

## Ka Wai Ola - Water For Life

**WATER IS ESSENTIAL FOR LIFE.** The BWS is committed to providing the people of O'ahu with safe, dependable and affordable water now and into the future. To ensure we continue to do so efficiently and effectively, one of the BWS's key initiatives is a Water Master Plan. A Water Master Plan is a comprehensive program that looks ahead 30 years, evaluates the entire water system, identifies necessary improvements, and balances needs and costs of providing water to our residents and visitors.

**O'AHU'S WATER SYSTEM IS MASSIVE. EACH AND EVERY DAY,** the BWS pumps an average of 145 million gallons of water and maintains infrastructure including 2,100 miles of pipes, 90 booster pump stations, 94 water sources (wells, tunnels and shafts) and 171 water storage reservoirs.

**UNDERGROUND OR OTHERWISE OUT OF SIGHT** for the most part, this water infrastructure is subjected to ongoing wear from the island's volcanic soils, earth movement, ground settling, weather, natural corrosion and the flow of water through it. Water main breaks are perhaps the most prominent signs of wear, but there is much more going on that is not evident day-to-day.

**THE BWS IS INVESTING IN IMPROVEMENTS** to protect and maintain the water system. These investments of the people's money are helping us continue to capture, treat, store, move and sustain water for all of us on O'ahu, now and for future generations.

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



**WATER FOR LIFE  
KA WAI OLA**



# About the Water Master Plan



## How the Water Master Plan Will Benefit O'ahu

The Water Master Plan will provide an updated, comprehensive understanding of O'ahu's water supplies, water needs and the water system. This holistic picture will give the Honolulu Board of Water Supply (the BWS) the opportunity to identify cost efficiencies by changing the timing, location or scope of projects, or by refining operations or maintenance activities. It will also allow us to:

- ▶ Increase reliability for residents, businesses and visitors, so that the water is available when and where it is needed
- ▶ Proactively care for our water quality and delivery infrastructure, and reduce costly emergency repairs
- ▶ Prioritize investment of limited resources in infrastructure based on benefit and risk
- ▶ Spread investments and rate changes over time
- ▶ Avoid unneeded replacement by physically assessing the condition of infrastructure, rather than relying on assumptions
- ▶ Improve design, construction and maintenance practices so that infrastructure lasts longer

The earlier problems are identified and corrected, the greater our ability to keep rates affordable. The thoughtful, proactive investment in infrastructure and maintenance of the water system supports the ability to better control rates over the long run. This, in turn, supports the BWS's commitment to continue providing safe, dependable and affordable water to all of its customers, now and in the future.



Crew from the BWS repairs a broken water main

## The Purpose of a Water Master Plan

A Water Master Plan is a comprehensive program that evaluates the entire water system, identifies necessary improvements and balances needs and costs to provide safe, dependable and affordable water. Water Master Plans are a best practice of water utilities seeking to ensure stewardship of water supplies and infrastructure, which are necessary to sustain safe, dependable and affordable water for customers. The Water Master Plan will provide vital information for policymakers to make decisions about how to balance the cost of infrastructure improvements with the risks to your water service dependability.



A computer model makes it possible to analyze the BWS's water system under both existing and future conditions

## Water Master Planning for O'ahu

Over the past few years, O'ahu has experienced water main breaks requiring emergency repairs at all hours of the day and night. Such breaks disrupt our community and are very expensive, with added crews putting in time to make repairs and restore service. Similarly, water storage tanks, pumps and other facilities are showing signs of wear and tear, passing their useful lives and sometimes failing outright. While the consequences may be less apparent than water main breaks in the street, they are no less serious.

Historically, the BWS has managed and improved the island's vast water system based on the experience of our water operators, maintenance professionals and engineers. Emerging technology provides us new methods of investigation and analysis. As stewards of O'ahu's precious water supply, the BWS is developing the Water Master Plan using these state-of-the-art methods, which will enable us to make decisions with greater accuracy and efficiency.

Financial analysis will help us determine the most effective and efficient approach to pay for those projects. This detailed financial plan will enable us to allocate our rate payers' money wisely to ensure that affordable water rates can sustain the long-term needs of the water system and allow the BWS to continue to dependably deliver this precious resource to the people of O'ahu.

## The Water Master Plan Sets the Stage for Water System Investments

Water master planning is a complex, time-consuming process, consisting of multiple steps and coordination among a team of diverse professionals. Together, they work through extensive research and analysis, arriving at conclusions that then are applied to set plans over the next 30 years. These steps include efforts to:

