

WATER FOR LIFE

Safe, dependable, and affordable water now and into the future

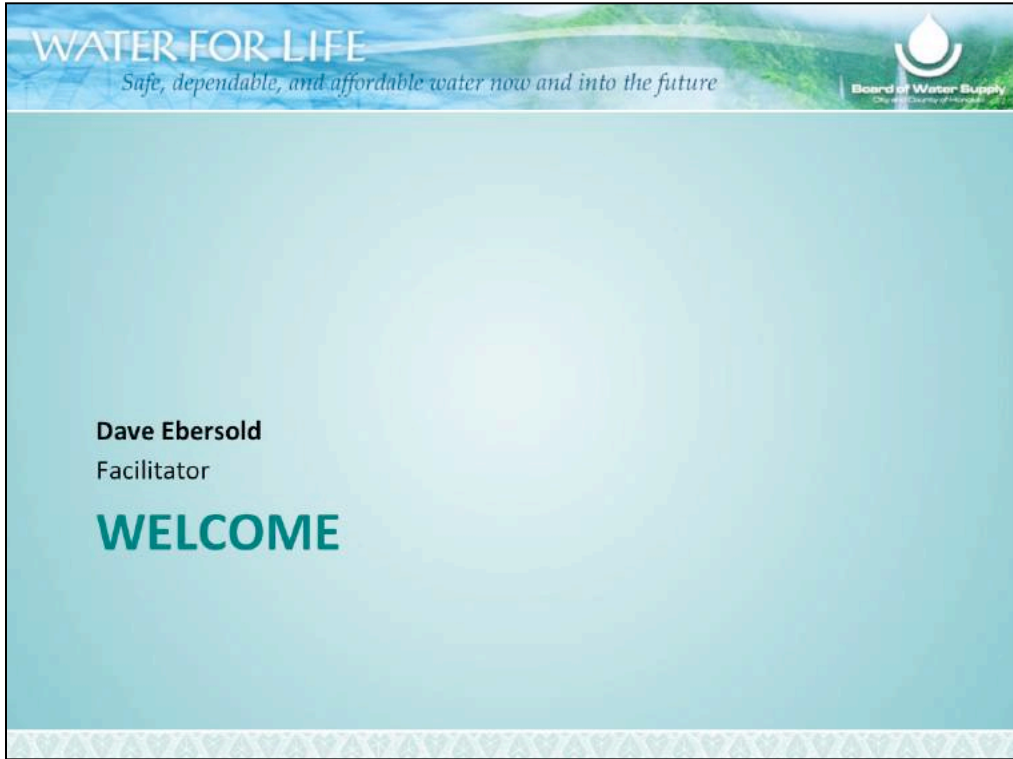


Board of Water Supply
City & County of Honolulu

Stakeholder Advisory Group

**Board of Water Supply
City & County of Honolulu**

Thursday January 24, 2019



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Board of Water Supply
City and County of Denver

Dave Ebersold
Facilitator

WELCOME

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Public Comments on Agenda Items

Meeting Objectives

- ◆ Welcome new stakeholders
- ◆ Receive updates regarding the BWS
- ◆ Receive an update on Navy's Red Hill Bulk Fuel Storage Tanks
- ◆ Review Scorecard of the implementation of Water Master Plan
- ◆ Hear updates on recent meetings with Ag agencies and farmers
- ◆ Get your input on the July 2019 water rates public roll-out

New Stakeholders

- ◆ Christine Olah, AARP
- ◆ Walter Theommes III, Kamehameha Schools

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Ernest Lau
BWS Manager and Chief Engineer

BWS UPDATES

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Erwin Kawata
BWS Water Quality Division Program Administrator

RED HILL UPDATE

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Mahalo!

