

## MINUTES

### REGULAR MEETING OF THE BOARD OF WATER SUPPLY

August 26, 2019

At 2:00 PM on August 26, 2019 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  
Kapua Sproat, Vice Chair  
Ross S. Sasamura  
Jade T. Butay

Also Present: Ernest Lau, Manager and Chief Engineer  
Ellen Kitamura, Deputy Manager and Chief Engineer  
Barry Usagawa  
Dymian Racoma  
Erwin Kawata  
Henderson Nuuhiwa  
Jason Takaki  
Jennifer Elflein  
Joe Cooper  
Kathleen Elliott-Pahinui  
Kathy Mitchell  
Kevin Ihu  
Michele Thomas  
Mike Fuke  
Mike Matsuo  
Raelynn Nakabayashi

Others Present: Jessica Wong, Deputy Corporation Counsel  
Jeff Lau, Deputy Corporation Counsel  
David Brown, Morgan, Lewis & Bockius LLP  
Brian McDonald, Exponent  
Steve Young, Intera  
Chris Harris, Harris & Company  
Christina Jedia, Civil Beat

Absent: Kay C. Matsui  
Ray C. Soon  
Max J. Sword

**APPROVAL OF  
MINUTES**

Approval of the Minutes of the Regular Meeting held on July 22, 2019.

**MOTION  
TO APPROVE**

Ross Sasamura and Jade Butay motioned and seconded, respectively, to approve the Minutes of the Regular Meeting of July 22, 2019. The motion was unanimously carried.

THE MINUTES OF THE REGULAR BOARD MEETING ON JULY 22, 2019 WERE APPROVED AT THE AUGUST 26, 2019 BOARD MEETING			
	AYE	NO	COMMENT
BRYAN P. ANDAYA	X		
KAPUA SPROAT	X		
KAY C. MATSUI			ABSENT
RAY C. SOON			ABSENT
MAX J. SWORD			ABSENT
ROSS S. SASAMURA	X		
JADE T. BUTAY	X		

"August 26, 2019

ADOPTION OF  
RESOLUTION  
NO. 902, 2019

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

Chair and Members:

Subject: Adoption of Resolution No. 902, 2019,  
Richelle Kobashigawa, 2019 Employee of the Year

We are pleased to announce that the 2019 Employee of the Year for the Board of Water Supply is Ms. Richelle Kobashigawa. She is an Accountant IV and serves as the Disbursement and Fiscal Controls Supervisor in the Finance Division.

We recommend the adoption of Resolution No. 902, 2019, to honor Ms. Kobashigawa for her outstanding service and dedication to the Board of Water Supply.

Respectfully submitted,

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

Attachments"

Chair Andaya read Resolution No. 902, 2019.



**BOARD OF WATER SUPPLY  
CITY AND COUNTY OF HONOLULU**

**RESOLUTION NO. 903, 2019**

**KATHLEEN ELLIOTT-PAHINUI  
2019 MANAGER OF THE YEAR**

**WHEREAS**, KATHLEEN M. ELLIOTT-PAHINUI, Public Information Officer who oversees the Communications Office (CO), has been selected as the Board of Water Supply (BWS) Manager of the Year for 2019; and

**WHEREAS**, MS. ELLIOTT-PAHINUI joined the BWS in July 2016 and has since successfully managed the staff that develops and implements public education programs to inspire personal stewardship of Oahu's precious water resources, and provides strategic communications services to uphold its transparency and accountability to its ratepayers and one million users; and

**WHEREAS**, under KATHLEEN ELLIOTT-PAHINUI's exemplary leadership coupled with a deep dedication to this agency's vision of Ka Wai Ola – Water for Life, the BWS has increased its public education and outreach; has improved its rapport with the community, other agencies, and elected officials; and now more proactively engages island water users through social media use and regularly livestreaming and video producing BWS Board and other related meetings; and

**WHEREAS**, she does an outstanding job of managing and addressing diverse and high-profile BWS issues of concern with a high degree of discipline and integrity while continuing to assure the public that information from this agency is trustworthy, accurate, and complete; and

**WHEREAS**, in addition to her BWS responsibilities, MS. ELLIOTT-PAHINUI serves her community as North Shore Neighborhood Board Chair, presiding over monthly public meetings that promote civic engagement to recognize and help resolve residents' concerns; and

**WHEREAS**, KATHLEEN ELLIOTT-PAHINUI has proven herself to be an excellent manager who personifies attributes that employees desire in their leaders as she leads by example, continually maintains a well-functioning work environment for the CO staff, and constantly provides them with professional growth opportunities; and

**WHEREAS**, MS ELLIOTT-PAHINUI's selection as the 2019 Board of Water Supply Manager of the Year and her nomination to the City Manager of the Year Recognition Ceremony has brought pride and honor to the BWS and all her family and friends; now, therefore

**BE IT RESOLVED** by the Members of the Board of Water Supply, City and County of Honolulu, that we hereby do express to KATHLEEN M. ELLIOTT-PAHINUI our heartfelt appreciation for her outstanding service to the Department and to the City and County of Honolulu; and

**BE IT FURTHER RESOLVED** that the Members of this Board express our sincere congratulations upon her selection as the Board of Water Supply Manager of the Year for 2019; and

**BE IT FINALLY RESOLVED** that this Resolution be presented to KATHLEEN M. ELLIOTT-PAHINUI with our warmest aloha and best wishes for all her future endeavors.



Resolution No. 903, 2019

Adopted this 26<sup>th</sup> day of August 2019  
Board of Water Supply, Honolulu, Hawaii

BRYAN P. ANDAYA

Chair of the Board

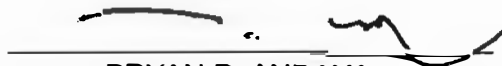
**MOTION TO  
ADOPT**

Jade Butay motioned to adopt Resolution 902, 2019, Richelle Kobashigawa, 2019 Employee of the Year, and was seconded by Ross Sasamura. The motion was unanimously carried.

In recognition as the BWS 2019 Employee of the Year, Chair Andaya, Vice Chair Sproat and Manager Lau presented Ms. Kobashigawa with a lei, plaque and a framed signed resolution. Ms. Kobashigawa will represent the Board of Water Supply at the City and County of Honolulu's annual Employees' Recognition Program next month.

RESOLUTION NO. 902, 2019, RICHELLE KOBASHIGAWA, 2019 EMPLOYEE OF THE YEAR ADOPTED ON AUGUST 26, 2019.			
	AYE	NO	COMMENT
BRYAN P. ANDAYA	X		
KAPUA SPROAT	X		
KAY C. MATSUI			ABSENT
RAY C. SOON			ABSENT
MAX J. SWORD			ABSENT
ROSS S. SASAMURA	X		
JADE T. BUTAY	X		

Adopted this 26<sup>th</sup> day of August 2019  
Board of Water Supply, Honolulu, Hawaii

  
BRYAN P. ANDAYA  
Chair of the Board

ADOPTION OF  
RESOLUTION  
NO. 903, 2019

"August 26, 2019

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

Chair and Members:

Subject: Adoption of Resolution No. 903, 2019,  
Kathleen M. Elliott-Pahinui, 2019 Manager of the Year

We are pleased to announce that the 2019 Manager of the Year for the Board of Water Supply is Ms. Kathleen M. Elliott-Pahinui. She is the Information Officer of the BWS and leads the Communications Office team.

We recommend the adoption of Resolution No. 903, 2019, to honor Ms. Elliott-Pahinui for her outstanding, leadership, service, and dedication to the Board of Water Supply.

Respectfully submitted,

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

Attachments"

Chair Andaya read Resolution No. 903, 2019.



