

# PEARL HARBOR WATER SHORTAGE PLAN

Commission on  
Water Resource  
Management  
Briefing

May 19, 2020

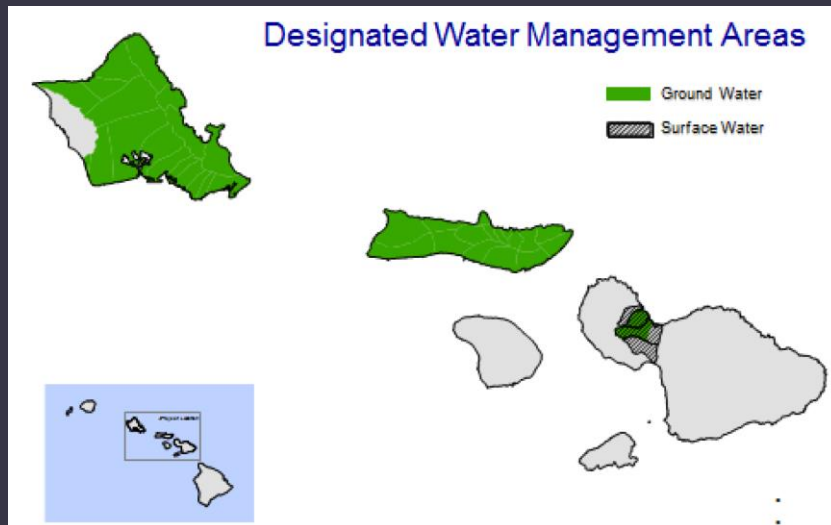
# Outline

- **Purpose and Scope**
- **Permit Classification**
- **Individual Water Shortage Plans**
- **Criteria/Triggers for Declaring Water Shortage**
- **Water Shortage Stages and Implementation Plan**
- **Water Quality Threats**
- **Enforcement**
- **Recommendations**

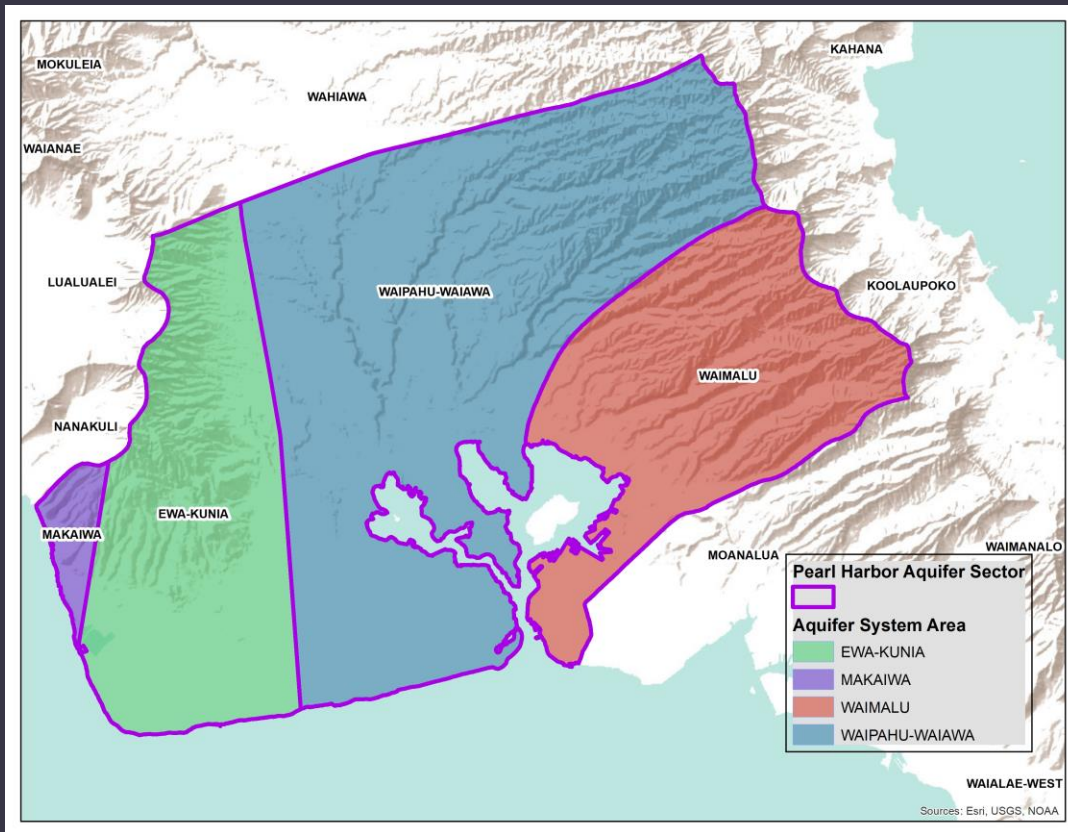
# Purpose

The commission shall formulate a plan for implementation during periods of water shortage. 174C-62(a) HRS