Questions & Answers





Action

Review and accept notes from

- ◆ Stakeholder Advisory Group Meeting #28
held on Tuesday, October 16th, 2018

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Ernest Lau
BWS Manager and Chief Engineer

Barry Usagawa
BWS Water Resources Program Administrator

**SCORECARD UPDATE –
IMPLEMENTATION OF THE WMP**

Scorecard Purpose

- ◆ Track advancement to achieve WMP goals
- ◆ Identify progress - what have we done well
- ◆ Capture opportunities for improvement - what can we do better
- ◆ Annual reporting and accountability to BWS Board and public

Scorecard Summary

- ◆ Organized around BWS' s six functions
- ◆ Detailed indicators for financial, operational, capacity, structural and management goals
- ◆ Annual metrics to quantify results

PLAN	Total Number of Metrics	 Met/on track to meet	 Miss by 10% of goal	 Miss by > 10% of Goal
Strategic Plan	9	7	1	1
Water Master Plan	33*	20	5	7

* 1 TBD



Indicator	Metric	Goal	Baseline	FY 2017	FY2018
Supply from nonpotable sources	% of total supply served from nonpotable water system	> 12%	6% (on-track to meet goal) ●	7.15% ●	7.10% ●
Annual water resource yield	% of available water resource yield used	< 90%	80% ●	70% ●	72% ●
Watershed management	\$ budgeted for watershed management	4% of CIP \$3.35M	\$1.4M ●	\$1.4M ●	\$1.8M ●
	Acres of watershed surveyed for invasive plant species removal per year	5,200 acres	1,691 acres ●	5,262 acres ●	43,739 ●
	Watershed area protected by fencing	20% of watershed funding	14% ●	19.80% ●	0% ●



Indicator	Metric	Goal	Baseline	FY 2017	FY2018
Conservation	\$ budgeted for conservation	4% of CIP \$3.35M	\$0.89M ●	\$1.08M ●	\$1.50M ●
	Per capita consumption	< 145 gpcd (by 2040, starting at 155 gpcd in 2016)	155 gpcd ●	155 gpcd ●	155 gpcd ●



Indicator	Metric	Goal	Baseline	FY 2017	FY2018
Standby source capacity	% of source capacity used at Maximum Day Demand (MDD)	< 50%	44% ●	40% ●	41% ●
Water level at index wells	% of wells with stable water levels as determined by BWS	100%	100% ●	100% ●	100% ●
Permitted or assessed sustainable yield	Number of sources exceeding source permitted use or assessed sustainable yield (12-month moving avg)	0	0 ●	0 ●	0 ●



Indicator	Metric	Goal	Baseline	FY 2017	FY2018
Water quality regulatory compliance	Number of water quality regulatory violations	0	0 ●	0 ●	0 ●
Treatment on-line	% of chlorination systems on-line	100%	100% ●	100% ●	100% ●
Comprehensive treatment system condition assessment	Perform comprehensive condition assessment of all potable and nonpotable treatment systems	Update every 5 years	On-schedule (last 2014) ●	On-schedule ●	On-schedule ●



Indicator	Metric	Goal	Baseline	FY 2017	FY2018
Sufficient pump capacity	% of pressure zones where firm capacity (not counting largest pumping unit at each station) < MDD	< 5%	2.6% ●	2.8% ●	2.8% ●
Pumps available for use	% of pumps that are available to be put in-service	> 90%	82% ●	81% ●	82% ●
Emergency power	% of population served indoor demand (85gpcd) in the event of loss of power	> 85%, distributed geographically	71% ●	71% ●	71% ●
Pump station condition assessment	Perform regularly scheduled condition assessment	Update every 5 years	On-schedule (last 2015) ●	On-schedule ●	On-schedule ●



Indicator	Metric	Goal	Baseline	FY 2017	FY2018
Reservoir restrictions	Number of reservoirs with use restrictions	< 2%	1% ●	0.58% ●	0.58% ●
Storage deficient pressure zones	Pressure zones with less than Standard storage and without pumping or transmission equivalency to meet operating, emergency, and fire needs	0%	6% ●	5% ●	5% ●
Reservoir condition assessment	Perform regularly scheduled condition assessment	Update every 10 years	On-schedule (last 2015) ●	On-schedule ●	On-schedule ●

