

**BOARD OF WATER SUPPLY
KA 'OIHANA WAI
CITY AND COUNTY OF HONOLULU**

630 SOUTH BERETANIA STREET • HONOLULU, HAWAII 96843
Phone: (808) 748-5000 • www.boardofwatersupply.com

RICK BLANGIARDI
MAYOR
MEIA

ERNEST Y. W. LAU, P.E.
MANAGER AND CHIEF ENGINEER
MANAKIA A ME KAHU WILIKI

ERWIN KAWATA
DEPUTY MANAGER
HOPE MANAKIA



NA'ALEHU ANTHONY, Chair
KAPUA SPROAT, Vice Chair
BRYAN P. ANDAYA
MAX J. SWORD
JONATHAN KANESHIRO
EDWIN H. SNIFFEN, Ex-Officio
GENE C. ALBANO P.E., Ex-Officio

July 18, 2023

NOTICE

The Board of Water Supply, City and County of Honolulu, Regular Meeting will be held on Monday, July 24, 2023, at 2:00 p.m. in the Boardroom, Public Service Building, 630 South Beretania Street, Honolulu, HI 96843.

Limited seating will be available for in-person testifiers in the Boardroom. The public may also view the livestream of the meeting from the lobby of the Board of Water Supply, Public Service Building, 630 S. Beretania St., Honolulu, HI 96843.

TESTIMONY

Testimony may be submitted as follows:

- **Written testimony** should include the submitter's address, email address, and phone number. Testimony should be received by Monday, July 24, 2023, at noon. Submit written testimony by:
 - Email to board@hbws.org
 - Online at boardofwatersupply.com/testimony
 - Mail to Board of Water Supply, 630 S. Beretania St., Honolulu, HI 96843
 - Fax to (808) 748-5079
- **Oral testimony** will be accepted remotely and in person during the meeting. Pre-registration is encouraged to facilitate as much remote and in-person testimony as reasonably possible during the time allotted. Testifiers should also consider submitting a written version of their oral testimony.
 - To testify remotely by phone or video using the Zoom videoconferencing platform, please submit your request by:
 - Email to board@hbws.org
 - Online at boardofwatersupply.com/testimonyZoom registration instructions, as well as participant guidelines, will be sent to the contact information provided. Once confirmed as registered, testifiers will receive an email containing the links and instructions to join the Zoom session. Submit your request to testify remotely by Friday, July 21, 2023, at noon.
 - To testify in person at the Board of Water Supply, Public Service Building, 630 S. Beretania St., Honolulu, HI 96843, please pre-register by submitting your request by Monday, July 24, 2023:
 - Email to board@hbws.org
 - Online at boardofwatersupply.com/testimonyIn-person testifiers should check-in with building security and then with testimony staff located in the lobby. Testifiers will be escorted to and from the Board Room. On-site registration will be available for walk-in requests.

Testimony is limited to two (2) minutes and shall be presented by the registered speaker only. Testimony submitted in writing or orally, electronically or in person, for use in the meeting process is public information. All testimony will be included as part of the approved meeting minutes at boardofwatersupply.com/boardmeetings.

MATERIALS AVAILABLE FOR INSPECTION

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VIEWING THE MEETING

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SPECIAL REQUESTS AND ACCOMMODATIONS

If you require special assistance, an auxiliary aid or service, and/or an accommodation due to a disability to participate in this meeting (i.e., sign language interpreter, interpreter for language other than English, or wheelchair accessibility), please call Joy at (808) 748-5172 or email your request to board@hbws.org **at least three business days prior to the meeting date**. If a response is received after the requested three business days before the meeting date deadline, we will try to obtain the auxiliary aid/service or accommodation, but we cannot guarantee that the request will be filled.

Upon request, this notice is available in alternate formats such as large print, Braille, or electronic copy.

The agenda for July 24, 2023, Regular Meeting of the Board of Water Supply is as follows:

ITEMS REQUIRING BOARD ACTION

1. Approval of the Minutes of the Regular Meeting Held on June 26, 2023
2. Adoption of Resolution No. 969, 2023, Resolution of Appreciation for Board Chair Bryan P. Andaya
3. Authorizing a Public Hearing to Consider a Proposed Amendment to the Fiscal Year 2024 Capital Improvement Program Budget of the Board of Water Supply

ITEMS FOR INFORMATION

1. Update on the Board of Water Supply's Response to the Potential Impacts of the Red Hill Fuel Contamination
2. On-Line Access to Board of Water Supply Service Line Material Inventory and Water Testing Results for Lead and Copper Rule
3. Recruitment Status
4. 2023 Customer Satisfaction Survey
5. 2023 Annual Halawa Xeriscape Garden Unthirsty Plant Sale
6. Status Update of Groundwater Levels at All Index Stations
7. Water Main Repair Report for June 2023

MINUTES

To watch the recording of this meeting, please click on the following link:
<https://vimeo.com/bwshonolulu/july-24-2023>. Closed captioning is available.

THE REGULAR MEETING OF THE BOARD OF WATER SUPPLY

July 24, 2023

At 2:00 PM on July 24, 2023, in the Public Service Building Board Room at 630 South Beretania Street, Honolulu, Hawaii, Board Chair Na'alehu Anthony called to order the Regular Meeting.

Present: Na'alehu Anthony, Chair
Kapua Sproat, Vice Chair via Zoom
Max J. Sword, Board Member
Bryan P. Andaya, Board Member via Zoom
Jonathan Kaneshiro, Board Member
Gene C. Albano, Ex-Officio

Also Present: Ernest Lau, Manager and Chief Engineer
Erwin Kawata, Deputy Manager
Jadine Urasaki, Assistant Program Administrator,
Capital Projects Division
Garon Hamasaki, Civil Engineer IV,
Customer Care Division via Zoom
Kathleen Elliott-Pahinui, Information Officer,
Communications Office
Raelynn Nakabayashi, Executive Assistant I,
Executive Support Office
Jason Nikaido, Program Administrator,
Field Operations Division
Joseph Cooper, Waterworks Controller,
Finance Division
Teriann Akana, Human Resources Specialist IV,
Human Resources Office
Henderson Nuuhiwa, Program Administrator,
Information Technology Division
via Vimeo
Michael Matsuo, Land Administrator, Land Division
Roland Festemacher,
Water Quality Laboratory Director,
Water Quality Division
Barry Usagawa, Program Administrator,
Water Resources Division
Kevin Ihu, Program Administrator,
Water System Operations Division
Joyce Lin, Civil Engineer IV,
Office of the Managers and
Chief Engineer

Kathy Mitchell, Administrative Services Officer
via Vimeo
Kimberly Kuwaye, Manager Secretary
Joy Cruz-Achiu, Board Secretary
Steven Norstrom, Information Specialist II,
Communications Office
Stella Bernardo, Information Specialist II,
Communications Office via Zoom
Michele Harman, Community Relations Specialist I,
Communications Office via Zoom
Wayne Maria, Information Specialist II,
Communications Office
Sheri Mikami, Community Relations Specialist,
Communications Office
Ian Arakaki, Principal,
The Limtiaco Consulting Group
Michael Ross, Jacobs Consulting
Joyce Tsuji, Toxicologist, Exponent, Inc. via Zoom
Becki Ward, Research Director, Ward Research
via Zoom
Rebecca Soon, President, Ward Research
via Zoom

Others Present: Jeff Lau, Deputy Corporation Counsel
via Zoom
Jessica Wong, Deputy Corporation Counsel
via Zoom

Absent: Edwin H. Sniffen, Ex-Officio

Chair Na'alehu Anthony opened the Board meeting with an 'olelo no'eau:

Aloha mai kākou e nā hoa makamaka mai ka lā hiki a ka lā kau. Welina nui me ke aloha! Mahalo nui no kēia 'ākoakoa 'ana o kākou no ka pono o ka lāhui, no ka pono o ka 'āina, a no ka pono o ka wai nō ho'i. Eia he 'ōlelo no'eau e kālele ana i ke ko'iko'i o ka wai. Mōhala I ka wai ka maka o nā pua.

Chair Anthony translated the 'olelo no'eau as Unfolded by the water by the faces of the flowers. Flowers thrive where there is water as thriving people are found, and where the living conditions are good.

Chair Anthony welcomed everyone to the July 24, 2023, Regular Meeting of the Board of Water Supply (BWS). He stated that the Board of Water Supply is dedicated to providing safe, dependable, and affordable supply of water now and into the future.

Before continuing the meeting, Chair Anthony stated that a recording would play to share reminders for public participation and virtual meeting regulations required by law.

The recording played: Goals for this meeting under Hawaii Revised Statutes, Section 92-7.5 are accessible at www.boardofwatersupply.com/boardmeeting. The public may attend this meeting in person at the Public Service building located at 630 South Beretania Street. The public may also view a live stream of today's meeting on our website at www.boardofwatersupply.com/live. We have been accepting written or oral testimony for today's meeting. Instructions and an online submittal form are available at boardofwatersupply.com/testimony. The deadline to submit advance written testimony has passed. Testimony received by noon today has been distributed to the board members. We will continue to accept written testimony today through our online form. Oral testimony in person or remotely will be accepted during today's meeting. To facilitate as much in-person and remote testimony as reasonably possible during the time allotted, preregistration and submittal of a written version of testimony at boardofwatersupply.com/testimony is strongly encouraged. To testify in person, please register using our online form or come to the public service building at 630 South Beretania Street. We have a representative in the lobby to provide intake and further instructions. To request to testify remotely, please complete the online form at boardofwatersupply.com/testimony. Requestors will receive an email containing links and instructions to join the Zoom session. Testifiers will have two minutes to state their position. A timekeeper will alert testifiers when there is one minute remaining. Once the two minutes are up, please summarize to allow time for questions from the Board. Then make room for the next testifier. Board members attending any board meeting remotely must be visible to the public to be considered, present, and meet quorum guidelines. Board members participating remotely must also disclose their location and anyone present at their location during roll call. Meeting participants who are calling or video conferencing in, please mute your microphone when you're not speaking. If you have a question, comment, or wish to enter or second a motion on an action item, please unmute your microphone and identify yourself before continuing to speak. If you encounter technical issues during today's meeting, please use the Zoom chat to send a direct message to our support team. Their names are listed in the message to all participants. To open the chat window, please click the text Bubble icon on the Zoom Toolbar.

Chair Anthony requested a roll call for the Regular Meeting. He asked those participating remotely to give the appropriate disclosures up responding.

Vice Chair Kapua Sproat joined via Zoom, responded aye, and disclosed that she was alone at her location; Board Member Bryan Andaya joined via Zoom, responded aye, and disclosed that he was alone at his location; Board Member Max Sword responded aye and was present in the Board room; Board Member Jonathan Kaneshiro responded aye and was present in the Board room; and Board Member Gene Albano responded aye and was present in the Board room. Chair Anthony was present in the Boardroom. Board Member Edwin Sniffen was absent.

Chair Anthony introduced those in the Boardroom, Manager Ernest Lau, Deputy Manager Erwin Kawata, Board Secretary Joy L. Cruz-Achiu, Manager Secretary Kimberly Kuwaye, and Information Specialist II Steven Norstrom and Wayne Maria. Deputy Jeff Lau and Deputy Jessica Wong joined via Zoom from the City and County Corporation Counsel.

REGULAR MEETING

APPROVAL OF MINUTES

Approval of the Minutes of the Regular Meeting Held on June 26, 2023.

MOTION TO APPROVE

Max Sword and Jonathan Kaneshiro motioned and seconded, respectively, to approve the Minutes of the Regular Meeting Held on June 26, 2023.

In lieu of a roll call vote, Chair Anthony requested a voice vote on the motion and requested that Board Members in favor of the motion say "Aye." The Board members present responded with a verbal "Aye." Board Member Gene Albano "Abstained." Chair Anthony then inquired if any Board Members would like to object or vote "Nay" on the motion. There were no objections or "Nay" votes. Vice Chair Anthony announced that the motion was unanimously carried.

THE MINUTES OF THE REGULAR MEETING HELD ON JUNE 26, 2023, WERE APPROVED AT THE JULY 24, 2023, BOARD MEETING			
	AYE	NO	COMMENT
NA'ALEHU ANTHONY	X		
KAPUA SPROAT	X		
BRYAN P. ANDAYA	X		
MAX J. SWORD	X		
JONATHAN KANESHIRO	X		
EDWIN H. SNIFFEN			ABSENT
GENE C. ALBANO			ABSTAIN

“July 24, 2023

ADOPTION OF
RESOLUTION NO.
969, 2023,
RESOLUTION OF
APPRECIATION
FOR BOARD
CHAIR
BRYAN P.
ANDAYA

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Adoption of Resolution No. 969, 2023, Resolution of
Appreciation for Board Chair Bryan P. Andaya

Board Chair Bryan P. Andaya has stepped down from his position as Board Chair. He will continue to stay on as a Board of Water Supply (BWS) Board member to help mentor and support Chair Na’alehu Anthony.

We recommend the adoption of Resolution No. 969, 2023, to recognize and thank Mr. Bryan P. Andaya for his excellent service, contributions, and dedication to this Board and the Department during his term as Chair of the BWS Board of Directors.

Respectfully Submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment”

DISCUSSION:

Ernest Lau, Manager and Chief Engineer, gave the report.

Vice Chair Kapua Sproat expressed her mahalo to Board Member Bryan Andaya’s time and aloha as Chair - it has been an honor to serve alongside him. She looks forward to Board Member Andaya’s continued contributions.

Board Member Bryan Andaya stated that serving the BWS as Chair for seven years has been an honor. He expressed his sincere mahalo to the Board and the Department.

Manager Ernest Lau shared his appreciation for Board Member Andaya. He stated that Board Member Andaya took the BWS through some challenging times as Chair and provided him with sound advice. Manager Lau looks forward to continue working with Board Member Andaya for the remainder of his term.

Chair Anthony echoed Manager Lau and Vice Chair Kapua’s comments. He thanked Board Member Andaya for leading the BWS through some trying times as Chair.

**MOTION
TO APPROVE**

Max Sword and Jonathan Kaneshiro motioned and seconded, respectively, to approve the Adoption of Resolution No. 969, 2023, Resolution of Appreciation for Board Chair Bryan P. Andaya.

Ms. Cruz-Achui conducted a roll call vote: Vice Chair Kapua Sproat, aye; Board Member Bryan Andaya, abstain; Board Member Max Sword, aye; Board Member Jonathan Kaneshiro; aye; Board Member Gene Albano, aye; and Chair Na'alehu Anthony, aye. Board Member Edwin Sniffen was absent.

Ms. Cruz-Achui announced that the motion passed with five ayes and one abstention.

ADOPTION OF RESOLUTION NO. 969, 2023, RESOLUTION OF APPRECIATION FOR BOARD CHAIR BRYAN P. ANDAYA WAS ADOPTED ON JULY 24, 2023			
	AYE	NO	COMMENT
NA'ALEHU ANTHONY	X		
KAPUA SPROAT	X		
BRYAN P. ANDAYA			ABSTAIN
MAX J. SWORD	X		
JONATHAN KANESHIRO	X		
EDWIN H. SNIFFEN			ABSENT
GENE C. ALBANO	X		



BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

RESOLUTION NO. 969, 2023

BRYAN P. ANDAYA
IN APPRECIATION FOR HIS SERVICE AS
CHAIR OF THE BOARD OF WATER SUPPLY

WHEREAS, BRYAN P. ANDAYA has ably served as Chair of the Board of Water Supply, City and County of Honolulu, since September 2016, and he has handed over the position; and

WHEREAS, during his tenure as Board Chair, MR. ANDAYA's work as an attorney and owner of Andaya Consulting, LLC, and the Andaya Real Estate Continuing Education School and as a partner with ES&A, a law corporation; his former position as Chief Operations Officer of L&L Franchise, Inc.; other board memberships; and prominence in the community have brought additional recognition and esteem for the Board; and

WHEREAS, his experience as a lawyer and his keen awareness of operational and administrative issues of owning and managing a business bolstered BRYAN P. ANDAYA's ability to deftly and successfully guide this Board and Department through significant departmental and community challenges – such as the Red Hill Underground Fuel Storage Tanks Facility leaks crises, adoption of the 30-year Water Master Plan, major changes to the water rates structure, live broadcasting of board meetings, transfer of Haiku Stairs to the city, and the COVID-19 pandemic -- with humility, integrity, wisdom, and compassion; and

WHEREAS, MR. ANDAYA has encouraged and supported BWS employees and initiatives for programs to further preserve and protect Oahu's precious water resources, and he has astutely led Board members in effecting business and policy decisions for the Board that will impact the direction and operations of this Department for many years to come; and

WHEREAS, his dedicated service as board chair and continuing service as a board member to support and mentor the incoming chair is a testament to his firm commitment to maintaining a municipal water system deserving of trust from the public it serves; now, therefore,

BE IT RESOLVED by the Members of the Board of Water Supply, City and County of Honolulu, that we do hereby express to BRYAN ANDAYA our deep appreciation and respect for his steadfast service and leadership of this Board and Department; and

BE IT FURTHER RESOLVED that the Members of this Board extend to BRYAN P. ANDAYA our sincere gratitude and best wishes for continuing success in all his endeavors; and

BE IT FINALLY RESOLVED that this Resolution be presented to BRYAN P. ANDAYA.



Resolution No. 969, 2023

Adopted this 24th day of July 2023
Board of Water Supply, Honolulu, Hawaii

NA'ALEHU ANTHONY
Chair of the Board

July 24, 2023

AUTHORIZING
A PUBLIC
HEARING TO
CONSIDER A
PROPOSED
AMENDMENT TO
THE FISCAL YEAR
2024 CAPITAL
IMPROVEMENT
PROGRAM
BUDGET OF THE
BOARD OF
WATER SUPPLY

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Authorizing a Public Hearing to Consider a Proposed Amendment to the Fiscal Year 2024 Capital Improvement Program Budget of the Board of Water Supply

We recommend that the Board authorize a public hearing to be held at 2:00 p.m. on August 28, 2023, to consider the resolution to adopt the proposed Amended Capital Improvement Program Budget for the fiscal year beginning July 1, 2023, and ending June 30, 2024.

This amendment is necessary to re-program Fiscal Year 2023 Capital Improvement Projects that were unable to be awarded, such as the Wilhelmina Rise 811' Reservoir Replacement Project and the State of Hawaii Department of Land and Natural Resources (DLNR) Windward Exploratory Well State Well No. 3-2449-002 Project, into Fiscal Year 2024. Additionally, we are proposing to add a Project titled, "BWS Water Master Plan Update".

Attached is the draft of the "Notice of Public Hearing" to be published prior to the hearing date.

Respectfully Submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

DISCUSSION: Raelynn Nakabayashi, Executive Assistant I, Executive Support Office, gave the report.

Board Member Max Sword inquired if any tanks would be replaced in the near future.

Ms. Raelynn Nakabayashi responded that in the next six years, there aren't many storage tanks to be replaced.

Manager Lau explained that the Wilhelmina Rise 811' Reservoir Replacement Project included in the Capital Improvement Project (CIP) Proposed Amendment would replace the 100-year-old water tank supporting the Wilhelmina Rise Community. The project would also

include the installation of a new booster pump. The BWS currently has an ongoing reservoir replacement project at Kapaa 272 Reservoir.

Board Member Sword asked if there are any immediate threats to any BWS tanks that would require replacement in the near future.

Manager Lau stated that the BWS's current focus is to develop new sources and install treatment systems. He explained that the community needs more water storage. Therefore, the BWS has implemented an environmental assessment for an eight million (M) gallon water storage tank in Waiialua, which would eventually be able to support the Honolulu water system and expand water pumpage to develop additional capacity. Manager Lau shared that there are tank replacement projects in the future.

Board Member Jonathan Kaneshiro inquired why the projects budgeted for in Fiscal Year 2023 were not awarded.

Ms. Nakabayashi explained that the bids for the Wilhelmina Rise 811 project were over 200% over budget and exceeded available funds.

Manager Lau shared that the bid for a 300,000-gallon tank and replacement and upgrade of a booster pump at Wilhelmina Rise would replace a 430,000-gallon tank and allow the booster pump to pump water to the higher reservoir was priced at \$20M. Therefore, the BWS is working to repackage or change the project's approach to lower the cost. He mentioned that the Wilhelmina 811' Rise project had American Rescue Plan Act (ARPA) funding.

Board Member Sword asked if the replacement tank at Wilhelmina Rise would be smaller than the existing tank.

Manager Lau confirmed that the Wilhelmina 811' Rise project would consist of a smaller tank since the current tank is larger than the system needs. He explained that the BWS is considering constructing a smaller tank within the existing tank, which may reduce the need to excavate and build a retaining wall.

Board Member Kaneshiro asked if the BWS would have proceeded with the project in Fiscal Year 2023 if the bid was within budget.

Ms. Nakabayashi replied that the Wilhelmina 811 Reservoir Replacement Project would have been awarded if the bid came in within budget.

Manager Lau added that the BWS is reviewing all options.

Ms. Nakabayashi also shared that the State of Hawaii Department of Land and Natural Resources (DLNR) Windward Exploratory Well State Well No. 3-2449-002 Project was not awarded in time. However, due to its importance, the BWS would like to pursue the project. She also

mentioned that the BWS is working to update the Water Master Plan (WMP) as the need becomes apparent in the rate study.

Manager Lau stated that updating the WMP as soon as possible is essential due to the challenges the BWS face with inflation, increased power cost, and the Red Hill contamination.

Vice Chair Sproat expressed her mahalo the BWS for their outreach efforts. She suggested that the BWS continue to engage with the community to hear their ma'nao and any concerns they may have.

**MOTION
TO APPROVE**

Jonathan Kaneshiro and Max Sword motioned and seconded, respectively, to Authorize a Public Hearing to Consider a Proposed Amendment to the Fiscal Year 2024 Capital Improvement Program Budget of the Board of Water Supply.

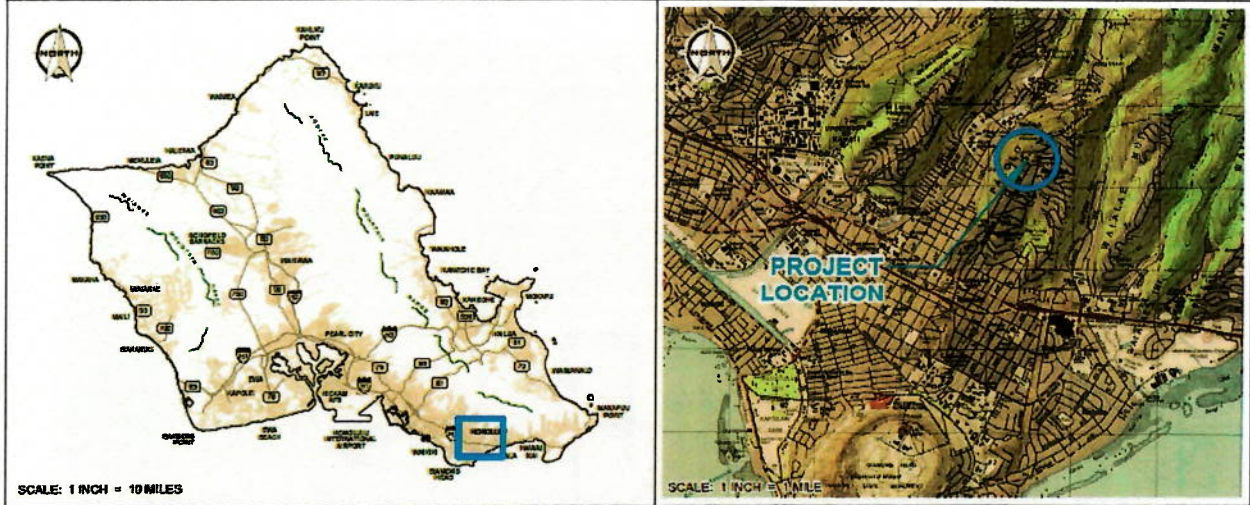
Ms. Cruz-Achiu conducted a roll call vote: Vice Chair Kapua Sproat, aye; Board Member Bryan Andaya, aye; Board Member Max Sword, aye; Board Member Jonathan Kaneshiro, aye; Board Member Gene Albano, aye; and Chair Na'alehu Anthony, aye. Board Member Edwin Sniffen was absent.

Ms. Cruz-Achiu announced that the motion passed with six ayes.

AUTHORIZING A PUBLIC HEARING TO CONSIDER A PROPOSED AMENDMENT TO THE FISCAL YEAR 2024 CAPITAL IMPROVEMENT PROGRAM BUDGET OF THE BOARD OF WATER SUPPLY WAS APPROVED ON JULY 24, 2023			
	AYE	NO	COMMENT
NA'ALEHU ANTHON	X		
KAPUA SPROAT	X		
BRYAN P. ANDAYA	X		
MAX J. SWORD	X		
JONATHAN KANESHIRO	X		
EDWIN H. SNIFFEN			ABSENT
GENE C. ALBANO	X		

Wilhelmina Rise 811' Reservoir Replacement Project

Regional Location Maps:

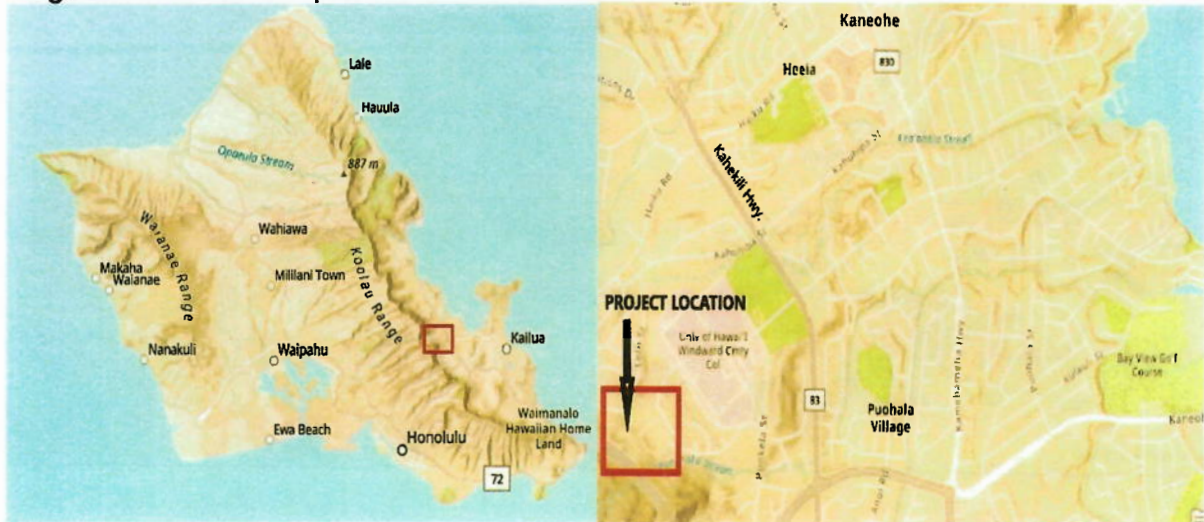


Site Location Map



**State of Hawaii Department of Land and Natural Resources (DLNR) Windward
Exploratory Well State Well No. 3-2449-002 Project**

Regional Location Maps:



Site Location Map:



NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the BOARD OF WATER SUPPLY (BWS), CITY AND COUNTY OF HONOLULU, will hold a PUBLIC HEARING in the Board Room, Public Service Building, 630 South Beretania Street, on Monday, August 28, 2023, at 2:00 p.m. or soon thereafter, where all interested persons shall be afforded the opportunity of being heard on the adoption of the Proposed Amendment to the Fiscal Year (FY) 2024 Capital Improvement Program Budget of the Board of Water Supply, beginning July 1, 2023 and ending June 30, 2024.

Limited seating will be available for in-person testifiers in the Boardroom. The public may also view the livestream of the meeting from the lobby of the Board of Water Supply, Public Service Building, 630 S. Beretania St., Honolulu, HI 96843.

TESTIMONY CAN BE SUBMITTED AS FOLLOWS:

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 - Online at boardofwatersupply.com/testimonyZoom registration instructions, as well as participant guidelines, will be sent to the contact information provided. Once confirmed as registered, testifiers will receive an email containing the links and instructions to join the Zoom session. Submit your request to testify remotely by Friday, August 25, 2023, at noon.
 - To testify in person at the Board of Water Supply, Public Service Building, 630 S. Beretania St., Honolulu, HI 96843, please pre-register by submitting your request by Monday, August 28, 2023:

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Upon request, this notice is available in alternate formats such as large print, Braille, or electronic copy.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

ITEM FOR INFORMATION NO. 1

"July 24, 2023

**UPDATE ON
THE BOARD OF
WATER SUPPLY'S
RESPONSE TO
THE POTENTIAL
IMPACTS OF
RED HILL FUEL
CONTAMINATION**

**Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843**

Chair and Members:

**Subject: Update on the Board of Water Supply's Response to the
Potential Impacts of the Red Hill Fuel Contamination**

Joyce Lin, Civil Engineer IV, Office of the Manager and Chief Engineer, and Deputy Manager Erwin Kawata will give an Update on the Board of Water Supply's Response to the Potential Impacts of the Red Hill Fuel Contamination.

Respectfully Submitted,

/s/ **ERNEST Y. W. LAU, P.E**
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION:

Joyce Lin, Civil Engineer IV, Office of the Manager and Chief Engineer, and Deputy Manager Erwin Kawata gave the report.

Board Member Sword inquired if the Navy had indicated their plans for the Red Hill after the tanks are defueled and closed.

Manager Lau responded that that question remains to be the big question. He mentioned that the Department of Health (DOH) requested the Navy explore beneficial reuse options. However, the Navy wants to permanently close the facility and remove all pipelines connecting the tanks to Pearl Harbor.

Board Member Sword asked about the Navy's plans to remediate the contamination.

Manager Lau replied that the discussion on the contamination cleanup is ongoing. He stated that the regulators, the United States Environmental Protection Agency (EPA), and DOH are responsible for deciding what actions must be taken to remediate the contamination.

Board Member Sword commented that he wants the party responsible for the contamination to be held accountable and rectify the issue.

Chair Na'alehu Anthony inquired about what regulators should do with the shared information.

Deputy Manager Erwin Kawata responded that the regulators should follow up on the information shared. The BWS suggests that the DOH also provides short and long-term medical assessment and treatment for those exposed to the different chemicals.

Manager Lau added that all regulators: DOH, EPA, and Centers for Controlled Disease (CDC), should all be assisting in providing the care and treatment for those impacted by the Red Hill contamination.

Chair Anthony asked Deputy Manager Kawata if it is due to the lack of assessments, tests, and information that makes it difficult to determine and understand what is happening.

Deputy Manager Kawata agreed. He stated that the BWS has been advocating the importance of monitoring for a very long time. Deputy Manager Kawata shared that when the 2014 Red Hill release occurred, the BWS requested the regulatory agencies to require the Navy to do extensive monitoring versus limiting the different types of chemicals to monitor. He explained that monitoring any extensive testing would generate long-term data and provide any trend for all that is found then and in the future. Deputy Manager Kawata stated that any and all data collected is critical and helpful going forward during exposure and medical assessment.

Board Member Gene Albano inquired if the BWS has received any information from the Department of Defense (DOD).

Manager Lau replied that in a recent experience, the DOD shared information with the BWS. He shared that after the November 2021 Red Hill spill, the BWS requested laboratory results for a deicing agent from test samples taken from the Red Hill Shaft and the drainage sump. The DOD provided laboratory results that showed non-detect of the deicing agent at the Red Hill Shaft and high levels in the sump.

There was in-person testimony:

Susan Pcola-Davis	<i>Commented on Dr. Roger Brewer's exposure assessment. She also provided a 7-page attachment.</i>
--------------------------	--

There was remote testimony:

Meredith Wilson	<i>Commented on Dr. Roger Brewer's exposure assessment and submitted questions. She also provided written testimony.</i>
------------------------	--

Manager Lau responded that the BWS would look into her concerns. He commented that the defueling Joint Task Force (JTF) information sharing forum's primary mission and focus is on defueling, and the remediation roundtable deals with broader environmental issues.

There were written testimony:

David Tupper	<i>Submitted three questions to the BWS.</i>
Susan Gorman-Chang	<i>Submitted written testimony commenting on the Red Hill discussion during the June 26, 2023, BWS Board Meeting.</i>



JULY 2023 RED HILL UPDATES

July 24, 2023

Joyce Lin

boardofwatersupply.com

RECENT EVENTS

- Subject Matter Expert Meeting
- PFAS Detection at Pearl City Shaft
- Met with ASN-EIE Meredith Berger
- Met with EPA Region 9 Administrator Martha Guzman
- FY 2024 National Defense Authorization Act
 - S. 2226
 - H.R. 2670



For Immediate Release
June 28, 2023

Board of Water Supply Confirms Low Level Detection of PFAS at Pearl City Shaft

HONOLULU - The Board of Water Supply (BWS) has confirmed the low-level detection of Perfluorohexanesulfonic acid (PFHxS) at the BWS Pearl City Shaft, at the levels shown in the table below. The BWS reported the findings to the Hawaii Department of Health (DOH) in accordance with Hawaii State Law.

Location	Analyte	Sample date			EPA Test Method
		4/18/23	5/1/23	5/10/23	
Pearl City Shaft	Perfluorohexanesulfonic acid (PFHxS)	ND	2.4	2.6	533
	Perfluorohexanesulfonic acid (PFHxS)	2.0	2.6	2.6	
All values in ppt					

Abbreviations:
ND = Not detected
ppt = parts per trillion (ppt)

On March 14, 2023, the U.S. Environmental Protection Agency (EPA) proposed a Hazard Index (HI) to determine the combined risk of four specific PFAS chemicals in drinking water at a site and Perfluorohexanesulfonic acid (PFHxS) is one of them. The Hazard Index is calculated by summing the ratios of each detected compound amount in ppt, relative to its Health-Based Water Concentration. The table below shows the amounts of Perfluorohexanesulfonic acid (PFHxS) detected relative to EPA's proposed Hazard Index and to existing DOH environmental action levels (EALs).

Location	Analyte	Detected level (in ppt)	HI value	EPA proposed HI limit	DOH EAL (in ppt)	EPA Test Method
Pearl City Shaft	Perfluorohexanesulfonic acid (PFHxS)	ND - 2.6	0 - 0.29	1	19	533
	Perfluorohexanesulfonic acid (PFHxS)	2.0 - 2.6	0.22 - 0.27	1	19	537.1

HI = Hazard Index
ND = Not detected
ppt = parts per trillion (ppt)

The Hazard Index of 0.29 is below EPA's LO compliance threshold. The Perfluorohexanesulfonic acid (PFHxS) amount of ND - 2.6 ppt is also less than the DOH environmental action level (DOH EAL) of 19 ppt. Based on these conditions, a significant health risk is not expected. DOH has advised however, that those with concerns may still use a home filtration option to reduce PFAS.

BWS detected Perfluorohexanesulfonic acid (PFHxS) as part of its PFAS testing program. Multiple samples were tested to confirm the finding and improvements in test methods and technology enable its detection at these very low levels. Pearl City Shaft is located in Pearl City and serves an area from Lehua Community Park to Pearl City District Park.

Perfluorohexanesulfonic acid (PFHxS) is in the PFAS group of fluorinated organic chemicals which have been used extensively in consumer products such as carpets, clothing, fabrics for furniture, paper packaging for food, and other materials (e.g., cookware) designed to be water-proof stain-resistant, or non-stick. They also have been used in fire-retarding foam.

Manager and Chief Engineer Ernest Lau stated, "We take our kuleana to provide safe drinking water to our community seriously and will continue to test for PFAS chemicals and monitor for any changes."

