Rate Study

SUMMARY

Board of Water Supply
City and County of Honolulu

Water for Life, Ka Wai Ola

AUGUST 2019

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This is a summary of the Rate Study prepared by the City and County of Honolulu Board of Water Supply in August 2018. The full plan and its companion publications – a Water Master Plan, 30-Year Infrastructure Investment Plan, and Long Range Financial Plan – are available on the Board of Water Supply web site.

All charts included within may not add up due to rounding.

Board of Water Supply
City and County of Honolulu

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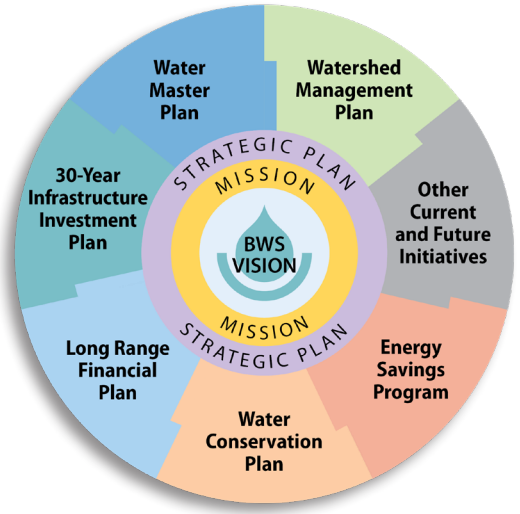
Rate Study **Overview**

Every day the Board of Water Supply for the City and County of Honolulu (BWS) carries out its vision of Ka Wai Ola – Water for Life – providing about 145 million gallons of water to people across O'ahu. As part of Honolulu's governance, the BWS is trusted to make sound decisions and plans for current and future water management on our island. A semi-autonomous, self-supporting agency, the BWS must generate its own revenue through rates and charges to its customers. This revenue must provide sufficient funding for water system operations, capital expenses, adequate cash on hand for disasters, and other activities and needs.

The BWS spent more than a year preparing a Rate Study to evaluate the state of its finances and the configuration of its rates, to assure that full costs of water service are recovered, providing the right funding, for the highest priority projects, at the right time. A Rate Study is a best management practice for water utilities, serving as a guide to how much customers should pay to generate necessary revenues, including consideration of affordability. The BWS Rate Study focuses on the period of Fiscal Year (FY) 2018 – FY 2023. BWS's FY is July 1 – June 30.

Over the past 4 years, BWS collaborated with technical and financial experts as well as stakeholders to craft several important studies that fed into the Rate Study, including:

- A Water Master Plan (WMP) that assessed the condition of the water system, projected future water demands, and outlined projects to address wear, age, growth, and sustainability.
- A 30-year Infrastructure Investment Plan (also termed a Capital Improvement Program or CIP) that puts the WMP into action. It provides a multi-decade strategy that designates when specific water infrastructure projects should be implemented based on need and risk.
- A Long Range Financial Plan designed to assure sufficient, specific funds are in place for WMP implementation while maintaining BWS's ongoing operations and affordability for customers.



These intertwined plans establish a foundation for BWS policy makers and technical staff to sustain O'ahu's water system and assure ample, high quality, fresh water for generations into the future.

Rate Setting Steps: **An Overview**

Revenue Requirement

The rate setting process starts with determining revenue requirements. In short: How much money is needed?

The BWS budget for FY 2018 was $335.8 million. Future revenue requirements must assure sufficient funds are in place for WMP implementation while sustaining the BWS's ongoing operations and affordability for customers. Future revenue requirements are estimated based on anticipated water sales, operations and maintenance costs, infrastructure investment needs and working capital requirements, coupled with future trends and risks.

Cost of Service

Cost of service is rooted in the reality that the cost to provide water varies for each of the different types of BWS customers. The cost to serve water to residential customers is more than for most other customer types. This is because more infrastructure and electricity are necessary to provide water during peak residential demand periods in the morning and late afternoon.

Single-family residential, agricultural, recycled water, and non-potable customers were found to be paying less than their cost of service. Multi-unit residential and non-residential customers pay more than their cost of service.

Rate Design

Rate design begins by establishing rate objectives, which were developed with significant input from a Stakeholder Advisory Group and approved by the BWS Board.

These objectives express that rates:

- Be legal, fair, and equitable.
- Be understandable and affordable.
- Recover the full cost of water.
- Support credit strength.
- Remain stable and predictable.
- Encourage conservation.

Board Approved New Rates

The Rate Study recommended an increase in rates to generate the additional funding needed to sustain a healthy water system that continues to provide safe, dependable, and affordable water now and into the future. On August 27, 2018 the BWS Board acted upon that recommendation and approved the new Schedule of Water Rates and Charges for the next five years.

