

**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



NĀ'ĀLEHU ANTHONY, Chair
KAPUA SPROAT, Vice Chair
BRYAN P. ANDAYA
JONATHAN KANESHIRO
EDWIN H. SNIFFEN, Ex-Officio
GENE C. ALBANO, P.E., Ex-Officio

December 12, 2023

NOTICE

The Board of Water Supply, City and County of Honolulu, Regular Meeting will be held on Monday, December 18, 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, December 18, 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/testimony
- Zoom 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, December 15, 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, December 18, 2023:
 - Email to board@hbws.org
 - Online at boardofwatersupply.com/testimony

In-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

Meeting materials ("board packet" under HRS §92-7.5) are accessible at www.boardofwatersupply.com/boardmeetings.

VIEWING THE MEETING

The meeting will be viewable via live streaming on the BWS website: www.boardofwatersupply.com/live. Video will appear on screen. You may have to click the arrow on video to start it. You may have to unmute audio as muted audio tends to be the default setting.

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 December 18, 2023 Regular Meeting of the Board of Water Supply is as follows:

ITEMS REQUIRING BOARD ACTION

1. Approval of the Minutes of the Public Hearing and Regular Meeting Held on November 27, 2023
2. Adoption of Resolution No. 977, 2023, Resolution of Appreciation for Waterworks Controller Joseph Cooper

ITEMS FOR INFORMATION

1. Update on the Board of Water Supply's Response to the Potential Impacts of the Red Hill Fuel Contamination
2. Revision to the Fiscal Year 2024 Capital Improvement Program Budget Amendment No. 2
3. Status Update of Groundwater Levels at All Index Stations
4. Water Main Repair Report for October 2023 and November 2023

MINUTES

To watch the recording of this meeting, please click on the following link:
<https://vimeo.com/bwshonolulu/dec-18-2023>. Closed captioning is available.

THE REGULAR MEETING OF THE BOARD OF WATER SUPPLY

December 18, 2023

At 2:00 PM on December 18, 2023, in the Public Service Building Board Room at 630 South Beretania Street, Honolulu, Hawaii, Board Chair Nā'ālehu Anthony called to order the Regular Meeting.

Present: Nā'ālehu Anthony, Chair
Kapua Sproat, Vice Chair via Zoom
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
Jennifer Elflein, Program Administrator,
Customer Care Division via Vimeo
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
Michele Thomas, Executive Assistant I,
Human Resources Office via Vimeo
Henderson Nuuhiwa, Program Administrator,
Information Technology Division
Michael Matsuo, Land Administrator, Land Division
Roland Fenstermacher,
Water Quality Laboratory Director,
Water Quality Division
Barry Usagawa, Program Administrator,
Water Resources Division
Kathy Mitchell, Administrative Services Officer
via Vimeo
Kimberly Kuwaye, Manager Secretary
Joy Cruz-Achui, 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

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

Absent: Edwin H. Sniffen, Ex-Officio

Chair Nā'ālehu 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. Ka'u, i Palahemo.

Chair Anthony translated the 'olelo no'eau: Thank you all for coming together today for the people, the land, and the water. Here is a short Hawaiian Proverb that helps us remember the importance of fresh water. No'eau #1610 - In Kāu, at Palahemo. Palahemo is a pool near Kalae in Ka' u. Saltwater is found under the fresh water, and any disturbance, like the dropping of a heavy stone, reverses the water so that the salt water rises to the top. This is a great reminder of the fragility of our freshwater resources.

Chair Anthony welcomed everyone to the December 18, 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 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-Achui, 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 November 27, 2023.

MOTION TO APPROVE

Jonathan Kaneshiro and Gene Albano motioned and seconded, respectively, to approve the Minutes of the Public Hearing and Regular Meeting Held on November 27, 2023.

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

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

THE MINUTES OF THE PUBLIC HEARING AND REGULAR MEETING HELD ON NOVEMBER 27, 2023, WERE APPROVED AT THE DECEMBER 18, 2023, BOARD MEETING			
	AYE	NO	COMMENT
NĀ'ĀLEHU ANTHONY	X		
KAPUA SPROAT	X		
BRYAN P. ANDAYA	X		
JONATHAN KANESHIRO	X		
EDWIN H. SNIFFEN			ABSENT
GENE C. ALBANO	X		

"December 18, 2023

ADOPTION OF
RESOLUTION NO.
977, 2023,
RESOLUTION OF
APPRECIATION
FOR JOSEPH
COOPER

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

Chair and Members:

Subject: Adoption of Resolution No. 977, 2023, Resolution of
Appreciation for Joseph Cooper

Waterworks Controller Joseph Cooper has notified the Board of Water Supply (BWS) of his retirement at the end of this month.

We recommend the adoption of Resolution No. 977, 2023, to recognize and thank Mr. Cooper for his excellent service, contributions, and dedication to the Board of Water Supply during his 10-year of service to the Department.

Respectfully Submitted,

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

Attachment"

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

Chair Anthony expressed his appreciation for Mr. Joseph Cooper's effort in maintaining the BWS's bond rating and cost savings.

Manager Ernest Lau expressed his gratitude for Mr. Cooper's diversified use of the financial tools at the BWS for its Capital Program and for pursuing for the first time the Water Infrastructure and Innovation Act (WIFIA) loan from the United States (US) Environmental Protection Agency (EPA). He asked Mr. Cooper how much the BWS applied for on the WIFIA loan.

Mr. Cooper responded if granted, the BWS is projecting \$99 million (M).

Manager Lau wished Mr. Cooper a happy retirement.

Mr. Cooper stated that serving at the BWS has been an honor since protecting our water resources is of great importance to him and his team.

Board Member Bryan Andaya congratulated Mr. Cooper on his retirement. He appreciated Mr. Cooper's clarity on any of the reports presented to the Board.

Vice Chair Kapua Sproat appreciated Mr. Cooper's patience, guidance, and wise counsel. She stated that the BWS's triple-A bond rating is a credit to his hard work. Vice Chair Sproat wished him a well-deserved retirement.

**MOTION
TO APPROVE**

Jonathan Kaneshiro and Gene Albano motioned and seconded, respectively, to approve the Adoption of Resolution No. 977, 2023, Resolution of Appreciation for Joseph Cooper.

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

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

ADOPTION OF RESOLUTION NO. 977, 2023, RESOLUTION OF APPRECIATION FOR WATERWORKS CONTROLLER JOSEPH COOPER WAS ADOPTED ON DECEMBER 18, 2023			
	AYE	NO	COMMENT
NĀ'ĀLEHU ANTHONY	X		
KAPUA SPROAT	X		
BRYAN P. ANDAYA	X		
JONATHAN KANESHIRO	X		
EDWIN H. SNIFFEN			ABSENT
GENE C. ALBANO	X		



BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

RESOLUTION NO. 977, 2023

JOSEPH COOPER

**IN APPRECIATION FOR HIS SERVICE AS WATERWORKS CONTROLLER
OF THE BOARD OF WATER SUPPLY FROM 2013 TO 2023**

WHEREAS, JOSEPH COOPER joined the Board of Water Supply (BWS) as its Waterworks Controller in December 2013 to manage the Finance Division that plans, directs, and controls the Department's accounting, treasury, and fiscal services to ensure the economic sustainability of this semi-autonomous City agency, and he has recently notified the Department of his retirement; and

WHEREAS, over his 10-year BWS career, MR. COOPER worked to issue a total of \$209.1 million in Water System Revenue Bonds, refinance \$143.6 million of older bonds at a lower interest rate, resulting in \$11.2 million in savings; obtain \$84.5 million in low-interest loans from the Drinking Water State Revolving Fund Loan program to refinance outstanding bonds to save \$6 million in interest; and lead two BWS Cost of Service studies and rate-making processes -- the first of which adjusted the rate tiers -- to finance BWS's operations and capital needs; and

WHEREAS, JOSEPH COOPER'S financial acumen, skills, and experience have greatly benefitted this agency as he has successfully implemented fiscal strategies and updated financial policies that have resulted in AAA municipal bond ratings from Fitch and Standard and Poor's, as well as clean financial audits; and

WHEREAS, in his capacity as Waterworks Controller, MR. COOPER oversaw the Department's creation of a Long-Range Financial Plan to fund its 30-year Infrastructure Investment Plan, which supports the BWS's 30-year Water Master Plan that will impact the BWS's direction and operations for many years to come; and

WHEREAS, MR. COOPER'S accomplishments, professionalism, integrity, and capable leadership have earned the respect of members of this Board, department employees, his colleagues, and the community, resulting in additional recognition and honor for the Board; and

WHEREAS, JOSEPH COOPER'S decade-long BWS career is a testament to his commitment to helping maintain a municipal water system that is safe, dependable, and affordable, as well as worthy 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 JOSEPH COOPER our deep appreciation and gratitude for his dedicated service to this Department; and

BE IT FURTHER RESOLVED that the Members of this Board extend to JOSEPH COOPER our sincere aloha and best wishes for continued success in all his future endeavors; and

BE IT FINALLY RESOLVED that this Resolution be presented to JOSEPH COOPER.



Resolution No. 977, 2023

Adopted this 18th day of December 2023
Board of Water Supply, Honolulu, Hawaii

NĀ'ĀLEHU ANTHONY

Chair of the Board

ITEM FOR INFORMATION NO. 1

“December 18, 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

Erwin Kawata, Deputy Manager, 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

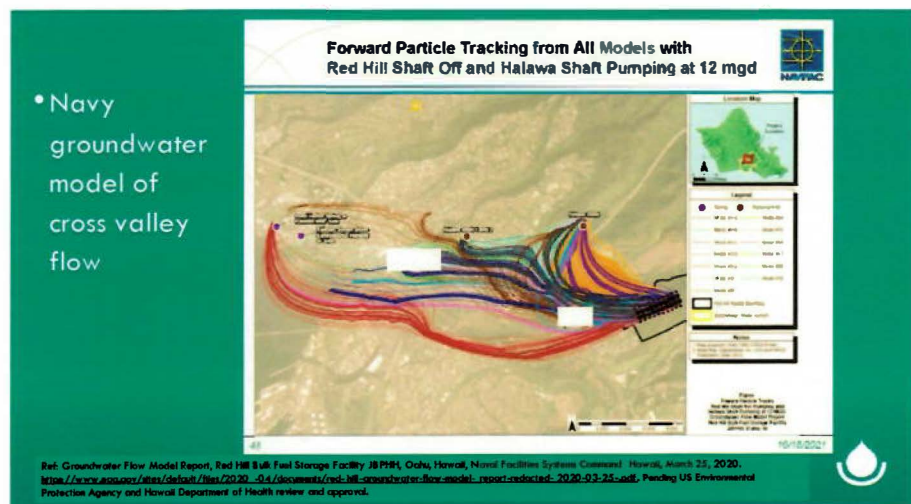
Attachment”

The foregoing was for information only.

DISCUSSION:

Erwin Kawata, Deputy Manager, gave the report.

Board Member Jonathan Kaneshiro inquired if there was a reason why the Navy groundwater model doesn't indicate any flow going south toward the BWS Moanalua Well.



Deputy Manager Erwin Kawata explained that the Navy's model currently does not replicate what is known about nature. The Navy's model is currently not able to measure water levels very well and only focuses on groundwater movement to the northwest and west. He stated that the Navy's model was not designed to look at what may be happening south of the tanks and toward the BWS Moanalua Well. Therefore, the study must be expanded.

Board Member Kaneshiro asked who developed the model.

Deputy Manager Kawata replied that the Navy did the models as part of the 2015 Administrative Order of Consent (AOC), which is being continued per the regulatory agency's requirement.

Manager Lau added that the Navy uses consultants to help generate the model.

Board Member Andaya inquired about treatment options and possibly turning on the BWS wells and shafts that were turned off.

Deputy Manager Kawata explained that the BWS will need to understand the nature and extent of the contamination – where the contamination is, how far the contamination has traveled, and how deep the contamination has gone. The BWS would need an absolute understanding of the groundwater's direction amidst the subsurface's complexities – how much water the contamination carries and what happens to the contamination as it carries it.

Board Member Andaya asked if monitoring wells would help better understand the movement of the contamination.

Deputy Manager Kawata responded that the nature and extent of the contamination need to be absolutely understood. Groundwater direction also needs to be understood amidst all of the complexities in the subsurface. How much contamination is the groundwater carrying, and what happens to that contamination as it moves? More monitoring wells and groundwater flow models will be needed.

