BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU 630 SOUTH BERETANIA STREET HONOLULU, HI 96843 www.boardofwatersupply.com



March 23, 2021

RICK BLANGIARDI, MAYOR

BRYAN P. ANDAYA, Chair KAPUA SPROAT, Vice Chair RAY C. SOON MAX J. SWORD NA'ALEHU ANTHONY

JADE T. BUTAY, Ex-Officio ROGER BABCOCK, Jr., Ex-Officio

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

ELLEN E. KITAMURA, P.E. Deputy Manager and Chief Engineer

NOTICE

The Board of Water Supply, City and County of Honolulu, will hold a Regular Meeting on Monday, March 29, 2021, at 2:00 p.m. in the Boardroom, Public Service Building, 630 South Beretania Street, Honolulu, Hawaii.

Pursuant to the Eighteenth Supplementary Proclamation issued by Governor David Y. Ige on February 12, 2021, related to the COVID-19 emergency, in order to allow public participation in a manner consistent with social distancing practices, the following procedures are in effect for the meeting.

Some Board members may be participating in the meeting by interactive conference technology from remote locations.

TESTIMONY

Testimony can be submitted as follows:

- <u>Written testimony</u> may be emailed to <u>board@hbws.org</u> or faxed to (808) 748-5079. Testimony is due by Monday, March 29, 2021, at noon. Written testimonies should include the submitter's address, email address, and phone number. Written testimony will be posted to the BWS website at <u>boardofwatersupply.com</u>.
- <u>Mail written testimony</u> to Board of Water Supply, 630 S. Beretania St., Honolulu, HI 96843. Testimony is due by Monday, March 29, 2021, at noon.
- <u>On-line testimony</u> will be accepted at <u>boardofwatersupply.com/testimony</u> Fill out the testimony form. Due by Monday, March 29, 2021, at noon.
- <u>Telephone testimony</u> will be accepted during the meeting at (808) 748-6040. Callers will be placed in a queue and brought up to testify one at a time.
- <u>In-person testimony</u> will not be accepted.

Testimony is limited to two (2) minutes and shall be presented by the registered speaker only.

MATERIALS AVAILABLE FOR INSPECTION

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

VIEWING THE MEETING

The meeting will be viewable via live streaming on:

(1) the BWS website: <u>www.boardofwatersupply.com/live</u>. 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 748-5172 or email your request to <u>board@hbws.org</u> at least three business days prior to the meeting date.

The agenda for the March 29, 2021, 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 February 22, 2021
- 2. Adoption of Resolution No. 922, 2021, Acceptance of Gifts to the Board of Water Supply from Various Donors in Support of the 2021 Water Conservation Week Program

ITEMS FOR INFORMATION

- 1. Results of the Sale of Board of Water Supply Water System Revenue Bonds, Series 2021A and Series 2021B
- 2. COVID-19 Mitigation Efforts and Board of Water Supply Updates
- 3. Status Update of Groundwater Levels at All Index Stations
- 4. Satellite Imagery Leak System Analysis and Leak Detection Services Project
- 5. Water Main Repair Report for February 2021

EXECUTIVE SESSION

- 1. Approval of the Minutes of the Executive Session Held on February 22, 2021
- 2. To Consider the Evaluation of the Chief Engineer, Where Consideration of Matters Affecting Privacy Will be Involved [HRS § 92-5(a)(2)]
- 3. To Consult with the Board's Attorney on Questions and Issues Pertaining to the Board's Powers, Duties, Privileges, Immunities, and Liabilities Pertaining to the Authorization to Join the City's Legal Action Against Fossil Fuel Companies to Recover Climate Change-Related Costs [HRS § 92-5(a)(4)]

MINUTES

THE REGULAR MEETING OF THE BOARD OF WATER SUPPLY

March 29, 2021

At 2:01 PM on March 29, 2021, in the Board Room of the Public Service Building at 630 South Beretania Street, Honolulu, Hawaii, Board Chair Andaya called to order the Regular Meeting.

Present:	Bryan P. Andaya, Chair Ray C. Soon, Board Member via WebEx Max J. Sword, Board Member via WebEx Na'alehu Anthony, Board Member via WebEx Jade T. Butay, Board Member, Ex-Officio via WebEx Roger Babcock, Jr., Ex-Officio via WebEx
Also Present:	Ernest Lau, Manager and Chief Engineer Ellen Kitamura, Deputy Manager and Chief Engineer via WebEx Jason Takaki, Program Administrator, Capital Projects Division via Vimeo Jadine Urasaki, Assistant Program Administrator, Capital Projects Division via WebEx Jennifer Elflein, Program Administrator, Customer Care Division via Vimeo Kathleen Elliott-Pahinui, Information Officer, Communications Office via Vimeo Raelynn Nakabayashi, Executive Assistant I, Executive Support Office Michael Fuke, Program Administrator, Field Operations Division Jason Nikaido, Assistant Program Administrator, Field Operations Division Joseph Cooper, Waterworks Controller, Finance Division Michele Thomas, Executive Assistant 1, Human Resources Office via Vimeo Henderson Nuuhiwa, Program Administrator, Information Technology Office via Vimeo Michael Matsuo, Land Administrator, Land Division via WebEx Erwin Kawata, Program Administrator, Water Quality Division via WebEx Barry Usagawa, Program Administrator, Water Resources Division

Regular Session Minutes

	Kevin Ihu, Program Administrator, Water System Operations Division via Vimeo Kathy Mitchell, Administrative Services Officer via Vimeo Deanna Thyssen, Executive Secretary via WebEx Joy Cruz-Achiu, Board Secretary Steven Norstrom, Information Specialist II,
	Communications Office
Others Present:	Jeff Lau, Deputy Corporation Counsel via WebEx Call Jessica Wong, Deputy Corporation Counsel
	via Conference Call
Absent:	Kapua Sproat, Vice Chair

REGULAR MEETING

Chair Bryan Andaya requested a roll call for the Regular Meeting. Chair Andaya asked each Board Member to respond verbally when their names were called. Board Member Ray Soon, aye; Board Member Na'alehu Anthony, aye; and Board Member Jade Butay, aye.

Chair Andaya asked if there were any other Board Members present on WebEx that he didn't call on. He stated he would acknowledge other Board Members as they joined.

At 2:02 PM, Chair Andaya stated Board Member Roger Babcock, Jr. joined the Board Meeting via WebEx and confirmed the Board meeting had quorum.

Chair Andaya requested all attendees calling in or video conferencing to please mute their microphone when not speaking to the audience. When intending to speak, unmute their microphone and identify themselves before speaking.

Chair Andaya also introduced those present in the Boardroom, Manager Ernest Lau, Board Secretary, Joy Cruz-Achiu, Information Specialist Steven Norstrom. Joining from the City and County Corporation Counsel was Deputy Jeff Lau via WebEx and Deputy Jessica Wong via Conference Call.

Chair Andaya stated under the Eighteenth Supplementary Proclamation issued by Governor David Ige on February 12, 2021, to follow public participation in a matter consistent with social distancing practices. The following procedures are in effect for the meeting:

Board Members are participating from remote locations via WebEx.

Chair Andaya shared the various ways to submit testimony: Written testimony may be submitted by email to <u>board@hbws.org</u>, by fax to (808) 748-5079; mailed to Board of Water Supply, 630 S. Beretania St., Honolulu, HI 96843; or online at the <u>boardofwatersupply.com/testimony</u>, which were all due on Monday, March 29, 2021, at noon. However, late testimony will be accepted by email, fax, or mail. Telephone testimony is accepted by calling (808)748-6040, where you will be put in the queue and allowed to testify one at a time. Unfortunately, due to the pandemic, in-person testimony is suspended. Pursuant to HRS Section 92-7.5, Board Meeting materials are available to view on our website at <u>www.boardofwatersupply.com/boardmeeting</u>.

Chair Andaya also announced the Board Meeting is broadcasted live on the BWS website at www.boardofwatersupply.com/live.

APPROVAL OF MEETING	Approval of the Minutes of the Regular Meeting held on	February 22, 2021.
MOTION TO APPROVE	Roger Babcock, Jr. and Na'alehu Anthony motioned and seconded, respectively, to approve the Minutes of the Regular Meeting of February 22, 2021.	
	Chair Andaya asked if there was any discussion on the Board Members. Since there was no discussion, Chair A Norstrom, is there was anyone to testify by telephone. I responded there were no telephone testifiers. Chair And Secretary Ms. Cruz-Achiu, were there any written testim Achiu responded there was no written testimony.	Andaya asked Mr. Mr. Norstrom daya asked Board
March 29, 2021	Regular Session Minutes	Page 3 of 17

In lieu of a roll call vote, Chair Andaya 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." Chair Andaya then inquired if any Board Members would like to object or vote "Nay" on the motion. There were no objections or "Nay" votes. Chair Andaya announced that the motion was unanimously carried.

At 2:35 PM, Board Member Max Sword joined the Regular Board meeting via WebEx.

THE MINUTES OF THE RE FEBRUARY 22, 2021, WER MARCH 29, 2021 BOARD M	E APPRO		
76-92-	AYE	NO	COMMENT
BRYAN P. ANDAYA	x		
KAPUA SPROAT			ABSENT
RAY C. SOON	X		
MAX J. SWORD			ABSENT
NA'ALEHU ANTHONY	x		
JADE T. BUTAY	x		
ROGER BABCOCK, JR.	x		

ADOPTION OF RESOLUTION NO. 922, 2021, ACCEPTANCE OF GIFTS TO THE BOARD OF WATER SUPPLY FROM VARIOUS DONORS IN SUPPORT OF THE 2021 WATER CONSERVATION WEEK PROGRAM

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

Chair and Members:

Subject: Adoption of Resolution No. 922, 2021, Acceptance of Gifts to the Board of Water Supply from Various Donors in Support of the 2021 Water Conservation Week Program____

We recommend the adoption of the attached Resolution No. 922, 2021, that accepts the proposed gifts to the Board of Water Supply (BWS), City and County of Honolulu, in support of the 2021 Water Conservation Week (WCW) Program. The donors' total value of these gifts is \$10,500.00.

