



KA WAI OLA

WATER FOR LIFE

Honolulu Board of Water Supply
Stakeholder Advisory Group Meeting 61
Thursday, July 16, 2026, 4:00 – 6:00 pm
Online via Zoom

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 16 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:

Alison Richardson	Coca-Cola Company
Bob Leinau	Resident of Council District 2
Cruz Vina, Jr.	Resident of Council District 8
Cynthia Rezentes	Resident of Council District 1
Helen Nakano	Resident of Council District 5
Jicky Ferrer	AARP Hawaii
John Reppun	KEY Project
John Rogers	Resident of Council District 1
Josh Stanbro	Hawaii Council
Kaleo Manuel	Kamehameha Schools
Mary Kishimoto	Chamber of Commerce Hawaii
Pono Chong	Resident of Council District 7
Ryan Obrero	Honolulu Board of Realtors
Shari Ishikawa	Hawaiian Electric Company
Wayne Tanaka	Sierra Club
William Clark	Resident of Council District 6

WELCOME

Facilitator Dave Ebersold welcomed everyone to the 60th meeting of the BWS Stakeholder Advisory Group.

Meeting objectives were identified as:

- Provide BWS Updates
- Pumping Capacity Analysis
- Accept notes from meetings #60
- Major Water Master Plan Findings

PUBLIC COMMENTS: None.

WATER MASTER PLAN ROADMAP:

Dave reviewed the Water Master Plan roadmap and the topics covered since January, including CIP project prioritization, the Water Master Plan scorecard, reservoir condition assessments, climate resilience, PFAS planning, future water demand projections, and potential additional water supplies. He noted that the July meeting would focus on the pumping capacity analysis and a recap of the major findings from the technical evaluations completed to date.

BWS UPDATES:

Dave invited Ernest Lau, BWS Manager and Chief Engineer, to share BWS updates. Ernest shared recent PFAS findings associated with the Red Hill Bulk Fuel Storage Facility. He explained that Navy reports have identified PFAS at numerous locations on the Red Hill property at varying concentrations. BWS has also been installing its own monitoring wells outside Navy property and has detected PFAS at several locations surrounding Red Hill, including monitoring wells at the former Animal Quarantine Station in Hālawā Valley, Moanalua Golf Course, and Hālawā District Park. Ernest noted that some of the detected PFAS compounds may be associated with aqueous film-forming foam (AFFF) historically used for firefighting.

Ernest said the findings have increased BWS concerns about the potential extent of PFAS contamination beyond the Red Hill property, including areas in Hālawā and Moanalua valleys and toward 'Aiea. BWS sent a letter raising these concerns to the Hawai'i Department of Health and U.S. Environmental Protection Agency and is awaiting a formal response. Ernest also raised the issue during a recent meeting in Washington, D.C. He emphasized that BWS currently has more questions than answers and expects to provide additional information at an upcoming BWS Board and Stakeholder Advisory Group meetings.

Ernest noted that cleanup activities at Red Hill are continuing, including cleaning the fuel tanks and removing residual fuel from the pipelines connecting the facility to Pearl Harbor. However, he emphasized that BWS concerns are no longer limited to petroleum contamination. Recent PFAS detections have raised additional questions about the potential presence and movement of these chemicals in the groundwater surrounding Red Hill.

Ernest also provided an update on proposed increases to BWS water system facilities charges, which had previously been presented to the SAG. He said BWS will begin outreach to developers and other affected groups and invited members to identify organizations that may benefit from a presentation.

PUMPING CAPACITY ANALYSIS

Dave introduced Carl Lundin, Environmental Engineer with CDM Smith, to give a presentation on the

pumping capacity analysis for the Water Master Plan. Carl explained that the pumping capacity analysis evaluates BWS's ability to move water through the system to where and when it is needed. The analysis began with BWS water system standards, which establish requirements for factors such as fire flow, pumping capacity, redundancy, and reservoir storage. Carl emphasized that the overall finding is that the existing system is currently adequate to serve existing demands.

Carl explained that BWS operates approximately 110 pressure zones, each representing an interconnected portion of the system operating at a similar pressure. The analysis evaluates each zone individually, including its reservoirs, distribution system, pumps, and customer demands. A key measure is "firm pumping capacity," which represents the amount of water a pump station can provide with its largest pump out of service. This provides a measurement that accounts for equipment being unavailable because of maintenance or failure. Demand within each pressure zone is then subtracted from firm pumping capacity to determine whether the zone has a pumping surplus or deficit.