## **BOARD OF WATER SUPPLY**

**CITY AND COUNTY OF HONOLULU**

### **RESOLUTION NO. 902, 2019**

#### **RICHELLE KOBASHIGAWA 2019 EMPLOYEE OF THE YEAR**

**WHEREAS, RICHELLE KOBASHIGAWA, an Accountant IV Disbursement and Fiscal Controls Supervisor with the Finance Division, has been a dedicated and exceptional employee since joining the Board of Water Supply (BWS) in December 1981, and was selected as the Department's 2019 Employee of the Year; and**

**WHEREAS, MS. KOBASHIGAWA greatly contributes to the BWS's endeavors to maintain reliable and sound financial practices by consistently completing her tasks efficiently and accurately no matter the situation; and**

**WHEREAS, MS. KOBASHIGAWA is well regarded as the Finance Division's "go to" person for her knowledge, understanding, and willingness to help staff from throughout the BWS when needed; and**

**WHEREAS, in addition to her normal duties, she has and continues to go beyond the call of duty to work on special tasks that have resulted in greater employee satisfaction and productivity; and**

**WHEREAS, RICHELLE KOBASHIGAWA has been selected as a Board of Water Supply Employee of the Year and will go on to represent the BWS in the upcoming City Employee of the Year Recognition Ceremony, bringing pride and honor to the Department, her family, and friends; 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 RICHELLE KOBASHIGAWA, our sincere appreciation for her outstanding service to the Department and to the City and County of Honolulu; and**

**BE IT FURTHER RESOLVED that the Members of this Board express to RICHELLE KOBASHIGAWA our sincere congratulations upon her selection as the Board of Water Supply Employee of the Year for 2019; and**

**BE IT FINALLY RESOLVED that this Resolution be presented to MS. KOBASHIGAWA with our heartfelt aloha and best wishes for success in all her future endeavors.**



**Resolution No. 902, 2019**

**Adopted this 26<sup>th</sup> day of August 2019  
Board of Water Supply, Honolulu, Hawaii**

**BRYAN P. ANDAYA  
Chair of the Board**

**MOTION TO  
ADOPT**

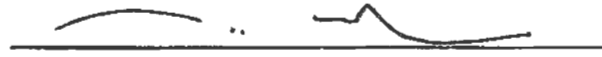
Ross Sasamura motioned to adopt Resolution 903, 2019, Kathleen Elliott-Pahinui, 2019 Manager of the Year, and was seconded by Kapua Sproat. The motion was unanimously carried.

In recognition as the BWS 2019 Manager of the Year, Chair Andaya, Vice Chair Sproat and Manager Lau presented Ms. Elliott-Pahinui with a lei, a plaque, and a framed signed resolution. Ms. Elliott-Pahinui will represent the Board of Water Supply at the City and County of Honolulu's annual Employees' Recognition Program next month.

Ms. Elliott-Pahinui expressed her appreciation to her staff for all the hard work they do for the Board of Water Supply.

RESOLUTION NO. 903, 2019, KATHLEEN ELLIOTT-PAHINUI, 2019 MANAGER OF THE YEAR ADOPTED ON AUGUST 26, 2019.			
	AYE	NO	COMMENT
BRYAN P. ANDAYA	X		
KAPUA SPROAT	X		
KAY C. MATSUI			ABSENT
RAY C. SOON			ABSENT
MAX J. SWORD			ABSENT
ROSS S. SASAMURA	X		
JADE T. BUTAY	X		

Adopted this 26<sup>th</sup> day of August 2019  
Board of Water Supply, Honolulu, Hawaii

  
BRYAN P. ANDAYA  
Chair of the Board



ITEM FOR INFORMATION NO. 1

"August 26, 2019

PRESENTATION  
OF THE 2019  
UNDERSTANDING  
RESIDENT  
PERCEPTIONS

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

Chair and Members:

Subject: Presentation of the 2019 Understanding Resident  
Perceptions of The Board of Water Supply By  
Ward Research

Every two years, the Board of Water Supply does a field survey via telephone calls on customer satisfaction, impressions and concerns about our ability to deliver safe, dependable and affordable water. Becki Ward of Ward Research will present the results of the 2019 survey which will also show results from 2015 and 2017 for comparison and trends.

Respectfully submitted,

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

Attachment"

The foregoing was for information only.

DISCUSSION: Chair Andaya invited Rebecca Ward of Ward Research to give her presentation. Ms. Ward said that this is a tracking survey that started in 2015. The survey was repeated in 2017 and now again in 2019.

Ms. Ward covered that the survey's objectives and methodology, overall satisfaction with the Board of Water Supply (BWS); tracking satisfaction of attributes; perception about rates; perception about the affordability of water services; message recall from the BWS; news recall about the BWS, differentiating water from sewer – bill payers only, and additional findings and summary of findings.

Ms. Ward spoke on the methodology of the survey that they conducted among 682 Oahu residents by cellphone or landline with a maximum sampling error +/- 3.6%.

Vice Chair Sproat inquired what time were calls made to the residents and how many times were they called back.

Ms. Ward responded that they have found the best time to call is between 12:30 p.m. and 8:30 p.m. due to the use of cellphones. If there is no

answer, they will call back three to five times especially those who are hard to reach based on the demographics of the sample.

Ms. Sproat asked about the percentage of landline versus cellphone called. Ms. Ward responded, in general, the percentage is 80% cellphones and 20% landlines.

Board Member Butay asked about the geographic distribution of the sample. Ms. Ward responded that Ward Research uses a sample size and geographic areas that are proportionate to the City Council Districts. The data showed lower satisfaction with the BWS in the Leeward and Ewa areas. Ms. Ward noted that a larger geographical sample size could make a statistical difference.

Mr. Andaya inquired if increased dissatisfaction in the Leeward and Ewa Plain areas could be related to either the water rates or water main breaks. Ms. Ward noted from past experience, that the higher the bill, the higher the dissatisfaction. However, other factors such as water main breaks and traffic issues could contribute to resident dissatisfaction.

Mr. Lau added that residents on the west side have a longer commute and main breaks could cause traffic disruptions. Mr. Lau indicated that he asked Ms. Ward to see if she noted any trends based on geographic area and the only trend was lower levels of satisfaction in the Leeward and Ewa Plain areas.

Mr. Butay commented that the bill payers cannot make a distinction between water charges and sewer charges. Mr. Lau added that residents with newer landscaping in the Ewa Plain may use more water for irrigation. When customers receive their bill from BWS, it has both the water and sewer charges. Surveys over the past three consecutive years show that residents have difficulty in understanding that the charges are from separate agencies, BWS and Environmental Services (ENV). Because the bill comes in a BWS envelope, the customer perceives it as the water bill.

Mr. Butay inquired if BWS collects fees from ENV for the billing service. Mr. Lau explained that ENV pays their fair share of the cost. BWS started providing billing services for ENV several years ago for efficiency purposes.

Mr. Lau expressed his appreciation to Ward Research. The results have been informative for the BWS. This is an opportunity for BWS to further educate the residents on the affordability of water, charging less than a penny a gallon.

Board Member Sasamura suggested enclosing a graphic with the water bill to distinguish between water and sewer charges.

Mr. Andaya suggested that there needs to be education for non-bill payers in terms of their perception of water usage and cost.

Mr. Lau expressed that it is a challenge across the country for the non-bill payers who do not receive a monthly bill because they live in a larger apartment complex. Many times, the water and sewer charges are incorporated into the maintenance or association fees.

Mr. Lau also commented that on a positive note, there has been a significant improvement in the residents satisfaction to response time for water main breaks.

Mr. Lau expressed his gratitude to the Field Operations Division who repair the water mains. Mr. Lau also thanked the Communications Office for diligently getting the information out to the media, the elected Officials and other agencies.

Mr. Lau noted that BWS has an outstanding partnership with the various City and State agencies that provide assistance during water main breaks and other emergency situations. Mr. Lau expressed his profound appreciation to Andrew Perriera, Public Information Officer in the Mayor's office; Ty Fukumitsu, City Department of Transportation Services; and Ed Sniffen, State Department of Transportation. Mr. Lau also thanked the officers of the Honolulu Police Department for providing traffic control to keep the field crews and public safe and minimize traffic disruptions.



