Chapter 25 - Honolulu Board of Water Supply

By city charter, the Honolulu Board of Water Supply (BWS) has full and complete authority to manage, control, and operate all city water systems on O`ahu. BWS focuses its efforts on the following objectives: resource sustainability, economic sustainability, and organizational sustainability.

As a semi-autonomous agency, BWS is governed by a seven-member board. Five of the members are appointed by the mayor and confirmed by the Honolulu City Council, the director of the city's Department of Facility Maintenance (ex-officio), and the director of the State's Department of Transportation (ex-officio). The board is a policy-making body that appoints the Manager and Chief Engineer (OMCE) to administer the department. BWS consists of 9 divisions:

Customer Care

- Handles customer contracts
- Conducts billing operations
- Investigates consumers' service problems

Finance

- Directs accounting activities
- Conducts financial studies
- Administers long-term bonded debt and bond sales

Information Technology

- Develops BWS databases, maintains hardware and software, network telephone, and call center systems

Water Quality

- Ensures the department's compliance with all environmental laws, rules, and regulations

Capital Projects

- Administers the Capital Improvement Program
- Oversees construction of all waterworks facilities

Field Operations

- Maintains all waterworks facilities, water mains, service connections, and department buildings and grounds

Water System Operations

- Responsible for the operations and maintenance of pumping and water treatment plant equipment and facilities

Land

- Acquires water rights, land, and land interests
- Maintains knowledge of water rights and land values

Water Resources

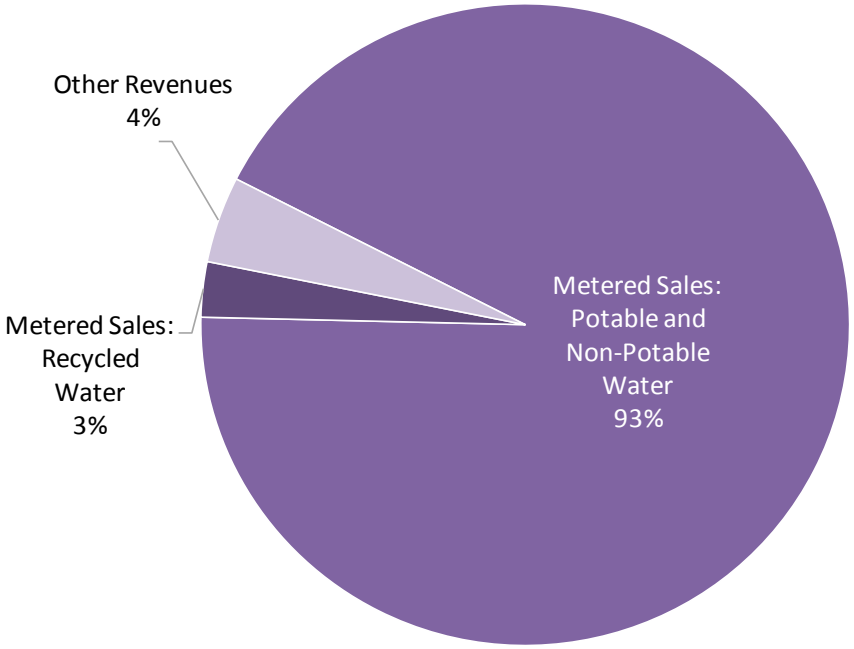
- Conducts hydrologic and geologic monitoring
- Conducts hydraulic water system analysis

The Board of Water Supply provides safe, dependable, and affordable water now and into the future.

