



Water Master Plan Quarterly Update

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



Board of Water Supply
City and County of Honolulu

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It's Official!

The BWS Board unanimously adopted the Water Master Plan (WMP) in October, with Board Chair Bryan Andaya declaring it as one of the most significant, symbolic, and meaningful plans for our organization over the next decade. Board member Kapua Sproat voiced appreciation to the WMP team for a job exceedingly well done and expressed hopes other City and County departments will be inspired to invest the resources and time to develop similarly robust master plans.

BWS Manager Ernest Lau gave Board members an overview of the plan's intent and development process, after which Barry Usagawa delivered a detailed presentation about its contents and future application. Helen Nakano, representing the community organization Mālama Mānoa, told the Board about her positive experience as a member of the BWS Stakeholder Advisory Group and emphasized

the importance of community involvement in this plan. "It was a brilliant idea to have a group like this, engaging us and making us feel important enough that our opinions were really being considered."

The WMP is now BWS policy guiding investment in sustainability initiatives such as watershed management and water conservation, and the development of the BWS Capital Improvement Program (CIP) into the future. 💧



The Water Master Plan was adopted by the Board at Bryan Andaya's first meeting as BWS Board Chair. Shown above, starting on the left are Kay Matsui, Ross Sasamura, Bryan Andaya, Ford Fuchigami, Kapua Sproat, David Hulihee, and Ernest Lau. Not shown in this photo is Adam Wong.

Hearing From Our Community

Many community members took the time to review and comment on the Draft WMP, and BWS was pleased to take their input into consideration.

The public review process included:

60 day review period (expanded from 45 in response to stakeholders' recommendations)

106 individual comments

45 community members and organizations represented

100 percent of comments responded to by BWS

7 key themes:

- ◆ Compliments for Water Master Plan
- ◆ Do more to: capture storm water, limit hardscape, reduce main breaks, focus on Red Hill, address recycled water, protect watersheds
- ◆ Water is limited so development should be limited
- ◆ Mandate methods for water conservation
- ◆ Enhance emergency power and renewable energy options
- ◆ Provide enough water for agriculture
- ◆ Costs – support, as well as concern, for paying more

3 of the many compliments received:

"... we now feel very committed to spreading the word about the Water Master Plan. Congratulations BWS."

"This type of information shows BWS is committed to do the right things."

"... the overall results are credible. The pipeline breakage analysis is a breakthrough... Way to go BWS!"

Building Upon the Water Master Plan

With the Water Master Plan (WMP) adopted, the BWS is working to determine the best options to fund the infrastructure renewal and replacement (R&R) and capacity expansion that are recommended in the WMP.

Differing from most other City and County of Honolulu government agencies, the BWS is self-funded, and supported nearly exclusively by customer rates. Given the many variables that contribute to the cost of water delivery, it is no simple task to analyze and plan for future water rates. The process begins with creating a strong Long-Term Financial Plan, which provides the foundation for a sound water rate-making process.

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Steps for Successful Rate-Making



The process starts with determining **revenue requirements**, in short: **How much money is needed?** Our current budget for Fiscal Year (FY) 2017 is about \$285 million. But how do we determine future revenue requirements? That's accomplished through a Long-Term

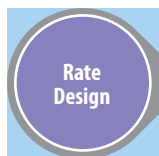
Financial Plan that explores and anticipates multiple details including: water sales, operations and maintenance, trends and risks, capital projects, and reserves.



Cost of service is the next consideration, rooted in the reality that the cost to provide water varies for each of the four types of BWS customer: single family residential, multi-family residential, non-residential, and agricultural.

The cost to deliver the same unit of water to

residential customers is significantly more than for most other customers. More infrastructure and electricity are necessary to provide water during peak demands in the morning (as people prepare for work) and late afternoon/evening (when residents prepare and clean up from dinner, then wash up for the night).



Rate design is the third step. This begins by establishing rate objectives, a process that will heavily involve the Stakeholder Advisory Group. Examples of rate objectives are that rates are easy to understand and administer, encourage efficient water use

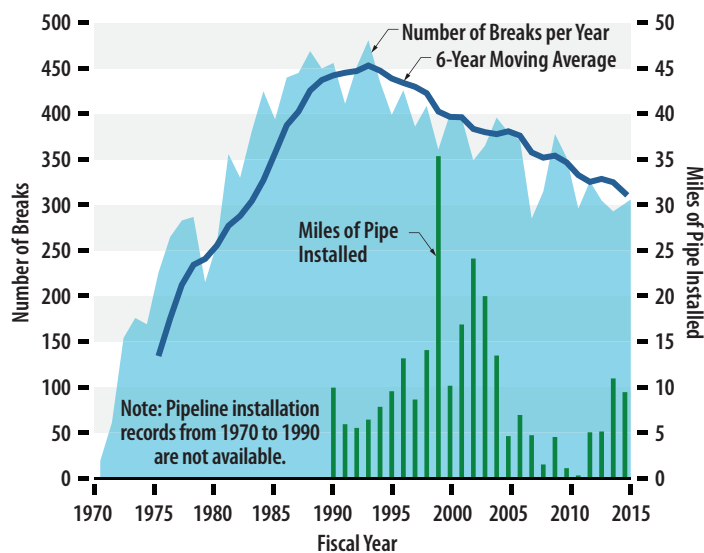
and conservation, and ensure affordability for those who are economically disadvantaged.

The Stakeholder Advisory Group will look not only at the rate objectives, but also at different approaches to structure rates so that they reflect community values and generate sufficient revenue. As the new water rates are crafted, we will inform people across O'ahu through an extensive public outreach program. Public comments and recommendations will be taken into account before our Board's anticipated consideration of new water rates in mid 2018.

Addressing Main Breaks in the 30-Year CIP

The BWS is now developing a 30-Year Capital Improvement Plan (CIP) that documents and prioritizes hundreds of projects that will be needed over the next few decades. The Water Master Plan (WMP) recommends that for the near-term, the CIP will continue to be funded at \$80 million per year. This investment level is adequate to address high priority water system infrastructure projects over a 10-year window, with the exception of pipelines. Only a portion of high-risk pipelines can be addressed at this funding level.

Prioritizing the renewal and replacement of existing pipelines is based on a risk analysis of all 2,100 miles currently in the ground. (Risk = likelihood of failure and consequences of failure.) The CIP will schedule replacement of higher risk pipelines earlier on, but — How many and how quickly will be enough to satisfy customers? Should we increase the CIP budget to replace more of the high-risk pipes, sooner? How much more staffing resources are necessary to support a higher CIP budget?



The good news is that the number of main breaks has decreased over the past two decades.

Right now, our system experiences main breaks at about the national average of 30 breaks and leaks per 100 hundred miles of pipe. This reflects our work dedicated towards replacing pipelines and making significant changes to how we operate our system over the last few decades. However, the number of breaks could climb back up as the system ages.

As we develop the 30-Year CIP and the related Financial Plan, we will explore the key question of how much funding is necessary to sustain different components of the water system and adequately address the issue of main breaks.

We are currently working with the Stakeholder Advisory Group to explore a range of possible future scenarios, especially for pipeline renewal and replacement.

One end of the spectrum is to maintain the status quo and delay the increase of pipeline replacements to future generations. At the other end of the spectrum, we could rapidly increase pipeline replacement to more than four times the current rate, investing more money now to replace the high-risk pipes sooner, with the goal of reducing water main breaks significantly.

We are taking time to carefully explore the related issues, questions, and potential scenarios as we develop our Long-Term Financial Plan.



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