The commission, by rule, may declare that a water shortage exists within all or part of a water management area when insufficient water is available to meet the requirements of the permit system or when conditions are such as to require a temporary reduction in total water use within the area to protect water resources from serious harm. 174C-62(b) HRS



# Scope



Pearl Harbor Aquifer Sector:

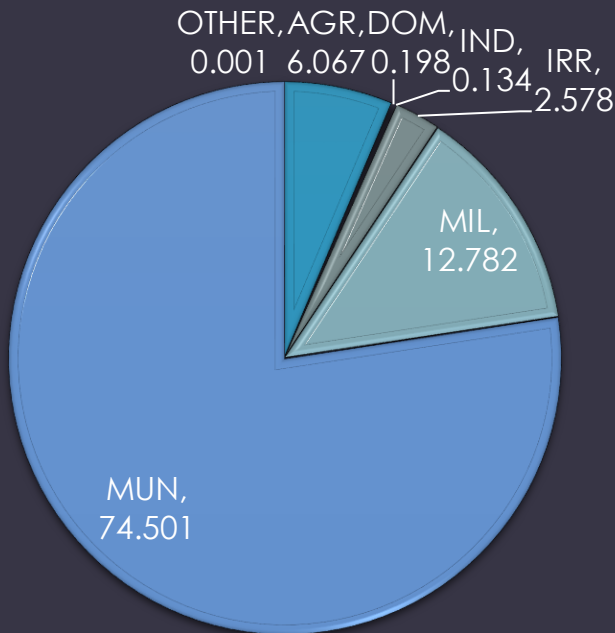
- 'Ewa-Kunia Aquifer System Area
- Waipahu-Waiawa Aquifer System Area
- Waimalu Aquifer System Area

Permitted uses of fresh and brackish water (chloride concentrations of up to 16,999 mg/L)

# Permit Classification

As a part of the plan, the commission shall adopt a reasonable system of permit classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof. 174C-62(a) HRS

# Permit Classification



Priority Level	Water Use Permit Class	Description of Water Use Permit Class
1	Domestic	Domestic permit class means a well that is used for individual personal needs and for household purposes such as drinking, bathing, heating, cooking, noncommercial gardening, and sanitation.
	Habitat Maintenance	Habitat Maintenance permit class means a well that is used to maintain sensitive, protected ecological habitats.
2	Municipal	Municipal permit class means a well that is used for domestic, industrial, and commercial use through public services available to persons of a county for the promotion and protection of their health, comfort, and safety; priority of this use in a water shortage is for domestic needs.
	Military	Military permit class means a well that is used by the United States military to supply its bases and their activities; priority of this use in a water shortage is for domestic needs.
3	Agricultural	Agricultural permit class is defined as a well that is used for the growing, processing, and treating of crops, livestock, aquatic plants and animals, and ornamental flowers and similar foliage.
	Industrial	Industrial permit class means a well of which uses include water used for fabrication, processing, washing, and cooling, and also includes water used by petroleum refineries and industries producing chemical products, food, and paper products.
	Golf Course	Golf Course permit class is defined as a well that is used to grow, maintain, and sustain golf course activities.

# Individual Water Shortage Plans

All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission. 13-171-42(c) HAR

# Individual Water Shortage Plans

- 86 active WUPs total
- 50 of 86 WUPs held by BWS
- 36 held by other permittee's
  - 7 of 36 did not submit IWSP
  - 6 of 33 submitted IWSP indicating 0% - <5% reductions

