



Honolulu Board of Water Supply
Stakeholder Advisory Group Meeting #38
Thursday, April 22, 2021 4:00 – 6:00 pm
Virtual Meeting

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 a virtual meeting in which 17 stakeholders participated on-line and/or by phone, in addition to BWS and CDM Smith staff and members of the public. The stakeholders represent diverse interests and communities island-wide.

The following Stakeholders Advisory Group members participated:

- | | |
|---------------------|--------------------------------|
| Bill Clark | Resident of Council District 6 |
| Mark Fox | Environmental |
| Shari Ishikawa | Hawaiian Electric Co. |
| Bob Leinau | Resident of Council District 2 |
| Helen Nakano | Resident of Council District 5 |
| Robbie Nicholas | Resident of Council District 3 |
| Dean Okimoto | Nalo Farms, Inc. |
| Christine Olah | AARP Hawaii |
| Dick Poirier | Resident of Council District 9 |
| John Reppun | KEY Project |
| Alison Richardson | Coca-Cola Bottling Co. |
| Elizabeth Reilly | Resident of Council District 4 |
| Cynthia Rezentes | Resident of Council District 1 |
| Chace Shigimasa | Resident of Council District 7 |
| Walter Thoemmes III | Kamehameha Schools |
| Guy Yamamoto | YHB Hawaii |
| Suzanne Young | Honolulu Board of Realtors |

WELCOME

Dave welcomed everyone to the 38th meeting of the BWS Stakeholder Advisory Group. He thanked everyone for making the time and providing valuable feedback on priorities for the Stakeholder Advisory Group. The interviews with individual stakeholders will continue until everyone has provide their input.

Dave reminded the stakeholders about best meeting practices and reviewed objectives for the meeting:

- Accept notes from Stakeholder Advisory Group meeting #37 in January 2021.
- Learn about the WSFC adoption schedule.
- Hear about One Water, One Oahu with guest speaker Matthew Gonser, Office of Climate Change, Sustainability, and Resiliency.
- Give feedback on BWS 6-Year CIP.

PUBLIC COMMENTS: None.

ACCEPT MEETING 37 NOTES: Accepted.

BWS UPDATES

Ernest Lau, BWS Manager and Chief Engineer, updated the group on Contested Case public hearings held by the Department of Health in the first week of February 2021. The hearings were related to a permit for the US Navy to operate underground fuel storage tanks at Red Hill. He said that a good summary prepared by Sierra Club Hawaii is posted on YouTube at <https://sierraclubhawaii.org/blog/redhill-cc-21>. He commended Erwin Kawata for his efforts on behalf of BWS on Red Hill issues and hearings. He added that a Red Hill Fuel Tank Advisory Committee meeting will be held on May 20, 2021.

Ernie also updated the group on water bill payment delinquencies. He said that the number of residential customer delinquencies is tracking reasonably close to previous years but the amount owed about \$1.8 million higher than previous years, and that BWS is monitoring closely. The number of commercial customer (non-residential) delinquencies has been dropping recently, and the amount that is delinquent also seems to be on a downward trend. He mentioned that a rental and utility relief program is available to households at or below 50% of the area median income or 90 days unemployed. The website for that relief program is: www.oneoahu.org/renthelp The program is accepting blocks of 8,000 residents at a time.

Since June 2020, BWS Customer Care has handled 9,000 calls related to past-due accounts, and 600 accounts have been coded to indicate financial impacts from COVID. BWS has received \$116,000 in 537 payments through the Hawaii Utilities Bill Assistance Program February – March 2021.

Ernie said that the BWS Board adopted the revised Long Range Financial Plan in February 2021. He thanked the group for their much-valued input. BWS recently completed a sale of revenue bonds to help finance the CIP programs and projects. We were able to maintain the AAA rating by S&P and AA+ rating by Fitch. BWS is the only agency in Hawaii to receive an AAA rating. Joe Cooper, BWS Waterworks Controller, said the Stakeholder Advisory Group was considered to be one of the factors that the bond rating agencies looked upon very favorably.