The seven-member BWS Board provides governance for the public water system on O'ahu. They are responsible for establishing and adjusting rates and charges for water services to BWS's customers. Five BWS Board members are appointed by the Mayor and approved by the City Council. Two ex-officio members serve by virtue of their positions in State and City government.

During the year-long rate setting process, the Board received regular updates and held open discussions of Rate Study findings, providing guidance on preferred direction in rate revisions. The Board considered input from BWS leadership, technical staff, and the BWS Stakeholder Advisory Group, including applying "guardrails" to guide final rate direction and limits.

Step 1 Revenue Requirement

The BWS's financial plan answers these questions:

- Will the amount of money (revenue) collected under current rates be sufficient to meet future costs associated with providing water and related services, including implementing the Water Master Plan and for reducing water main breaks?
- If not, how much additional revenue will be needed each year?

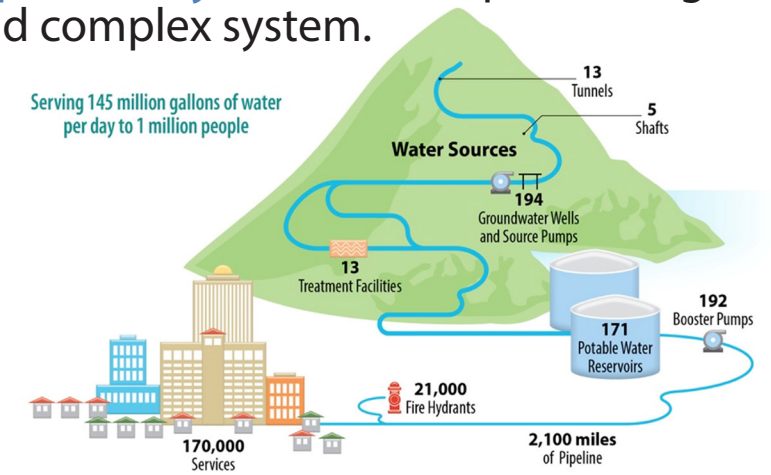
A financial model (computer program) was used to run the numbers, with the goal of balancing revenue coming in from BWS water sales and expenses going out under numerous scenarios. The scenarios included different pipeline replacement timeframes, the mix of cash and/or bonds to pay for future infrastructure improvements, and impacts of varied water demands, natural disasters, water-source contamination, climate change, and economic cycles.

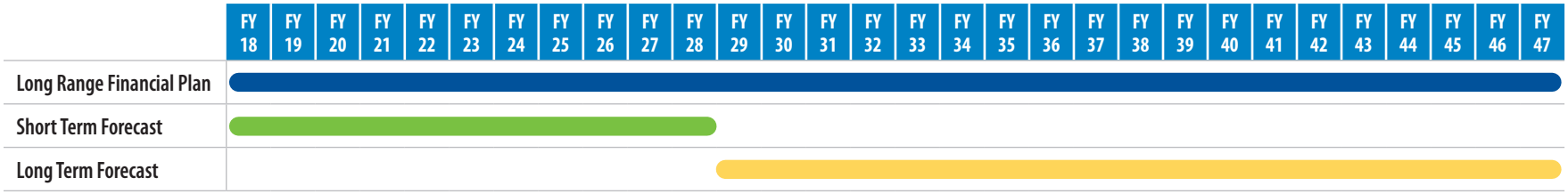
Objectives focused on:

- Affordability.
- Sufficient revenues for future generations of rate payers.
- Alignment with the expected useful life of the assets.
- Only gradual increases to the revenue requirements.

In May 2017, the BWS Board adopted a Long Range Financial Plan. The plan was designed to support O'ahu's large and complex water system, not just for the next few years, but for future generations as well. The conclusions of the Long Range Financial Plan provided the revenue requirement foundation for the Rate Study. The plan forecasted revenues and expenses for near term and long range planning horizons. Future revenue requirements were estimated based on historic and projected water sales, operations and maintenance costs, infrastructure investment needs, working capital requirements, as well as future trends and risks.

Delivering water from **underground aquifers to your home** requires a large and complex system.





Revenue requirements forecast for the short term are more detailed as data are more reliable for the upcoming decade than for a 30-year time span. The long term forecast includes assessment of trends and risks through fiscal year 2047. This forecast is less certain and is expected to be monitored and adjusted over time.

Revenues Coming In

The table below shows year-by-year projected income from water sales with no increase in rates. A minimal amount of revenue is attributed to miscellaneous sources, for example: providing billing services for the Department of Environmental Services, meter installations (domestic and private fire), rental income, interest earnings, and ocean cooling. Quantities shown are in millions of dollars.