Carl compared the analysis with the long-term demand projections. Although O'ahu's population is projected to increase approximately 3.6%, per-capita water use is projected to decline approximately 13% to 14% through 2055, resulting in an overall decrease in islandwide demand. However, development and population growth will not occur evenly across the island. Approximately 28 million gallons per day of demand could shift geographically, particularly because of transit-oriented development and other large housing developments. Some pressure zones may therefore experience increased demand even as total islandwide demand declines. Carl emphasized that the timing and location of development remain uncertain and will require BWS to continue monitoring and reevaluating its projections over time.

The analysis identified between 16 and 40 of BWS's 110 pressure zones as having pumping capacity needs, depending on the standard applied. Potential solutions could include additional water sources, additional pumping capacity, new pipelines, valves, or other improvements that allow BWS to better move water through the system. Wai'anae currently has the largest identified need at approximately 2.5 million gallons per day (MGD), largely because of declining water supplies rather than increased demand.

Carl also discussed the effects of future transit-oriented development. Metro 180, which covers much of urban Honolulu from approximately Diamond Head toward Hālawā, could experience approximately 14 MGD of additional demand. Because Metro 180 is a large pressure zone, this represents approximately a 19% increase. Pearl Harbor 277, which includes the Aloha Stadium area, could experience approximately 2.5 MGD of additional demand.

QUESTION: Ryan Obrero asked whether the supply limitations identified for Wai'anae mean BWS needs to drill additional wells or whether the underlying groundwater resource itself is becoming more limited.

ANSWER: Ernest Lau explained that rainfall and groundwater recharge along the Wai'anae Coast and Wai'anae mountain range have declined over time, meaning the available groundwater capacity may also be decreasing. BWS has petitioned the Commission on Water Resource Management to designate the Wai'anae Coast as a groundwater management area because the resource may be approaching its capacity and additional regulation may be needed. He noted that local Wai'anae wells, tunnels, and shafts are already insufficient to meet current demand. Approximately 55% to 60% of Wai'anae's demand is currently supplied by water from the Waipahu/'Ewa area that is pumped along Farrington Highway through a 24-inch transmission main. BWS is also updating the Wai'anae Coast Watershed

Management Plan and engaging the community regarding its concerns and priorities.

QUESTION: Bob Leinau asked about the different roles pumps play within the water system, including source pumps, transmission pumps, and pumps used for redundancy or emergency response.

ANSWER: Carl Lundin explained that redundancy is incorporated into the firm-capacity standard, with pump stations planned so that an additional pump is available if another pump is out of service. For emergency demands such as firefighting, BWS primarily relies on water stored in reservoirs because they can immediately provide large volumes of water.

QUESTION: Bob Leinau asked whether limits on how much groundwater can be pumped at a given time are based on salinity or other factors.

ANSWER: Carl Lundin explained that withdrawal limits are generally based on volume, although BWS also monitors chlorides at its wells and may establish operational limits to protect water quality. Ernest added that the Commission on Water Resource Management regulates groundwater withdrawals across most of O'ahu through water use permits. One of the primary considerations is chloride levels because excessive pumping can cause saltwater to move upward or inland, increasing salinity and potentially damaging the freshwater resource.

QUESTION: Bob Leinau raised concerns about increasing wastewater generation associated with future development, particularly on the North Shore, and asked what alternatives exist when communities are concerned about wastewater entering either the ocean or groundwater.

ANSWER: Dave Ebersold referred to previous discussions about alternative water supplies and reuse. He explained that localized water reuse could provide one option by capturing and treating wastewater for non-potable uses such as agricultural irrigation. He said these types of alternatives will increasingly need to be evaluated as water demands and sustainability pressures evolve.

QUESTION: Jicky Ferrer asked what requirements apply when private developers drill their own wells and whether BWS establishes standards governing their construction, equipment, testing, and operation.

ANSWER: Ernest Lau explained that private well construction is regulated by the Commission on Water Resource Management. Developers must obtain a well construction permit to drill a well and a pump installation permit before installing pumping equipment. The Commission maintains well standards that must be followed, while BWS projects must also comply with BWS water system standards.

Ernest added that properly sealing abandoned wells is also critical to protecting groundwater because an improperly abandoned well can create a direct pathway for contaminants from shallow groundwater or the ground surface to reach deeper aquifers.

QUESTION: John Reppun asked how the pumping capacity analysis accounts for multiple pressures on BWS's water resources, including the loss of Red Hill sources, PFAS contamination, restoration of water for traditional agricultural uses and streams, cesspool conversion requirements, and potential future water demands from data centers.