Comment: The funds being distributed through oneoahu.org come from the CARES Act, passed December 27, 2020. The money from the American Rescue Act Plan has still not been dispersed and those are funds still to come, but available funds for emergency rental assistance programs are going quickly.

WATER SYSTEM FACILITIES CHARGE SCHEDULE

Dave Ebersold, Vice President of CDM Smith, updated the group on the process and estimated schedule for adopting proposed changes to the Water System Facilities Charge (WSFC). He reviewed what the WSFC pays for: growth-related capacity expansions of the water system, and to equitably recover earlier investments in over-sizing infrastructure to accommodate new customers.

Dave said that BWS put the adoption of the WSFC on-hold last year when everyone was dealing with pandemic issues and financial impacts. The Permitted Interaction Group for rates met in April. The BWS Board will be briefed in June and requested to authorize beginning outreach related to the proposed changes.

Outreach to BWS customers is proposed to begin in June, continue through adoption and into July 2022 when the new charge would go into effect. A meeting with the Small Business Regulatory Review Board (SBRRB) is anticipated in August 2021. The BWS Board would consider adoption in September 2021. This would be followed by submitting a Post-Hearing Small Business Impact Statement to SBRRB in October 2021.

Comment: The WSFC is like a “membership fee” to the BWS water system.

CLIMATE READY OAHU AND ONE WATER

This presentation was video recorded and can be viewed at:
<https://www.boardofwatersupply.com/climatechange>

Matt Gonser, Chief Resilience Office and Executive Director of the Honolulu Office of Climate Change, Sustainability and Resiliency (OCCSR) wished everyone a very happy Earth Day. He recognized several people as part of the Advisory Hui to his office. Those included Suzanne Young, Elizabeth Reilly, Dana Okano, and Kathleen Pahinui.

He said that the OCCSR was created by voters in 2016. Just this morning, OCCSR released the 2021 Annual Sustainability Report (available at resilientoahu.org), along with the Climate Action Plan for years 2020 – 2025.

Climate Ready Oahu is focusing on the cascading impacts that climate change can create. For example, changing rainfall patterns can affect drought, and that can decrease freshwater availability. At least a half a foot of sea level rise has been measured at the Honolulu Harbor Tide Gauge. Different projections into the future are extremely dependent upon our local and global communities' actions. We have the ability to bend the curve if we bring emissions down over time.

Matt explained that climate change is already costing us. Examples included:

- Mauna Lahilahi Beach Park, where the city had to remove a comfort station because of sea level rise and coastal erosion.
- Grave consequences for private residences as well as the beach, a public trust resource.

- Businesses interrupted or even closing in Mapunapuna because of constant disruption to their operations.
- City infrastructure issues with environmental services, coastal erosion, and concerns with fixing water mains in the low-lying areas and having to wait for low tide to get access.

Solutions are not going to be same all over the island. The Climate Ready Oahu project developed the Advisory Hui with nearly four dozen people from all the geographies and different sectors of the island (e.g., business, environment, community, education).

Matt said that the Hui has been primarily talking about coastal issues and water issues, but climate change is not just water. Heat is actually the largest killer globally in terms of extreme weather events. The environment that we designed and planned for yesterday is not the environment that we are stepping into tomorrow. So the Hui is discussing how to make sure that what we do moving forward establishes expectations, both for the government and community members.

Work on a climate change adaptation roadmap is expected to be completed by September 2021. The adaptation roadmap will feed into a Climate Resilience and Hazard Mitigation Plan. Matt said hazard mitigation is where we should be driving a lot of budget discussions and using it as a mechanism to bring in FEMA funds.

