



STRATEGIC PLAN FOR FISCAL YEARS  
— 2023-2027 —



Board of Water Supply



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## Introduction

On January 24, 2022, the Board of Water Supply (BWS) Board of Directors (Board) approved the BWS request to update a new 5-Year Strategic Plan for Fiscal Years 2023 – 2027. At the same meeting, the Board created a Permitted Interaction Group consisting of 3 Board members to assist the BWS Senior Management Team with the update of the Strategic Plan.

This project was a collaboration with the Board in their role of providing oversight and foresight into the direction of the BWS. Members of the Permitted Interaction Group and the BWS Senior Management Team participated in a series of facilitated workshops between March to May 2022, to review, reconfirm, and update the Vision, Mission, Shared Values, Sustainability Goals, and the Strategic Objectives, and develop Key Action Plans with Performance Metrics and Milestones for the BWS.

The intent of this Strategic Plan is to provide guidance on how BWS employees will focus their commitment to deliver safe, dependable, and affordable water, now and into the future. The Plan's timeframe is for Fiscal Years 2023 – 2027.

The Strategic Plan formalizes the BWS Vision, Mission, Shared Values, Sustainability Goals, Strategic Objectives, Key Action Plans, Performance Metrics, and Milestones.



## Letter from the Chair of the Board and the Manager and Chief Engineer

We, at the Honolulu Board of Water Supply, recognize and embrace our stewardship of Oahu's most precious resource – water. Our vision – Ka Wai Ola or Water for Life, captures the essence of our responsibility to the community to preserve and protect our water resources as well as our duty to provide water today and for generations to come.

The Board of Water Supply has adopted an updated five-year Strategic Plan to reaffirm our commitment to our mission of providing our Oahu water customers with safe, dependable, and affordable water now and into the future. The updated Strategic Plan reviewed and revised our three overarching Sustainability Goals – Resource Sustainability, Operational Sustainability and Financial Sustainability – and our key action plans to meet these goals.

Resource Sustainability addresses the need to protect, conserve, and manage Oahu's water resources and watersheds now and into the future through adaptive and integrated strategies. Operational Sustainability focuses on the need to manage and continuously refine an effective organization that can evolve and adapt its human and physical resources to provide dependable service. Financial Sustainability confirms the need to implement sound fiscal strategies to support our mission.

Our Strategic Plan expresses our Shared Values that guide our employees, teams and organization in how we work together to accomplish our mission. These values reflect and reinforce our

culture in our delivery of water service to our customers: 1) Respect and support each other, 2) Uphold our commitments, 3) Maintain trust through our relationships, 4) Invest in our staff, and 5) Embrace opportunities for innovation. Through our Shared Values, the Strategic Plan reinforces our all-encompassing responsibility as public servants to uphold the constitutional mandate of the Public Trust “...all public natural resources are held in trust by the State for the benefit of the people.”

A major consideration of the five-year Strategic Plan is how we answer the challenges of protecting all of our precious water resources in the face of continuing stresses from climate change, economic adversities, and more recently from petroleum contamination from the Red Hill Bulk Fuel Storage Facility while upholding our continued commitment to provide safe drinking water to our customers.

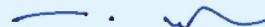
Providing Water for Life to the citizens of the City and County of Honolulu is a uniquely vital responsibility. With the adoption and publication of our Strategic Plan, we establish the direction for our organization going forward. We are committed to our mission, and we ask that you join us in creating a strong and lasting shared stewardship of Oahu's water resources.

*Mahalo,*

ERNEST Y. W. LAU, P.E.  
Manager and Chief Engineer



BRYAN P. ANDAYA  
Chair



## History of the Board of Water Supply

The Honolulu Board of Water Supply (BWS) was created in 1929. It was an action taken by the then-State Territorial Legislature in response to public outcry for a need for a truly effective water management system that was not influenced by politics.

In the previous years, droughts and the failure of the City Water Works Department to effectively manage uncontrolled drilling led to drastically decreasing aquifer levels and water shortages. Several important meetings were held in Honolulu during this time, with citizens, legislators, engineering experts, and water works officials all working together to solve the critical water problem.