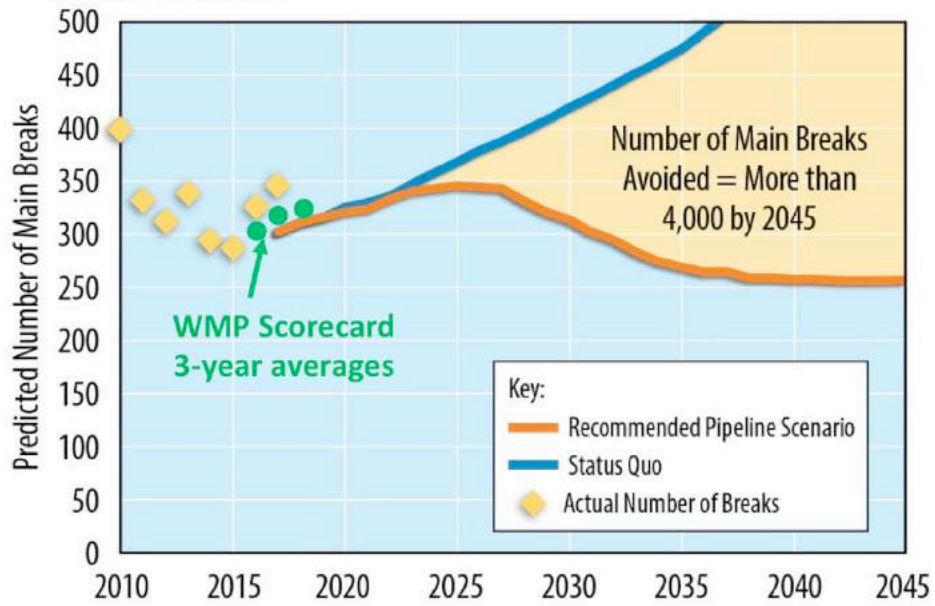


Indicator	Metric	Goal	Baseline	FY 2017	FY2018
Pipeline breaks	Pipeline breaks and leaks repaired per 100 miles per year (3-year average)	< 15	14 ●	15 ●	16 ●
	Pipeline breaks and leaks repaired per year (3-year average)	< 300	302 ●	320 ●	331 ●
Transmission pipeline breaks	Number of pipeline breaks for \geq 16 inches in diameter (3-year average)	< 14	10 ●	12 ●	13 ●
Non-revenue water	% of water produced but not sold	< 8.1%	7.8% (5-year average) ●	7.4% ●	TBD
High risk pipelines	Portion of pipelines with risk score	< 5%	12% ●	14% ●	14% ●

