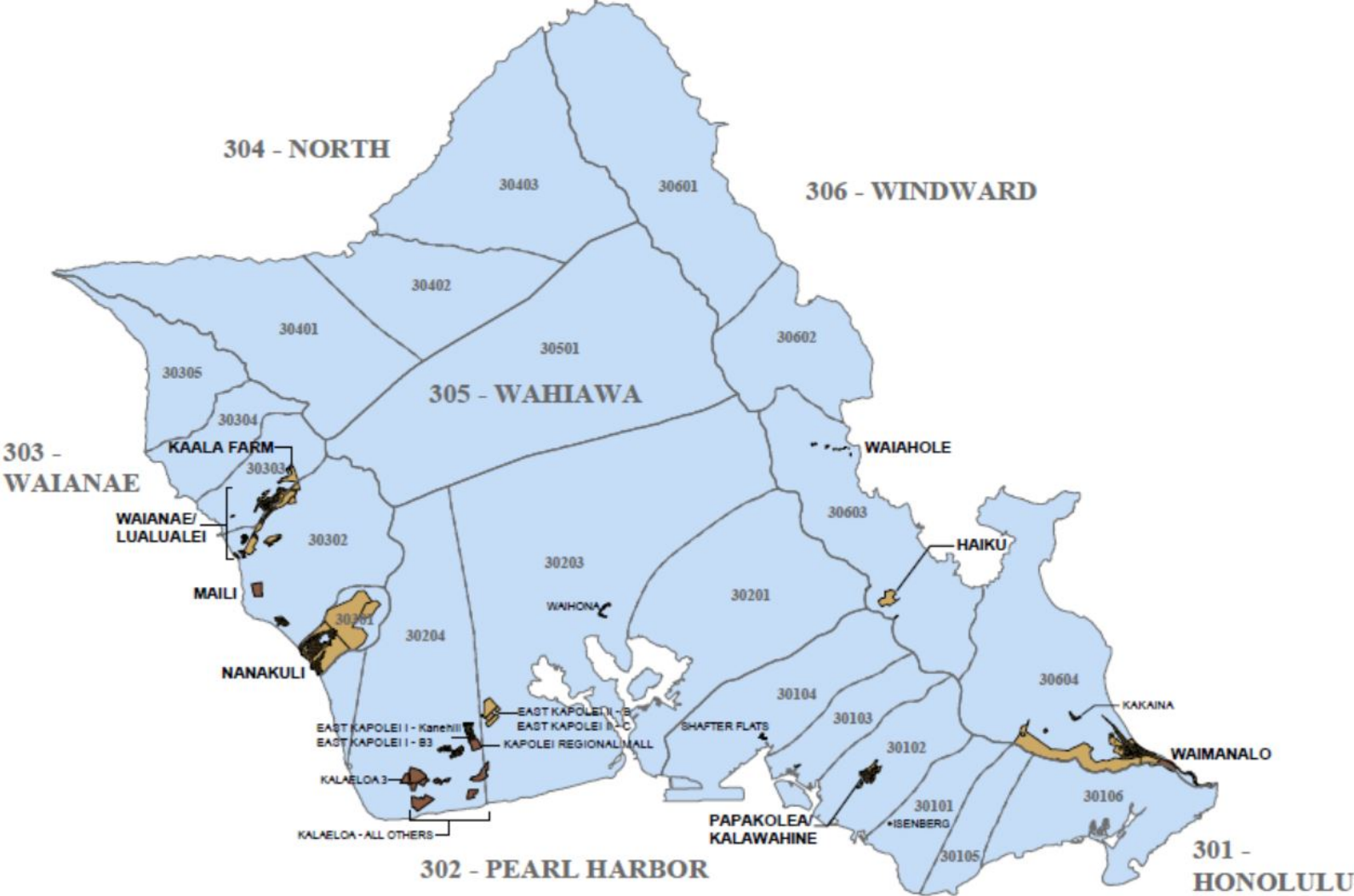
December 20, 2021

Water Needs and Water Management

- 1. Wai`anae Moku Tracts and Water Needs**
- 2. Implications of Possible “Designation” of a Ground Water Management Area**