Local citizens and experts alike recommended the establishment of a commission to manage the municipal water system. A prime consideration in the creation of this commission was to remove the operation and management of the waterworks from direct political influence and control. Both groups agreed that proper management of the water system would be most effectively accomplished through the establishment of an independent, non-political commission whose members would be responsible citizens serving overlapping terms to assure continuity.

The 1929 Legislature considered these recommendations and passed Act 96 that created and defined the powers and duties of the Honolulu BWS. With this Act, the Legislature took the control of water away from the City and turned it over to the newly-created, semi-autonomous City agency, the Honolulu BWS.

Although it remained with the City and County, it was designed to be semi-autonomous and self-supporting with the authority to charge for water usage to support its capital improvement and operating expenses and set long term plans for Oahu's water future.

Today, a seven-member Board of Directors (Board) presides over the agency and sets its policies. Five at-large members are nominated by the Mayor and approved by the City Council. Two serve as ex-officio members, the Director of the State Department of Transportation and the Chief Engineer of the City Department of Facility Maintenance.

This Board sets the policy of the BWS. It also appoints the Manager and Chief Engineer who is responsible for administering the BWS and its operation.

The monies collected from water usage are used to finance the BWS' operations and projects. The BWS does not receive nor request money collected from property or other City and County taxes or fees, or from the State, to manage and operate the water supply system.

Its semi-autonomous operations allow the BWS to continue to successfully fulfill its mission to provide Oahu water users with a safe, dependable, and affordable drinking water supply now and into the future.

## BWS Vision and Mission

### Ka Wai Ola - *Water for Life*

The vision of the BWS captures the critical need of water, which is the basis for life. With this vision comes the responsibility of the BWS's stewardship of, and the duty to manage, our natural water resources and watersheds for present and future generations.

The ancient Hawaiians valued water as one of nature's greatest gifts and they lived in harmony with water. Land Divisions (ahupua'a) mirrored the natural ecosystem - from the mountain top through upland forests to flatlands and the shore. Formal rules governed the use of water, and regulations were established and enforced over water use in upland areas so that a pure flow was always available to those who lived at lower elevations.



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

**SAFE** addresses the multiple areas of individual and community needs.

- Our water must meet all statutory and regulatory compliance standards in providing water for consumption and other uses.
- Our water must provide for public health and safety such as for firefighting and sanitation needs.

**DEPENDABLE** relies upon three factors:

- The source of our water must be sufficient and available now and into the future. The BWS ensures this through management of the watershed and groundwater supply, long-range planning, and possible development of alternative sources of water.
- A water system that is designed, constructed, and operated with system redundancy that continues delivery of water even with disruptions in the system.
- The employees of BWS who are committed to providing our customers with high quality water and excellent service.

**AFFORDABLE** water delivery that is safe and dependable is primary. We establish programs for efficiency in water use via conservation, infrastructure installation, and water system operations and maintenance. We continually implement changes to our systems to deliver water at the most responsible cost to the customer.

## BWS Shared Values

These values guide our employees, teams, and the organization in how we work together to accomplish our mission. The values reflect and reinforce our culture in our delivery of water service to our customers.