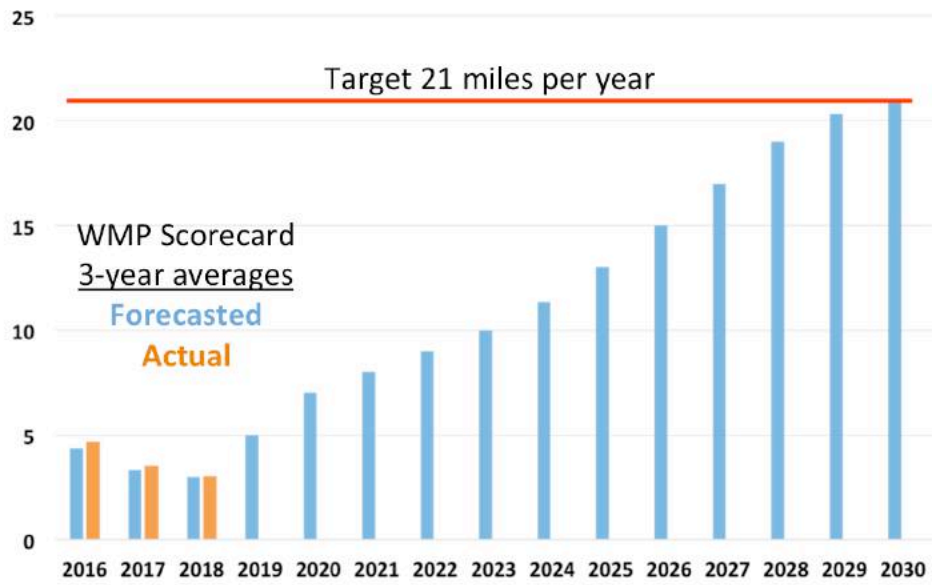


Indicator	Metric	Goal	Baseline	FY 2017	FY2018
Pipeline R&R	Miles of system pipeline renewed (3-year average)	21 miles	4.7 miles ●	3.5 miles ●	3.0 miles ●
Fire hydrant supply	Hydrants that meet fire flow standards	> 99%	98% ●	98% ●	98% ●
Pipeline leak detection	% of pipes checked for leaks per year	25%	14% ●	12% ●	26% ●
PWA pipeline condition assessment	Of pipelines recommended for PWA by CapPlan framework (currently 63 miles), miles assessed per year	6.3 miles (10%)	12 miles (19%) ●	0 miles ●	0 miles ●

Main breaks will take a few years to decrease



Pipeline replacement ramp-up is underway



TOOLS



Indicator	Metric	Goal	Baseline	FY 2017	FY2018
Water Mater Plan update		Update every 10 years	On-schedule (last 2016) ●	On-schedule ●	On-schedule ●
Hydraulic models and CapPlan updated		Update every 5 years	On-schedule (last 2016) ●	On-schedule ●	On-schedule ●
GIS update		Annually	On-schedule (last 2016) ●	On-schedule ●	On-schedule ●
SCADA reliability	% of sources, pump stations, water treatment plants, and reservoirs utilizing microwave backbone for control data	100% (by 2023)	13% (on-track) ●	15% ●	23% ●

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Mahalo!

Questions & Answers



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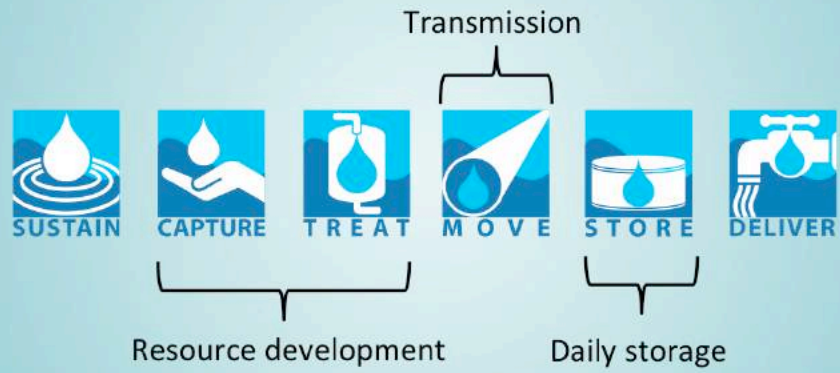
Barry Usagawa
BWS Water Resources Program Administrator

**WATER SYSTEM FACILITY CHARGE
FOR AG -- UPDATE**

WSFC is a 1-time charge

- ◆ Charged when connecting to the system for the first time, or when additional capacity is needed
- ◆ Fund growth-related capacity expansions
- ◆ Equitably recover earlier investments in oversizing infrastructure to accommodate new customers

WSFC is for the backbone system only (general use facilities)



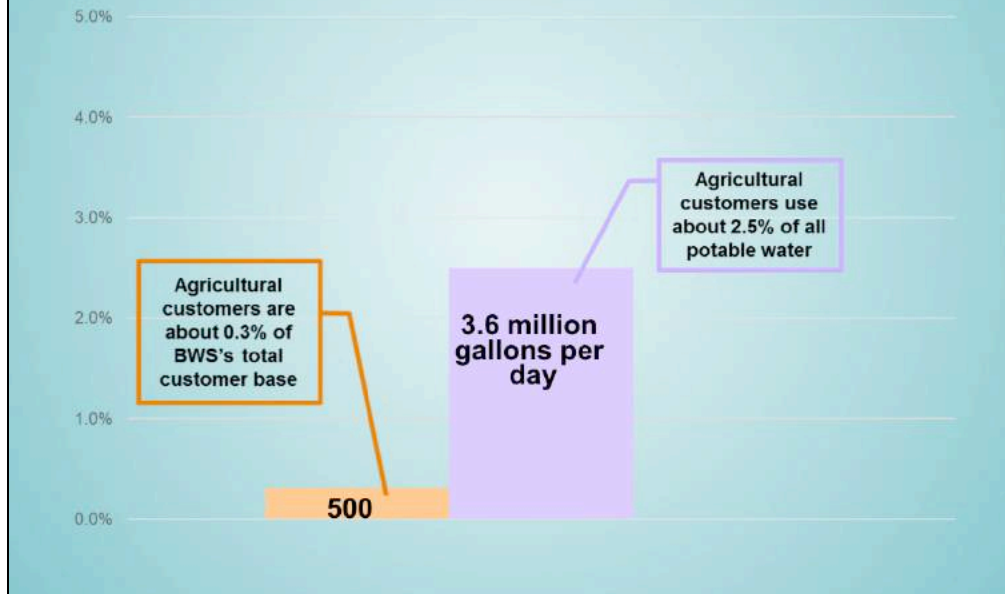
[AWWA M1 Manual]