Category	Historical			Projected					
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Water Sales	$211.3	$235.3	$229.7	$232.7	$231.9	$231.2	$230.5	$229.8	$229.1
Miscellaneous	$8.4	$11.4	$10.7	$9.1	$9.6	$9.8	$9.8	$10.0	$10.0
Total	**$219.7**	**$246.7**	**$240.4**	**$241.8**	**$241.5**	**$241.0**	**$240.3**	**$239.8**	**$239.1**

Quantities shown are in millions of dollars.

Revenues Necessary to Cover Planned Expenses

The next major step was to identify the costs anticipated for near term operations, maintenance, and infrastructure investments to implement the Water Master Plan, as well as funds to be held in reserve to meet revenue bond requirements and for emergencies. Quantities shown are in millions of dollars. Additional income will be needed to cover the anticipated costs. Future expenses were projected to grow from $318 million in FY 2018 to $343 million by FY 2023.

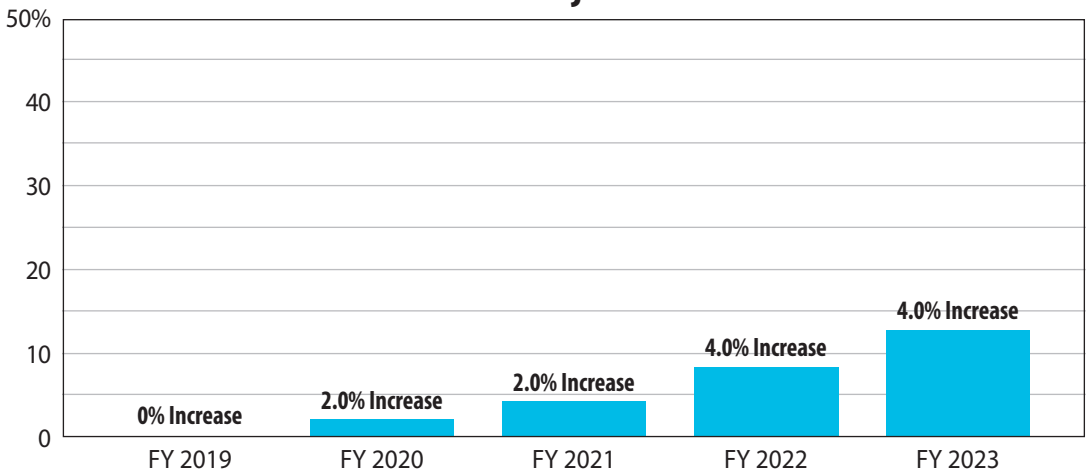
Line Item	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
O&M	$136.9	$139.2	$143.9	$149.2	$156.4	$163.3
Debt Service	$31.1	$22.3	$23.3	$23.8	$31.9	$32.3
Cash Funded Capital	$82.5	$76.6	$118.9	$63.6	$65.3	$66.4
Working Capital	$67.5	$68.6	$71.0	$73.6	$77.1	$80.5
Total	**$318.0**	**$306.7**	**$357.0**	**$310.3**	**$330.7**	**$342.6**

Quantities shown are in millions of dollars.
Totals may not add up due to rounding.

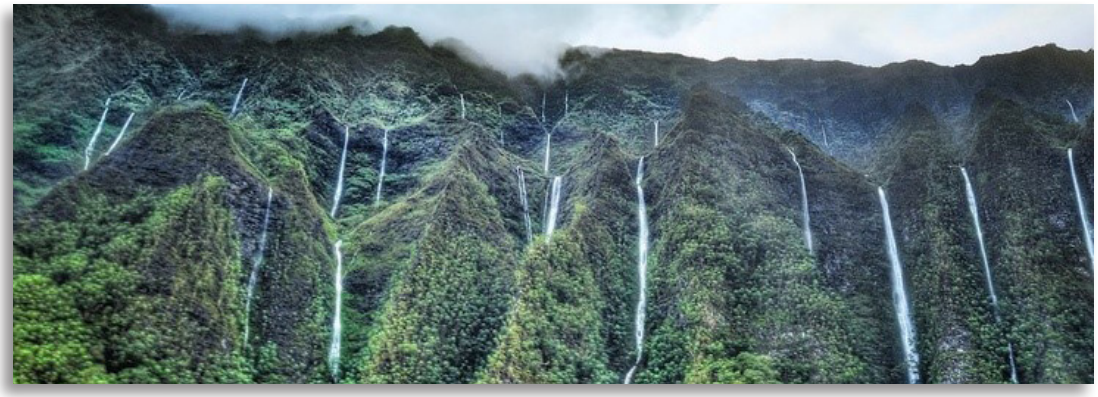
Revenue Requirement Projections Indicated the Need to Adjust Rates

As seen from comparing the tables on the previous page, projected revenues are less than projected revenue requirements. This gap is made up by a series of rate adjustments starting in FY 2020 that will result in increased revenue amounts as shown in the chart below. Changes in customers' actual bills may be higher or lower as a result of other rate adjustments explained on the following pages.