Water Shortage Plan	Water Use Permit	Response Action	Reduction Amount	Water Use Category	Well Name	Allocation (mgd)	Date of Plan	Aquifer System Area
Hawaii Pacific Church of the Nazarene	57	Conservation	5%	Domestic	Pearl City Well 2358-49	0.003	August-02	Waipahu-Waiawa
Navy: Halawa Shaft	86	Conservation	15% of allocation	US Military	Aiea Halawa Shaft 2255-032	0.697	March-20	Waimalu
Watanabe: Waipahu	90	Conservation	5%	Agricultural	2300-11	0.68	March-03	Waipahu-Waiawa
Watanabe: Waipahu	91	Conservation	5%	Agricultural	2300-20	0.4	March-03	Waipahu-Waiawa
Navy: Public Works Center	111	Conservation	7%	US Military	2558-010	14.977	March-20	Waipahu-Waiawa
Hawaii Country Club	454	Conservation	15%	Golf Course Irrigation	2603-001	0.4	September-02	Waipahu-Waiawa
Tadoo Abe	495	Conservation	5%	Domestic	2201-002	0.009	February-07	Waipahu-Waiawa
Gary Takiguchi	500	Conservation, repair of leaking	5%	Domestic and Irrigation	2201-02	0.019	February-07	Waipahu-Waiawa
Kenneth Simon	573	Conservation	5%	Agricultural	3-2358-035	0.04	August-02	Waipahu-Waiawa
Royal Kunia CC	575	Conservation	15-20%	Golf Course Irrigation	2401-007	0.6	February-07	Waipahu-Waiawa
Pearl City Community Church	626	Conservation	5-10%	Domestic	2359-010	0.005	March-03	Waipahu-Waiawa
US Fish & Wildlife	627	n/a	0%	Habitat Maintenance	2359-019	0.18	February-07	Waipahu-Waiawa
Ko Olina Co.	655	Conservation	5%	Golf Course Irrigation	Ko Olina 2006-13	0.7	February-03	Ewa-Kunia
Minami Farm	656	Conservation	5%	Agricultural	Waimalu 2455-002	0.158		Waimalu
Gentry Waiawa Well 1/ Waiawa Development	692	Conservation	Stage 1: 30% Stage 2: 70%	Golf Course Irrigation	2658-07	0.524	November 2005	Waipahu-Waiawa
Gentry Waiawa Well 2/ Waiawa Development	693	Conservation	Stage 1: 30% Stage 2: 70%	Golf Course Irrigation	2658-08	0.458	November 2005	Waipahu-Waiawa
Mark H Ortiz	742		0%	Domestic	Honouliuli 2202-001	0.003		Waipahu-Waiawa
Roman Catholic Church	814	Conservation	15%	Domestic	2101-001	0.11	December-19	Waipahu-Waiawa
Del Monte Fresh Produce: Kunia 1	928	Conservation	10%	Agricultural	2703-001	1.075	January-03	Ewa-Kunia
Kamehameha Schools	966	Conservation	5%	Other	2659-004	0.3		Waipahu-Waiawa
Grace Pacific Corp	983	Conservation	5%	Industrial	Makakilo Lower Quarry	0.044	July-07	Ewa-Kunia
Oceanwide Resort Paradise	1035	Conservation	5%	Other	2006-001-11	0.957	December-19	Ewa-Kunia
Kalaeloa Water Company LLC	1048	Conservation	5%	Military	2103-003	2.337	March-20	Ewa-Kunia
State of Hawaii Waimano Training School 1 and 2	110	Conservation	1%	Domestic	Waimano Training School 1 2557-01; School 2 2557-02	0.136	February-03	Waimalu
Tadaihiro Abe	456	n/a	0%	Agricultural	2202-002	0.009	February-07	Waipahu-Waiawa
Pearl Country Club	466	Conservation	10% or more as necessary	Golf Course Irrigation	2356-054	0.33	August 1998	Waimalu
Kenneth Simon	574	Conservation	0%	Domestic	2358-036	0.004	August-02	Waipahu-Waiawa
Robinson Kunia Land, LLC	767	Practices	n/a	Agricultural	2602-003	0.1	December-19	Waipahu-Waiawa
Waialeke Farms	1024	Practices	n/a	Agricultural	2702-012	0.609		
Lau Taro Farm	65		No plan	Agricultural	Lau Farm 2356-070	0.1		Waimalu
Harris Rug	84			Industrial	2201-14			Waipahu-Waiawa
Kipapa Acres Association of Owners	642	Conservation	No plan	Agricultural	Kipapa Gulch 2600-002	0.1		Waipahu-Waiawa
Taba Farm, Inc	749		No plan	Agricultural	2358-21, 22, 26, 29	0.864		Waipahu-Waiawa
Dr. Horton- Schuler Homes, LLC	805		No plan	Municipal	Multiple wells	7.969		Waipahu-Waiawa
Hoban E&C USA, Inc	902		No plan	Golf Course Irrigation	2301-01 - 2301-10	0.95		Waipahu-Waiawa
The Queens Medical Center	1085		No plan	Other	2201-003	0.18		Waipahu-Waiawa