Donor Name	Amount
Friends of Halawa Xeriscape Garden	\$ 2,000.00
Hawaiian Financial Federal Credit Union	\$ 2,000.00
Times Supermarkets	\$ 2,000.00
Aloha Pacific Federal Credit Union	\$ 2,000.00
Alexander and Baldwin, Incorporated	\$ 1,000.00
Hawaii Energy	\$ 1,000.00
Pasha Hawaii	<u>\$ 500.00</u>
TOTAL	\$10,500.00

The WCW program is in its 43rd year of existence. This well-established, successful public education program reaches out to Oahu's students in grades Kindergarten through 12 to inspire them to value the island's finite drinking water supply and conserve water when they use it. Studies have shown that youth who adopt water conservation practices at an early age are likely to encourage their parents to be water-efficient and later raise their own water-smart families. Through this program, the BWS intends to motivate more customers to adopt behaviors that support water conservation.

Sponsor gifts will help offset the department's costs for the program that include the printing of about 20,000 copies of the 2022 Water Conservation Calendar that features winning entries of this year's poster and poetry contests. The calendars are distributed to all Oahu schools, elected officials, and the general public.

We deeply appreciate the continued support of this Board for this very valuable and worthwhile public education program. All participants in our WCW program are encouraged to always embrace their roles as responsible stewards of our island's precious water resource.

Respectfully submitted,

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

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Attachment"

DISCUSSION: Kathleen Elliott-Pahinui, Information Officer, Communications Office, gave the report.

Chair Andaya thanked Ms. Elliott-Pahinui for her presentation and asked the Board Members if there were any questions.

Board Member Na'alehu Anthony inquired how does the Board of Water Supply (BWS) solicit funding.

Ms. Elliott-Pahinui stated most of the BWS's sponsors had supported the Water Conservation Week (WCW) Program for five years or more. Funding received from sponsors is deposited directly into the BWS accounts, which offsets the BWS calendars printing cost. She mentioned, the BWS is open to new ideas and to soliciting new sponsors.

Board Member Anthony stated he has some ideas and would reach out to Ms. Elliott-Pahinui.

MOTION TO ADOPT Jade Butay and Roger Babcock, Jr. motioned and seconded, respectively, the Adoption of Resolution No. 922, 2021, Acceptance of Gifts to the Board of Water Supply from Various Donors in the 2021 Water Conservation Week Program.

In lieu of a roll call vote, Chair Andaya 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." Chair Andaya then inquired if any Board Members would like to object or vote "Nay" on the motion. There were no objections or "Nay" votes. Chair Andaya announced that the motion was unanimously carried.

Chair Andaya asked Ms. Elliott-Pahinui to convey the BWS's gratitude for the various sponsors' generous gift.

RESOLUTION NO. 922, 20 TO THE BOARD OF WATE DONORS IN SUPPORT OF CONSERVATION WEEK PE MARCH 29, 2021	R SUPPL THE 202	Y FRC 1 WAT	M VARIOUS ER
	AYE	NO	COMMENT
BRYAN P. ANDAYA	x		
KAPUA SPROAT			ABSENT
RAY C. SOON	x		
MAX J. SWORD			ABSENT
NA'ALEHU ANTHONY	x		
JADE T. BUTAY	x		
ROGER BABCOCK, JR.	X		

BOARD OF WATER SUPPLY CITY AND COUNTY OF HONOLULU

RESOLUTION NO. 922, 2021

ACCEPTANCE OF GIFTS TO THE BOARD OF WATER SUPPLY FROM VARIOUS DONORS IN SUPPORT OF THE 2021 WATER CONSERVATION WEEK PROGRAM

WHEREAS, the Board of Water Supply's (BWS) Water Conservation Week program is an annual endeavor that features a poster and poetry contest to educate Oahu's youth about the importance of using water efficiently to develop this ethic in them, and also publishes the winning and honorable mention entries in an annual Water Conservation Calendar; and

WHEREAS, the BWS may solicit gifts to the Department as long as it does not provide special consideration, treatment, advantage, privilege, or exemption for or coerces a potential donor; and

WHEREAS, the BWS will solicit for gifts on its agency website, which is available for access by any interested person or business; and

WHEREAS, the Friends of Halawa Xeriscape Garden; Hawaiian Financial Federal Credit Union, Board of Water Supply Branch; Times Supermarkets; Aloha Pacific Federal Credit Union; Alexander and Baldwin, Incorporated; Hawaii Energy; and Pasha Hawaii are offering monetary gifts totaling \$10,500.00 in support of the 2021 Water Conservation Week program; and

WHEREAS, a gift to the BWS benefits the Department because it assists outreach efforts, such as the BWS's Water Conservation Week public education program, and lessens the need for ratepayer funds to support the program's key components; and

WHEREAS, the gifts will be used to offset reasonable and necessary costs of the printing and delivery of about 20,000 Water Conservation Calendars featuring the contests' winning entries and efforts to reveal and recognize the student winners and honorable mentions; now, therefore

BE IT RESOLVED that the Board of Water Supply hereby accepts the various gifts valued at \$10,500.00 and directs the Manager and Chief Engineer, or his delegate, to accept and thank the various donors for these gifts.

ADOPTED:

BRYAN P. ANDAYA Chair

Honolulu, Hawaii March 29, 2021

RESOLUTION NO. 922, 2021, ACCEPTANCE OF GIFTS TO THE BOARD OF WATER SUPPLY FROM VARIOUS DONORS IN THE 2021 WATER CONSERVATION WEEK PROGRAM, ADOPTED ON MARCH 29, 2021				
	AYE NO COMMENT			
BRYAN P. ANDAYA	x			
KAPUA SPROAT			ABSENT	
RAY C. SOON	x			
MAX J. SWORD			ABSENT	
NA'ALEHU ANTHONY	X			
JADE T. BUTAY	x			
ROGER BABCOCK, JR.	x			

ITEM FOR INFORMATION NO. 1

"March 29, 2021

RESULTS OF	Chair and M	lembers	
THE SALE OF	Board of Wa	ater Supply	
BOARD OF	City and Co	unty of Honolulu	
WATER SUPPLY	Honolulu, H	awaii 96843	
WATER SYSTEM			
REVENUE	Chair and Members:		
BONDS, SERIES			
SERIES 2021A	Subject:	Results of the Sale of Board of Water Supply Water System	
AND SERIES		Revenue Bonds, Series 2021A and Series 2021B	
2021B			
	Durauant to	Poord of Mator Supply Pooplytion No. 021, 2021, authorizing	

Pursuant to Board of Water Supply Resolution No. 921, 2021, authorizing the issuance of water system revenue bonds, the Board issued a total of \$93,535,000 principal amount of Board of Water Supply Water System Revenue Bonds, Series 2021A and Series 2021B dated March 25, 2021. The Board and our customers will realize approximately \$458,561 annually in debt service savings. In addition, the refund of the past bonds will provide a combined net present value saving of \$3,209,930 will be realized with the refunding.

The proceeds of the Series 2021A and Series 2021B bonds will be used: (1) to pay the cost of improvements authorized in the capital budget of the Board; (2) to pay the costs of issuance of the Series 2021A and Series 2021B bonds; and (3) to fund a trust fund to provide for the refunding and redemption of all or a portion of the Board's Water System Revenue Bonds, Series 2012A and Series 2014A.

The bonds were assigned underlying ratings of AAA, stable outlook, from S & P Global Ratings and AA+, positive outlook, from Fitch Ratings. The Series 2021A and Series 2021B bonds were sold on March 9, 2021 at a true interest cost of 2.49 percent. The bonds were issued at a total premium of \$11,292,598.

Net proceeds for the new bonds (Series 2021A) of \$61,006,091 was deposited into the BWS Improvement Fund and \$45,442,808 from the Series 2021B was deposited into escrow funds to defease the refunded bonds. The refunding bond issue is structured to match the terms of the refunded bonds. The cost to issue both series is \$556,864.

Bank of America Securities served as lead underwriter, Stifel, Nicolaus & Company as co-manager, and Orrick, Herrington & Sutcliffe LLP served as bond counsel to the Board.

Respectfully Submitted,

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

Regular Session Minutes

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The foregoing was for information only.

DISCUSSION: Joseph Cooper, Waterworks Controller, Finance Division, gave the report.

Chair Andaya asked the Board Members if they have any questions.

Manager Ernest Lau recognized Mr. Cooper for the excellent job of building a solid team and selling the BWS bonds annually. He also expressed his gratitude to the Board Members for their support on the various financial policies and the Long-Range Financial Plan (LRFP) that made a difference and allowed the BWS to obtain a AAA rating.

Board Member Ray Soon inquired the BWS is saving \$2 million but what makes up the cost of half a million dollars to issue the bonds?

Mr. Cooper explained the breakdown of half a million dollars covered the cost for the following: \$150,000 Bond Counsel, \$50,000 Underwriter Counsel, Underwriter \$200,000, and \$100,000 rating agency fees, advertisement on Blue Sky, notices, and publishing and printing documents.

Board Member Soon asked how does the BWS maintain AAA rating?

Mr. Cooper stated governance, response to the COVID pandemic, various BWS financial policies and planning, and long range financial planning (LRFP) all have been a part of maintaining the AAA rating. He also mentioned with the board's support in providing the necessary resources, the BWS was able to retain the AAA rating.

Chair Andaya stated that the BWS AAA rating has a lot to do with the LRFP that the Board adopted. He stated some key factors that bond rating agencies look at: the policies set, the debt and operating ratios, and the reserves, such as the 60-day working capital.

Manager Lau added that governance is vital to the bond rating agencies. Bond rating agencies pay great attention to how the utility is governed and the ability of the policymakers and utility's willingness to raise rates and invest in water system infrastructure. The BWS' approach is to lessen the impact to ratepayers by making minimal yearly increases.

Manager Lau mentioned that this year the Fitch rating agency gave BWS an upgrade. For many years, BWS received an AA+ rating with a stable outlook. This year, BWS continued to receive an AA+ rating however the outlook was upgraded to positive. This was a pleasant surprise and Manager Lau indicated that if BWS continued the good work, it's possible they may upgrade the rating to AAA.

Board Member Soon thanked Manager Lau and Mr. Cooper for their efforts and the positive results from the rating agencies.