ANSWER: Carl Lundin explained that source limitations and contamination events are incorporated into the pumping analysis and have collectively reduced BWS's available capacity. The largest change since

the 2016 analysis was the removal of Hālawā Shaft from service following the Red Hill contamination. While Metro 180 currently retains adequate capacity, the loss of Hālawā Shaft significantly reduced the system's excess capacity. Other limitations may individually be manageable but collectively reduce BWS's flexibility to respond to peak demands, growth, or additional source losses.

Ernest clarified that BWS has shut down Hālawā Shaft, Hālawā Wells, and 'Aiea Wells because of concerns related to Red Hill contamination and the potential movement of PFAS. Those shutdowns removed significant capacity that previously supported urban Honolulu during peak demand periods. Other wells consequently had to operate more heavily, contributing to increased chloride levels at Beretania Wells and requiring BWS to reduce pumping there. Ernest emphasized that developing additional wells and restoring spare capacity will be important for meeting peak demands, emergencies, developments, and other future growth.

QUESTION: John Rogers asked why the Waipahu, 'Ewa, and Kapolei areas were not identified among the areas with significant future pumping needs given the amount of development and transit-oriented growth occurring there.

ANSWER: Carl Lundin explained that BWS has anticipated much of that growth and already has significant existing and planned capacity programmed for the area. Because those improvements and future sources are already incorporated into BWS planning, the projected growth does not currently create the same type of identified pumping deficit shown in other areas.

ACCEPT MEETING 60 NOTES

Meeting 60 notes were approved.

WATER MASTER PLAN MAJOR FINDINGS

Dave re-introduced Carl Lundin to present on major findings from the technical evaluations completed over the past two years. Carl emphasized that the purpose was to bring together the work completed to date and identify the issues that should carry forward into the Water Master Plan and future Capital Improvement Program.

Carl began with climate-related findings, noting that climate variability is expected to increase even though projections do not show dramatic changes in total annual rainfall. Instead, rainfall is expected to become more variable, with more intense storm events and potentially longer periods of drought between storms. He explained that more intense rainfall can result in increased runoff and reduced infiltration into the ground, while higher temperatures increase evaporation and transpiration, further reducing the amount of water available to recharge aquifers.

Carl also discussed the effects of sea level rise on groundwater and BWS infrastructure. He explained that rising sea levels may cause groundwater elevations to rise even as the freshwater lens becomes thinner, meaning higher groundwater levels do not necessarily indicate that more freshwater is available. Sea level rise could also increase corrosion, complicate water main repairs in low-lying areas, and mobilize subsurface contaminants.

Carl emphasized the importance of adaptive management given the uncertainty surrounding climate change. Rather than relying on projections made today for the next 30 years, BWS will continue monitoring conditions and adjust its plans and projects as needed. He noted that some climate scenarios project significant reductions in groundwater availability later this century.

Carl also discussed power reliability as a climate resilience issue. He stated that BWS's current backup power capabilities are generally sufficient under normal conditions and that additional permanent generators have been installed in recent years. However, increasing wildfire risk and more severe storms could place greater stress on the electrical system. BWS will need to evaluate whether additional permanent or portable generators should be incorporated into future planning.

QUESTION: Jicky Ferrer asked whether BWS deploys backup generators or are they stored at centralized locations.

ANSWER: Carl explained that many critical facilities already have permanent generators installed, while portable generators are stationed at various BWS yards. When an event such as a hurricane can be anticipated, portable generators can be moved in advance to locations where they are expected to be needed. Ernest Lau added that permanent generators have been constructed at selected wells and pump stations, including a large generator at Beretania. He explained that at the beginning of hurricane season, BWS pre-deploys mobile generators to key facilities that could be used to maintain water service to major medical facilities and as much of the community as possible. However, BWS does not currently have enough backup generation to provide 100% system coverage during an islandwide outage.

QUESTION: Jicky Ferrer asked whether BWS coordinates with the Hawai'i Emergency Management Agency (HI-EMA) on backup power and emergency preparedness.

ANSWER: Ernest confirmed that BWS works with HI-EMA and has repeatedly applied for Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program funding following disasters. These federal grants can cover up to 75% of eligible project costs, with BWS providing the remaining 25% match.

QUESTION: Pono Chong asked how BWS prioritizes limited funding among competing needs, such as backup generators, pipeline hardening, and other infrastructure improvements.