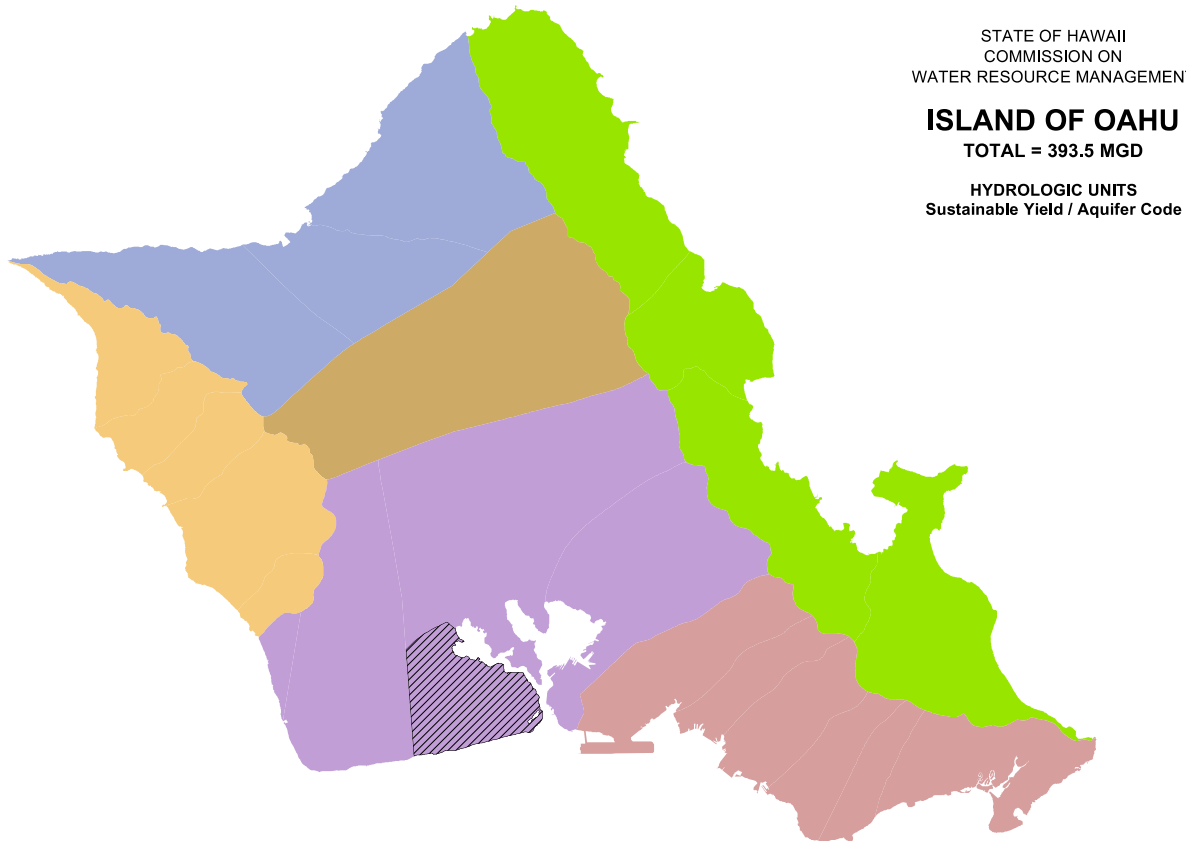
DHHL O'ahu Tracts by Aquifer



Wai`anae Moku Regions, Homesteads, and Acreage

DHHL Planning Region	Homestead Communities in Region	Other Areas	Acreage
Wai`anae	Kaupuni Wai`anae Wai`anae Kai Lualualei	Mā`ili	2,472
Nānākuli	Nānākuli Princess Kahanu Estates		2,311