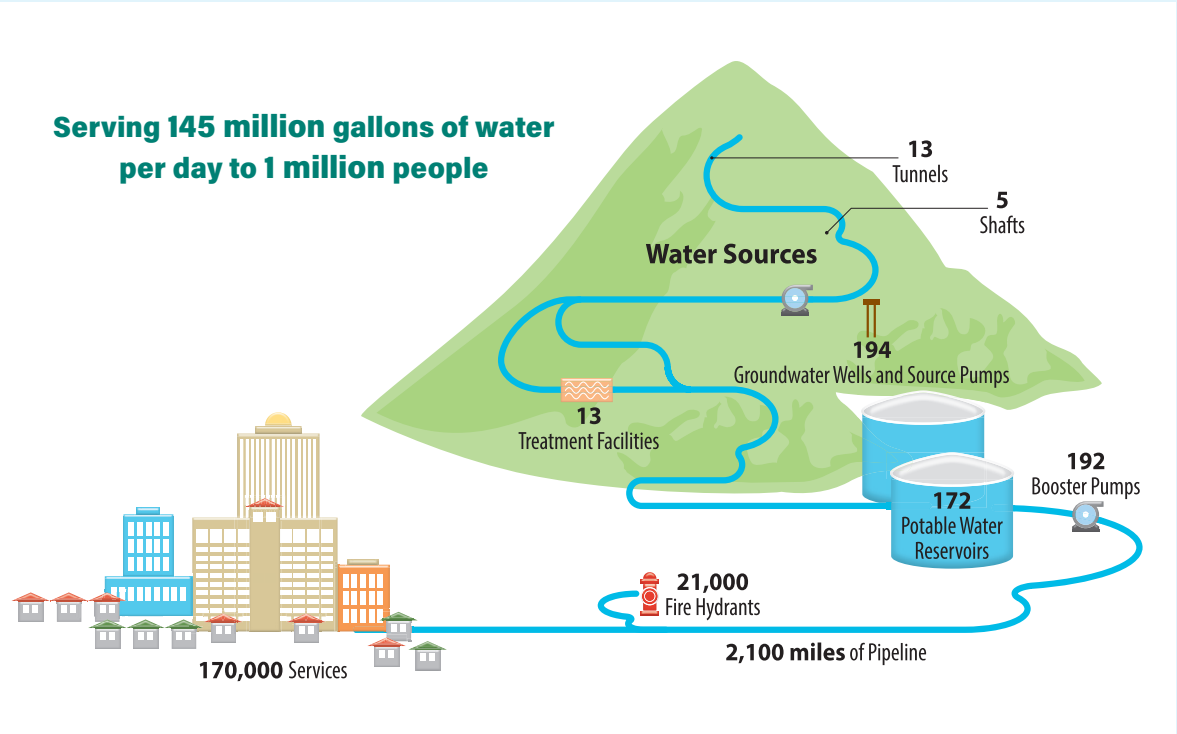
CATCH PHRASE "We..."	DESCRIPTION
...respect and support each other.	We depend upon and support each other and treat each other with dignity and respect.
...strive to uphold our commitments.	We honor our commitments and communicate effectively with colleagues, partners, and stakeholders, to bridge differences and accomplish our collective goals.
...maintain trust through our relationships.	We uphold the Public Trust* by participating in community partnerships, collaborating with community leaders and other public agencies, and being advocates of Oahu's water resources.
...invest in our staff.	We provide the necessary work environment, training, and tools for our staff to grow in the water utility business; and to complete their jobs safely, effectively and in support of our mission to provide safe, clean, affordable water.
...embrace opportunities for innovation.	We promote strategic innovation and new ideas in improving and maintaining our infrastructure to deliver water safely, reliably, and affordably to our customers.

\*Public Trust – Principle embedded in Hawaii Law that recognizes that water is held in trust by the State of Hawaii for present and future generations. Pursuant to the Hawaii State Constitution, Article XI, Section 1, "For the benefit of present and future generations, the State and its political subDivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including land, water, air, minerals, and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State. All public natural resources are held in trust by the State for the benefit of the people."



## BWS Water System

For decades, the BWS has built, operated, and maintained a complex infrastructure to provide safe, dependable, and affordable service to our customers.



Source: BWS Water Master Plan, adopted October 2016





## 6 Steps from Source to Tap

Six primary steps provide water from source to tap. These primary steps are managed and enabled on a daily basis through the water system infrastructure and workforce of the BWS.



1. Groundwater is O'ahu's only current supply source for potable water, coming from high quality, naturally filtered, reliable aquifer storage. The BWS manages **thousands acres of watershed area** on O'ahu to protect and preserve underlying water sources. Efforts to manage and protect the watersheds include limiting access and development, combatting invasive plants and animals, promoting healthy forests, and encouraging customer water conservation. The BWS also owns and maintains **5 dams or open reservoirs**, 4 of which currently provide flood control and the other storing non-potable water for irrigation.