ANSWER: Dave Ebersold emphasized that stakeholder input regarding priorities is an important part of those decisions. Ernest added that the Water Master Plan will include a 30-year capital program, with a more detailed look at the first ten years and allocations among major infrastructure categories such as pipelines, pumping stations, and reservoirs. Because BWS is financially self-sufficient and primarily supported by water rates, pursuing outside funding such as federal grants is an important way to reduce the burden on ratepayers.

Carl continued his presentation by discussing climate vulnerability inspections. He explained that resilience improvements should focus on protecting facilities against flooding, hurricane winds, and wildfires and that many improvements can be incorporated during the normal rehabilitation cycle for existing facilities. Carl said BWS intends to incorporate improvements such as hurricane-rated louvers, ember-resistant screening, and sealing potential water intrusion points, into future design criteria and facility standards.

Carl transitioned to the condition assessment findings, noting that progress has been made on projects identified in the 2016 Water Master Plan. He identified several areas requiring continued attention, including access to remote facilities, high-consequence transmission mains, exterior post-tensioned reservoirs, pump rehabilitation, and potential treatment needs for emerging contaminants. Carl also

emphasized the importance of having sufficient staff and resources to implement future Water Master Plan projects.

Carl highlighted pump availability as one of the more significant operational concerns. Approximately 33% of BWS pumps were identified as out of service on the Water Master Plan scorecard. He explained that rehabilitation projects have been initiated for many pumps, but completing projects and returning pump stations to service has been challenging. BWS is placing emphasis on reducing this percentage and is considering a more formal pump asset management approach to track pumps that are out of service and identify projects that have become delayed or stalled.

Carl reviewed the reservoir findings, noting that most BWS reservoirs have minor maintenance needs. However, seven externally post-tensioned reservoirs built in the 1950s and 1960s are deteriorating faster than anticipated. Comparisons between the 2014 and 2025 assessments showed increased deterioration of the exterior post-tensioning systems, indicating these reservoirs will require prioritized rehabilitation.

Carl reported that electrical and control systems at most facilities are performing as expected, but much of the equipment is approaching the end of its expected useful life and will eventually need replacement as part of routine rehabilitation projects. One significant finding was the difference between equipment located indoors and outdoors, with Indoor electrical equipment seeing less corrosion. Carl noted that although constructing buildings around equipment increases initial capital costs, BWS may need to consider housing more equipment indoors when planning for service lives of 50 to 100 years.

Carl also introduced findings related to water loss and explained the difference between apparent losses and real losses. Apparent losses are losses that occur in accounting rather than through the physical loss of water, such as inaccurate meters, data-handling errors, or unauthorized consumption. Real losses include actual physical losses such as leaks, valves that do not fully seal, and reservoir overflows. Carl explained that BWS is in the early stages of developing a more comprehensive water-loss program and that the current amount of apparent loss makes it difficult to accurately identify how much water is physically being lost from the system.

Dave noted that BWS's combined water-loss figure is approximately 15% and asked whether the analysis found if it is more apparent rather than physical loss. Carl confirmed that apparent losses are believed to represent at least the larger portion of the current total. BWS plans to investigate potential physical losses through inspections for leaking bypass valves, reservoir overflows, and other operational problems, while also testing meters and tracing data from the meter through SCADA and other data systems to identify discrepancies.

QUESTION: Ryan Obrero asked whether staffing shortages are affecting BWS's ability to complete the projects identified through the Water Master Plan.

ANSWER: Ernest confirmed that BWS is experiencing significant staffing challenges, estimating the overall vacancy rate at approximately 20%. Ernest explained that insufficient staffing limits the amount of preventive maintenance BWS can perform, even though increased maintenance could extend infrastructure life. He noted that BWS operates within the civil service system and has difficulty competing with private-sector salaries for some positions. Ernest encouraged interested individuals to consider employment opportunities with BWS and highlighted leave, holidays, and health plan benefits.

COMMENT: Ryan Obrero commented that moving equipment indoors to protect it from corrosion can create significant maintenance and replacement challenges later. He explained that equipment incorporated into buildings can become extremely expensive to replace if roofs or other portions of a structure must be removed to access it. Ernest agreed and emphasized that facilities need to be designed from the beginning with maintenance access in mind.

QUESTION: Bob Leinau asked whether additional landscape and watershed management strategies could reduce evapotranspiration and improve groundwater recharge.