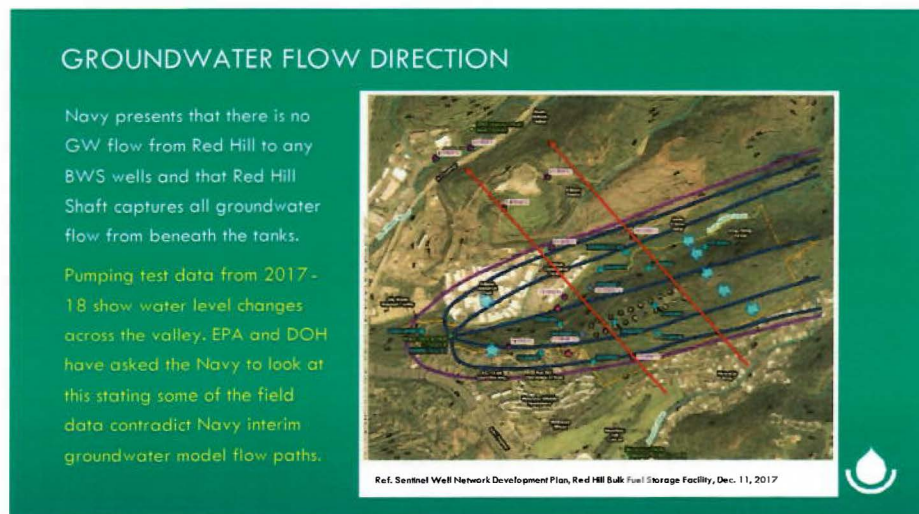
Board Member Andaya suggested that the BWS request specific needs from the Navy and the regulatory agencies regarding turning on Halawa Shaft and Aiea Wells. He also asked that the BWS share more about treatment options, the cost, and the advantages and disadvantages in future board meetings.

Vice Chair Sproat commented that since it would be difficult to determine how to treat the contamination without knowing its full scope and the BWS's understanding of the groundwater flow in the aquifer and the fate and transport is based on years of pumping the BWS Halawa Shaft and Well and Aiea Wells. She inquired if the BWS has found any difference in groundwater flow since Halawa Shaft, Halawa Well, and Aiea Well have been turned off.

Deputy Manager Kawata responded that the BWS was able to collect data from Halawa Shaft before the contamination spill; however, shortly after Halawa Shaft was turned off, the cable car broke. Therefore, the BWS has not been able to collect current information. He commented that keeping Halawa Shaft off does not move the contamination across the valley, but spreading the contamination through pumping Halawa Shaft is a big concern. Deputy Manager Kawata shared that the BWS has been collecting data from the top of the aquifer at Halawa Shaft but has not been able to collect further information in the valley since there are no monitoring wells between the Halawa Shaft and Red Hill tanks to be able to completely understand what is happening.

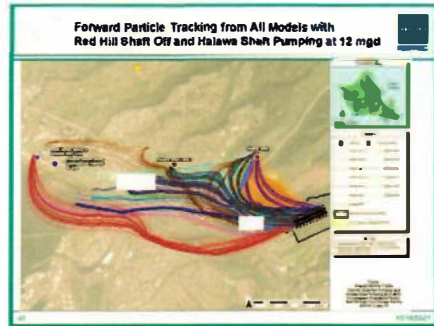
Vice Chair Sproat appreciated Deputy Manager Kawata's explanation of how much is unknown. She agreed that the BWS should not turn on Halawa Shaft, Halawa Well, and Aiea Well until more information is available and there is a better understanding of what is happening.

Chair Anthony referred to the "Groundwater Flow Direction" slide and asked about the water level dynamics.



Deputy Manager Kawata explained that during the test, the water levels in several different monitor wells were measured while pumping various wells. In one test, the BWS turned on Halawa Shaft while the Navy's Red Hill Shaft was turned off – the test observed the water level went down at various monitoring wells. In another test, the Navy's Red Hill Shaft was turned on, and BWS Halawa Shaft was turned off – the water level went down at Halawa Shaft but not as low as it did at Red Hill Shaft. This data convincingly showed that water can move across the valley. He stated that based on this data, pumping Halawa Shaft can possibly carry contamination toward the Shaft as the water moves across the valley.

Chair Anthony commented that the water level and connectivity across the valley are evident. He inquired about the issues regarding the Navy's particle tracking models.



Deputy Manager Kawata shared that the Navy's particle tracking model could not replicate the water levels observed in nature. The particle tracking model forecast particle direction based on specific parameters inputted in the model that generated the drawings above.

Chair Anthony shared that there have been discussions about remediation, monitoring, and future studies during the Red Hill Wai Group meetings. He stated that the information is public for anyone to view on the BWS website: boardofwatersupply.com.

Manager Lau shared that in the most recent Navy press release they shared that 21 baseline Polyfluoroalkyl substances (PFAS) tests were performed at various monitor wells. The PFAS detected exceeded the maximum level at four locations, and PFAS was detected at the other locations. He stated that more information is needed before turning Halawa Shaft back on. The decisions made today will impact the generations of tomorrow.



DECEMBER 2023 RED HILL UPDATES

December 18, 2023
boardofwatersupply.com

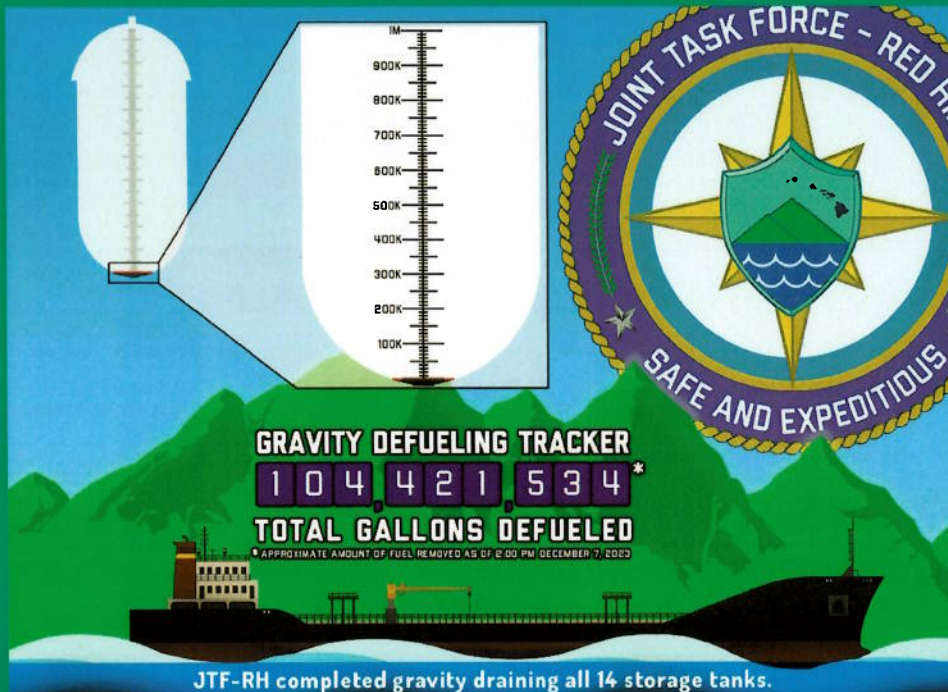
RECENT EVENTS

- 12/5: Defueling Information Sharing Forum
- 12/7: Flowable Tank Bottoms Defueling Completed
- 12/14: Red Hill Remediation Roundtable

Upcoming

2024:

- Updates on Closure Plan, finalization of closure method, and the removal of residual fuel and sludge.

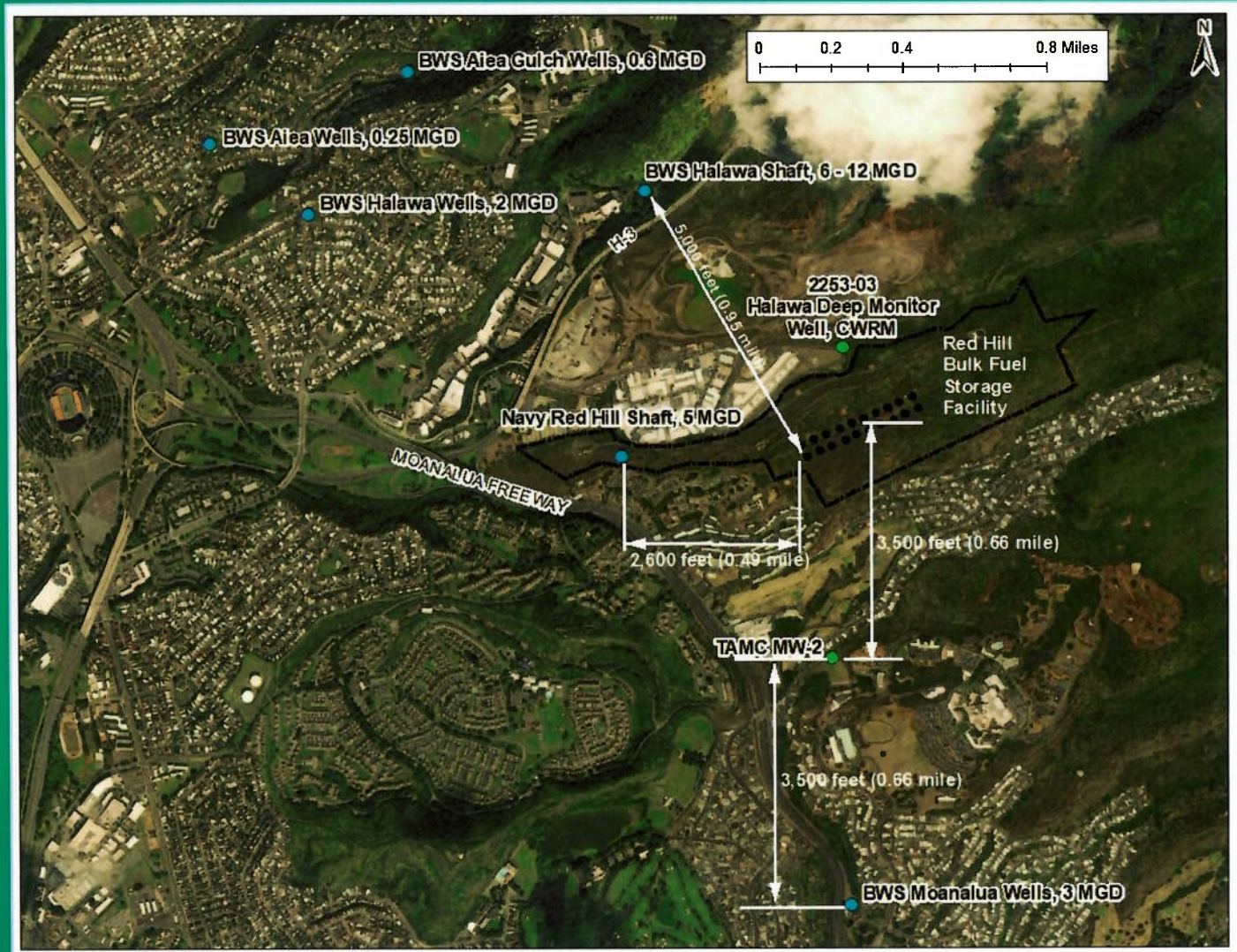


REVIEW AND EXAMINE

- Current understanding and uncertainties of the contamination in the groundwater aquifer
- Groundwater flow direction
- Contaminant fate and transport in the aquifer
- Question of restarting BWS wells that were shut down



- Five BWS wells close to Red Hill Facility contribute 11.5% of the 140 MGD average daily production
- BWS Halawa Shaft is the largest of the five wells
- Halawa Shaft serves 20% of the water to metropolitan Honolulu
- Navy's Red Hill Shaft supplies 24% of the JBPHH drinking water needs

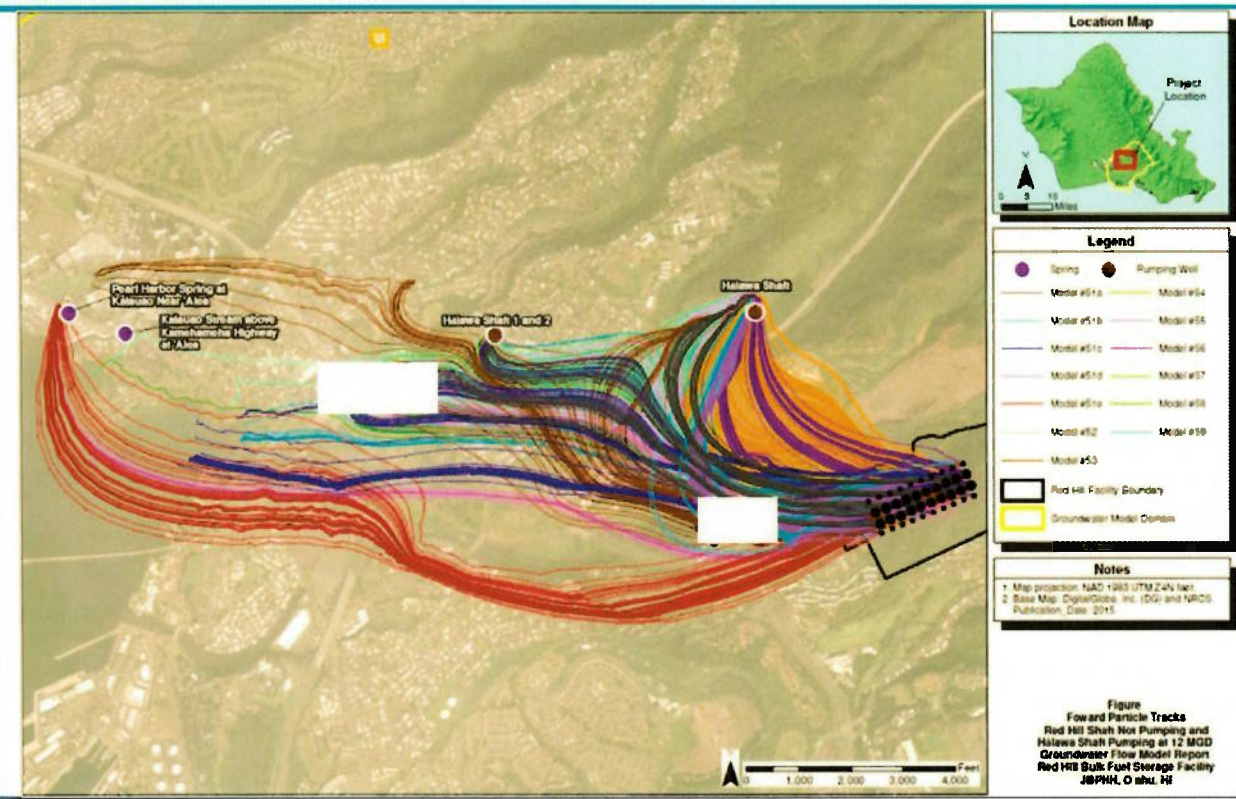




Forward Particle Tracking from All Models with Red Hill Shaft Off and Halawa Shaft Pumping at 12 mgd