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

# **Understanding Resident Perceptions of the Board of Water Supply**

Prepared for:



**Board of Water Supply**

**July 2019**

# OBJECTIVES AND METHODOLOGY

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## OBJECTIVES

To track measures of satisfaction and other key metrics related to perceptions of the Board of Water Supply and the fulfillment of its mission

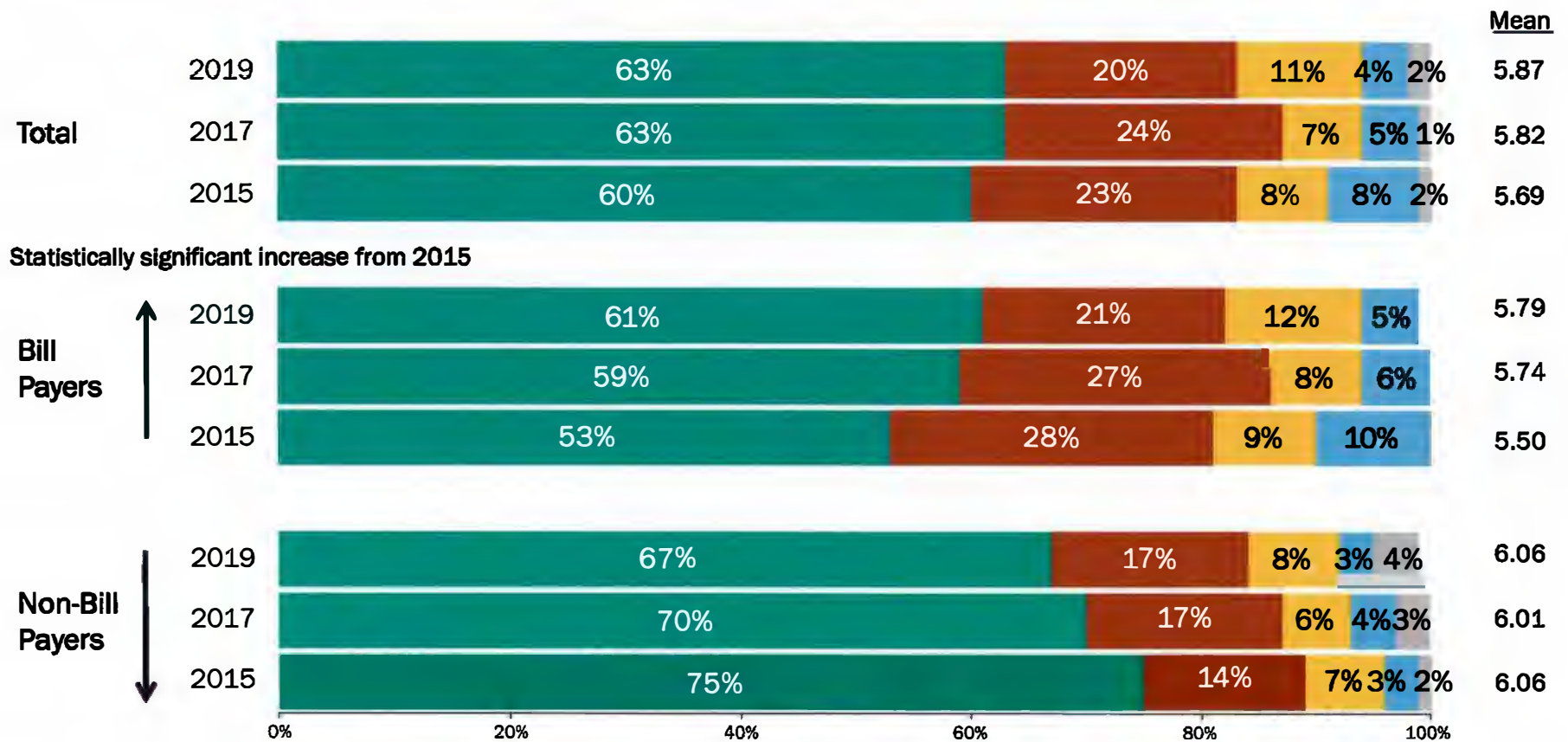
## METHODOLOGY

- Telephone survey
- April 1-22, 2019
- n=682 Oahu residents
- +/-3.6% maximum sampling error
- 3<sup>rd</sup> wave (2015, 2017) of tracking study

# OVERALL SATISFACTION WITH THE BWS

How would you rate your overall satisfaction with the Board of Water Supply?  
1=EXTREMELY DISSATISFIED; 7=EXTREMELY SATISFIED

■ Strong Satisfaction (6-7 rating) ■ Moderate Satisfaction (5 rating) ■ Low Satisfaction (4 rating) ■ Dissatisfaction (1-3 rating) ■ Don't know



# TRACKING SATISFACTION WITH ATTRIBUTES

STRONG SATISFACTION: 6-7 RATING	2015	2017	2019
Providing water to customers	82%	83%	85%
Ability to provide dependable water	82%	78%	81%
Reliable service	76%	78%	79%
Quality of water	72%	73%	75%
Ability to provide safe water	77%	73%	74%
Water pressure	72%	69%	71%
Taste of water	70%	70%	69%
Courtesy of employees	63%	67%	68%
Overall professionalism of employees	63%	66%	66%
Overall customer service	62%	67%	64%
Format and presentation of the bill (bill payers only)	56%	58%	63%
<b>Fast response to trouble calls</b>	50%	<b>58%</b>	<b>62%</b>

Denotes statistically significant increase from 2015



# TRACKING SATISFACTION WITH ATTRIBUTES

STRONG SATISFACTION: 6-7 RATING	2015	2017	2019
Accurate billing (bill payers only)	55%	60%	60%
Accessibility of employees	56%	56%	59%
Employees following through with what they say	54%	58%	58%
Accuracy of employees	57%	58%	58%
Efficiency of employees	58%	58%	58%
Repairing, maintaining, and replacing Oahu's water delivery system	54%	53%	53%
Informing residents how to conserve water and keep bills lower	52%	54%	53%
Protecting, managing, and sustaining Oahu's water resources	56%	54%	51%
Condition of Oahu's water delivery system	52%	48%	49%
Ability to keep water rates affordable	44%	48%	40%
Fairness of water rates	37%	45%	37%
Things they do to reach out to residents	31%	33%	32%

Denotes statistically significant decrease from 2017

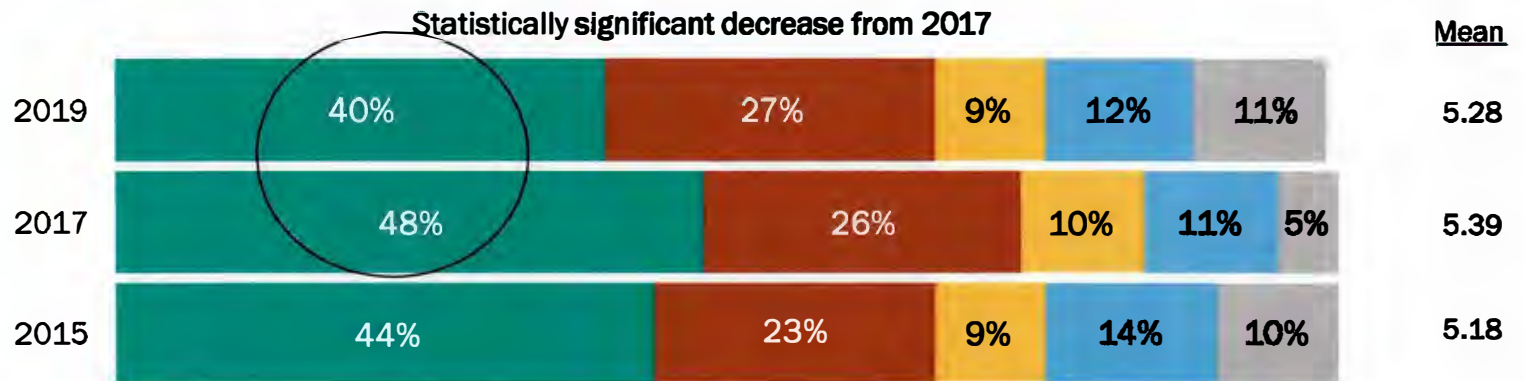


# PERCEPTIONS ABOUT RATES

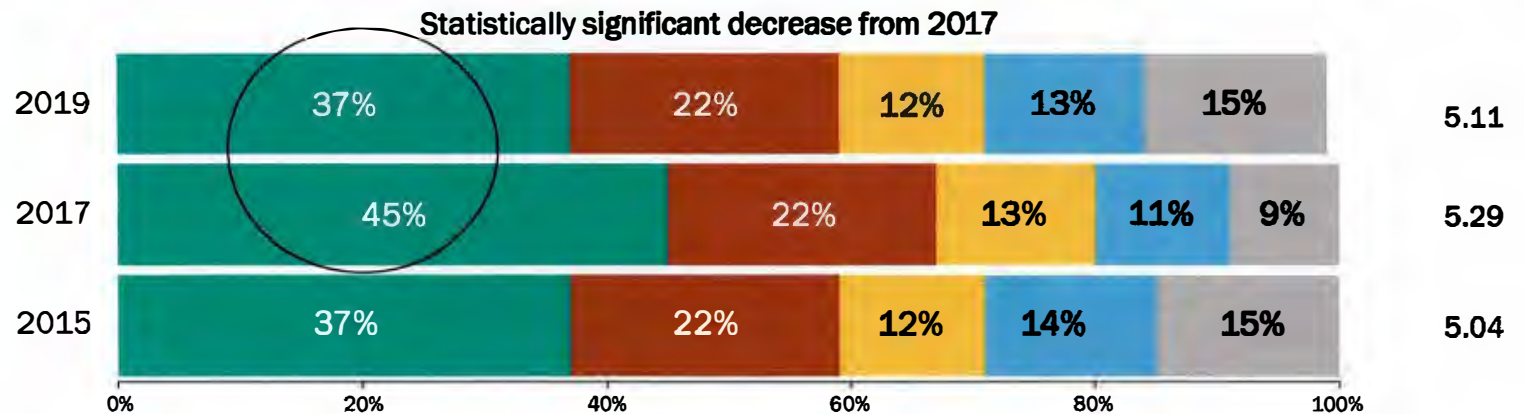
How satisfied are you with:  
1=EXTREMELY DISSATISFIED; 7=EXTREMELY SATISFIED