Cumulative Revenue Adjustments Over Five Years



Financial planning determined that the BWS could make its revenue requirements in FY2019 without adjusting rates. After that, gradually increased revenues would be required.



Important Decisions Were Made That Will Impact Future Revenue Requirements

The multiple studies and plans preceding the Rate Study identified a broad range of initiatives and projects. The water system needs are many, requiring important decisions that will impact future revenue requirements.

- To reduce the frequency of water main breaks, BWS is gradually ramping up pipeline replacement to replace 21 miles of pipe every year by 2028. Pipeline replacement will be the largest portion of BWS's infrastructure investment for years to come.
- Allotments for BWS's watershed management and conservation programs are targeted to each equal 4 percent of the annual infrastructure investment program budget.
- The number of pipes tested for leaks each year is increased from 18 percent to 25 percent, with additional planning to prioritize high-risk pipes.
- Financial policies were updated in 2017. They now include a working capital target of 180 days of annual operations and maintenance costs, with a minimum of 60 days. This means that sufficient money to run BWS operations for 180 days will be readily available for disaster and emergencies.

Step 2 Cost of Service

Cost of Service is Different for Each Customer Group

BWS took a close look at whether all customer classes were paying for the actual costs to serve them. Cost of service is the sum of all of the expenses to provide water – from constructing and maintaining the infrastructure, to reading meters, to the many vehicles necessary to answer calls across O'ahu, to efforts to protect the island's watersheds, and more. A cost of service analysis identifies what portion of these costs are incurred by each customer class and asks:

- Are all classes recovering close to 100 percent of what it costs to serve them?
- If not, what is causing the difference? Example causes include adoption of a new policy, greater rigor in addressing a guideline, serving community values, changes in customers water use, and securing better data.

BWS Customer Classes

Single-Family Residential
Customers with single-family and duplex homes.

Multi-Unit Residential
Customers with multi-unit residences such as triplexes, townhomes, condominiums and apartment buildings.

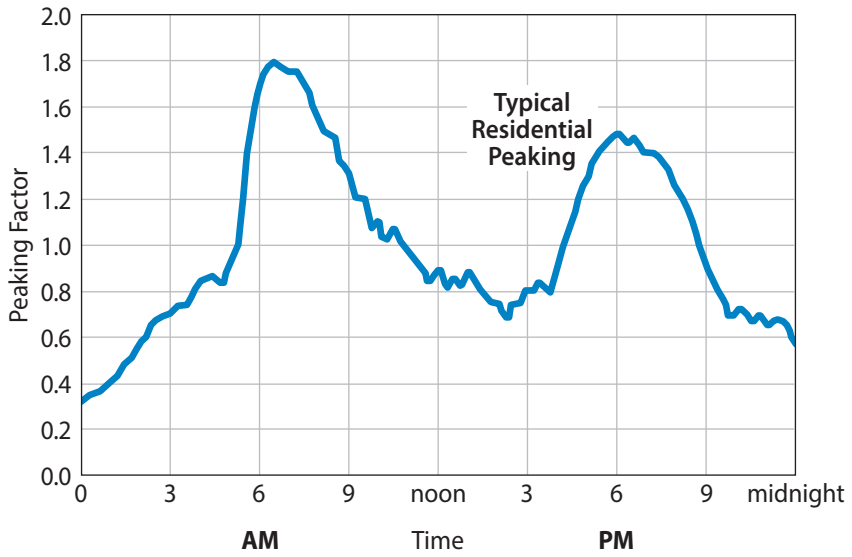
Non-Residential
Customers whose property is used for commercial, industrial, government, religious, schools, hotels, resorts, mixed commercial, and other non-residential purposes.

Agricultural
Customers whose primary property use is for commercial agriculture, livestock or dairy farming and who have been approved by BWS for agricultural rates.

Non-Potable Water/Recycled Water
Customers that use non-potable brackish water for irrigation and landscape watering. Customers who are served recycled wastewater for irrigation, or water that has undergone reverse osmosis.

Residential Customers Cost More to Serve

In part because of different water use patterns, the cost of service for BWS's customer classes are varied. The cost to deliver the same amount of water to residential customers is more than for most other customers. That is because more infrastructure and electricity are necessary to provide water during peak demand periods to serve residential customers in the morning and evening, which drives capital and operational costs higher.