The Climate Ready Oahu project team is diving deeper into understanding specific climate hazards to help identify adaptation action areas. These areas are not necessarily at highest risk; but they are geographies or communities around the island where potential adaptation actions can be tested, and lessons learned to be applied to subsequent climate change adaptation projects.

Through discussions with City departments, residents and the Advisory Hui, these specific climate hazards were prioritized:

- Sea level rise and coastal erosion
- Increase in temperatures
- Rain bombs
- Decrease in rainfall
- Hurricane

Considering these five climate hazards, Matt's team selected five adaptation action areas:

- Kakaako/Ala Moana/McCully-Moiliili/Waikiki
- Kapolei/Makakilo/Ewa
- Kualoa/Kaaawa/Hauula/Laie/Kahuku
- Makaha/Waianae/Maili/Nanakuli
- Mapunapuna/Kalihi Kai/Sand Island/Iwilei

The project aims to help Oahu be “sea level wise”, “get flood ready”, and “beat the heat.” City budgets are supposed to help advance the policies and values identified in the planning processes. Matt's team is looking into where there are potential gaps in that structure right now. In implementing new climate practices, Matt noted that “Producing a strategy is not the end of thinking about resilience – it's the beginning.” The intent is to be nimble and more integrated moving forward – such as the One Water concept.

One Water adaptation is not a new idea. It is already a functioning framework in a lot of other municipalities and is being used to advance their integrated water resource investments over time.

The Climate Change ordinance for the City and County of Honolulu calls upon eight departments, including planning and permitting, design and construction, transportation services, environmental services, parks and recreation, facility maintenance, the Board of Water Supply, and Matt's office to collaborate on resource and financial efficiencies across the water cycle. As we move forward into this climate-changed environment into the future, new ways of working together will bring important benefits.

Matt commended community members like the BWS Stakeholder Advisory Group for keeping the pressure on. More informed groups that understand the realities and the challenges can help be a bridge for climate change adaptation discussions all around the island.

Matt thanked the group and asked for questions and comments.

Q: It would be great to be able to participate or listen in on the Advisory Hui meetings. Public participation is really essential. I can think of a lot of people would be very interested in paying attention to the One Water initiative. Could Matt provide a link?

A:

- Sign up to be added to the Climate Ready Oahu project list at: <https://www.climatereadyoahu.org/connect>
- Sign up to join the Resilience Office list at: <https://resilientoahu.org/subscribe>
- Sign up for information about the Advisory Hui at: <https://www.climatereadyoahu.org/advisory-hui>

Comment: The notion of expanding watersheds and resources needs to be taken seriously. Development is starting to fill in the areas between ranges. Let's look at watershed expansion there. If we figure out ways to do water catchment for individual houses and buildings, all of us are going to become more attentive to the use of non-potable water for non-potable needs, as opposed to potable water for non-potable needs.

Interfaces between state and county level planning are critical for things to get addressed quickly. Recent flooding where state highways were being flooded and county lands being impacted, the coordination between state and county was absolutely essential. Recently the state water system went down for the count because the river jumped out of its banks and ran right through the pump station. Barry Usagawa said BWS could hook up its water supply system to the state system, and even fill up the reservoir. That kind of interconnection between state and county, or even county and private systems, is really important.

Comment: Inter-departmental cooperation is important to solve problems, but sometimes you have to fall back on stuff from before. For example, whose kuleana is it to deal with buildup of silt from flooding over the years? Army Corps of Engineers, the City and County, and different landowners were all involved. An enormous amount of time was wasted talking about it. The solution eventually came down to money. Money has to be part of the program. Hopefully the OCCSR doesn't get cut off due to a lack of funding. OCCSR started on a grant, which was great. Get some emergency funds set aside that you can access. That's really important for the future.

Comment: The Manoa community has always been very active but during this pandemic, many groups couldn't meet. Still, we were able to get 11 community groups together to develop a community survey. With the help of many, we were able to get 1,300 responses to the survey and as many as 2,000 people who were engaged in some way. We're going to have a conference – a summit of Malama Manoa and all these other organizations – to talk about the things we learned from the survey and ways that we can connect and collaborate.