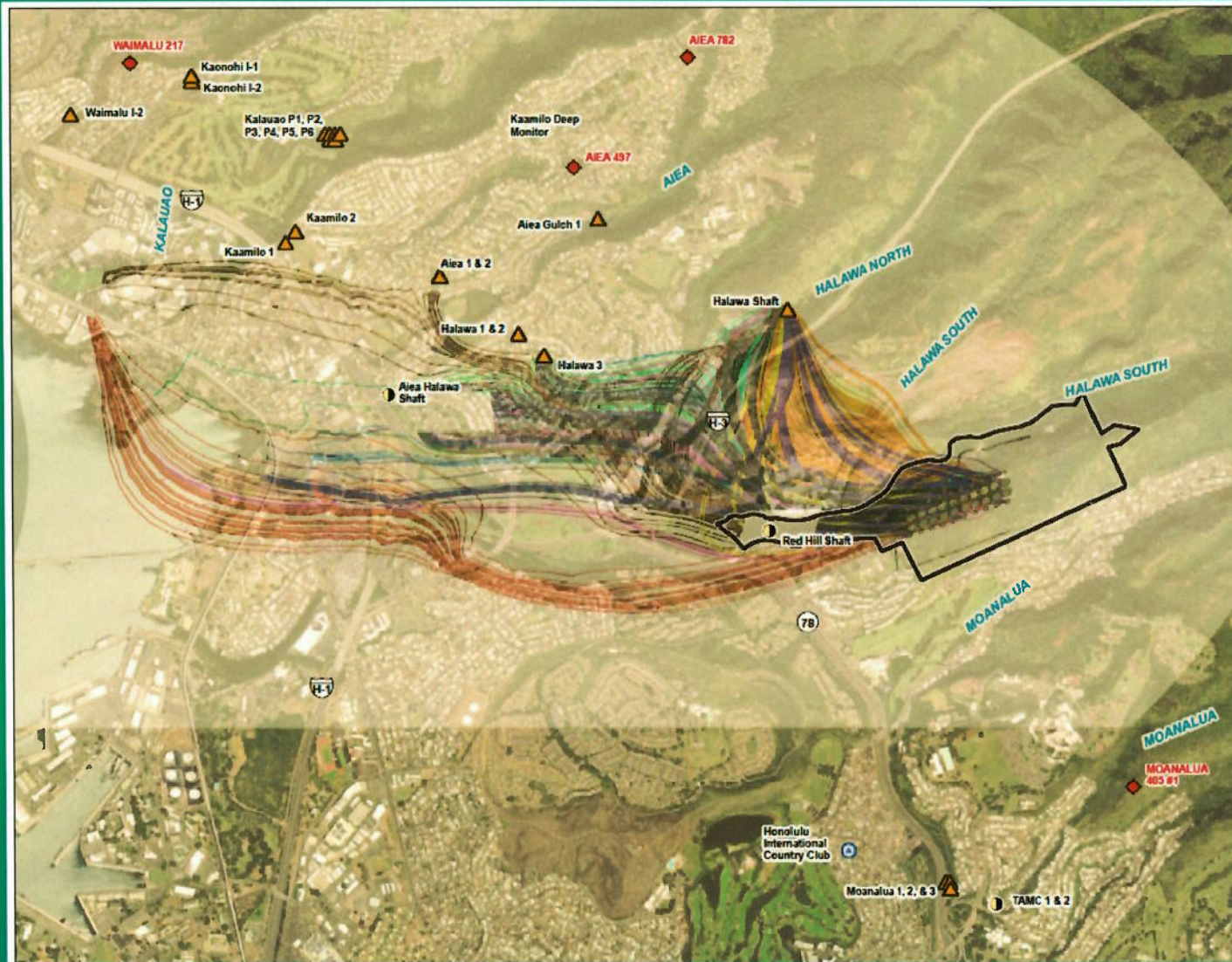


- Navy groundwater model of cross valley flow



Ref: Groundwater Flow Model Report, Red Hill Bulk Fuel Storage Facility JBPHH, Oahu, Hawaii, Naval Facilities Systems Command Hawaii, March 25, 2020.
<https://www.epa.gov/sites/default/files/2020-04/documents/red-hill-groundwater-flow-model-report-redacted-2020-03-25-.pdf>. Pending US Environmental Protection Agency and Hawaii Department of Health review and approval.





RED HILL WAI REPORT

- The reopening of wells would be at risk of encountering free product or contaminated groundwater.
- Further research is needed to understand the distribution of the fuel plume at the water table.
- An independently generated contaminant fate and transport model is needed.

Reference: Red Hill Water Alliance Initiative (WAI) Report, November 2023



SUMMARY

- Defueling did not remove the contamination in the aquifer – only the fuel in the tanks
- Current knowledge of GW flow direction shows contamination can move toward Halawa Shaft and other wells to the west of the facility
- Restarting wells that were shut down must be supported by indisputable data that proves it is safe to do so. Otherwise, can lead to contamination of the BWS water system and public health consequences



SUMMARY – CONT.

- Treatment reduces contamination to levels deemed to not pose a danger to public health
- Presently no MCL for petroleum contaminants



QUESTIONS / DISCUSSION



ITEM FOR INFORMATION NO. 2

“December 18, 2023

REVISION TO
THE FISCAL
YEAR 2024
CAPITAL
IMPROVEMENT
PROGRAM
BUDGET
AMENDMENT
NO. 2

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

Chair and Members:

Subject: Revision to the Fiscal Year 2024 Capital Improvement
Program Budget Amendment No. 2

Raelynn Nakabayashi, Executive Support Office, will present the report regarding a Revision to the Fiscal Year 2024 Capital Improvement Program (CIP) budget which amended the name of CIP Project Item 41 to reflect a redesign of the project.

Respectfully Submitted,

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

Attachment”

The foregoing was for information only.

DISCUSSION:

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

Chair Anthony inquired if the reduced capacity of 0.3 million gallons (mg) caused any engineering problems.

Manager Lau replied that there were no problems. The system meets the needs of the community at the top of Maunalani.

Chair Anthony thanked the BWS for finding ways to save on costs.

Manager Lau stated that the initial bid for a new tank was double and over budget.

Ms. Raelynn Nakabayashi added that the budget was \$8.5 million (M), and building a new tank would double the cost. The redesign will keep the price at \$8.5M.



REVISIONS TO THE FISCAL
YEAR 2024 CAPITAL
IMPROVEMENT PROGRAM
BUDGET

December 18, 2023

Raelynn Nakabayashi

www.boardofwatersupply.com



TO: ERNEST Y.W. LAU, P.E.
MANAGER & CHIEF ENGINEER **DATE:** October 30, 2023

FROM: RAELYNN NAKABAYASHI
EXECUTIVE SUPPORT OFFICE

SUBJECT: Approval of the Revision of the Fiscal Year 2023-2024 Capital Improvement – Program Budget – Amendment No. 2

We request your approval to correct the title of Project Item No. 41 listed in the Fiscal Year 2024 (FY 2024) Capital Improvement Program (CIP) Budget.

1. Correct the title of the following CIP project:

PRESENT TITLE
Item No. 41 WILHELMINA RISE 811 RESERVOIR REPLACEMENT

PROPOSED TITLE
Item No. 41 WILHELMINA RISE 815 RESERVOIR REPLACEMENT

PRESENT DESCRIPTION
Description: Replace the existing 0.43 reservoir and appurtenances.

PRESENT APPROPRIATION
IMPROVEMENT FUND CONST \$8,500,000

Reason: The project was redesigned, and the elevation of the reservoir is now at 815'. The title needs to be corrected to accurately reflect the project. This amendment does not change the description or the appropriation of the project.

The following is a summarization of the FY 2024 Budget Amendment No. 2:

Resolution 966, 2023

FY 2024 CIP Budget (as Adopted) \$212,648,000

Resolution 970, 2023

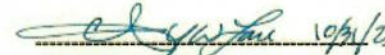
FY 2024 – Amendment No. 1	
Projects – Added	+\$10,630,000
Projects – Deleted	(\$ 580,000)
Construction Cost Index Account – Improvement	+\$ 850,000
Construction Cost Index Account – Extramural	+\$ 365,976
FY 2024 CIP Budget (as Amended)	\$223,911,976

FY 2023 – Amendment No. 2 (No Change to Funding)	
FY 2024 CIP Budget (as Amended)	\$223,911,976

ERNEST Y.W. LAU, P.E.
October 30, 2023
Page 2

Upon approval, the appropriate changes will be effected.

APPROVED/ DISAPPROVED:


ERNEST Y.W. LAU, P.E. Date

CC: Finance
Capital Projects
ESO-MBO - Original

Budget Amendment No. 2:
Corrects the title of FY2024
CIP Project No. 41 to
Wilhelmina Rise 815' Reservoir
Replacement



FISCAL YEAR 2023 BUDGET AMENDMENT NO. 2

This amendment to the Fiscal Year 2024 Capital Improvement Program changed the title of Item No. 41 and is necessary to reflect a resign of the project. The amendment did not change the description or the amount of funding appropriated for the project.

- New Title: Wilhelmina Rise 815 Reservoir Replacement
- Original Title: Wilhelmina Rise 811 Reservoir Replacement



WILHELMINA RISE 815' RESERVOIR REPLACEMENT OF EXISTING 811' RESERVOIR



WILHELMINA RISE 815' RESERVOIR REPLACEMENT

- Supports the BWS' water master plan and 6-year Capital Improvement Program.
- Construction project to replace a 0.43-million-gallon (MG) Reservoir with a new 0.3 MG Reservoir.
- The project was redesigned to increase the elevation of the existing 811' reservoir.
- The increase in elevation of the reservoir to 815' will raise the spillway to improve the operating range of the reservoir and increase the pressure of the water system.



BUDGET AMENDMENT SUMMARY

The following is a summarization of the FY 2024 Budget Amendment No. 2:

Resolution 966, 2023

FY 2024 CIP Budget (as Adopted)	\$212,646,000
---------------------------------	---------------

Resolution 970, 2023

FY 2024 – Amendment No. 1	
Projects – Added	+\$10,630,000
Projects – Deleted	(\$ 580,000)
Construction Cost Index Account – Improvement	+\$ 850,000
Construction Cost Index Account – Extramural	+\$ 365,976
FY 2024 CIP Budget (as Amended)	\$223,911,976
FY 2023 – Amendment No. 2	
(No Change to Funding)	
FY 2024 CIP Budget (as Amended)	\$223,911,976





Mahalo!

BOARD OF WATER SUPPLY

Revisions to the Fiscal Year 2024 Capital
Improvement Program Budget

December 18, 2023

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

ITEM FOR INFORMATION NO. 3

“December 18, 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

Nine aquifer index stations were in low groundwater condition for the production month of November 2023. Kaimukī, Beretania, Kalihi, Moanalua, Pearl City, Waipahu and Waialua are in Caution Status. Punalu`u and Kaluanui are in Alert Status. The monthly production average for November 2023 was 138.71 million gallons per day.

The Board of Water Supply rainfall index for the month of November 2023 was 123 percent of normal, with a 5-month moving average of 64 percent. As of December 5, 2023, the Hawai`i Drought Monitor shows moderate drought conditions across most of O`ahu, with abnormally dry conditions along a portion of the windward coast and severe drought conditions along the leeward coast. The National Weather Service is forecasting below-normal precipitation through June 2024.

Most monitoring wells exhibited stable to somewhat decreasing head levels for the month of November 2023, likely reflecting the consecutive months of lower-than-average rainfall, offset to some degree by recent rains in November. Average monthly production for November 2023 was slightly higher than November 2022 and the 5-year monthly average. Increased conservation messaging is recommended for the remainder of 2023, possibly into mid-2024.

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.

Chair Anthony asked how concerned everyone should be about nine aquifer index stations in low groundwater.