2. Several approaches are used to capture groundwater. The BWS operates **194 groundwater wells**. Each well requires drilling into the ground, sometimes hundreds of feet below the surface. In addition, **5 water shafts** provide access to groundwater. Unlike wells that penetrate deeply with small-diameter holes, shafts are dug out of rock to reach groundwater. The BWS also maintains and operates **13 tunnels**, dug horizontally into the mountains to access stored groundwater.



3. The majority of the island's groundwater is exceptionally pure, requiring treatment only to assure it remains ready to drink as it travels through the distribution system that takes it from source to use. Some sources, particularly in Central O'ahu, require treatment primarily to address legacy agricultural contamination. The BWS operates **13 granular activated carbon facilities** to remove these contaminants. The BWS also operates the Honouliuli Water Recycling Facility that treats and supplies non-potable recycled water for industrial and irrigation uses.



4. Water sources on the island are sufficient, but are not always located where the supply is needed. Large transmission pipelines have been installed by the BWS to carry water from the source to the general area where it will be used. The **360 miles of transmission pipelines** vary from 16 to 42 inches in diameter. The BWS maintains **192 booster pumps** that keep the water moving through the piping system. This is in addition to **194 pumps, one at each well**.



5. Reservoirs (large covered tanks) have been built by the BWS at varied locations throughout the system to store water close to the point of use. The reservoirs store water for high demand periods and fire protection, and add dependability to the system. There are **172 potable water reservoirs** across O'ahu, together capable of storing about 196.5 million gallons. In addition, **7 non-potable reservoirs** can store approximately 15 million gallons of recycled or brackish water, used for irrigation or industrial purposes.



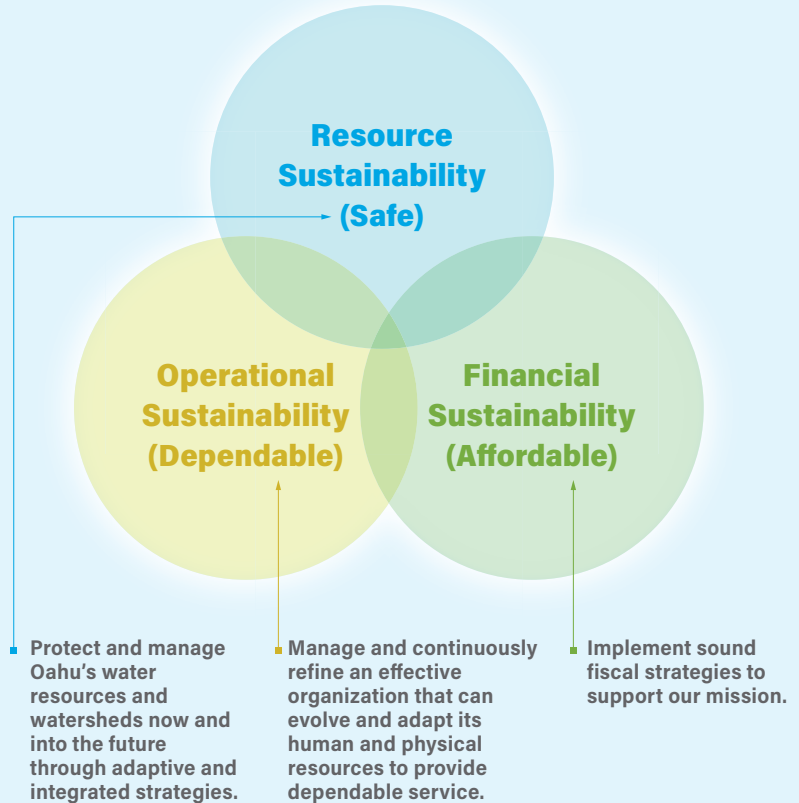
6. Once the water has been carried to the general area where it is needed, it moves into the distribution system to be delivered to its point of use through distribution pipelines that are less than 16 inches in diameter. In total, the BWS system includes **2,100 miles of pipeline**, necessary to serve water to nearly 1 million people across O'ahu through about **170,000 services**. The BWS's customers include residential, commercial, and industrial users. In addition to these potable water customers, the BWS serves non-potable water for use in golf course irrigation and industrial processes.