■ Strong Satisfaction (6-7 rating) ■ Moderate Satisfaction (5 rating) ■ Low Satisfaction (4 rating) ■ Dissatisfaction (1-3 rating) ■ Don't know

**BWS's ability  
to keep water  
rates  
affordable**

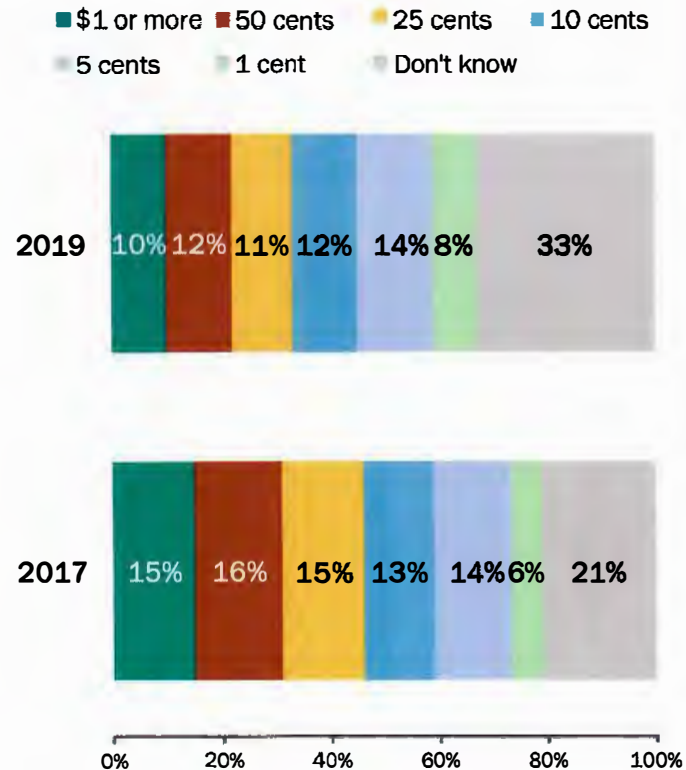


**Fairness of  
water rates**

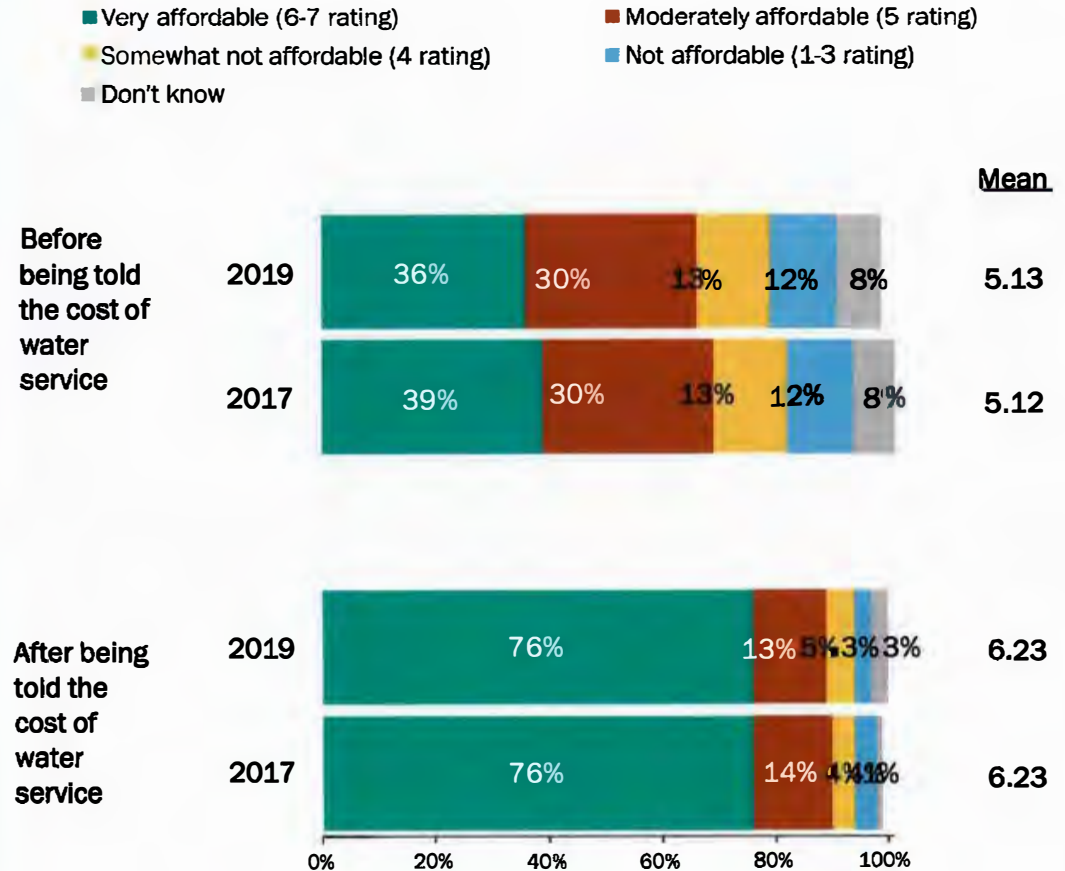


# PERCEPTIONS ABOUT THE AFFORDABILITY OF WATER SERVICE

On average, how much per gallon do you think the Board of Water Supply charges for residential water services?

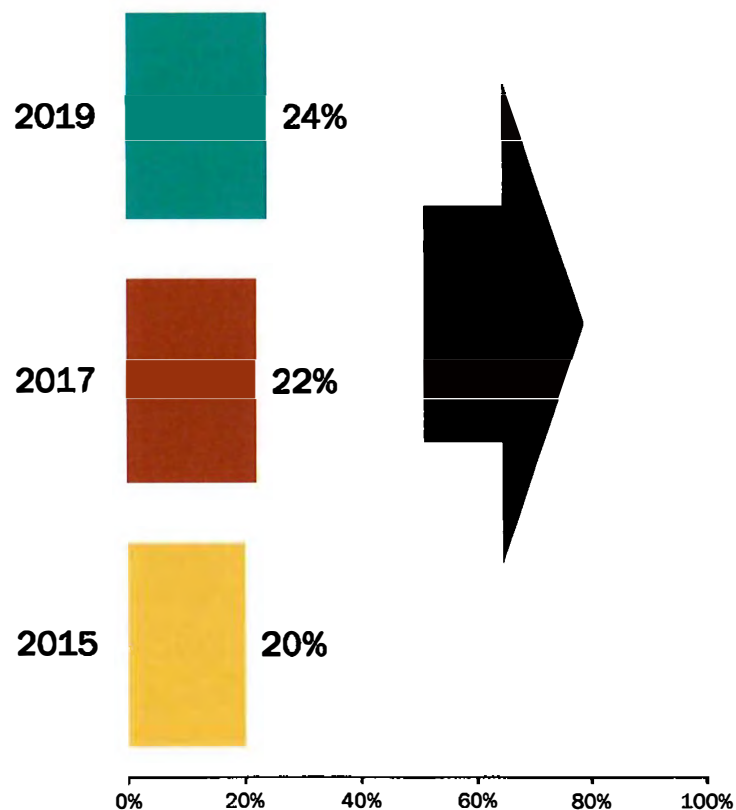


How affordable would you say your water service is?