###



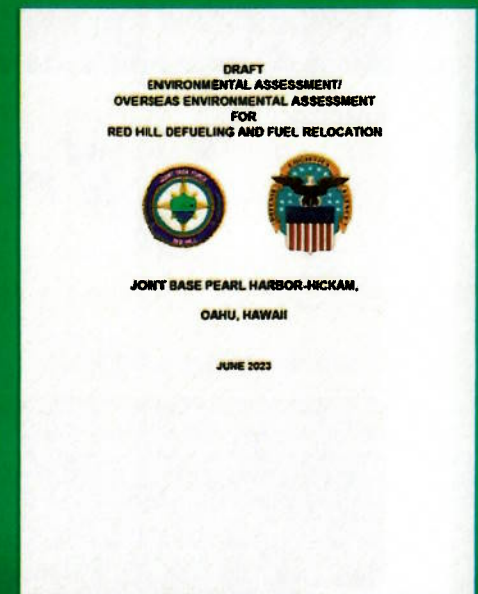
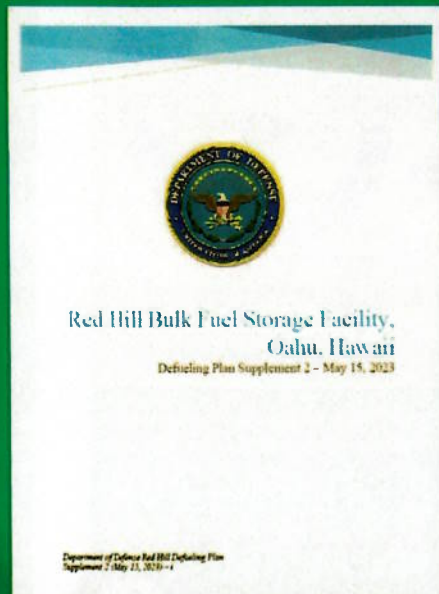
DEFUELING

Defueling Plan Supplement 2

- Defueling Timeline:
October 16, 2023 – January 19, 2024
- 99.85 % of fuel will be removed
- About 100,000 - 400,000 gallons of fuel to remain
- Conditionally approved by EPA and DOH

Environmental Assessment for Red Hill Defueling and Fuel Relocation

- Public Comment period ended June 30th





Next 90 Days

July 2023

August 2023

September 2023

Key Events

July 13: Response Drill
 July 14: Fire Watch Training Begins
 July 17-28: Surge Tank Draining
 July 17: Tank Tightness Testing Complete

August 7: Repairs Approved by DOH
 August 15: Fire Watch Training Ends
 August 16-17: Firefighting Drill
 August 22: DISF¹ Meeting
 August 28-30: Repacking
 August 31: NEPA¹ Complete

September 1-30: Final Preparations for Defueling
 September 19: HNL Dept of Emergency Management / Local Emergency Planning Committee

DoD Repairs Completed

3rd Party Quality Validation Completed

Number of Validated Repairs Submitted to DOH for Review/Approval

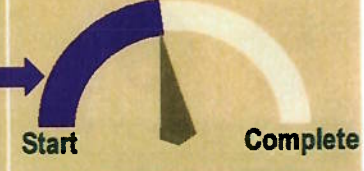
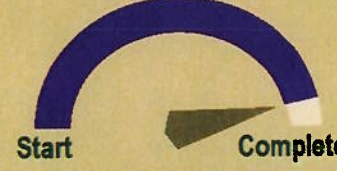
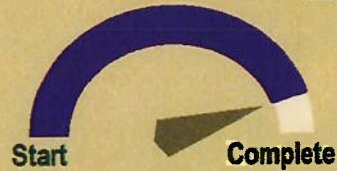
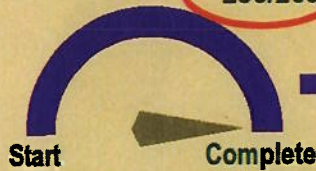
DOH Conditional Approval

253/253

227/253

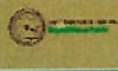
227/253

114/253



Surge Tanks

Within the underground pump house, there are four surge tanks holding approximately 480,000 gallons of fuel. Surge Tank draining is scheduled to begin July 17. Click [here](#) to learn more about the process.



Tank Tightness Testing



On July 17, Tank Tightness Testing will be complete. To learn more about the importance of Tank Tightness Testing, click on the video to the left.

Dashboard Legend ¹

DISF: Defueling Information Sharing Forum
 FTAC: Fuel Tank Advisory Committee
 NEPA: National Environmental Policy Act

Joint Task Force - Red Hill
 Defueling Dashboard
 As of July 12, 2023

Subject to Revision



Android coming soon!

JTF-RH is currently ON PLAN to begin gravity defueling on October 16, 2023

CLOSURE of Red Hill Bulk Fuel Storage Facility

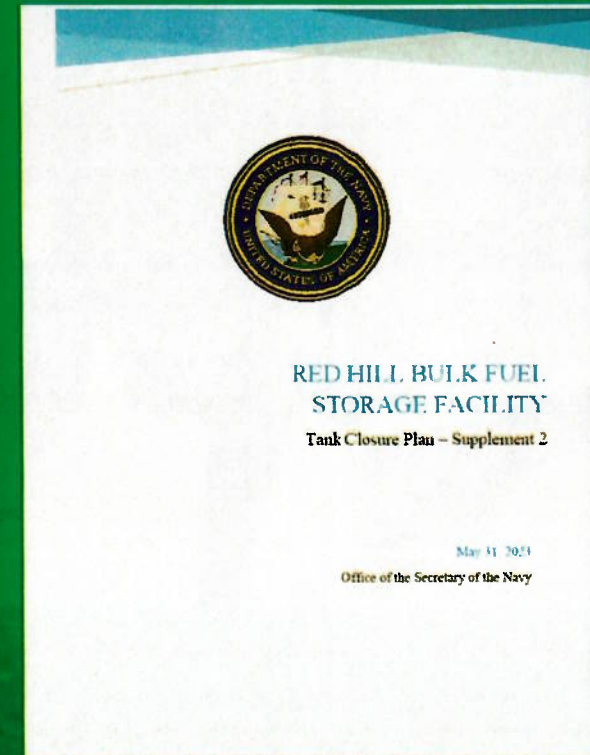
Closure Alternatives:

- 1: Closure In-Place
- 2: Closure In-Place and Non-Fuel Reuse
- 3: Closure with Fill
- 4: Remove Tank Steel Liner, and Fill

Tank Closure Plan -Supplemental 2

- Clean and close 20 fuel tanks, and dismantle the 3 fuel pipelines between tanks and Pearl Harbor
- 3+ years to complete

Tank Closure: August 2027



UPCOMING EVENTS

- Community Representative Initiative (CRI) Group Scope and Information Meeting
 - Thursday, July 27, 5-7 PM
 - Aliamanu Middle School
- Red Hill Remediation Roundtable
 - August 2023





MAHALO!

July 2023 Red Hill Updates

Providing safe, dependable, and affordable
drinking water, now and into the future.



DOH EXPOSURE
ASSESSMENT REPORT OF
NOVEMBER 2021 RELEASE
OF JP-5 JET FUEL INTO THE
JOINT BASE PEARL HARBOR
HICKAM (JBPHH) DRINKING
WATER SYSTEM

July 24, 2023

boardofwatersupply.com

DISCUSSION TOPIC

- Review of DOH Exposure Assessment Report of November 2021 JP-5 jet fuel release into the JBPHH drinking water system
- Questions / discussion

File # 2023-054-RB

Exposure Assessment: November 2021 Release of JP-5 Jet Fuel into the Joint Base Pearl Harbor Hickam Drinking Water System

Hawai'i Department of Health

**Prepared by: Roger Brewer, PhD
Hazard Evaluation and Emergency Response**

June 2023

DEPARTMENT OF HEALTH (DOH) REPORT APPROACH

- Purpose:
 - Assess residents' exposures to tap water contaminated by the November 2021 release from the Red Hill Bulk Fuel Storage Facility
- Methods:
 - Estimated exposure levels of jet fuel (JP-5) chemicals in tap water and air based on observations, JP-5 properties, and laboratory experiments
 - Assessed potential health risks by comparing estimated exposure levels to the health-based levels of fuel chemicals



EXPOSURE UNCERTAINTIES AND POTENTIAL FOR UNDERESTIMATION

- Unknown and variable exposures over time and by location
- Only JP-5 chemicals and a fuel de-icing additive were considered
 - Missing: other additives, heavy chlorination, Simple Green cleaner, or historical contamination mobilized by JP-5 and Simple Green
- Actual conditions could increase air exposure to chemicals over those estimated
 - Water spray and mixing from a faucet
 - Hot water (e.g., cooking, bathing, washing) compared to cold water
 - Standing in the shower, near a boiling pot of noodles, or washing dishes
- Possible error in the amount of indoor air exposure time



CHEMICAL TOXICITY AND HEALTH-BASED LEVELS

- Combined effects of multiple chemicals are not considered
- DOH should note that the fuel additive is a concern for exposure during pregnancy
- DOH notes the EPA updated the toxicity of chemicals in JP-5
- These updates could lower the DOH Environmental Action Level (EAL) for JP-5 from 266 to 91 ppb
 - DOH states that 91 ppb is too low for laboratories to accurately measure
 - However, DOH sampling in December 2021 reported JP-5 levels down to 47 ppb



DOH REPORT CONCLUSIONS

- Report Findings:
 - *“Exposure under each scenario was at times high enough to cause immediate, acute health effects”*
- Constituents in order of most health concern¹:
 1. Fuel de-icing additive
 2. JP-5 overall
 3. Certain JP-5 chemicals
- DOH does not discuss the potential for persistent health effects but suggests that a Health Assessment will be conducted in exposed residents

¹ based on magnitude of exceeding short-term screening levels



ADDITIONAL BWS COMMENTS

- DOH's discussion of various chemicals reaffirms prior BWS urging the testing of groundwater for more than just total petroleum hydrocarbons and a few related chemicals²

²benzene, ethylbenzene, toluene, xylenes

Messrs. Pallarino and Chang
October 3, 2016
Page 14

DOH should direct the Navy to test for all the additives discussed above: EGME, DiEGME, 2,6-di-tert-butyl-4-methylphenol, 6-tert-butyl-2,4-dimethylphenol, 2,6-di-tert-butylphenol, N,N'-disalicylidene-1,2-propanediamine, tertiary butylated phenol, and phenol. Also, they should direct the Navy to provide a list of additives used in fuels stored at RHBFSF from 1942 through the 1970s and analyze groundwater for any chemicals not already included in this list.

In summary, EPA and DOH should direct the Navy to test for all the additives discussed above: EGME, DiEGME, 2,6-di-tert-butyl-4-methylphenol, 6-tert-butyl-2,4-dimethylphenol, 2,6-di-tert-butylphenol, N,N'-disalicylidene-1,2-propanediamine, tertiary butylated phenol, and phenol. Also, they should direct the Navy to provide a list of additives used in fuels stored at RHBFSF from 1942 through the 1970s and analyze groundwater for any chemicals not already included in this list.

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
830 SOUTH BERETANIA STREET
HONOLULU, HI 96845
www.boardofwatersupply.com



October 3, 2016

KIRK CALDWELL, MAYOR
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FORD H. FUJIOGAWA, Esq. Ofc.
ERNEST Y. W. LAAL, P.E.
Manager and Chief Engineer
ELLEN E. KITAHARA, P.E.
Deputy Manager and Chief Engineer

Mr. Bob Pallarino
EPA Red Hill Project Coordinator
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105

and

Mr. Steven Chang, P.E.
DOH Red Hill Project Coordinator
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Dear Messrs. Pallarino and Mr. Chang:

Subject: Board of Water Supply (BWS) Comments on the Red Hill Bulk Fuel Storage Facility (RHBFSF) Administrative Order on Consent (AOC) Work Plans and Associated Scoping Meetings

From June 2015 to the date of this letter, the BWS has sent 34 letters on the AOC and its work plans to the AOC Parties and received only 11 responses. We strongly believe these letters demonstrate our commitment to lend our assistance and expertise in good faith and at a minimum deserve the courtesy of a reply to each one. The number of responses, however, received to date is disappointing given the serious threat these aging underground fuel storage tanks pose to the environment and our high quality drinking water resource.

The BWS continues to be concerned about the petroleum contamination that is still present in the rocks and groundwater underneath and near the Red Hill fuel tanks and the risk for potential future, perhaps catastrophic leaks. The Navy has been testing the groundwater since 2005. However, tests conducted by the Navy from 2014 to 2016 indicate the amount of petroleum contamination in the groundwater underneath Tank 5 is rising.

ADDITIONAL BWS COMMENTS – CONT.

- The different fuel types, additives, and other chemicals used at the Red Hill Facility
 - Complicate assessment of potential health risks and diagnosis and treatment of medical issues for those affected
 - Increase the scope, intensity, complexity and cost of water treatment studies and building, operating, and maintaining the final treatment system
- Identify the additives present in the fuel stored at Red Hill over its 80 year history
- Immediately conduct testing of all Red Hill water sources and monitoring wells for additives as recommended by BWS in 2016.



QUESTIONS / DISCUSSION



Subject: Board Meeting Testimony Submittal or Request - Monday, July 24, 2023 - Susan Pcola-Davis
Date: Sunday, July 23, 2023 at 5:32:47 PM Hawaii-Aleutian Standard Time
From: contactus=notify2.boardofwatersupply.com@mg.boardofwatersupply.com on behalf of contactus@notify2.boardofwatersupply.com
To: Stella Bernardo, Board of Water Supply Board of Directors
Attachments: BWS Testimony 7_24_23.pdf

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BWS TESTIMONY SUBMITTAL / REQUEST TO TESTIFY FORM

Form Submitted on: 7/23/2023 5:31:39 PM

Meeting Date: Monday, July 24, 2023

I wish to provide Written testimony + request to give in-person oral testimony at 630 S. Beretania Street

TESTIFIER INFORMATION

Full Name Susan Pcola-Davis
Email susanp60@yahoo.com
Phone (optional) (808) 387-3061

TESTIMONY DETAILS

Agenda Item Information 01: Update on the BWS Response to the Potential Impacts of the Red Hill Fuel Contamination
Your Position on Matter I wish to comment
Representing Self

I wish to provide

Written testimony + request to give in-person oral testimony at 630 S. Beretania Street

Written Testimony (if entered on the online form; otherwise see attached)

ACKNOWLEDGEMENTS

Terms and Agreement Check Box

I UNDERSTAND and ACCEPT that all public meeting transcripts and testimony are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the meeting process is public information.

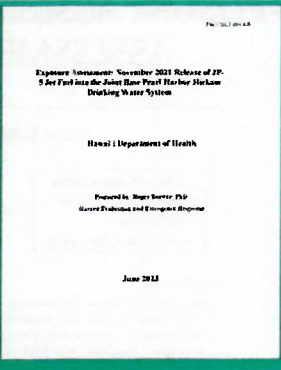
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BWS comparison to Roger Brewer

DISCUSSION TOPIC


- Review of DOH Exposure Assessment Report of November 2021 JP-5 jet fuel release into the JBPHH drinking water system
- Questions / discussion



INTRODUCTION – (0:00)

**Exposure Assessment:
November 2021 Release of JP-5 Jet Fuel into the
Joint Base Pearl Harbor Hickam Drinking Water System**

Roger Brewer, PhD
Hawaii Department of Health
Hazard Evaluation and Emergency Response
(Senior Principal/PAH, BSc, MS, QM)
June 28, 2022



Brewer Video: Explaining the 98 Page Document Link
[JBPHH JP-5 Exposure Assessment - YouTube](#)

...the medical experts to better understand
the health effects were observed in the
residence...

Brewer Exposure Assessment is not a Health Assessment

DEPARTMENT OF HEALTH (DOH) REPORT APPROACH

- Purpose:
 - Assess residents' exposures to tap water contaminated by the November 2021 release from the Red Hill Bulk Fuel Storage Facility
- Methods:
 - Estimated exposure levels of jet fuel (JP-5) chemicals in tap water and air based on observations, JP-5 properties, and laboratory experiments
 - Assessed potential health risks by comparing estimated exposure levels to the health-based levels of fuel chemicals



EXPOSURE ASSESSMENT VS HEALTH ASSESSMENT (0:35)

Roles & References

Exposure Assessment	Health Assessment
<ul style="list-style-type: none">• What was I exposed to?• Risk Assessors• Lead: Hawaii Dept Health	<ul style="list-style-type: none">• How did it affect my health?• Toxicologists, Medical Experts• Lead: US Dept Health (ATSDR)

References

HIDOH, 2023, *Exposure Assessment: November 2021 Release of JP-5 Jet Fuel into the Joint Base Pearl Harbor Hickam Drinking Water System*. Hawaii Department of Health, Hazard Evaluation and Emergency Response, June 2023 (File # 2023-054-RB, and updates).

USDN, 2023, *Command Investigation into the 6 May 2021 and 20 November 2021 Incidents at Red Hill Bulk Fuel Storage Facility*. United States Department of the Navy, memorandum from Vice Chief of Naval Operations to File, June 13, 2022, Ser N09/22U100552.

The purpose of this assessment and, that's the purpose of the report that I prepared, was to answer the simple question of 'what was I exposed to?'

The report uses the **best available information** to model and estimate exposure concentrations in a threefold approach:

EXPOSURE UNCERTAINTIES AND POTENTIAL FOR UNDERESTIMATION

- Unknown and variable exposures over time and by location
- Only JP-5 chemicals and a fuel de-icing additive were considered
 - Missing: other additives, heavy chlorinated, Simple Green cleaner, or historical contamination associated by JP-5 and Simple Green
- Actual conditions could increase air exposure to chemicals over those estimated
 - Water spray and misting from a faucet
 - Hot water (e.g., cooking, bathing, washing) compared to cold water
 - Skanking in the shower, near a boiling pot of noodles, or washing dishes
- Possible error in the amount of indoor air exposure time



• This report summarizes exposure of JBPHH residents to JP-5 jet fuel following the November 20, 2021 release from the Red Hill Bulk Fuel Storage Facility. The report uses the best available information to model and estimate exposure concentrations in a threefold approach:

- Provide a **summary of key contaminants of potential concern (COPCs)** associated with contamination of the JBPHH drinking water system with JP-5 jet fuel in November 2021;
- Provide an **estimate of Reasonable Maximum Exposure (RME)** concentrations associated with the COPCs at and leading up to the peak of contamination within the system;
- Provide information regarding the **estimated duration of exposure**; and
- Identify compounds that **could** have posed potential health risks.

Obviously the report will miss unknown and variable exposures over time and duration well described in video.

Exposure duration and toxic effects (14:42)

Pathways: Inhalation, ingestion and dermal absorption (20:50)

Every condition possible was not necessary to provide enough data to come up with possible conclusions

There isn't enough data to determine amount of indoor air exposure due to so many variables. Estimates were made not absolutes.

Actual JP5 Fuel from Adit 3 was tested by 2 Massachusetts labs...

Reminder: Although it may seem a DOH document; it is a Dr. Brewer document solely.

CHEMICAL TOXICITY AND HEALTH-BASED LEVELS

- Combined effects of multiple chemicals are not considered
- DOH should note that the fuel additive is a concern for exposure during pregnancy
- DOH notes the EPA updated the toxicity of chemicals in JP-5
- These updates could lower the DOH Environmental Action Level (EAL) for JP-5 from 266 to 91 ppb
 - DOH states that 91 ppb is too low for laboratories to accurately measure
 - However, DOH sampling in December 2021 reported JP-5 levels down to 47 ppb

Stating the obvious, if a woman is exposed to toxins, the unborn child in the womb connected by the placenta will be affected.

Video (31:58)

But basically what happened, we sent fuel to this laboratory, it was Newfields laboratory Alpha laboratory both in Massachusetts. They are some of the top experts in petroleum in the US, probably in the world.

Some of the experiments, too, we know they use Simple Green, like I said before, in the laboratory, sprayed Simple Green on top of the fuel in the second set of experiments and see if that affected the solubility and dissolution of this stuff.

And it really didn't make any difference. That Simple Green actually, is pretty diluted by the time you use it. It's just a soap.

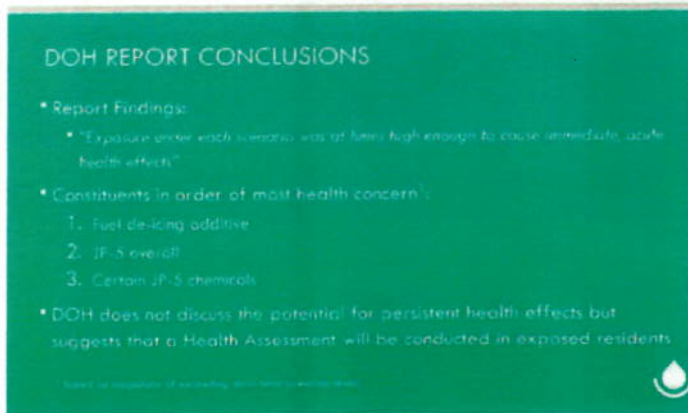
So that's what they did and each one of the water samples collected or tested for this BTEX, these individual compounds and you test Naphthalene, Methyl-naphthalenes. Also importantly, they were tested for the aliphatic and aromatic carbon range compounds.

All this other stuff that makes up the main component of jet fuel along with the icing inhibitor, the DiEGME. They also tested samples for butoxy propanol and the samples where Simple Green was used.

So the data then reflect the dissolution of JP5 into water over time, over a few weeks. Pretty similar to what we can expect would have happened up at Red Hill.

So now we know what was dissolved, we know it was in the fuel, and in the sheens, and very trace amount of Simple Green. That really didn't seem to play much of a role at least very low concentrations in the water. Most of it was, if it was there, it was **probably staying in this jelly form.**

This is an exposure assessment not a health assessment, Dr. Brewer is not a **Medical Expert**



Reference: Video

...So that was it kind of a lengthy the overview, but I hope this helps understand the motivations, the purpose behind exposure assessment and then there'll be some time tags in this presentation. We go to specific points and this should help you know fill an information gap for the **medical experts** looking at the health effects and also hopefully for the residents themselves.

LASTLY, So when we know people were starting to vomit and such and get heavily, quickly sick, we can put a concentration on what had to be in the air at that time inside their house.

And one interesting thing in the EPA's report, you can review it yourself, is once you get about five times over this level that causes people to start becoming acutely sick, you can start hitting levels in anywhere that could **cause some type of permanent health effects**. A lot of the residents are complaining of long-term lingering health effects. they weren't transient. Initially some people, medical experts, **[McGinnis]** thought they might be **[transient]**. That's something for the health assessors to look at **ASTDR**.

ABSOLUTELY!!!

ADDITIONAL BWS COMMENTS

- DOH's discussion of various chemicals reaffirms prior BWS urging the testing of groundwater for more than just total petroleum hydrocarbons and a few related chemicals²

Wesley P. Paterno and Chang October 3, 2018 Page 14

DOH should direct the Navy & EGMC to have a short half-life literature available to us that have no applicability to the theoretical mode of DUEGM (BIOG) test suggested that et al., 1997). Moshiko et al with the experiment from which roughly double that from Mus conditions expected in a soil CSM subsurface or groundwater. Please see how, especially the 100-yr waste disposal facility evidence applicable to Red 14 short half-life.

In summary, EPA and DOH should direct the Navy to test for all the additives discussed above: EGMC, DPCAE, 7,6-dibutyl-4-ethylphenol, 5-tert-butyl-2,4-dimethylphenol, 2,6-di-tert-butylphenol, N,N-dimethyl-1,2-propanediamine, tertiary butylated phenol, and phenol. Also, they should direct the Navy to provide a list of additives used at Kees stored at MHPSP from 1942 through the 1970s and analyze groundwater for any chemicals not already included in this list.

STATE OF CALIFORNIA
 DEPARTMENT OF WATER RESOURCES
 DIVISION OF WATER RIGHTS


 WATER RIGHTS

OFFICE OF THE ATTORNEY GENERAL
 CIVIL RIGHTS SECTION
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 TEL: (916) 227-1234
 FAX: (916) 227-1235

TO: Mr. Wesley P. Paterno
 1201 M Street, Suite 1000
 Sacramento, California 95833

FROM: Mr. Chang
 1201 M Street, Suite 1000
 Sacramento, California 95833

RE: [Illegible]

DATE: 10/3/2018

TIME: 10:30 AM

LOCATION: [Illegible]

AGENDA: [Illegible]

ATTORNEY GENERAL'S OFFICE
 CIVIL RIGHTS SECTION
 1201 M STREET, SUITE 1000
 SACRAMENTO, CA 95833
 TEL: (916) 227-1234
 FAX: (916) 227-1235

² https://www.waterboards.ca.gov/...

Who is this ASK for? DOH, NAVY, EPA.....

ADDITIONAL BWS COMMENTS – CONT.

- The different fuel types, additives, and other chemicals used at the Red Hill Facility
 - Complicate assessment of potential health risks and diagnosis and treatment of medical issues for those affected
 - Increase the scope, intensity, complexity and cost of water treatment studies and building, operating, and maintaining the final treatment system
- Identify the additives present in the fuel stored at Red Hill over its 80 year history
- Immediately conduct testing of all Red Hill water sources and monitoring wells for additives as recommended by BWS in 2016.



Subject: Board Meeting Testimony Submittal or Request - Monday, July 24, 2023 - Susan Gorman-Chang
Date: Monday, July 24, 2023 at 6:29:42 AM Hawaii-Aleutian Standard Time
From: contactus=notify2.boardofwatersupply.com@mg.boardofwatersupply.com on behalf of contactus@notify2.boardofwatersupply.com
To: Stella Bernardo, Board of Water Supply Board of Directors
Attachments: July 24 BOW meeting.docx

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BWS TESTIMONY SUBMITTAL / REQUEST TO TESTIFY FORM

Form Submitted on: 7/24/2023 6:28:59 AM

Meeting Date: Monday, July 24, 2023

I wish to provide Written testimony + request to give remote oral testimony by Zoom videoconference

TESTIFIER INFORMATION

Full Name Susan Gorman-Chang

Email sggc@dslextreme.com

Phone (optional) (818) 723-0767

TESTIMONY DETAILS

Agenda Item Information 01: Update on the BWS Response to the Potential Impacts of the Red Hill Fuel Contamination

Your Position on Matter I wish to comment

Representing Organization

I wish to provide Written testimony + request to give remote oral testimony by Zoom videoconference

Written Testimony (if entered on the online form; otherwise see attached)

Board of Water Supply Meeting: Monday, July 24, 2023 Susan Gorman-Chang, Environmental Advocate Trinity United Methodist Church Aloha Board, Mahalo for allowing this testimony. I am Susan Gorman-Chang the Environmental Justice Advocate for Trinity United Methodist Church in Pearl City. After watching the recording of the June 2023 Board of Water meeting, we want to express our appreciation to the entire Board for their diligence and thoughtfulness for us as water drinkers and rate payers. We agree that we should hold the Navy accountable for the damage they have done to our aquifer. Furthermore we agree that we should, with the help of our federal Senators and Congresspersons, work to acquire federal funding to be reimbursed for the vast amounts of money we are now forced to spend on exploratory wells and ultimately new wells because of the volume of drinkable water we have lost thanks to the Navy's contamination. We appreciate your discussion that we, the ratepayers, were not responsible for the Navy's contamination of our water, yet we will be asked to pay for it. It is indeed unjust and thank you for your acknowledgement of that fact. We look forward to the Board of Water's technical team's assessment of Dr. Brewer's "Exposure Assessment November 2021 Release of JP-5 Jet Fuel into the Joint Base Pearl Harbor Hickam Drinking Water System" report. We support wholeheartedly, as Ernie Lau has requested, asking the Department of Health to amend their Medical Advisory that was issued back on March 11, 2022, so that this would allow people impacted by the contaminated water with jet fuel and additives to be able to get access to better medical testing and care. The latest Hawaii Department of Health Medical Advisory, dated March 11, 2022, does not list the known additives such as the de-icing chemicals. Furthermore, it states, "Chemical screening (aka biological monitoring) for exposures to petroleum hydrocarbons in drinking water is not recommended." This Medical Advisory is dangerously outdated and seeks to dismiss facts and information now made public in Mr. Brewer's report. If a doctor and/or medical clinic were to look for guidance in this March 11, 2022 Medical Advisory still in effect until amended, they would be gravely misled to the detriment of their patients who had been exposed to the jet fuel and its additives. Finally, we thank the Board for their leadership on the PFAs contamination issue in our water supply. We humbly suggest that the Board of Water Supply consider entering into a lawsuit for remediation with the corporations that created these "forever chemicals" in order to pay for our water's treatment. This has, just last month, been successfully accomplished to the tune of a \$1 billion dollar agreement by Chemours, DuPont and Corteva who agreed to provide more than \$1 billion to municipalities, who sued these entities, to clean up their PFA contamination.

ACKNOWLEDGEMENTS

Terms and Agreement Check Box

I UNDERSTAND and ACCEPT that all public meeting transcripts and testimony are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the meeting process is public information.

Board of Water Supply
Meeting: Monday, July 24, 2023
Susan Gorman-Chang, Environmental Advocate Trinity United Methodist Church

Aloha Board,

Mahalo for allowing this testimony. I am Susan Gorman-Chang the Environmental Justice Advocate for Trinity United Methodist Church in Pearl City.

After watching the recording of the June 2023 Board of Water meeting, we want to express our appreciation to the entire Board for their diligence and thoughtfulness for us as water drinkers and rate payers.

We agree that we should hold the Navy accountable for the damage they have done to our aquifer. Furthermore we agree that we should, with the help of our federal Senators and Congresspersons, work to acquire federal funding to be reimbursed for the vast amounts of money we are now forced to spend on exploratory wells and ultimately new wells because of the volume of drinkable water we have lost thanks to the Navy's contamination.

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Finally, we thank the Board for their leadership on the PFAs contamination issue in our water supply. We humbly suggest that the Board of Water Supply consider entering into a lawsuit for remediation with the corporations that created these "forever chemicals" in order to pay for our water's treatment. This has, just last month, been successfully accomplished to the tune of a \$1 billion dollar agreement by Chemours, DuPont and Corteva who agreed to provide more than \$1 billion to municipalities, who sued these entities, to clean up their PFA contamination.

-----Original Message-----

From: Meredith Wilson <fannmv@gmail.com> On Behalf Of Meredith Wilson

Sent: Monday, July 24, 2023 2:13 AM

To: Board of Water Supply Board of Directors <board@hbws.org>

Subject: Oral/Written Testimony for 7-24 BWS Board Mtg

Attachments: 7-24-23 M Wilson BWS Board Mtg Testimony.pdf

CAUTION: This email originated from outside of the organization. Do not follow guidance, click links, or open attachments unless you recognize the sender and know the content is safe.

Aloha,

I'd like to submit for oral testimony at today's BWS Board Meeting.

I'm attaching a written version as well.

Looking forward to Zoom information.

Thank you as always,

-Meredith Wilson

July 24, 2023 BWS Board Meeting
Item for Info #1 Update on Red Hill
Meredith Wilson - Testimony

Aloha Board, my name is Meredith Wilson and I appreciate the opportunity to speak with you again about updates regarding Red Hill.

As a reminder, I lived on Joint Base Pearl-Harbor Hickam for 5 years and experienced intense neurological health issues beginning especially in late October 2021. Only a month later did I learn that countless neighbors also had been dealing with vertigo, migraines, and vision problems, too—all pointing toward our toxic exposure.

Here we are, 20 months later and I'm still trying to grapple with my sense of security being completely shattered. When I used to come home from working in town, I had to show my ID to an armed guard just to enter my neighborhood within a protected US military base, only to be poisoned by the very entity my husband works for in my seemingly safe home via supposedly clean & life-giving water.

Twenty months later now, we finally have a preliminary Exposure Assessment from the Department of Health. And not really from the DOH itself, but from its Senior Environmental Scientist—a geologist who assesses risk, NOT really health effects. But it's more information than we've received thus far about our chemical exposure from the Navy or any of our doctors.

Here are my items:

1. Will you help the public get more health effects information from DOH and in particular the state toxicologist about this Exposure Assessment? Please use your lever of that relationship to gain more knowledge since these chemicals are in the collective aquifer. I know the ATSDR is reviewing it, but where does the Dept of Health stand?
2. Since we now know that antifreeze does NOT dissolve in water as expected, is BWS currently or planning to test all their wells for DiEGME?
3. The most troublesome yet actionable revelation from this assessment was that the USEPA updated their toxicity factors for individual carbon ranges in 2022. This allowed the assessment author to update the expected screening/action level for TPH and it should be 3 TIMES MORE STRINGENT or LOWER.

It states this “should be taken into consideration for future monitoring” of the drinking water system & impacted groundwater. If this is the case, the current 266 ppb being used for LTM is completely off-base and even proves dangerous. The previous EAL was based off a 2009 toxicity factor from EPA! I know I'm preaching to the choir on this :)

Can BWS' representative to the DISF plead to the IDWST that LTM needs to be amended ASAP?! Lots of acronyms, but the military is used to it.

Mahalo as always for protecting the wai and furthermore the people of Oahu.

From: David Tupper <tupperd001@gmail.com>

Sent: Monday, July 24, 2023 9:37 AM

To: Board of Water Supply Board of Directors <board@hbws.org>

Subject: Board of Water Supply, City and County of Honolulu, Regular Meeting 7/24/2023 (Written Testimony)

CAUTION: This email originated from outside of the organization. Do not follow guidance, click links, or open attachments unless you recognize the sender and know the content is safe.

Aloha,

Attached is my written testimony. I have used PDF format as instructed so the testimony may be included in the presentation. Unfortunately my work schedule precludes me from attending this meeting in person and delivering my testimony orally. I read that "Testimony is limited to two (2) minutes for the first item and one (1) minute for each additional item." Therefore my first item for testimony is the *7. Water Main Repair Report for June 2023* agenda item. My second item of testimony is the *1. Update on the Board of Water Supply's Response to the Potential Impacts of the Red Hill Fuel Contamination* agenda item.

Mahalo,

David Tupper

BWS Regular Meeting (Written Testimony) 1. Update on Red Hill

July 24, 2023

submitted by David Tupper

Comments

Thank you to newly elected Chair Anthony, Vice Chair Sproat, the Board of Directors, and Board of Water Supply employees for your efforts to best manage this difficult situation. You are providing an invaluable service to the community, and we appreciate your concern for individual residents and families on the island of Oahu.

Questions

- 1) Is there anything the general public should be doing to help your efforts to hold the United States Navy and federal authorities accountable and encourage the best resolution of the Red Hill situation?
- 2) During the 6/26/2023 Board Meeting there was discussion of how the Red Hill situation is driving plans to divert Board of Water Supply (BWS) funds from water delivery system upkeep to identify and develop new well sources. Is BWS also considering expanding use of funds for new conservation efforts?
- 3) Is BWS open to partnering with community efforts to reduce their water usage by 20% or more? If so, how should the community coordinate with BWS?

ITEM FOR INFORMATION NO. 2

“July 24, 2023

ON-LINE ACCESS TO BOARD OF WATER SUPPLY SERVICE LINE MATERIAL INVENTORY AND WATER TESTING RESULTS FOR LEAD AND COOPER RULE Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: On-Line Access to Board of Water Supply Service Line Material Inventory and Water Testing Results for Lead and Copper Rule

Deputy Manager Erwin Kawata will discuss and demonstrate the online access to our water service line material inventory and water testing results required under the Lead and Copper Rule Revisions.

Respectfully Submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Attachment”

The foregoing was for information only.

DISCUSSION: Erwin Kawata, Deputy Manager, gave the report.

Manager Lau asked Deputy Manager Kawata when he started working on the information provided today so that the BWS would be in compliance with the Lead and Copper Rule Amendment.

Deputy Manager Kawata shared that in November 2019, the EPA proposed changes to the lead and copper rule, which was finalized in January 2021. However, due to the amount of time and the size of the BWS water system of 175,000 service connections, Deputy Manager decided to develop its scope of work and begin six months before the rule was finalized. Deputy Manager Kawata also shared that the BWS is the first department, to our knowledge, to publish the Material Inventory and Water Testing Results for Lead and Copper. He stated that the BWS is one year ahead of schedule, and the actual due date to publish the information is October 2024.

Chair Anthony inquired how Hawaii compares to other states, such as Flint, Michigan, which had to remove and replace water service laterals and adjust to comply with the Lead and Copper Rule.

Deputy Manager Kawata responded that in the early 1900s, it was recognized that lead should not be part of the water system. He stated

that the difference between Hawaii and other states is the water quality, which is very neutral and non-aggressive to the pipe.

Deputy Manager Kawata shared that you can navigate and search specific addresses by going to the BWS website: <https://www.boardofwatersupply.com>, go to Water Quality and look under Lead and Copper Rule.