Why update the WSFC now?

- ◆ Current charges adopted in 1993
- ◆ Water use patterns have changed
- ◆ Growth needs have changed
- ◆ Available capacities in existing system have changed
- ◆ Costs have increased
- ◆ Technical analysis needs to be updated
- ◆ Implement concurrent with other changes to BWS's rates and charges

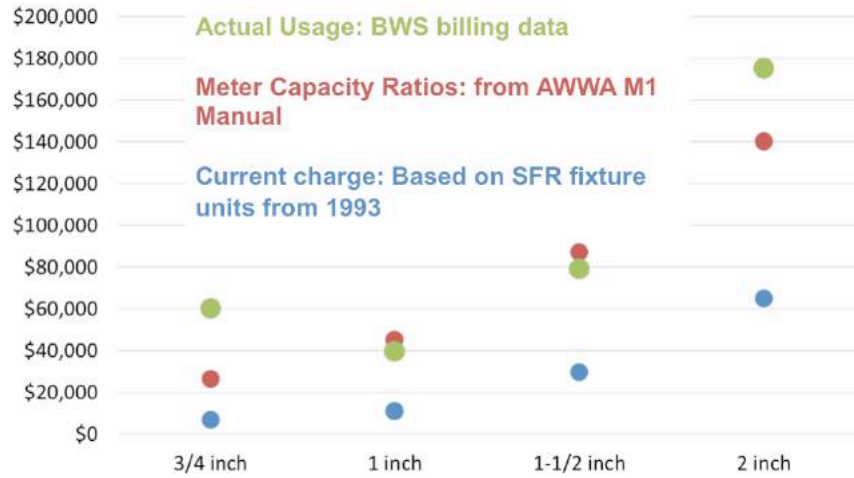
In 1 day, the average agricultural customer uses 6,000 gallons, more than half of BWS's single family residential customers use in an entire month

Agricultural customers are large water users



We have a customer base of about 170,000 and we provide an average of 145 million gallons of water per day.

