



Honolulu Board of Water Supply
Stakeholder Advisory Group Meeting 52
Thursday, October 17, 2024, 4:00 – 6:00 pm
Blaisdell Center – Hawaii Suite

Meeting Notes

PURPOSE AND ORGANIZATION OF MEETING NOTES

The purpose of these notes is to provide an overview of the Board of Water Supply (BWS) Stakeholder Advisory Group meeting. They are not intended as a transcript or as minutes. Major points of the presentations are summarized herein, primarily for context. Copies of presentation materials were provided to all participants and are available on the BWS website. Participants made many comments and asked many questions during the meeting. These are paraphrased to be more concise.

ATTENDEES

This was an in-person meeting in which 12 stakeholders participated, in addition to BWS staff, consultants and members of the public. The stakeholders represent diverse interests and communities island wide.

The following Stakeholders Advisory Group members attended:

- | | |
|-------------------|--------------------------------|
| Bill Clark | Resident of Council District 6 |
| Will Kane | Mililani Town Association |
| Brady Jencks | Resident of Council District 7 |
| Bob Leinau | Resident of Council District 2 |
| Calvin Mann | Kamehameha Schools |
| Helen Nakano | Resident of Council District 5 |
| Dana Okano | Hawaii Community Foundation |
| Elizabeth Reilly | Resident of Council District 4 |
| Cynthia Rezentes | Resident of Council District 1 |
| Alison Richardson | Coca-Cola Co. |
| Wayne Tanaka | Sierra Club |
| Suzanne Young | Honolulu Board of Realtors |

WELCOME

Facilitator Dave Ebersold welcomed everyone to the 52nd meeting of the BWS Stakeholder Advisory Group. Dave introduced the newest stakeholder, Brady Jencks, representing District 7 of the City and County of Honolulu. Brady shared his enthusiasm for joining the group and expressed his excitement about contributing to the group’s initiatives.

Meeting objectives were identified as:

- Reviewing Water Sensible Program update
- Learning about recent detections in BWS supply wells
- Providing BWS updates
- Accepting notes from meeting #51
- Reviewing 2025 SAG meeting dates

PUBLIC COMMENTS: None.

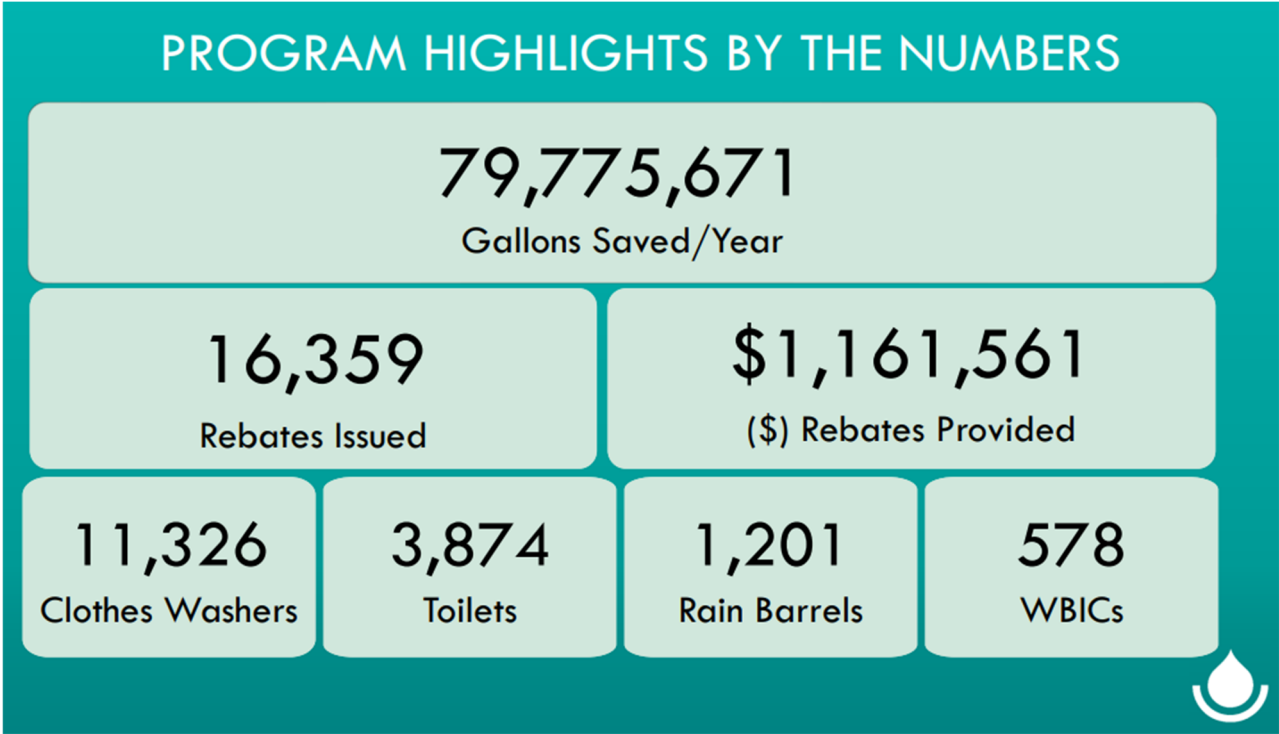
WATER SENSIBLE PROGRAM UPDATE

Dave introduced BWS Water Resources Civil Engineer Lorna Heller to provide an update on the BWS's Water Conservation Program and Water Sensible Program. Lorna outlined her presentation, which would cover the Water Sensible Program, WaterSmart, Water Conservation Advertising, Conservation Outreach, the BWS's Calendar Contest & the Halawa Xeriscape Garden. Lorna emphasized the importance of collaboration across BWS Divisions and external partners to ensure the success of conservation programs. She also explained that their efforts focus on both residential and commercial customers and that the team is continuously working to adapt and expand programs based on community needs and technological advancements.

Lorna introduced Daniel Chen, Program Manager with Honeywell, to provide an overview of the WaterSensible program. He explained that the initiative was launched in 2017 to encourage water conservation among residential customers through rebate programs. The program initially offered incentives for clothes washers and rain barrels and was later expanded to include weather-based irrigation controllers and smart water monitors. In 2019, the program extended its reach to commercial kitchens with audits and low-flow aerators. To support financially or physically constrained customers, the Direct Install Program was introduced, offering free upgrades to water-efficient devices.

During the pandemic, some programs were temporarily paused for safety reasons, but efforts resumed with new initiatives in 2022 and beyond. Daniel highlighted the addition of commercial rebates for cooling towers and toilets, as well as the introduction of the Smart Water Monitor rebate, which provides customers with devices to track water use and detect leaks via a smartphone app. He explained that the program's success is rooted in its ability to adapt, such as increasing the toilet rebate to \$100 to incentivize widespread adoption and launching the Kupuna Program, which offers water audits and efficiency upgrades for seniors.

Daniel shared statistics to illustrate the impact of the WaterSensible program, which has saved over 79 million gallons of water annually. Over 16,000 rebates have been issued, totaling more than \$1.1 million in financial assistance to customers. He cited specific success stories, such as the Ramada Plaza Waikiki's replacement of 3.5-gallon-per-flush toilets with 1.28-gallon models, resulting in \$17,000 in water bill savings and a 24% reduction in water usage within the first year. The project also benefited from \$8,500 in rebates, showcasing the tangible benefits of program participation.



Daniel introduced Steven Norstrom, BWS Information Specialist with the Communications Office, to share about BWS’s educational and outreach efforts. The Water Wisdom Program was created to engage condominium residents and building managers who may not directly pay water bills or recognize the importance of conservation. Steven explained how outreach letters were sent to top water users, comparing usage from 2022 to 2023, with follow-ups planned to track progress in the new year. This initiative aimed to encourage behavioral changes and provide education about conservation methods and available rebates.

Steven also introduced the Multi-Family Outreach Program, a partnership with the Hawaii Green Infrastructure Authority (HGIA) and Hawaii Energy. This program identifies high-water-use properties and offers tailored solutions to reduce both water and energy consumption. HGIA offers financing options with low-interest, long-term loans enabling properties to implement upgrades that might otherwise be cost-prohibitive. He highlighted the partnership’s early successes, including collaborations with properties like Country Club Village, one of the top water users in the residential sector. Through presentations and community engagement, residents showed strong interest in adopting conservation measures.