ON-LINE ACCESS TO BWS
SERVICE LINE MATERIAL
INVENTORY AND WATER
TESTING RESULTS FOR
LEAD AND COPPER

BWS Board Meeting
July 24, 2023

LEAD AND COPPER RULE REVISIONS (LCRR) RULE DATES AND CONTAMINANT LIMITS

- Rule dates
 - Final rule promulgated January 15, 2021.
 - Effective date: December 16, 2021
 - Initial 3-year compliance date: October 16, 2024
- Contaminant limits
 - Action Level (90th percentile value)
 - Lead: 15 ppb (parts per billion)
 - Copper: 1,300 ppb
 - Lead Trigger Level
 - 90th percentile greater than 10 ppb and less than or equal to 15 ppb



LEAD AND COPPER RULE REVISION – KEY REQUIREMENTS

- Prepare an inventory and identify the material of all service lines on the utility and customer side of the water meter. Update annually.
- Categorize each service line as:
 - Lead
 - Non-lead (copper, plastic, etc.)
 - Lead status unknown (aka: unknown or unknown material type)
 - Galvanized line at any time connected to lead service line or lead connector
 - If cannot demonstrate galvanized line never connected to lead service line, then define as lead line and becomes a galvanized line requiring replacement
- Provide searchable database to give public access to inventory

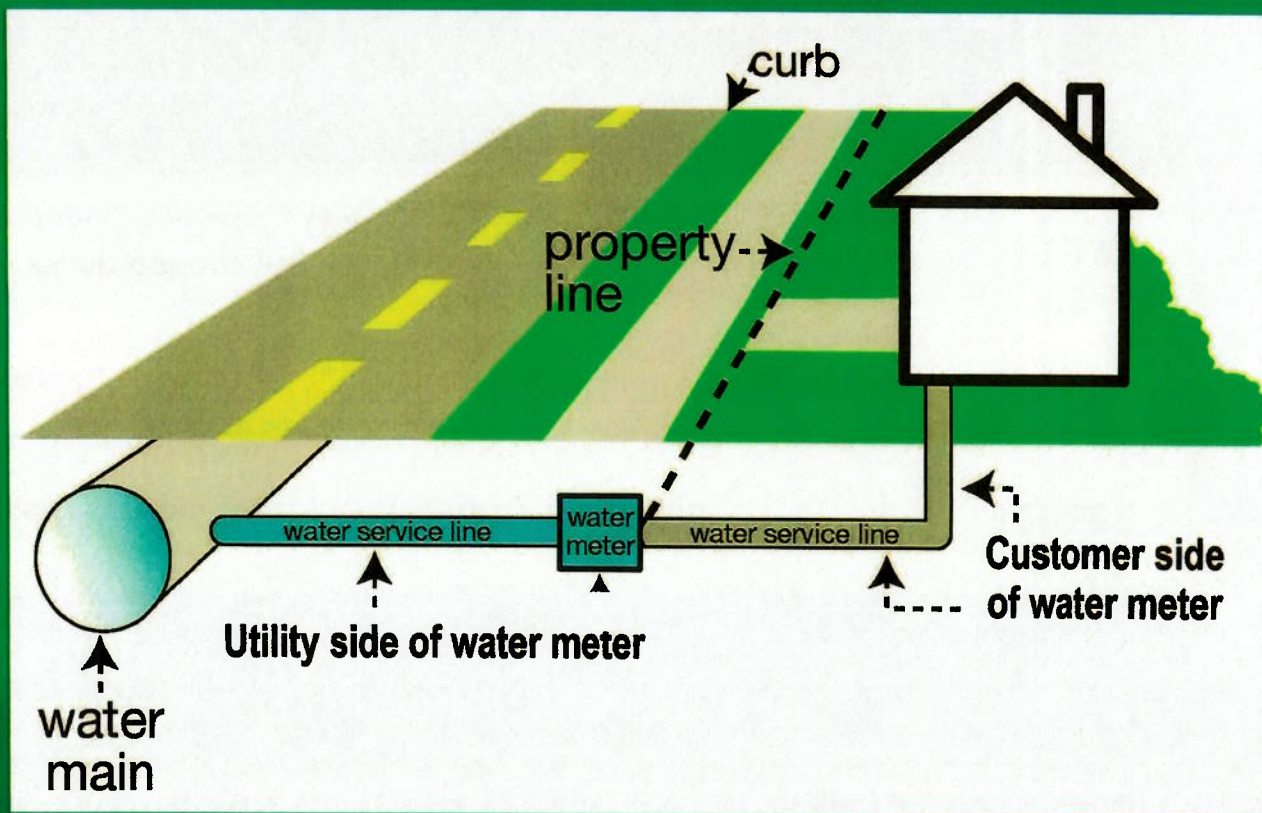


KEY REQUIREMENTS – CONT.

- Select tap water sampling locations based on results of the inventory and collect five 1-liter samples at each site.
- Conduct tap water testing in schools and day-care facilities.
- Utilities with lead service lines (LSLs) must prepare and implement an LSL replacement plan.



UTILITY AND CUSTOMER (PRIVATE) SIDE OF THE METER

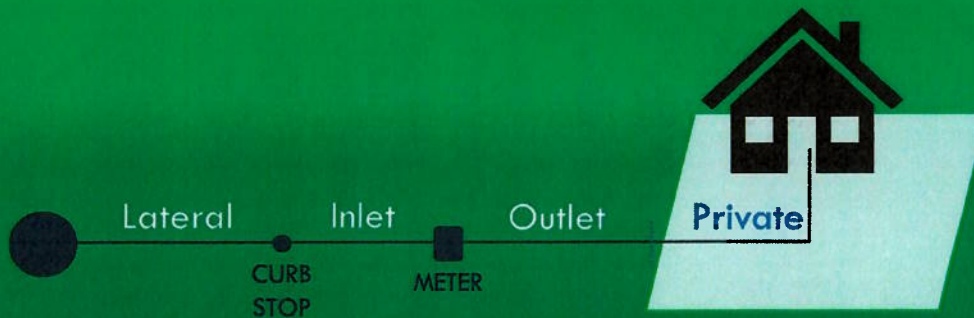


INVENTORY RESULTS BY ENTIRE SERVICE LINE

- Service Lines: 175,911

Non-Lead / Non-Lead / Non-Lead / Non-Lead	120,882
Non-Lead / Non-Lead / Non-Lead / Lead Status Unknown	53,832
Other combinations (no instances of Lead) i.e. Non-Lead / Non-Lead / Lead Status Unknown / Lead Status Unknown	1,197

Material Type
Copper
Galvanized Iron
Ductile Iron
Cast Iron
Unknown
Plastic
Asbestos Cement
Brass



ON-LINE ACCESS TO BWS SERVICE LINE
INVENTORY AND TAP WATER TEST RESULTS



ITEM FOR INFORMATION NO. 3

"July 24, 2023

RECRUITMENT STATUS Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843
Chair and Members:

Subject: Recruitment Status

Teriann Akana, Human Resources Specialist VI, Human Resources Office, will be presenting an update on the Recruitment Status for the period of April 2023 to June 2023.

Respectfully Submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION: Teriann Akana, Human Resources Specialist VI, Human Resources Office, gave the report. There were no comments or discussion.

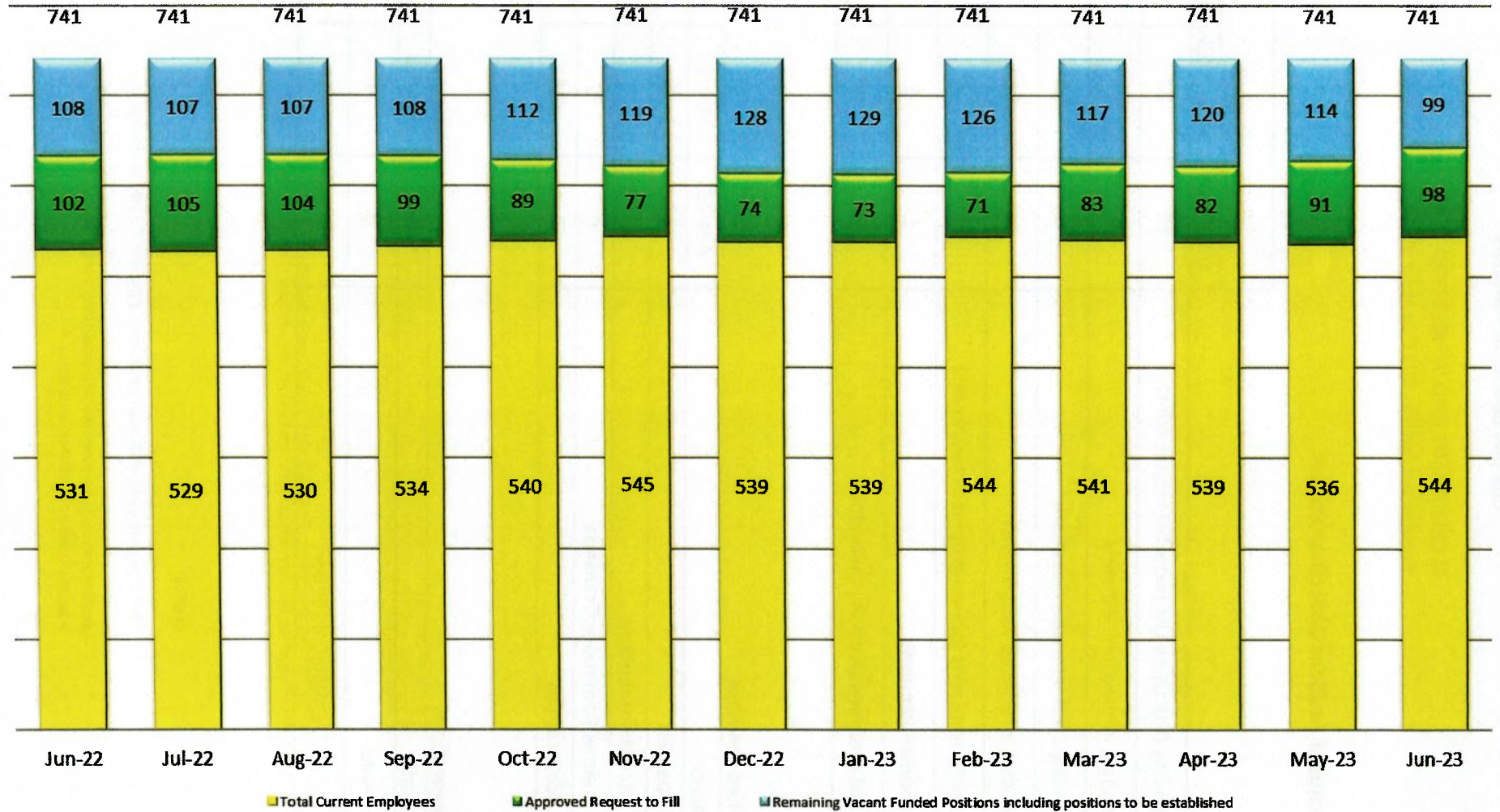
At 3:10, Board Member Bryan Andaya excused himself from the meeting and exited Zoom.

There was remote testimony for Info #1, Update on the BWS's response to the Potential Impacts of the Red Hill Fuel Contamination

Jamie Simic	<i>She shared the continued hospital and doctor visits and tests her family and others are going through. She also expressed her gratitude for the BWS efforts and work.</i>
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Positions Filled June 1, 2022 through June 30, 2023



For the period of Apr23-Jun23 Actions: 20 New Hires, 6 Promotions, 1 Demotion, 1 Transfer, 17 Separations

BOARD OF WATER SUPPLY

City and County of Honolulu

RECRUITMENT AND SEPARATION STATUS

For Period April 1, 2023 to June 30, 2023

Status of Positions Under Recruitment

	as of		
	4/30/2023	5/31/2023	6/30/2023
Pending DHR Open List (external recruitment)	20	23	27
Pending Internal recruitments	1	3	2
Pending Final Interview Questions	8	18	32
Pending Interviews with Division	34	32	27
Anticipated Starts (pre-employment clearances)	18	14	10
Cancelled Requests	1	1	0
Total Positions Under Recruitment	82	91	98

Filled Positions

Month	Apr-23	May-23	Jun-23
Open list	4	6	10
Internal Promotions	4	2	0
Internal Demotions/Transfers	0	2	0
Reallocations	7	23	10

Separations

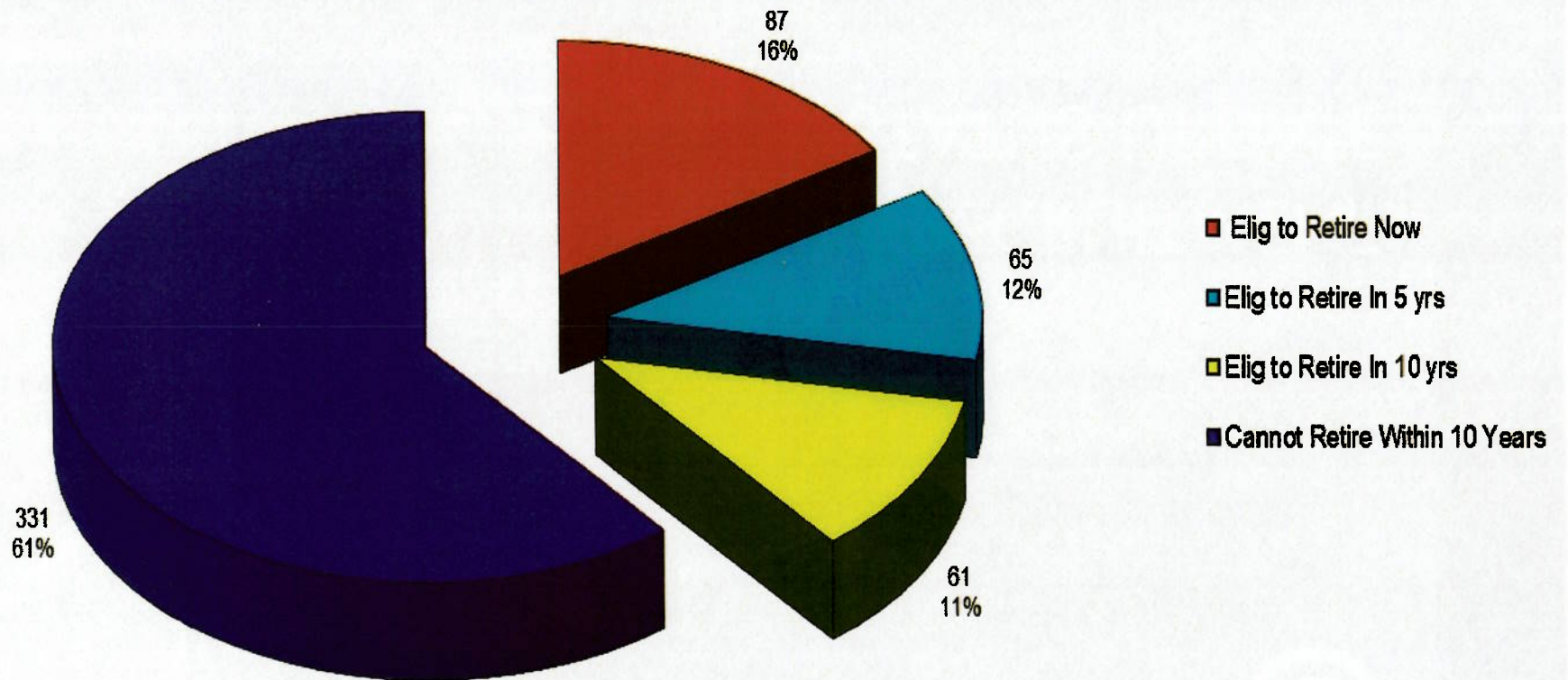
Month	Apr-23	May-23	Jun-23
Retire	0	4	0
Resign/Termination/Other	6	5	2

Legend:

DHR = Department of Human Resources City and County of Honolulu

Reallocation = Employee has demonstrated competency in higher level position and position was adjusted

BWS Retirement Projections As of June 30, 2023





RECRUITMENT STATUS UPDATE

Michele L. Thomas

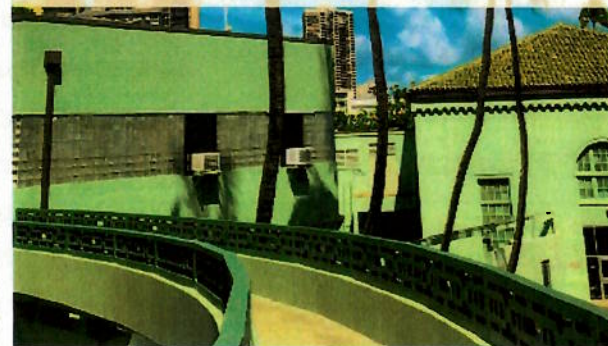
July 24, 2023

boardofwatersupply.com

BWS SUPERVISORS' REFERENCE GUIDE



Board of Water Supply Reference Guide for Managers & Supervisors



2023

OUR MISSION

Provide safe, dependable, and affordable drinking water now and into the future.

OUR VALUES

- Respect and support each other
- Strive to uphold our commitments
- Maintain trust through our relationships
- Invest in our staff
- Embrace opportunities for innovation

OUR GOALS

Our goal to sustain safe, dependable and affordable water is achieved when we support one another.

Resource Sustainability (Safe)

Protect and manage Oahu's water resources and watersheds now and into the future through adaptive and integrated strategies.

Operational Sustainability (Dependable)

Manage and continuously refine an effective organization that can evolve and adapt its human and physical resources to provide dependable services.

Financial Sustainability (Affordable)

Implement sound fiscal strategies to support our mission.

OUR COMMITMENT

Providing Water for Life (Ka Wai Ola) to the citizens of the City and County of Honolulu today and for generations to come.

OUR KEY ACTIONS

Safety, Courtesy, Professionalism, Efficiency

BWS SUPERVISORS' REFERENCE GUIDE

Table of Contents

I. WHO WE ARE & WHAT WE DO	_____
A. THE BOARD	_____
B. OFFICE OF THE MANAGER AND CHIEF ENGINEER	_____
C. CUSTOMER CARE DIVISION	_____
D. FINANCE DIVISION	_____
E. INFORMATION TECHNOLOGY DIVISION	_____
F. WATER QUALITY DIVISION	_____
G. CAPITAL PROJECTS DIVISION	_____
H. FIELD OPERATIONS DIVISION	_____
I. WATER SYSTEM OPERATIONS DIVISION	_____
J. LAND DIVISION	_____
K. WATER RESOURCES DIVISION	_____
II. EMPLOYMENT PRACTICES, POLICES & DIRECTIVES	_____
A. RESPECTFUL WORKPLACE	_____
B. EQUAL OPPORTUNITY AND NON-DISCRIMINATION	_____
C. SEXUAL HARASSMENT	_____
D. WORKPLACE VIOLENCE	_____

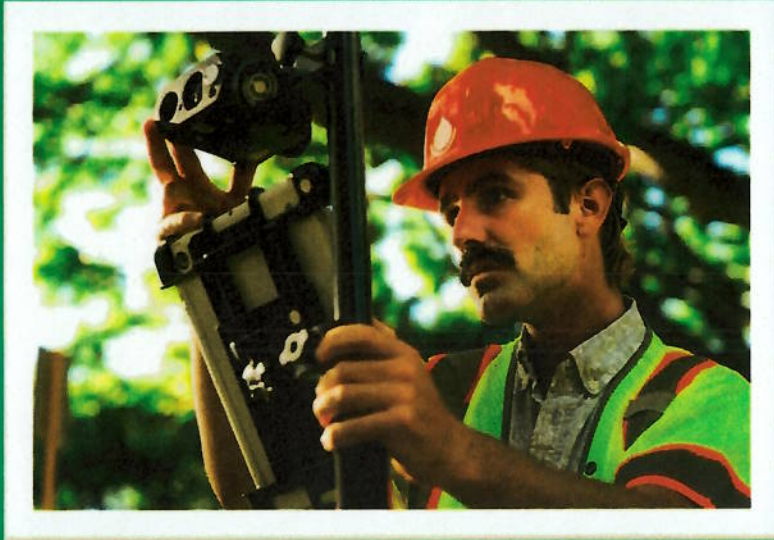


BWS IN-HOUSE TRAINING OPPORTUNITIES

- Skills-based trainings
- Training curriculum for new & emerging leaders
- Refresher training for continuing supervisors in fundamental supervisory concepts



BWS & CITY ADVERTISEMENTS



HI CAREER EXPO



Partnership w/ City DHR



ITEM FOR INFORMATION NO. 4

"July 24, 2023

**2023
CUSTOMER
SATISFACTION
SURVEY**

**Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843**

Chair and Members:

Subject: 2023 Customer Satisfaction Survey

Becki Ward of Ward Research will present the findings of the recent Customer Satisfaction Survey and how they compare with past surveys

The Customer Satisfaction Survey is done every two (2) years to check on customer and public perceptions of the Board of Water Supply, their staff and messaging on various initiatives.

Respectfully Submitted,

**/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer**

Attachment"

The foregoing was for information only.

DISCUSSION: Becki Ward, Research Director, Ward Research, gave the report.

Vice Chair Sproat stated that although the presentation was good information, it was slightly discouraging with lower customer satisfaction. She commented that the community is worried about the contamination. Vice Chair Sproat asked what would Ms. Becki Ward or Ms. Rebecca Soon recommend to change how the community feels.

Ms. Becki Ward stated that communicating with the community benefited the BWS shown in previous years, and the BWS is a trusted source of information. She suggested that the BWS continue communicating with the community to find out what they understand and know.

Manager Lau asked if Red Hill is dominating the community's perception, would clarifying the roles and responsibilities of the different entities help.

Ms. Ward replied that she was not suggesting that the BWS should advocate the different roles, but it would help the BWS to understand what the community understands.

Manager Lau commented that he has seen an improvement in how the regulators and military engage with the community and supports continued communication with the community.

Ms. Ward stated that communication would benefit everyone involved.

Manager Lau stated since the BWS will be doing rate increase outreach to update the WMP, it could also be another opportunity for the BWS to engage with the community. He stated that BWS does not always have good news for the community. However, the BWS does share its challenges and what needs to be done to help educate and allow the community to engage. Manager Lau commented that despite the many challenges of Red Hill and global climate change, it is essential that the BWS continue to provide safe, dependable, and affordable supply of water.

Chair Anthony asked Ms. Ward to elaborate on the opposite of the halo effect and how Red Hill affects the community when sharing other challenges that the BWS is facing.

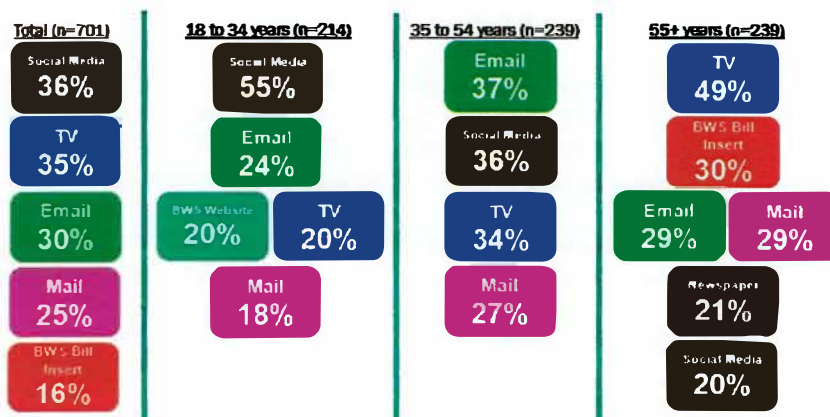
Ms. Ward explained that a halo effect exists when an organization has done something exceptionally well, and the perception of the whole company improves. A “negative halo” could be the cause of one department in an organization and impact the entire organization.

Chair Anothony stated that the community responded to requests from the BWS to reduce water use by 10%, with the reasoning due to the Red Hill crisis. He asked if, in Ms. Ward’s experience dealing with other entities, is it common for the younger and older generation to want diverse advertising methods.

Ms. Ward responded that she has seen change in the reaction to community outreach and messaging over time, but not as dramatic as in the change in 2023.

Communication from the BWS (by Age Segments)

How do you prefer to get information about Board of Water Supply programs and services?



Ms. Rebecca Soon added that in the column of 55+ years that they, too, are relying on social media. She encourages the BWS to continue to use the various types of communication and leverage the trust and credibility

that the BWS hold. Ms. Soon also commented on the “negative halo.” She explained that since the degree of which the community can distinguish between the responsibility of the BWS and other agencies is unknown, the overall perception regarding water affects all agencies.

Chair Anthony commented that the perception of the BWS may be affected since the BWS has shared data on all the different chemicals being monitored but has also failed to state that the water that the BWS provides the community is safe to drink.

Ms. Ward agreed that mentioning that the BWS’s water is safe is important.

Vice Chair Sproat stated that Red Hill has affected the BWS tremendously, requiring additional time onto existing responsibilities for staff. She suggested bringing in additional resources to provide support in other departments that may be negatively affected, which may help with the perception of the BWS.

Board Member Kaneshiro commented that it is good news that the community continues to trust the BWS despite the dilemma surrounding the Red Hill contamination. He believes that re-establishing the WMP, engaging with the community, and sharing how water will be affected in the future, is a move in the right direction.

Manager Lau agreed with Board Member Kaneshiro. The decisions made today will affect future generations.

Board Member Sword inquired if the data collected regarding communications if the television rating from public service announcements or news coverage.

Ms. Ward responded that it is predominantly from news coverage; however, hard to discern if it is from public service announcements or advertising.

Manager Lau asked Ms. Kathleen Elliott-Pahinui to share her thoughts.

Ms. Kathleen Elliott-Pahinui, Information Officer, Communications Office, commented that Red Hill has caused a negative halo on many different levels. The public may trust the BWS, but the news of Red Hill has the community concerned and scared. Therefore, it is expected that the BWS’s messaging is impacted negatively.



WARD RESEARCH
I N C O R P O R A T E D

**Understanding and Tracking
Resident Perceptions of
the Board of Water Supply**

Prepared for:

**The Board of Water Supply
April 2023**

Objectives and Methodology

- Objective: Track measures of satisfaction & other key metrics related to perceptions of the Board of Water Supply and fulfillment of its mission.
- 5th wave of tracking study. Baseline conducted in 2015; studies every 2 years.
- Mixed methodology phone/online survey
- n=388 surveys online (March 18 to 31, 2023)
- n=313 surveys via telephone (March 20 to April 3, 2023).
- Total of 701 Oahu resident interviews. Maximum sampling error is +/-3.7%.
- Data weighted by age & ethnicity; allows for more accurate tracking of data given that previous data were also weighted by same standards.

2023	Unweighted	Weighted
18-24 years old	2%	9%
25-34	10	21
35-44	18	17
45-54	19	17
55-64	22	16
65 and older	28	18
Refused	1	1

2023	Unweighted	Weighted
Caucasian	20%	19%
Chinese	9	6
Filipino	9	14
Hawaiian/part-Hwn	20	20
Japanese	24	22
Mixed/Other	15	15
Refused	3	3

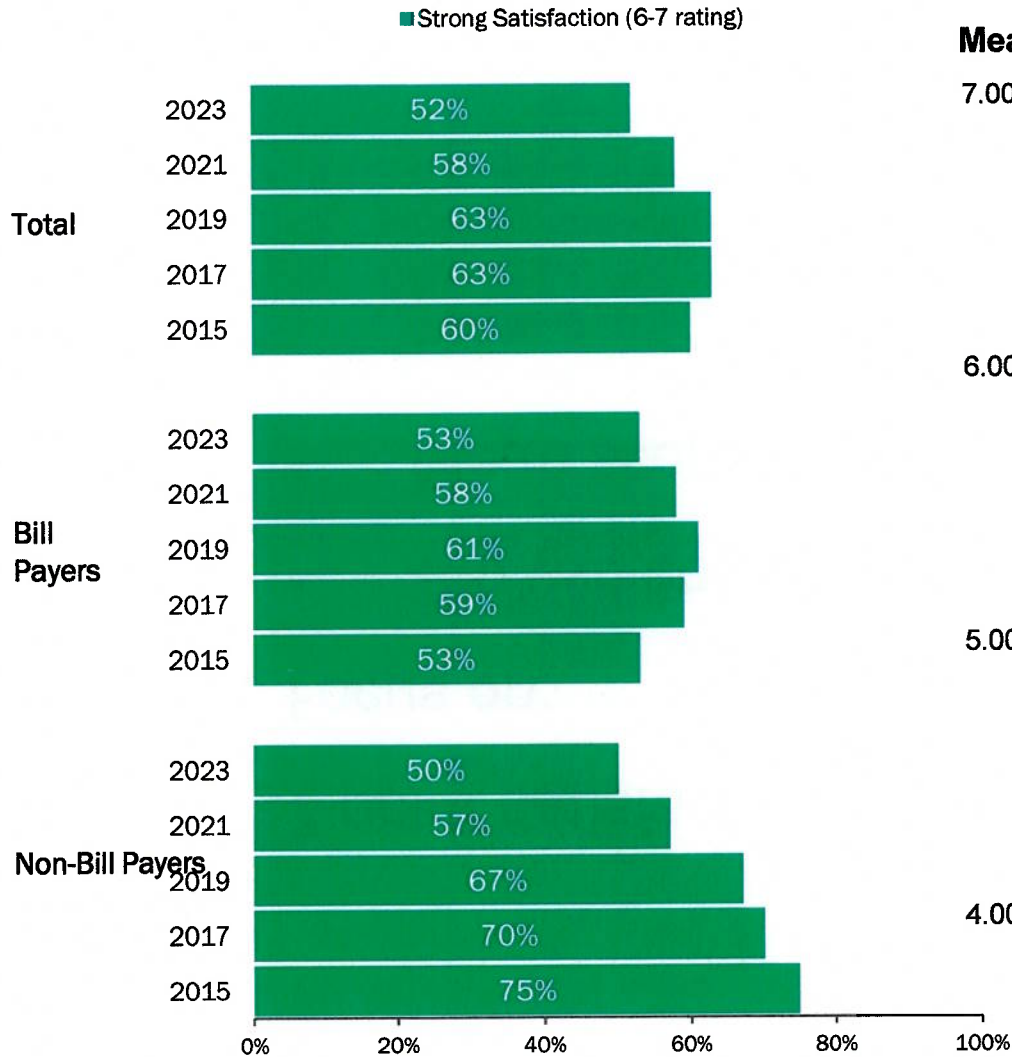
Analysis and Presentation

Notes:

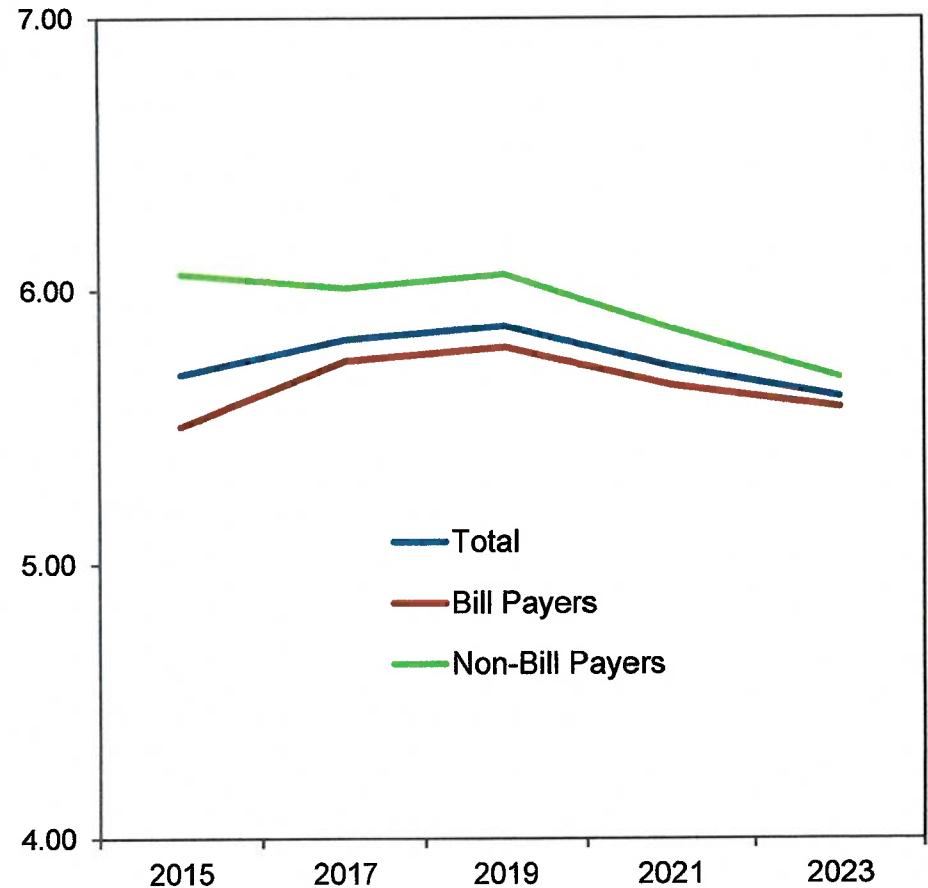
- ✓ 7-point satisfaction scale used throughout
- ✓ Focus on:
 - Top two box; 6 or 7 rating
 - Mean scores

Overall Satisfaction with the BWS

How would you rate your overall satisfaction with the Board of Water Supply?



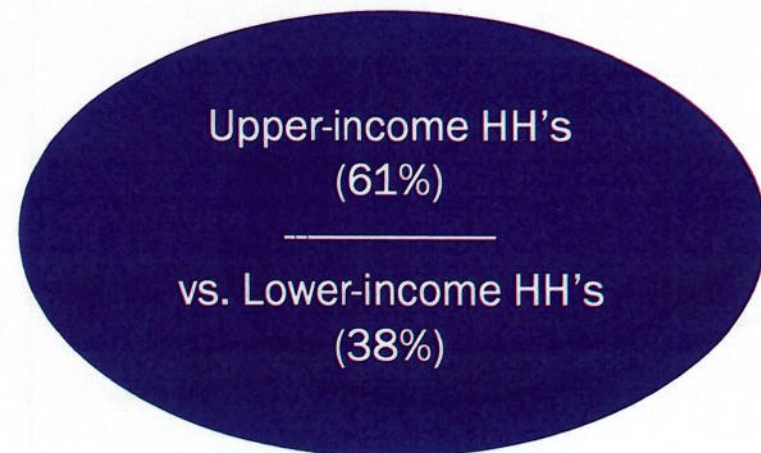
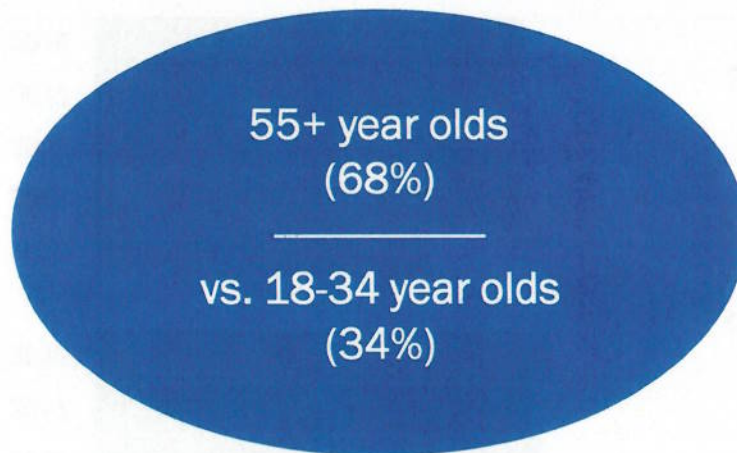
Mean Rating



Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685; Bill Payers: 2023=471, 2021=423, 2019=460, 2017=472, 2015=454; Non-Bill Payers: 2023=230, 2021=252, 2019=222, 2017=214, 2015=231

Subsample Findings

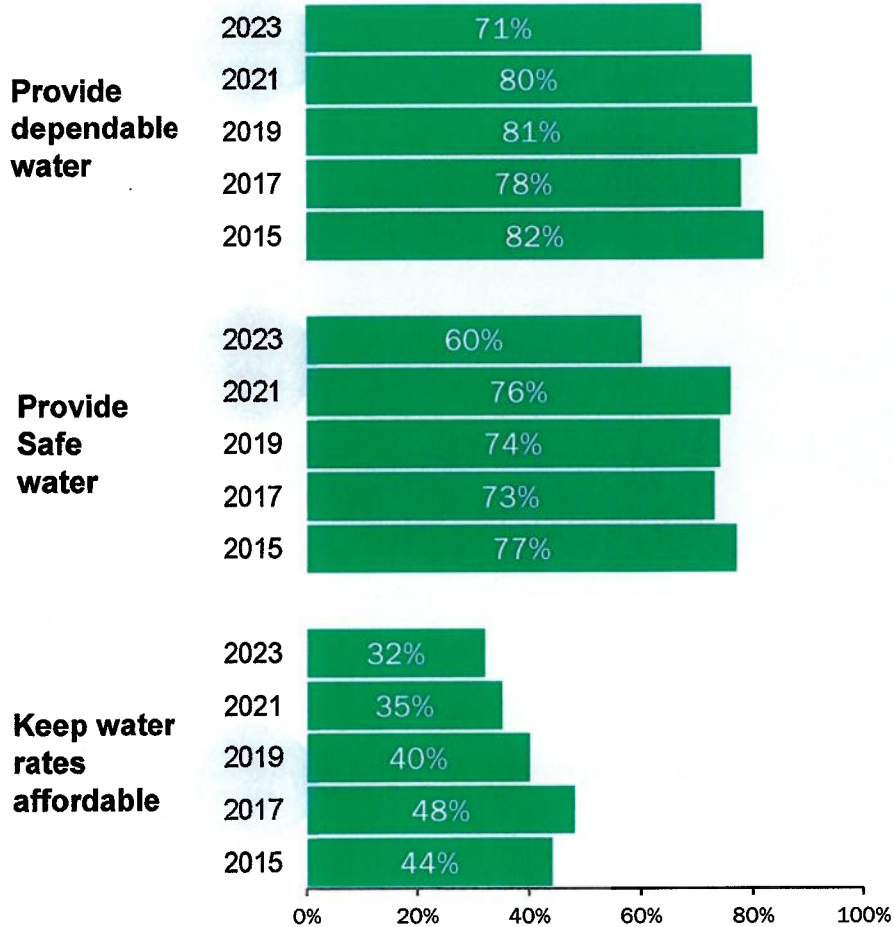
Significantly greater proportions indicated strong overall satisfaction with BWS:



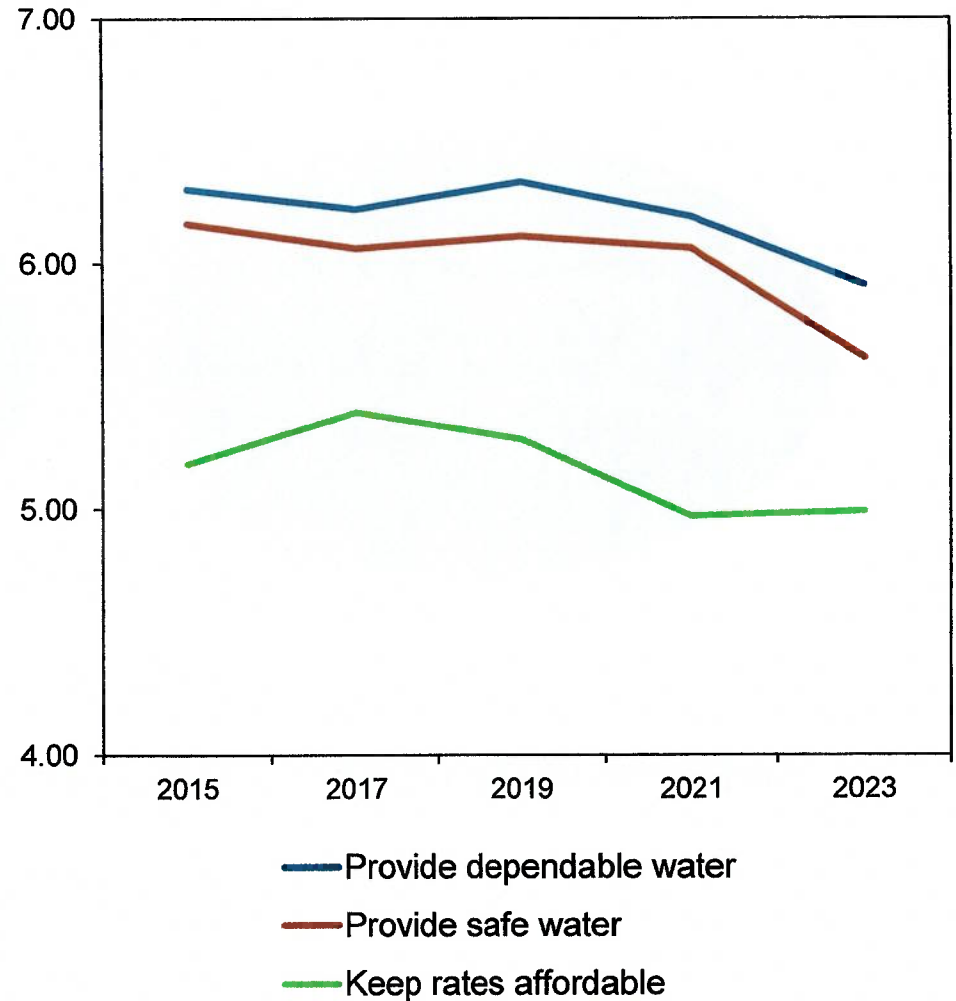
The BWS Mission

How satisfied are you with the Board of Water Supply's ability to...?