Mr. Barry Usagawa shared that in 2003 there were nine aquifer index stations in low groundwater, which was towards the end of a six-year drought caused by a severe El Nino. He stated that he was surprised at how quickly the number of index stations increased during the summer/fall drought. November and December rains were good for the winter, but he is concerned about what happens in the upcoming summer. The BWS is working on a water shortage plan for Windward Oahu and has updated the metro water shortage plan.

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

POTABLE

STATION	MGD
HONOLULU (1)	
KULIOUOU	0.06
WAILUPE	0.12
AINA KOA	0.00
AINA KOA II	0.63
MANOA II	0.93
PALOLO	0.97
KAIMUKI HIGH	1.73
KAIMUKI LOW	1.15
WILDER	8.34
BERETANIA HIGH	2.53
BERETANIA LOW	2.31
KALIHI HIGH	3.38
KALIHI LOW	2.76
KAPALAMA	0.16
KALIHI SHAFT	8.16
MOANALUA	2.61
HALAWA SHAFT	0.00
KAAMILO	0.89
KALAUAO	8.62
PUNANANI	9.28
KAAHUMANU	0.26
HECO WAIU	2.72
MANANA	0.20
WAIALAE IKI	0.55
WELLS SUBTOTAL:	58.37
MANOA TUNNEL	0.17
PALOLO TUNNEL	0.00
GRAVITY SUBTTL:	0.17
HONOLULU SUBTTL:	58.54

STATION	MGD
WINDWARD (2)	
WAIMANALO II	0.80
WAIMANALO III	0.00
KUOU I	0.00
KUOU II	0.75
KUOU III	0.75
LULUKU	0.81
HAIKU	0.34
IOLEKAA	0.00
KAHALUU	0.65
KAHANA	0.58
PUNALUU I	0.00
PUNALUU II	4.24
PUNALUU III	0.00
KALUANUI	1.98
MAAKUA	0.32
HAUULA	0.26
WELLS SUBTOTAL:	11.48
WAIM. TUNNELS I & II	0.00
WAIM. TUNNELS III&IV	0.19
WAIHEE INCL. WELLS	0.27
WAIHEE TUNNEL	3.90
LULUKU TUNNEL	0.17
HAIKU TUNNEL	0.34
KAHALUU TUNNEL	1.10
GRAVITY SUBTOTAL:	5.97
WIND. SUBTOTAL:	17.44

STATION	MGD
NORTH SHORE (3)	
KAHUKU	0.41
OPANA	0.99
WAIALEE I	0.03
WAIALEE II	0.62
HALEIWA	0.00
WAIALUA	1.89
N.SHORE SUBTOTAL:	3.95

STATION	MGD
MILILANI (4)	
MILILANI I	1.93
MILILANI II	0.00
MILILANI III	0.69
MILILANI IV	1.88
MILILANI SUBTOTAL:	4.50

STATION	MGD
WAIHAWA (5)	
WAIHAWA	1.75
WAIHAWA II	1.06
WAIHAWA SUBTOTAL:	2.81

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	0.22
KAONOHI I	1.68
WAIMALU I	0.00
NEWTOWN	1.78
WAIU	1.84
PEARL CITY I	0.84
PEARL CITY II	1.08
PEARL CITY III	0.21
PEARL CITY SHAFT	0.91
PEARL CITY-HALAWA SUBTOTAL:	8.56

STATION	MGD
WAIPAHAU-EWA (7)	
WAIPIO HTS.	1.84
WAIPIO HTS. I	0.00
WAIPIO HTS. II	0.44
WAIPIO HTS. III	1.28
WAIPAHAU	6.62
WAIPAHAU II	2.02
WAIPAHAU III	4.26
WAIPAHAU IV	2.26
KUNIA I	5.67
KUNIA II	1.75
KUNIA III	1.34
HOAEAE	6.03
HONOULIULI I	0.00
HONOULIULI II	5.00
MAKAKILO	0.11
WAIPAHAU-EWA SUBTOTAL:	38.62

STATION	MGD
WAIANAE (8)	
MAKAHA I	0.48
MAKAHA II	0.00
MAKAHA III	0.12
MAKAHA V	0.33
MAKAHA VI	0.00
MAKAHA SHAFT	0.00
KAMAILE	0.06
WAIANAE I	0.28
WAIANAE II	0.34
WAIANAE III	1.13
WELLS SUBTOTAL:	2.74
WAI. C&C TUNNEL	1.40
WAI. PLANT. TUNNELS	0.14
GRAVITY SUBTOTAL:	1.54
WAIANAE SUBTOTAL:	4.28

NONPOTABLE

NONPOTABLE	MGD
KALAUAO SPRINGS	0.48
BARBERS POINT WELL	1.23
GLOVER TUNNEL NP	0.30
NONPOTABLE TOTAL:	2.02

RECYCLED WATER (OCTOBER 2023)

RECYCLED WATER	MGD
HONOULIULI WRF R-1	5.80
HONOULIULI WRF RO	1.56
RECYCLED TOTAL:	7.36

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

PRODUCTION SUMMARIES

TOTAL WATER	MGD
PUMPAGE	131.03
GRAVITY	7.68
POTABLE TOTAL:	138.71
NONPOTABLE	2.02
RECYCLED WATER	7.36
TOTAL WATER:	148.09

CWRM PERMITTED USE AND BWS ASSESSED YIELDS FOR BWS POTABLE SOURCES				
WATER USE DISTRICTS		A	B	C
		PERMITTED USE/ BWS YLDS	NOV 2022	DIFF. A-B
1	HONOLULU	83.32	58.37	24.95
2	WINDWARD	25.02	17.44	7.58
3	NORTH SHORE	4.70	3.95	0.75
4	MILILANI	7.53	4.50	3.03
5	WAHIAWA	4.27	2.81	1.46
6	PEARL CITY-HALAWA	12.25	8.56	3.69
7	WAIPAHAU-EWA	50.63	38.62	12.01
8	WAIANAEE	4.34	4.28	0.06
TOTAL:		192.06	138.54	53.51

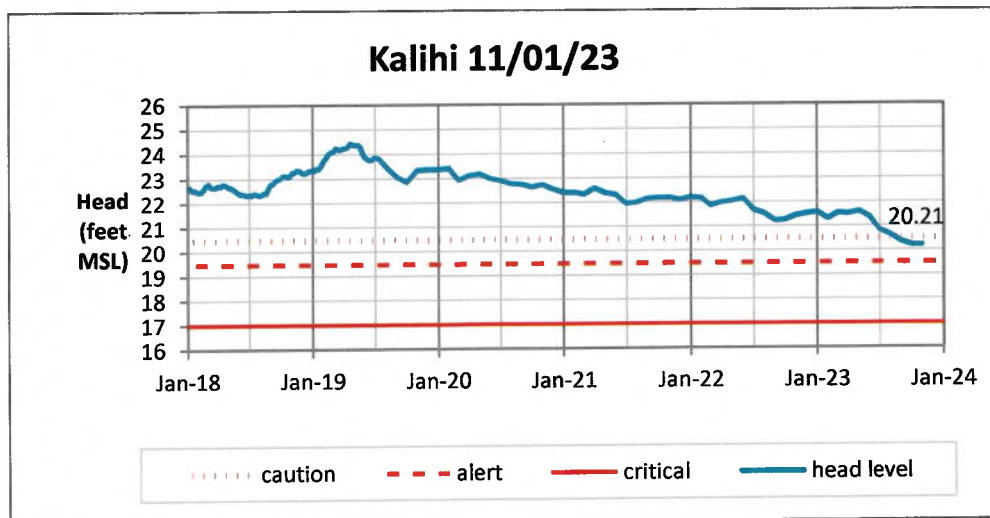
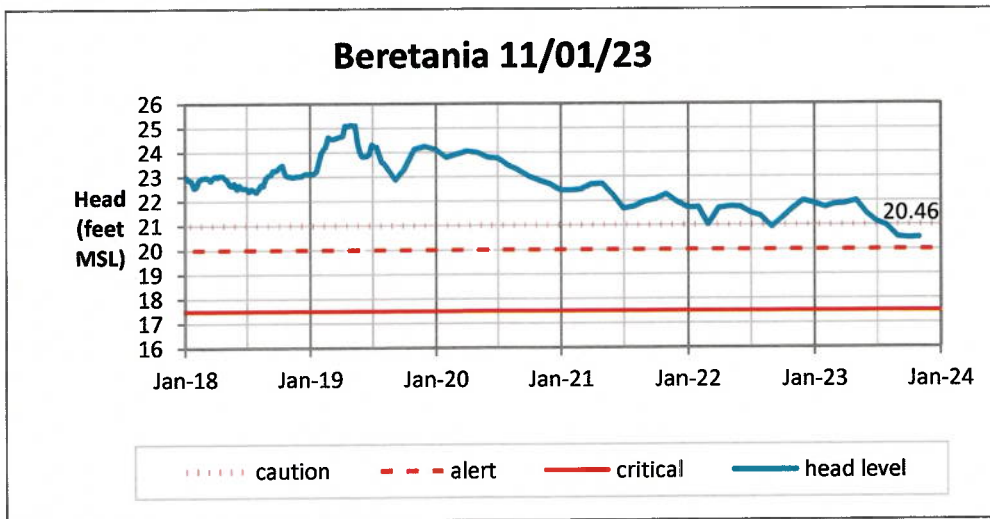
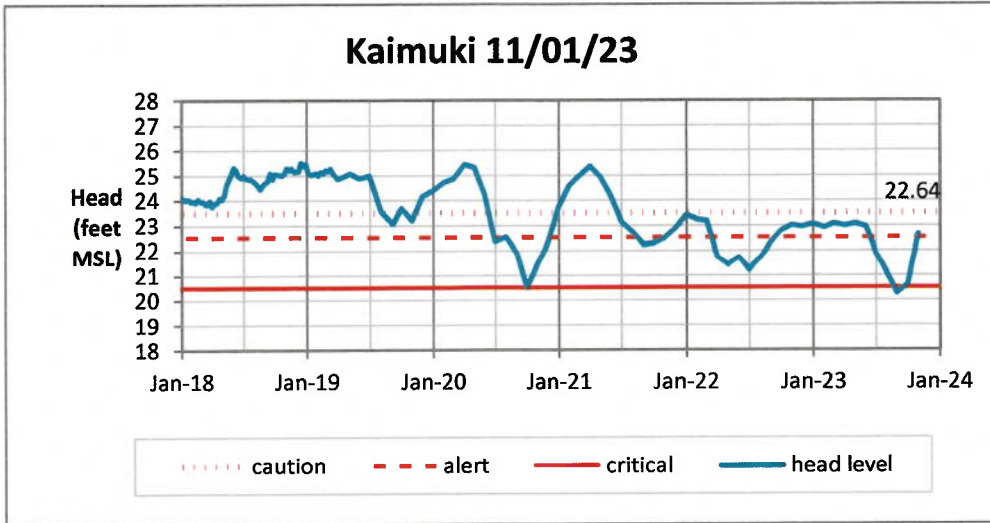
CWRM PERMITTED USE FOR BWS NONPOTABLE SOURCES				
WATER USE DISTRICTS		A	B	C
		PERMITTED USE	NOV 2022	DIFF. A-B
7	WAIPAHAU-EWA (BARBERS POINT WELL)	1.00	1.23	-0.23
TOTAL:		1.00	1.23	-0.23