Working together with your two groups (BWS and OCCSR), would be a very beneficial and natural collaboration. BWS is developing the Halau Wai Manoa in our watershed. For information go to: <https://www.boardofwatersupply.com/community/halau-wai-manoa> OCCSR is looking for opportunities to engage individual communities. BWS would be able to introduce the project to the community directly involved with it. 'Be Ready Manoa' would have all the agencies teaching about hurricanes and emergency preparedness.

A: Matt said we all look forward to that future opportunity where we can get back to those kinds of big events like you've described.

Comment: The challenge with climate change is that the need is long-term planning simultaneous with response to “now-emergencies” that are on the rise.

Q: Great presentation. To the point about state agencies and One Water collaboration, I believe our intent is to start small with the city agencies and then work towards expanding that to the state. There is a state commission on climate mitigation and adaptation, and a city commission on climate change. How do the two commissions coordinate with the office of state planning and your office? How does that work?

A: The small step was getting us to work together. We need to be on the same page so that we can advocate and have the leverage to engage. The state commission is set up structurally very different than the city's commission. The city climate change commission has five members and they are a volunteer advisory group of experts in the fields of climate sciences and the built environment. The state climate change mitigation and adaptation commission has nearly two dozen members consisting of state and county agencies and legislators. OCCSR engages directly with both commissions.

6-Year CIP Projects

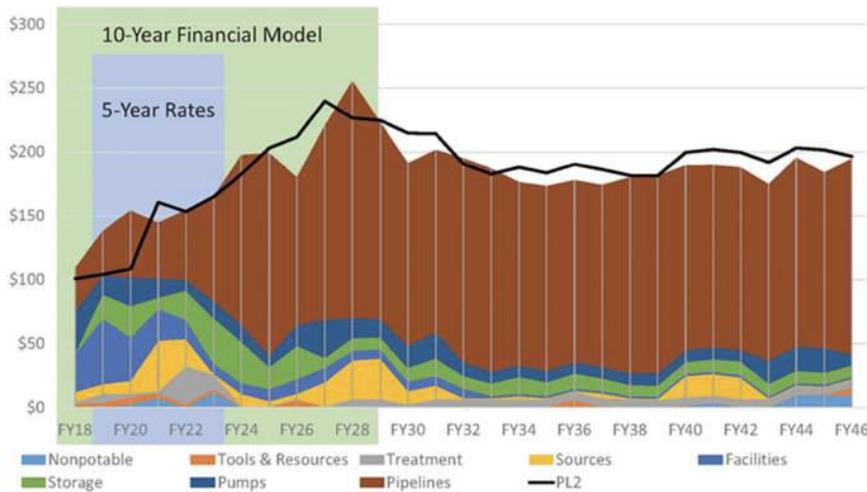
Dave introduced Barry Usagawa, BWS Water Resources Program Administrator. Barry told the group that he would discuss the 6-Year Capital Improvement Program (CIP) planned for fiscal years 2021 to 2026. The 6-Year CIP includes projects that help fulfill the recommendations of the Water Master Plan.

Major recommendations of the Water Master Plan were to:

- Develop new drinking water supplies in Ewa-Waipahu and Honolulu
- Double the amount of non-potable water produced today
- Rehabilitate some pumps and build new pumps where needed
- Build additional storage (reservoirs) in Ewa-Waipahu, Honolulu, and Waianae
- Replace high priority pipelines and install new pipelines to add capacity in areas of greatest growth

CIP projects are programmed for construction over 30 years. Barry noted a steady increase in CIP costs (see 30-Year Capital Improvement Program chart below). One reason is that BWS is steadily increasing the number of miles of high priority pipelines being replaced every year. In 2020, BWS’s water system experienced 16 main breaks per 100 miles, 333 breaks that year. Pipeline replacement planned for the 6-Year CIP starts at 9 miles replaced in 2021 increasing up to 19 miles per year in 2026.