■ Strong Satisfaction (6-7 rating)



Mean Rating



Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685

Indicates statistically-significant differences in strong satisfaction ratings

The BWS Mission

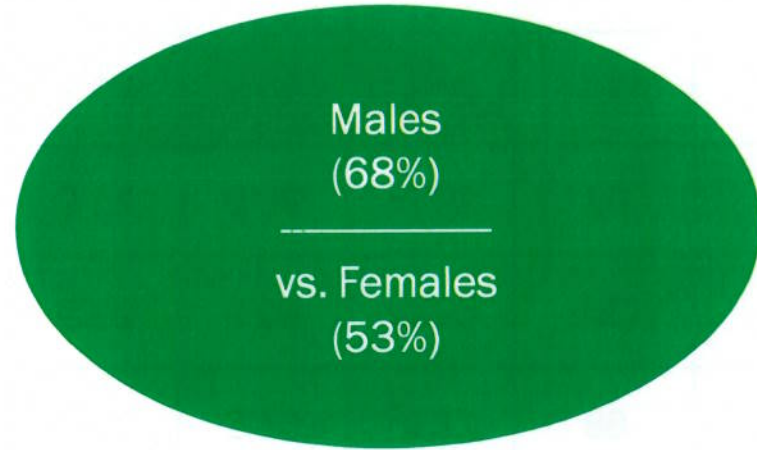
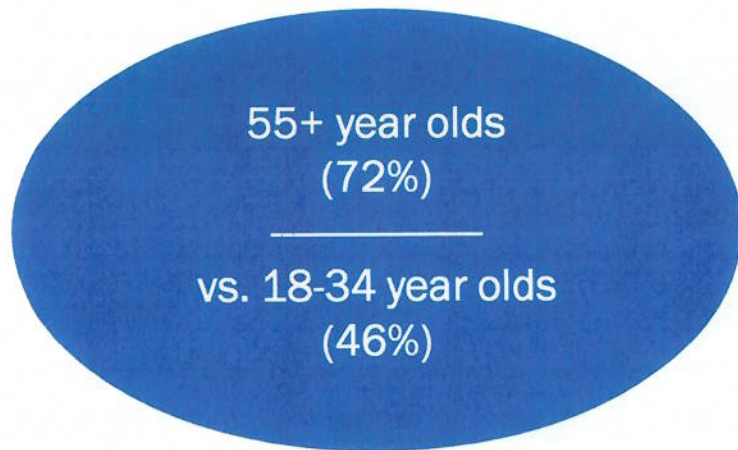
How satisfied are you with the Board of Water Supply's ability to provide safe water?

Region	6 & 7 ratings			Mean ratings			Base	
	2023	2021	+/-	2023	2021	+/-	2023	2021
Total	60%	76%	-16%	5.61	6.06	-0.45	701	675
East Honolulu	68%	71%	-3%	5.52	5.79	-0.27	89	88
Urban Honolulu	56%	79%	-23%	5.56	6.08	-0.52	182	183
Windward	72%	79%	-7%	5.78	6.36	-0.58	90	99
PC/Aiea/Moanalua*	53%	74%	-21%	5.54	5.99	-0.45	136	94
Central Oahu	69%	80%	-11%	5.79	6.19	-0.40	104	103
Ewa Plain	54%	73%	-19%	5.41	5.86	-0.45	69	70
North Shore	14%	100%	-86%	5.91	7.00	-1.09	11	6
Leeward	62%	70%	-8%	5.95	5.93	0.02	20	32

*Includes 96818, 96819, 96701, and 96782

Subsample Findings

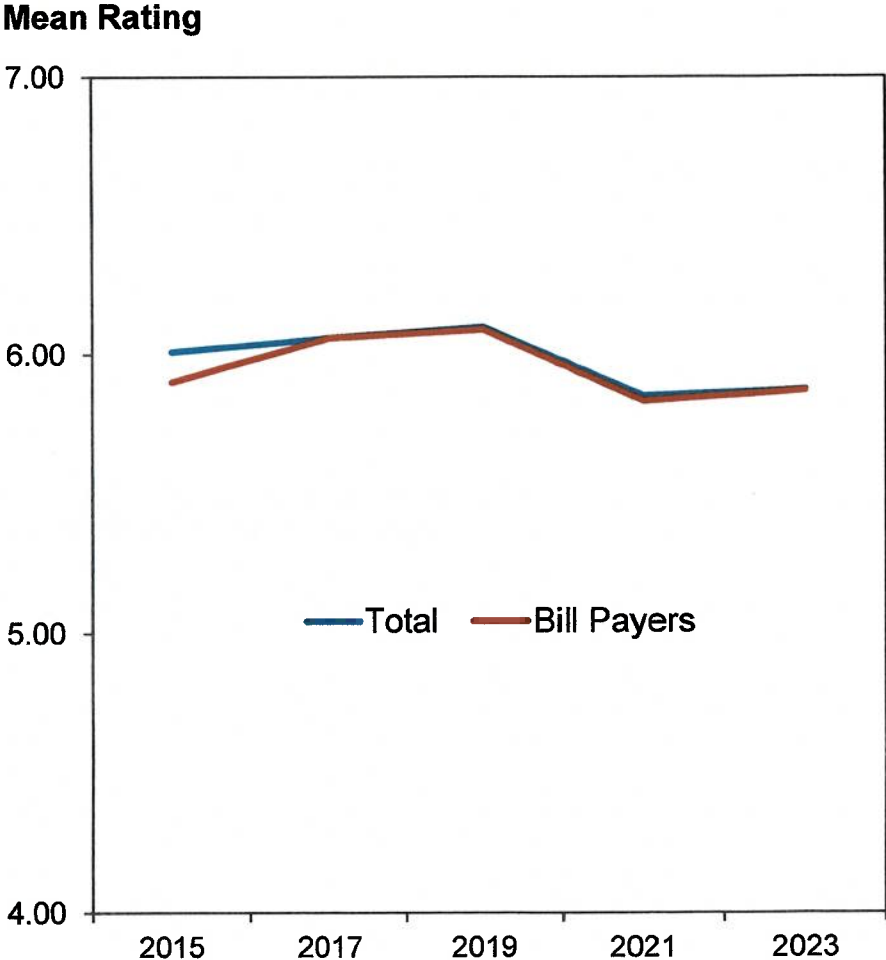
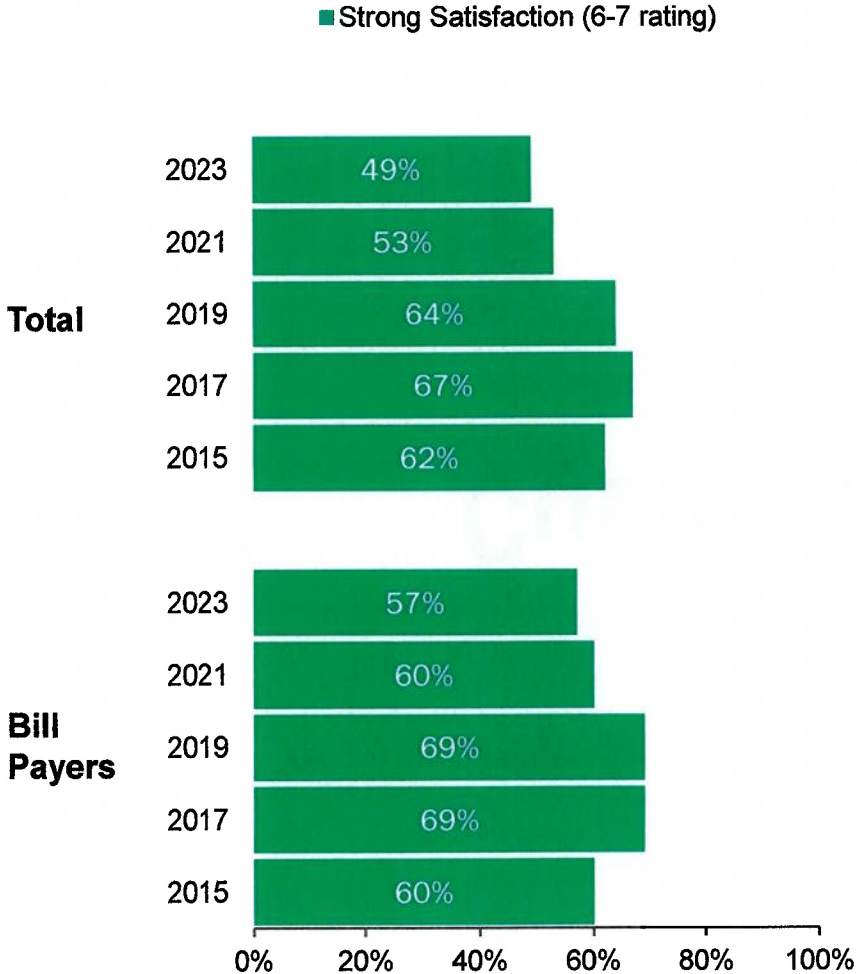
Significantly greater proportions indicated strong satisfaction with the Board of Water Supply's ability to provide safe water :



Customer Service

Satisfaction with Overall Customer Service

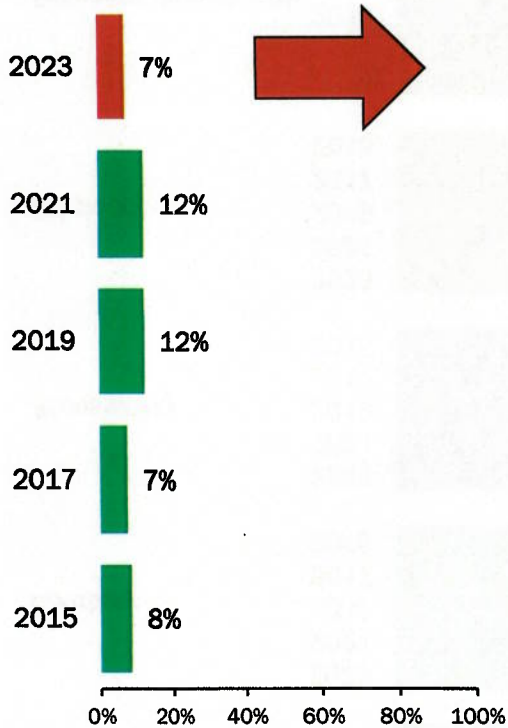
How would you rate your satisfaction with the Board of Water Supply in terms of overall customer service?



Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685;
 Bill Payers: 2023=471, 2021=423, 2019=460, 2017=472, 2015=454;

Contacting the BWS – Bill Payers Only

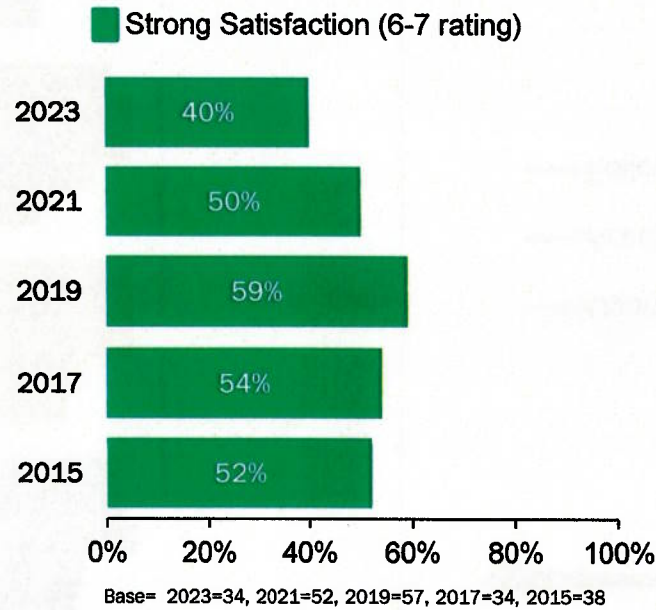
In past 6 months, have you called the Board of Water Supply about an account, billing, or payment related matter?



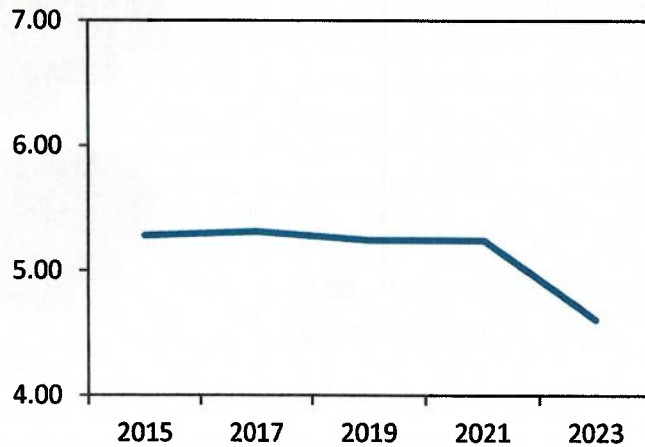
Note: Prior to 2021, question was worded "Did you contact the Board of Water Supply about a bill in the past six months?"

Base= Total: 2023=471, 2021=423, 2019=460, 2017=472, 2015=454

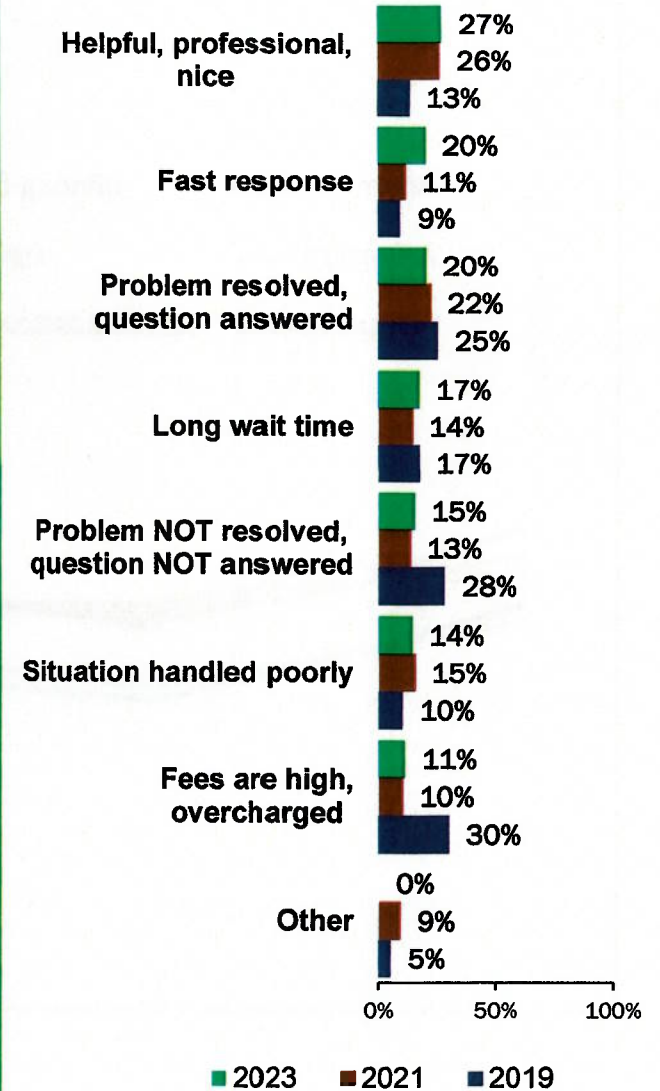
How satisfied were you with how the communication was handled?



Mean Rating

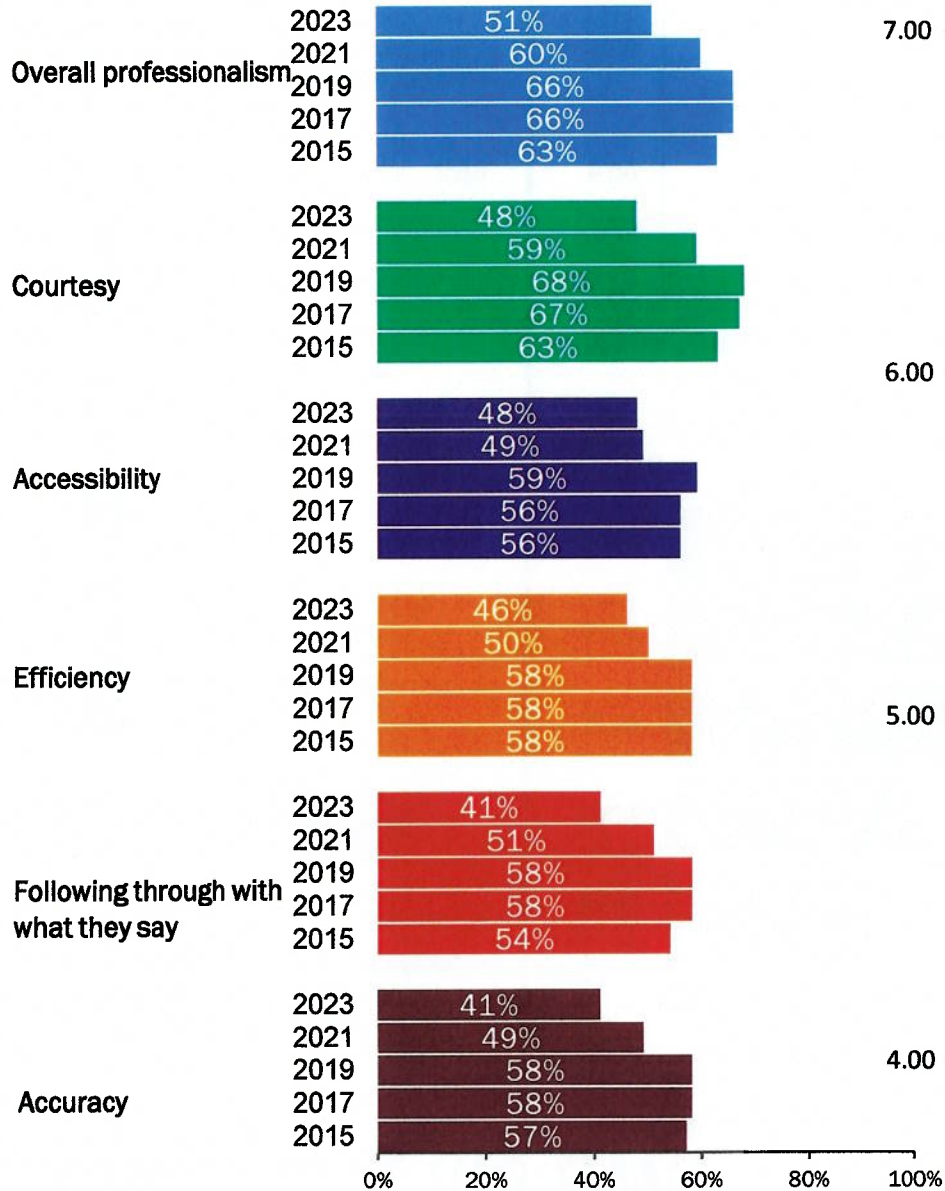


Why do you say that?

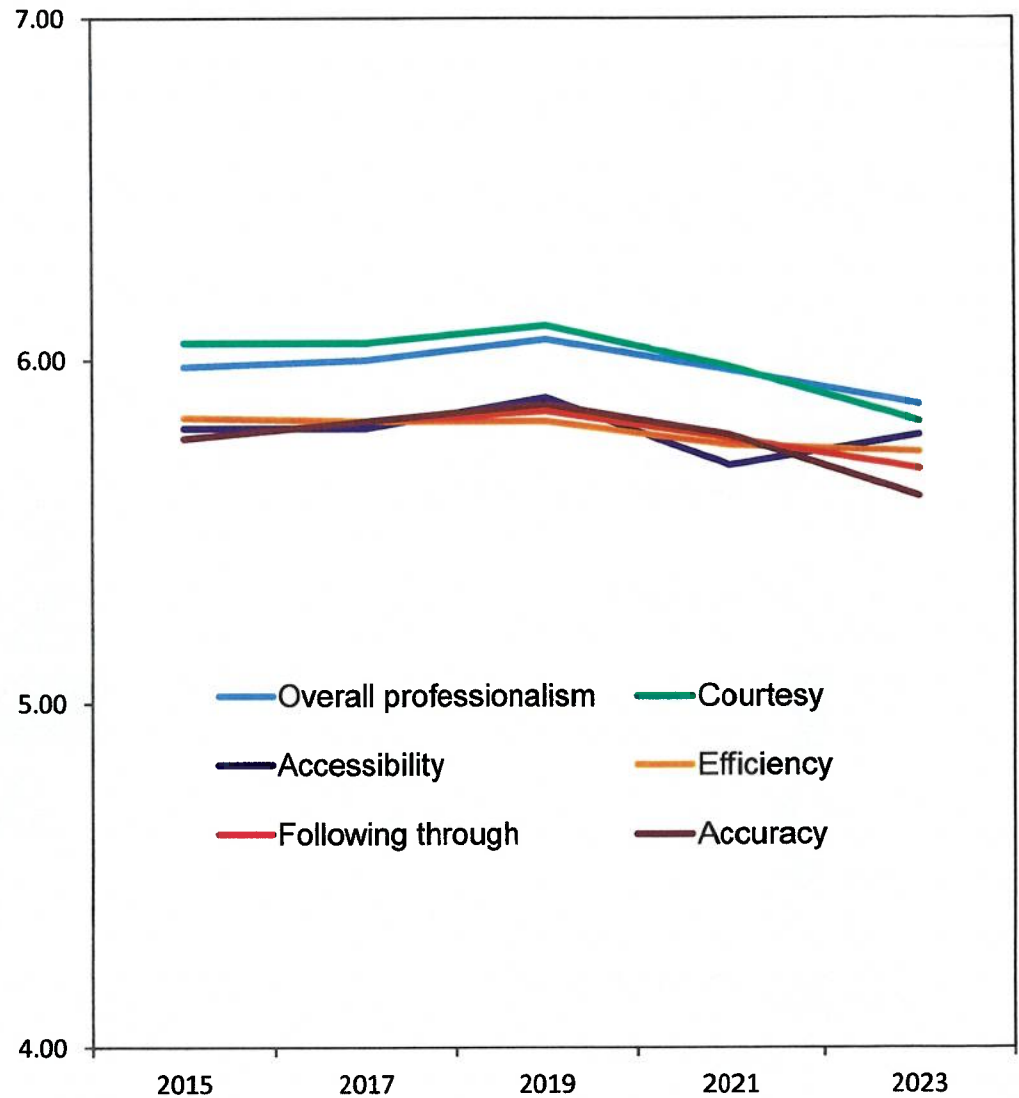


BWS Employees

Strong Satisfaction (6-7 rating)



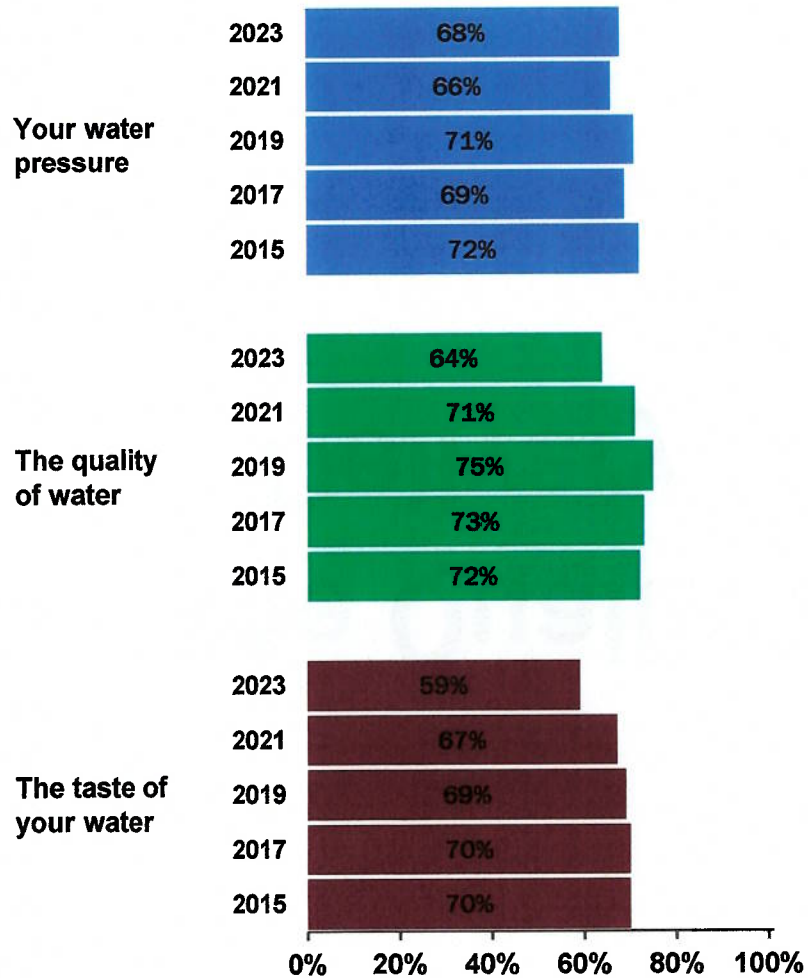
Mean Rating



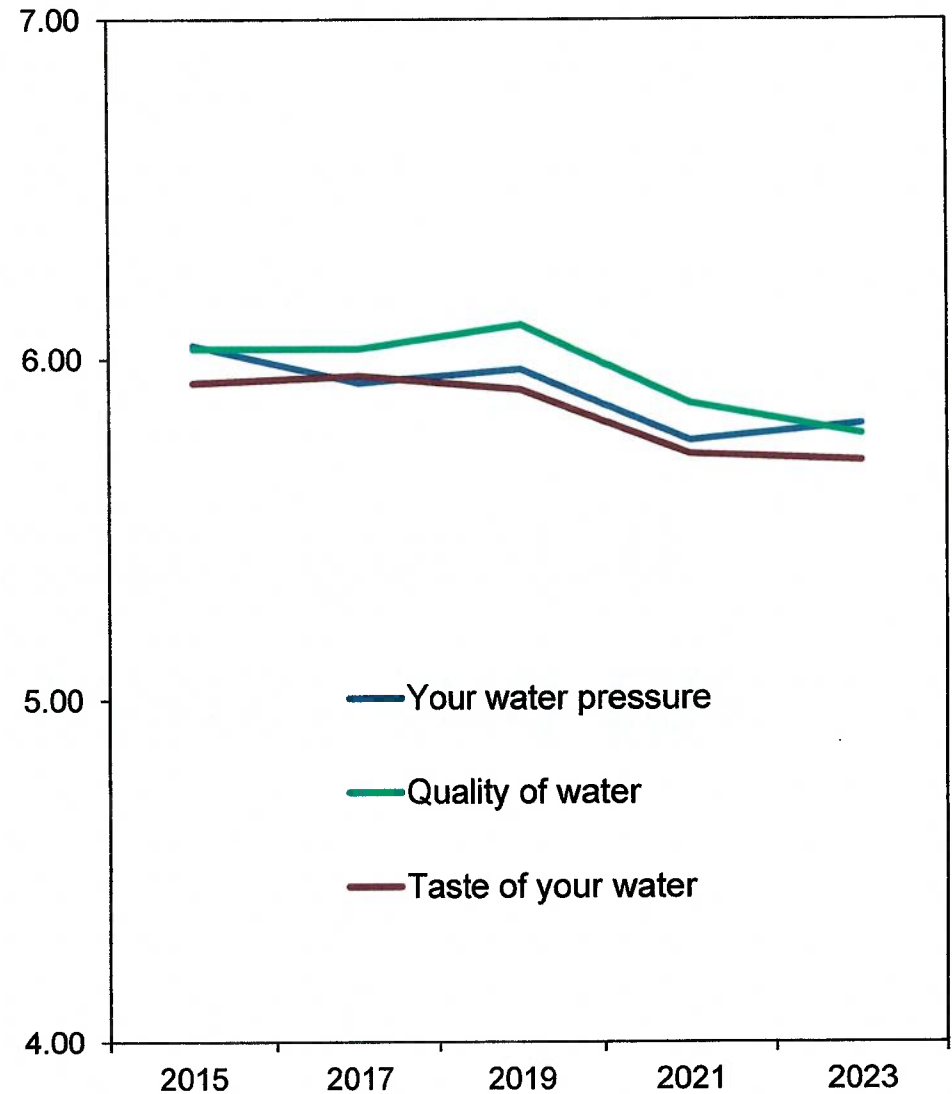
The Quality of Water and the Delivery of Water Service

The Quality of Water

How satisfied are you with:
Strong Satisfaction (6-7 rating)



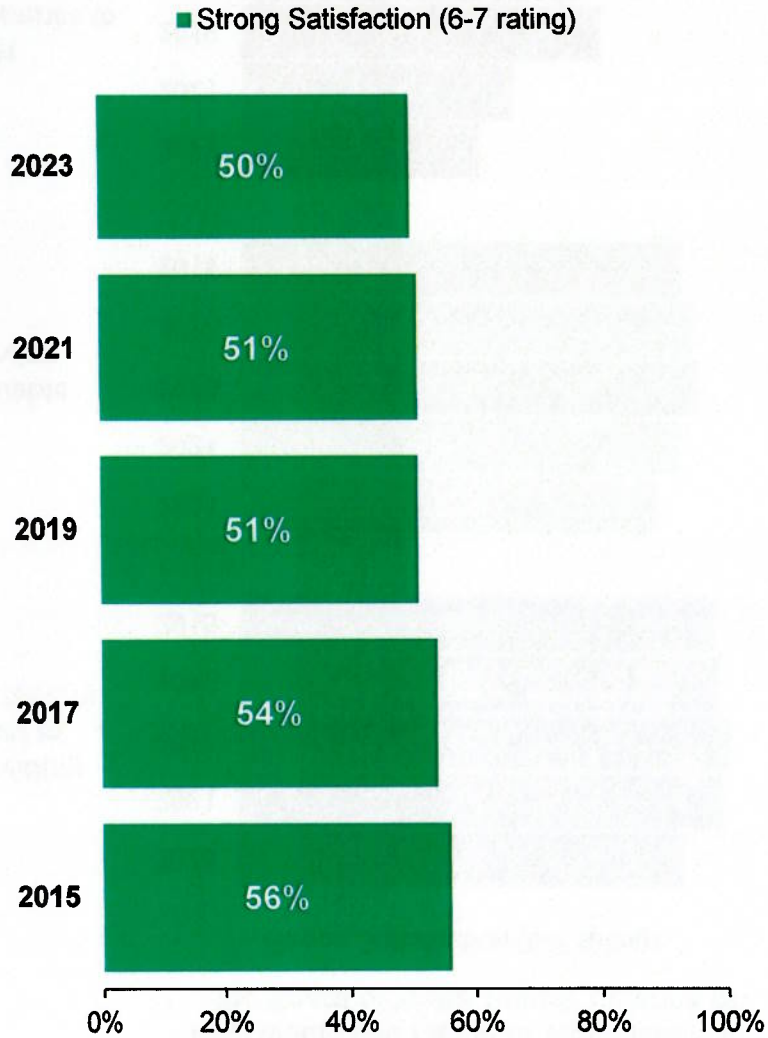
Mean Rating



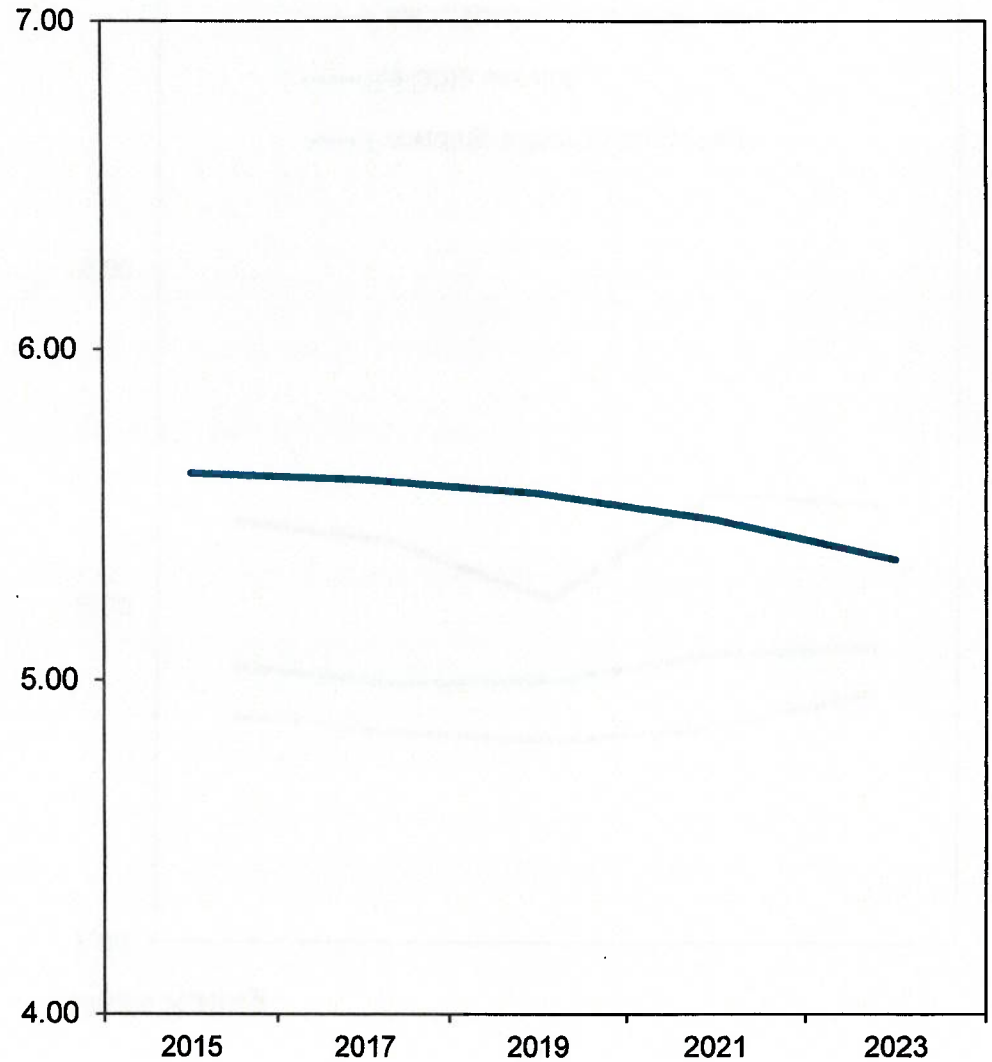
Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685

Protecting and Managing Resources

How satisfied are you with the job that the Board of Water Supply is doing protecting, managing, and sustaining O'ahu's water resources?