Regular Session Minutes

ITEM FOR INFORMATION NO. 2

"March 29, 2021

COVID-19	Chair and I	Members			
MITIGATION	Board of Water Supply				
EFFORTS AND	City and Co	City and County of Honolulu			
BOARD OF WATER	Honolulu, Hawaii 96843				
SUPPLY UPDATES	Chair and Members:				
	Subject:	COVID-19 Mitigation Efforts and Board of Water Supply <u>Update</u>			
	•	akabayashi, Executive Assistant I, Executive Support Office, will prmation on COVID-19 Mitigation Efforts and BWS Updates.			

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 Andaya asked the Board Members if they had any questions.

Board Member Anthony asked what practices, procedures, safety routines, and new COVID guidelines may continue to be used past the pandemic?

Ms. Nakabayashi replied the BWS had made a lot of technology updates externally for our ratepayers and also internally for BWS processes. For convenience and to better assist our ratepayers, the BWS has added the Interactive Voice Response (IVR) system to the phone system and updated the BWS website for better access online. The BWS has also made a few changes in-house, adding electronic and digital signatures using Adobe Sign, increased remote and virtual meeting capabilities, and teleworking.

Manager Lau discussed an article that someone shared with him from the Harvard Business Review regarding liminal experiences; the term is used culturally to describe the practices of young people transitioning from childhood into adulthood. In a way, the BWS had to go through this as the BWS was forced, for over one year now, to break from the traditional way of operating the utility and learn to operate in the new norm. He stated that the pandemic had brought many valuable life lessons and hopes to continue building on the changes and updates that have already been put into place. The one word that comes to Manager Lau is "nimble"; to survive in the prolonged stress of the pandemic, everyone has had to become more nimble.

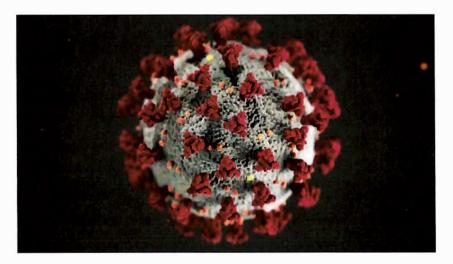
Manager Lau stated at the beginning of the pandemic, the rate of change was almost weekly. There was a lot of new information being released that required the BWS to adjust to new protocols and policies. He said Ms. Nakabayashi and Ms. Michele Thomas, Executive Assistant I, Human Resources Office, diligently worked together to implement policies as new information and developments became available from Governor David Ige, former Mayor Kirk Caldwell, and Mayor Rick Blangiardi's office. Manager Lau recognized both Ms. Nakabayashi and Ms. Thomas for all their hard work throughout this pandemic. Manager Lau would like to share the lessons that the BWS learned throughout the pandemic.

Board Member Anthony mentioned that conversations are happening about how the bureaucracy can be shifted across city and state departments to develop more efficient processes. He agreed the increased use of technology and getting rid of paper processes reflect this. He encouraged the BWS to continue to move forward to eliminate some of the waste that can occur over time from being set in our ways.

Chair Andaya thanked Ms. Nakabayashi for the report.



COVID-19 Mitigation Efforts and BWS Updates



March 29, 2021





BWS Continues to Manage and Mitigate COVID-19 Challenges

- We've been able to sustain all operations with no disruptions in service due to COVID-19
- We've implemented process and policy changes to keep our workers safe
- We've embraced change and continue to quickly adapt to the "new COVID-19" landscape
- We continue to protect our ratepayers and make fiscally prudent decisions

Safe, dependable, and affordable water now and into the future





7-day rolling averages: We 30 Case Count 27 22 Tier 4 are here 1% 0.9% Test Positivity 1% Week 1 Week 4 **Additional Time** Week 2 Week 3 olling 7-day average not meet Tier 4 crite

Safe, dependable, and affordable water now and into the future



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Emergency Order 2021-03

"The City is currently within Tier 3 of Honolulu's COVID-19 Reopening Framework but based on the recent number of daily COVID-19 cases and associated test positivity rates, it appears additional safe business and community activity can resume. This Order will become effective immediately upon signing and will continue through April 30, 2021"

Tier 3 Amendments

City and County of Honolulu

Outdoor organized team sports allowed to operate beginning April 12 (masks required, no spectators). Indoor sports can operate in limited capacity in Tier 4.

Funerals no longer restricted to 25-person limit.

Bars allowed to operate in same manner as restaurants. Cut-off time extended from 10 pm until midnight.

Capacity restrictions on commercial gyms, recreational boating relaxed in Tier 4 from 50% to 75%

Added category "Structured Events at Venues" that allows venues to host low-risk events like seminars, graduations.

Categories for transportation, tours, helicopter/plane tours and skydiving being adjusted for consistency with other categories and associated risk levels to address issues raised by FAA.

Safe, dependable, and affordable water now and into the future



Where Are You in the Vaccine Timeline?



Phase 1a Healthcare personnel



Long-term care facility residents

Phase 1b

- First responders
- Frontline essential workers
- Adults 70+ years of age



Phase 1c

- Adults age 65 to 69 years
- Persons 16 to 64 years with high-risk medical conditions

Essential Workers:

cetting COMD-19

Workers who are in sectors essentio

to the functioning of society and are at substantially higher risk of

 Essential workers not included in the previous group





updated with new guidelines from the CDC and other authoritie Please keep informed by visiting HawallCOVID19.com/vaccine



Phase 2 Persons 16 years and older not in other categories

May 2021

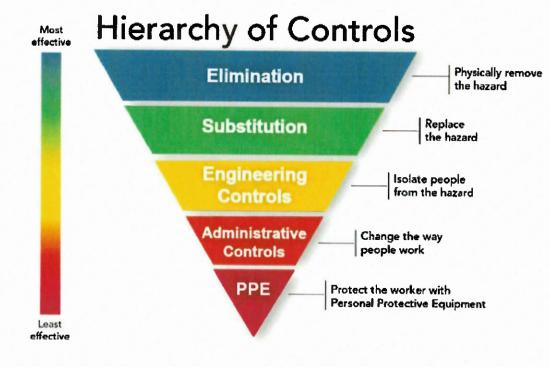
BWS Employees are "Essential Workers" in the 1b & 1c Category.

Vaccines were offered to all BWS Employees.

Approximately 70% of our employees have received at least their 1st Vaccine Shot thru the City's Designated POD



OSHA Guidance Posted January 29, 2021 **PROTECTING WORKERS:** GUIDANCE ON MITIGATING AND PREVENTING THE SPREAD OF COVID-19 IN THE WORKPLACE





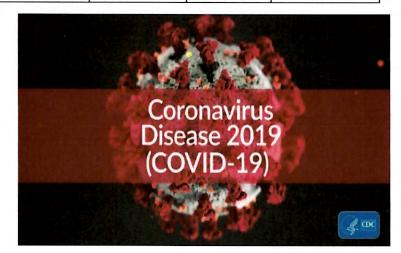
Board of Water Supply - COVID-19 Pandemic Safety Plan

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ATTACHMENT 2: Sick EE's with COVID-19 Symptoms & EE Respo	nsibilities	
ATTACHMENT 3: Basic Tips for Vehicle Usage During COVID-19		
ATTACHMENT 4: Message Regarding Mayor's Emergency Order 20-18		
ATTACHMENT 5: Checklists		

Version Control*

DATE	VERSION	CHANGE(S)	DISTRIBUTION
10/01/2020	1.0		BWS - All



Assignment of a workplace coordinator who will be responsible for COVID-19 issues on the employer's behalf.

WATER FOR LIFE

Safe, dependable, and affordable water now and into the future

Identification of where and how workers might be exposed to COVID-19 at work. This includes a thorough hazard assessment to identify potential workplace hazards related to COVID-19. This assessment will be most effective if it involves workers (and their representatives) because they are often the people most familiar with the conditions they face.

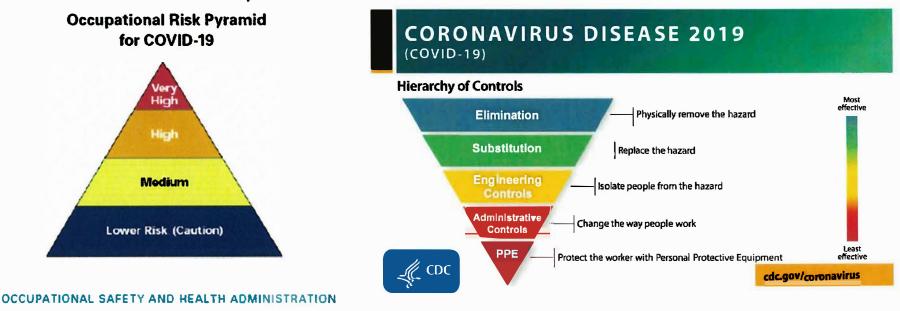


Board of Water Supply



Identification of a combination of measures that will limit the spread of COVID-19 in the workplace, in line with the principles of the hierarchy of controls.

This should include a combination of eliminating the hazard, engineering controls, workplace administrative policies, personal protective equipment (PPE), and other measures, prioritizing controls from most to least effective, to protect workers from COVID-19 hazards







Eliminating the Hazard



For Immediate Release January 6, 2021



Board of Water Supply Offers Automated 24/7 Pay-by-Phone Service

HONOLULU – The Board of Water Supply (BWS) is offering an automated service for its customers to access account information and pay their bills* 24/7 via their touch-tone phone.







ACCESS MY ACCOUNT Please provide your log in credentials to access your account.

Wa're making improvements to our Online Billing site. We hope you like the new lock! We've made additional information available to help you manage your billing more quickly and easily

User Name				
	25			

First time user? Click the New User button to register.

Password (case sensitive)

button to reg

Sign in





Eliminating the Hazard

COVID-19 Health Screening Questionnaire

Honolulu Board of Water Supply



Only business critical visitors are allowed to enter BWS facilities at this time. Customers who need to pay their bill are encouraged to review alternative payment options at thems manager.

In an effort to reduce the risk of COVID-19 exposure to our workforce and vigitors, we are conducting a health screening and/or temperature screening prior to allowing access to our Follows. Answering these questions and/or submitting to a temperature screening is required and is important to help us take precautionary measures to protect you and everyone in this facility. Thank you for your time.

in the past fourteen (14) days, have you or a member of your immediate household:

- 1. Experienced a fever or flu like symptoms?
- 2. Experienced a recent onset of *any* of the following symptoms: Cough, Shortness of Breath, Fever, Chills, Muscle Pain, Sore Throat, New Loss of Taste or Smell?
- 3. Traveled off island?
- 4. Come into close personal contact with anyone with a confirmed COVID-19 infection?
- Been asked to self-quarantine by any doctor, hospital, or health agency because of COVID-19?