Comparison of WSFC options for Ag

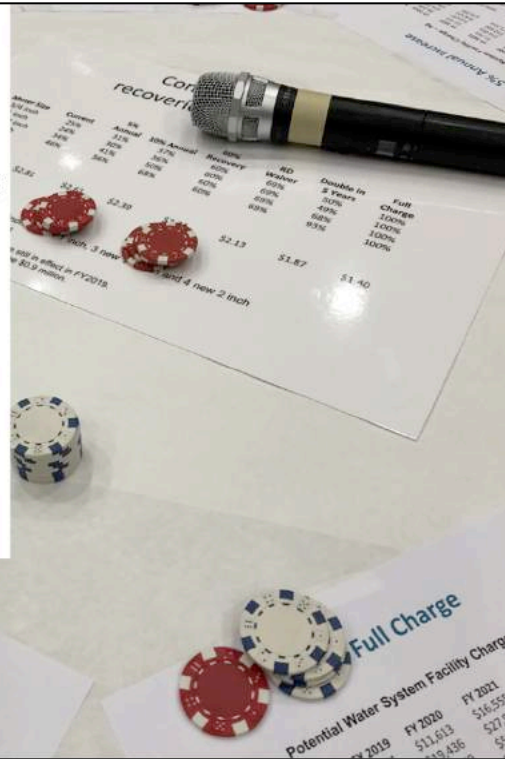


Agricultural WSFC comparisons to other islands

	BWS	Maui	Kauai	Hawaii
3/4"	\$6,671	\$18,884	\$21,170	NA
1"	\$10,934	\$33,356	\$35,290	\$13,750
1.5"	\$29,651	\$71,948	\$70,580	\$27,500
2"	\$64,866	\$125,012	\$112,920	\$44,000

Other islands' WSFC based on meter size for all customers

- ◆ We reviewed Ag WSFC in detail last meeting
- ◆ Your input was that full cost was too high
- ◆ Follow-up was to meet with farmers and Ag agencies
- ◆ Identify potential ways to reduce the charge and conserve water



Strategic Approach for Affordable Impact Fees for New Farmers

- ◆ Ensure farmers know how much water they should be using per acre through a Water Use Plan requirement
- ◆ Right size the meter to limit wasteful water use. Smaller meters cost less
- ◆ Create an education program so farmers know how to conserve water
- ◆ Develop and implement conservation incentives for farmers to discount submeters, weather based irrigation controllers, soil moisture sensors, etc. Allow water bill adjustments if leaks are repaired
- ◆ Obtain State assistance to develop new water sources to buy down impact fees directly benefitting farmers

Recent Outreach Meetings with Ag Agencies and Farmers

- ◆ Agribusiness Development Corporation (ADC)
December 11, 2018
- ◆ Hawaii Department of Agriculture (HDOA)
December 20, 2018
- ◆ University of Hawaii, College of Tropical Research
and Human Resources (CTAHR)
December 21, 2018
- ◆ Hawaii Kai Farmers
January 8, 2019

Outreach Purpose was to Gain Insights

- ◆ Opportunities and barriers for Ag water use plans
- ◆ Conservation measures that farmers use
- ◆ Tools to assist and/or incentivize Ag customers to plan for and use water efficiently



Who We Are

Enacted by the State Legislature in 1994, the Agribusiness Development Corporation is a state agency administratively attached to the Hawaii State Department of Agriculture. It has its own board of directors consisting of three ex-officio and eight private citizens appointed by the Governor.

ADC's Mission

To acquire and manage, in partnership with farmers, ranchers and aquaculture groups, selected high-value lands, water systems and infrastructure for commercial agricultural use and to direct research into areas that will lead to the development of new crops, markets and lower production costs.





Hawaii Department of Agriculture (HDOA) Discussion Highlights

- ◆ It is in HDOA's and BWS's best interests to work together on conserving the water supply
- ◆ Expects that FSMA will be diligently enforced
- ◆ Exploring development of "agricultural hubs" for safe crop washing
- ◆ Greenhouses have potential for future Ag
- ◆ Believes BWS's pricing of Ag water, even at the subsidized rate, is high and would be a strong incentive to conserve water

What We Learned About HDOA Requirements

Tenants of agricultural lands required to prepare 2 plans

- ◆ Soil Conservation Plan

Covers things like soil type, slopes, acreage, soil conservation measures, and planned water application.

- ◆ Plans of Utilization and Development

Includes a timeline of how to fully develop the agricultural property.

Ag water use plan is not required by either plan

HDOA supports conservation incentives for farmers



Welcome to the College of

Tropical Agriculture and Human Resources

- [Prospective Students](#)
- [Current Students](#)
- [Community](#)
- [Collaborators/Researchers](#)
- [Alumni/Friends](#)
- [Faculty/Staff](#)



💧 Believes that water has the potential to aggregate small farms around food processing hubs

Beginning Farmer Training Program
Provides agribusiness services that include business planning and financial analysis to help farmers lower costs and increase sales

Could help with educating new farmers about water use and conservation, and about preparing Water Use Plans

GO FARM
HAWAII
UNIVERSITY OF HAWAII
"Go Farm With Us"