# Individual Water Shortage Plans (IWSP)

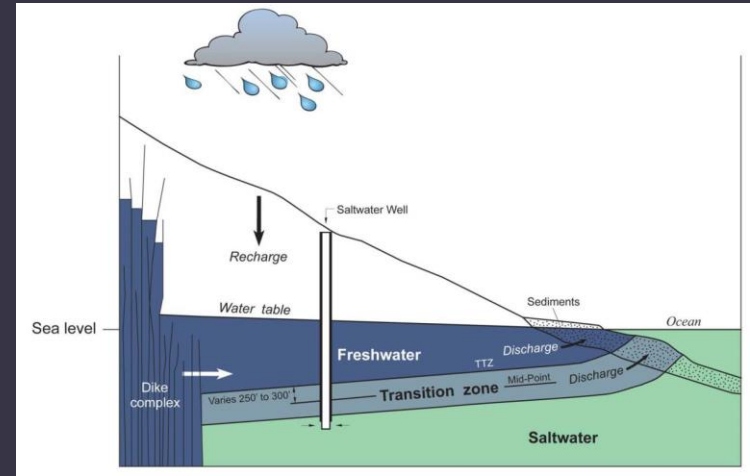
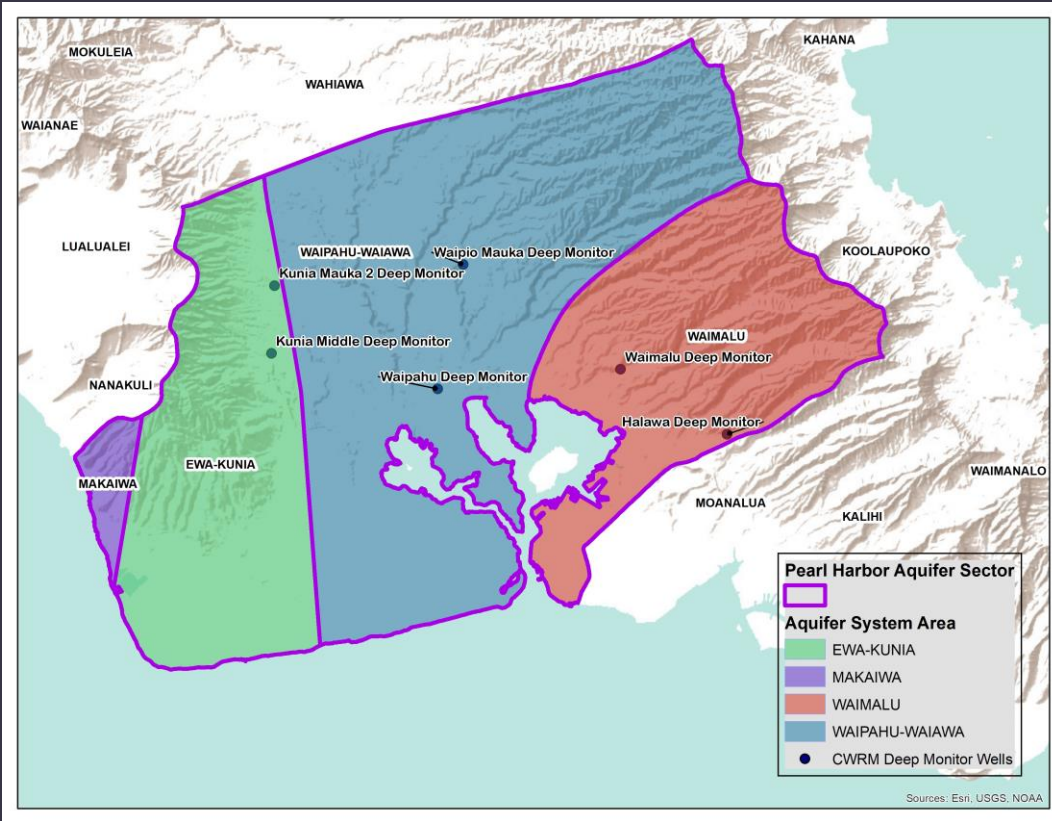
- Proposed Modification of IWSPs for:
  - Permittees who have not submitted IWSP
  - Permittees who have indicated 0% - <5% reduction
- **Minimum of 5% voluntary reduction**

# Criteria/Triggers

A water shortage declaration shall be made by the commission within all or part of a water management area which the commission has found and publicly declared that it is necessary to regulate the uses of water because in its opinion that usage has caused or may cause within the foreseeable future:

- Withdrawals that exceed the recharge;
- Declining water levels or heads;
- Deterioration in the quality of water due to increasing chloride content;
- Excessive waste of water which can be prevented; or
- A situation in which any further water development would endanger the ground water aquifer or the existing sources of supply. 13-171-41 HAR

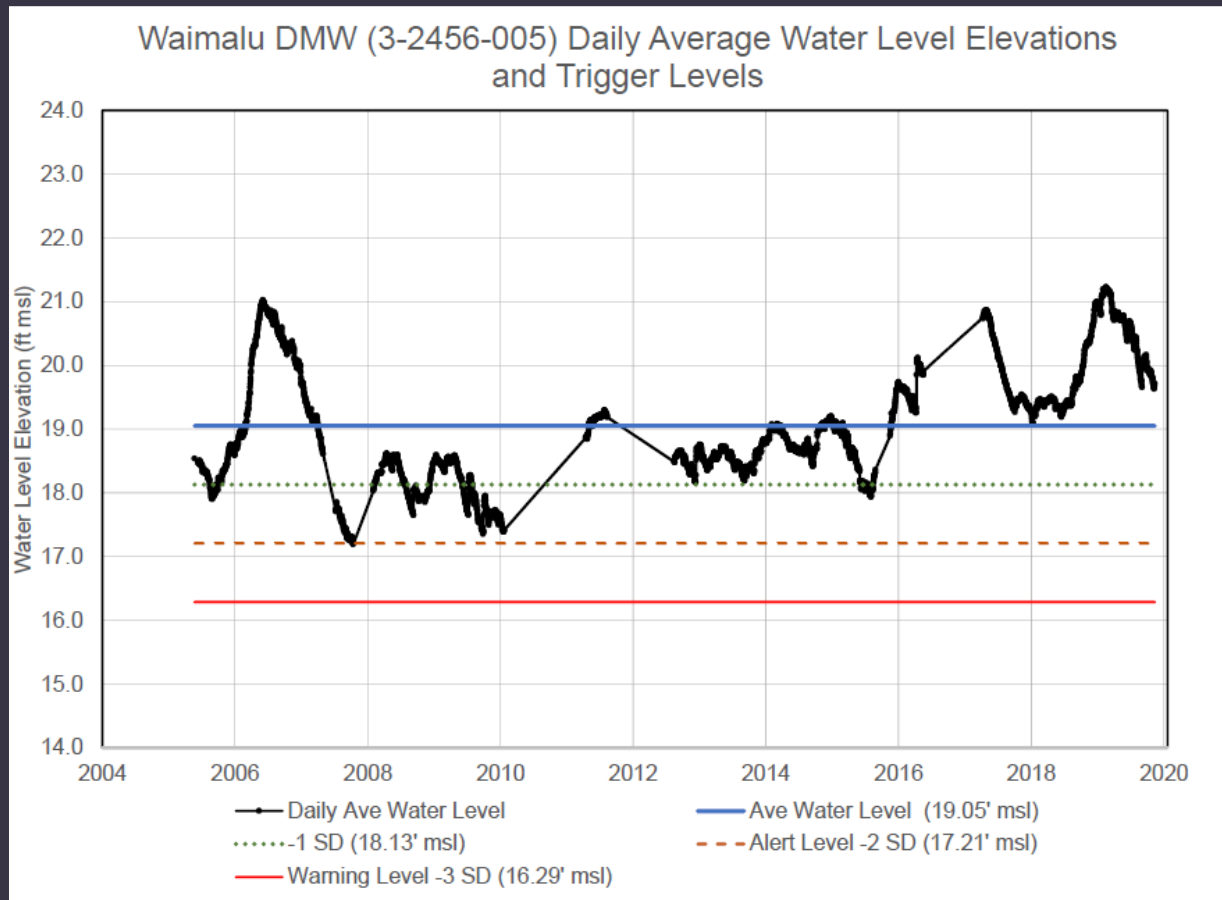
# Deep Monitor Wells



## Deep monitor wells:

- Penetrate through the freshwater zone and transition zone and terminate in the saltwater zone
- Tracks changes in the thickness of the freshwater lens over time