EFFECTIVE WATER DEMAND PER DISTRICT

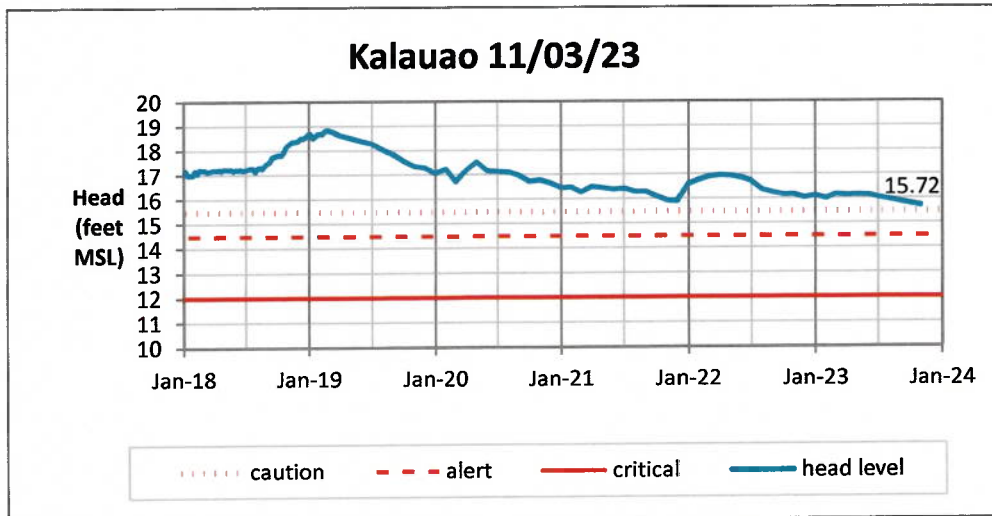
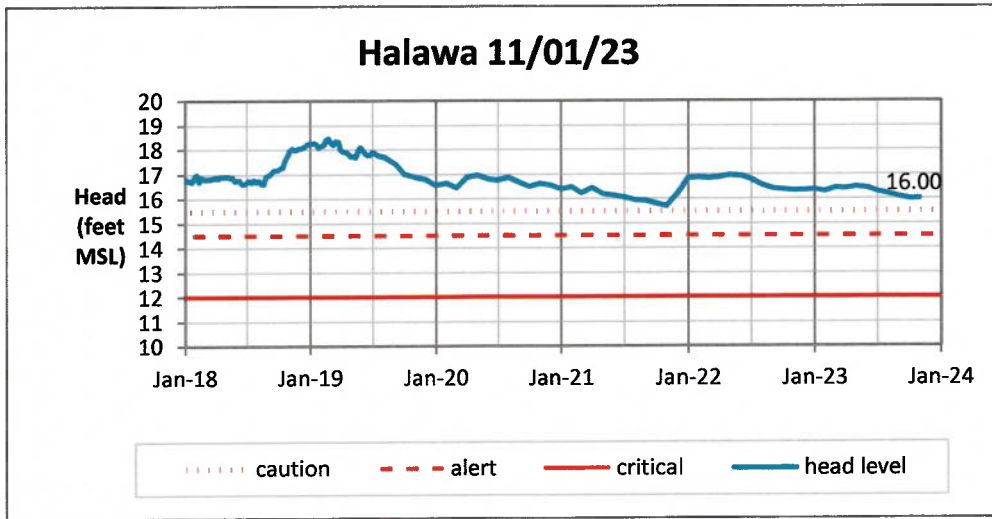
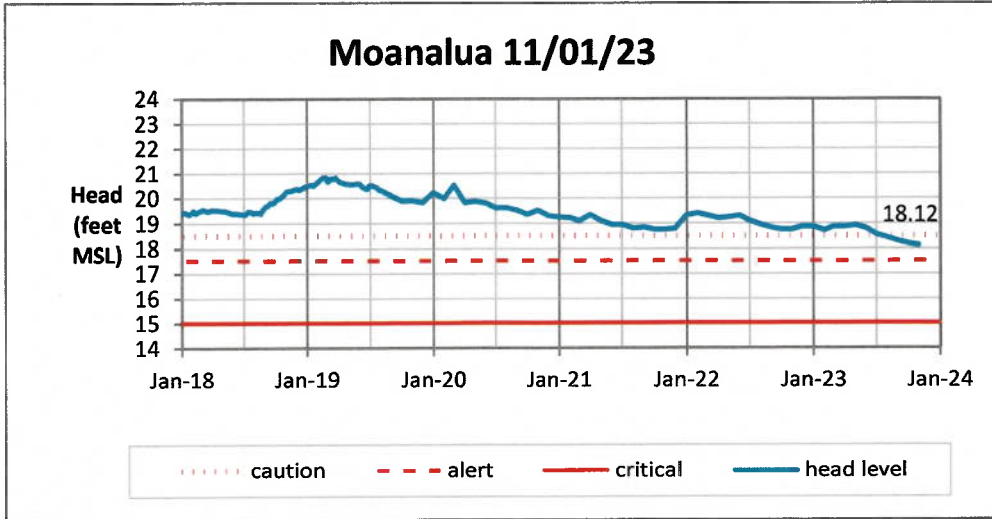
IMPORT/EXPORT BETWEEN WATER USE DISTRICTS			
FROM	TO		MGD
2	1	WINDWARD EXPORT	0.14
7	8	BARBERS PT LB	5.81

WATER USE DISTRICTS		SUBTOTAL	IMPORT	EXPORT	EFFECTIVE WATER DEMAND
1	HONOLULU	58.54	0.14	-	58.68
2	WINDWARD	17.44	-	0.14	17.30
3	NORTH SHORE	3.95	-	-	3.95
4	MILILANI	4.50	-	-	4.50
5	WAHIAWA	2.81	-	-	2.81
6	PEARL CITY-HALAWA	8.56	-	-	8.56
7	WAIPAHAU-EWA	38.62	-	5.81	32.81
8	WAIANAEE	4.28	5.81	-	10.10
TOTAL:		138.71	5.95	5.95	138.71

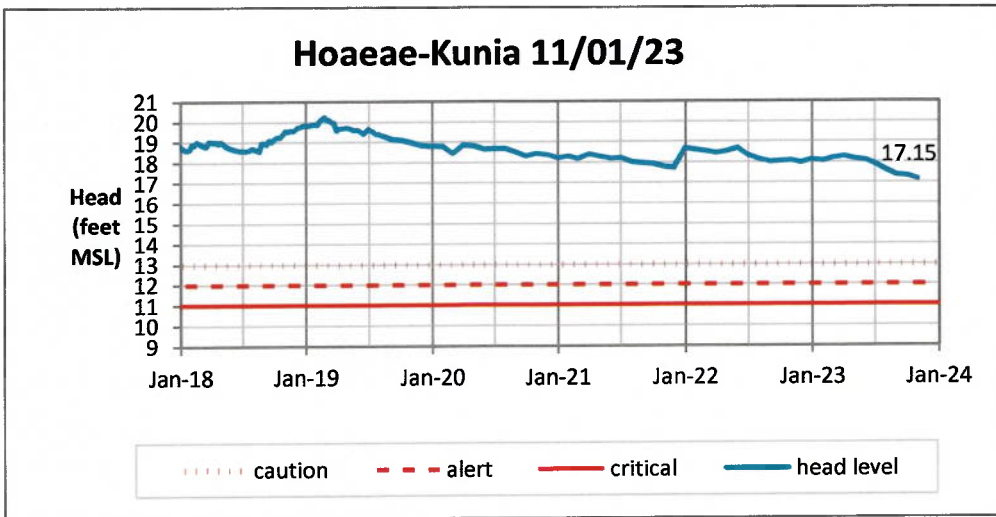
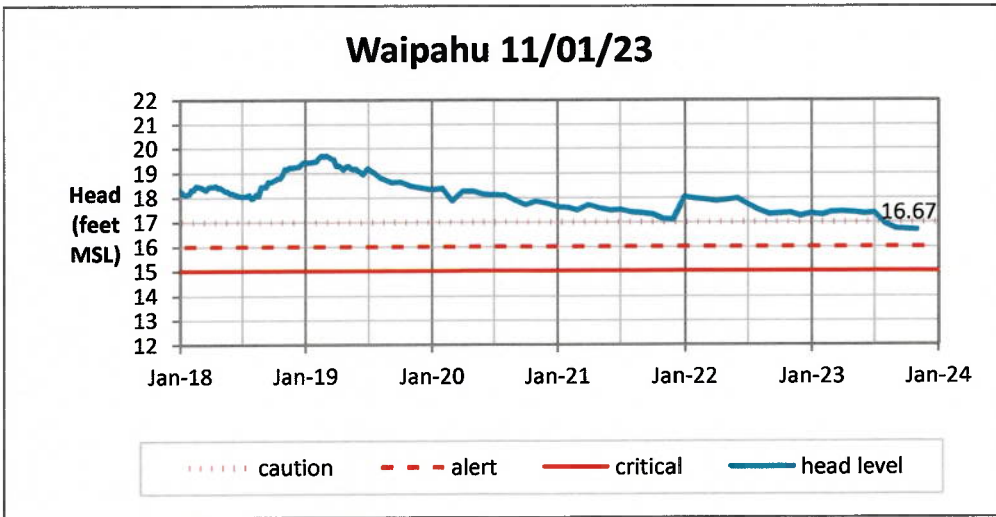
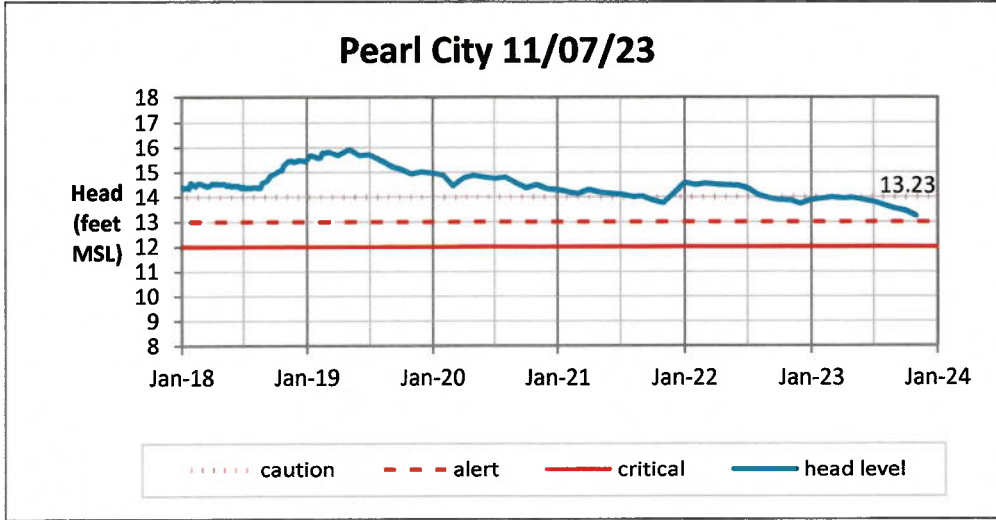
Head Report



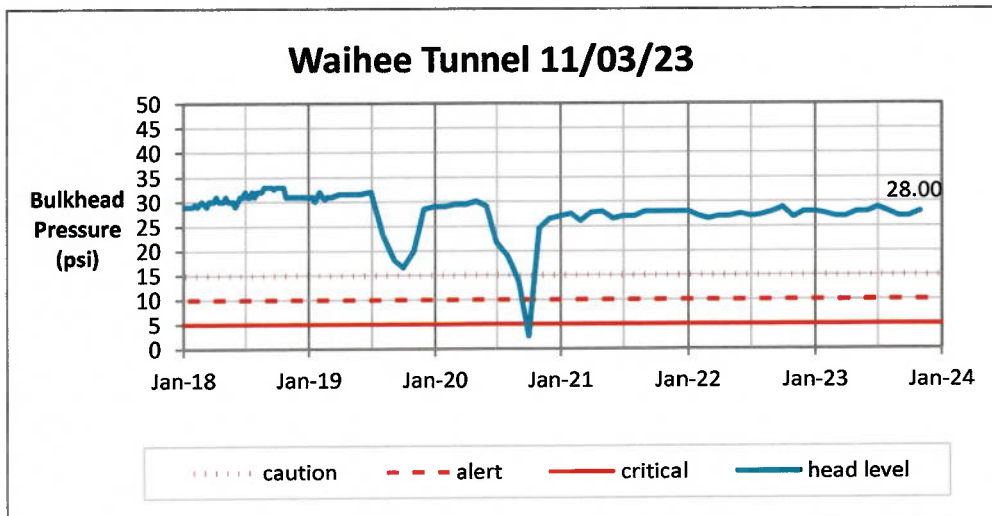
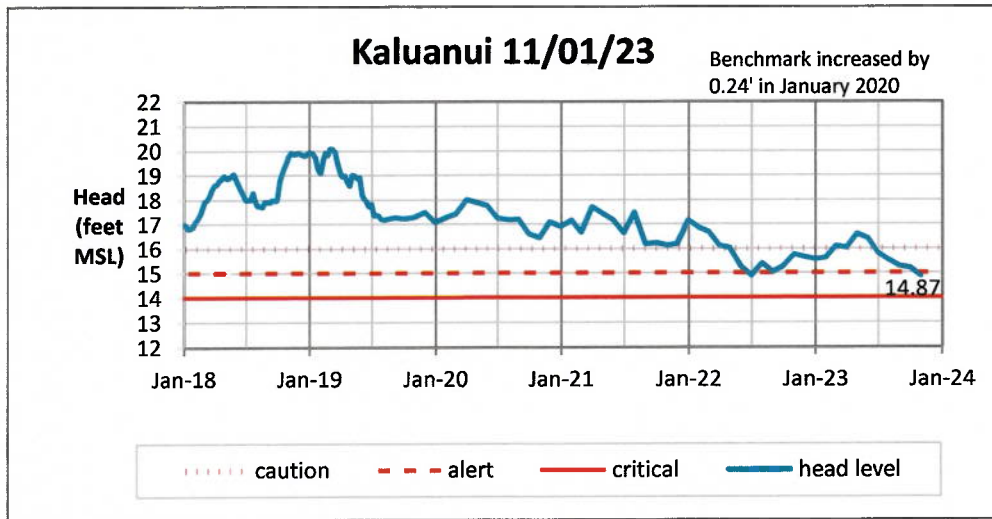
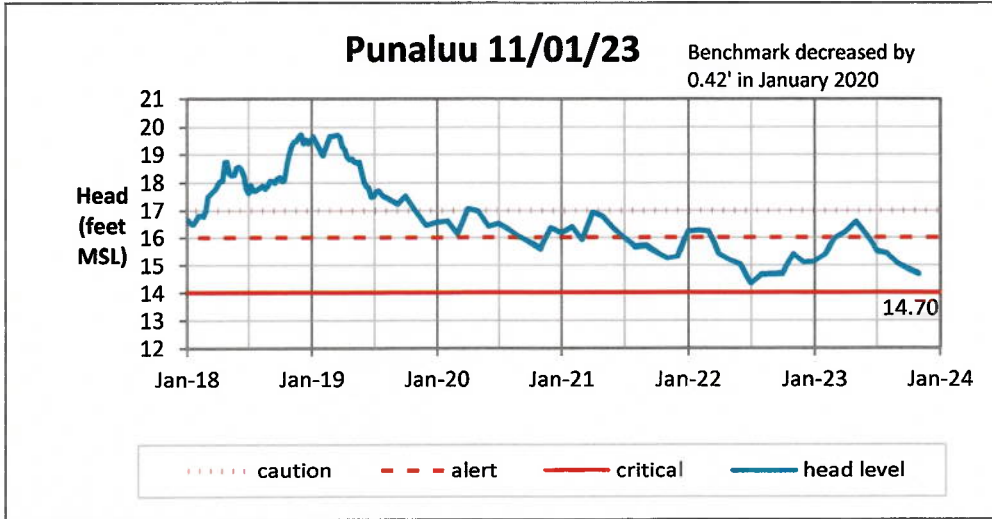
Head Report