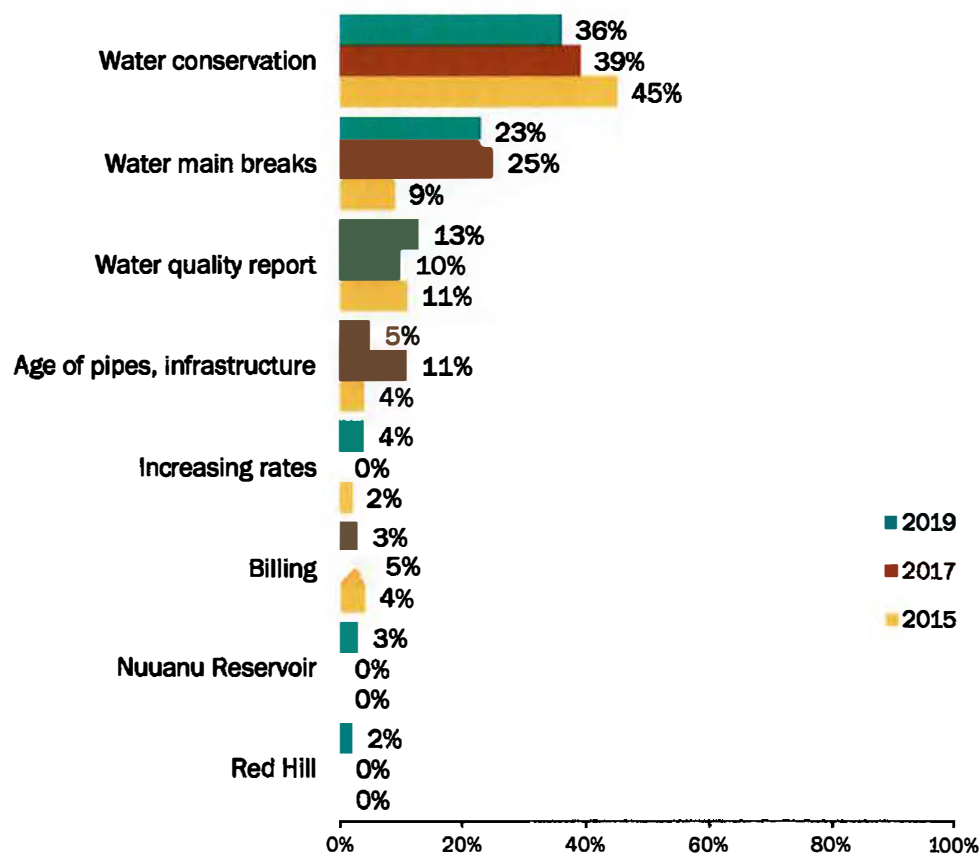


# MESSAGE RECALL, FROM THE BWS

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

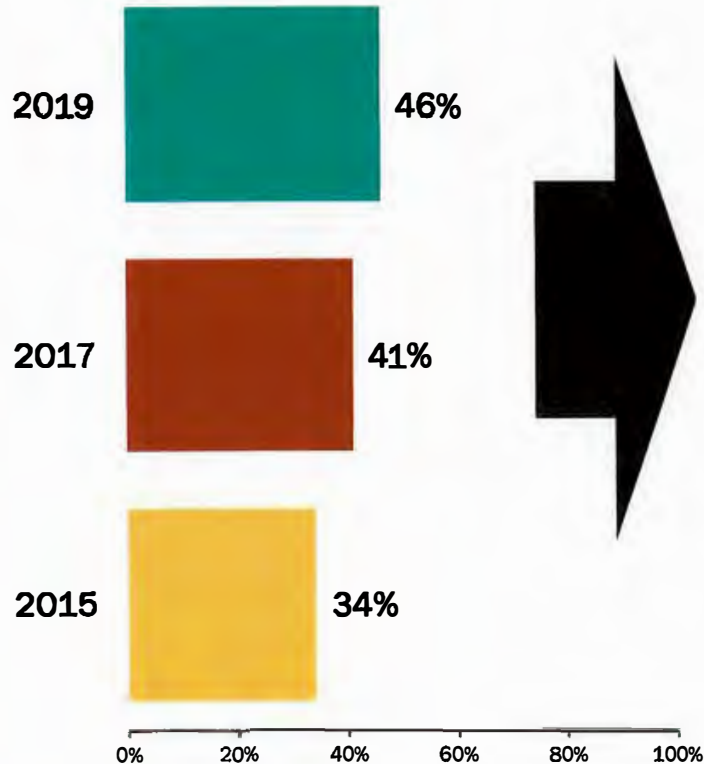


What do you remember seeing or hearing?  
Top Responses

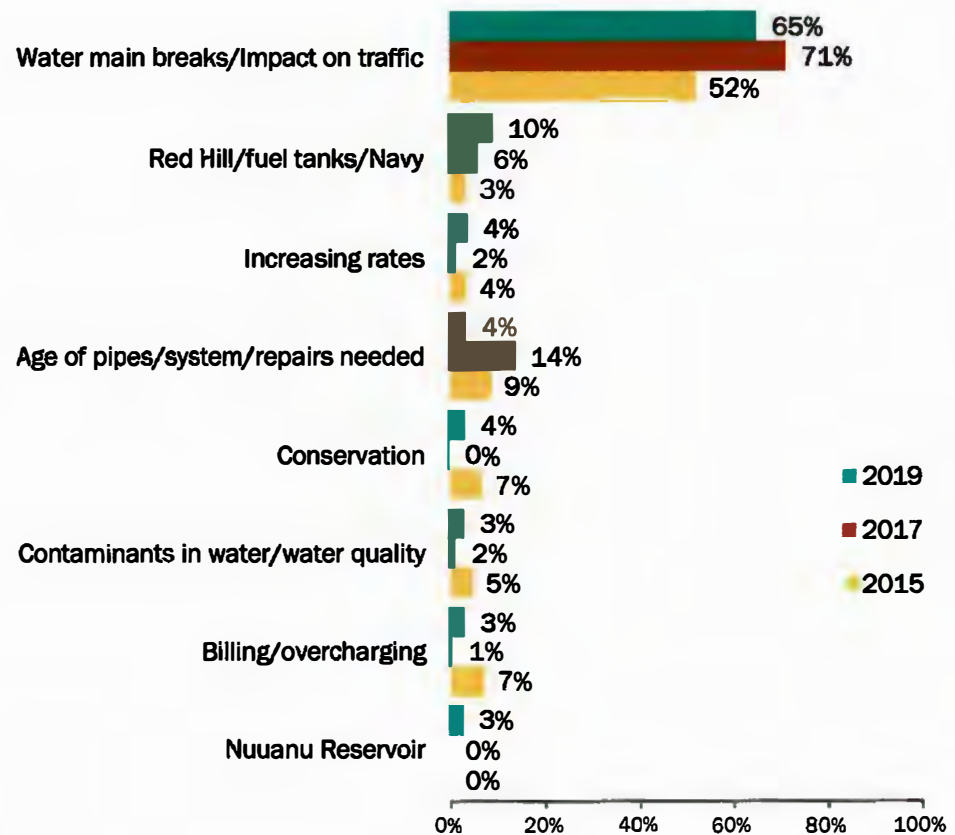


# NEWS RECALL, ABOUT THE BWS

And in the past 6 months, do you remember seeing or hearing any stories in the news concerning the Board of Water Supply?



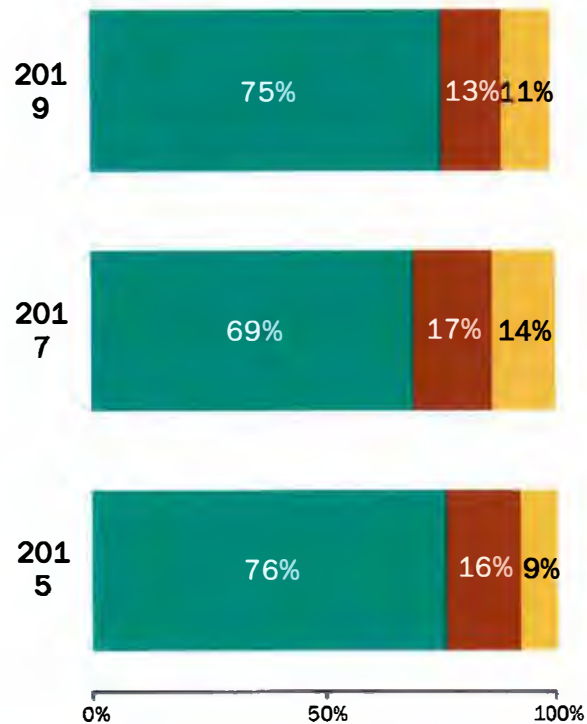
What do you remember seeing or hearing?  
Top Responses