# CWRM Deep Monitor Well Water Level Data



# Water Shortage Stages



Watch

Alert

Warning

	<b>Trigger(s)</b>	<b>Action(s)</b>
<b>Water Shortage Watch</b>	<ul style="list-style-type: none"><li>• USDA Secretarial Drought Designation for the county containing ASA; or</li><li>• -1 standard deviation from average water levels in one or more CWRM DMWs for 2 quarterly measurements</li></ul>	<ul style="list-style-type: none"><li>• Joint “Call for Conservation” press release with BWS</li><li>• Enforcement of water use reporting</li><li>• Increase monitoring frequency from quarterly to monthly at CWRM DMWs</li><li>• Increased coordination with BWS, Navy, and DOH</li></ul>

Watch

Alert

Warning

	<b>Trigger(s)</b>	<b>Action(s)</b>
<b>Water Shortage Alert</b>	<ul style="list-style-type: none"><li>• -2 standard deviations from average water levels in one or more CWRM DMWs for 3 monthly measurements; or</li><li>• BWS declaration of low groundwater conditions</li></ul>	<ul style="list-style-type: none"><li>• Voluntary implementation of IWSP</li><li>• Initiate emergency rule making to declare water shortage</li><li>• Continue monthly monitoring of CWRM DMWs and enforcement of water use reporting</li><li>• Continued coordination with BWS, Navy, and DOH</li></ul>

Watch

Alert

Warning

	<b>Trigger(s)</b>	<b>Action(s)</b>
<b>Water Shortage Warning</b>	<ul style="list-style-type: none"><li>-3 standard deviations from average water levels in one or more CWRM DMWs for 2 monthly measurements</li></ul>	<ul style="list-style-type: none"><li>Complete emergency rulemaking</li><li>Mandatory water shortage reductions according to priority level<ul style="list-style-type: none"><li>Priority 1: IWSP</li><li>Priority 2: 15%</li><li>Priority 3: 20%</li></ul></li><li>Continue monthly monitoring of CWRM DMWs and enforcement of water use reporting</li><li>Continued coordination with BWS, Navy, and DOH</li></ul>



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# Stakeholder Engagement

- Discussed Draft triggers and cutbacks with water use permit holders 1<sup>st</sup> quarter 2020
- Individual meetings with large users (Navy, 2 BWS Meetings)
  - Plan coordinated with BWS low groundwater levels, reduce duplicative efforts and leveraging their data and monitoring network
- Stakeholder meeting inviting all water use permit holders
- Feedback
  - Clarifying the “use classification” withdrawal from aquifer versus end use by customers
  - Requested electronic communication
  - Support for protecting the resource and putting in place a shortage plan

# Rescinding shortage

- Conditions no longer require a temporary reduction in total water use
- Triggers no longer applicable

# Enforcement

- Non-compliance with water use reductions may result in fines of up to \$5,000 per day. 174C-15, HRS
- Enforcement actions could include revocation or suspension of water use permit. 174C-58, HRS

# Water Quality Threats

- Defer to DOH's Hazard Evaluation and Emergency Response (HEER)
- HEER has the responsibility and legal authority to respond to releases, threats of releases, or discoveries of hazardous substances 128D HRS
- Technical Guidance Manual
  - <http://hawaiiidoh.org/tgm.aspx>
  - Ground and surface water sampling procedures
  - Response actions depend on threat to public safety as determined by HEER
- Requires public notification

# Recommendations

- Maintain high levels of public engagement during water shortage and seek consistent messaging amongst water purveyors impacted by the shortage
- Spot check water use permit holder meter readings
- Revise Water Code to eliminate requirement for rule-making for water shortage declaration to facilitate more efficient and timely response
- Adopt a “living document” approach by delegating the authority to the Chairperson to update this water shortage plan as new permits are issued or modified, provided that the update is consistent with the policies and framework laid out in this plan.