## BWS Sustainability Goals

For many years, BWS has communicated its efforts through three Sustainability Goals: Resource Sustainability, Operational Sustainability, and Financial Sustainability. These over-arching BWS goals create alignment with the Vision and Mission, program priorities, and action plans.

A major consideration of the five-year Strategic Plan is how we answer the challenges of protecting all of our precious water resources in the face of continuing stresses from climate change, economic adversities, and more recently from petroleum contamination from the Red Hill Bulk Fuel Storage Facility while upholding our continued commitment to provide safe drinking water to our customers.



## BWS Strategic Objectives

With the validation of the three Sustainability Goals, the Permitted Interaction Group and BWS Senior Management Team participated in facilitated virtual workshops to review the Strategic Objectives to support the three overarching Sustainability Goals.

Periodic progress reports to the Board and an annual review by the BWS Senior Management Team will ensure that BWS meets these Strategic Objectives to reaffirm their alignment to the BWS' Sustainability Goals.

SUSTAINABILITY GOALS	CATEGORY	STRATEGIC OBJECTIVE
Resource	Resource Sustainability	We will continuously adapt and implement resilient and sustainable solutions to mitigate climate and environmental changes to protect and manage Oahu's water resources and watersheds.
Resource	Water Quality	We will protect, preserve, and ensure the safety and quality of Oahu's water resources extending for at least seven generations.
Resource	Water Conservation	We will conserve Oahu's water resources, supply, and system capacity by reducing per capita demand and increasing water efficiency.
Resource	Resource Advocacy	We will lead, promote, and sustain partnerships with stakeholders to advocate and support community-driven initiatives to protect Oahu's water resources and watersheds.
Operational	Organizational Resiliency	We will ensure the necessary workforce, competencies, tools, and resources to support current and future needs.
Operational	Infrastructure	We will proactively assess and address water system risks and vulnerabilities to ensure water system adequacy, dependable service, and operational efficiency.
Operational	Customer Service	We will consistently provide dependable service and a quality experience in every customer interaction.
Operational	Technology	We will ensure that our technology systems are current, secure, and leveraged to effectively support current and future BWS needs.
Operational	Strengthen Operational Partnerships	We will proactively collaborate with external government and community decision-makers and stakeholders to ensure that there is a holistic approach to critical environmental and social issues; and in so doing, reinforce the utility as a valued and trustworthy partner.
Financial	Financial Opportunities	We will strategically pursue and leverage financial opportunities.
Financial	Financial Planning	We will develop and implement short-, mid- and long-term financial plans and policies.
Financial	Financial Accountability	We will be accountable and transparent to our stakeholders through responsible and effective financial management.



## BWS Key Action Plans, Performance Metrics, and Milestones

The following Key Action Plans, Performance Metrics, and Milestones help assess the progress of the BWS towards meeting the Sustainability Goals and Strategic Objectives identified in the Strategic Plan.

### RESOURCE SUSTAINABILITY GOAL

Protect and manage Oahu's water resources and watersheds now and into the future through adaptive and integrated strategies.

STRATEGIC OBJECTIVES	KEY ACTION PLANS	PERFORMANCE METRICS AND MILESTONES
<p><b>Resource Sustainability</b></p> <p>We will continuously adapt and implement resilient and sustainable solutions to mitigate climate and environmental changes to protect and manage Oahu's water resources and watersheds.</p>	<p>Complete the Kalaeloa seawater desalination plant - 1.7 MGD.</p> <hr/> <p>Appropriate up to 4% of annual Capital Improvement Program funding for watershed management and invasive species control.</p> <hr/> <p>Diversify alternative water supplies to reduce impacts on natural water resources.</p> <hr/> <p>Evaluate existing pumping operations to determine impacts to the aquifer and develop operational strategies and/or new sources to distribute source pumping.</p>	<ul style="list-style-type: none"> <li>• Complete procurement by Fiscal Year 2023.</li> <li>• Annual Board report on % project completion.</li> <li>• Estimated project completion by Fiscal Year 2025.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Annual Board report on actual removal of invasive plant species and protection measures for BWS priority watersheds.</li> <li>• Develop strategies by January 2023 to increase funding expenditures for watershed management.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Budget for construction East Kapolei 215 3.0 MG reservoir and connecting pipelines in FY 2024.</li> <li>• Initiate design of project for Kapolei Parkway 24" transmission main to Kapolei Business Park by FY 2024.</li> <li>• Support of gray/on-site water reuse initiatives and assist ENV on expanding R-1 reuse at WWTPs.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Annual Board report on impact of existing pumping on aquifers. (Energy costs for pumping, chloride/head levels, ability to fill reservoirs, operation within permitted use).</li> </ul>