Statewide Beginning Farmer Training Program

- ◆ UH's Cooperative Extension service agents could potentially help with educating farmers about water conservation measures
- ◆ CTAHR supports BWS conservation incentives for farmers
- ◆ UH may be able to assist the BWS create a model that focuses on water, to help farmers see what their costs would be with different scenarios



Hawaii Kai Farming is in Kamilonui Valley and above Kaiser High School

- ◆ Recognize that the BWS is subsidizing Ag water rates
- ◆ Some have concerns about the new higher monthly customer charge based on meter size, but the offset is the Ag rate threshold is lower, from 13,000 to 6,000 gals/mo.
- ◆ BWS is following up by calculating “before and after” water bills to compare the impact of new rates

Water Conservation Measures

- ◆ Methods of conserving water include
 - Mulch and/or cover crops to reduce evaporation
 - Installing submeters (they really liked this)
 - Weather-based irrigation controllers and soil moisture sensors
 - Learning how to detect and repair leaks
- ◆ One farmer said that her irrigation system had been automated, but she changed back to watering by hand and is using much less water now

Future of Farming

- ◆ Kamehameha Schools (KS) is the landlord of much of the farmland in Hawaii Kai
 - Many leases expire in 2025
 - Some leases are longer
- ◆ Expect shift in management of Hawaii Kai farms to the next generation
 - In considering water conservation incentives, BWS should plan accordingly (e.g., potentially more interest in technology)



The FFA club at Waipahu Intermediate, photo courtesy FFA

Outcomes of Meeting with Hawaii Kai Farmers

- ◆ Supportive of inter-agency and inter-organization cooperation, especially education about soil conservation and water conservation
- ◆ Water Use Plans have the potential to help new farmers calculate water needs and properly size meters
- ◆ Services of other agencies would be valuable in helping new farmers to prepare their water use plans

Legislation for Funding Support to Buy Down BWS Impact Fees for New Farmers

- ◆ Hawaii Farm Bureau introduced legislation for funding \$700,000 for 1 exploratory well at proposed BWS Kunia Wells IV pump station in upper Kunia
- ◆ Well station is mauka of proposed State Kunia Agriculture Park and could provide potable water for crop washing
- ◆ Rep. Ryan Yamane and DLNR Carty Chang are supportive
- ◆ Your support of this bill is appreciated



Next Steps

- ◆ Meet with new HDOA Director
- ◆ Explore 3-way Memorandum of Understanding with BWS/HDOA/CTAHR
- ◆ Meet with Michelle Gorham, West O'ahu Soil and Water Conservation District on ag education programs
- ◆ Meet with Windward farmers
- ◆ Support the State funding legislation
- ◆ Seek BWS Board input
- ◆ Refine BWS strategic approach for affordable impact fees for farmers
- ◆ SBRRB and public outreach
- ◆ BWS Board consideration

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Questions & Answers



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Kathleen M. Pahinui
BWS Information Officer

Water Rates – Next Steps

Recap of 2018 Public Input

- ◆ 4 Public Hearings: Honolulu, Kapolei, Kaneohe, Mililani – 65 attendees
- ◆ 15 Neighborhood Boards – reached about 500 attendees
- ◆ 10 interest group presentations – reached about 150 attendees
- ◆ Newspaper articles, social media, TV and radio interviews – estimated reach around 250,000
- ◆ Briefings for 6 City Council Members and Cabinet Briefing
- ◆ Mailed special edition of Water Matters to 170,000 account holders
- ◆ Over 1,300 page views on the BWS website

2019 Public Outreach

- ◆ Inserted small note in Winter *Water Matters*
- ◆ Updating the 4-page *Water Matters* for mailing with May / June 2019 bills
- ◆ Provide refresh training for Neighborhood Board representatives
- ◆ Provide this issue as a hand-out for Neighborhood Boards and in the customer service area of BWS/ Satellite City Halls March – July 2019
- ◆ Start social media campaign to remind customers and public about rate increases March – June 2019
- ◆ Reach out to traditional media in June 2019 in advance of changes
- ◆ Anything else?

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SUMMARY AND NEXT STEPS