# DIFFERENTIATING WATER FROM SEWER – BILL PAYERS ONLY

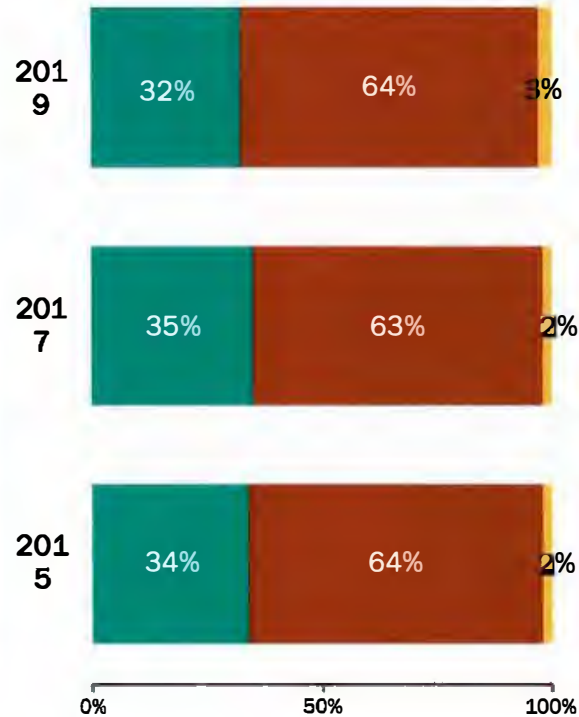
Is your water bill combined with  
your sewer bill?

■ Yes ■ No ■ Don't know



Do you know that your water and  
sewer charges are from two  
different agencies?

■ Yes ■ No ■ Don't know



Are your water charges higher or  
lower than your sewer charges?

■ Higher ■ Lower ■ Don't know



# ADDITIONAL FINDINGS

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- BWS still among the most trusted sources of information about freshwater issues on Oahu, along with scientists
- Little to no change in awareness of BWS's programs and activities since baseline measure; awareness is again highest for "repair and maintenance of the water system"
- Very few bill payers have contacted the BWS either about a bill (although, the proportion did increase) or something else in the past 6 months; more than half of those who did indicated strong satisfaction with how the communication was handled
- Levels of satisfaction with overall customer service provided by the BWS, as well as levels of satisfaction with BWS employees largely unchanged from past years



# SUMMARY OF FINDINGS

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- Continued strong satisfaction with BWS, but note the downward trend in satisfaction among non-bill payers; bill payer satisfaction, however, is trending up
- Levels of satisfaction with attributes tested are fairly static compared to past years
- Two differences (declines) in levels of satisfaction from 2017 are statistically significant, both for attributes relating to rates: fairness of rates and ability of the BWS to keep rates down
- Recall of news stories about BWS and messages from the BWS ticked up, including about the rate increases and Red Hill fuel tanks, but those were far from being the stories or messages recalled most often
- Water service is still perceived to be more expensive than it actually is, including among bill payers
- Conclusions: Customers slow to recall news about rate increases but, based on ratings for attributes regarding rates, increase is affecting perceptions of – but not overall satisfaction with – the BWS

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# QUESTIONS



ITEM FOR INFORMATION NO. 2

"August 26, 2019

CAPITAL  
IMPROVEMENT  
PROGRAM

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

Chair and Members:

Subject: Fiscal Year 2018-2019 (FY19) Capital Improvement  
Program Review

Jason Takaki, Capital Projects Division Program Administrator, will provide a review of the recently completed FY19 Capital Improvement Program (CIP).

The funding appropriations for the following projects in the FY19 CIP budget were deferred or reduced and were transferred to the CIP Contract Adjustment Account. The Contract Adjustment Account is used to provide additional funding for contract change orders and projects that the bid awards are higher than budgeted.

Item No. 47	WATER METER TRANSPONDERS REPLACEMENT – PHASE II	(\$5,000,000)
Item No. 65	KAPOLEI BASE YARD AND BRACKISH WATER DESALINATION FACILITY	(\$3,000,000)
Item No. 48	RTU UPGRADES	(\$400,000)
Item No. 54	FACILITY REPAVING AT VARIOUS LOCATIONS	(\$1,000,000)
	CIP CONTRACT ADJUSTMENT ACCOUNT	\$9,400,000

The following projects were funded with the appropriations reallocated to the Contract Adjustment Account:

<b>Job/Item</b>	<b>Project Title</b>	<b>Amount</b>
2017-036	Kalaeloa Seawater Desalination Facility	\$642,899
16-032E0	Emergency Generators at Kalihi Yard & Shaft, Halawa Shaft & Kunia Wells I	25,541.00
12-018	Beretania Emergency Generator System Upgrade	313,416.00
2017-045	Project Management Services for Security Projects	659,552.00
2015-050	Makiki & Waialae Iki 180 Reservoirs Altitude Valve Assemblies Replacement	50,455.00
2015-034	Aulua Road & Ulukahiki Street 16-Inch Water Mains	21,786.00
2015-018	Punananani Wells Motor Control Center Replacement	35,657.00
18-052T0	Palolo Wells Chlorinator Reroofing	8,370.00
18-052T0	Kaimuki Pump Station Electrical Improvements	141,604.00
18-052T0	Hoaeae Wells Reroofing	31,061.00
16-0450	Lualualei Line Booster System Improvements	23,149.00
2018-0580	Mauna Olu 530 Reservoir Improvements	35,099.00
2013-42500	Capital Projects Division Construction Management Services	1,000,192.00
2012-039D0	Beretania Engineering Building Window Repairs	893.00
2015-0040	Investment Grade Audit Agreement (ESPC) - BWS Facilities	28,148.00
17-0510	Diamond Head Line Booster Pumping Units Replacement	20,841.00
17-0550	Pearl City Wells I Renovation	2,987.00
18-052T0	Alewa Booster No. 1 Pump Station Reroofing	3,387.00
2013-008B	Pump Renewal & Replacement at Kaluanui, Diamond Head, et. al.	21,848.00
16-029E0	Kalihi Corporation Yard Fueling Station Renovation & Kalihi Shaft Waste Removal	1,055.00
18-017Q0	Kunia Wells GAC Facility Improvements	297,490.00
2016-0160	Makakilo Water System Improvements, Part III	56,796.00
2017-0120	Mililani Wells II Pump Replacement	271,261.00
16-043E0	Access Road Repair & Drainage Improvements for Kalihi, Niu Valley and Waianae Reservoirs	16,559.00
18-017Q0	Halawa Shaft Reroofing	666,520.00
2018-0230	Wilhelmina Rise 811 Reservoir Replacement	54,978.00
2018-0350	Sand Island Water System Improvements	5,037.00
2017-0040	Waialeale Gulch Exploratory Well Condition Assessment	7,500.00
14-042E0	Kaonohi 277 & Moanalua 405 No. 1 & No. 2 Reservoirs Repair	12,211.00
		<b>\$4,456,292</b>

The remaining balance was unencumbered at the end of the fiscal year.

Respectfully submitted,

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

Attachments"

The foregoing was for information only.

DISCUSSION: Jason Takaki, Program Administrator, Capital Projects Division, gave the report.

Mr. Andaya asked about the water main replacement of \$31.5 million and how many miles were awarded.

Mr. Takaki replied that the goal is 21 miles of pipeline replacement per year until 2028. The target for 2019 was 7 miles in which the awards were for 7.8 miles. For the current fiscal year, FY2020, the target is 8 miles.

In reviewing the budgeted versus encumbered graph, Mr. Andaya noticed that it appears that 2019 encumbrance rate is 87.7%, which appears lower than previous years. He asked if this is a trend or a one-time occurrence. Mr. Takaki responded there was one project that they deferred for \$17 million which made up 13% of the budget.

Mr. Lau indicated that the deferred project was the water meter transponder project that would have replaced 60,000 meter transponders. The meter transponders send the water meter readings to a radio mounted in a vehicle driving by the water meter. The project was originally scheduled to begin when the increase in water rates were being implemented. The project was deferred because we felt that the customers and BWS would be facing too many changes at the same time, new water rates, changes in the water bills and the 60,000 meter transponder change-out project.

The Board members present agreed with this approach.