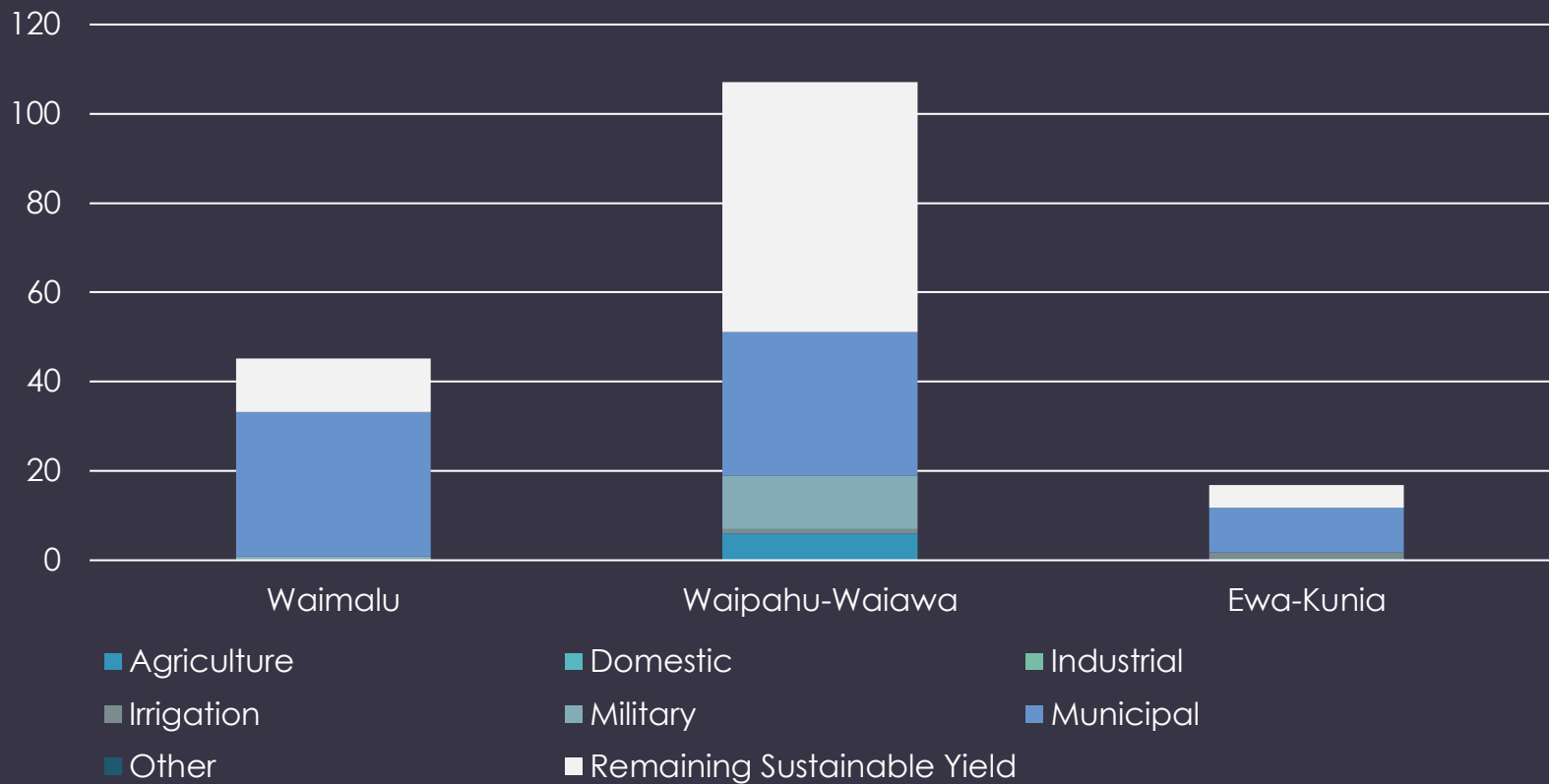
# Q&A AND DISCUSSION





# Supplemental Slides

# 2018 Water Use vs Sustainable Yield (MGD)

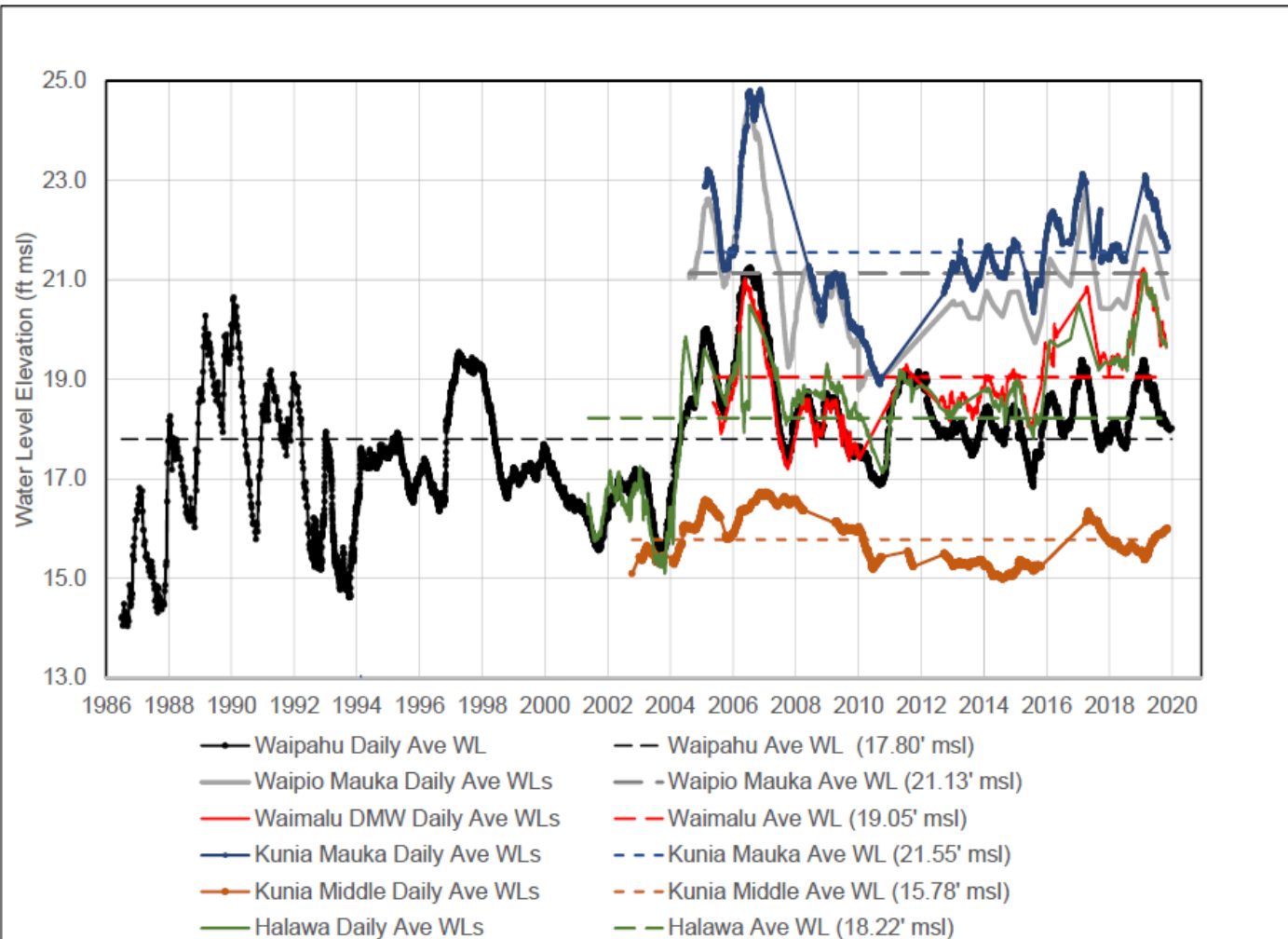


# Water Use Permit Holders

~ 10 Agricultural, 7 Resorts, 3 Industrial, 5 Domestic, 4 Municipal

1. Honolulu Board of Water Supply (~39 WUP)
2. NAVFAC, Navy Public Works Center (2)
3. KO OLINA CO.
4. Del Monte Fresh Produce
5. Grace Pacific Corporation
6. Oceanwide Resort Paradise HI LLC (2)
7. Aulani
8. Lau Taro Farm
9. Waimano Home & Training School
10. Howard Hamada (Pearl Country Club)
11. Minami Farms
12. Hawaii Pacific District Church of the Nazarene
13. Harris Rug & Carpet Cleaners
14. Al S. & Rose R. Wantanabe (2)
15. Hawaii Country Club
16. Tadahiro Abe
17. Tadao Abe
18. Gary Takiguchi
19. Kenneth Simon (2)
20. Royal Kunia CC
21. C&C Des, Golf Course Div
22. Pearl City Community Church
23. US Fish & Wildlife
24. Kipapa Acres Assoc of Owners
25. Mark H. Ortiz
26. Taba Farm, Inc
27. Robinson Kunia Land, LLC
28. D.R. Horton- Schuler Homes LLC
29. Roman Catholic Church- Hawaii
30. Kamehameha Schools
31. Waikele Farms, Inc

# Water Level Data



# How do we know we are in a water shortage?

- CWRM deep monitor well water level data
- USDA drought declaration
- Honolulu Board of Water Supply low groundwater conditions declared

# Cutbacks

Stage	Cutback
Water Shortage Watch	Not applicable, 0% cutbacks
Water Shortage Alert	Percent reduction: <ul style="list-style-type: none"><li>• Follows % in Individual Water Shortage Plan (IWSP)</li></ul>
Water Shortage Warning	Percent reduction by Well Use Priority: <ul style="list-style-type: none"><li>• Priority 1: Following % IWSP</li><li>• Priority 2: 15%</li><li>• Priority 3: 20%</li></ul>