Mean Rating

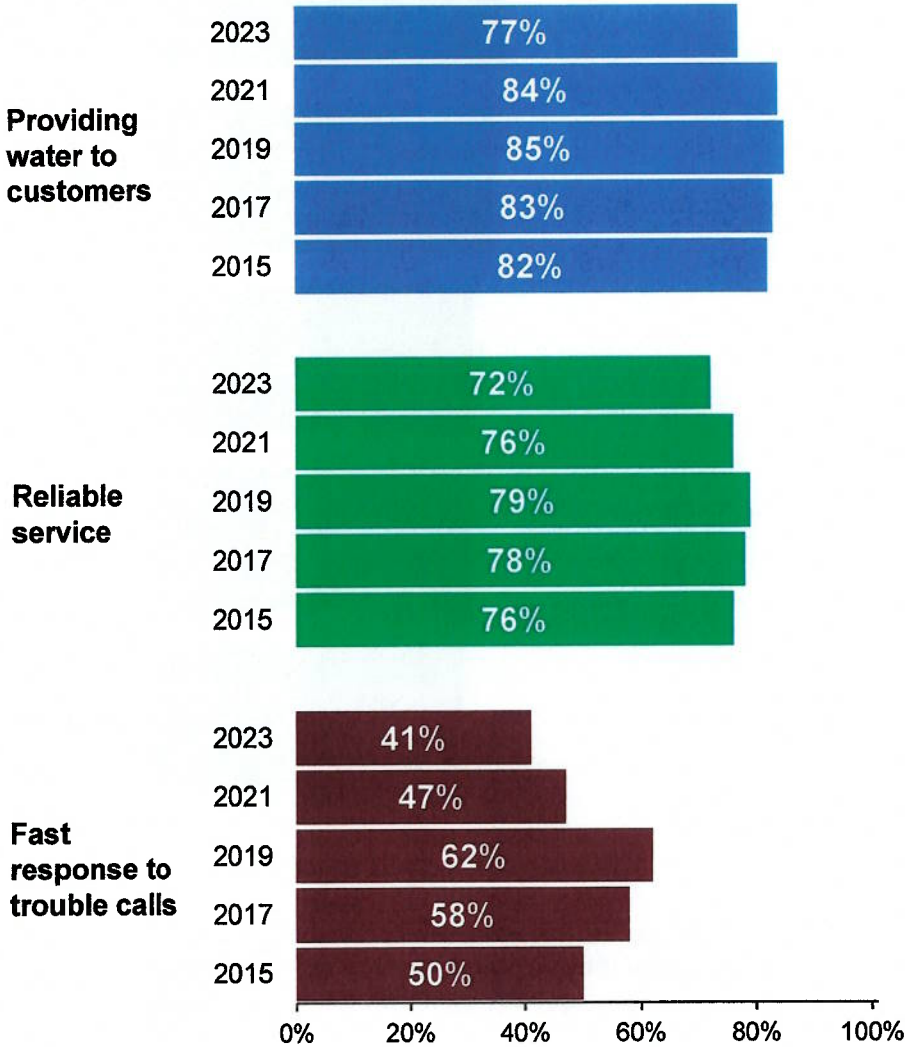


Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685

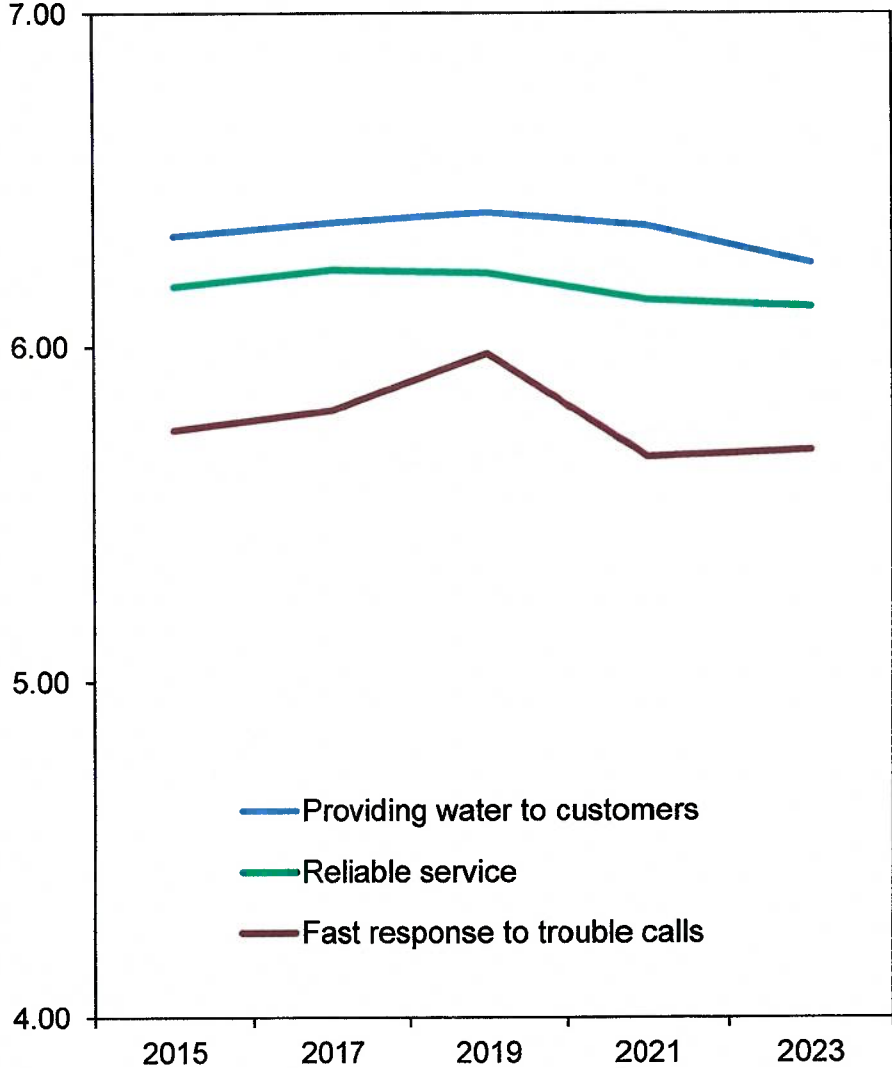
The Delivery of Water Service

How would you rate your satisfaction with the Board of Water Supply in terms of:

Strong Satisfaction (6-7 rating)



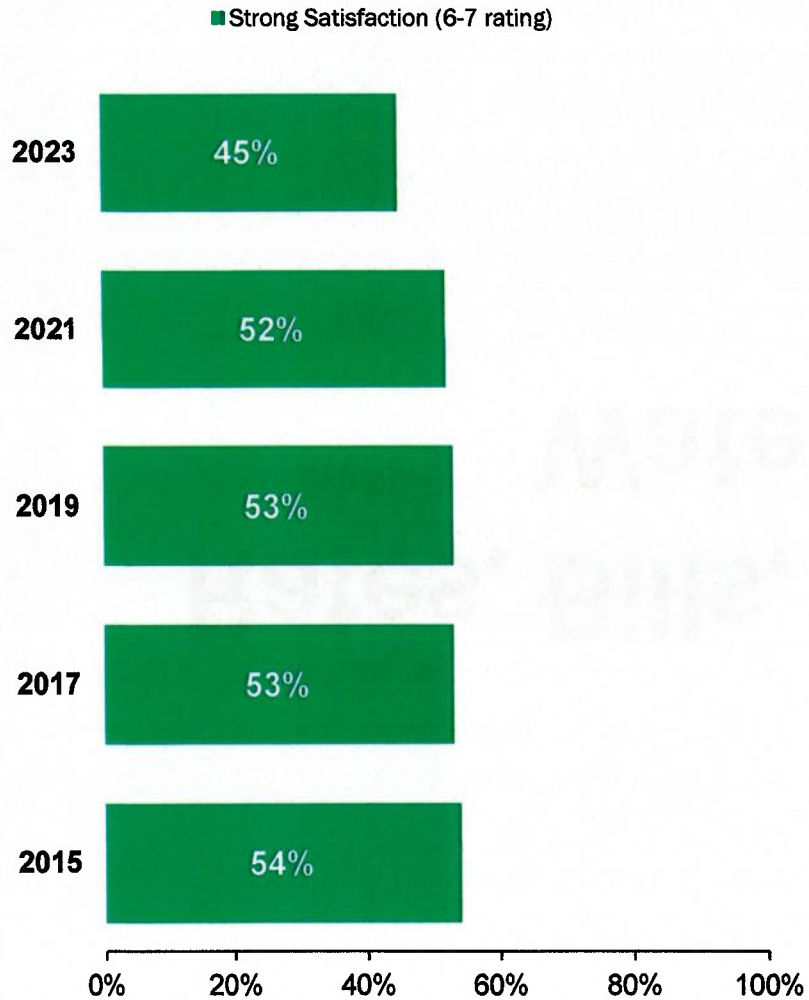
Mean Rating



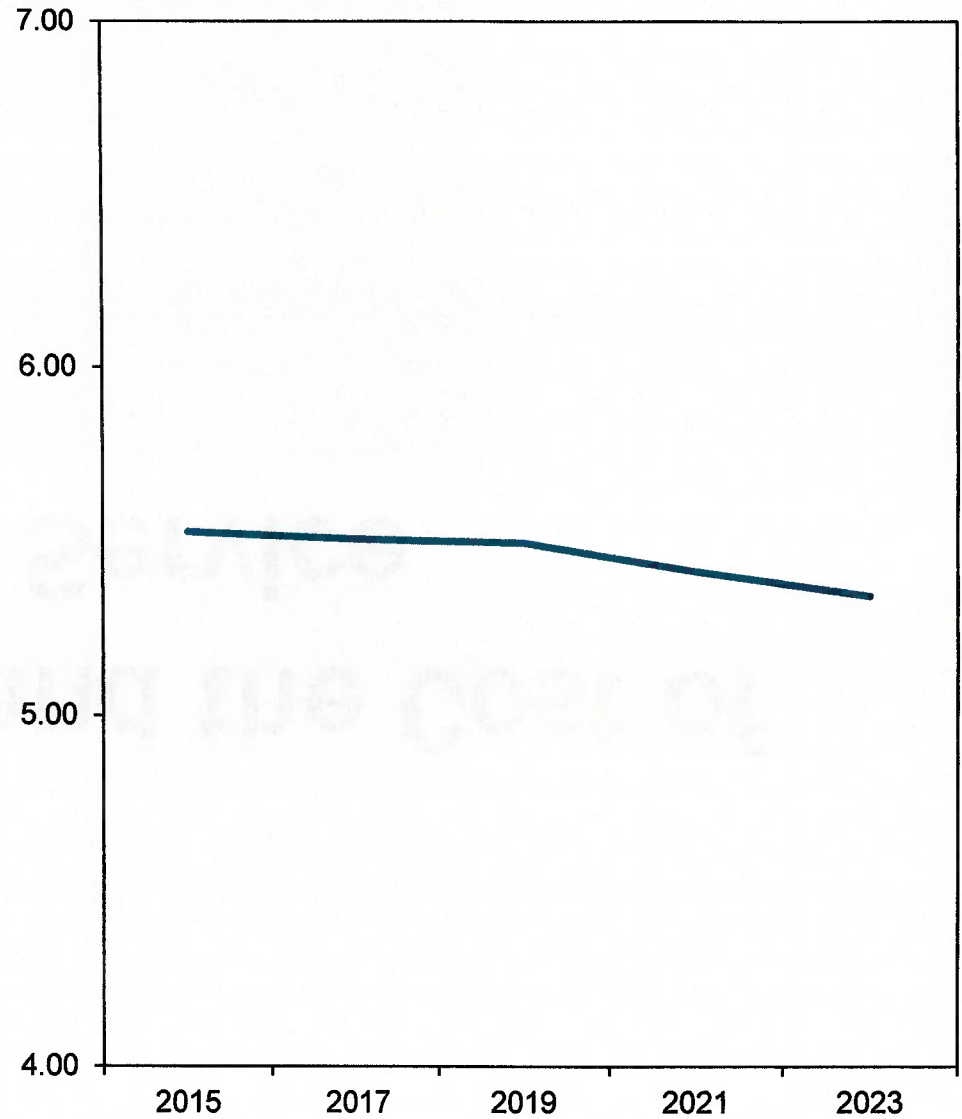
Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685

Maintaining and Replacing

How satisfied are you with the job that the Board of Water Supply is doing repairing, maintaining, and replacing O'ahu's water delivery system?



Mean Rating

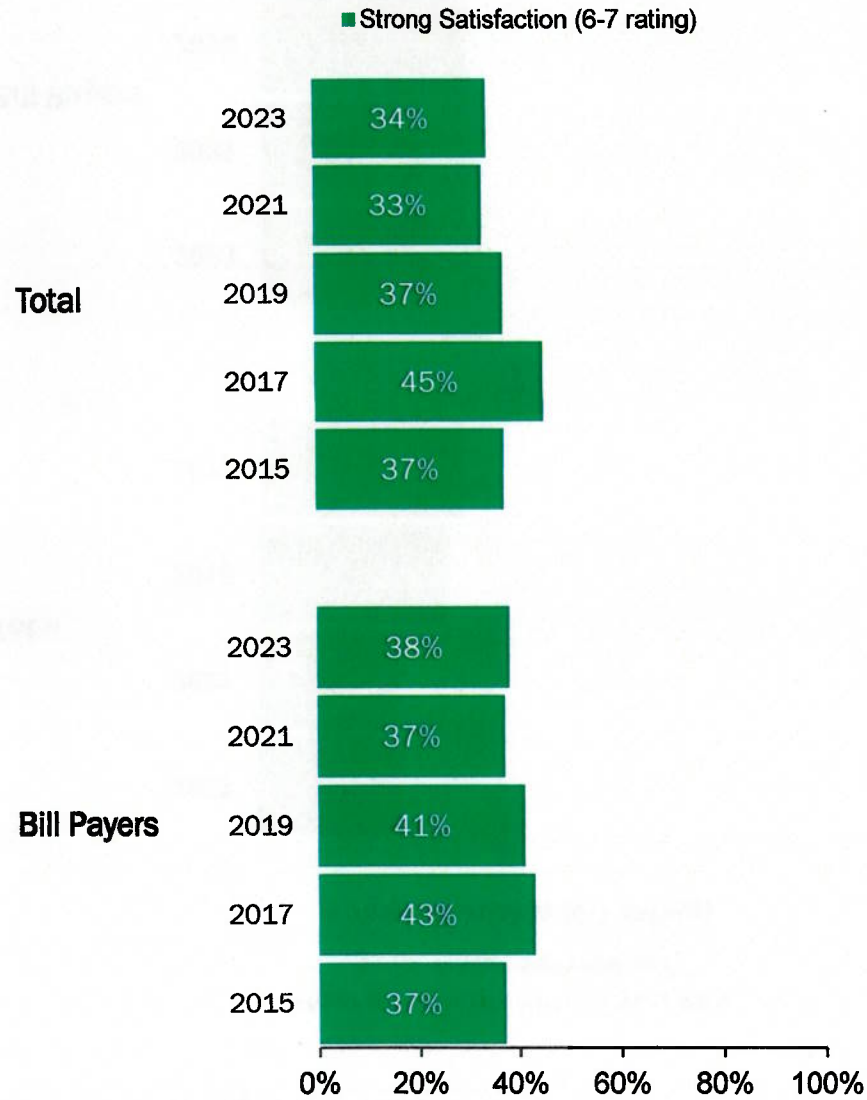


Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685

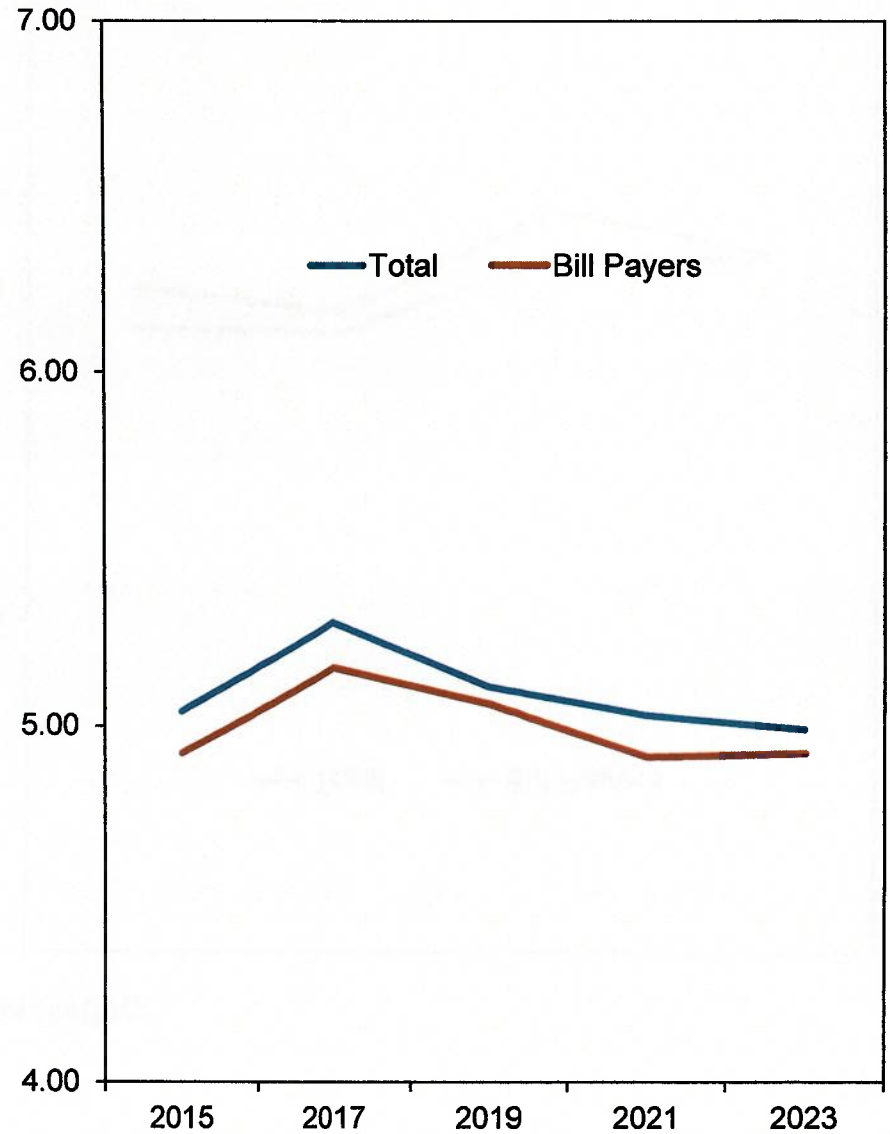
Rates, Bills, and the Cost of Water Service

Fairness of Water Rates

How would you rate your satisfaction with the Board of Water Supply in terms of fairness of water rates?



Mean Rating

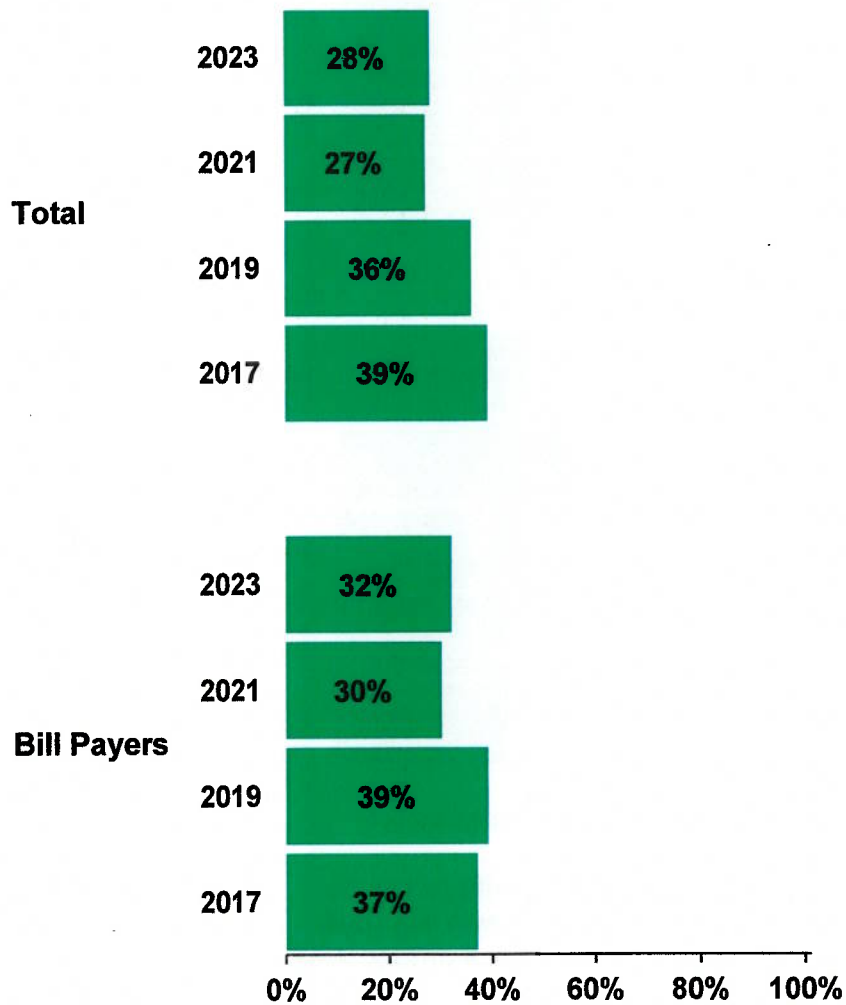


Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685; Bill Payers: 2023=471, 2021=423, 2019=460, 2017=472, 2015=454

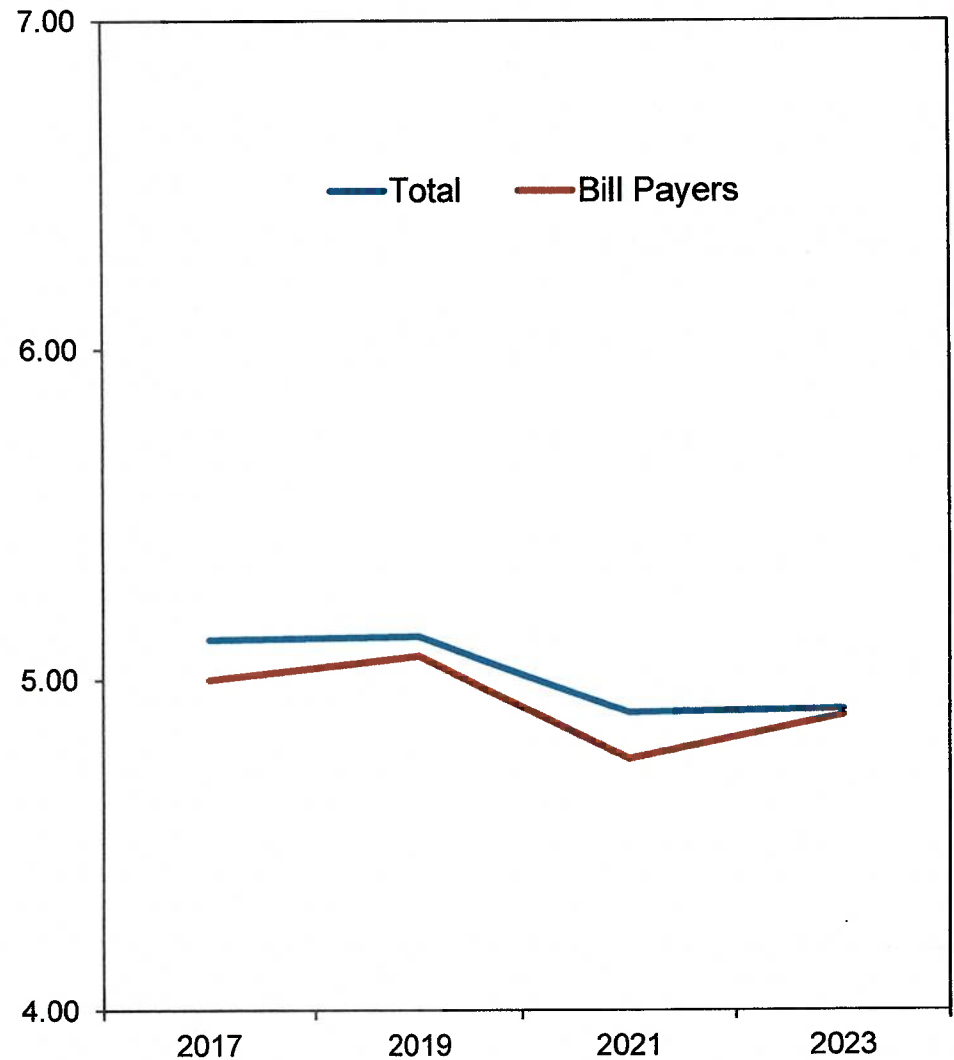
Perceptions about Affordability of Water Service

How affordable would you say your water service is?

■ Very affordable (6-7 rating)



Mean Rating

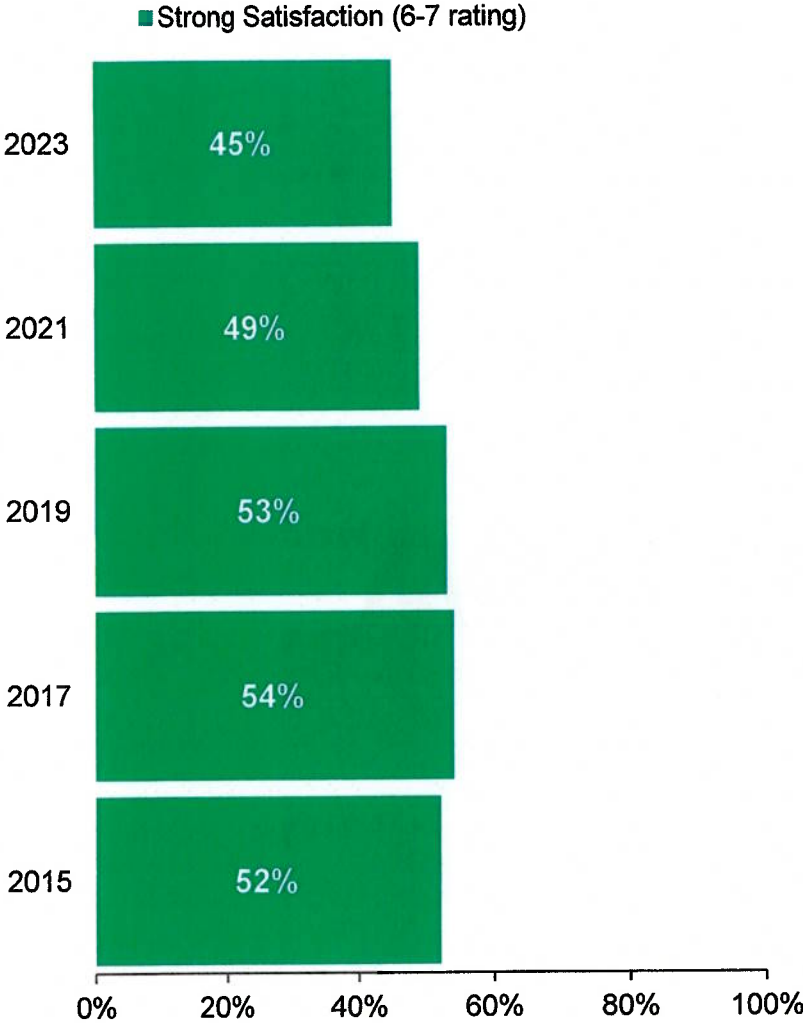


Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685; Bill Payers: 2023=471, 2021=423, 2019=460, 2017=472

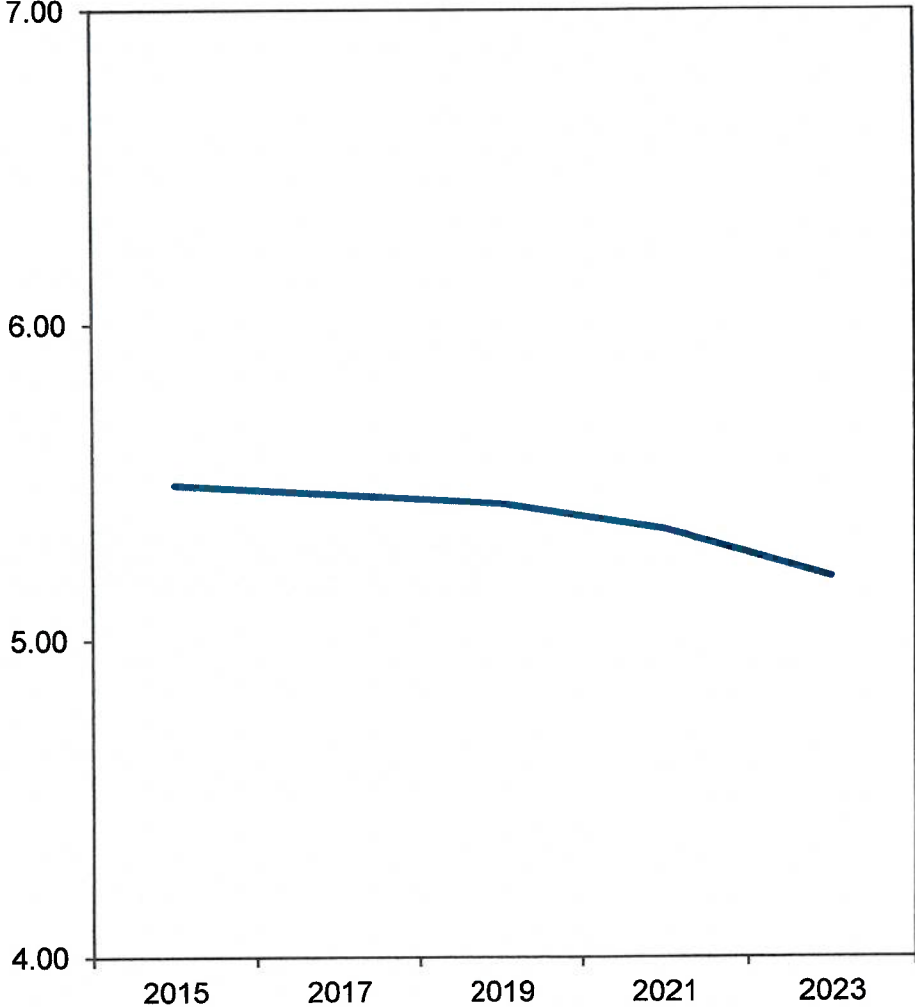
Water Conservation

Information on Water Conservation

How would you rate the Board of Water Supply in terms of their efforts to inform residents how to conserve water and keep their bills lower?



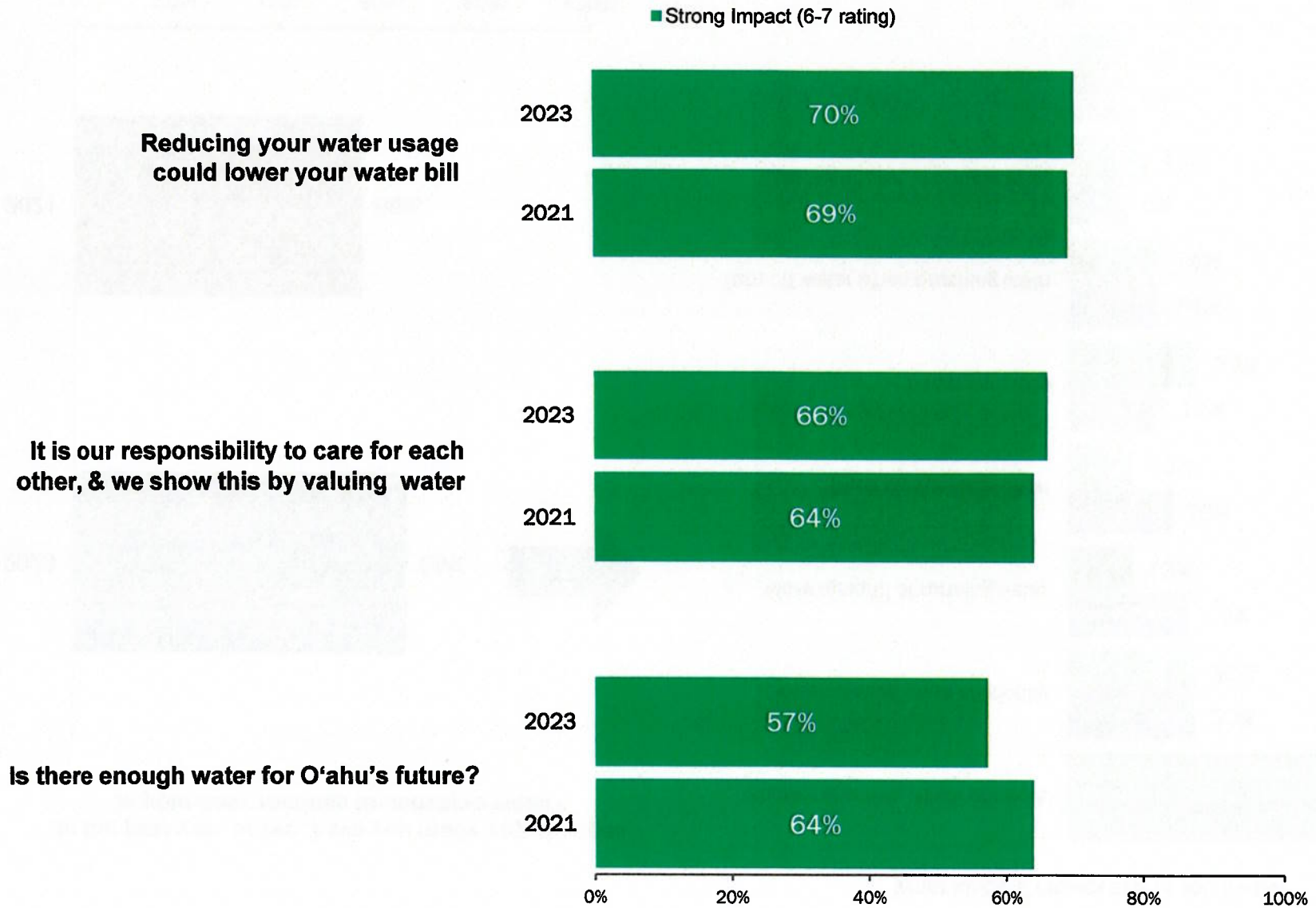
Mean Rating



Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685
 Note: Prior to 2021, question was worded "How would you rate the Board of Water Supply in terms of informing residents how to conserve water and keep their bills lower?"

Impact of Various Water Conservation Messages – (added in 2021)

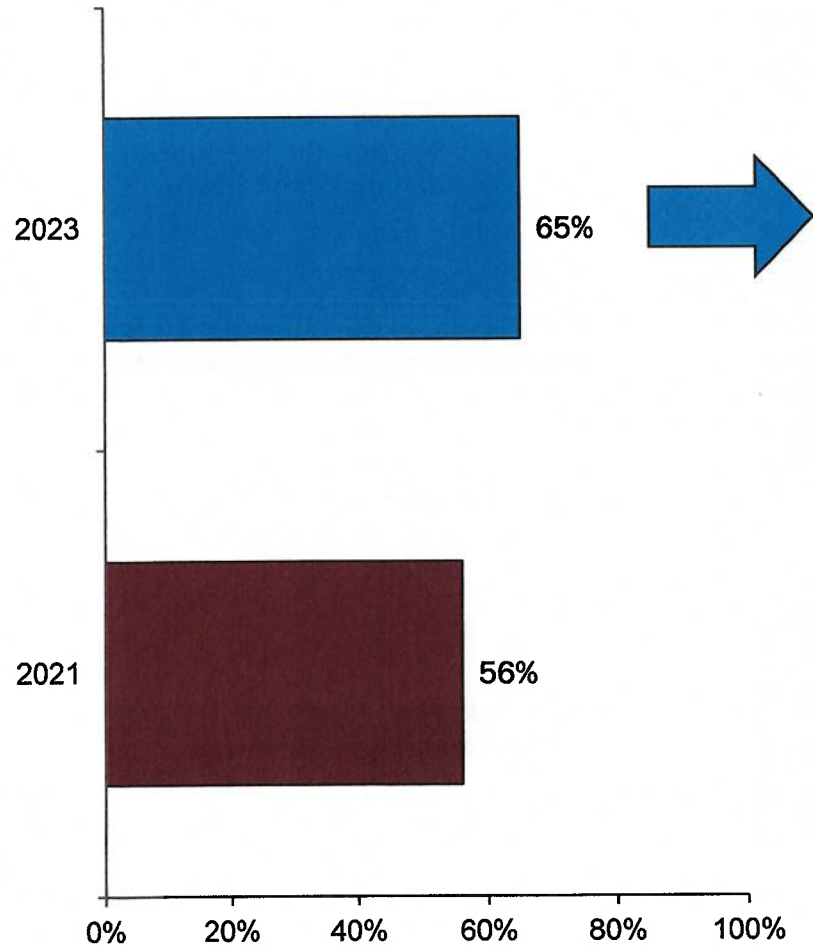
How much impact would that have in getting you to conserve water?