If you answered YES to any of the questions above or have a temperature in EXCESS of 100.4F, ACCESS TO THIS FACILITY IS DENIED AT THIS TIME.

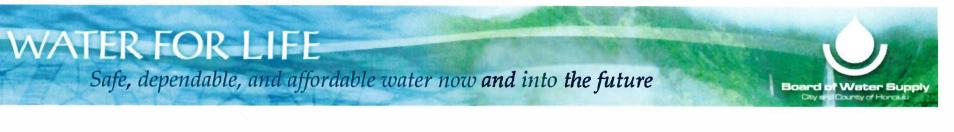
You may call 748-5000 or email <u>contactual/blows.org</u> to obtain information about. If scheduling an appointment on a Alture data when you are no longer a potentiel titls. If you have a medical condition or disability that may cause coughino, breathing difficulties, other symptoms or an elevated temperature that appear singer to but are unrestind to COVID-19, planse but us now.

ALL ANSWERS MUST BE "NO"

Mandatory Temperature Check



TEMPERATURE READING MUST BE UNDER 100.4F



Eliminating the Hazard







Eliminating the Hazard





Eliminating the Hazard



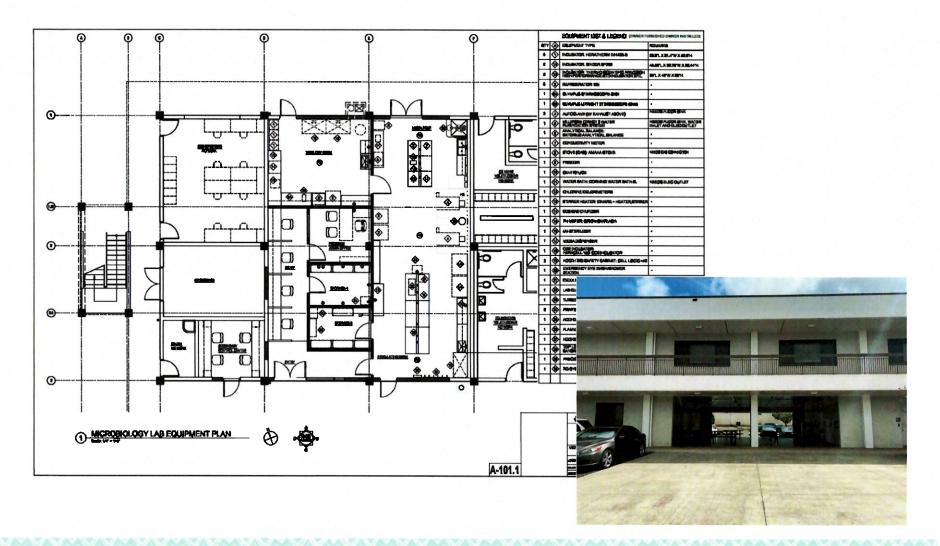
24x40 modular building

Safe, dependable, and affordable water now and into the future

Manana Corp Yard - Microbiology Lab and Control Center

Board of Water Supply Country of Honold

Casula



Safe, dependable, and affordable water now and into the future



Workplace Administrative Policies

UPDATES



Honolulu Board of Water Supply

DATE: February 24, 2021 TO: All BWS Employees FROM: Ernest Y.W. Lau, P.E., Manager and Chief Engineer SUBJECT: Sick Employees with COVID-19 Symptoms & Employee Responsibilities in Response to COVID-19 (REVISED)



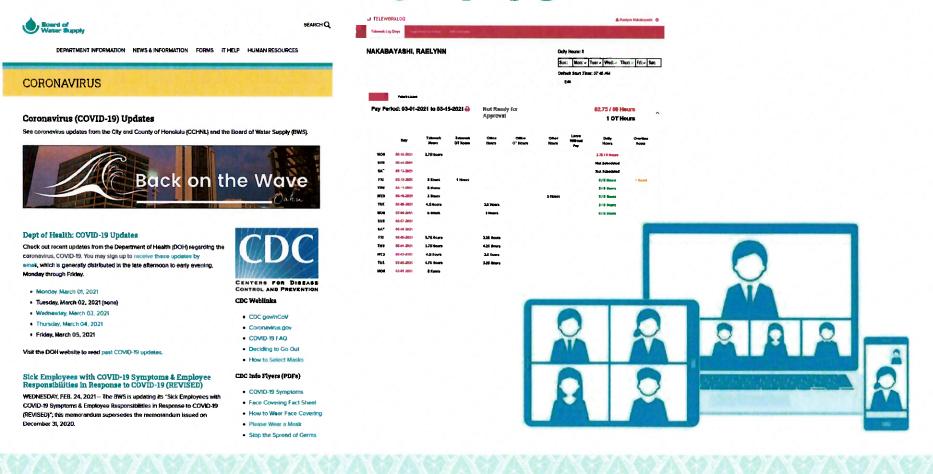








Workplace Administrative Policies





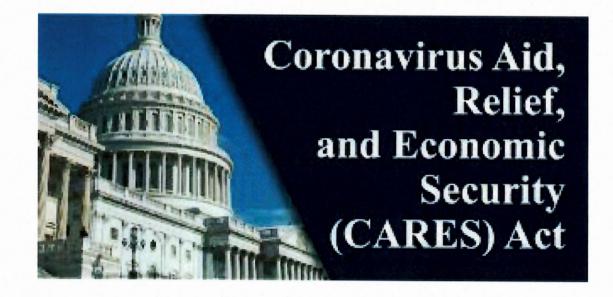


Hygiene Supplies, Mandatory Masking & Social Distancing





CARES Funding Updates



PAID to BWS by City: **\$915,359.19** PENDING: **\$507,750.21**

Safe, dependable, and affordable water now and into the future



Other Federal Stimulus Funds



The Emergency Rental Assistance program makes available \$25 billion to assist households that are unable to pay rent and utilities due to the COVID-19 pandemic.

- Up to \$114 Million is available to the City and County of Honolulu from the Federal Government and the State
- Program is under development thru the City's Office of Economic Recovery (OER)
- BWS is working with OER to ensure qualifying customers can benefit from this program

AMERICAN RESCUE PLAN ACT OF 2021

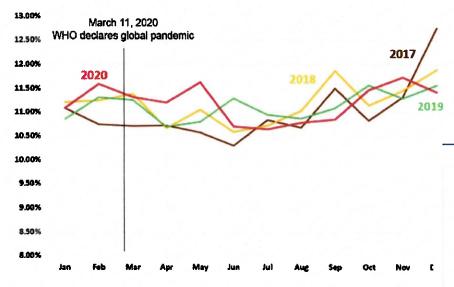
A \$1.9 trillion package of COVID-19 response legislation that will infuse billions of dollars into programs that can offer aid to water systems and their low-income ratepayers

- Will deliver \$350 billion in aid for state. local, tribal, and territorial governments
 - Some of these funds may be used to support water system operations, essential worker pay, and water infrastructure investments





Monitoring Our Finances





At an annual level, currently-projected impacts appear to be relatively minor and may be mitigated to some extent in the future by COVID-19 stimulus funds that may be made available. However, it is imperative to recognize that, as of this report date, the COVID-19 global pandemic is not over and the conditions necessary for comprehensive economic recovery have not been met. Moreover, there continues to be high uncertainty in the timing of when these conditions will be met. While the number of delinquent accounts in April and May 2020 appears a little higher than historical, by June the number of accounts has dropped to the lower end of the range

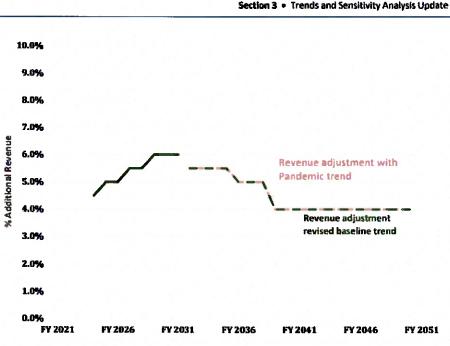


Figure 3-26. Additional Revenue Needs Trend as a Percent of Existing Rate-Based Revenue, Pandemic





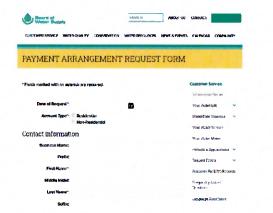
BWS continues to temporarily suspended water shut-off due to nonpayment through **Wednesday**, **June 30**, **2021**.

REQUEST A PAYMENT ARRANGEMENT

If you are unable to pay your bill in full, please pay what you can and contact us as soon as possible. A customer service representative will work with you to develop a payment arrangement.

How to Request a Payment Arrangement

- Call: (808) 748-5070
- Email: collections@hbws.org
- Complete a Request Form: Online Request Form | Fillable PDF



FINANCIAL SUPPORT PROGRAMS

The following information is provided as a courtesy for BWS customers. Programs and information are subject to change without notice. Please check back often with the following organizations;

ALOHA UNITED WAY (AUW)

Aloha United Way (AUW) continues to be a valuable community resource, Get information about how AUW connects people to the resources they need: http://www.auw211.org/.

ONE OAHU

The City and County of Honolulu set up One Oahu as a centralized resource for accurate advice and information for Oahu residents and businesses during the COVID-19 outbreak. Information and links on <u>one-wahu.org</u> are from trusted sites and will be regularly updated. You may also email <u>covidresponse@honolulu.gov</u> or call 768-CITY.

COVID-19 Hardship Relief Program: Eligible payments may include rent, mortgage, certain utilities, childcare
providers recognized by the Department of Human Services, and other emergency expenses - but NOT water and
waste water. We hope that the assistance received by qualified individuals through this program for those other
important bills will help ease the burden so they can make payment toward their water and waste water bill with
BWS.

WATER & WASTE WATER BILL ASSISTANCE - UPDATED

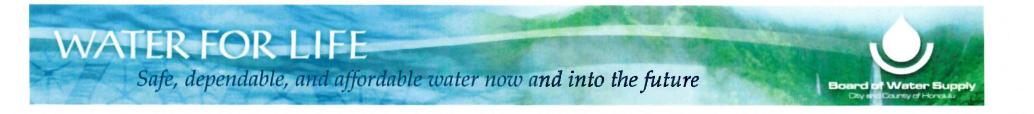
FRIDAY, SEPTEMBER 18, 2020 - BWS is aware that funds may still be available for water and waste water bills through the following agencies for qualifying individuals. Contact them for details.