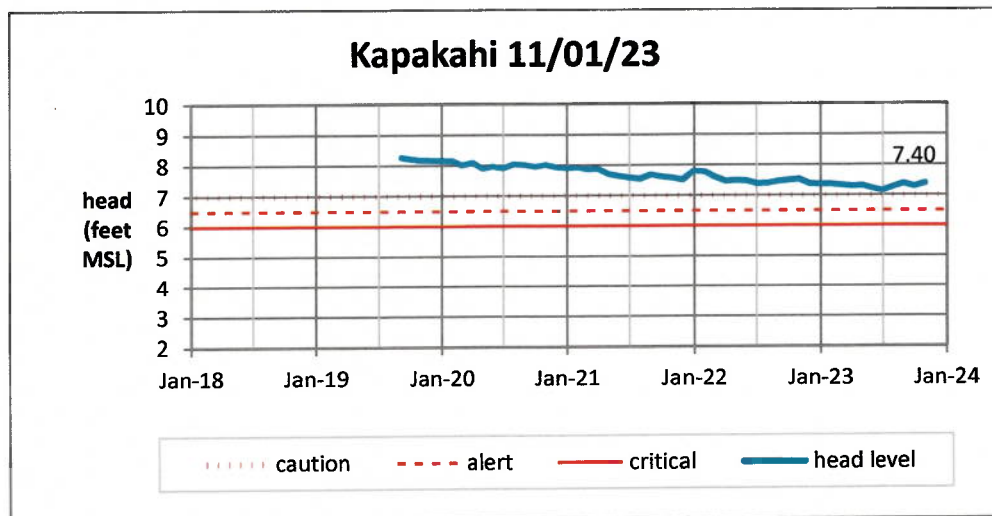
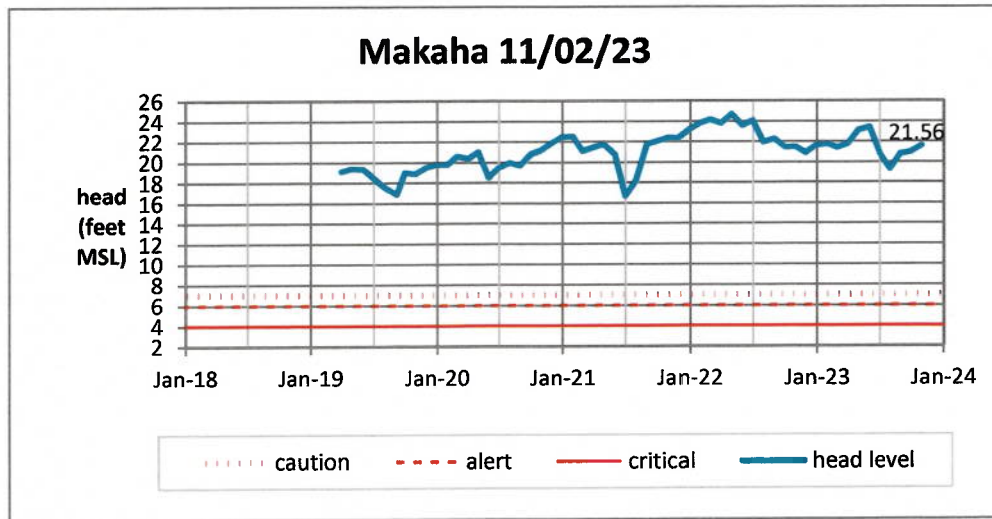
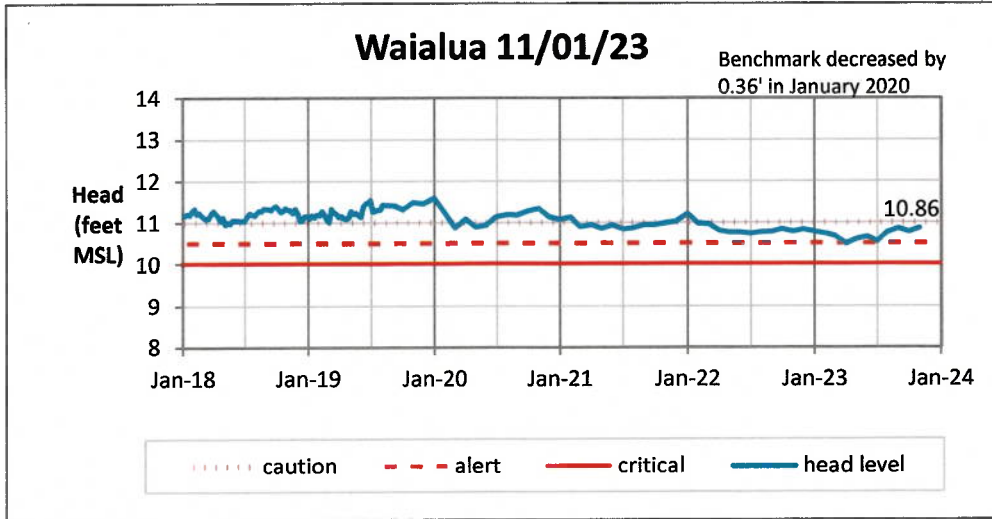
Head Report

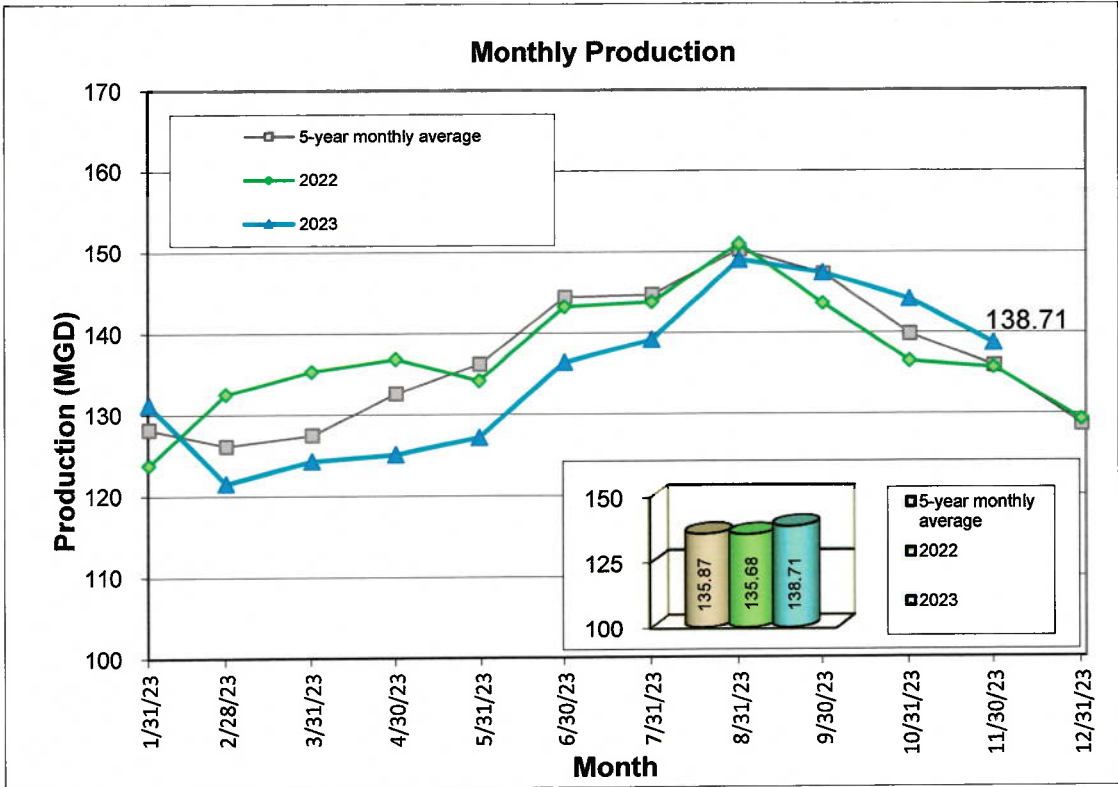
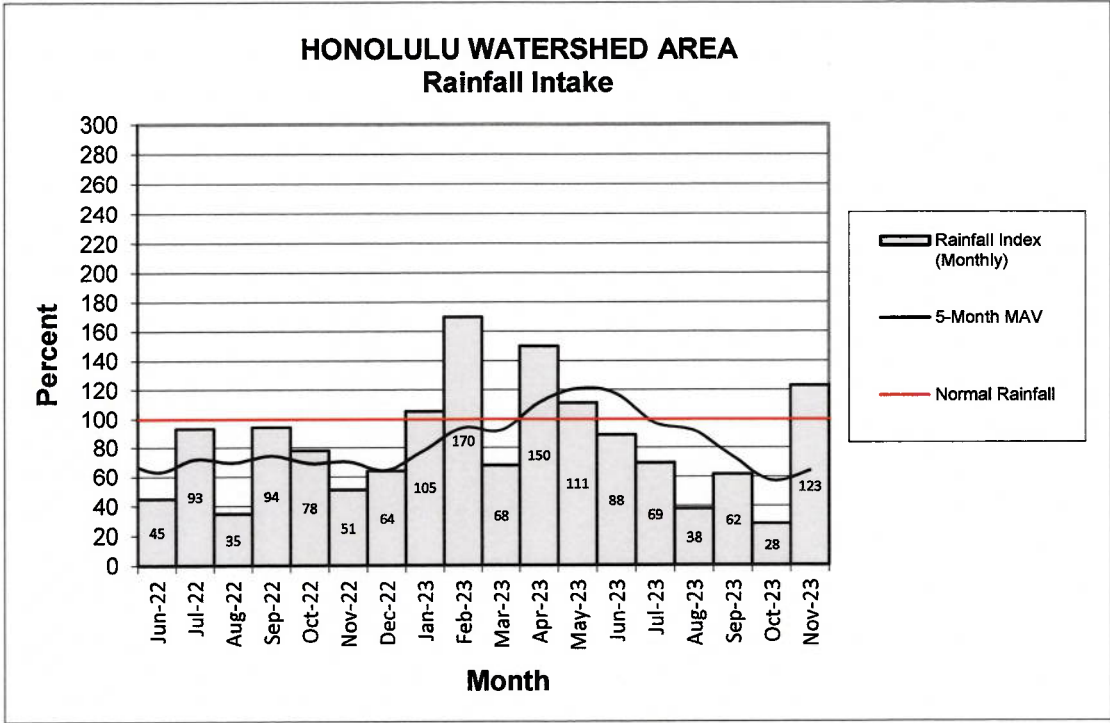


Head Report



Head Report





ITEM FOR INFORMATION NO. 4

“December 18, 2023

WATER MAIN
REPAIR
REPORT FOR
OCTOBER 2023
AND NOVEMBER
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 October 2023 and
November 2023

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

Manager Lau inquired if the 11 leaks found on the main lines were reported with the main breaks.

Mr. Jason Nikaido responded that leaks found are reported as main breaks.

Manager Lau noted that the leaks found are proactively located on mains and are classified as main breaks. However, leaks on mains are repaired before they become an actual main break.

Board Member Gene Albano asked whether there is a concern with the BWS infrastructure since the water main leaks and breaks are trending up.

Manager Lau replied that it justifies our capital program, which includes pipeline replacement and new source development and is projected to cost \$1.26 billion over the next six years.

Mr. Nikaido added that some of the water main leaks and breaks may be attributed to the weather. The dryer weather typically leads to a higher number of breaks.

Manager Lau asked if it was due to settlements or ground movement.

Mr. Nikaido responded that it could be caused by more pumping and higher pressure.

Board Member Albano asked Mr. Nikaido if it was abnormal to have such dry conditions.

Mr. Nikaido replied that it was abnormal; he had not seen it so dry for such a long period.

Chair Anthony inquired if the BWS can determine how much water is wasted from the size of the pipe and the duration of the water moving when a main break occurs.