Base= Total: 2023=701, 2021=675 *Question was added in 2021

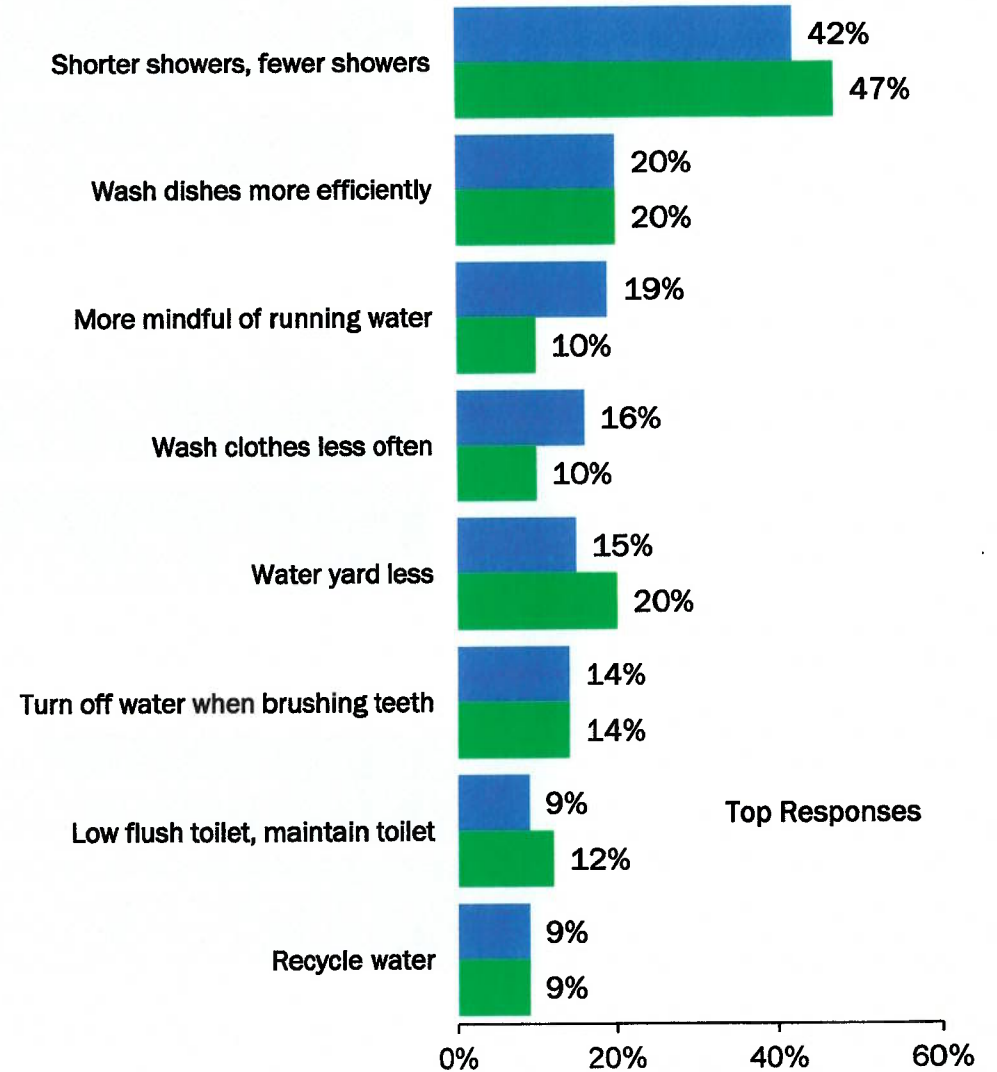
Changes in Daily Routines To Conserve Water – (added in 2021)

In the past year or two, have you made any changes in your daily routines to conserve water?



Base= Total: 2023=701, 2021=675 *Question was added in 2021

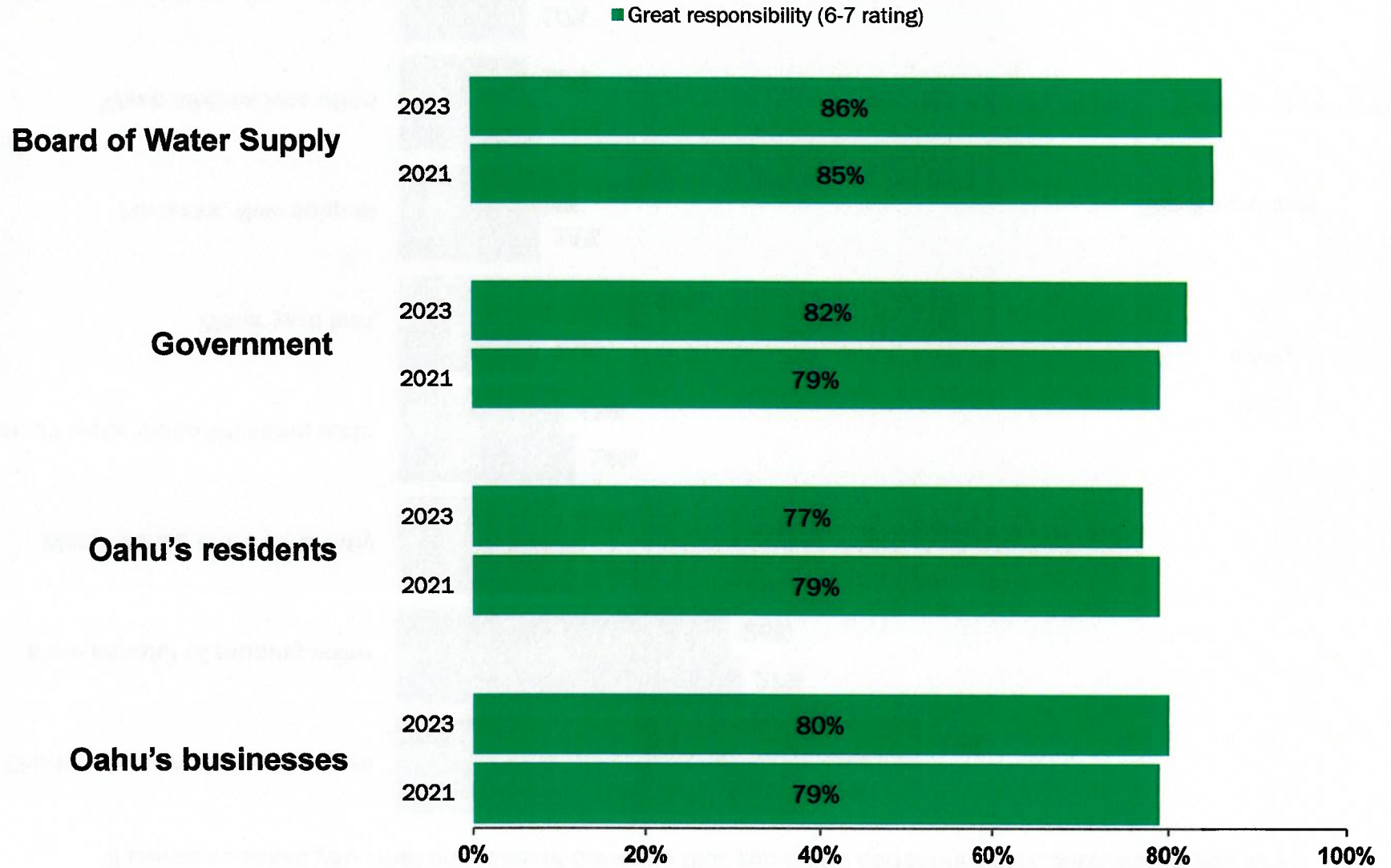
What kinds of changes have you made?



Base= Total: 2023=701, 2021=379 *Question was added in 2021

Responsibility in Water Conservation – (added in 2021)

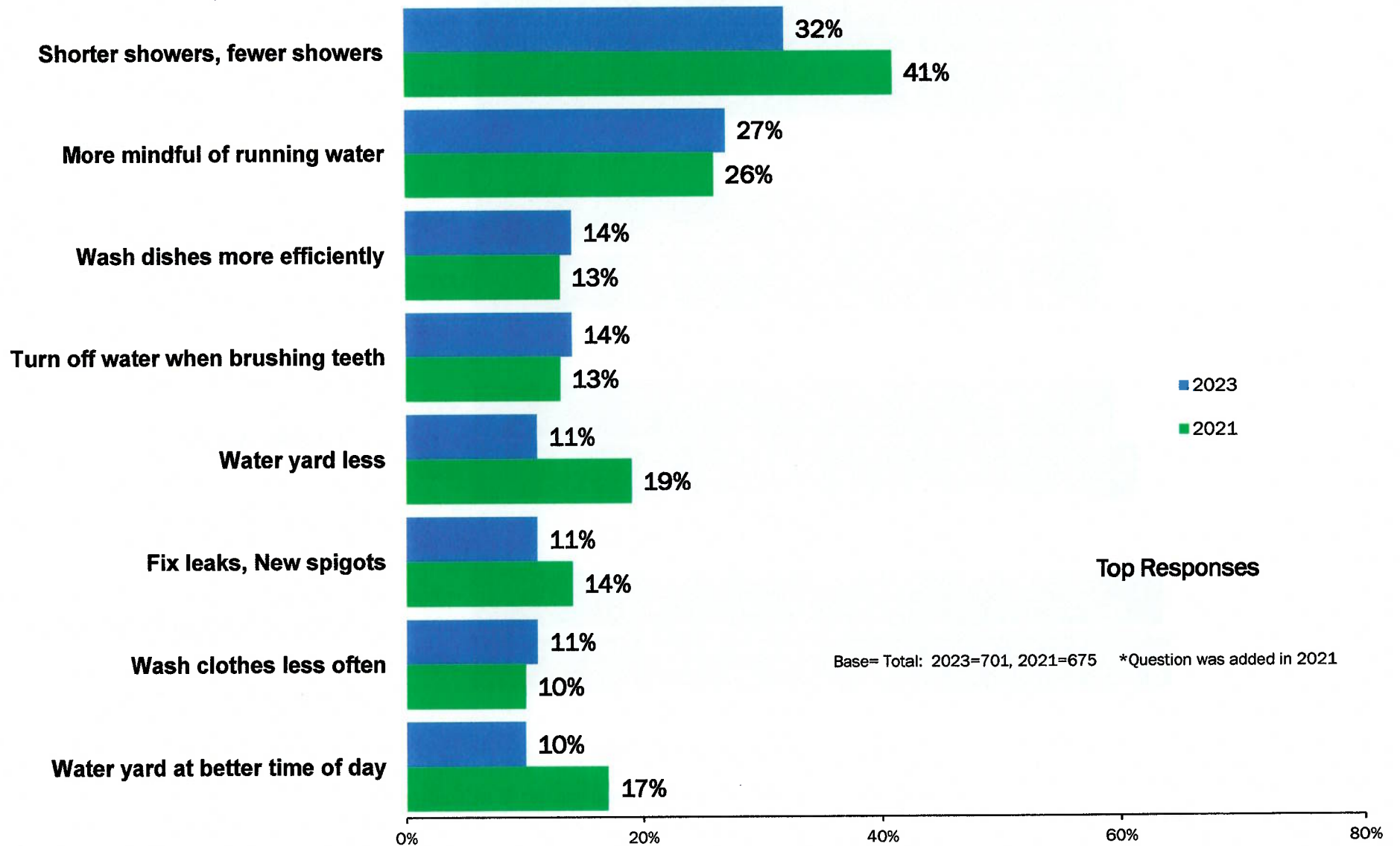
Who has the greatest responsibility in water conservation?



Base= Total: 2023=701, 2021=675 *Question was added in 2021

Suggestions For Conserving Water – (added in 2021)

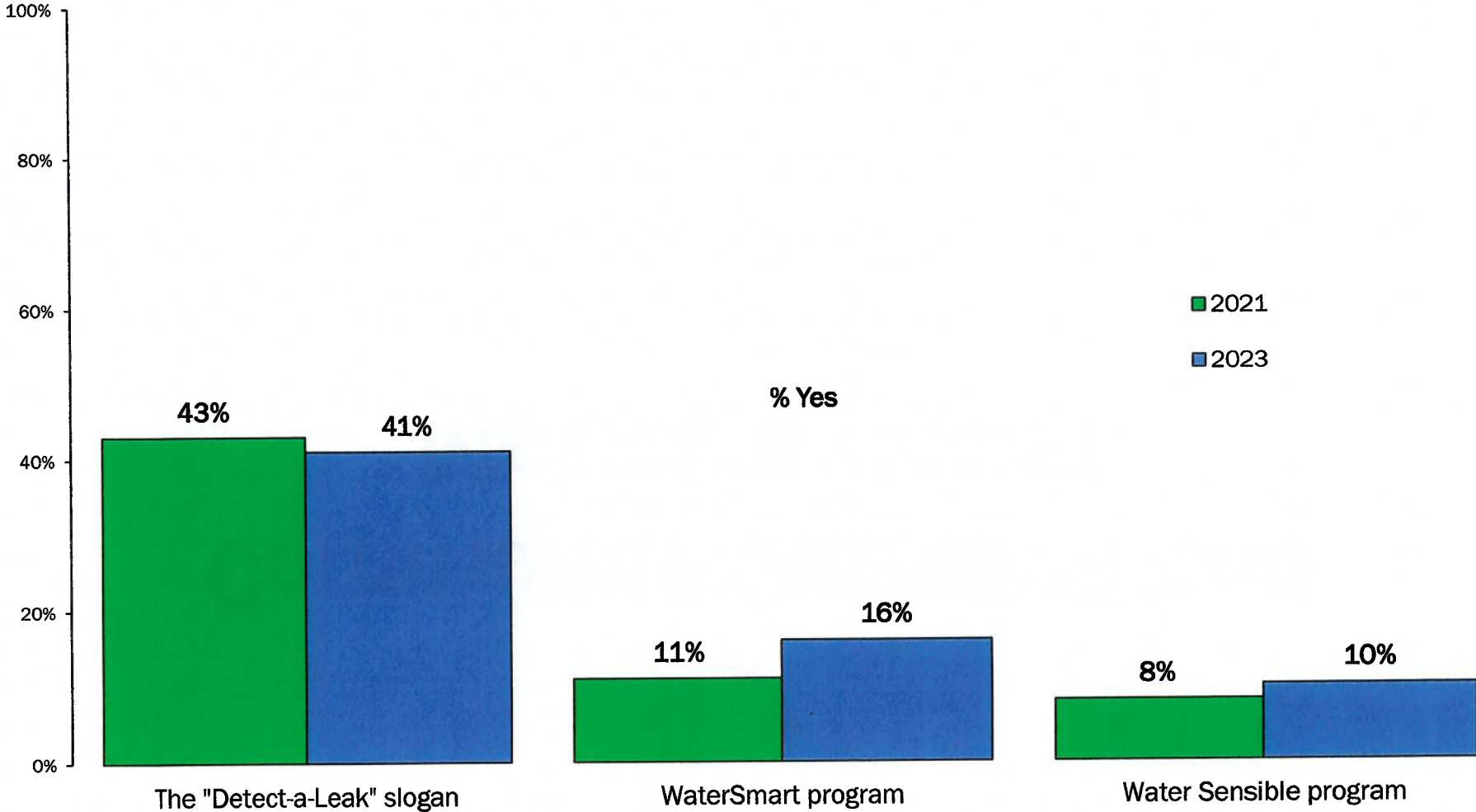
If someone asked you what are some of the ways that you could conserve water, what would you say?



Community Outreach and Message Recall

BWS Programs (added in 2021)

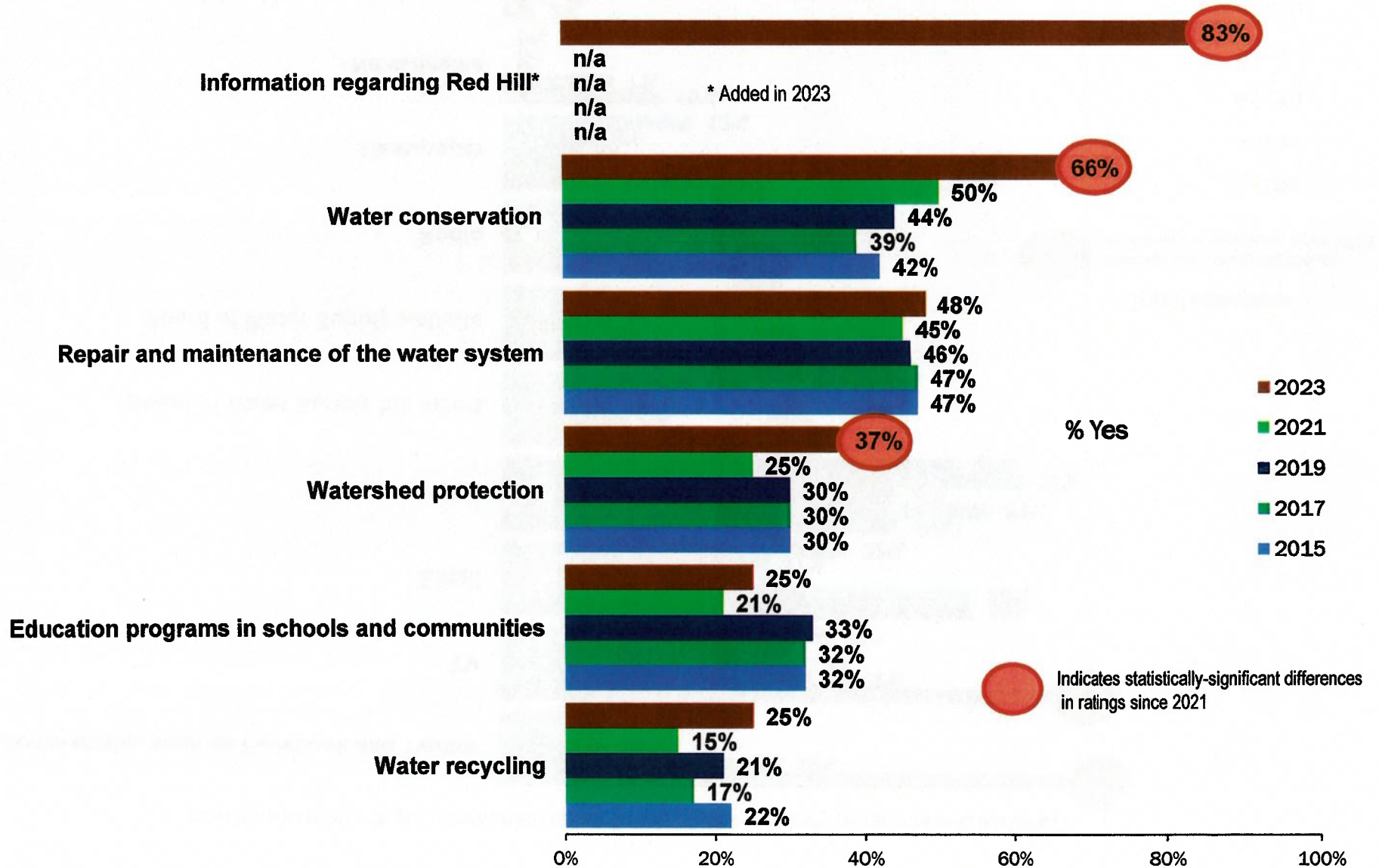
Have you ever seen, read, or heard of...



Base= Total: 2023=701. 2021=675 *Question added in 2021

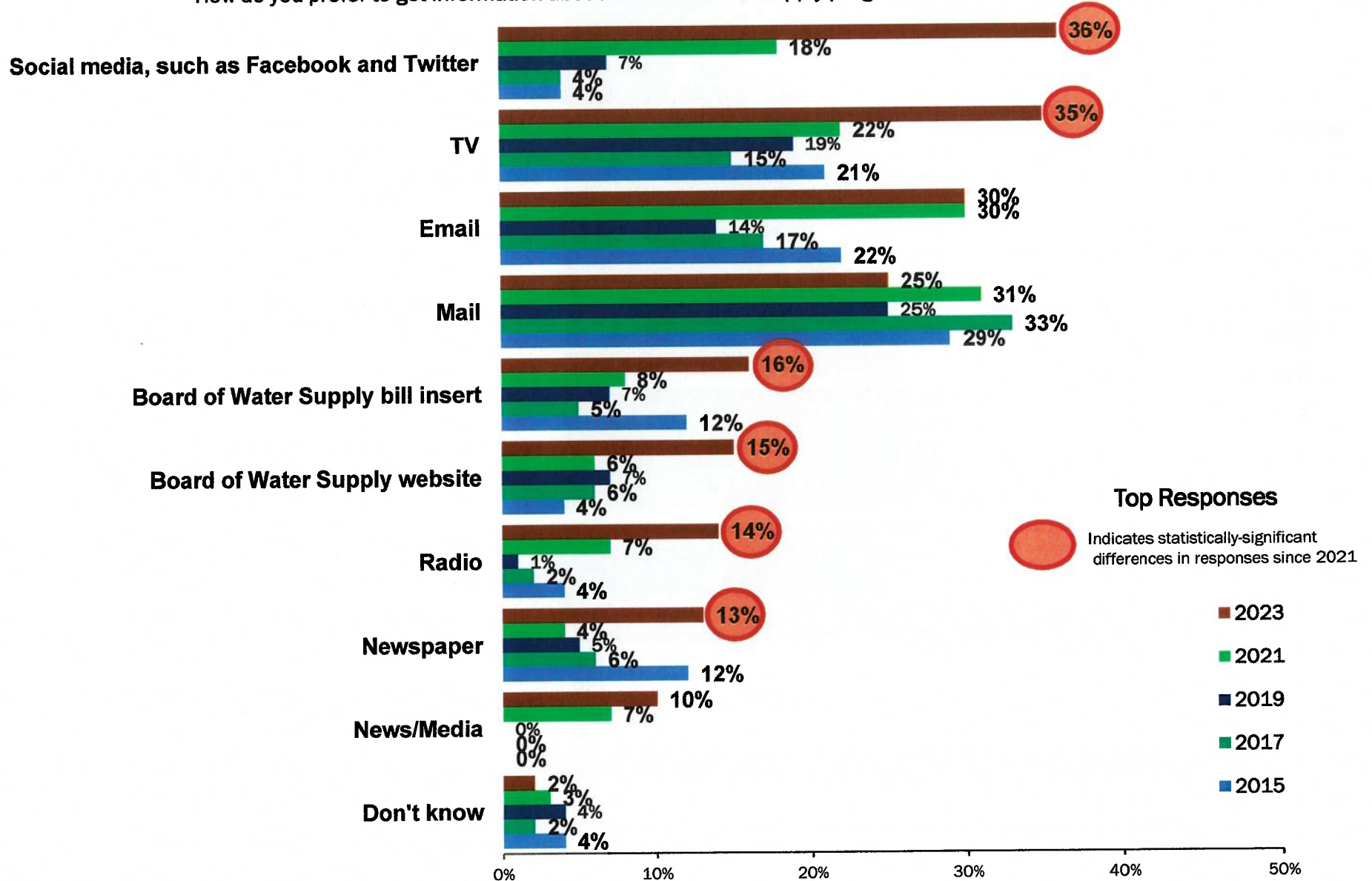
BWS Programs and Activities

Have seen or heard of the BWS's activities and programs in the following areas?



Communication from the BWS

How do you prefer to get information about Board of Water Supply programs and services?



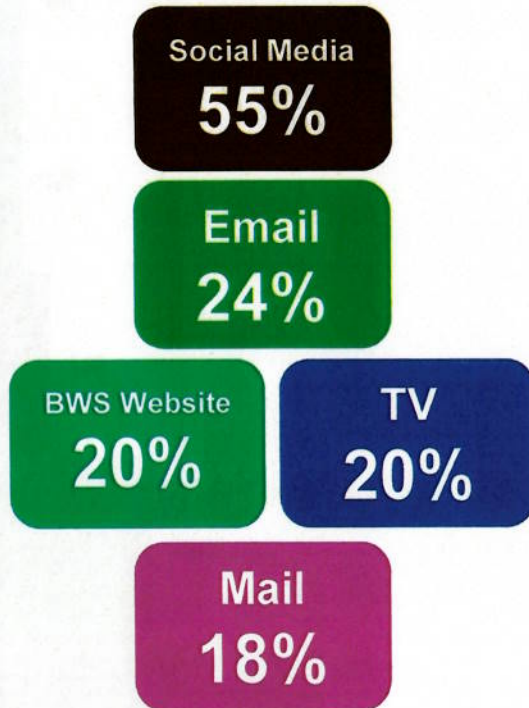
Communication from the BWS (by Age Segments)

How do you prefer to get information about Board of Water Supply programs and services?

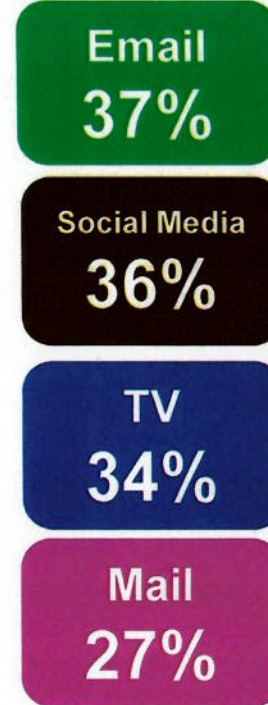
Total (n=701)



18 to 34 years (n=214)



35 to 54 years (n=239)

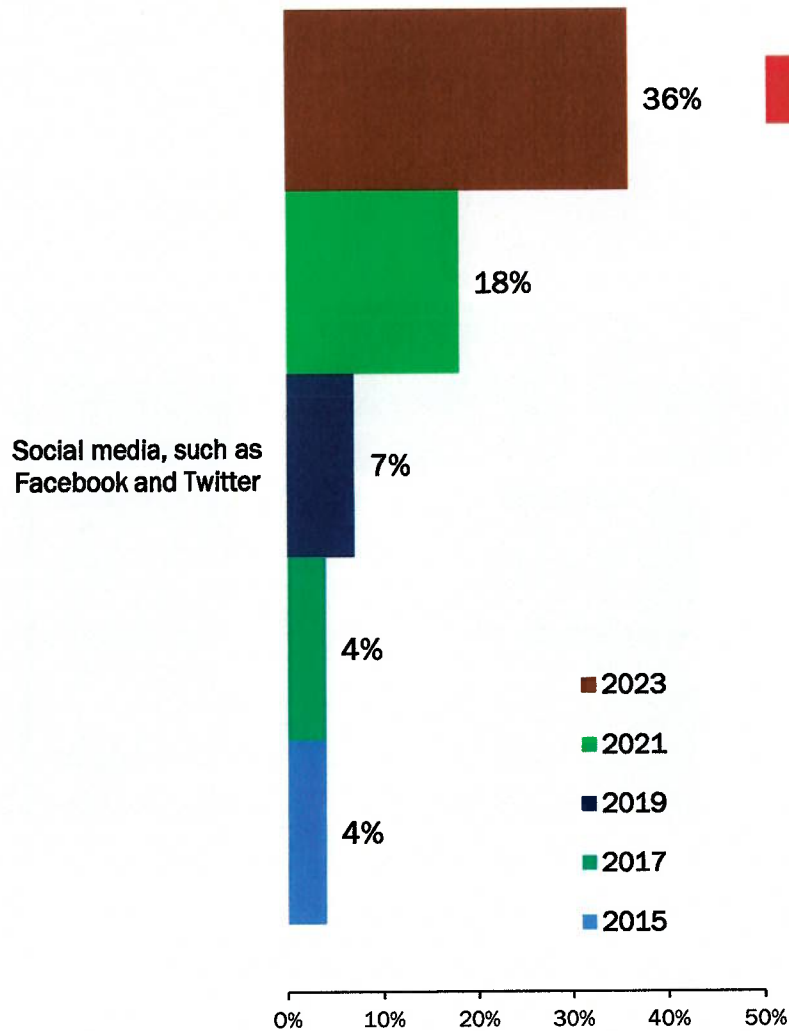


55+ years (n=239)



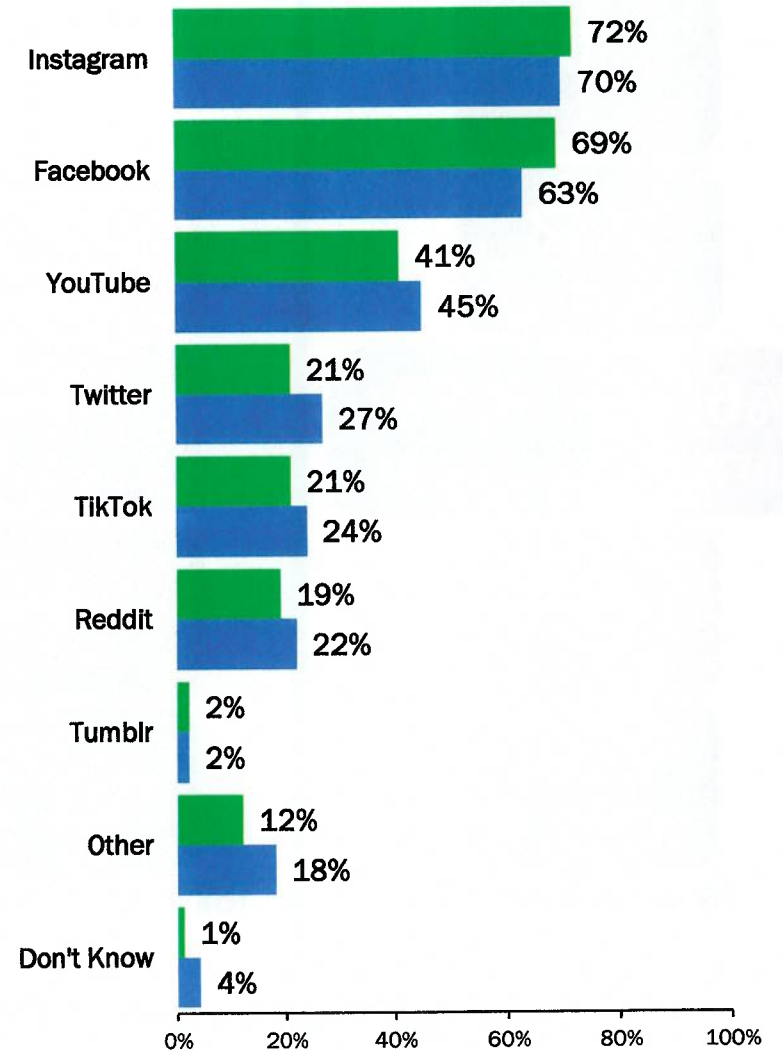
Digital Information

How do you prefer to get information about Board of Water Supply programs and services?



Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685

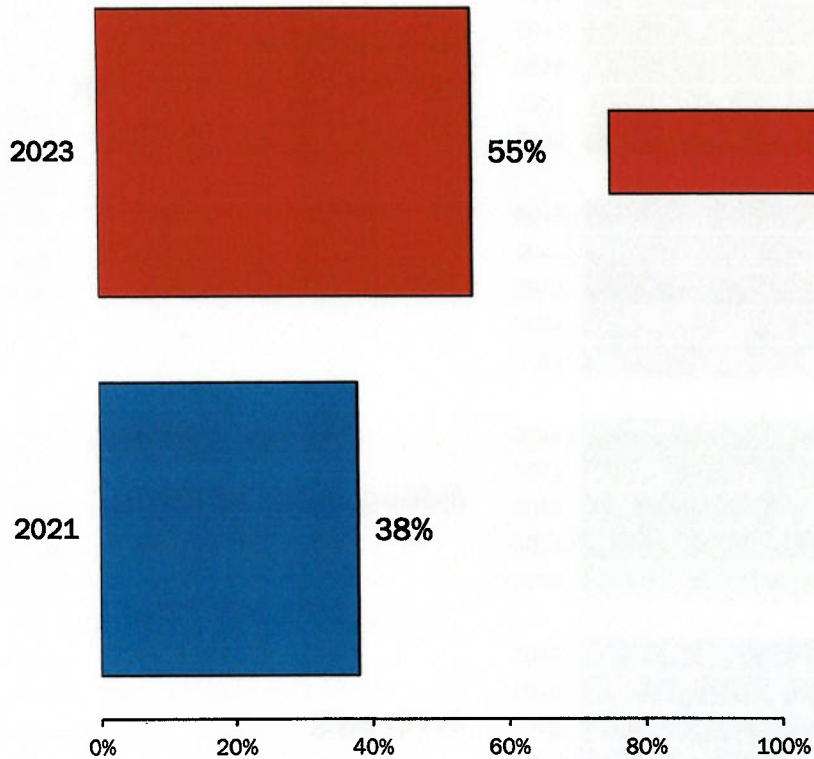
Where do you get your digital information?



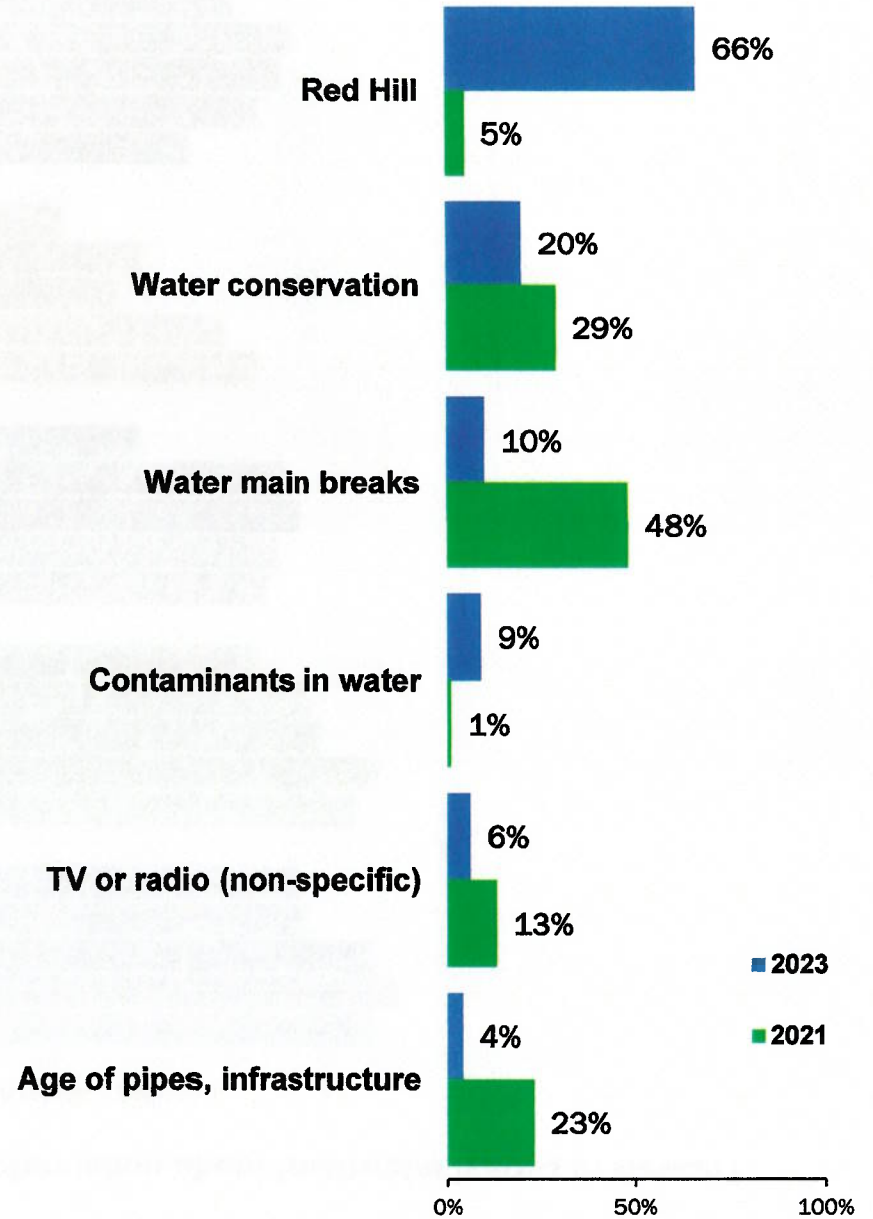
Base= Total: 2023=254, 2021=120 *Question added in 2021

Message Recall

In the past 6 months, do you remember seeing or hearing any messages or news stories from the Board of Water Supply?