ANSWER: Barry Usagawa explained that improving forest health can help watersheds function more effectively by improving infiltration and groundwater recharge. BWS supports invasive species control, fencing, and other watershed restoration work through watershed partnerships. Barry noted that rising temperatures may be increasing evaporation and plant transpiration, contributing to declining groundwater levels in some areas even where pumping remains relatively low. He said declining rainfall, increasing temperatures, and reduced recharge may all be contributing factors and emphasized the need for continued monitoring. Dave added that the Department of Facility Maintenance is preparing to begin a Stormwater Master Plan, which is expected to evaluate opportunities to improve stormwater recharge.

Dave introduced Bill Fernandez, Water Resources Engineer with CDM Smith, to discuss major findings related to future demand and source development. Bill reiterated that historical analysis found both climate and socioeconomic factors influence water demand, with water rates being the most significant factor identified in the demand model. Bill emphasized that because demand is projected to decline rather than increase substantially, future source development is more likely to be driven by groundwater sustainability and water quality concerns than by overall growth in demand.

Bill identified future aquifer sustainable yield as one of the largest uncertainties affecting long-term water supply reliability. Climate-related changes in rainfall, recharge, evaporation, and other components of the water balance could reduce the amount of groundwater that can be sustainably pumped. Referring to a 2019 Commission on Water Resource Management map, some aquifers were already operating near their estimated sustainable yield at the time of the analysis. Bill explained that BWS will need to continue monitoring these areas and ensure future pumping remains sustainable. He also highlighted watershed management plans as an important tool for evaluating the balance between water needs, sources, and potential projects at the watershed level.

Bill summarized BWS's chloride and groundwater quality analyses, which examined the relationship between pumping rates and chloride levels. He noted that both the 2016 analysis and the current evaluation found recommended pumping rates were only about 1% below recent average pumping, indicating that BWS has generally been operating its wells conservatively. Continued monitoring will help maintain stable water quality.

Bill also emphasized proactive source water protection as a major resilience strategy. BWS recently completed its Source Water Protection Plan, which evaluates potential contamination threats and identifies measures to reduce risks before contamination affects drinking water sources. He noted that the effort has already resulted in the identification of two abandoned wells that BWS is now funding to properly seal and decommission.

Bill noted that evolving regulations and emerging contaminants will continue to influence future infrastructure needs. PFAS has been detected at 16 BWS well sites and has exceeded current maximum contaminant levels at four locations. Treatment is currently being designed or installed at three priority

sites, with implementation expected within the next five years. For other potentially vulnerable sites, BWS plans to establish monitoring trigger levels so that treatment can be initiated if concentrations begin approaching regulatory limits.

Bill concluded the source findings by explaining that conservation, increased non-potable water use, recycled water, seawater desalination, potable reuse, and managed aquifer recharge can all improve system resilience and reduce dependence on groundwater. However, these options require significant planning, engineering, permitting, and capital investment. He highlighted the proposed managed aquifer recharge project in Nu‘uanu Valley, which would capture excess stormwater, treat it, and inject it into the aquifer for future use. Bill noted that projects capable of capturing increasingly intense storm events may become particularly valuable as climate conditions change.

QUESTION: Bob Leinau asked whether the caprock that helps retain freshwater beneath O‘ahu remains constant or if there are variables that could allow greater movement of saltwater into the aquifer.

ANSWER: Bill explained that caprock generally helps retain freshwater within the island. But, slight communication with seawater does occur, as evidenced by tidal influences on groundwater levels near the coast. Caprock thickness also varies by location because of how it formed. However, based on current climate projections, the amount of groundwater lost through the caprock to the ocean is expected to remain relatively constant into the future.

QUESTION: Jicky Ferrer asked whether future military and private data centers could create significant new water demands. He also raised concerns about the former Navy laundry facility near St. Elizabeth Church in ‘Aiea and questioned whether the property had been adequately remediated.

ANSWER: Ernest explaining that cleanup for the Navy laundry facility has occurred and that additional remediation activities may still be underway. A groundwater monitoring well installed as part of the investigation remains at the site, and BWS has asked EPA to require the Navy to incorporate that well into the Red Hill groundwater monitoring network. Regarding data centers, Ernest said he had recently participated in a discussion with utilities from areas of the mainland where data centers are common. He noted that newer data centers are increasingly using more efficient closed-loop cooling systems rather than older single-pass systems that consumed and discharged large volumes of water. Ernest emphasized that BWS remains concerned about both the water and electricity requirements of large data centers and would closely evaluate any significant proposals on O‘ahu.

QUESTION: Pono Chong asked whether areas approaching the sustainable yield correspond with locations where development and population are concentrated.