Mr. Nikaido responded that it is difficult to determine how much water is lost due to the different variables.

Chair Anthony commented that quantifying the number of gallons lost during a main break is essential as it may be an infrastructure goal that can be worked on.

Manager Lau stated that the current process of prioritizing considers factors such as the age and condition of a main. He shared that when the BWS 30-year updates its Master Plan, resources and climate change will be part of the discussion.

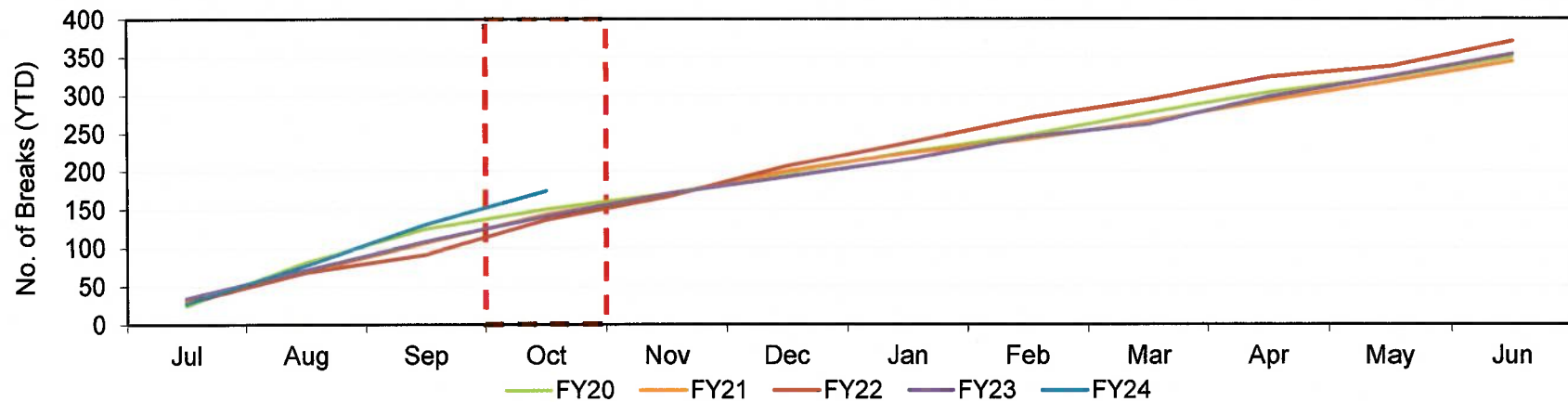
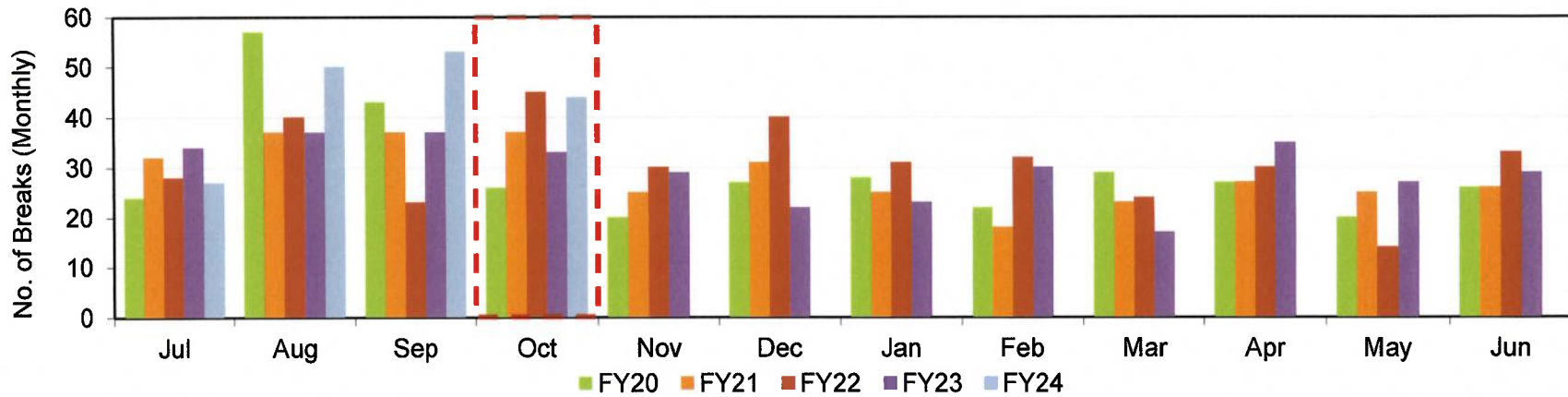
Vice Chair Sproat asked, since leak detection on mains is counted into the water main breaks, does it artificially look like there are more main breaks?

Mr. Nikaido shared that before the BWS started using the satellite, leak detection would look for and find main breaks and leaks on main lines. The BWS has a better idea today since main leaks and breaks are tracked.

**WATER MAIN REPAIR REPORT
for October 2023**

Monthly Main Breaks

FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2024	27	50	53	44									174
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

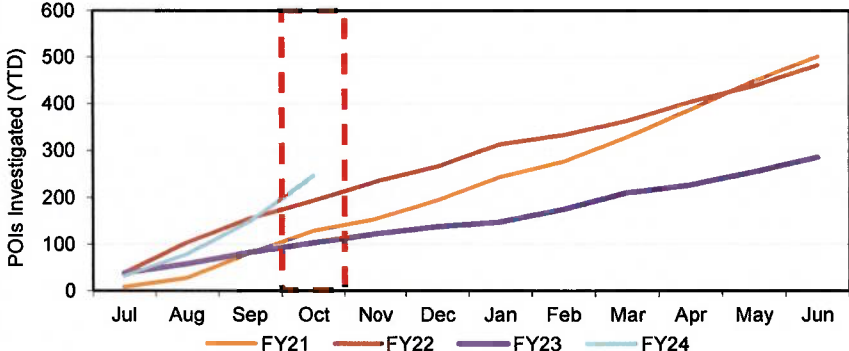
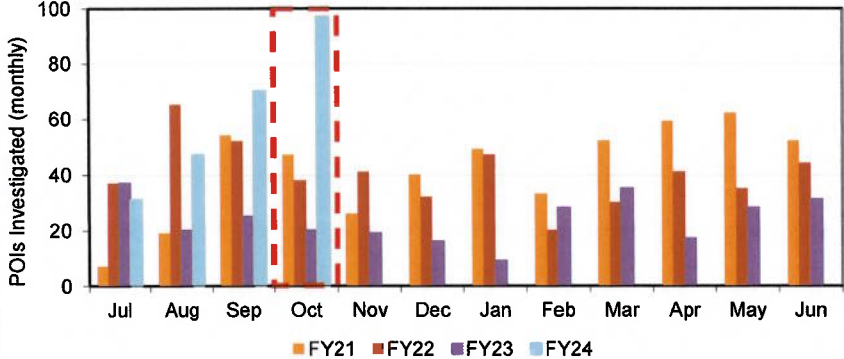


Date	Address	Size (In)	Pipe Type	Date	Address	Size (In)	Pipe Type
10/2/2023	98-1737 Hapaki St, Aiea	8	CI	10/22/2023	99-1276 Aiea Heights Dr, Aiea	4	CI
10/2/2023	1514 Dillingham Blvd, Honolulu	8	CI	10/23/2023	4362 Punihi St, Honolulu	8	CI
10/2/2023	95-1005 Kahakiki St, Mililani	4	DI	10/23/2023	2138 Kanealii Ave, Honolulu	8	CI
10/3/2023	2454 Kanealii Ave, Honolulu	8	CI	10/25/2023	94-365 Peke Ln, Waipahu	8	CI
10/4/2023	979 Waiohinu Dr, Honolulu	6	CI	10/25/2023	1330 10th Ave, Honolulu	12	DI
10/5/2023	979 Waiohinu Dr, Honolulu	6	CI	10/25/2023	333 Queen St, Honolulu	6	CI
10/5/2023	979 Waiohinu Dr, Honolulu	6	CI	10/27/2023	2750 Woodlawn Dr, Honolulu	12	CI
10/5/2023	2425 N School St, Honolulu	8	CI	10/27/2023	41-1020 Kakaina St, Waimanalo	6	AC
10/7/2023	89-686 Mokiawe St, Waianae	8	AC	10/27/2023	41-1020 Kakaina St, Waimanalo	6	AC
10/7/2023	1480 Puanakau St, Honolulu	12	PVC	10/27/2023	94-135 Waikele Rd, Waipahu	8	CI
10/9/2023	98-1374 Akaaka St, Aiea	8	PVC	10/27/2023	949 Auahi St, Honolulu	8	CI
10/10/2023	98-1473 Kaahumanu St, Aiea	12	CI	10/28/2023	51-114 Kamehameha Hwy, Kaaawa	6	CI
10/10/2023	1740 Hoowae St, Pearl City	8	CI	10/29/2023	1522 Queen Emma St, Honolulu	6	CI
10/11/2023	717 N Vineyard Blvd, Honolulu	12	CI	10/29/2023	889 Ahua St, Honolulu	8	CI
10/12/2023	1148 Kahului St, Honolulu	8	CI	10/31/2023	46-227 Kamehameha Hwy, Kaneohe	8	DI
10/12/2023	99-404 Palaialii Wy, Aiea	8	PVC				
10/12/2023	46-149 Alaloa St, Kaneohe	12	CI				
10/13/2023	86-243 Kawili St, Waianae	8	PVC				
10/16/2023	91-1601 Malio St, Ewa Beach	20	PVC				
10/16/2023	45-280 Puaae Rd, Kaneohe	8	CI				
10/16/2023	597 Kulia St, Wahiawa	12	DI				
10/18/2023	784 Hoomaemae St, Pearl City	8	CI				
10/18/2023	1440 Alewa Dr, Honolulu	4	CI				
10/19/2023	1440 Alewa Dr, Honolulu	4	CI				
10/19/2023	1901 Kamehameha Hwy, Honolulu	8	PVC				
10/19/2023	392 Circle Mauka Pl, Wahiawa	4	CI				
10/20/2023	3018 Puhala Rise, Honolulu	6	CI				
10/20/2023	35 Wood St, Honolulu	8	PVC				
10/21/2023	51-192 Kamehameha Hwy, Kaaawa	6	CI				

**LEAK DETECTION
for October 2023**

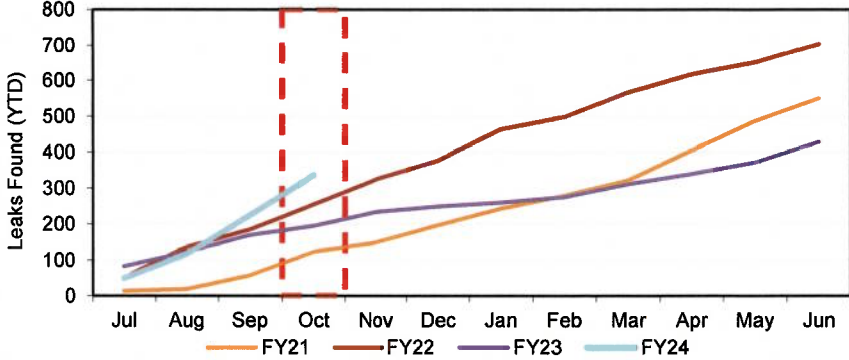
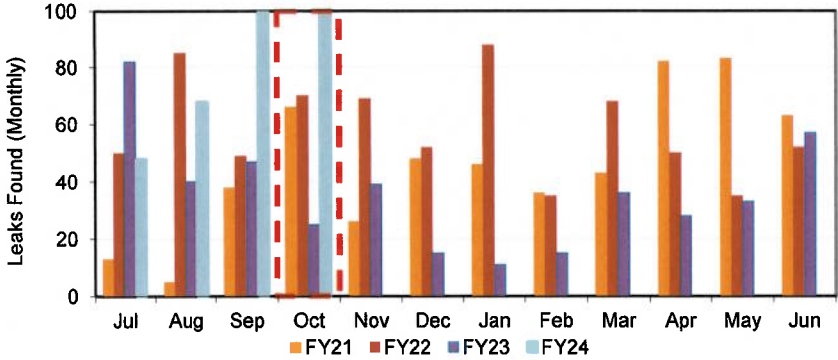
POIs Investigated

FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2024	31	47	70	97									245
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