People awaken in the early morning. As they shower, shave, make coffee, and otherwise prepare for the day, their aggregate water consumption sharply spikes around 6 am. A second peak is created when people return in the evening, start dinner, and get ready for bed. Non-residential customers tend to use water more evenly throughout the day. Residential customers create two predictable water use spikes each day.

Some Customers Pay More Than Their Costs

BWS's cost of service analysis for FY 2019 showed that different customer classes achieved vastly different levels of coverage for their cost of service.

Customer Class	Cost of Service	Revenue Under Existing Rates	Difference Between Cost of Service and Revenue
Single-Family	$107,400,900	$96,339,800	11%
Multi-Unit	$41,478,500	$45,083,400	(8%)
Non-Residential	$66,953,400	$80,586,200	(17%)
Agricultural	$3,900,600	$2,357,500	65%
Fire Service – Private	$678,500	$84,300	705%
Subtotal Potable	$220,411,800	$224,451,200	(2%)
Non-Potable	$2,008,500	$1,546,400	30%
Contractual			
RO	$4,956,400	$2,709,100	83%
R-1 (Golf)	$1,821,000	$534,200	241%
R-1 (Other)	$2,787,600	$2,698,400	3%
R-1 Total	$4,608,600	$3,232,600	43%
Ocean Cooling	$1,280,400	$1,326,600	(3%)
Total	**$233,265,800**	**$233,265,800**	**0%**

Intended and Unintended Subsidies

A subsidy occurs when some customers pay more to cover the costs to serve other customers who are paying less than the cost to serve them.

Some subsidies occur unintentionally as demand patterns of customer classes change or conservation practices are adopted.

Other subsidies are intentional, like the lower revenues collected from Agricultural customers and customers using recycled water. These intentional subsidies reflect community values or goals established by the BWS Board. Examples include supporting agricultural land use for local farm products, or using non-potable and recycled water resources where feasible to conserve potable water resources.

The results of the cost of service analysis showed which different customer classes are being subsidized by other classes and by how much. Based on these results and Stakeholder Advisory Group input, the BWS Board provided the following guidelines for adjusting water rates:

- Gradually increase revenues from single-family residential customers, to bring the class closer to full cost of service recovery by FY 2023.
- Incrementally decrease revenues collected from multi-unit residential customers to bring the class down closer to cost of service recovery.
- Maintain cost recovery for the agricultural customer class at existing levels.
- Increase non-potable, R-1 and RO water customer classes to get closer to cost of service recovery while maintaining some subsidization to continue to encourage use of these alternative water sources.

Stakeholder Advisory Group

A diverse Stakeholder Advisory Group engaged to help draft the Water Master Plan was carried into the rate setting process. BWS highly values the input and participation of this group, and believes it is an important component of sharing information with customers and stakeholders. Through the group's ongoing participation, BWS seeks to learn more about the water-related perspectives and concerns of varied constituencies. As BWS moved forward with framing rates, the advisory group played a pivotal role by providing recommendations on the best options to achieve the critical and delicate balance between water service adequacy, dependability, infrastructure costs, and rate affordability.

A Zero-Sum Exercise

Cost recovery is a zero-sum exercise. If the revenues generated by one customer class are not sufficient to cover its cost of service, then the revenues from other customer classes have to make up the difference.

The Stakeholder Advisory Group learned this through a zero-sum exercise, with charts and poker chips representing funds. Broken into three small groups, each group had to reach consensus on how much revenue should come from each customer class in comparison to its cost of service. The total cost of service had to be recovered. After much debate, each group reached consensus:

The consensus results:

- Agricultural customers should continue to be subsidized.
- Single-family residential customers should pay a larger share of their cost of service.
- Multi-unit residential customer class revenues should be lowered so the class is not recovering more than its cost of service.

Public Involvement in Rate Setting

One of the hallmarks of the BWS's rate setting process was the commitment to transparency, open public communications, and broad-based community engagement. Understanding the sensitivity of rate increases and benefits of keeping people informed, BWS reached out across the island to share results of the 2018 Rate Study, communicating proposed rates and the reasoning behind them. In total, these outreach efforts reached approximately 500,000 people.

Public outreach and engagement related to rates included:

- Four regional public hearings were held across O'ahu. All of the hearings were televised on Olelo, and the recorded videos were posted on the BWS website.
- Fifteen neighborhood board presentations were conducted, with more than 500 attendees.
- Ten interest group presentations were conducted with groups such as AARP, Chamber of Commerce Hawai'i, developers, farmers, golf course managers, Hawaiian Electric, and the Honolulu Board of Realtors.
- Six City Council briefings were held, including the Mayor's cabinet of top City leadership.
- A prominent section of the BWS website was dedicated to proposed rate changes and received over 20,000 page views.
- A special edition of *Water Matters*, the BWS customer newsletter, was distributed to all 170,000 account holders.
- Three articles in the local newspaper plus TV news coverage and social media posts.
- BWS staff participated in radio and TV interviews describing the proposed rates.
- Two surveys drew over 1,400 participants expressing their values and understanding of the new rates.