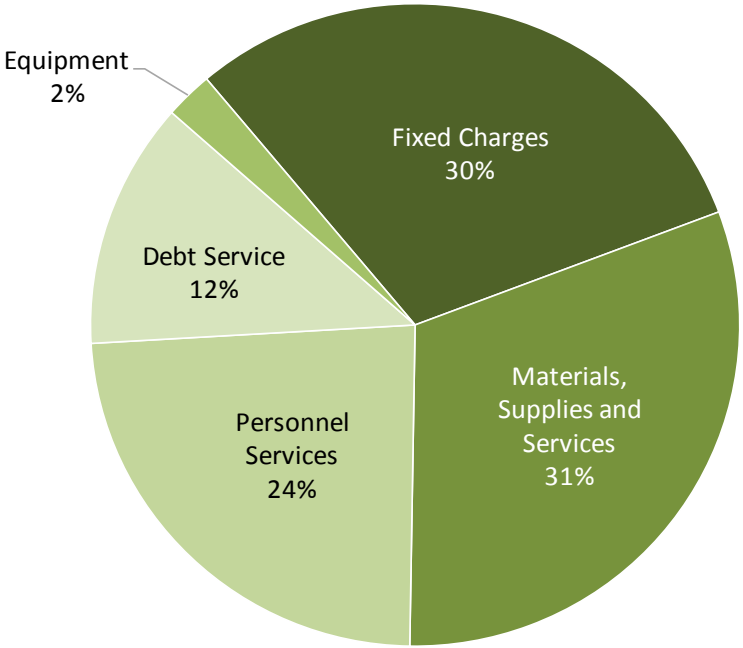
Mission Statement

Spending and Staffing

Fund Sources



Fund Uses[1]



	Total Operating Expenditures ($ millions)	Revenues ($ millions)	Debt Service ($ millions)	Total Authorized FTE	Total Vacant FTE	Cost Per FTE[2]	Total Overtime Expenditures ($ millions)
FY 2015	$149.45	$217.76	$15.40	714	233	$209,317	$2.20
FY 2016	$149.50	$243.59	$17.89	714	210	$209,388	$2.32
FY 2017	$169.37	$236.22	$36.59	714	200	$237,206	$2.49
FY 2018	$171.40	$238.22	$30.32	714	201	$240,052	$2.81
FY 2019	$167.58	$237.72	$20.82	741	200	$226,157	$2.93
Change from last year	-2%	<-1%	-31%	4%	<-1%	-6%	4%
Change over last 5 years	12%	9%	35%	4%	-14%	8%	33%

Source: Honolulu Board of Water Supply.[1]Percentages do not total 100% due to rounding. [2]Cost per FTE = Total Operating Expenditures/Total Authorized FTE.

Highlights and Challenges

Spending

Overtime Expenditures

$2.93 M ▲ 4%

The department attributes the FY 2018 to FY 2019 increase to their field operations and water system division, to maintain and operate the water distribution system.

Five Year Trends

- The department's operating expenditures increased 12% from $149.45 million to $167.58 million over the last five years. According to BWS, this is due to increases in costs for personnel, material, services, and supplies.

- Total overtime increased 33% from $2.2 million to $2.93 million over the last five years. According to BWS, this is due to costs of emergency preparedness and repairs.

2019 National Community Survey

- Drinking water quality received a rating of **68%** *excellent* or *good*, a 7% decrease over last year.

- About **89%** of citizens reported making an effort to conserve water in 2019.

BWS Water Saving Campaign

Source: Honolulu Board of Water Supply

FY 2019 ACCOMPLISHMENTS

- **BWS's new water conservation rebate program for efficient washing machines, rain barrels, and weather-based irrigation controllers resulted in the issuance of $143,330 in rebates and an annual estimated freshwater savings of more than 12 million gallons per year**
- **Developed a spatial main break analysis tool to provide increased insights for improving the construction and operation of the water system that utilizes data to forecast future main breaks and map them geospatially**

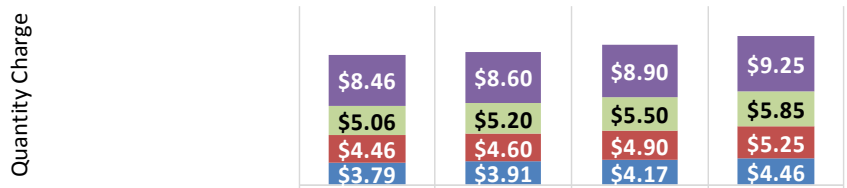
CHALLENGES MOVING FORWARD — FY 2020

- ***Developing water system resiliency plans for natural disasters and climate change***
- ***Having the ability to deliver water following natural disasters***

