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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Completing an Important Financial Planning Step

On May 8, our Board unanimously voted approval of updated financial policies for BWS, enacting a key component of the 30-Year Financial Plan, which will support implementation of the comprehensive Water Master Plan (WMP) adopted in October 2016.

Strong Financial Policies . . .

- Support the basis for our 30-year Financial Plan and Rate Study
- Position the BWS to maintain high bond ratings that allow us to borrow at lower rates
- Provide a cushion for rate stabilization, enabling customers to better plan for bill payments
- Ensure sufficient cash to address damage from serious emergencies, like hurricanes

The importance of financial planning is recognized throughout the water industry as well as by bond-rating agencies. The BWS financial policies define the permitted uses of funds; their limits; as well as principles for financial planning and management. Topics of these policies focus on the amount of cash on hand, when and why to borrow, how much can be borrowed, and the ability to make loan payments.

BWS Manager Ernest Lau presented our updated Financial Policies to the BWS Board.

In developing the updated financial policies, BWS staff conducted a detailed review of the needs of the BWS as we implement the WMP. They examined trends and risks, and considered the policies of other similarly sized and managed water utilities across the nation.

The BWS Stakeholder Advisory Group assisted in framing the updated financial policies. These community leaders who represent diverse constituencies spent time at multiple meetings to consider the benefits and possible drawbacks of draft policies, enhancing the final recommendation to the BWS board. BWS Manager Ernest Lau complimented the Group, saying "Your input, your participation in this stakeholder group is invaluable to the Board of Water Supply and to our customers, the community of Honolulu, and Oahu".

Planning for Rough Times

Considerable time and attention went into crafting the financial policy for Working Capital, which sets the level of cash on hand to cover expenses and continue service following unforeseen events, including natural disasters. The updated financial policy establishes a target of 180 days Working Capital, to be reached gradually over 10 years. In effect, this is an emergency fund that is invested, but can be readily accessed when needed. The policy reflects input from the Stakeholder Advisory Group, primarily focused on Oahu's remote location and limited accessibility, combined with research on the history of major disasters in Hawaii and assessment of how other water agencies have addressed similar events.

How Low Should We Go?

Modeling Pipeline Replacement Shows Options to Reduce Main Breaks

How many miles of pipeline should be replaced annually to manage the number of main breaks and keep water rates affordable? The question seems simple enough but the answer is actually quite complex. The smart choice will support the needs of the water system and effectively manage main breaks. The workload to build those miles of pipelines must also be achievable. Equally important, the decision about miles of pipeline replacement will have the most impact to BWS' overall budget, so cost must be considered.

In recent years, BWS has been replacing about 6 miles of pipes. Based on guidance from the Water Master Plan (WMP), the American Water Works Association (AWWA), and analyses of main-breaks and pipe-age, pipeline replacement needs to increase to about 1% of the 2,100-mile system (21 miles annually). But, in what time frame, at what cost, and at what impacts to the community? This summer, the BWS will use the results of ground-breaking computer modeling to help make critical decisions about how low we should go in reducing the number of main breaks.

The main break computer model:

- Helps explain how replacing pipelines at different rates (miles per year) would change the frequency of main breaks.
- Utilizes BWS's own data that is specific to Oahu rather than industry-estimated design factors.
- Forecasts the expected number of main breaks for various pipeline replacement planning scenarios.