## RESOURCE SUSTAINABILITY GOAL

Protect and manage Oahu's water resources and watersheds now and into the future through adaptive and integrated strategies.

STRATEGIC OBJECTIVES	KEY ACTION PLANS	PERFORMANCE METRICS AND MILESTONES
<p><b>Water Quality</b></p> <p>We will protect, preserve, and ensure the safety and quality of Oahu's water resources extending for at least seven generations.</p>	<p>Monitor the Red Hill groundwater contamination situation and take action to protect and preserve BWS wells near Red Hill fuel facility.</p>	<ul style="list-style-type: none"> <li>• Participate in DOH/EPA working group.</li> <li>• Install 4 or more sentinel/monitor wells in Halawa/Moanalua/Aiea areas by December 2026.</li> </ul>
<p><b>Water Conservation</b></p> <p>We will conserve Oahu's water resources, supply and system capacity by reducing per capita demand and increasing water use efficiency.</p>	<p>Reduce water loss by 2% in BWS water system.</p>	<ul style="list-style-type: none"> <li>• Calibrate largest source meters by 2027.</li> <li>• Continue leak detection and meter change out program (one cycle a year).</li> <li>• Complete AMR MXU change out program.</li> <li>• Continue replacement of priority pipelines to reduce main breaks and water loss.</li> <li>• Annual Board report on % non-revenue water loss.</li> </ul>
<p><b>Resource Advocacy</b></p> <p>We will lead, promote and sustain partnerships with stakeholders to advocate and support community-driven initiatives to protect Oahu's water resources and watersheds.</p>	<p>Lead and engage with stakeholders and the community on resource protection initiatives.</p>	<ul style="list-style-type: none"> <li>• Development of Initiatives (SWAP-Source Water Assessment Program/SWPP-Source Water Protection Program) including stakeholder outreach and develop SWPP plan by 2024.</li> </ul>



## BWS Key Action Plans, Performance Metrics, and Milestones (Cont.)

### OPERATIONAL SUSTAINABILITY GOAL

Manage and continuously refine an effective organization that can evolve and adapt its human and physical resources to provide dependable service.