ORGANIZATION NAME & ADDRESS	CONTACT INFORMATION
ALEA Bridge	Phone: (606) 379-2532 (customers will be forwarded to a case manager)
123 Mango St., Waltiawa	Website: electridge org
Gregory House Programs	Phone: (208) 592-9022
200 N. Vineyard Blvd, Ste A310, Honolulu	Website: gregoryhouse.org
Parents & Children Together	Phone: (808) 841-6177 (ask for Family Division Center)
1485 Linapunk St., Ste 105, Honolulu	Website: pacthawaii.org
Salvation Army	Phone: (909) 841-5565
Various	Website: hawaii.salvalionamiy.org
	ALEA Bridge 123 Mango SL, Walvawa Gregory House Programs 200 N. Vineyard Bivd, Ste A310, Honokusu Paronts & Children Together 1485 Linapunit SL, Ste 105, Honokus Salvation Army



Remaining True to Our Mission Through Challenging Times

- The service we provide is critical to our Island Residents. We will continue to ensure no disruptions in service due to COVID-19
- The employees of the BWS are the reason we can achieve our mission. We're doing everything we can, with all available resources and knowledge, to keep our workers safe
- We will continue to make sound financial decisions that protect our ratepayers



Questions?

Thank you!

ITEM FOR INFORMATION NO. 3

"March 29, 2021

STATUS	Chair and Mamhara		Warch 20, 2021		
	Chair and Members				
	Board of Water Supply				
GROUNDWATER	City and County of Ho				
LEVELS AT	Honolulu, Hawaii 968	43			
ALL INDEX STATIONS	Chair and Members:				
	Subject: <u>Status </u>	Update of Groundwater Levels at All	Index Stations		
	production month of F Punaluu is in Alert stat	r index stations in low groundwater of ebruary 2021. Waialua is Caution St tus. The monthly production average on gallons per day, which is below th	tatus, and e for February		
	was 110 percent of no As of March 2, 2021, t conditions along the le The National Weather	upply rainfall index for the month of F rmal, with a 5-month moving averag- he Hawaii Drought Monitor shows at seward coast of Oahu from Ewa Bead Service is forecasting La Nina condi nths, with potential above-normal rai	e of 98 percent. phormally dry ch to Makaha. tions continuing		
	decreasing trends duri rainfall from April to De period has usually bee	(except for January 2021) have cont ng the Winter season, possibly due t ecember 2020. Production during the en consistent with previous years. He February 2021 was below the previ e.	to below average e same time owever, 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.				
	Board Member Jade Butay asked if Waialua and Punaluu were still in caution and alert status with the severe rain Oahu previously had.				
	Chair Andaya inquired today's Board meeting	if the March rainfall data is being pro	esented in		
March 29, 2021	Regular	Session Minutes	Page 11 of 17		

Regular Session Minutes

Mr. Usagawa responded that the data presented in March is for February. March head levels will be shown in the April Board meeting. He stated that Waialua groundwater level was in the caution stage and Punaluu in alert by less than 1/10 of a foot.

Board Member Butay asked if the March rainfall would show how much water was recharged into aquifers?

Mr. Usagawa replied that the rainfall would eventually increase water levels but will take several months to recharge into the aquifers. He mentioned that in January, Oahu had a lot of rainfall as well.

Manager Lau stated the BWS would monitor and see what the next few month's reports will indicate.

Mr. Usagawa stated during heavy storms there is a lot runoff; therefore, doesn't necessarily recharge the aquifers.

Manager Lau stated the best rainfall for recharging the aquifers is a steady drizzle. However, any rainfall is good, Wai (water) is precious. He hopes the BWS will have a better March report for Punaluu.

PRODUCTION, HEAD AND RAINFALL REPORT MONTH OF FEBRUARY 2021

POTABLE

STATION	MGD
HONOLULU (1)	-
KULIOUOU	0.02
WAILUPE	0.09
	0.08
AINA KOA II	0.35
	0.53
PALOLO	1.03
Kaimuki High	0.91
KAIMUKI LOW	1.36
WILDER	6.94
BERETANIA HIGH	6,16
BERETANIA LOW	0.12
KALIHI HIGH	0.00
KALIHI LOW	0.00
KAPALAMA	1.57
KALIHI SHAFT	7.76
MOANALUA	1.34
HALAWA SHAFT	7.79
KAAMILO	0.88
KALAUAO	5.09
PUNANANI	10.39
KAAHUMANU	0.25
HECO WAIAU	2.66
MANANA	0.27
WELLS SUBTOTAL:	55.56
MANOA TUNNEL	0.17
PALOLO TUNNEL	0.00
GRAVITY SUBTOTAL:	0.17
HONO. SUBTOTAL:	55.73

STATION	MGD
WINDWARD (2)	
WAIMANALO II	0.19
WAIMANALO III	0.00
KUOUI	0.55
KUOU II	0.05
KUOU III	0.61
LULUKU	0.89
HAIKU	0.00
IOLEKAA	0.00
KAHALUU	0.69
KAHANA	0.97
PUNALUU I	0.00
PUNALUU II	2.28
PUNALUU III	0.82
KALUANUI	1.30
MAAKUA	0.23
HAUULA	0.26
WELLS SUBTOTAL:	8.84
WAIM. TUNNELS & []	0.00
WAIM. TUNNELS III&IV	0.19
WAIHEE INCL. WELLS	0.13
WAIHEE TUNNEL	4.09
LULUKU TUNNEL	0.16
HAIKU TUNNEL	0.84
KAHALUU TUNNEL	1.68
GRAVITY SUBTOTAL:	7.10
WIND, SUBTOTAL:	15.94

STATION	MGD
NORTH SHORE (3)	
KAHUKU	0.27
OPANA	0.06
WAIALEE I	0.44
WAIALEE II	0.54
HALEIWA	0.00
WAIALUA	1.67
N.SHORE SUBTOTAL:	2.98

MILILANI (4)	
MILILANI I	1.33
MILILANI II	0.00
MILILANI III	0.54
MILILANIIV	2.12
MILILANI SUBTOTAL:	3.99

WAHIAWA (5)	
WAHIAWA	0.96
WAHIAWA II	1.88
WAHIAWA SUBTOTAL:	2.84

	1.
PEARL CITY-HALAWA (6)	
HALAWA 277	0.56
HALAWA 550	0.00
AIEA	
AIEA GULCH 497	0.30
AIEA GULCH 550	0.20
KAONOHII	1.05
WAIMALU I	0.00
NEWTOWN	0.79
WAIAU	0.54
PEARL CITY I	0.79
PEARL CITY II	1.02
PEARL CITY III	0.24
PEARL CITY SHAFT	0.93
PEARL CITY-HALAWA SUBTOTAL:	7.52

STATION	MGD
WAIPAHU-EWA (7)	
WAIPIO HTS.	1.48
WAIPIO HTS. 1	0.83
WAIPIO HTS. II	0.26
WAIPIO HTS. III	1.24
WAIPAHU	5.46
WAIPAHU II	2.56
WAIPAHU III	1.66
WAIPAHU IV	2,85
KUNIA I	2.55
KUNIA II	1.82
KUNIA III	1.42
HOAEAE	5.82
HONOULIULII	0.00
HONOULIULI II	4.17
MAKAKILO	0.13
WAIPAHU-EWA SUBTOTAL:	32.24
WAIANAE (8)	iti ati
МАКАНА І	0.08
MAKAHA II	0.13
MAKAHA III	0.26
MARYALIA V	0.04

МАКАНА І	0.08
MAKAHA II	0.13
MAKAHA III	0.26
MAKAHA V	0.24
MAKAHA VI	0.00
MAKAHA SHAFT	0.00
KAMAILE	0.04
WAIANAE I	0.17
WAIANAE II	0.29
WAIANAE III	0.69
WELLS SUBTOTAL:	1.90
WAIA. C&C TUNNEL	1.40
WAIA, PLANT, TUNNELS	0.22
GRAVITY SUBTOTAL:	1.62
WAIANAE SUBTOTAL:	3.52

NONPOTABLE

NONPOTABLE	MGD
KALAUAO SPRINGS	0.45
BARBERS POINT WELL	0.99
GLOVER TUNNEL NP	0.30
NONPOTABLE TOTAL:	1.74

RECYCLED WATER (JANUARY 2021)

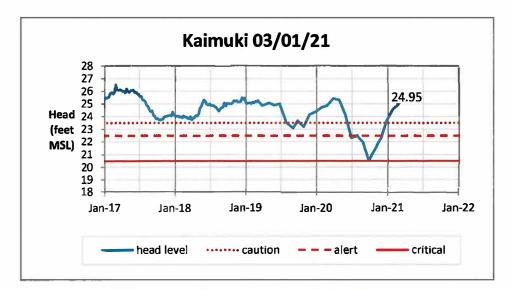
RECYCLED WATER	MGD
HONOULIULI WRF R-1	5.39
HONOULIULI WRF RO	1.18
RECYCLED WATER TOTAL:	6.57