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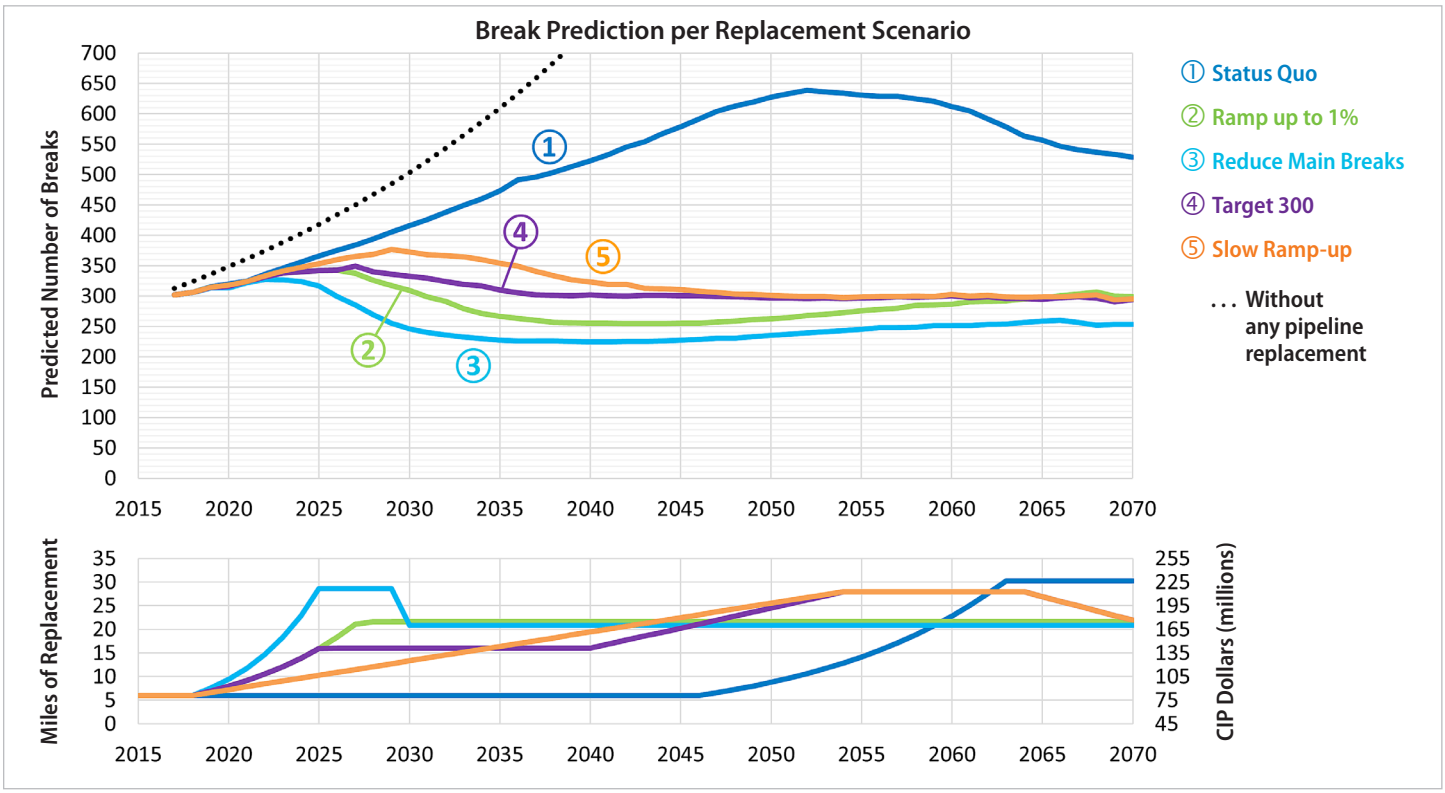
The main-break model analyzed several different scenarios reflecting different timeframes to ramp up the pace of work to replace all 2,100 miles of BWS pipelines over the next century. Computer predictions are shown in the charts below.



Main Break Study Findings Help Determine "How Low We Could Go"

BWS main breaks are about the same as the national average, but according to the Main Break analysis, they can be expected to increase if we continue pipeline replacement at the current rate. BWS employees have worked hard to get the number of main breaks down to around 300 per year. Allowing this number to dramatically increase would be unacceptable to our customers and the BWS.

No matter what time frame (or scenario) is implemented, our water system will continue to serve our customers. What matters most in reducing main breaks is WHEN pipes are replaced. The study shows that the number of breaks is lower when more pipes are replaced early on.

The Stakeholder Advisory Group is currently discussing the pros and cons of the five scenarios described to the right and shown in the chart above. A recommended scenario or combination is expected to be provided to the BWS Board this summer.

SCENARIO	FIVE ALTERNATIVE SCENARIOS	THE NUMBERS TELL THE STORY	
1	**Status Quo** would continue the current level of **6 miles of** pipeline replacement per year for 30 years, and then ramp up to replace the entire system within the 100-year planning horizon.	600 **DELAYED** ramp up	The number of water main breaks would double (from a little over **300 today to more than 600 per year) by 2050**.
2	**Ramp up to 1% (21+ miles)** of pipeline replacement per year. Ramp up would occur over 10 years.	250 **MODERATE** ramp up	The number of breaks would rise initially and then decrease to about **250 per year by 2040**.
3	**Reduce Main Breaks** sooner by aggressively replacing a large number of pipes early on, including those ranked as high priority in the Water Master Plan.	225 **FAST** ramp up	The number of breaks would rise at first and then drop to about **225 per year by 2040**.
4	**Target 300** Main Breaks steadily replacing pipelines to maintain the current break rate.	300 **MODERATE** ramp up	The number of breaks hold steady around **300 per year**.
5	**Slow Ramp Up** from 6 to 21 miles of pipeline replacement per year. The ramp up would be done over 30 years — a slow, steady, and consistent increase in replacing pipelines.	300 **MODERATE** ramp up	The number of breaks would rise to around **375 per year by 2030**, and then drop back down to around **300 per year**, same as today's break rate.

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