



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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Supply and Demand and the Board of Water Supply's Water Master Plan

The Water Master Plan (WMP) is being developed to help the Board of Water Supply (BWS) meet long-range water needs on O'ahu. Supply and demand are among the most important and complex pieces of the plan; they establish a foundation for making big decisions about O'ahu's water future.

There's sufficient water (supply) to meet the needs (demand) of O'ahu's population today, especially with our Watershed Management and Conservation Programs. Looking 20 to 30 years into the future, there are many challenges and uncertainties to consider, for example:

- ▶ Will enough water be available where O'ahu's population is moving and growing?
- ▶ How do we prepare for planned growth like Transit-Oriented Development?
- ▶ What if people don't continue to conserve as much as they do today?
- ▶ How does Hawai'i's changing climate factor into water supply and demand?

To answer these questions and many more, the WMP technical team has pored through decades of BWS records including field monitoring and water use; reviewed island-wide plans, including the General Plan and land-use plans; tested hundreds of variables and scenarios using computer models developed for the BWS system; conducted pilot tests; and studied a wide range of research related to water supply and demand.

Every division of the BWS has contributed to what we know today about supply and demand on O'ahu.



Barry Usagawa, Water Resources Program Administrator, presents Supply and Demand information to the BWS's Stakeholder Advisory Group.

The Draft Water Master Plan is approximately 80% complete! It will be followed by a Financial Analysis and Water Rate Study.

What the Numbers Tell Us

944,000 — Current population served by the BWS; **1,055,000** projected population the BWS will serve by 2040

145 mgd (million gallons per day) — Current total water demand of BWS customers

153 mgd — Most probable future water demand by 2040 (assumes continued increases in conservation)

166 mgd — Projected high-range future water demand (assumes conservation levels off)

407 mgd — Sustainable yield of O'ahu's aquifers; **192 mgd** — permitted use by the BWS

The Bottom Line of Supply and Demand

Throughout O'ahu, overall, there should be enough supply to meet the most probable future water demands in 2040 – as long as:

- ▶ People continue to increasingly conserve water like they do today.
- ▶ Demand to serve the planned Transit-Oriented Developments does not outpace projections.
- ▶ Drought and climate change impacts are no greater than anticipated in the WMP. Hawai'i's climate is already changing:
 - Rainfall and stream discharge have decreased.
 - Dry areas will get drier.
 - Air temperature and rainstorm intensity are increasing.
 - Sea level and surface temperature are rising.
 - The ocean has grown more acidic.

The BWS will apply our Planning Principles to balance supply and demand. We will:

- ▶ Operate within sustainable yields.
- ▶ Move water to where it is needed and take only what is necessary while doing no harm.
- ▶ Develop new groundwater sources for growth and reliability.
- ▶ Plan sufficient water for agriculture.
- ▶ Diversify supply to address uncertainties, like climate change, level of conservation, and future development.

The BWS will be diligent about following our Planning Principles and will continue building programs to conserve water and develop new supplies for the future.

Our Stakeholder Advisory Group

The Board of Water Supply's Stakeholder Advisory Group is working hard to help us shape a Water Master Plan that will be accepted by our customers, ensure the health of our island's water future, and keep rates affordable.

In the first five Stakeholder Advisory Group meetings, we presented important topics related to our water system, to help build the stakeholders' understanding of the magnitude and complexity of O'ahu's water system and to help us understand their priorities.

The BWS's Stakeholder Advisory Group



The Stakeholder Advisory Group is made up of leaders of the community who represent diverse interests.

Eric Au

Sheraton - Waikiki

Jackie Boland

AARP Hawai'i

Pono Chong

Chamber of Commerce Hawai'i

Bill Clark

Resident of Council District 6

Richard Dahl

James Campbell Company, LLC

Mark Fox

The Nature Conservancy of Hawai'i

Gregg Fraser

Hawai'i Restaurant Association

Neil Hannahs

Kamehameha Schools

Rick Hobson

Building Industry Association of Hawai'i

Shari Ishikawa

Hawaiian Electric Co.

Micah A. Kāne

Hawai'i Community Foundation

Will Kane

Millilani Town Association

Ralph Mesick

First Hawaiian Bank

Helen Nakano

Resident of Council District 5

Robbie Nicholas

Resident of Council District 3

Dean Okimoto

Nalo Farms Inc.

Alison Omura

Coca-Cola Bottling Co.

Kathleen Pahinui

Resident of Council District 2

Dick Poirier

Resident of Council District 9

Elizabeth Reilly

Resident of Council District 4

John Reppun

Kualoa-He'eia Ecumenical Youth (KEY) Project

Cynthia Rezentes

Resident of Council District 1

Francois Rogers

Blue Planet Foundation

Josh Stanbro

Hawai'i Community Foundation

Cruz J. Vina Jr.

Resident of Council District 8

Christopher Wong

Resident of Council District 7

Lee Yamamoto

Marine Corps Base Hawai'i

Suzanne Young

Honolulu Board of Realtors

Presentations and Discussions Have Included:

- ▶ Overview of the BWS and Our Water System
- ▶ Introduction to the Water Master Plan
- ▶ Top Priorities of the Stakeholder Advisory Group
- ▶ Objectives of the Water Master Plan
- ▶ Updates on Red Hill
- ▶ Update One Year After the City Audit
- ▶ Findings of the Customer Satisfaction Survey and Focus Groups
- ▶ Stakeholder Input to the Water Master Plan
- ▶ Water Supply and Demand
- ▶ BWS's Water Conservation Program
- ▶ Water Quality and Treatment
- ▶ Condition Assessment of the BWS Reservoirs
- ▶ The Hawai'i Community Foundation "Freshwater Initiative, A Blueprint for Action"

Stakeholders will take this information into account as they advise on how to best implement the WMP, the BWS's rate structure, and other important decisions that the BWS must make to be certain the plan is well-rounded and remains relevant 30 years from now.

We are learning from these community leaders, as they have provided the planning team with valuable input on all of the topics presented. They are already making a significant impact: two chapters are being added to the WMP — Sustainable Water Management and Implementation — as an outcome of their advice. They also developed overarching objectives for the WMP, and provided extensive input about conservation strategies and the BWS's role in implementing the Freshwater Initiative.

Information Developed for Stakeholders Shared with Employees and Customers

Information discussed with the Stakeholder Advisory Group is available to employees and BWS customers.

- ▶ Stakeholder Advisory Group meetings are open to the public and agendas are posted a week in advance on the BWS website, in accordance with the Hawai'i Sunshine Law.
- ▶ You can access the presentations and public handouts online at <http://www.boardofwatersupply.com/cssweb/display.cfm?sid=125077>



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