O'ahu Aquifers and Sustainable Yields

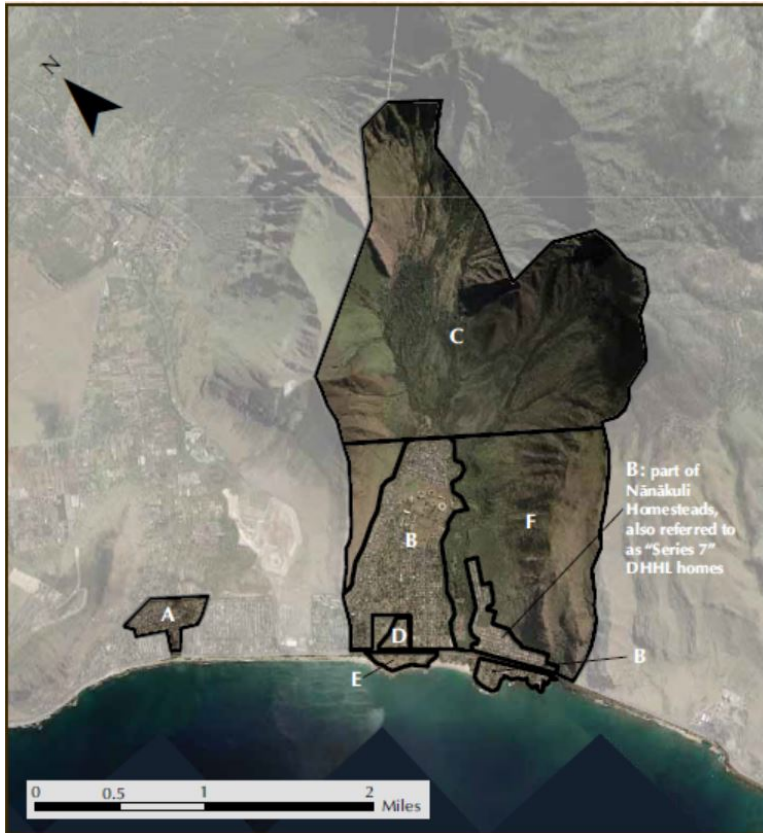


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O'ahu Effective Water Demand Per District, October 2021

WATER USE DISTRICTS		SUBTOTAL	IMPORT	EXPORT	EFFECTIVE WATER DEMAND
1	HONOLULU	64.22	0.02	-	64.24
2	WINDWARD	13.13	-	0.02	13.11
3	NORTH SHORE	3.94	-	-	3.94
4	MILILANI	4.99	-	-	4.99
5	WAHIAWA	3.09	-	-	3.09
6	PEARL CITY-HALAWA	8.41	-	-	8.41
7	WAIPAHAU-EWA	37.07	-	6.24	30.83
8	WAIANAЕ	3.27	6.24	-	9.52
TOTAL:		138.11	6.26	6.26	138.11

Nānākuli Lands



Planning Area	Acreage
Princess Kahanu Estates	53
Nānākuli Hawaiian Homesteads	260
Nānākuli Upper Valley	1,126
Future site of Nānākuli Village Center	13.65
Former Nānāikapono School Site	17
Nānākuli Ranch	448

Nānākuli Land Use Designations

Uses	Acreage
1,835 residential homesteads (proposed)	320
Residential (existing)	390
Community use	50
Conservation	825
Commercial	10
General agriculture	710

Nānākuli Future Water Demands

- **2017 State Water Projects Plan**
 - Potable: 1.3069 mgd, an increase of 1.25 mgd
 - Non-potable, “medium” demand: 2.46 mgd
- **Non Potable needs by average water use**
 - 710 acres * 2,500 gad = 1.775 mgd

Wai`anae Lualualei Land Use Designations

Uses	Acreage
Residential (existing and proposed)	255
140 subsistence ag lots (proposed)	190
Community use	85
Special district	105
Conservation	265
Industrial	3
General agriculture	95

SWPP Wai`anae Lualualei Future Water Demands

	2016	2021	2026
Lualualei (potable)	0	0	0.1290
Lualualei (nonpotable, using potable)	0	0	0.0714
Wai`anae (potable)	0	0.0040	0.1240
Wai`anae (nonpotable, using potable)	0	0.0136	0.0136
Total potable demand	0	0.0176	<u>0.3380</u>

Additional Wai`anae Water Demands



Prepared in cooperation with the Office of Hawaiian Affairs, State of Hawai'i

Water Use in Wetland Kalo Cultivation in Hawai'i



Open-File Report 2007-1157

U.S. Department of the Interior
U.S. Geological Survey

- Medium long term non-potable demands for Ka'ala Farm are 7.275 mgd
- Demand does not equal availability