# WATER FOR LIFE

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Board of Water Supply  
City and County of Honolulu

## Quarterly Capital Improvement Program Status Report All Divisions as of June 30, 2019

Quarter Awarded	JUL - SEP		OCT - DEC		JAN - MAR		APR - JUN		Awarded to Date	Total Budgeted
Design Contracts Awarded (#/\$)	0	\$0.00	1	\$77,903.00	11	\$6,331,855.22	29	\$20,704,516.97	\$27,114,275.19	\$20,295,000.00
Construction Contracts Awarded (#/\$)	17	\$2,990,679.60	5	\$2,954,286.00	8	\$8,573,962.41	28	\$53,513,542.51	\$68,032,470.52	\$88,160,000.00
Project Totals	17	\$2,990,679.60	6	\$3,032,189.00	19	\$14,905,817.63	57	\$74,218,059.48	\$95,146,745.71	\$108,455,000.00

Quarter Completed	JUL - SEP		OCT - DEC		JAN - MAR		APR - JUN		Totals
Design Contracts Completed (#/\$)	0	\$0.00	1	\$1,347,123.98	3	\$1,638,693.21	6	\$1,458,810.00	\$4,444,627.19
Construction Contracts Completed (#/\$)	2	\$1,017,329.74	5	\$13,921,230.11	1	\$1,102,455.57	0	\$0.00	\$16,041,015.42
Totals	2	\$1,017,329.74	6	\$15,268,354.09	4	\$2,741,148.78	6	\$1,458,810.00	\$20,485,642.61

Ongoing Projects	
Ongoing Design Projects (#)	232
Ongoing Design Projects (\$)	\$89,135,602.56
Ongoing Construction Projects (#)	116
Ongoing Construction Projects (\$)	\$242,632,507.35



# WATER FOR LIFE

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Board of Water Supply  
City and County of Honolulu

## Quarterly Capital Improvement Program Status Report All Divisions

### DESIGN AND CONSTRUCTION PROJECTS AWARDED - FOURTH QUARTER FY 2019

Item #	Project Title	Expend Type	Budget Amount	Awarded
001	Construction Management for Various BWS Construction Projects	P&E	\$2,300,000.00	\$2,300,000.00
005R	Wilder Wells Pump No. 4	CONST	162,459.00	162,459.00
005T	Replace Transformer at Kalihi Corporation Yard	CONST	74,700.00	74,700.00
006	Kunia Wells III	P&E	175,000.00	334,122.81
007	Waipio Heights Wells and Wells I	P&E	150,000.00	394,500.00
008	Haleiwa Wells Renovation	P&E	100,000.00	464,657.00
011	Ala Aolani: 12-Inch Water Main	CONST	6,500,000.00	6,503,813.00
012	Puhawai Road, Kuwale Road And Puuhulu Road Water System Improvements	CONST	7,900,000.00	5,708,300.00
013	Lanakila Water System Improvements	CONST	3,100,000.00	3,090,378.50
014	Lunalilo Home Road Water System Improvements	CONST	6,370,000.00	4,415,644.20
016	Pacific Heights Water System Improvements, Part II	CONST	6,800,000.00	6,363,476.99
017	Waiau Water System Improvements, Part II	CONST	1,230,000.00	1,073,270.00
018	Rehabilitation of Pipeline and Tunnel: Makapuu Pipeline Tunnel	CONST	1,100,000.00	5,031,284.00
021	Box Drain Repair at School Street	CONST	200,000.00	237,887.00
022	Service Lateral Replacement at Various Locations (Kunia)	CONST	1,000,000.00	1,682,970.00
023	Kuahea Street Water System Improvements, Waiomao Road to 2373 Kuahea Street	P&E	0.00	509,743.00
024	Hihimanu Street 20-Inch Main	CONST	100,000.00	150,000.00
025	Farrington Highway 24-Inch Main Rehabilitation	P&E	750,000.00	781,623.00
026	Water System Improvements at Various Locations in Manoa	P&E	1,500,000.00	1,258,697.00
028	Farrington Highway Water System Improvements, Waipahu Depot Road Vicinity	P&E	790,000.00	1,443,228.00
029	Kamehameha Highway Water System Improvements, Pupukea Road Vicinity	P&E	520,000.00	557,968.00
031	Paleka Road and Waikalua Road Area Water System Improvements	P&E	740,000.00	720,605.72
035	Keana Road Area Water System Improvements / Kaneohe Bay Drive and Kamehameha Highway Water System Improvements	P&E	1,230,000.00	1,505,209.52
036	Paiko Drive 8-Inch Main	P&E	160,000.00	354,818.46
038	Waikalua Road Water System Improvements	P&E	320,000.00	311,613.28
040	Farrington Highway Water System Improvements, Hookele Street Vicinity	P&E	1,410,000.00	1,670,016.00
041	Water Sampling Stations at Various Locations	P&E	500,000.00	401,070.00
043A	Pupukea Iwi Kupuna Reinterment	P&E	100,000.00	119,173.00
043B	North School Street Water System Improvements	P&E	0.00	1,278,379.68
047	Water Meter Transponders Replacement Phase II	CONST	8,336,311.18	6,314,172.00
047B	Construction Management Services for MKU Replacement Project.	CONST	1,663,688.82	1,663,688.82
049	Security Fencing at Diamond Head 180 Reservoir	CONST	1,200,000.00	2,106,500.00
050B	Security Improvements at Various Locations Across Oahu, Phase 1	CONST	977,000.00	977,000.00
051B	Wahiawa Wells II Provision for Emergency Generator Connection	CONST	0.00	1,339,547.00
051E	Aina Koa 1100 Reservoir and Kamehame 820 Reservoir Repair and Rehabilitation	CONST	0.00	1,786,539.00
051G	Kalihi Corporation Yard Locker Room and Pavilion Renovations	CONST	24,304.00	770,000.00



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Board of Water Supply  
City and County of Honolulu

## Quarterly Capital Improvement Program Status Report All Divisions

### DESIGN AND CONSTRUCTION PROJECTS AWARDED - FOURTH QUARTER FY 2019 (continued)

Item #	Project Title	Expend Type	Budget Amount	Awarded
051G	Kalihi Corporation Yard Locker Room and Pavilion Renovations	CONST	24,304.00	770,000.00
051M	Installation of Diesel Fuel Dispensing Facility at Manana Corporation Yard	CONST	0.00	419,000.00
051N	Aina Koa Booster No. 1 Electrical Repairs	CONST	0.00	91,660.00
052	Facility Reroofing at Various Locations	CONST	1,500,000.00	1,325,794.00
053	Facility Painting at Various Locations	CONST	1,000,000.00	360,102.00
055G	Moanalua Wells PRV Installation	CONST	192,675.00	192,675.00
055H	Makaha Wells I Hydropneumatic Tank	CONST	327,401.00	327,401.00
055M	Kalihi High Service Booster No. 1 & 2: Replace Piping and Valves	CONST	607,625.00	607,625.00
056	Nuuanu Reservoir No. 1 Dam Improvements	P&E	1,000,000.00	1,586,166.00
059	Beretania Complex Electrical Survey	P&E	150,000.00	150,000.00
060A	Makaha Wells II, III and IV and Waimanalo Wells III Access Roads Repair	P&E	346,696.00	721,108.55
060C	Reservoir Reroofing at Various Facilities	P&E	0.00	628,780.00
060D	Reservoir Sealing and Repair at Various Facilities	P&E	0.00	238,471.00
060E	Kalihi Corporation Yard HVAC Replacement	P&E	81,910.00	81,910.00
060G	Repair of Pearl City 385 Reservoir	P&E	0.00	411,370.00
060H	Renovation of the 4th Floor of the Public Service Building (PSB)	P&E	0.00	216,009.18
060J	Kalihi Pump Station Fire Alarm System Replacement	P&E	0.00	310,917.77
060K	Beretania Public Service Building (PSB) Exterior Improvements	P&E	0.00	270,848.00
064	Wireless and Electronic Security Support Services for BWS	CONST	800,000.00	650,000.00
064B	Furnishing and Delivery of Ethernet Radio Systems and Electronic Security Systems	CONST	0.00	87,656.00
066	Beretania Complex Office Building and Parking Structure	P&E	1,400,000.00	1,963,238.00
<b>4th Quarter totals</b>			<b>\$64,889,770.00</b>	<b>\$74,218,059.48</b>