Water Rates

The Board of Water Supply manages O`ahu's municipal water resources and distribution system, providing residents with a safe, dependable, and affordable drinking water supply now and into the future. As the largest municipal water utility in the State of Hawai`i, the BWS delivered potable and non-potable water to approximately one million customers on O`ahu. The BWS manages an intricate system, consisting of 94 active potable water sources, 171 reservoirs, and 2,100 miles of pipeline.

Honolulu's Monthly Water Rates for Single Family Residences



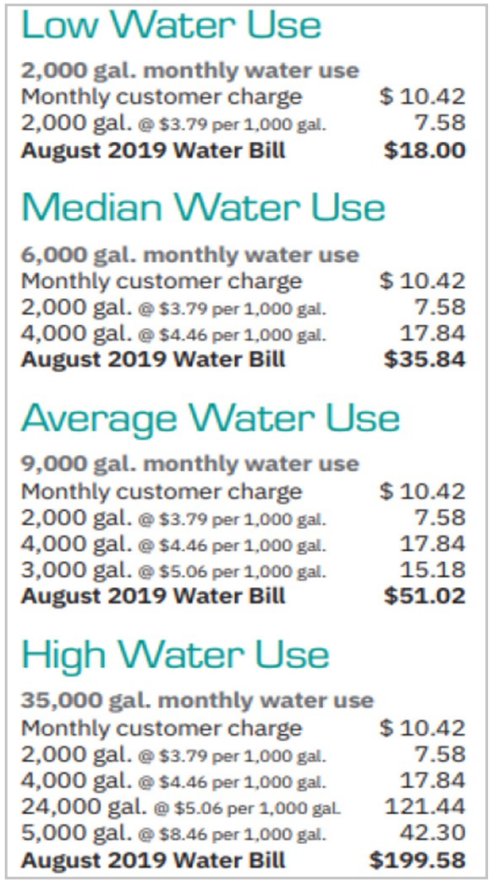
	July 1, 2019	July 1, 2020	July 1, 2021	July 1, 2022
More than 30,000 Gallons	$8.46	$8.60	$8.90	$9.25
6,001 - 30,000 Gallons	$5.06	$5.20	$5.50	$5.85
2,001 - 6,000 Gallons	$4.46	$4.60	$4.90	$5.25
First 2,000 Gallons	$3.79	$3.91	$4.17	$4.46

Source: Honolulu Board of Water Supply.

	Typical Monthly Water Bill[1]
FY 2015	$60.83
FY 2016	$66.72
FY 2017	$66.72
FY 2018	$66.72
FY 2019	$66.72
Change from last year	0%
Change over last 5 years	10%

Source: Board of Water Supply. [1]The new rate schedule was approved in FY 2018 and went into effect September 15, 2018.

A typical monthly water bill on O`ahu remained the same at $66.72 in FY 2019. Over the last five years, the typical monthly water bill has increased 10%.



Example Single-Family Residence Water Bill Calculations

Source: Honolulu Board of Water Supply

The *Example Single-Family Residence Water Bill Calculations* infographic depicts hypothetical water bill charges using the newly tiered water usage rates.

Customer Service

One of BWS' strategic operational goals for customer service is a commitment to proactively and consistently provide a quality experience in every customer interaction.

The 45,584 estimated bills issued in FY 2019 represented a 25% increase over the past year. The department attributes the increase to aging automated meter reading equipment. The BWS has been working to repair and maintain the equipment, however the antiquated equipment has led to a decrease in automated read rates and a subsequent increase in estimated bills.

Over the last five years, the number of delinquent accounts has increased 24% from 4,094 in FY 2015 to 5,068 in FY 2019. The department attributes the increase to limited resource availability within the current low unemployment rate environment and highly competitive market conditions. To address this, the BWS began using a collections agency to assist in the recovery of delinquent accounts and will be working with a consultant in 2020 to automate a portion of its collections process.