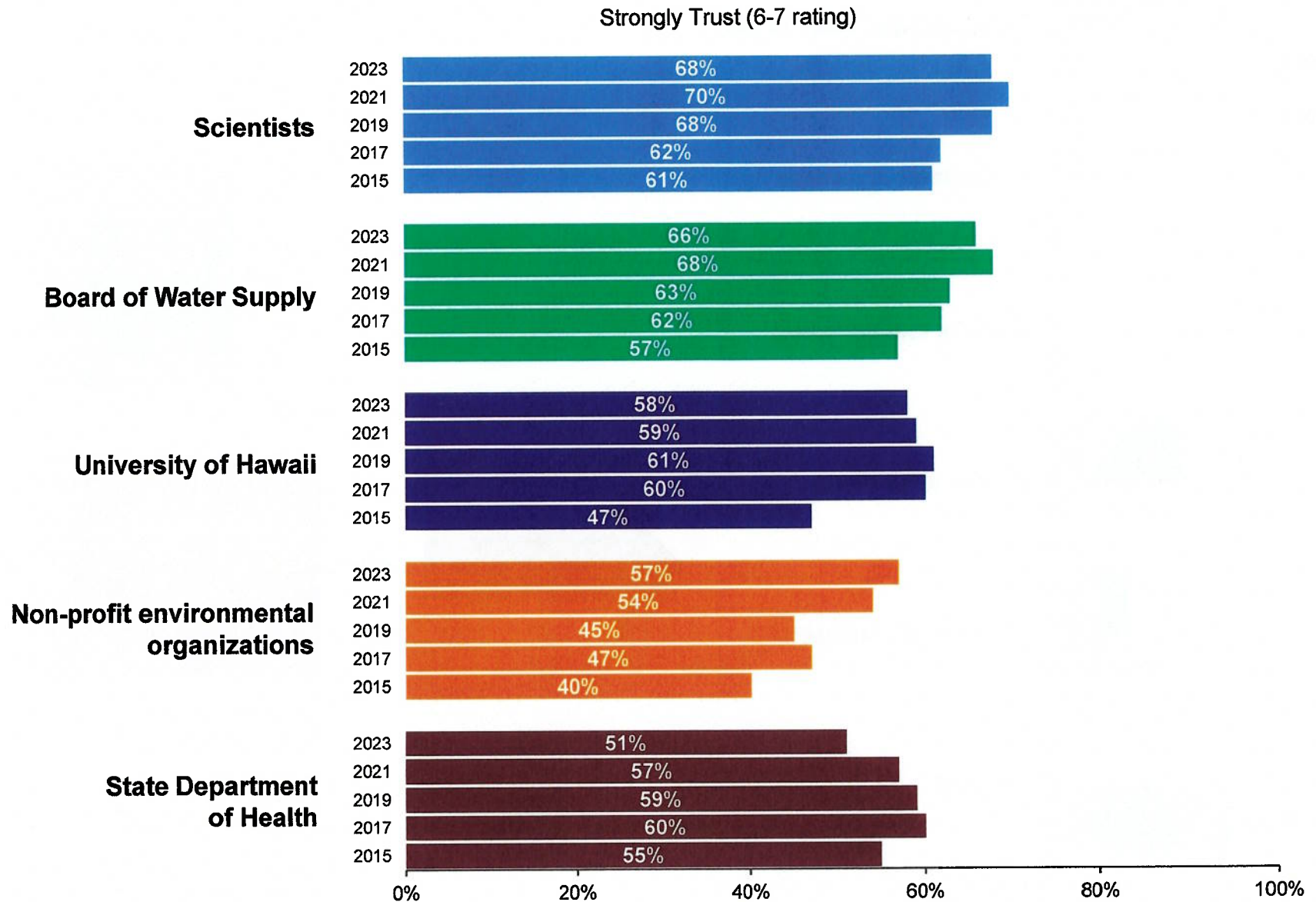


What do you remember seeing or hearing? (Top responses)



Sources of Information about Freshwater Issues (1 of 2)

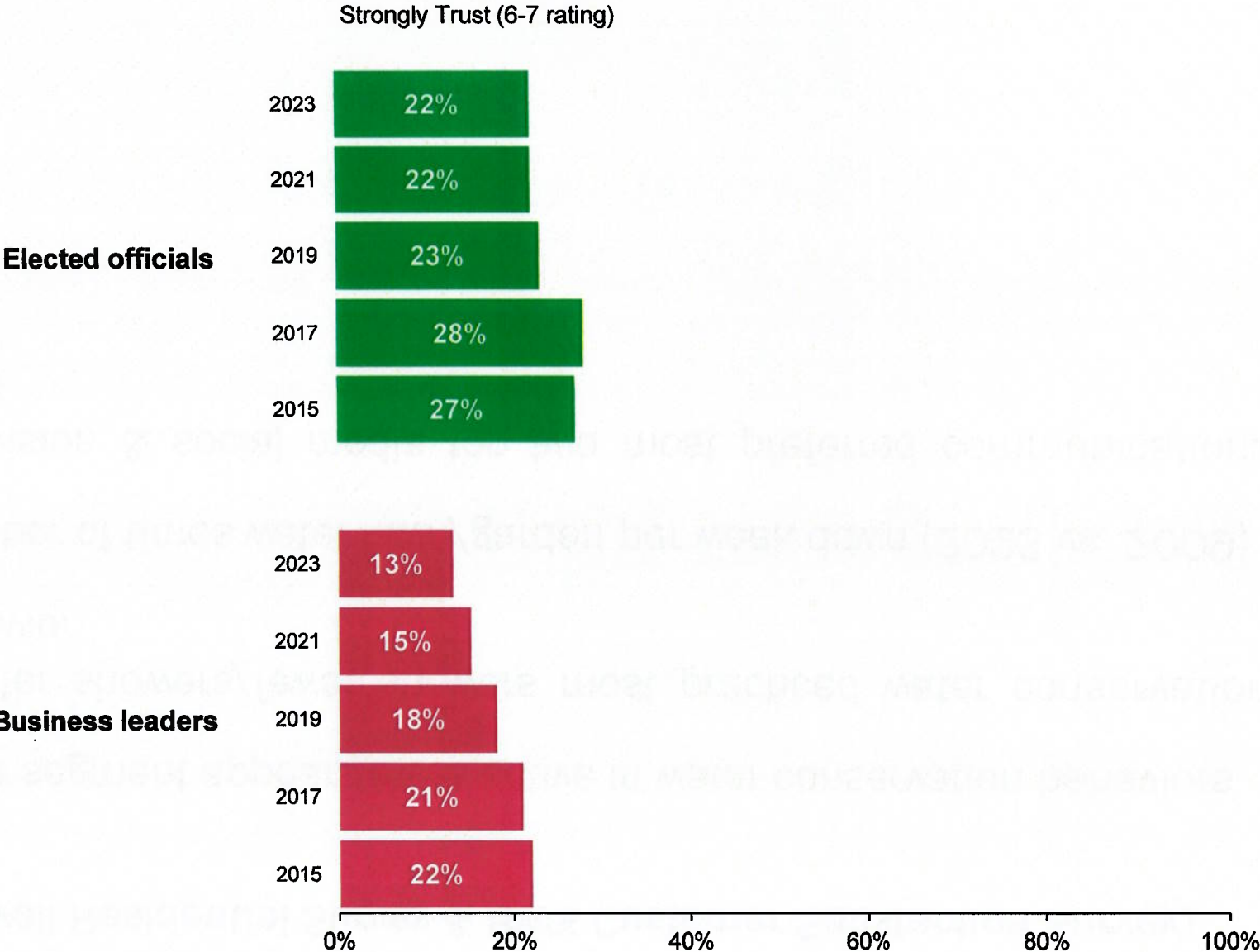
Which sources do you trust to provide honest, accurate information about freshwater issues in Hawaii?



Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685

Sources of Information about Freshwater Issues (2 of 2)

Which sources do you trust to provide honest, accurate information about freshwater issues in Hawaii?



Base= Total: 2023=701, 2021=675, 2019=682, 2017=686, 2015=685

Looking Across Surveys

(Honeywell Residential Survey & BWS Customer Satisfaction Survey)

- Older segment appears more active in water conservation behaviors
- Shorter showers/fewer showers most practiced water conservation behavior
- Number of times water lawn/garden per week down (2023 vs. 2009)
- Television & social media top two most preferred communications tools

Conclusions

- Impact of Red Hill contamination & corresponding media coverage apparent in 2023 data. Perhaps PFAS, as well, given March timing.
- Satisfaction levels declined significantly for BWS's ability to provide 1) *dependable water* and 2) *safe water*. Significantly noted in Pearl City/Aiea/ Moanalua.
- Residents still equally trust BWS & scientists most to provide honest, accurate information about freshwater issues in Hawaii.
- Perceptions remained steady over 2021 for BWS's efforts to protect, manage, & sustain O'ahu's water resources; as well as job BWS is doing repairing, maintaining, & replacing O'ahu's water delivery system.
- Affordability of water ratings all held steady in 2023 but have fallen off since high in 2017-19.

Conclusions

- Similar to previous tracking, 6 in 7 residents believe BWS has great responsibility in water conservation.
- Communications re: Red Hill likely helped reinforce water conservation messages. Significant increase in those who said they have made changes in their daily routines to conserve water.
- Rebuilding in awareness of BWS education programs in schools & communities.
- Survey data strongly support increased efforts in digital communications & social media.
- Some of this change may be due to perceptions related to Red Hill issue; Nothing in data to support or refute this.

ITEM FOR INFORMATION NO. 5

"July 24, 2023

2023 ANNUAL
HALAWA
XERISCAPE
GARDEN
UNTHIRSTY
PLANT SALE

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: 2023 Annual Halawa Xeriscape Garden Unthirsty Plant Sale

I am pleased to invite you to attend the 2023 Annual Halawa Xeriscape Garden (HXG) Unthirsty Plant Sale on Saturday, August 5, 2023, from 9:00 a.m. to 3:00 p.m., at 99-1268 Iwaena Street in Halawa Valley's Central Park Industrial Area.

After a three-year pause due to the COVID-19 pandemic, this free community event will once again offer the public a chance to learn more about xeriscaping. Xeriscaping helps to reduce outdoor water usage, maintain an attractive yard, and preserve our precious water resources.

The Friends of Halawa Xeriscape Garden, a non-profit organization and event co-sponsor, has coordinated the participation of local plant vendors to feature an array of less-thirsty plants for purchase. Plant Sale proceeds support the education programs at the garden.

Visit with various organizations that also promote sustainability of our island resources and environment. You can sign up for a Rain Barrel Water Catchment workshop and take home a free bag of compost.

Our annual Unthirsty Plant Sale helps to remind and inspire attendees about everyone's personal responsibility to carefully use our precious drinking water supply, especially in the upcoming warmer months. We hope you and your family will join us on August 5th.

Respectfully Submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION:

Sheri Mikami, Community Relations Specialist, Communications Office, gave the report. There were no comments or discussion.

**Unrivaled.
Unmistakable.
Unthirsty.**



**2023 Annual Hālawā Xeriscape Garden
Unthirsty Plant Sale
99-1268 Iwaena Street
Saturday, August 5
9am-3pm
Free Admission!**

- Beautiful & Drought-Tolerant Plants
- Rain Barrel Catchment
- Education Booths
- Plant Doctors
- Backyard Composting
- Free Soil Conditioner
- & Much More!

FREE SHUTTLES

- 8:30 a.m. – 3:30 p.m.
on Iwaena Street



FRIENDS OF HĀLAWA
Xeriscape Garden



**Board of
Water Supply**
boardofwatersupply.com
(808) 748-5041

DRIVING DIRECTIONS TO HĀLAWA XERISCAPE GARDEN

99-1268 Iwaena Street, Hālawā Valley's Central Park Industrial Area

From Honolulu: ■■■■■■■■■■

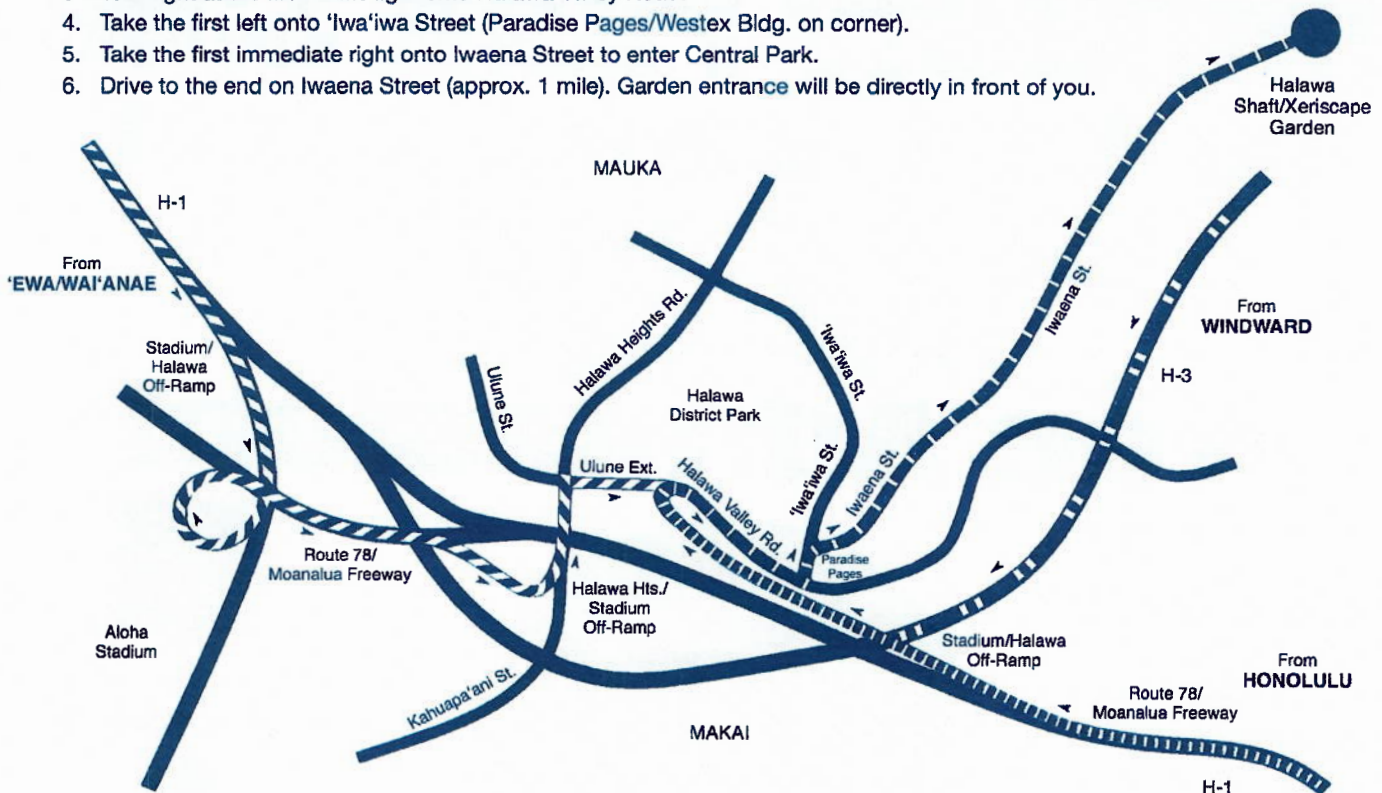
1. Take the H-1 Freeway West onto Route 78/Moanalua Freeway.
2. Take the Stadium/Hālawā off-ramp (1-E), **NOT** the H-3 off-ramp!
3. Turn right at the first traffic light onto Hālawā Valley Road.
4. Take the first left onto 'Iwa'iwa Street (Paradise Pages/Westex Bldg. on corner).
5. Take the first immediate right onto Iwaena Street to enter Central Park.
6. Drive to the end on Iwaena Street (approx. 1 mile). Garden entrance will be directly in front of you.

From 'Ewa / Wai'anae: ▩▩▩▩▩▩▩▩

1. Take the H-1 Freeway East to Stadium/Hālawā off-ramp. When off-ramp meets Route 78/Moanalua Freeway, stay in the same lane. It will turn into the Hālawā Heights/Stadium off-ramp.
2. Turn left at traffic light at the end of off-ramp onto Kahuapa'ani Street (mauka-bound).
3. At the next intersection, turn right onto Ulune Street Extension; veer into left lane to cross the next intersection onto Hālawā Valley Road.
4. Take the first left onto 'Iwa'iwa Street (Paradise Pages/Westex Bldg. on corner).
5. Take the first immediate right onto Iwaena Street to enter Central Park.
6. Drive to the end on Iwaena Street (approx. 1 mile). Garden entrance will be directly in front of you.

From Windward via H-3: ■■■■■■■■■■

1. When driving from the Windward side on H-3 Honolulu bound, take the Stadium/Hālawā exit ramp.
2. When exit ramp meets with the off-ramp from route Route 78/Moanalua Freeway, merge into far right lane to Hālawā Valley.
3. Turn right at the first traffic light onto Hālawā Valley Road.
4. Take the first left onto 'Iwa'iwa Street (Paradise Pages/Westex Bldg. on corner).
5. Take the first immediate right onto Iwaena Street to enter Central Park.
6. Drive to the end on Iwaena Street (approx. 1 mile). Garden entrance will be directly in front of you.



TheBus ROUTES TO HĀLAWA XERISCAPE GARDEN FROM HONOLULU

#54 Upper/Lower Pearl City

Originates at Alapai Street near Fasi Municipal Bldg.

Runs every 30 minutes

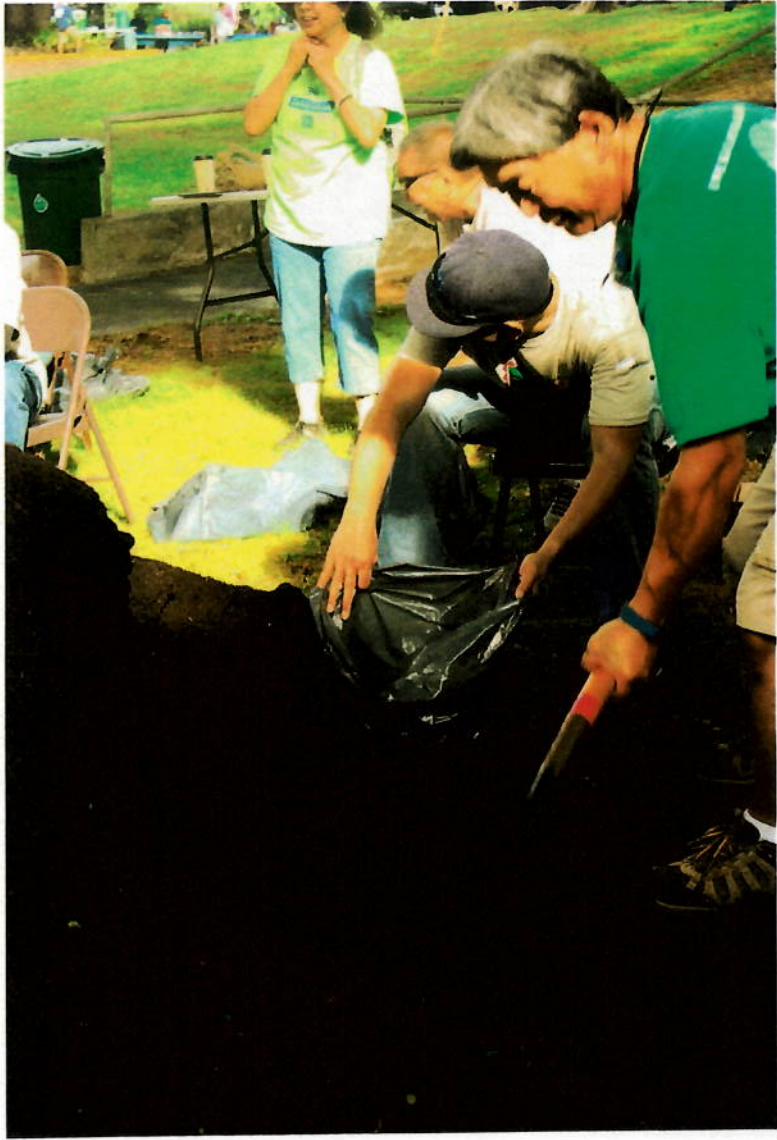
Get off at Hālawā Valley Road bus stop

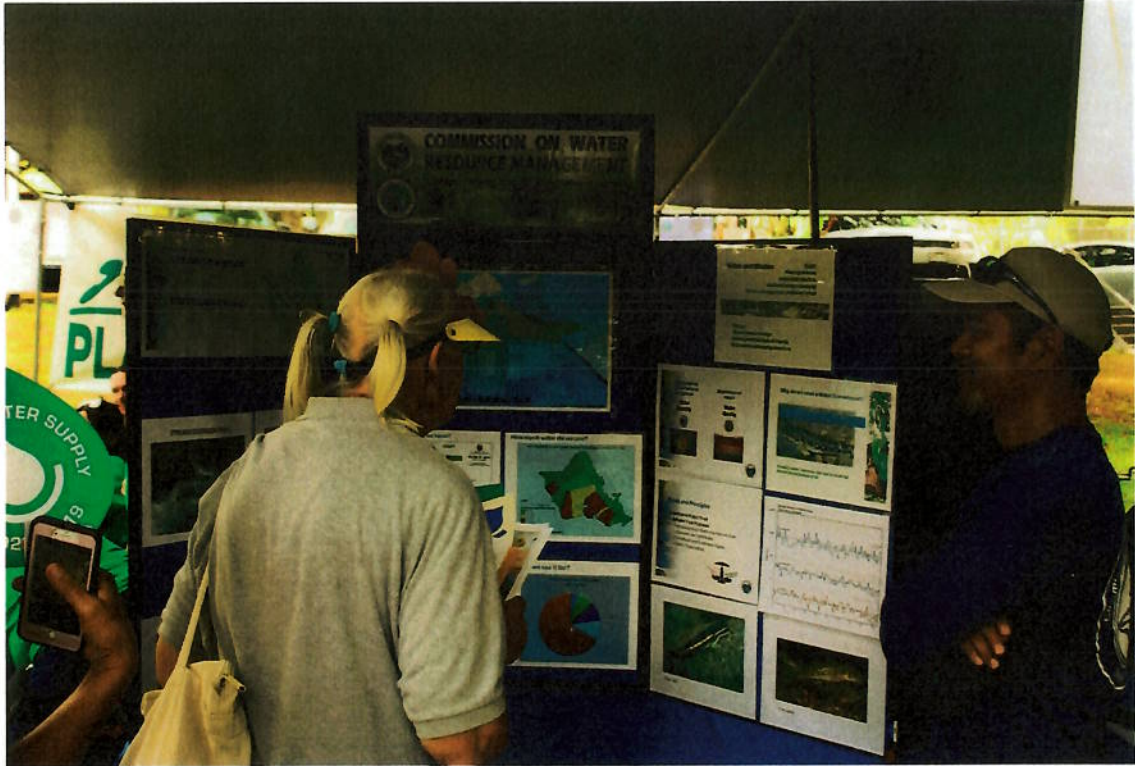












ITEM FOR INFORMATION NO. 6

"July 24, 2023

STATUS
UPDATE OF
GROUNDWATER
LEVELS AT
ALL INDEX
STATIONS

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Status Update of Groundwater Levels at All Index Stations

Four aquifer index stations were in low groundwater condition for the production month of June 2023. Kaimuki, Pearl City, Punaluu, and Waialua are in Caution Status. The monthly production average for June 2023 was 136.36 million gallons per day.

The Board of Water Supply rainfall index for the month of June 2023 was 88 percent of normal, with a 5-month moving average of 117 percent. As of July 4, 2023, the Hawaii Drought Monitor shows abnormally dry conditions along the southern coast of Oahu. The National Weather Service is forecasting below-normal precipitation from a moderate to strong El Nino through January 2024.

Most monitoring wells exhibited relatively stable head levels for the month of June 2023, likely reflecting the lower overall groundwater production combined with lower-than-average rainfall. Average monthly production for June 2023 was lower than in June 2022 and lower than the 5-year monthly average.

Respectfully Submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION: Barry Usagawa, Program Administrator, Water Resources Division, gave the report. There were no comments or discussion.

**PRODUCTION, HEAD AND RAINFALL REPORT
MONTH OF JUNE 2023**

POTABLE

STATION	MGD
HONOLULU (1)	
KULIOUOU	0.01
WAILUPE	0.11
AINA KOA	0.00
AINA KOA II	0.58
MANOA II	0.94
PALOLO	0.99
KAIMUKI HIGH	2.37
KAIMUKI LOW	1.94
WILDER	8.84
BERETANIA HIGH	1.74
BERETANIA LOW	3.30
KALIHI HIGH	0.91
KALIHI LOW	5.04
KAPALAMA	1.22
KALIHI SHAFT	8.42
MOANALUA	1.84
HALAWA SHAFT	0.00
KAAMILO	0.97
KALAUAO	8.80
PUNANANI	11.98
KAAHUMANU	0.26
HECO WAIU	0.00
MANANA	0.23
WAIALAE IKI	0.43
WELLS SUBTOTAL:	60.94
MANOA TUNNEL	0.17
PALOLO TUNNEL	0.00
GRAVITY SUBTTL:	0.17
HONOLULU SUBTTL:	61.11

STATION	MGD
WINDWARD (2)	
WAIMANALO II	0.26
WAIMANALO III	0.00
KUOU I	0.00
KUOU II	0.80
KUOU III	0.75
LULUKU	0.87
HAIKU	0.30
IOLEKAA	0.00
KAHALUU	0.69
KAHANA	0.57
PUNALUU I	0.00
PUNALUU II	4.18
PUNALUU III	0.00
KALUANUI	1.63
MAAKUA	0.28
HAUULA	0.25
WELLS SUBTOTAL:	10.58
WAIM. TUNNELS I & II	0.00
WAIM. TUNNELS III&IV	0.19
WAIHEE INCL. WELLS	0.66
WAIHEE TUNNEL	3.95
LULUKU TUNNEL	0.12
HAIKU TUNNEL	0.33
KAHALUU TUNNEL	1.45
GRAVITY SUBTOTAL:	6.70
WIND. SUBTOTAL:	17.28

STATION	MGD
NORTH SHORE (3)	
KAHUKU	0.46
OPANA	0.99
WAIALEE I	0.36
WAIALEE II	0.25
HALEIWA	0.00
WAIALUA	2.00
N.SHORE SUBTOTAL:	4.07

STATION	MGD
MILILANI (4)	
MILILANI I	1.28
MILILANI II	0.00
MILILANI III	0.59
MILILANI IV	2.28
MILILANI SUBTOTAL:	4.15

STATION	MGD
WAHIAWA (5)	
WAHIAWA	1.65
WAHIAWA II	1.01
WAHIAWA SUBTOTAL:	2.66

STATION	MGD
PEARL CITY-HALAWA (6)	
HALAWA 277	0.00
HALAWA 550	0.00
AIEA	0.00
AIEA GULCH 497	0.00
AIEA GULCH 550	0.21
KAONOHI I	1.44
WAIMALU I	0.00
NEWTOWN	1.77
WAIU	1.85
PEARL CITY I	0.84
PEARL CITY II	1.12
PEARL CITY III	0.17
PEARL CITY SHAFT	0.90
PEARL CITY-HALAWA SUBTOTAL:	8.30

STATION	MGD
WAIPAHU-EWA (7)	
WAIPAHU HTS.	1.78
WAIPAHU HTS. I	0.00
WAIPAHU HTS. II	0.29
WAIPAHU HTS. III	1.24
WAIPAHU	6.72
WAIPAHU II	1.96
WAIPAHU III	3.49
WAIPAHU IV	2.75
KUNIA I	2.36
KUNIA II	1.73
KUNIA III	1.41
HOAEAE	6.16
HONOULIULI I	1.25
HONOULIULI II	2.92
MAKAKILO	0.15
WAIPAHU-EWA SUBTOTAL:	34.20

STATION	MGD
WAIANA E (8)	
MAKAHA I	0.88
MAKAHA II	0.00
MAKAHA III	0.36
MAKAHA V	0.49
MAKAHA VI	0.00
MAKAHA SHAFT	0.00
KAMAILE	0.07
WAIANA E I	0.28
WAIANA E II	0.16
WAIANA E III	0.68
WELLS SUBTOTAL:	2.92
WAI. C&C TUNNEL	1.40
WAI. PLANT. TUNNELS	0.27
GRAVITY SUBTOTAL:	1.67
WAIANA E SUBTOTAL:	4.59

NONPOTABLE

NONPOTABLE	MGD
KALAUAO SPRINGS	0.57
BARBERS POINT WELL	1.16
GLOVER TUNNEL NP	0.30
NONPOTABLE TOTAL:	2.03

RECYCLED WATER (MAY 2023)

RECYCLED WATER	MGD
HONOULIULI WRF R-1	5.92
HONOULIULI WRF RO	1.39
RECYCLED TOTAL:	7.31

**PRODUCTION, HEAD AND RAINFALL REPORT
MONTH OF JUNE 2023**

PRODUCTION SUMMARIES

TOTAL WATER	MGD
PUMPAGE	127.82
GRAVITY	8.54
POTABLE TOTAL:	136.36
NONPOTABLE	2.03
RECYCLED WATER	7.31
TOTAL WATER:	145.70

CWRM PERMITTED USE AND BWS ASSESSED YIELDS FOR BWS POTABLE SOURCES				
WATER USE DISTRICTS		A	B	C
		PERMITTED USE/ BWS YLDS	JUN 2022	DIFF. A-B
1	HONOLULU	83.32	60.94	22.38
2	WINDWARD	25.02	17.28	7.74
3	NORTH SHORE	4.70	4.07	0.63
4	MILILANI	7.53	4.15	3.38
5	WAHIAWA	4.27	2.66	1.61
6	PEARL CITY-HALAWA	12.25	8.30	3.95
7	WAIPAHU-EWA	50.63	34.20	16.43
8	WAIANAE	4.34	4.59	-0.25
TOTAL:		192.06	136.19	55.87

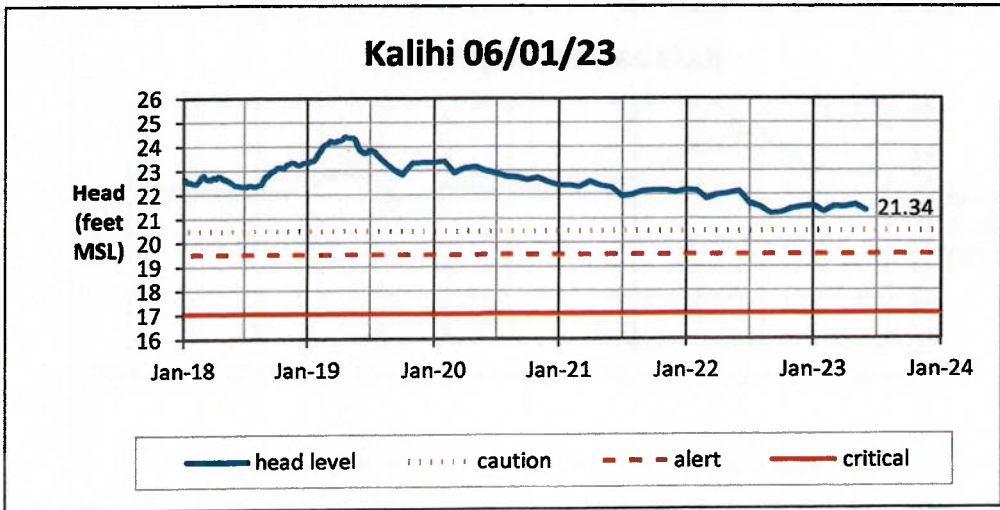
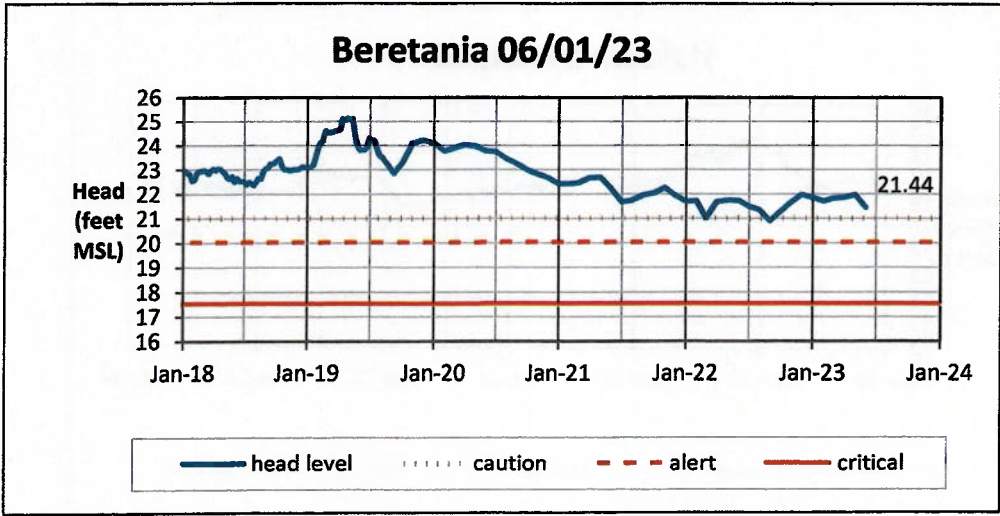
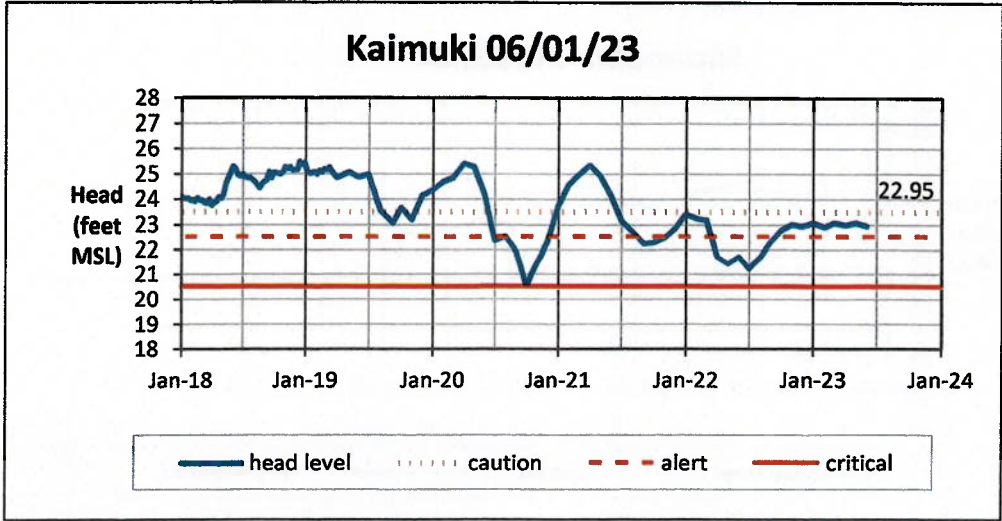
CWRM PERMITTED USE FOR BWS NONPOTABLE SOURCES				
WATER USE DISTRICTS		A	B	C
		PERMITTED USE	JUN 2022	DIFF. A-B
7	WAIPAHU-EWA (BARBERS POINT WELL)	1.00	1.16	-0.16
TOTAL:		1.00	1.16	-0.16

EFFECTIVE WATER DEMAND PER DISTRICT

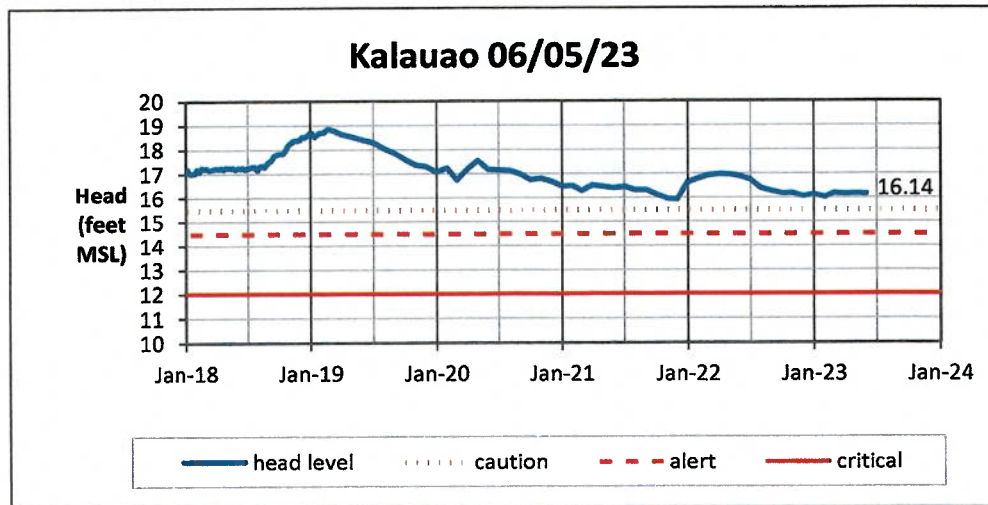
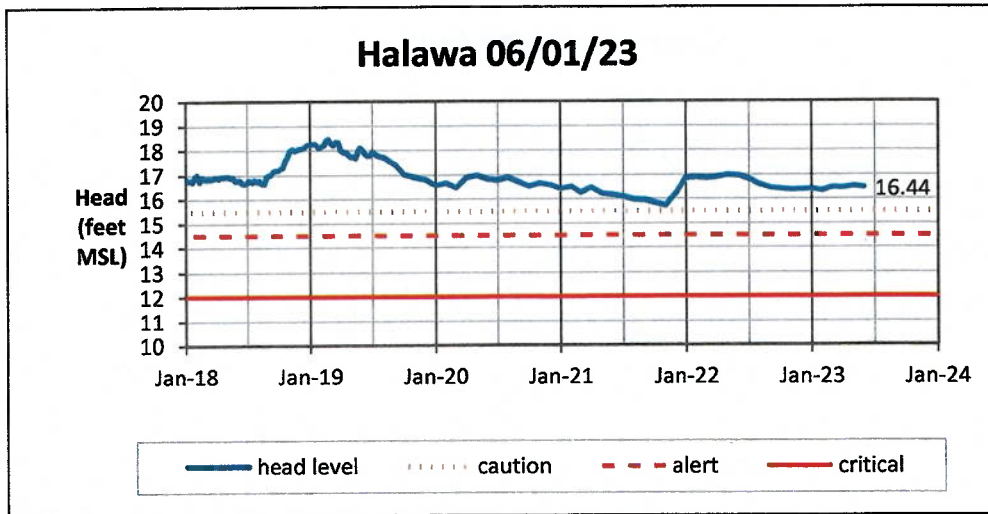
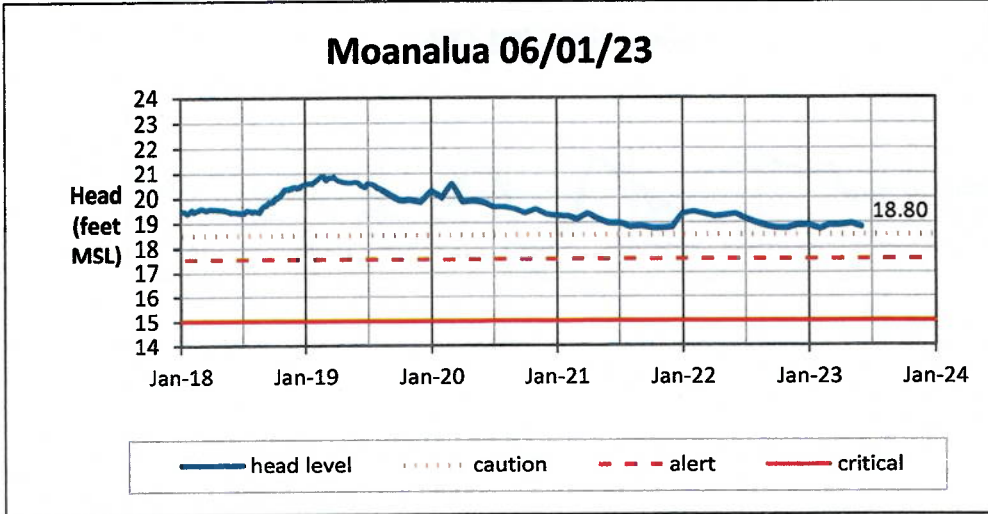
IMPORT/EXPORT BETWEEN WATER USE DISTRICTS			
FROM	TO		MGD
2	1	WINDWARD EXPORT	0.01
7	8	BARBERS PT LB	4.51