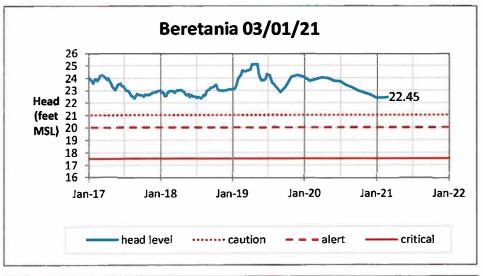
PRODUCTION, HEAD AND RAINFALL REPORT MONTH OF FEBRUARY 2021

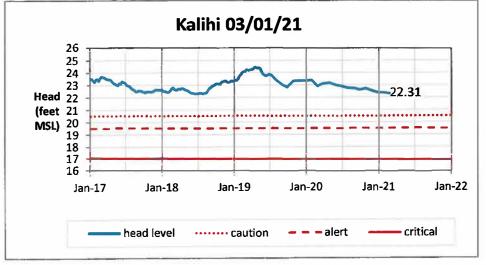
TOTAL WATER	MGD	CWR	CWRM PERMITTED USE AND BWS ASSESSED YIELDS FOR BWS					CWRM PERMITTED USE FOR BWS				
PUMPAGE	115.87		POTABLE SOURCES					NONPOTABLE SOURCES				
GRAVITY	8.89	-		A	в	С				В	С	
POTABLE TOTAL:			WATER USE DISTRICTS	PERMITTED	FEB 2021	DIFF.	WATER	USE DISTRICTS	PERMITTED USE	FEB 2021	DIFF	
NONPOTABLE	1.74			BWS YLDS	2021	A-B				2021	A-B	
RECYCLED WATER	6.57	1	HONOLULU	82.93	55.56	27.37		WAIPAHU-EWA		/		
TOTAL WATER:	133.08	2	WINDWARD	25.02	11.72	13.30	7 (BARBERS	1.00	0.99	0.0		
		3	NORTH SHORE	4.70	2.98	1.72		POINT WELL)		<u> </u>		
		4	MILILANI	7.53	3,99	3.54		TOTAL:	1.00	0.99	0.0	
		5	WAHIAWA	4.27	2.84	1.43						
		6	PEARL CITY-HALAWA	12.25	7.52	4.73						
		7	WAIPAHU-EWA	.50.63	32.24	18.39						
		8	WAIANAE	4.34	1.90	2.44						
			TOTAL:	191.67	118.75	72.92						

IMPOF	RT/EX	PORT BETWEEN WATER US	E DISTRICTS		WA	TER USE DISTRICTS	SUBTOTAL	IMPORT EXPORT EFFECTIVE		
FROM	то		MGD		1 НО	NOLULU	55.56	1.14		56.70
2	1	WINDWARD EXPORT	1.14		2 Wi	NDWARD	11.72	-	1.14	10.58
7	8	BARBERS PT LB	5.49		3 NO	RTH SHORE	2.98	-	-	2.98
					4 MIL	ILANI	3.99	-	-	3.99
				ę	5 WA	AHIAWA	2.84	•	-	2.84
				e	6 PE.	ARL CITY-HALAWA	7.52	-	-	7.52
					7 WA	AIPAHU-EWA	32.24	•	5.49	26.75
				8	8 WA	AIANAE	1.90	5.49	-	7.38
					TOTAL:		118.75	6.63	6.63	118.75

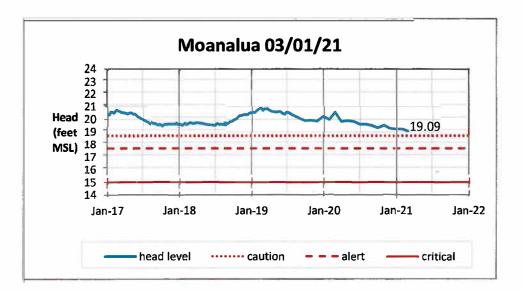
Head Report

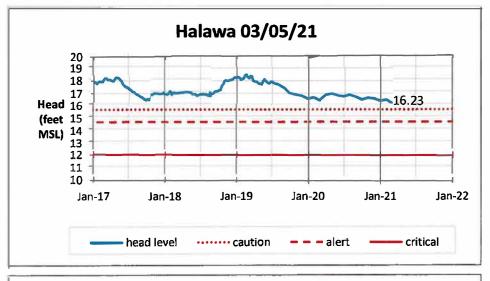


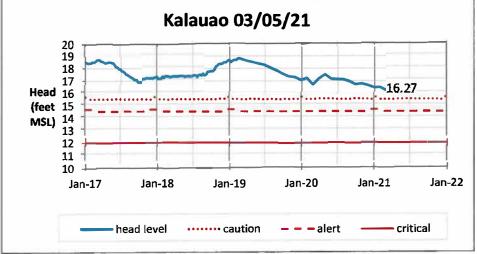




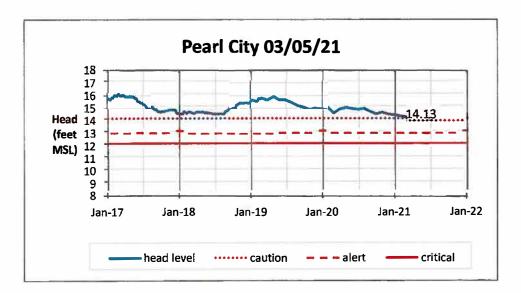
Head Report

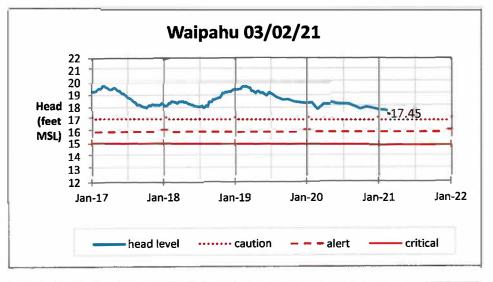


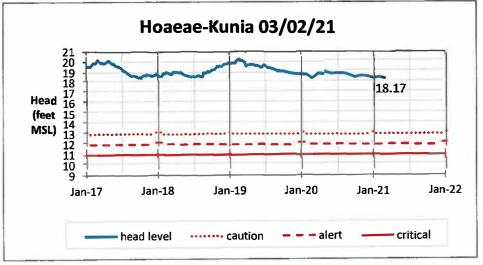




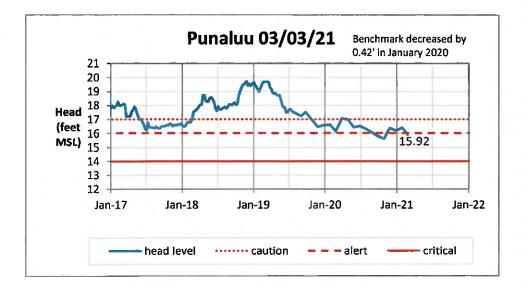
Head Report

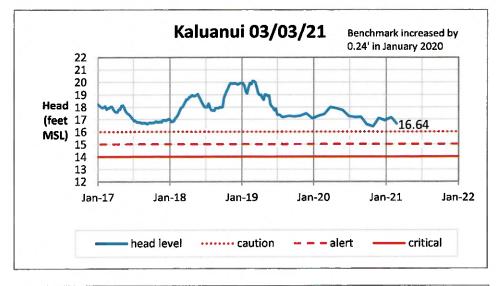


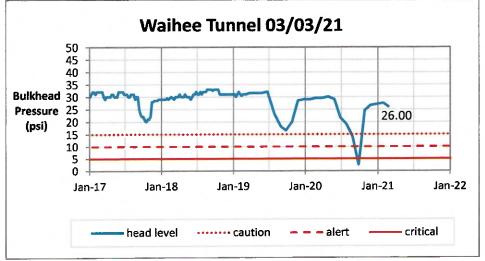




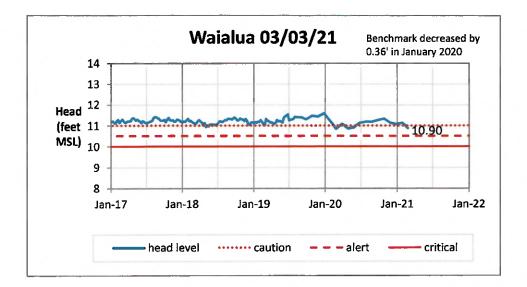
Head Report

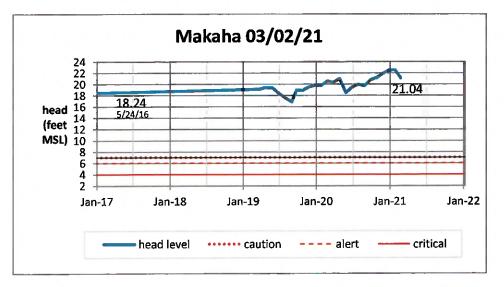


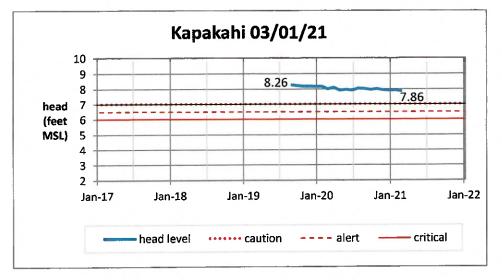


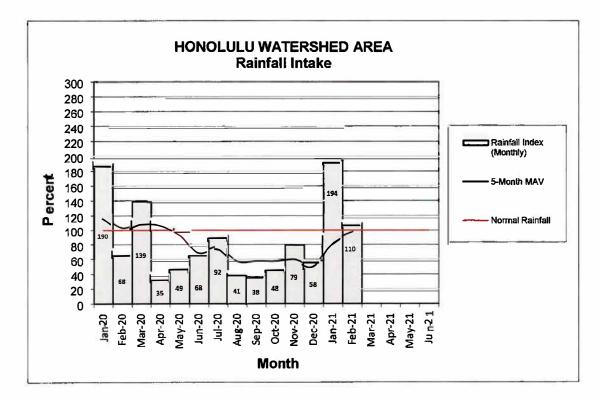


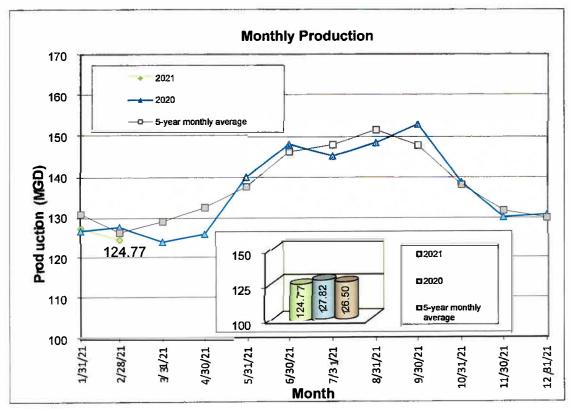
Head Report











ITEM FOR INFORMATION NO. 4

"March 29, 2021

SATELLITE	Chair and M	embers				
IMAGERY	Board of Wa	ater Supply				
LEAK SYSTEM	City and Co	unty of Honolulu				
ANALYSIS AND LEAK	······································					
DETECTIÓN SERVICES	Chair and M	embers:				
PROJECT	Subject:	Satellite Imagery Leak System Analysis and Leak Detection Services Project				
	and Jason N Division, will	Assistant Program Administrator, Water Resources Division, Jikaido, Assistant Program Administrator, Field Operations I report on the Satellite Imagery Leak System Analysis and ion Services Project.				