Lorna resumed the presentation with an overview of the extensive calendar of community engagement events designed to raise awareness about water conservation. These events include World Water Day, Detect-A-Leak Week, and the Imagine a Day Without Water campaign. Steven detailed how Imagine a Day Without Water has evolved into a large-scale initiative with participation from over 20 City & County and State agencies, as well as community organizations. This year’s event at Kapolei Regional Park featured interactive activities, workshops, and resources like collapsible water storage jugs, emphasizing the importance of water sustainability, especially in high-risk wildfire areas. Plans are already in motion to expand the event further next year, with Windward Mall being considered as a possible venue.

Lorna highlighted the annual calendar contest, which reached 49 poster schools and 11 poetry schools, totaling 847 posters and 312 poetry entries in 2024. She also touched on the role of the Halawa Xeriscape Garden, which reopened in 2024 after renovations. The garden serves as an educational hub, offering workshops, volunteer opportunities, and community events focused on water-efficient landscaping. Lorna highlighted the garden's annual Unthirsty Plant Sale as a major success, attracting significant community participation. Efforts are underway to enhance outreach to senior groups, schools, and parks, further integrating the garden into broader conservation education initiatives.

The presentations concluded with an acknowledgment of the vital partnerships that enable these programs to thrive. Lorna expressed gratitude to Coca-Cola for supplying recycled barrels used in rain barrel workshops and emphasized the importance of collaborative efforts with schools and local organizations to promote awareness and participation in conservation programs.

This concluded the Water Conservation Program Update and Dave opened the floor for questions and further discussion.

QUESTION: Wayne Tanaka inquired about incorporating water-efficient infrastructure into new developments.

RESPONSE: Daniel Chen noted recent legislation requiring only high-efficiency toilets be sold in Hawaii starting in 2025. Ernest Lau added that the BWS has been actively engaging with developers and other stakeholders to integrate water conservation measures into development projects, emphasizing the importance of long-term planning and the availability of rebates and financial assistance to offset costs. Ernest highlighted examples of successful partnerships, such as a conservation project at Kamehameha Homes in Kalihi, which involved water audits and other efficiency measures.

COMMENT: Alison Richardson praised the rain barrel program and the WaterSmart application, sharing her positive experience using the app to monitor water usage and share metrics with her team.

ACCEPTION MEETING 51 NOTES

Cynthia Rezendes noted that comments on Page Three relating to abandoned wells should have been attributed to her. Dave acknowledged the oversight and noted it for correction. Meeting 51 notes were approved pending that correction.

VARIOUS CHEMICALS DETECTED AT BWS WELLS

Dave introduced Erwin Kawata, BWS Deputy Manager, to provide a presentation on various chemicals detected at BWS wells.

Erwin began by emphasizing that these detections, though recently observed, likely have existed for a long time. Erwin outlined his presentation, which would include an overview of polycyclic aromatic hydrocarbons (PAHs), per- and polyfluoroalkyl substances (PFAS), comparisons between detections in their wells and those in the Navy's monitoring wells, and the implications of these findings on water quality and aquifer health, particularly after the November 2021 incident at Red Hill.

Erwin introduced PAHs as a class of chemicals with diverse structures and characteristics. He explained that these chemicals are highly soluble in water and resistant to breakdown due to their chemical composition. PAHs are present in petroleum products, formed during combustion processes, and have

been used in various products since the 1940s. He highlighted the detection of PAHs at Aiea Wells, located over two miles west of the Red Hill facility. This well, along with Halawa Shaft and Halawa Wells, was shut down following the November 2021 fuel release due to uncertainties about contamination movement in the complex subsurface geology.

Erwin illustrated how water levels and contamination at Red Hill could migrate westward due to groundwater movement. He presented data showing the presence of multiple PAHs at Aiea Wells, detected using two test methods designed for drinking water and hazardous waste. Weekly sampling revealed a transient mass of material with varying levels of PAHs. Samples collected before and after the specific week of detection showed negligible or non-detect, suggesting the movement of contamination as a mass rather than uniform dispersion.