30-year Capital Improvement Program



The CIP budget summary has three categories: Research and development, repair and replacement, and capital expansion. *The information shown below is **draft** as of April 22, 2021, and could change upon BWS Board adoption of the 6-Year CIP.*

Category	FY (\$ 000)						
	Total	2021	2022	2023	2024	2025	2026
RESEARCH AND DEVELOPMENT	35,425	2,660	6,900	5,100	4,100	5,850	10,815
REPAIR AND REPLACEMENT	715,840	105,925	121,475	140,600	108,230	123,635	115,975
CAPITAL EXPANSION	249,675	53,150	23,200	41,125	53,990	34,405	43,805
SUBTOTAL:	1,000,940	161,735	151,575	186,825	166,320	163,890	170,595
CONTRACT & CONSTRUCTION COST INDEX ADJUSTMENT	161,033	31,723	28,401	25,795	24,817	24,766	25,531
TOTAL:	1,161,973	193,458	179,976	212,620	191,137	188,656	196,126

CIP projects of note are diverse and address operational needs along with recommendations and metrics from the Water Master Plan. Some of these projects are:

Source Development Projects

Ewa Shaft Tunnel Improvements – Ewa Shaft will produce approximately 10 million gallons per day (MGD). The CIP project involves installing a bulkhead, relocating a pump station, and lining the stream to address seepage. The cost is expected to be approximately \$35 million.

Kunia Wells IV – BWS is drilling and testing three exploratory wells that are expected to produce 3 million gallons per day. The state legislature appropriated \$1,000,000 in 2019 that BWS will apply to reduce costs for new and larger agricultural meters.

Kalaeloa Seawater Desalination Facility – BWS recently solicited a Request for Qualifications for a design-build-operate-maintain contract. This facility will have a capacity of 1.7 million gallons per day, expandable to 5 million gallons per day. The project was accepted for 25% grant funding from the US Bureau of Reclamation through a congressional authorization with the help of Senator Inouye. The cost of construction is expected to be about \$30 million, and the facility should be online in 2024.

Reservoir Projects

Kapaa 272' Reservoir Replacement – There is significant leaking at the existing tank; structural deficiencies were noted in the Water Master Plan. The project will build a new 1.0 million-gallon (MG) reservoir and demolish the existing 2.0 MG reservoir.

Kalawahine 180' 2.0 MG Reservoir – This reservoir will provide 2.0 MG of additional storage in the Metro system which has a storage deficiency. The cost is estimated at \$38 million. The project has the potential to provide a park easement for the Kalawahine community.

Waiawa Reservoirs Environmental Assessment – Environmental assessment for 8.5 MG of total storage (3 reservoirs with 4.0 MG, 2.5 MG, and 2.0 MG respectively).

Recycled Water Projects

East Kapolei 215' 3.0 MG Reservoir – This will be the first elevated reservoir for the recycled water system. It will help increase recycled water use in the City of Kapolei, Kapolei business park and in East Kapolei.

Kualakai Parkway 16-inch Recycled Water Main – This pipeline will connect the new recycled water reservoir with the recycled water distribution system. BWS is applying for a Clean Water State Revolving Fund (SRF) low interest loan to help spread out payments for the recycled water 16-inch main and reservoir.

Transmission Main Projects

Honolulu District 42-inch main Liliha to Moiliili – South trunk transmission main will provide capacity, redundancy and reliability to an existing transmission main that was built in the 1940s. Construction cost for an initial phase will be approximately \$35 million.

Farrington Highway 24-inch main rehabilitation – New pipe rehabilitation technologies will be used to basically insert a new pipe within an existing out of service 24-inch pipe. The rehabbed pipe will provide redundant transmission capacity to the West side of the island. Transmission capacity is being increased as climate change decreases aquifers in Makaha and Waianae.