Respectfully submitted,

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

Attachment"

The foregoing was for information only.

DISCUSSION: Marc Chun, Assistant Program Administrator, Water Resources Division, and Jason Nikaido, Assistant Program Administrator, Field Operations Division, gave the report.

Board Member Max Sword asked if the BWS's non-revenue water loss ranged between 10% to 15% and if BWS was planning to use this technology to reduce the water loss.

Manager Lau confirmed that the non-revenue water loss is between 10 - 15%. Manager Lau added that this is the second year that the BWS is using Utilis and the BWS has increased efficiencies by fourfold with the same amount of resources, staffing, and equipment. The BWS is working to quantify the benefits by determining how much cost savings this new technology will help customers.

Board Member Sword stated if the non-revenue water loss can be reduced to 10% with the use of Utilis, it is well worth the money.

Chair Andaya inquired is the BWS quantifying how much can be saved with the increase of efficiency using Utilis.

Mr. Nikaido replied yes, with the use of Utilis, the BWS can increase efficiency and save.

Regular Session Minutes

Manager Lau mentioned that he first saw this new technology in the exhibit hall at the Annual Conference & Exposition (ACE) and Annual Conference for the American Water Works Association (AWWA). He learned that a satellite could detect chlorinated water using a spectral imaging signature and thought this might be too good to be true. It was at the Elemental Accelerator Program that the BWS was introduced to Utilis. Mr. Usagawa, Mr. Chun, Mr. Fuke, and Mr. Nikaido, the BWS, have since implemented the program. Manager Lau stated it is crucial for a utility to stay current with new technology and expressed his appreciation to Mr. Chun and Mr. Nikaido for the great teamwork and presentation.

Chair Andaya echoed Manager Lau's comments on staying current with new technology. He thanked the BWS for quantifying the results of technology to help make better decisions.



Safe, dependable, and affordable water now and into the future



Satellite Imagery Leak System Analysis and Leak Detection Services

March 29, 2021

Marc Chun, HBWS Jason Nikaido, HBWS



Safe, dependable, and affordable water now and into the future



Pilot Project

- · Vendor: Utilis Inc.
- Cost: \$307,000 over 2 fiscal years
- Scope of Work:
 - Acquire satellite imagery
 - Analyze data
 - Prepare leakage report





Pilot Project

- · Goals:
 - Verify technology
 - Reduce non-revenue water
 - Increase leak detection efficiency

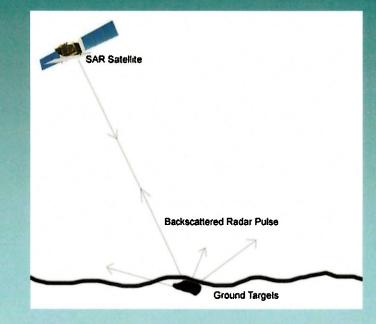
WATER FOR LIFE

Safe, dependable, and affordable water now and into the future



Synthetic Aperture Radar Satellites

- All weather capability
- Day/night operation
- Sensitive to dielectric properties
- Subsurface penetration
- The radar pulse is scattered by the ground targets, with some back to the antenna



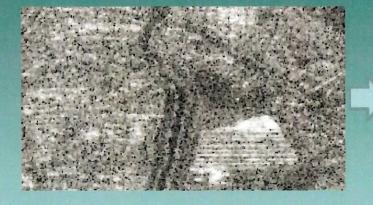


Safe, dependable, and affordable water now and into the future



What is satellite (radar) imagery?

The received signal



The data pixel values

01.079330477492307 85.52732049492804 86.7437037963445204 81.74370379634453 81.4281307812425 83.6394325.28412425 83.54633662046875	4.10331432647882 -5.132203123 -5.572647303002344 -5.572647303002344 -5.43510615236479 -22.43510615236479 -23.5256774823400 -5.590532564340033 -5.59053273037931	17 70440012210794 30 42775097500129 31 42775097500129 34 40 7040750200120312 34 40 704075100120312 34 40 70409130120312 34 40 70409130120312 35 4550764127444488 35 455064127444488		-2.5 (373-42193)(5719 -8 478670063356371 -13 53849765625 - (3 228-49136-84286)	2.438000 7560303 75 0.25400 8870 75603 85 0.2118079833 8021437 0.2118079833 8021437 0.2118079833 8021437 0.355070833 80217 0.555070812730008 0.5550708115720536 0.212950708115720536	1443628725389433 4.0399023252873 17375299243682344 21.638593994382328 -04.235393735387347 4.362939353847347 -12.6393935389328 -12.6393539339	11.05400024414063 14.176074548675 16.114946872074312 2.621374539297682 -18.54394646517 -18.543946465177781 -18.344959421575	154 854,72 8333334 535 96706,735125 1472,812 9596,77648 535,52766,501,17157 -14,265 875706,801,17157 -14,265 875706,80375 -8,5305,7306,5775 -43,511,7306,57751,25	12.47656496590938 4.8375930764150812 15-2759126953125 -12.56255400366625	4.199527805012/5 14.27562580514062 5.4764761400129501 14.2864761739752 4.2864761739752 1.71647012611271175 1.7497012611271175		7.26030301485 17.0640345434 14.0244330275 11.7215728759 -11.0575161525 4.14695302885
81.571369477942.87 81.57125947943.89 81.5725369443.89 81.5710376584378 81.5710376584378 81.57115755555555555555555 81.57155555555555555555 81.57155555555555555 81.5715555555555555 81.5715555555555555 81.5715555555555555 81.57155555555555555 81.5715555555555555 81.57155555555555555 81.5715555555555555 81.5715555555555555 81.5715555555555555 81.571555555555555 81.5715555555555555 81.571555555555555 81.571555555555555 81.571555555555555 81.57155555555555 81.57155555555555 81.5715555555555 81.571555555 81.571555555 81.571555555 81.57155555 81.57155555 81.5715555 81.5715555 81.571555 81.571555 81.571555 81.571555 81.571555 81.571555 81.571555 81.57155 81.57155 81.57155 81.57155 81.57155 81.57155 81.57155 81.57155 81.5715 81.	11 7777 0 678 1943 4 8605 935 878 80 - 8 83203 125 - 8 8220 3125 - 8 8220 7220 807 344 - 8 7710 807 320 479 - 8 820 507 300 1240 - 94 85425 4040 4073 - 54 8593 127 303 393 - 54 8593 127 303 - 54 8593 127 305 - 54 8593 127 305 - 54 8593 - 54 8593 127 305 - 54 8593 - 55 8595 - 55 8595 - 55 8595 - 55 8595 - 55 8595 -	17 309430422380394 39 42275809734049 47 349726622035196 48 59994455479135 48 6479865479135 49 1345379029320512 48 67964961267236 49 1345379029320512 48 67964961267246 39 33555214944667 48 1000441491224	24 54553457421675 11 59 49 49 28 125 -16 52 3465 7 517 549 -5 70 122 3465 7 517 549 -8 25 1990 64 3445 125 -17 182 12949 116 40 525 -12 7 182 36 6 125 125 -12 7 182 36 6 125 125	4.2151254000111251 20.25405001112551 -14.40525577636729 -8.475425577636729 -8.4754206236375 -8.4754206236375 -13.22549135494260	4.554943532273437 5.2115879985213542 4.72581368278175 4.5070853612752659 4.712395422752659 4.712395422752659	17 3712007430023944 21.61352919379223 -94.21552919379223 -9.30229105503817327 -12.610297002330013	10-11-040072070312 2-6215740373576962 -15-5435950405175 -16-707544021575781 -40-502809542,575	1472824096679648 3-5552760520117187 -14.265487570888438 -8-150537388375	6.6379030766130812 15-2795126033125 -12.36385400300625 -7.9713992328080675	5.476676394001295821 36-206-04572870312 -7 124000175-921575 -1 769012481175475	19-715-30/900-40-251 16-22017633-000-465 -16-020177539-3425 -6-02013720703-215	14 (284032275 (1.72)(5720750 -(1.057516)(525 -6.1409(30,2605
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14 (1442) 47 (18 (4065) 4 5225 (14402) 43/75 7 422/4 2007) 10 (407) 27 27 28 (7527) 10 (4 1 452) 14 (7667) 48/75 7 1 (2008) 77 13 (4047) 7 1 (2008) 77 13 (4047)	-34.954256474340975 -55.8993875833951 -85.414080493564803 -87.81453034473855	-14 218823149414063 -2 257661274434262 -2 200574743422	-12.71020611225125		-18 MILLING 1 174776		17. 39 PROPERTY (19.1.1.1.7.1	-15.554463227139243	+F-8153818468303125	-5 (6 338734 1388 9938	-9.3717696623976962	-20.0006146240
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Identify Point of Interests (POIs)

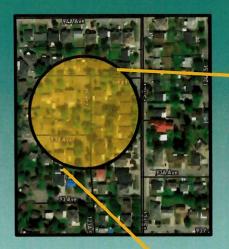




Safe, dependable, and affordable water now and into the future



Utilis survey method





WATER FOR LIFE

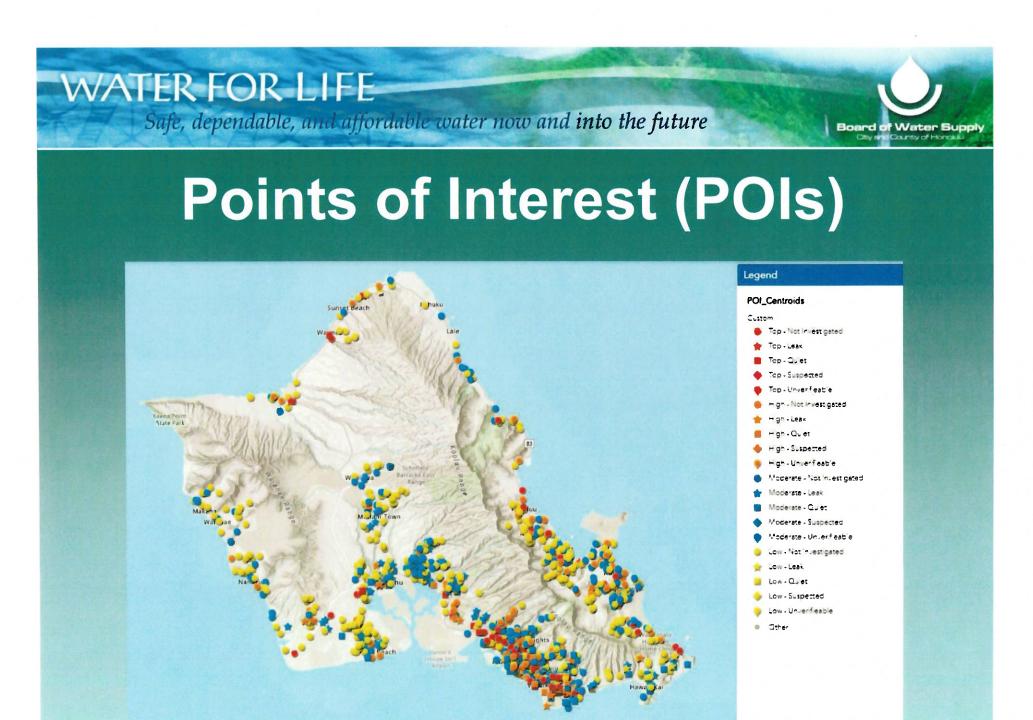
Safe, dependable, and affordable water now and into the future