The Customer Care Center received 186,621 calls in FY 2019, a decrease of 17% from 223,893 calls received in FY 2018. The department stated that it was successful in filling vacant positions which decreased the average time to answer a call, which likely resulted in a decrease in the number of customer callbacks.

Rainfall and Storm Rates Public Presentation

Source: Honolulu Board of Water Supply

	Total Number				
	Water Accounts (At Year End)	Delinquent Accounts	Estimated Bills	Customer Care Center Calls Received	Average AMR Read Rate
FY 2015	168,665	4,094	6,561	146,679	88.52%
FY 2016	166,465	4,785	13,454	152,494	87.04%
FY 2017	169,065	4,259	18,387	208,269	83.25%
FY 2018	170,459	4,744	36,387	223,893	81.00%
FY 2019	168,406	5,068	45,584	186,621	83.00%
Change from last year	-1%	7%	25%	-17%	2%
Change over last 5 years	<-1%	24%	595%	27%	-6%

Source: Honolulu Board of Water Supply.

Water Infrastructure

BWS' strategic goal for operational sustainability is to ensure a dependable water system. The agency is committed to fostering a resilient and collaborative organization utilizing effective and proactive operational practices consistent with current industry standards. BWS' strategic goal for infrastructure includes renewing and improving the water system to ensure adequacy, dependable service, and operational efficiency.

The North Shore Watershed Management Plan was adopted by the Honolulu City Council and State Commission on Water Resources Management, which completes four of eight watershed management plan components of the O`ahu Water Management Plan.

The amount of total leaks recovered decreased 75% over the past five years, from 354 in FY 2015 to 88 in FY 2019. Annual water savings from leak recovery has fallen 29% over the past year and 74% over the past five years. The department has attributed the decreases to a number of special projects being assigned to the leak detection team which shifted resources away from routine leak detection surveys. BWS is currently undergoing a re-organization to increase staff in the area.

The amount of total pipeline miles replaced increased 23% from 5.8 in FY 2018 to 7.1 in FY 2019. The department attributes this to a gradual ramp up of pipeline replacement over the next decade to reduce main breaks.

Board of Water Supply Contract Values

	Construction Contracts ($ millions)	Professional Services Contracts ($ millions)
FY 2015	$41.58	$15.77
FY 2016	$48.84	$17.59
FY 2017	$52.52	$13.40
FY 2018	$60.82	$17.71
FY 2019	$57.23	$32.49
Change from last year	-6%	83%
Change over last 5 years	38%	106%

Source: Honolulu Board of Water Supply

Expenditures for professional service contracts has risen from $17.71 million in FY 2018 to $32.49 million in FY 2019. BWS states that this is due to increased design, planning, and engineering contracts to support its capital improvement program.

	Potable Water						Non-Potable Water	
	Water Mains (Miles)	Pipeline Replaced (Miles)	Total Water Main Breaks	Total Breaks Per 100 Miles of Pipeline	Total Leaks Recovered	Annual Water Savings Leak Recovery (mg/yr)[1]	Total Recycled Water Pipeline (Miles)	Total Recycled Water Pipeline Added (Miles)
FY 2015	2,123	7.1	293	14	354	932	38	0
FY 2016	2,131	1.3	326	15.3	515	581	45	7
FY 2017	2,144	1.6	346	16.1	166	491	45	0
FY 2018	2,156	5.8	322	14.94	75	340	45	0
FY 2019	2,159	7.1	328	15.19	88	242	45	0
Change from last year	<1%	23%	2%	2%	17%	-29%	0%	--
Change over last 5 years	2%	0%	12%	9%	-75%	-74%	18%	--

Source: Honolulu Board of Water Supply. [1]mg/yr-millions of gallons per year; the water flow from each leak is estimated and totaled with the assumption that the leak duration is over a one year period.