Leaks Found

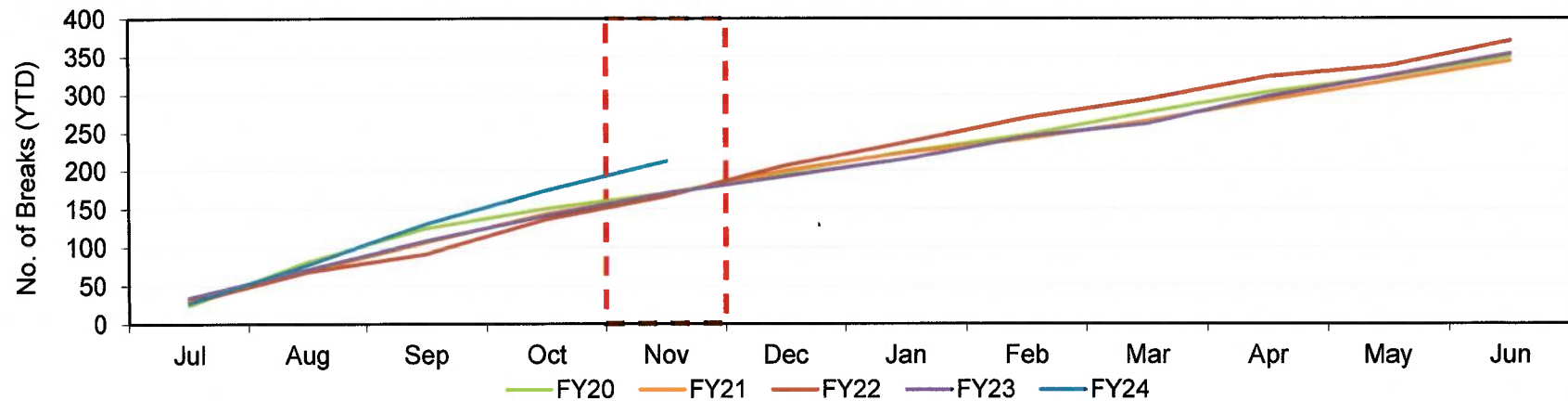
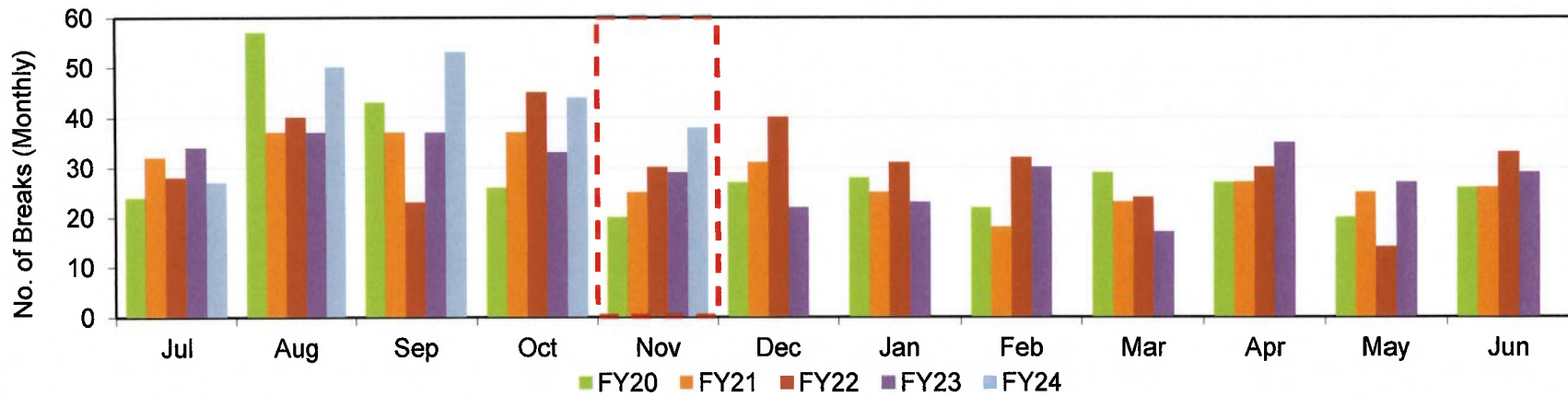
FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2024	48	68	108	111									335
2023	82	40	47	25	39	15	11	15	36	28	33	57	428
2022	50	85	49	70	69	52	88	35	68	50	35	52	703
2021	13	5	38	66	26	48	46	36	43	82	83	63	549



**WATER MAIN REPAIR REPORT
for November 2023**

Monthly Main Breaks

FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2024	27	50	53	44	38								212
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

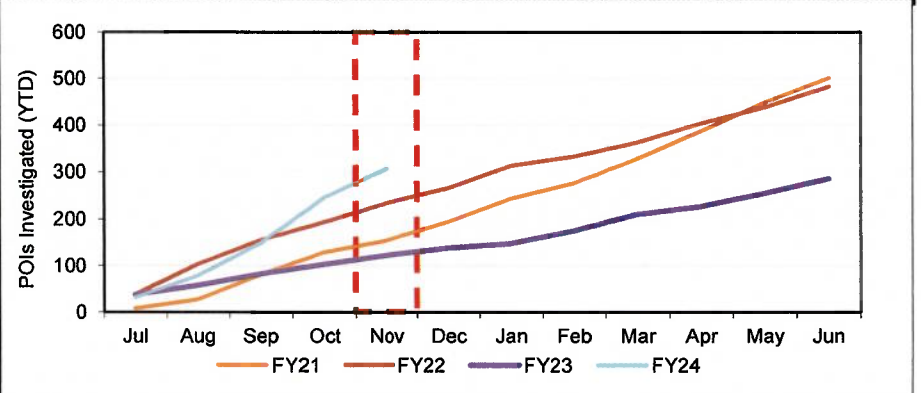
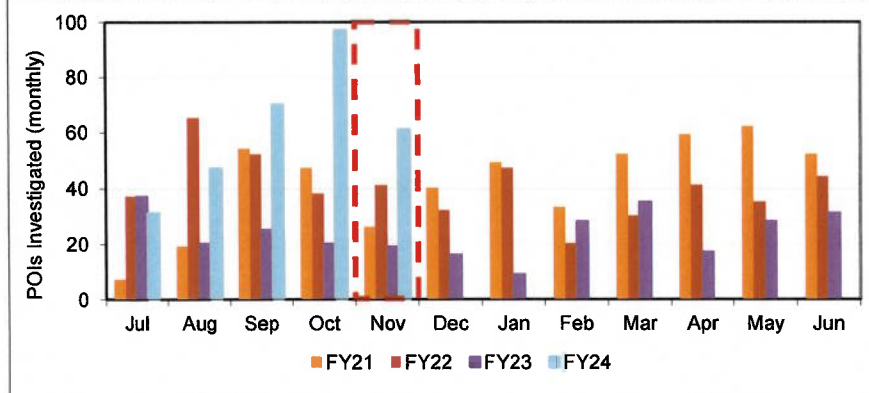


Date	Address	Size (In)	Pipe Type	Date	Address	Size (In)	Pipe Type
11/1/2023	950 Mill St, Waianae	8	CI	11/27/2023	1220 Punana Lp, Kailua	8	CI
11/1/2023	1617 Dillingham Blvd, Honolulu	8	CI	11/27/2023	765 Kailua Rd, Kailua	12	AC
11/3/2023	702 Maluniu Ave, Kailua	4	CI	11/28/2023	94-127 Pupupuhi St, Waipahu	8	CI
11/4/2023	47-372 Mahakea Rd, Kaneohe	8	AC	11/28/2023	959 N Kalaheo Ave, Kailua	12	PVC
11/10/2023	1342 Aina Koa Ave, Honolulu	8	CI	11/29/2023	708 Queen St, Honolulu	12	DI
11/10/2023	91-319 Olai St, Kapolei	14	PVC	11/29/2023	94-145 Pupupuhi St, Waipahu	8	CI
11/12/2023	2133 Komo Mai Dr, Pearl City	12	CI	11/29/2023	1118 Gulick Ave, Honolulu	6	CI
11/12/2023	86-249 Kawili St, Waianae	8	PVC	11/29/2023	5246 Kalaniana'ole Hwy, Honolulu	12	CI
11/13/2023	385F Haleloa Pl, Honolulu	8	CI	11/30/2023	3134 Monsarrat Ave, Honolulu	6	CI
11/13/2023	94-151 Awanui St, Waipahu	8	CI				
11/13/2023	2666 Kalihi St, Honolulu	12	PVC				
11/14/2023	46-224 Punawai St, Kaneohe	8	CI				
11/14/2023	1710 Hooia St, Pearl City	8	CI				
11/14/2023	67-138 Kuhi St, Waialua	8	CI				
11/14/2023	3106 Monsarrat Ave, Honolulu	6	CI				
11/15/2023	1848 Hoolele St, Pearl City	8	CI				
11/16/2023	455 Kauhane St, Honolulu	6	CI				
11/17/2023	1428 Komo Mai Dr, Pearl City	8	CI				
11/17/2023	47-160 Kamehameha Hwy, Kaneohe	6	CI				
11/18/2023	751 Kealahou St, Honolulu	12	CI				
11/19/2023	1312 Mokapu Blvd, Kailua	24	CI				
11/19/2023	44-308 Mikiola Dr, Kaneohe	8	CI				
11/19/2023	44-731 Malulani St, Kaneohe	6	CI				
11/19/2023	46-176 Ohala St, Kaneohe	8	CI				
11/19/2023	46-214 Punawai St, Kaneohe	8	CI				
11/20/2023	44-141 Laha St, Kaneohe	12	AC				
11/20/2023	46-226 Punawai St, Kaneohe	8	CI				
11/22/2023	1591 Kaumoli St, Pearl City	8	CI				
11/27/2023	1740 Hoowae St, Pearl City	8	CI				

**LEAK DETECTION
for November 2023**

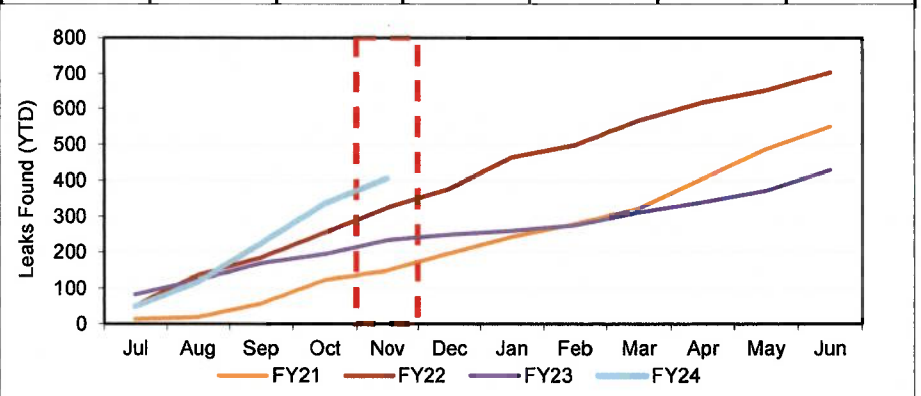
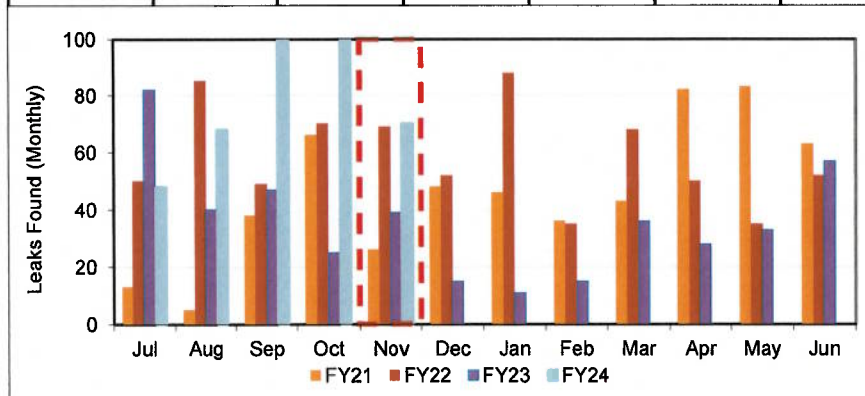
POIs Investigated

FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2024	31	47	70	97	61								306
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



Leaks Found

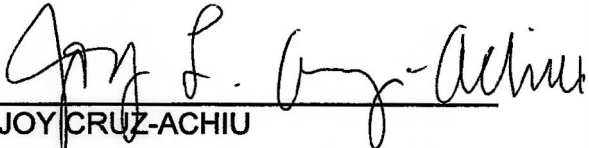
FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2024	48	68	108	111	70								405
2023	82	40	47	25	39	15	11	15	36	28	33	57	428
2022	50	85	49	70	69	52	88	35	68	50	35	52	703
2021	13	5	38	66	26	48	46	36	43	82	83	63	549



**MOTION TO
ADJOURN**

There being no further business Chair Anthony at 2:53 PM, called for a motion to adjourn the Regular Session. Gene Albano so moved, seconded by Jonathan Kaneshiro, and unanimously carried.


The minutes of the Regular Meeting held on December 18, 2023, are respectfully submitted,



 JOY CRUZ-ACHIU

THE MINUTES OF THE REGULAR MEETING HELD ON DECEMBER 18, 2023, WERE APPROVED AT THE JANUARY 22, 2024, BOARD MEETING			
	AYE	NO	COMMENT
NĀ'ĀLEHU ANTHONY	X		
KAPUA SPROAT			ABSENT
BRYAN P. ANDAYA	X		
JONATHAN KANESHIRO	X		
EDWIN H. SNIFFEN			ABSENT
GENE C. ALBANO	X		

APPROVED:



 NĀ'ĀLEHU ANTHONY
 Chair of the Board
 JAN 22 2024

 Date