Wai`anae Moku Water Reservations

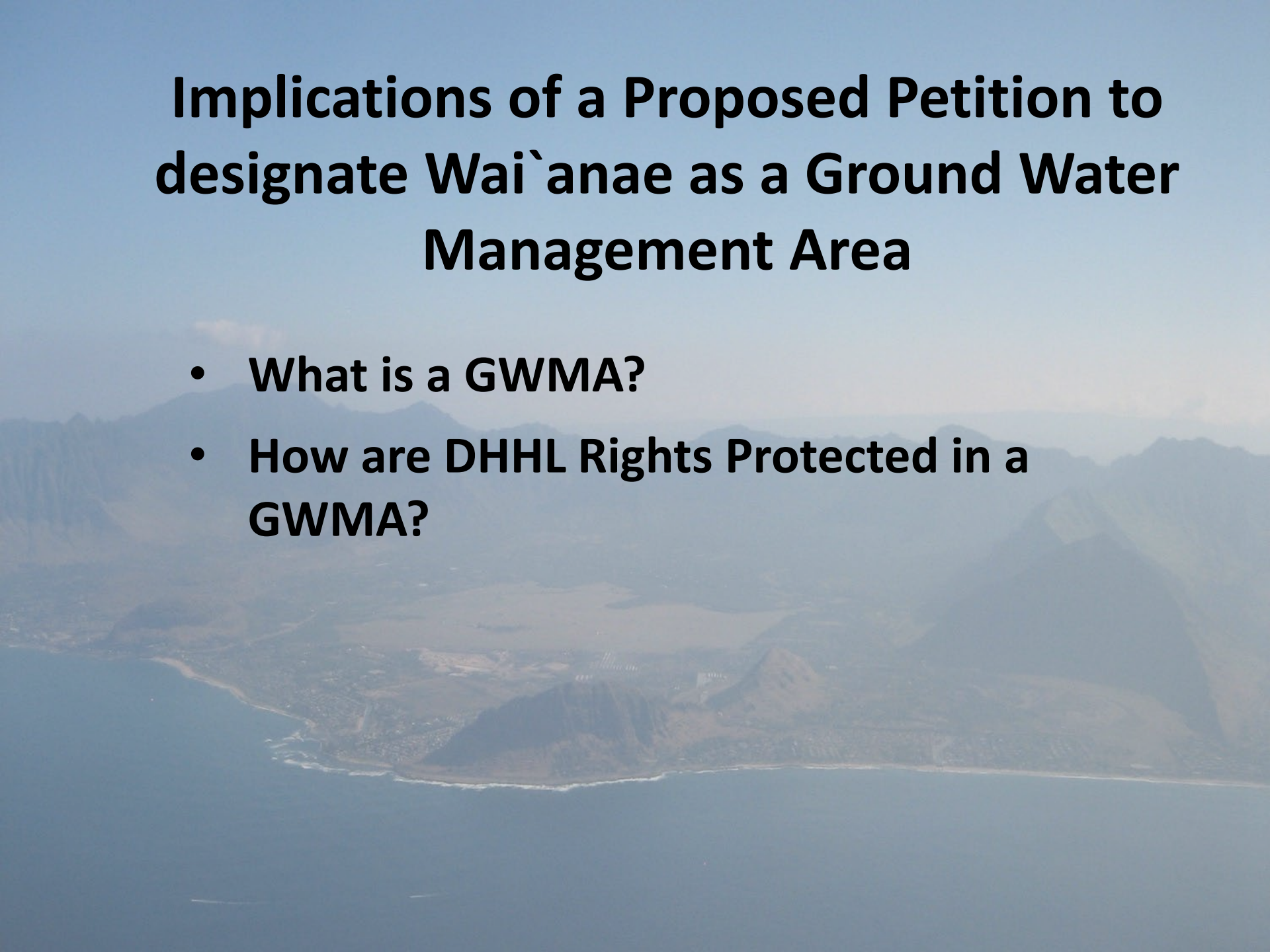
§13-171-61 Department of Hawaiian home lands reservation for Honolulu and Leeward Oahu. The commission hereby reserves 1.724 million gallons per day of ground water from state lands in the Waipahu-Waiawa aquifer system for use in the Papakolea, Nanakuli, and Waianae-Lualualei Hawaiian homestead areas. This amount shall be in excess of the existing uses of water on Hawaiian home lands as of the effective date of this rule. [Eff. FEB 18 1994]

Unmet Water Demands by Tract, mgd

Tract	Unmet Potable Needs	Unmet Non-Potable Needs
Nānākuli	1.31	2.46
Mā'ili	0.20	0.00
Wai`anae / Lualualei	0.39	7.28
Total	<u>1.9</u>	<u>9.74</u>

Implications of a Proposed Petition to designate Wai`anae as a Ground Water Management Area

- **What is a GWMA?**
- **How are DHHL Rights Protected in a GWMA?**



What is a GWMA?: Permits in Non-Designated vs. Designated Areas

Undesignated Areas	Designated Areas
Well Construction Permit	Well Construction Permit
Pump Installation Permit	Pump Installation Permit
	Water Use Permit*