ANSWER: Barry Usagawa noted that the information was from 2016 when Hālawā Shaft was still operating and that the loss of that source has required BWS to redistribute pumping across other aquifers. Barry explained that BWS staff has worked to optimize remaining sources and balance pumping after the shutdown of Hālawā Shaft. BWS is also developing additional wells, including projects in Kalaeloa and Kunia, which should provide greater flexibility to rebalance groundwater withdrawals.

Barry further explained that BWS is trying to reduce potable water demand in heavily used aquifers through non-potable water use and conservation. As an example, BWS is requiring the new Aloha Stadium to use non-potable Kalauao well water for toilet flushing rather than potable water. BWS is also working to convert major irrigation users such as parks and golf courses from potable water to

available non-potable supplies. He mentioned Hālawā District Park as an example where irrigation has already been converted to non-potable water. Barry said these efforts, combined with WaterSensible conservation programs, are intended to reduce pressure on aquifers serving the urban core.

QUESTION: Josh Stanbro asked whether BWS is preparing for a potential El Niño pattern that could bring reduced rainfall while also affecting hurricane and storm activity.

ANSWER: Ernest responded that BWS is monitoring the situation closely. He recalled past hurricane seasons, including 2015 when multiple Category 4 hurricanes were present across the Pacific and Hurricane Lane in 2018, which at one point reached Category 5 strength. Ernest emphasized the uncertainty of hurricane behavior and encouraged everyone to remain prepared with emergency supplies and resources before storms threaten the island.

QUESTION: John Reppun asked whether areas such as Kaʻau Crater could potentially be used for groundwater recharge, particularly because Pālolo is among the aquifers approaching its sustainable yield.

ANSWER: Barry explained that the Nuʻuanu managed aquifer recharge project involves capturing stormwater, treating it, and injecting it into the aquifer. He noted that large centralized recharge projects can be challenging because of geography, stream flows, and regulatory requirements, so smaller projects such as detention basins, rain barrels, and other green infrastructure may be more practical. Barry cited work being considered in Heʻeia and other areas to slow runoff and increase infiltration.

This concluded Bill's presentation. Dave then asked the SAG whether the major findings presented during the meeting resonated with them and whether there were issues missing from the technical evaluations that should be considered as BWS moves into development of the Capital Improvement Program.

COMMENT: Jicky Ferrer shared that he is working on an emergency shelter sustainability project involving an atmospheric water generator capable of producing approximately 4,000 gallons of water. He said the project team is exploring funding opportunities and would provide additional information to BWS as it develops.

COMMENT: Josh Stanbro said the findings regarding rising groundwater and submerged infrastructure in low-lying areas raised longer-term questions about where future infrastructure and development should be located. He suggested that future Water Master Plan updates may need to consider moving infrastructure and development farther mauka as sea level rise and storm impacts make coastal areas increasingly expensive and difficult to maintain. Dave agreed that sea level rise will create significant long-term challenges regarding the continued use of low-lying coastal properties and infrastructure.

QUESTION: John Rogers asked whether BWS has evaluated greater use of renewable energy, including photovoltaic systems and battery storage, to power pump stations.

ANSWER: Dave explained that BWS previously completed a major energy savings performing contract focused on investments that could pay for themselves through energy savings. Ernest added that the project reduced BWS energy demand by approximately 8% to 9% and installed approximately three megawatts of photovoltaic generation at BWS facilities, including reservoirs, parking areas, and pump stations. He noted that the deep wells and booster pumps have large power needs, which can make it

difficult to provide solely through photovoltaic generation. However, BWS continues to evaluate renewable energy and its potential integration with backup power to maintain operations during Hawaiian Electric outages.

QUESTION: Cynthia Rezentes asked whether BWS is coordinating with the Department of Planning and Permitting and other City agencies regarding where and how future development should occur. She noted that areas such as Kapolei and Ho‘opili are growing rapidly and expressed concern that concentrating additional housing in areas with limited water infrastructure or constrained aquifers could further stress the system.

ANSWER: Dave agreed that the issue is important and proposed discussion at the next SAG meeting.

COMMENT: John Reppun noted his community is discussing generating hydropower from the Waiāhole Ditch and using that energy to charge portable battery systems, and could potentially be used for BWS facilities or other locations requiring emergency power.

NEXT STEPS

Dave shared the list of stakeholder advisory group meetings for 2026:

- September 17 (virtual)
- October 15 (in person)
- November 19 (hybrid)

Dave thanked the attendees for their attention and participation and concluded the meeting.