Step 3

Rate Design

Rates Adjusted to Implement the Water Master Plan

The new rates and rate structures adopted in 2018 are designed to produce sufficient increases in revenues over a five-year period, providing the additional funds needed to implement the Water Master Plan and sustain safe, dependable and affordable water resources on O'ahu. Due to changes in the rate structure to meet the Board's goals for cost of service recovery at the customer class level, the percent change in a bill for a given customer may not equal the annual revenue adjustment.

The new rates were designed with the following goals in mind:

- Increase investments in O'ahu's water infrastructure.
- Decrease the frequency of water main breaks.
- Encourage conservation.
- Provide funding for disaster recovery.
- Ensure that everyone pays more of their fair share of water service costs.
- Balance paying for infrastructure investments with a mix of cash, bonds, and low-interest loans to keep rates affordable.

Monthly Customer Charges

Based on meter size.

Meter Size	Adopted Monthly Customer Charge in $ / Month – Effective Dates				
	July 2018	July 2019	July 2020	July 2021	July 2022
5/8-inch or 3/4-inch*	$9.26	$10.42	$10.80	$11.38	$12.09
1-inch	$9.26	$13.31	$13.79	$14.45	$15.28
1-1/2-inch	$9.26	$15.23	$15.78	$16.50	$17.41
2-inch	$9.26	$38.81	$40.18	$41.61	$43.45
3-inch	$9.26	$47.95	$49.64	$51.35	$53.55
4-inch	$9.26	$91.74	$94.95	$97.98	$101.92
6-inch	$9.26	$163.91	$169.63	$174.84	$181.64
8-inch	$9.26	$250.03	$258.76	$266.57	$276.78
12-inch	$9.26	$541.31	$560.18	$576.78	$598.53

*** Typical for single-family residential customer.**

All BWS customers' bills will include a monthly Customer Charge based on meter size. This replaces the former flat fee of $9.26 per month, which does not recognize that larger meters cost more to install, maintain and replace. This change benefits customers with smaller meters. Ninety-one percent of BWS customers have 5/8-inch or 3/4-inch meters.

New Essential Needs Tier

The BWS has established a new water rate tier for the first 2,000 gallons of water used each month. This covers sufficient water to address essential uses for a household of 3, for example drinking, cooking, toilet, and showers. The intent is to help low-income and fixed-income customers to afford basic water needs. The Essential Needs tier prices water lower than the cost for BWS to provide it. All residential customers will receive the Essential Needs rate.

Use	Gallons	Unit	Daily Total (gallons per day/ per household)	Assumption	30-Day Month (gallons per month/ per household)
Dishwasher	4	per load	4	1 load per day	120
Shower	2	per minute	30	5 minute shower	900
Toilet	1.6	per flush	14.4	3 flushes per person	432
Drinking	1	per day	3	1 gallon per person per day	90
Cooking	1	per day	3	1 gallon per person per day	90
Clothes Washer	20	per load	10	1 load every other day	300
Total	—	—	64.4	—	1,932

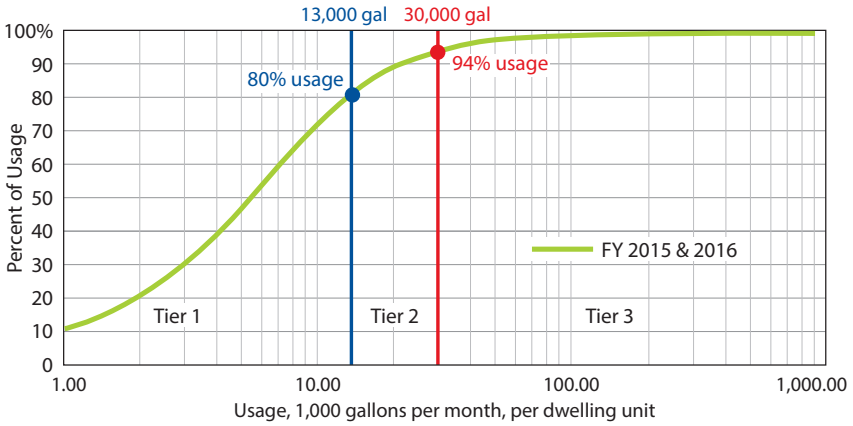
Adjusting Tiers to Meet Goals

Integral to the Rate Study, residential customer water usage was compared to the billing tiers to determine if water pricing was motivating water conservation, which was the intention. Single-family residential billing tiers as of July 2017 were:

- Tier 1 – up to 13,000 gallons per month.
- Tier 2 – 13,001 – 30,000 gallons per month.
- Tier 3 – more than 30,001 gallons per month.