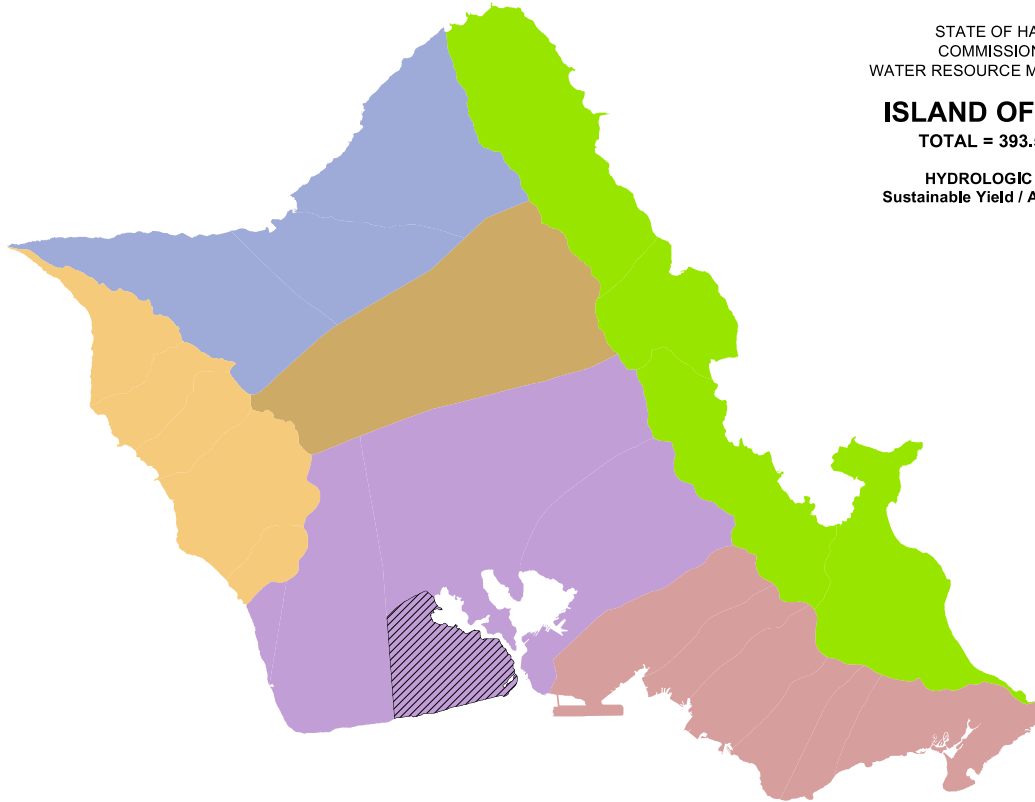
* Water Use Permit Applications have public notice and process requirements

STATE OF HAWAII
COMMISSION ON
WATER RESOURCE MANAGEMENT

ISLAND OF OAHU

TOTAL = 393.5 MGD

HYDROLOGIC UNITS
Sustainable Yield / Aquifer Code

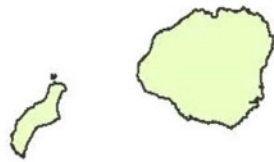


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WATER MANAGEMENT AREAS

FOR GROUND WATER ONLY

 Water Management Areas



ISLAND OF OAHU

- North Sector
- Windward Sector
- Honolulu Sector
- Pearl Harbor Sector
- Central Sector



ISLAND OF MOLOKAI

- West Sector
- Central Sector
- Northeast Sector
- Southeast Sector



ISLAND OF MAUI

- Iao System



STATE OF HAWAII
Department of Land and Natural Resources
Commission on Water Resource Management



WHY NOT WAI`ANAE?

- **1961: Groundwater Use Act, HRS chap. 177**
- **1979-82: Pearl Harbor, Honolulu, & Waialua groundwater designated under older Act**
- **1987 Water Code enacted**
- **1988: Petition to designate Windward O`ahu; granted in 1992**
- **No one has petitioned to designate Wai`anae**

DHHL & Beneficiary Rights in WMAs

- The ability to secure enforceable water reservations by administrative rule
- The ability to comment on, object to, and request contested cases on the proposed water uses of other parties.
- Water Use Permits are conditioned on DHHL uses.



Nīnau?

Hawai`i Water Law History Background

- **Ancient times – Māhele (1848 – 52)**
- **Rise of the Plantations – Early Statehood (1852 – 1973)**
- **The “McBryde” cases, ConCon, and the Water Code (1973 - 87)**

Hawai`i Water Law History Background

- **The Water Code (1987)**
- **Determine “Hydrologic Units”**
- **Set “Sustainable Yields”**
- **Management in “Designated”
and undesignated areas**