Images and Analysis

Image	Miles	Image Date	POIs
1	2,100	Dec. 13, 22, 2019	728
2	500	June 13, 2020	190
3	613	Sept. 13, 2020	201

999 total POIs

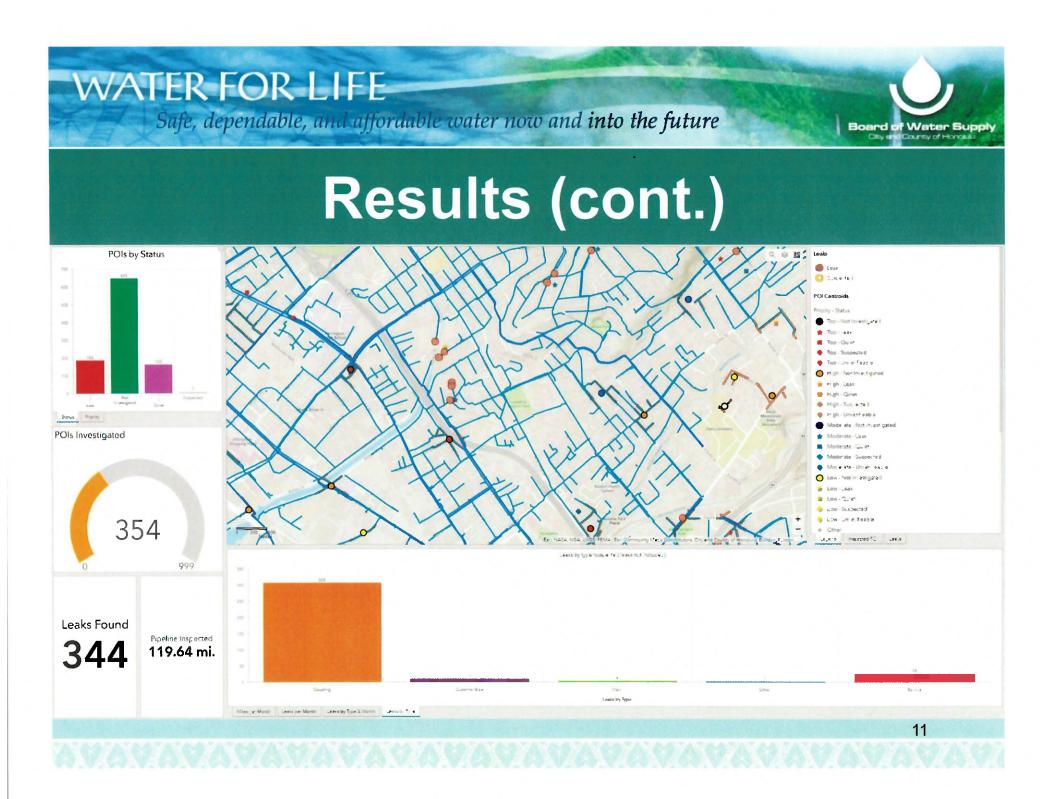






Results

	2019 Traditional	2020 Utilis Satellite Guided
Miles investigated	358	120
Leaks Found	255	344
Leaks per Mile	0.7	2.9





Pilot Project

- · Goals:
 - Verify technology
 - Reduce non-revenue water
 - Increase leak detection efficiency



BWS Next Steps

- "Pilot" program continues
- Proceed to "Year Two"
- Re-Image areas to look for improvements
- Evaluate results to determine long term implementation plans



Safe, dependable, and affordable water now and into the future



Questions?

ITEM FOR INFORMATION NO. 5

"March 29, 2020

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

Chair and Members:

Subject: Water Main Repair Report for February 2021

Michael Fuke, Program Administrator, Field Operations Division, will report on water main repair work for the month of February 2021.

Respectfully submitted,

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

Attachment"

The foregoing was for information only.

DISCUSSION: Chair Andaya recognized Mr. Michael Fuke.

Chair Andaya inquired if the 14 miles of pipeline surveyed by the leak detection team refers to the points of interest detected by Utilis.

Mr. Fuke confirmed that Utilis was used to determine the areas to be surveyed and added that 14 miles may seem like a very small amount, but the BWS' leak detection efforts are more efficient with this new technology. Before Utilis, the BWS crew would survey the water mains by large geographic areas; therefore, the miles surveyed would be more significant. Now, the leak detection team can focus on specified areas detected by Utilis, lowering the miles surveyed. Mr. Fuke stated the efficiency of using Utilis is worth it even if only half the number of miles is covered. He used the 30-inch main break near Hawaii Kai Golf Course as an example, the BWS team cross-checked their work with Utilis and found a possible leak on the only 30-inch main. It is possible that the main break could have been averted if the leak detection team was sent out to investigate the potential leak identified by Utilis. He commented Utilis seems to very useful and promising and agrees with Manager Lau that it would be interesting to see what it will be able to do in the future.

Mr. Fuke gave his Water Main Repair Report for February 2021, reporting 18 breaks, which consisted of three, four, six, and eight-inch main breaks that took approximately 14 hours to repair. The leak detection team surveyed 14 miles and found two water main leaks. The BWS team also found 31-meter coupling leaks.

Chair Andaya asked if the coupling meters were customer meters that would affect a customer's bill.

March 29, 2021

Regular Session Minutes

Manager Lau stated it would depend on what side of the meter was affected.

Mr. Fuke explained if the leak is on the inlet side or before the meter, it will not impact the customer. However, if the leak is on the outlet side or passed through the meter, this would impact the customer.

Manager Lau stated billing adjustments could be made to customer bills for meter leaks.

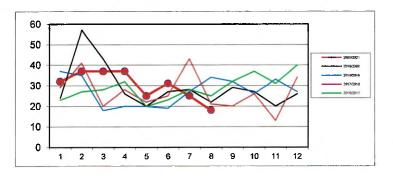
Chair Andaya thanked Mr. Fuke for his report.

WATER MAIN REPAIR REPORT

for February 2021

	JUL	AUG	SEP	ост	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
2020/2021	32	37	37	37	25	31	25	18					242
2019/2020	24	57	43	26	20	27	28	22	29	27	20	26	349
2018/2019	37	35	18	20	20	19	27	34	32	26	33	27	328
2017/2018	29	41	20	28	22	25	43	21	20	26	13	34	322
2016/2017	23	27	28	32	20	23	28	25	32	37	31	40	346

Date	Address	Size (In)	Pipe Type
2/1/2021	87-125 Kulakumu Pl, Waianae	8	DI
2/1/2021	86-277 Kawili St, Waianae	8	PVC
2/2/2021	98-1780 Ipuala Loop, Aiea	8	CI
2/5/2021	501 Halekou Rd, Kaneohe	6	CI
2/8/2021	95-179 Waikalani Dr, Mililani	6	CI
2/10/2021	41-202 Kalanianaole Hwy, Waimanalo	30	CC
2/10/2021	41-774 Mokulama St, Waimanalo	4	CI
2/10/2021	92-585 Makakilo Dr, Kapolei	16	CI
2/11/2021	92-678 Palailai St, Kapolei	4	CI
2/11/2021	87-124 Maaloa St, Waianae	8	CI
2/12/2021	1476 Kealia Dr, Honolulu	6	CI
2/13/2021	1530 Kealia Dr, Honolulu	6	CI
2/17/2021	98-120 Hekaha St, Aiea	8	PVC
2/17/2021	44-553 Kaneohe Bay Dr, Kaneohe	8	CI
2/18/2021	44-701 Nanamoana Pl, Kaneohe	4	CI
2/21/2021	3145 Alika Ave, Honolulu	8	PVC
2/23/2021	928 9th Ave, Honolulu	6	CI
2/25/2021	1448 Alewa Dr, Honolulu	4	CI



14 miles of pipeline were surveyed by the Leak Detection Team in the month of February.

MOTION TOThere being no further business Chair Andaya called for a motion toRECESS INTOadjourn the Open Session. Jade Butay so moved; seconded by Ray SoonEXECUTIVEand unanimously carried.SESSIONSeconded by Ray Soon

Upon unanimous approved motion, the Board recessed into Executive Session Pursuant to [HRS § 92-5 (a)(4)] at 3:16 PM to Consider Issues Pertaining to Matters Posted for Discussion at an Executive Session.

OPEN The Board reconvened in Open Session at 4:02 PM.

NO COMMENT

ABSENT

MOTION TO There being no further business Chair Andaya at 4:03 PM called for ADJOURN a motion to adjourn the Open Session. Jade Butay so moved; seconded by Max Sword and unanimously carried.

> The minutes of the Regular Meeting held on March 29, 2020 are respectfully submitted,

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APPROVED:

BRYAN P. ANDAYA Chair of the Board APR 2 6 2021

Date

March 29, 2021

SESSION

BRYAN P. ANDAYA KAPUA SPROAT

NA'ALEHU ANTHONY

ROGER BABCOCK JR.

RAY C. SOON MAX J. SWORD

JADE T. BUTAY

THE MINUTES OF THE REGULAR SESSION BOARD MEETING HELD ON MARCH 29, 2021 WERE

APPROVED AT THE APRIL 26, 2021 BOARD MEETING

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