About 80 percent of single-family residential customers were using 13,000 gallons per month or less; 94 percent used less than 30,000 gallons per month. With so much usage captured within the first and second tiers, it was clear that the BWS's rate structure was not encouraging conservation. This was also true of multi-unit residential customers. Adjustments to tiers were made to further encourage conservation while also consider affordability.

Single-Family Residential Usage Pattern



Quantity Charges

These charges are based on the amount of water used and increase with higher usage to better meet goals and match customer use patterns.

The BWS measures water consumption in thousands of gallons per month. BWS residential customers are split into single-family and multi-unit classes. Customers in BWS's single-family residential customer class have average monthly water consumption of about 9,000 gallons per dwelling unit, based on FY 2015 and FY 2016 data. The average billed water usage for a multi-unit residential customer is about 6,000 gallons per dwelling unit. Single-family customers' higher average usage results from higher levels of landscape irrigation and other outdoor uses.

Single-Family Residential Customers

Adopted Rates for Water Use

Rates are shown in $ / thousand gallons. Duplexes are considered single-family residential customers.

Tier	Prior		Tier	Adopted Rates/Effective Dates				
	Gallons/Month/Dwelling Unit	Rate		Gallons/Month/Dwelling Unit	July 2019	July 2020	July 2021	July 2022
1	0 to 13,000	$4.42	1: Essential Needs	0 to 2,000	$3.79	$3.91	$4.17	$4.46
			2	2,001 to 6,000	$4.46	$4.60	$4.90	$5.25
2	13,001 to 30,000	$5.33	3	6,001 to 30,000	$5.06	$5.20	$5.50	$5.85
3	More than 30,000	$7.94	4	More than 30,000	$8.46	$8.60	$8.90	$9.25

Multi-Unit Residential Customers

Adopted Rates for Water Use

Rates are shown in $ / thousand gallons. Multi-unit residential is considered as three dwelling units or more on the property. Water bills for multi-unit residential are typically charged to the property owner or manager, not to individual units.

Tier	Prior		Tier	Adopted Rates/Effective Dates				
	Gallons/Month/Dwelling Unit	Rate		Gallons/Month/Dwelling Unit	July 2019	July 2020	July 2021	July 2022
1	0 to 9,000	$4.42	1: Essential Needs	0 to 2,000	$3.70	$3.71	$3.72	$3.77
			2	2,001 to 4,000	$4.35	$4.36	$4.38	$4.43
2	9,001 to 22,000	$5.33	3	4,001 to 10,000	$4.95	$4.96	$4.98	$5.03
3	More than 22,000	$7.94	4	More than 10,000	$5.90	$5.91	$5.93	$5.98

Non-Residential Customers

Adopted Rates for Water Use

Rates are shown in $ / thousand gallons.

Prior Rate	Adopted Rates, Effective Dates			
	July 2019	July 2020	July 2021	July 2022
$4.96	$5.01	$5.06	$5.16	$5.27

The non-residential customer class includes a wide range of premise types, including government, hotels, religious, commercial, irrigation, and golf courses. Because the premises within this customer class are so diverse in terms of customer types, needs, and usage patterns, water is billed based on a uniform rate, regardless of the amount of usage. There are no rate tiers for this class. Commercial, government, and hotels together account for 80 percent of water consumed within the non-residential customer class.

Agricultural Customers

Adopted Rates for Water Use

Rates are shown in $ / thousand gallons.

Tier	Prior	
	Gallons/Month	Rate
1	—	—
	0 to 13,000	$4.42
2	More than 13,000	$1.89

Tier	Prior	Adopted Rates, Effective Dates			
	Gallons/Month	July 2019	July 2020	July 2021	July 2022
1: Essential Needs	0 to 2,000	$3.79	$3.91	$4.17	$4.46
2	2,001 to 6,000	$4.46	$4.60	$4.90	$5.25
3	More than 6,000	$1.95	$1.98	$2.05	$2.12

The BWS offers a subsidized agricultural customer class rate. Customers must qualify annually by applying to BWS and demonstrating participation in agriculture on a commercial basis. Customers within the agricultural class serve both their home and agricultural needs through one meter; thus, their water is billed under a declining block rate structure after the first two rate tiers. The first (Essential Needs) and second tier blocks and unit rates for agricultural are the same as for single-family residential customers. Use over 6,000 gallons is charged at a reduced rate for crop irrigation. This declining rate tier recognizes the benefits of on-island agriculture. Agricultural customers account for 1 percent of BWS revenues.