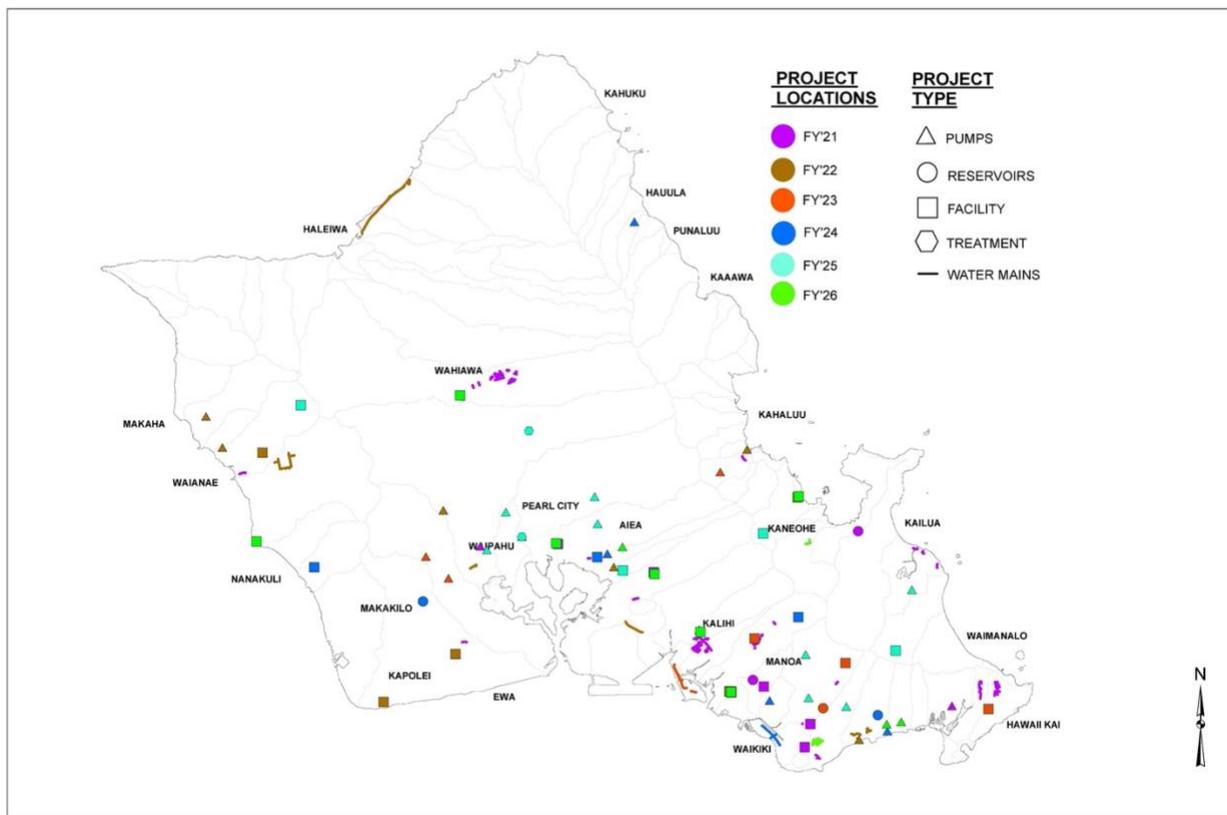
Facility Improvement Projects

Three major projects include:

Beretania Data Center Renovation

Beretania Public Service Building and 4th Floor Renovation to multi-purpose and meeting facilities

Manana Corporation Yard Microbiology Lab and Control Center Expansion



6-Year CIP projects (shown in map above) are distributed around the island. Color codes are the fiscal years for construction. The total 6-Year CIP budget is approximately \$1.1 billion.

Q: When you take salt water and clean it up through desalination, what's the salinity at the end of the purification?