WATER USE DISTRICTS		SUBTOTAL	IMPORT	EXPORT	EFFECTIVE WATER DEMAND
1	HONOLULU	61.11	0.01	-	61.12
2	WINDWARD	17.28	-	0.01	17.27
3	NORTH SHORE	4.07	-	-	4.07
4	MILILANI	4.15	-	-	4.15
5	WAHIAWA	2.66	-	-	2.66
6	PEARL CITY-HALAWA	8.30	-	-	8.30
7	WAIPAHU-EWA	34.20	-	4.51	29.69
8	WAIANAE	4.59	4.51	-	9.10
TOTAL:		136.36	4.52	4.52	136.36

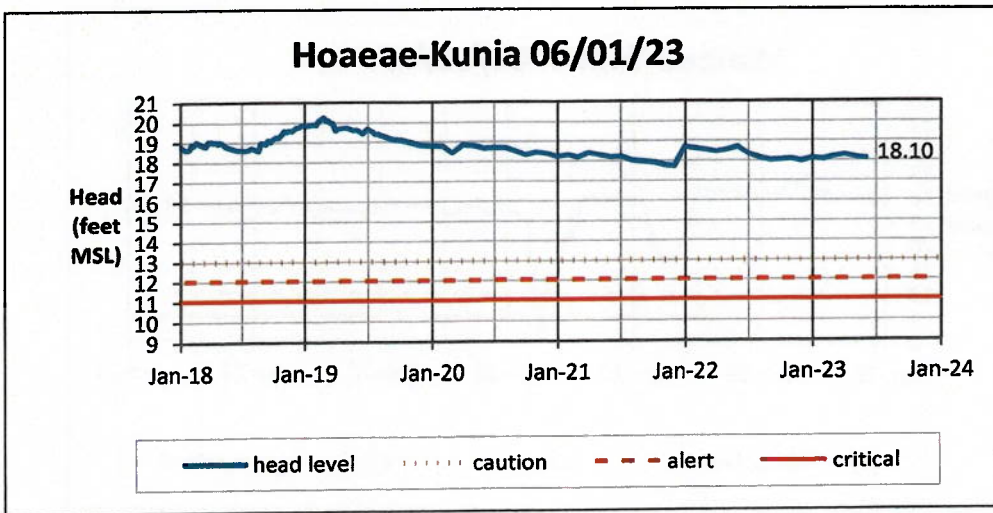
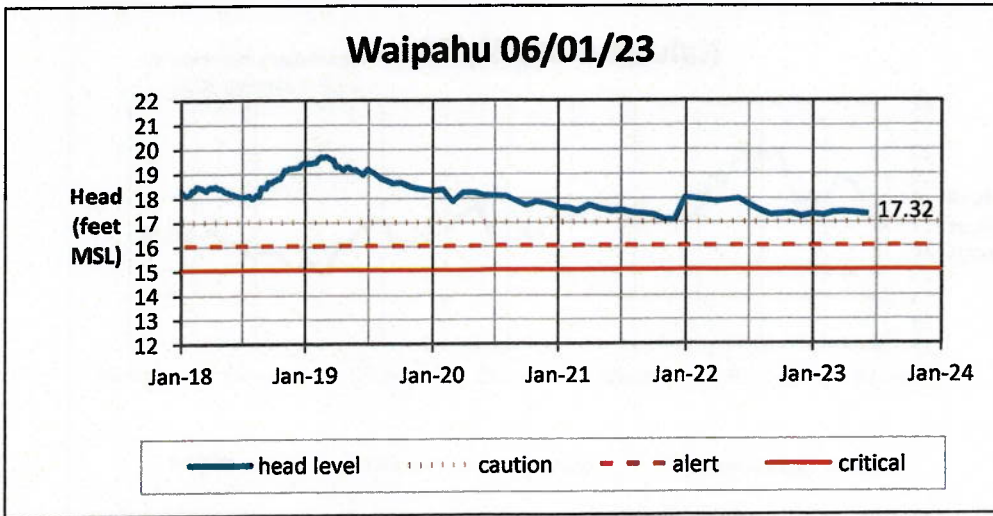
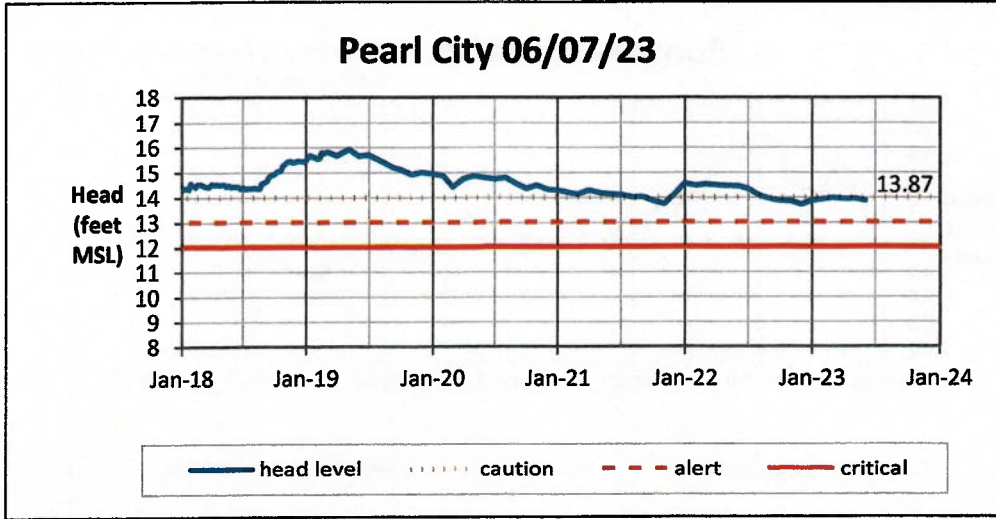
Head Report



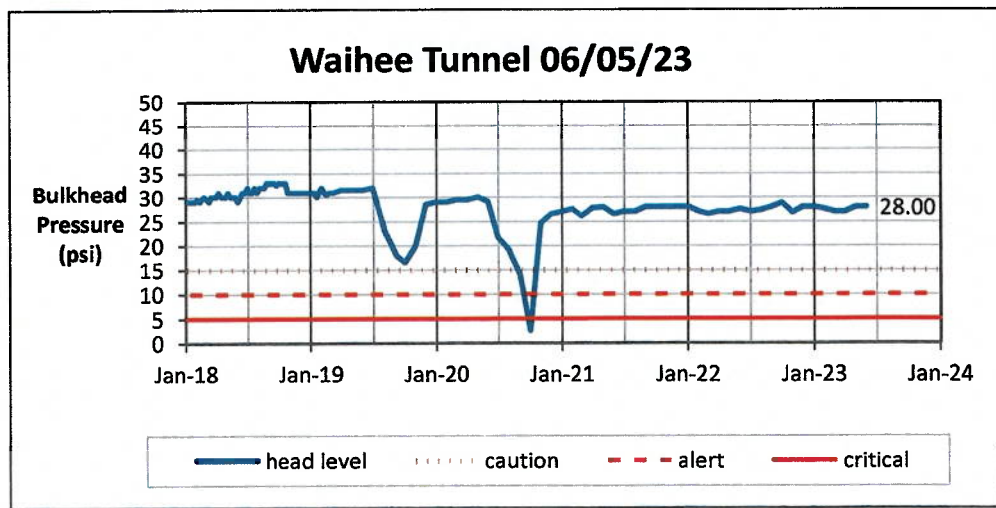
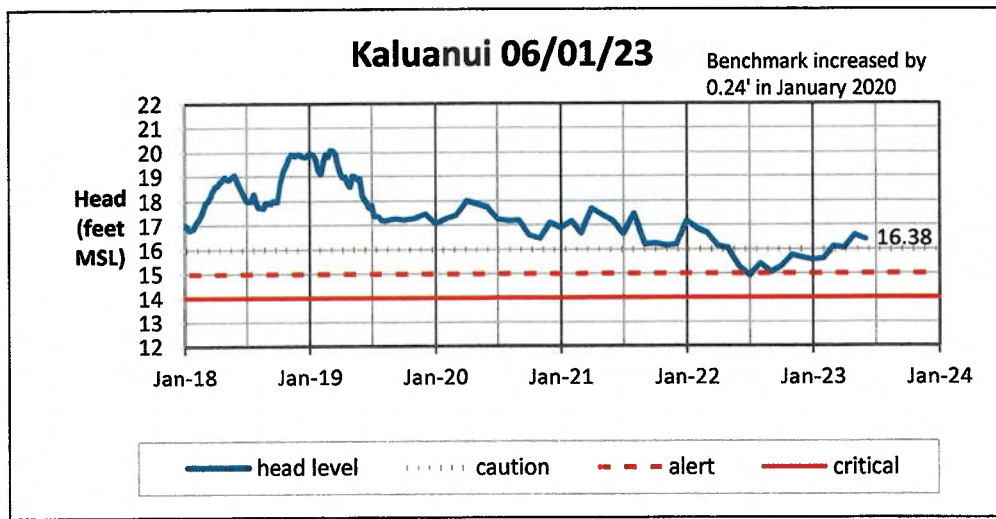
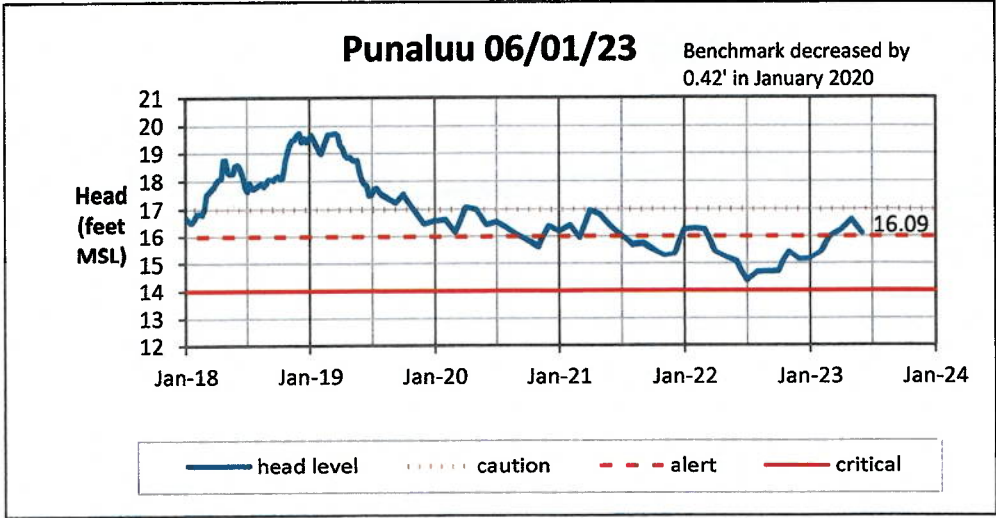
Head Report



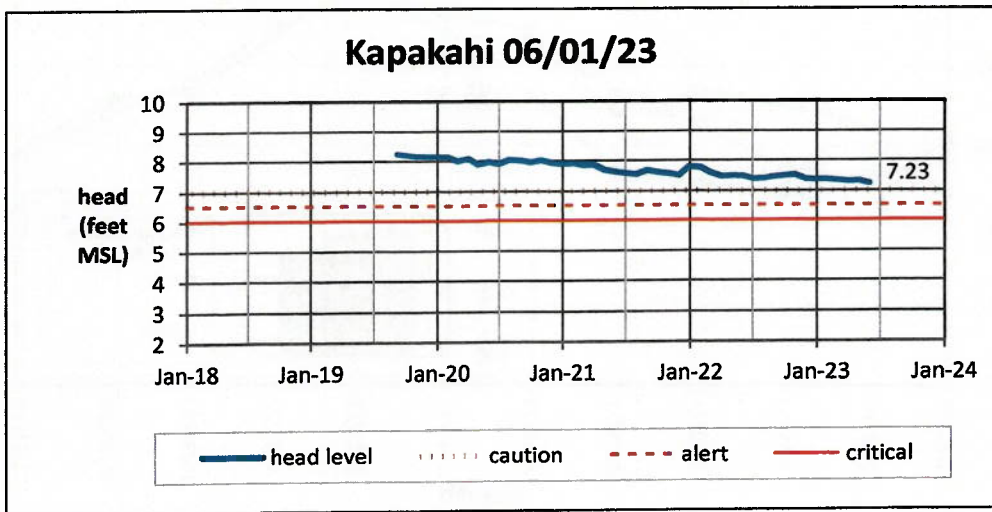
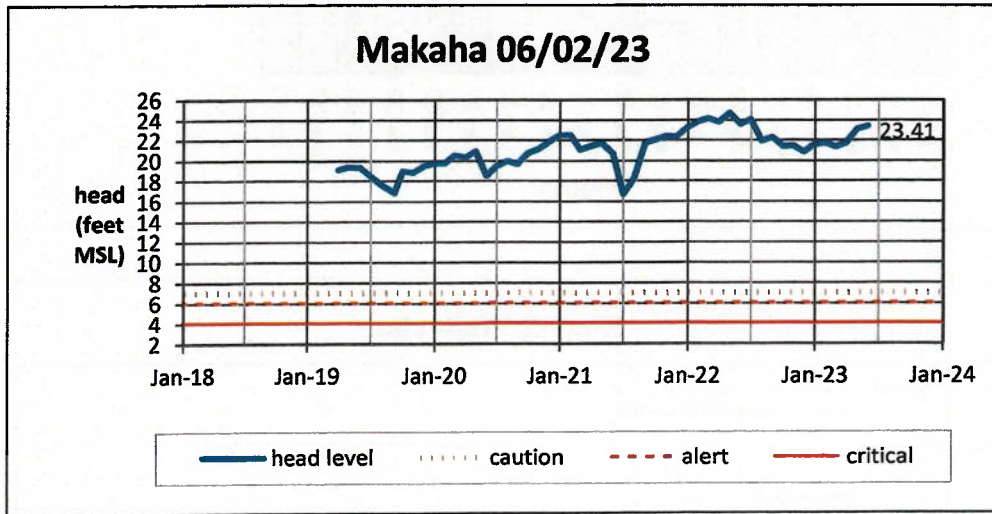
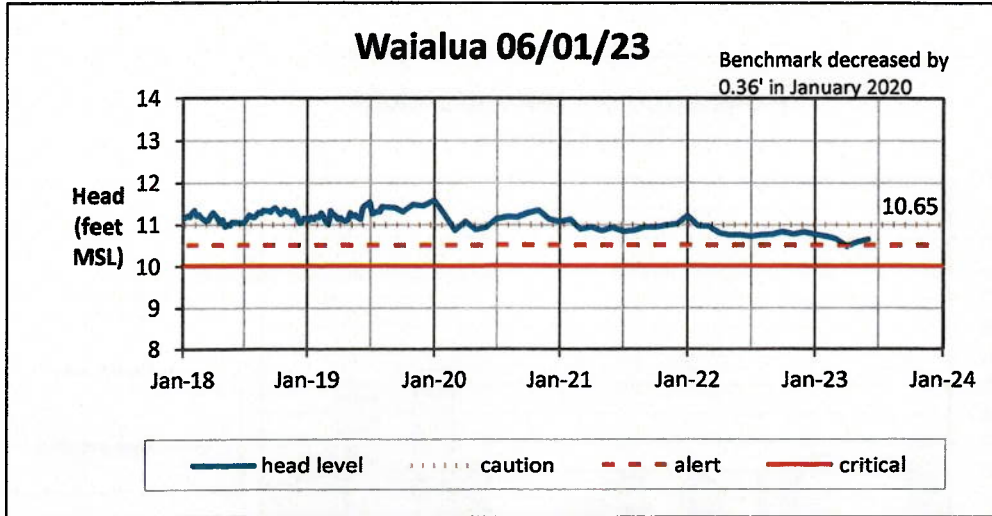
Head Report

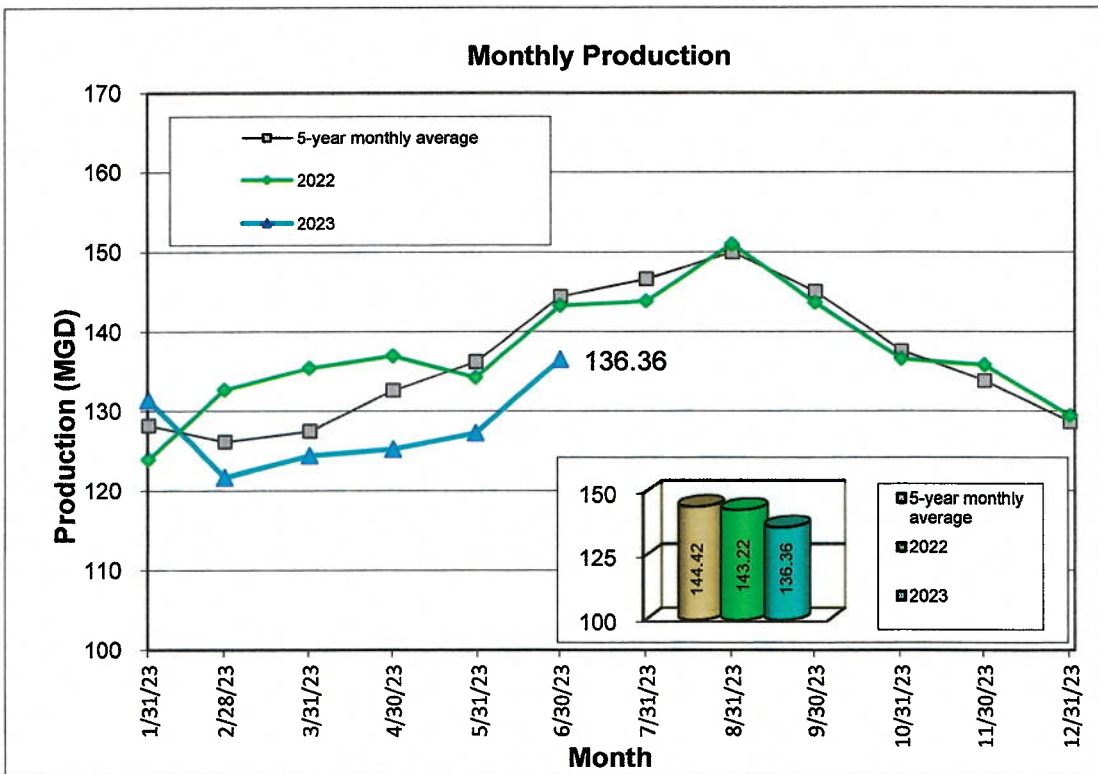
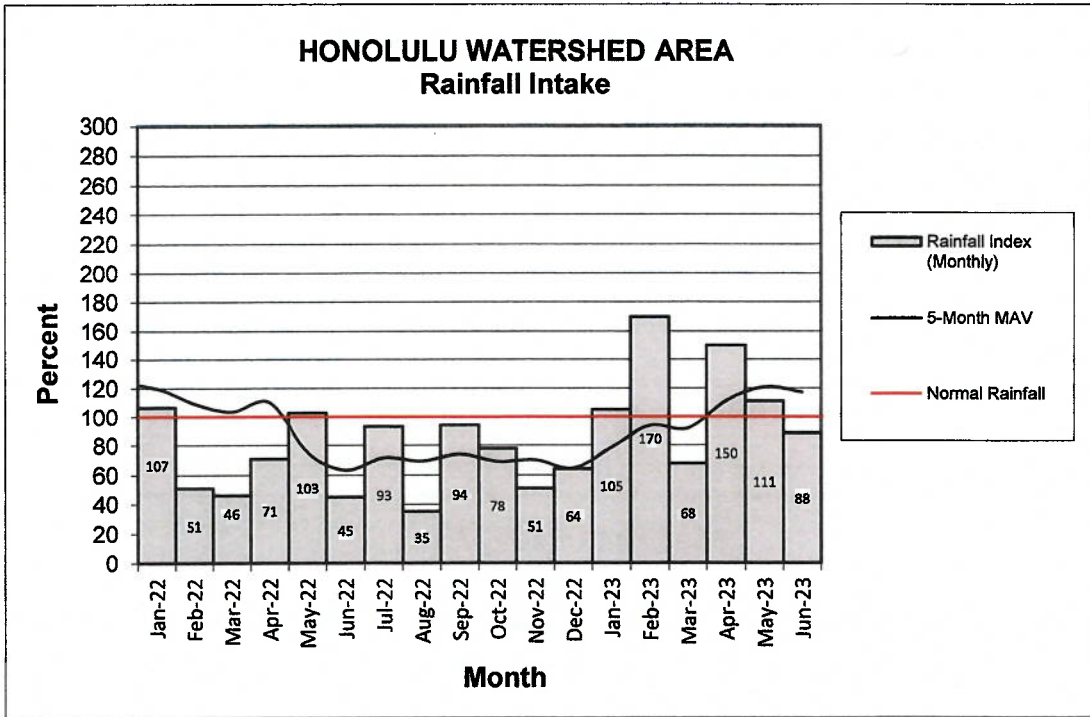


Head Report



Head Report





ITEM FOR INFORMATION NO. 7

"July 24, 2023

WATER MAIN
REPAIR
REPORT FOR
JUNE 2023

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Water Main Repair Report for June 2023

Jason Nikaido, Program Administrator, Field Operations Division, will report on water main repair work for the month of June 2023.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION:

Jason Nikaido, Program Administrator, Field Operations Division, gave the report.

Board Member Sword asked what part of the island has suffered the most leaks.

Mr. Jason Nikaido replied that the metro area has the most leaks since the pipes are older and most concentrated.

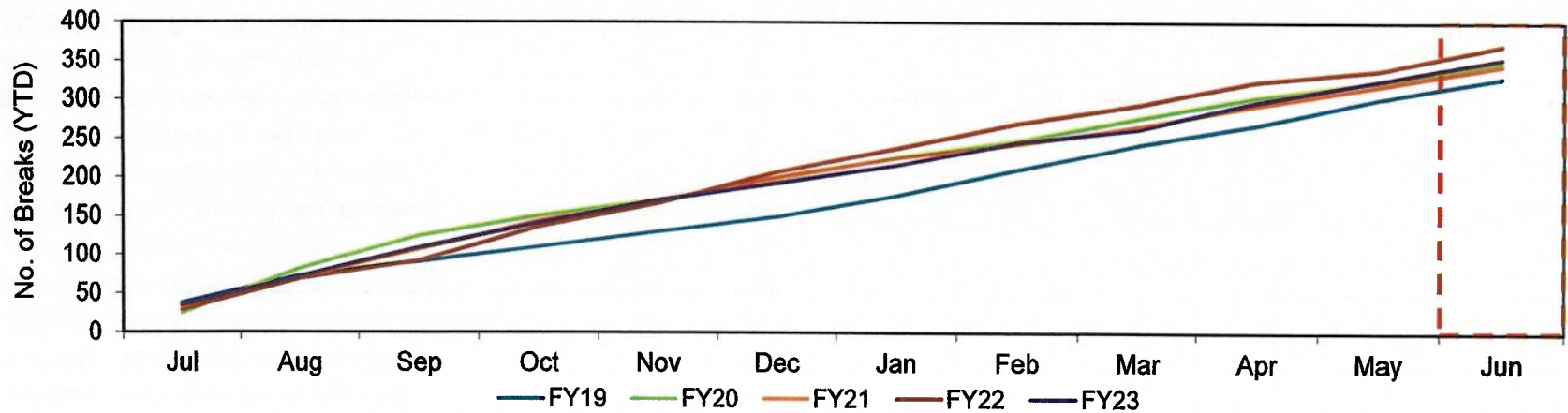
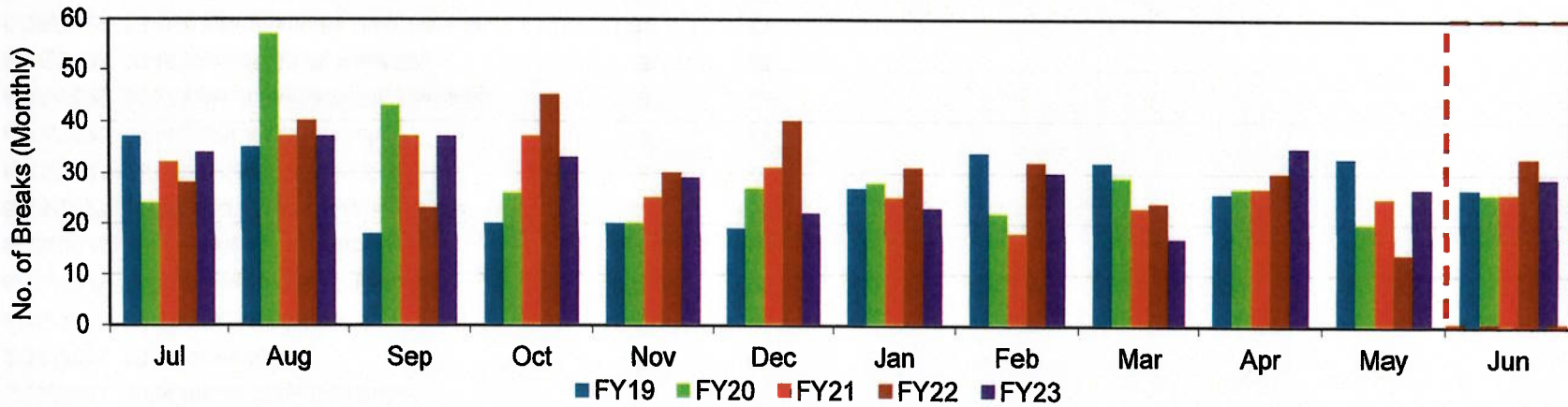
There was written testimony:

David Tupper	<i>Submitted 12 questions to the BWS.</i>
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**WATER MAIN REPAIR REPORT
for June 2023**

Monthly Main Breaks

FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2023	34	37	37	33	29	22	23	30	17	35	27	29	353
2022	28	40	23	45	30	40	31	32	24	30	14	33	370
2021	32	37	37	37	25	31	25	18	23	27	25	26	343
2020	24	57	43	26	20	27	28	22	29	27	20	26	349
2019	37	35	18	20	20	19	27	34	32	26	33	27	328

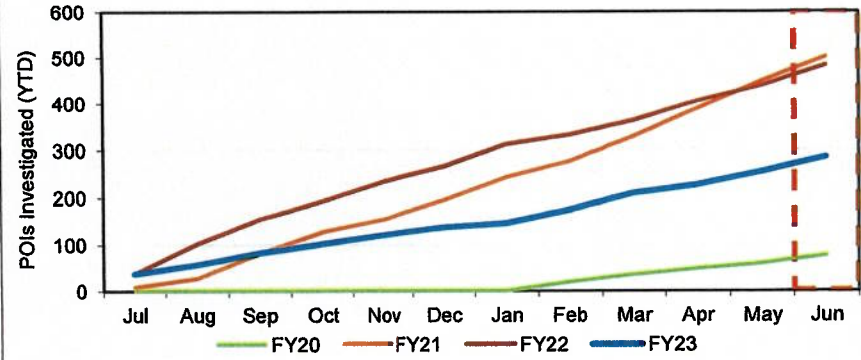
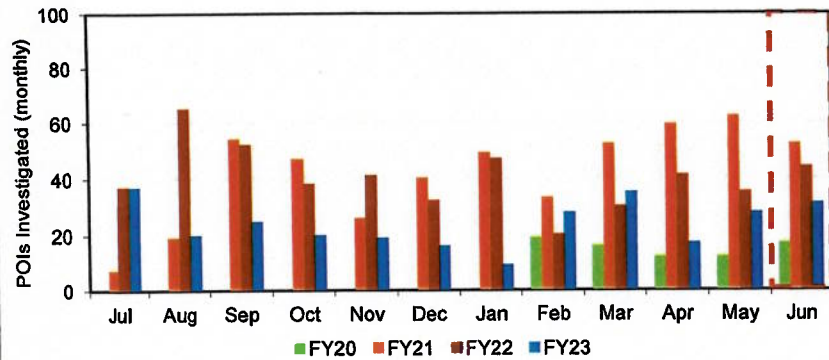


Date	Address	Size (In)	Pipe Type
6/1/2023	91-685 Pohakupuna Rd, Ewa Beach	12	CI
6/2/2023	2301 Aumakua St, Pearl City	8	CI
6/3/2023	2224 Komo Mai Dr, Pearl City	8	CI
6/3/2023	98-141 Kamehameha Hwy, Waimalu	12	CI
6/4/2023	89-224 Haleakala Ave, Waianae	8	PVC
6/7/2023	9 Aikahi Loop, Kailua	12	AC
6/7/2023	1994 California Ave, Wahiawa	6	CI
6/8/2023	838 Pohukaina St, Honolulu	8	CI
6/9/2023	998 Kailiu Pl, Honolulu	8	CI
6/10/2023	2119 Puowaina Dr, Honolulu	4	CI
6/10/2023	2771 Pali Hwy, Honolulu	6	CI
6/13/2023	840 Pueo St, Honolulu	8	CI
6/14/2023	3320 Kaimuki Ave, Honolulu	8	CI
6/15/2023	2584 Alaula Way, Honolulu	6	CI
6/18/2023	H1 W, Honolulu	24	CI
6/18/2023	98-130 Kalike Pl, Aiea	6	CI
6/19/2023	1829 Dillingham Blvd, Honolulu	8	CI
6/19/2023	2940 Haawale Pl, Honolulu	4	CI
6/19/2023	1088 Sand Island Pkwy, Honolulu	12	PVC
6/21/2023	2675 Gardenia St, Honolulu	8	CI
6/22/2023	3514 Leahi Ave, Honolulu	8	CI
6/22/2023	2067 Kamehameha IV Rd, Honolulu	8	CI
6/26/2023	7548 Kamaomao Pl, Honolulu	8	DI
6/26/2023	53-930 Kamehameha Hwy, Hauula	12	CI
6/27/2023	201 Kuhio Avenue, Honolulu	24	CC
6/28/2023	87-559 Kulaaupuni St, Waianae	8	CI
6/29/2023	2228 Pahounui Dr, Honolulu	8	CI
6/29/2023	46-214 Koaena Pl, Kaneohe	4	CI
6/30/2023	2250 Waiomao Rd, Honolulu	8	CI

**LEAK DETECTION
for June 2023**

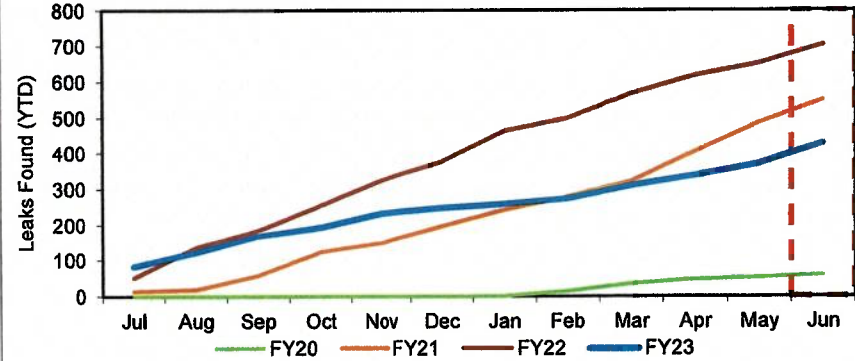
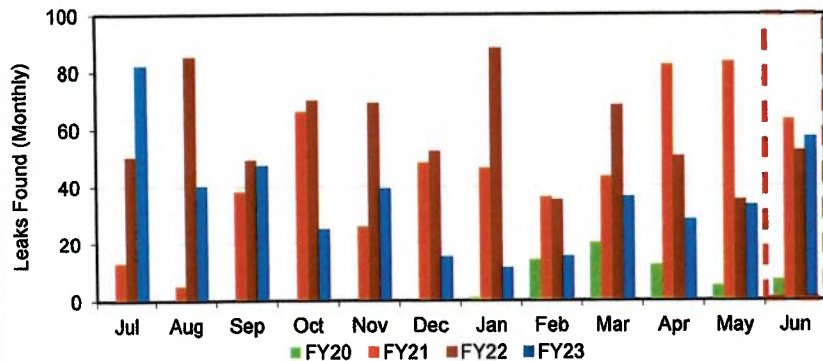
POIs Investigated

FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2023	37	20	25	20	19	16	9	28	35	17	28	31	285
2022	37	65	52	38	41	32	47	20	30	41	35	44	482
2021	7	19	54	47	26	40	49	33	52	59	62	52	500
2020								19	16	12	12	17	76



Leaks Found

FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2023	82	40	47	25	39	15	11	15	36	28	33	57	428
2022	50	85	49	70	69	52	88	35	68	50	35	52	703
2021	13	5	38	66	26	48	46	36	43	82	83	63	549
2020							1	14	20	12	5	7	59



From: David Tupper <tupperd001@gmail.com>

Sent: Monday, July 24, 2023 9:37 AM

To: Board of Water Supply Board of Directors <board@hbws.org>

Subject: Board of Water Supply, City and County of Honolulu, Regular Meeting 7/24/2023 (Written Testimony)

CAUTION: This email originated from outside of the organization. Do not follow guidance, click links, or open attachments unless you recognize the sender and know the content is safe.

Aloha,

Attached is my written testimony. I have used PDF format as instructed so the testimony may be included in the presentation. Unfortunately my work schedule precludes me from attending this meeting in person and delivering my testimony orally. I read that "Testimony is limited to two (2) minutes for the first item and one (1) minute for each additional item." Therefore my first item for testimony is the *7. Water Main Repair Report for June 2023* agenda item. My second item of testimony is the *1. Update on the Board of Water Supply's Response to the Potential Impacts of the Red Hill Fuel Contamination* agenda item.

Mahalo,

David Tupper

BWS Regular Meeting (Written Testimony)

7. Repair Report for June 23

July 24, 2023

submitted by David Tupper

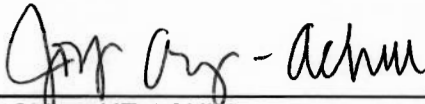
Questions (Continued)

- 5) What leak detection methods does BWS use (acoustic, pressure tests, satellite imaging, submetering, visual inspection, other)?
- 6) How much is budgeted for each method annually?
- 7) Does one method work better than others in specific situations?
- 8) If so, what are the corresponding factors that drive the selection/use of each of the methods?

MOTION TO
ADJOURN

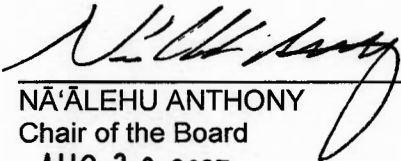
There being no further business Chair Anthony at 4:25 PM, called for a motion to adjourn the Regular Session. Max Sword so moved, seconded by Jonathan Kaneshiro, and unanimously carried.

The minutes of the Regular Meeting held on July 24, 2023, are respectfully submitted,


JOY CRUZ-ACHIU

THE MINUTES OF THE REGULAR MEETING HELD ON JULY 24, 2023, WERE APPROVED AT THE AUGUST 28, 2023, BOARD MEETING			
	AYE	NO	COMMENT
NĀ'ĀLEHU ANTHONY	X		
KAPUA SPROAT			ABSENT
BRYAN P. ANDAYA	X		
MAX J. SWORD	X		
JONATHAN KANESHIRO			ABSENT
EDWIN H. SNIFFEN			ABSENT
GENE C. ALBANO	X		

APPROVED:


NĀ'ĀLEHU ANTHONY
Chair of the Board
AUG 28 2023
Date