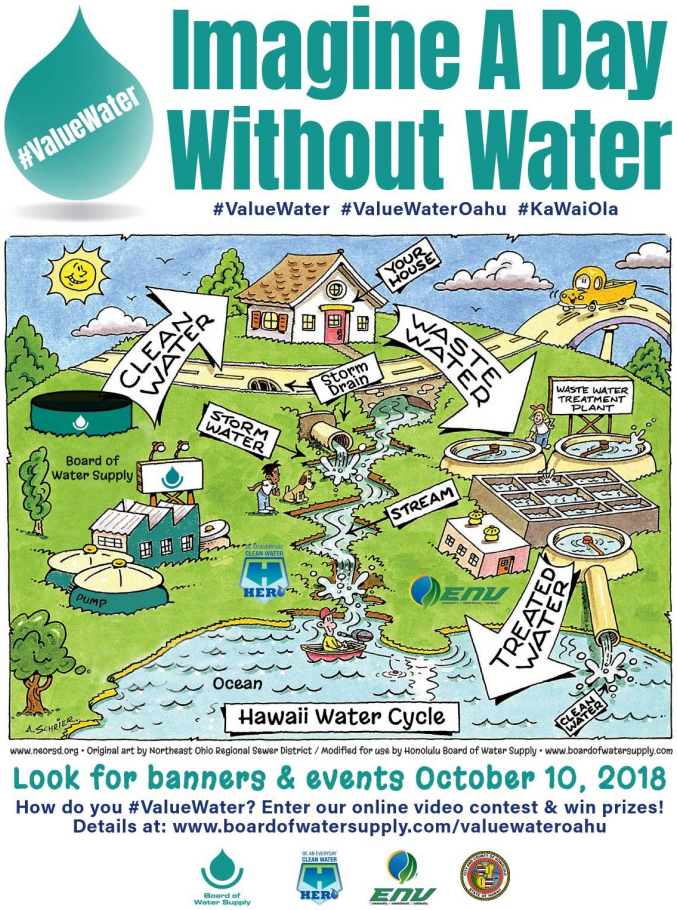
Water Consumption

According to BWS, a dependable water supply relies on the premise that the source of Honolulu's water must be sufficient and available now and into the future. The agency ensures this through watershed and groundwater supply management, long-range planning, and possible development of alternative sources of water. BWS initiated the Water Sensible Rebate Program for residential rain barrels and water-efficient clothes washers.

Geographically, water consumption changes over time trended downward with decreases over the past year in East Honolulu, Wai`anae, Central O`ahu, Ko`olau Poko, Primary Urban Honolulu, and the North Shore. The North Shore represented the largest decrease of 10% over the past year going from 2.27 million gallons per day in FY 2018 to 2.04 million gallons per day in FY 2019.

Irrigation Controller Rebate

Source: Honolulu Board of Water Supply



Value Water Flyer

Source: Honolulu Board of Water Supply

	Average Day Metered Consumption (mgd)[1] by Development Plan Area								
	East Honolulu	'Ewa	Wai'anae	Central O'ahu	Ko'olau Poko	Ko'olau Loa	North Shore	Primary Urban Core	New Connections
FY 2015	7.20	16.23	8.03	14.78	13.58	1.22	2.35	56.97	522
FY 2016	7.14	16.67	8.35	14.76	13.11	1.14	2.34	57.70	242
FY 2017	6.93	17.23	8.36	13.02	12.75	1.15	2.36	56.37	737
FY 2018	7.00	16.47	7.74	14.33	13.09	1.17	2.27	56.54	855
FY 2019	6.70	16.62	7.63	13.84	12.68	1.19	2.04	56.14	487
Change from last year	-4%	1%	-1%	-3%	-3%	2%	-10%	-1%	-43%
Change over last 5 years	-7%	2%	-5%	-6%	-7%	-3%	-13%	-1%	-7%

Source: Honolulu Board of Water Supply. [1](mgd) = million gallons per day.

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