A: The desalination water quality will be a reasonable match of the existing water system quality. Chloride would be in the low 120 milligrams per liter range.

Q: You had mentioned that that the desalination could have a capacity of 5 million gallons per day. Is this the only desalination plant on the island that's available? What if we get innovative and leaned more on salt water for drinking water?

A: This plant will help with climate resilience, especially if our aquifers are depleted with lower rainfall with climate change. This is the first large scale desalination plant in the state. The site is 20 acres so there is ample space for expansion. The desalination system components are modular and could be expanded, and photovoltaic renewable energy is planned in a future phase. Ernie added that if needed in case of emergency, the desalination plant will have backup power generators.

Comment: I was “exhausted” from your presentation. So much work to do.

Q: What is the capacity for Marine Corps Base Hawaii to do desalination? Could they be pushed in that direction?

A: We are trying to get the Base to restart their recycled water system. They use about 2 million gallons per day of potable water but during the recent 2020 drought, they increased their demand to 3 MGD. BWS met with them, and they immediately cut back. It's more likely that the Marine Corps Base would expand their recycled water system rather than build desalination.

Q: What are the costs per thousand gallons of desalinated water delivered to customers?

A: We don't yet know the exact costs; desalination system designers will propose their plans and cost is one of the items that we will be looking for. The system uses a lot of power because you have to take the salt out of seawater and condition it so that there's no impact to the distribution system. Desal water is more expensive, but the costs would be absorbed in the island-wide water rate.

Q: Is there a way of taking that salt and marketing it as “This salt is sold by the City”?

A: The idea of salt and brine use was brought up by a councilmember recently. I think that once this project is up and running, we'll have accommodations for visitors and research projects. There are a lot of new technologies around trying to reduce power consumption, and new ways of desalinating water. We imagine that BWS will have more research agreements with the University of Hawaii to look at new ways of being more efficient and apply new technologies.

Q: I was interested in the funding for the Manana laboratory. After all the planning and all the amazing amount of work that goes into every drop of water that we drink, in the end, you want to know how clean is that water we drink? This is measured by the laboratory results. So the laboratory is really important, because a lot of people are concerned about the cleanliness of water. The Honolulu Board of Water Supply does a fabulous job but there's a lot of chemistry going on out there. A lot of things are being manufactured that are breaking down and combining with a whole bunch of other things. If you've got a lab protocol that you've been employing for the last 20 years, I don't think that cuts it anymore. Someone needs to be really proactive and look for things that are emerging. Having a laboratory that has a high level of capacity is really important.

A: Erwin Kawata, BWS Water Quality Program Administrator, said that there's a lot to be said regarding emerging contaminants. There is the need to stay out in front of them, and we are doing a lot of that. We've already started extensive testing of all of our sources, ahead of new regulations coming up in 2023. Unregulated Contaminant Monitoring Program Regulations are also coming up in

2023. We've had initial discussions about doing Legionella bacteria testing as well. There are chemical, microbiological, or biological types of emerging contaminants. We're looking at expanding our testing capabilities in-house to be able to eventually get our testing into the area of viruses.

Erwin returned to the earlier discussion about the desalination plant. The water is going to have to be conditioned so that there isn't an adverse effect. In Flint, Michigan, they took a different water supply and introduced it into the existing water system. The new water supply wasn't compatible with the existing system. That's what resulted in the problems in Flint, Michigan. There are lots of lessons-learned throughout the United States and in the world with respect to mixing different water supplies. We have to make sure we learn from those lessons and make sure we harness all of that knowledge and make it apply and fit here in Hawaii.

Barry added that BWS incorporated a number of testing requirements for the desalination contractor to ensure that they can meet the enhanced water quality standards. We want to ensure that there are no detrimental impacts once we turn the system on.

Summary and Next Steps

Dave thanked everyone for coming and said the next meeting is on July 15th and the one after that is October 21st.