Non-Potable and Recycled Water Customers

Adopted Rates for Water Use

Rates are shown in $ / thousand gallons.

	Prior	Adopted Rates, Effective Dates			
		July 2019	July 2020	July 2021	July 2022
Non-Potable	$2.47	$2.53	$2.62	$2.75	$2.90
R-1 Recycled Water	—	—	—	—	—
Golf	Varies by Contract	$0.57	$0.59	$0.62	$0.65
Other		$1.84	$1.88	$1.92	$1.96
RO Recycled Water		$5.76	$5.88	$6.12	$6.36

The BWS offers non-potable water for irrigation and landscape watering, charged under a published rate. BWS also provides recycled R-1 (treated) and RO (demineralized) water charged under contracts. Up to 10 million gallons of R-1 water are available per day.

Subsidies are provided to these classes, as is a common practice in the water industry, to encourage the use of recycled water so that potable water remains available for those uses that require potable water quality. Subsidies for use of R-1 water on golf courses provide additional tangible benefits such as storm water retention.

The BWS provides RO demineralized recycled wastewater from the Honouliuli Water Reclamation Facility. Six electric power plants and oil refiners receive RO water under contracts.

Fire Meter Standby Charge

The Fire Meter Standby Charge for readiness to serve applies to services used exclusively for private fire protection. This includes automatic fire sprinkler services connected to alarm systems, fire hydrants, and wet stand pipes. Fire service charges will be billed a flat monthly charge based on the size of the service. Any misuse for other water use will be billed at twice the highest quantity charge in effect at that time.

Bill Examples

As word of rate changes were shared publicly and discussed openly, the predominant focus of questions and comments were based on individuals' desire to get an understanding of what this would mean for them. To provide a general sense of what to expect, BWS generated example future bills for four hypothetical single-family residential customers, providing estimates over the next 5 years.

Comparing Current and Proposed Water Bills for Single-Family Residential Customers

Ten percent of the Honolulu Board of Water Supply's single-family residential customers use 2,000 gallons of water per month or less per household. Half of the customers use 6,000 gallons or less, and the average customer uses about 9,000 gallons of water per month per household. About 3 percent of customers use more than 30,000 gallons of water per month.

Shown below are water bill cost comparisons for a **single-family household** under the new rate schedule.

Essential Needs Tier – Low Water User
Up to 2,000 gallons per month

Prior	Bill as Adopted			
	July 2019	July 2020	July 2021	July 2022
$18.10	$18.00	$18.62	$19.72	$21.01

Median Water User
Up to 6,000 gallons per month

Prior	Bill as Adopted			
	July 2019	July 2020	July 2021	July 2022
$35.78	$35.84	$37.02	$39.32	$42.01

Average Water User
Up to 9,000 gallons per month

Prior	Bill as Adopted			
	July 2019	July 2020	July 2021	July 2022
$49.04	$51.02	$52.62	$55.82	$59.56

High Water User
Over 35,000 gallons per month

Prior	Bill as Adopted			
	July 2019	July 2020	July 2021	July 2022
$197.03	$199.58	$204.82	$215.82	$228.66

Affordability

Water is a staple of life. Thus, careful consideration is provided should a customer be unable to cover a monthly water bill. Affordability programs differ among utilities, based on their goals, capacity, community values, and other organizational factors.

BWS Affordability Programs include:

- Zero-interest payment plans.
- Multiple steps and accommodations to avoid shut-off.
- An Essential Needs tier, with water priced below the cost for BWS to provide it.
- Bill adjustments for underground leaks (1x credit every 5 years).
- Referrals to community social service groups such as Helping Hands and Catholic Charities.
- Monthly billing, so individual bills tend to be smaller.
- An inclined block rate structure, so water conservation is rewarded with lower rates.
- Hookup fees waived for select affordable and homeless housing.

About the Cover

Pure Water – Man's Greatest Need, 1958 - Juliette May Frasier

A large, richly colored mural spans the walls behind the customer service counter in the lobby of the Board of Water Supply (BWS) Public Service Building. According to a pamphlet describing architectural and artistic features on the BWS Beretania campus, the mural depicts agricultural activities on O'ahu, from pre-contact to the 20th century. A section of the mural was selected to adorn the cover of this Rate Study Summary.

Juliette May Frasier was born in Honolulu in 1887. After graduating from Wellesley College with an arts degree, she returned to Hawai'i to teach art.

Board of Water Supply
City and County of Honolulu