Erwin then discussed PFAS, chemicals widely used since the 1940s for various products due to their water solubility and resistance to breakdown. He noted PFAS have potential adverse health effects even at low concentrations. Detection of PFAS at Halawa Shaft, located less than a mile northwest of Red Hill, was a significant concern since it supplies 20% of water to metropolitan Honolulu, so it remains shut down since the November 2021 incident. Sampling data from 2020 onwards revealed no detections until after the incident, underscoring the potential impact of the fuel release.

He elaborated on the presence of two PFAS compounds, PFHxS and PFOs, found consistently in Halawa Shaft and the Navy's monitoring wells. He highlighted similarities between detections in the Navy's wells within the Red Hill property and those at Halawa Shaft, suggesting a potential connection. However, the lack of monitoring wells outside the Red Hill property limits comprehensive understanding.

Erwin presented the Navy's monitoring efforts, noting that while they had installed nearly 40 wells since 2005, most were concentrated within the Red Hill property. He emphasized the need for additional monitoring wells outside the property and advocated for increased sampling frequency, even if it yielded zeros, to enhance data reliability. He discussed the Department of Defense's awareness of PFAS issues and its nationwide monitoring efforts, reflecting growing public interest and regulatory developments.



Addressing EPA standards, Erwin explained that PFAS are now regulated at extremely low levels due to their significant health impacts even at trace amounts. He showed a particle track map from a 2020 Navy groundwater model report, illustrating contamination pathways from the Red Hill tanks, predominantly moving westward. Time-lapse data further demonstrated contamination’s fluctuating levels and movement over time, reinforcing concerns about the non-uniform nature of contamination in the aquifer.

Erwin detailed travel time estimates from the Red Hill tanks to other points, highlighting the influence of groundwater flow direction. He presented water level measurements from BWS wells, showing consistent westward movement of water. The Navy’s 2020 report corroborated these findings, mapping groundwater contours and flow gradients.

In conclusion, Erwin underscored the importance of ongoing monitoring and data collection. He reaffirmed BWS’s decision to keep the three wells shut down and emphasized the need to understand the contamination’s full extent and long-term impacts. He advocated for collaborative efforts with the Navy and regulatory agencies to install more monitoring wells, collect consistent data, and implement the Red Hill Water Alliance Initiative’s recommendations for remediation and monitoring.

This concluded the presentation on chemical detections at BWS wells and Erwin opened the floor for questions and further discussion.

QUESTION: Bob Leinaw asked whether the Environmental Protection Agency (EPA) and the state Department of Health (DOH) employed consistent standards, and whether the EPA had established maximum dose standards nationwide. He also raised concerns about the long-term effects of exposure

to chemicals, suggesting the need for epidemiological studies to examine health impacts and whether such exposure accumulates in a manner like mercury. He also inquired about the variability in sampling protocols, particularly regarding how data is standardized when sampling from different levels of an aquifer.

RESPONSE: Erwin explained that the complexity of the issue stems from the presence of chemical mixtures rather than a single contaminant. These mixtures, which include substances like lead, cadmium, and thallium, interact in unique ways that vary between individuals. Erwin emphasized that drinking water regulations have traditionally focused on single analytes, making this a challenging scenario for both the EPA and the DOH. He highlighted variability in contamination levels, citing differences between Aiea Wells and Halawa Shaft, with the latter showing consistent PFAS presence while the former displayed episodic contamination.

QUESTION: Elizabeth Rely asked why the Navy is resistant to install additional monitoring wells and increase data collection.

RESPONSE: Erwin speculated that the Navy's reluctance might stem from fear of uncovering more extensive contamination. He noted that even regulatory agencies seem uncertain about how to address such findings. Erwin added that the Navy's approach, which is monitoring primarily within their property, fails to account for broader contamination pathways, which could potentially lead back to the Red Hill tanks.

COMMENT: Dana Okano suggested a more proactive sampling approach, particularly when contamination is detected. She proposed monitoring daily to track the peak and flow of contaminants.

RESPONSE: Erwin acknowledged the suggestion as reasonable but pointed out logistical challenges, including the need to drain water during testing and delays in lab results, which typically take six to eight weeks. BWS Manager and Chief Engineer, Ernest Lau, further clarified that the BWS had already requested weekly sampling, particularly for wells closest to Red Hill, and emphasized the need for additional monitoring wells outside Navy property to trace contamination more effectively.

QUESTION: Is there sufficient data sampling to hypothesize what might be causing the mass to move (besides gravity), and when will there be enough data to develop a plan to control its migration?