STRATEGIC OBJECTIVES	KEY ACTION PLANS	PERFORMANCE METRICS AND MILESTONES
<p><b>Organizational Resiliency</b></p> <p>We will ensure the necessary workforce, competencies, tools and resources to support current and future needs.</p>	<p>Develop recruitment plan with metrics and implementation plan for Department by end of FY2023.</p> <hr/> <p>Create a Facility Maintenance Division (FMD)</p>	<ul style="list-style-type: none"> <li>• Determine a priority fill list for FY2023.</li> <li>• Recommend to the Board an acceptable vacancy rate based on historical data for approval by 2024.</li> <li>• Annual Board report on vacancy rate.</li> <hr/> <li>• Obtain approval from Manager to begin reorganization to create FMD by December 2022.</li> <li>• Gather data, complete analysis and submit justification memo to DHR by December 2023.</li> <li>• Create new FMD by 2027.</li> </ul>
<p><b>Infrastructure</b></p> <p>We will proactively assess and address water system risks and vulnerabilities to ensure water system adequacy, dependable service and operational efficiency.</p>	<p>Improve and maintain water infrastructure to ensure dependable service to our customers.</p>	<ul style="list-style-type: none"> <li>• Annual Board report on number of main breaks per 100 miles of pipe with target of 15 or less.</li> <li>• Annual Board report on number of leaks located and repaired per 100 miles with target of 30 or more.</li> <li>• Annual Board report on number of switchgears maintained at pump stations with target of 15 facilities or more.</li> </ul>
<p><b>Customer Service</b></p> <p>We will consistently provide dependable service and a quality experience in every customer interaction.</p>	<p>Continue to improve work processes, efficiencies and quality assurance program.</p>	<ul style="list-style-type: none"> <li>• All Divisions to submit a work process improvement plan and metric to measure success by December 2022.</li> <li>• Annual Board report on Resident Overall Satisfaction with BWS (%); survey taken every 2 years with target of 70% or more.</li> </ul>
<p><b>Technology</b></p> <p>We will ensure that our technology is current, secure, and leveraged to effectively support current and future BWS needs.</p>	<p>Update IT Strategic Plan</p>	<ul style="list-style-type: none"> <li>• Update plan by end of FY 2023.</li> <li>• Develop milestone for FY24-26 based on plan.</li> </ul>



## OPERATIONAL SUSTAINABILITY GOAL

Manage and continuously refine an effective organization that can evolve and adapt its human and physical resources to provide dependable service.

STRATEGIC OBJECTIVES	KEY ACTION PLANS	PERFORMANCE METRICS AND MILESTONES
<p><b>Strengthen Operational Partnerships</b></p> <p>We will proactively collaborate with external government and community decision-makers and stakeholders to ensure that there is a holistic approach to critical environmental and social issues; and in so doing, reinforce the utility as a valued and trustworthy partner.</p>	<p>Develop and adopt a plan to identify external public and private agencies with whom BWS should meet on an on-going basis (no less than annually) and assign a BWS Division or office to nurture each relationship by FY2025.</p>	<ul style="list-style-type: none"> <li>• Develop plan with Divisions/Staff Offices to determine public/private stakeholders by 12/31/2022.</li> <li>• Manager to assign various Divisions/Staff Offices to begin outreach with stakeholders in 2023.</li> </ul>

## FINANCIAL SUSTAINABILITY GOAL

Implement sound financial strategies to support our mission.

STRATEGIC OBJECTIVES	KEY ACTION PLANS	PERFORMANCE METRICS AND MILESTONES
<p><b>Financial Opportunities</b></p> <p>We will strategically pursue and leverage financial opportunities.</p>	<p>Effectively and strategically leverage debt and governmental funding for infrastructure investments.</p>	<ul style="list-style-type: none"> <li>• Sept 2022 - submit WIFIA Letter of Interest.</li> <li>• Jan 2024 - submit WIFIA application (if 2022 LOI is selected).</li> <li>• Submission of grant and funding applications as they become available, e.g. USBR grant, American Rescue Plan Act projects.</li> <li>• May annually - submit projects eligible for SRF Intended Use Plan.</li> <li>• Annual Board report on outstanding debt.</li> </ul>
<p><b>Financial Planning</b></p> <p>We will develop and implement short-, mid-, and long-term financial policies and plans.</p>	<p>Complete the cost-of-service study and water rate plan and update the financial model.</p>	<ul style="list-style-type: none"> <li>• Sept 2022 - complete the financial model tool.</li> <li>• Oct 2022 - begin community and government outreach.</li> <li>• Dec 2022 - complete revised water rates.</li> <li>• Oct 2023 - issue final report.</li> <li>• Jan 2024 - new water rates become effective.</li> </ul>
<p><b>Financial Accountability</b></p> <p>We will be accountable and transparent to our stakeholders through responsible and effective financial management.</p>	<p>Maintain and/or exceed current bond rating.</p>	<p>Annual Board report on bond ratings: AA+ - Fitch   Aa2 - Moody's   AAA - S &amp; P</p>



# KA WAI OLA

— WATER FOR LIFE —



**Board of  
Water Supply**

[www.boardofwatersupply.com](http://www.boardofwatersupply.com)

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