RESPONSE: Erwin acknowledged the difficulty in capturing a complete picture due to the intermittent presence of contaminants and stressed the importance of consistent sampling. Ernest further explained the movement of groundwater - which flows from higher to lower elevations - and how contaminants interact with geological features like lava tubes and clinker zones. He noted that petroleum products break down and mix with other substances, complicating efforts to trace contamination directly back to its source.

COMMENTS: Brady Jencks directed attention to a presentation slide illustrating groundwater travel time, questioning whether the Navy or BWS had developed the data. Ernest confirmed it was based on the Navy's 2020 Groundwater Modeling Report and explained how pumping from Halawa Shaft influenced groundwater flow patterns. This highlighted the challenges of balancing water extraction with the risk of inadvertently spreading contamination. Jencks also raised the idea of utilizing historical artesian wells for monitoring. Lau explained that few such wells remain accessible, and many of the Navy's monitoring wells are confined to their property, leaving significant gaps in data collection.

Ernest then discussed the challenges of installing monitoring wells on private property, describing the reluctance of landowners due to potential liability issues. He suggested a federal exemption for monitoring wells installed as part of remediation efforts to alleviate landowner concerns and expedite the process.

COMMENT: Bob Leinau suggested seeking federal grants or National Science Foundation funding for research on chemical mixtures and their health impacts. Ernest agreed, highlighting ongoing efforts under the Red Hill Water Alliance Initiative to secure continuous funding for monitoring and remediation. He also noted the importance of addressing contamination in the vadose zone, the rock layer between the tanks and the aquifer, which remains a long-term source of potential contamination influenced by weather patterns.

COMMENT: Bob Leinau also commented about liability, to which Ernest responded that the BWS had filed a \$1.2 billion claim under the Federal Tort Claims Act against the Navy and was considering further legal action to replace compromised wells. The complexity of the situation underscored the absence of a definitive resolution.

COMMENT: Brady Jencks raised the broader issue of aging underground storage tanks, particularly those at other Department of Defense facilities. Ernest confirmed that older fuel storage systems, like those at Mililani and Wheeler Army Airfield, also posed risks. He called for increased transparency and cooperation from the military to address these legacy issues.

COMMENT: Henry Curtis, a community representative, provided historical context on the Wheeler Army Airfield, noting past discrepancies in fuel accounting and cleanup efforts. He underscored the community's role in advocating for accountability and vigilance in monitoring contamination.

COMMENT: Elizabeth Relly revisited the potential leverage offered by military land leases expiring in 2029. Ernest viewed these leases as an opportunity for the State and community to secure better outcomes for Hawaii's water resources, emphasizing the importance of collective action involving state, local, and federal stakeholders.

COMMENT: Calvin Mann commented on the DOH's apparent lack of engagement in restoration advisory board meetings, underscoring the need for all parties to actively participate in addressing this complex issue.

BWS UPDATES

Dave invited Ernest Lau, BWS Manager and Chief Engineer, to share BWS updates.

Ernest discussed the update to the Water Master Plan, which was originally adopted in 2016. He highlighted the essential role of Stakeholder Advisory Group participants in this process, acknowledging their contributions in providing input and exploring different options for the plan. He also expressed gratitude in advance for their support and collaboration in shaping the updated plan.

Ernest then discussed the Source Water Protection Plan, outlining efforts to address potentially contaminating activities that pose risks to water resources. He shared that the BWS recently approved funding to transition the plan into an actionable framework. This effort includes incorporating additional Department of Defense facilities and historical data into the plan. He noted the importance

of using this information to protect and restore water resources and to be more aware of legacy issues, such as old dump sites or World War II-era fuel storage tanks, when identifying locations for new wells. Dave reminded attendees that a presentation on the Source Water Protection Plan had been given two meetings prior and encouraged those who missed it to access the information on the BWS website. He also mentioned that the previous meeting included an update on the Water Master Plan's progress, emphasizing the importance of ongoing input from participants.

NEXT STEPS

Dave shared a list of Stakeholder Advisory Group meetings in 2025: Thursday, January 16, 2025; Thursday, April 17, 2025; Thursday, July 17, 2025; and Thursday, October 16, 2025.