### DESIGN AND CONSTRUCTION PROJECTS COMPLETED - FOURTH QUARTER FY 2019

Job #	Project Title	Completion Date	Contract Amount
1999-071	Hawaii Kai Water System Improvements, Part I	4/5/2019	\$248,844.00
1999-088C05	Palolo Avenue Water System Improvements - Part I	4/10/2019	347,000.00
2009-020	Facility Repair and Renovation: Mililani 865 Facility Renovation	4/10/2019	200,000.00
2013-026B	Drainage Improvements and Facility Repair: Kailua Heights and Waimanalo Boosters	4/10/2019	170,750.00
2014-036	Aiea Kai Place and Way 8-inch Mains	4/10/2019	369,580.00
2015-040	Keolu Bridge Hangers Replacement & Kailua Heights 230 Reservoir Demolition	4/10/2019	122,636.00
<b>4th Quarter totals</b>			<b>\$1,458,810.00</b>



# WATER FOR LIFE

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Board of Water Supply  
City and County of Honolulu

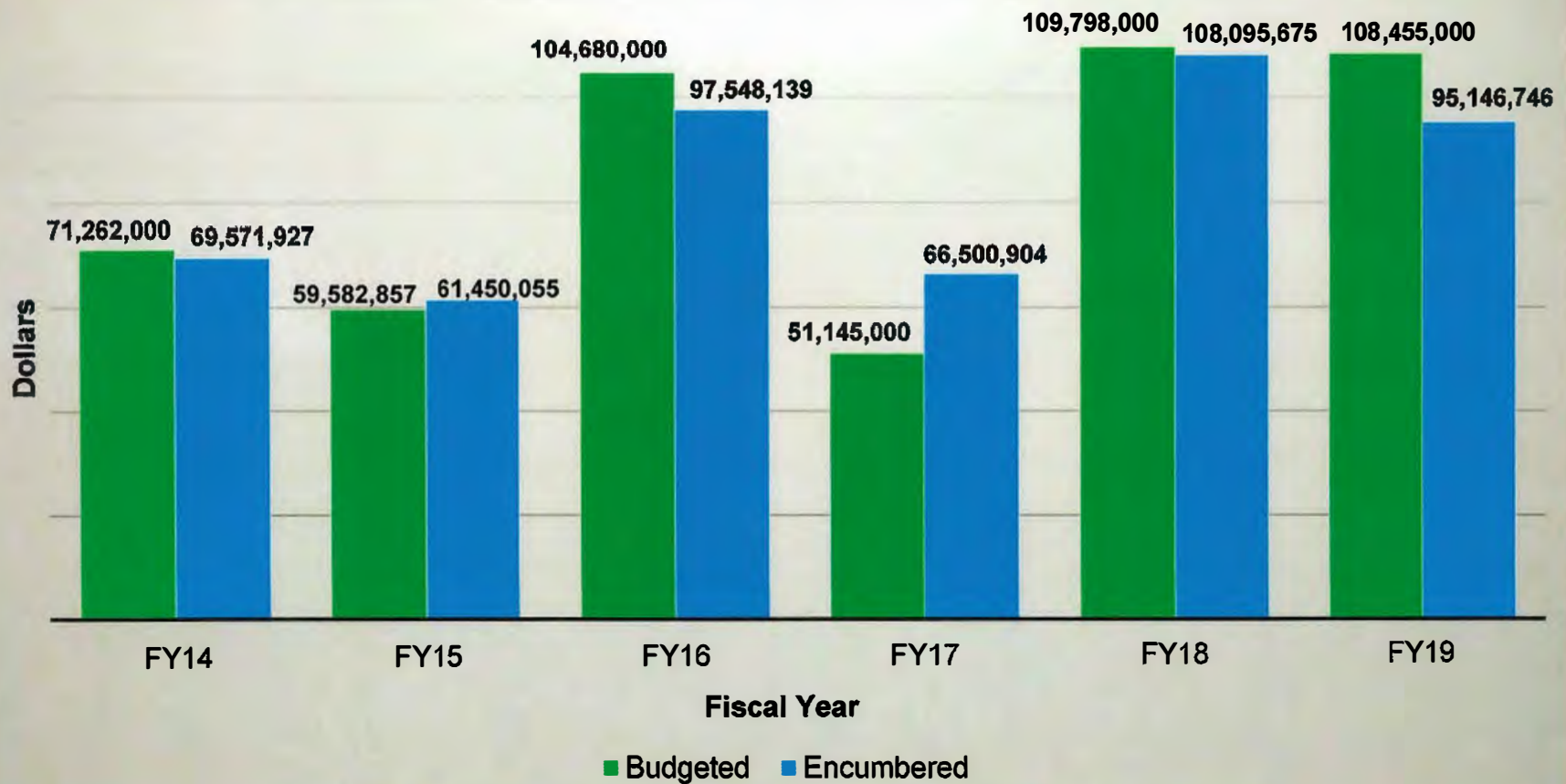


FY 2019  
CIP Highlights





## Budgeted vs. Encumbered





## Construction

- Water main replacement - \$31.5 million
- Facility renovations - \$12.7 million
- Pump renewal and replacement - \$4.2 million
- MXU change-out - \$8 million





# WATER FOR LIFE

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Board of Water Supply  
City and County of Honolulu



- Makapuu Pipeline Tunnel rehabilitation - \$5 million





## Planning and Engineering

- Water main replacement - \$14.1 million
- Facility renovations – \$3 million
- Construction management - \$2.3 million
- Beretania Complex Office Building and Parking Structure - \$2 million
- Nuuanu Reservoir No. 1 - \$1.6 million





# WATER FOR LIFE

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Board of Water Supply  
City and County of Honolulu

Job/Item	Project Title	Amount
2017-036	Kalaeloa Seawater Desalination Facility	\$642,899
16-032E	Emergency Generators at Kalihi Yard & Shaft, Halawa Shaft & Kunia Wells I	25,541.00
12-018	Beretania Emergency Generator System Upgrade	313,416.00
2017-045	Project Management Services for Security Projects	659,552.00
2015-050	Makiki & Waialae Iki 180 Reservoirs Altitude Valve Assemblies Replacement	50,455.00
2015-034	Aulua Road & Ulukahiki Street 16-Inch Water Mains	21,786.00
2015-018	Punanani Wells Motor Control Center Replacement	35,657.00
18-052T	Palolo Wells Chlorinator Reroofing	8,370.00
18-052T	Kaimuki Pump Station Electrical Improvements	141,604.00
18-052T	Hoaeae Wells Reroofing	31,061.00
16-045	Lualualei Line Booster System Improvements	23,149.00
2018-058	Mauna Olu 530 Reservoir Improvements	35,099.00
2013-4250	Capital Projects Divison Construction Management Services	1,000,192.00
2012-039D	Beretania Engineering Building Window Repairs	893.00
2015-004	Investment Grade Audit Agreement (ESPC) - BWS Facilities	28,148.00
17-051	Diamond Head Line Booster Pumping Units Replacement	20,841.00
17-055	Pearl City Wells I Renovation	2,987.00
18-052T	Alewa Booster No. 1 Pump Station Reroofing	3,387.00
2013-008B	Pump Renewal & Replacement at Kaluanui, Diamond Head, et. al.	21,848.00
16-029E	Kalihi Corporation Yard Fueling Station Renovation & Kalihi Shaft Waste Removal	1,055.00
18-017Q	Kunia Wells GAC Facility Improvements	297,490.00
2016-016	Makakilo Water System Improvements, Part III	56,796.00
2017-012	Mililani Wells II Pump Replacement	271,261.00
16-043E	Access Road Repair & Drainage Improvements for Kalihi, Niu Valley and Waianae Reservoirs	16,559.00
18-017Q	Halawa Shaft Reroofing	666,520.00
2018-023	Wilhelmina Rise 811 Reservoir Replacement	54,978.00
2018-035	Sand Island Water System Improvements	5,037.00
2017-004	Waikele Gulch Exploratory Well Condition Assessment	7,500.00
14-042E	Kaonohi 277 & Moanalua 405 No. 1 & No. 2 Reservoirs Repair	12,211.00
		<b>\$4,456,292</b>

ITEM FOR INFORMATION NO. 3

"August 26, 2019

**RECRUITMENT  
STATUS**

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

Chair and Members:

Subject: Recruitment Status

Michele L. Thomas, Executive Assistant, Human Resources Office, will be presenting an update on the Recruitment Status for the period of May 2019 to July 2019.

Respectfully submitted,

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

Attachment"

The foregoing was for information only.

**DISCUSSION:**

Michele Thomas, Executive Assistant, Human Resources, gave the report. There were no comments or discussion.

ITEM FOR INFORMATION NO. 3

"August 26, 2019

RECRUITMENT  
STATUS

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

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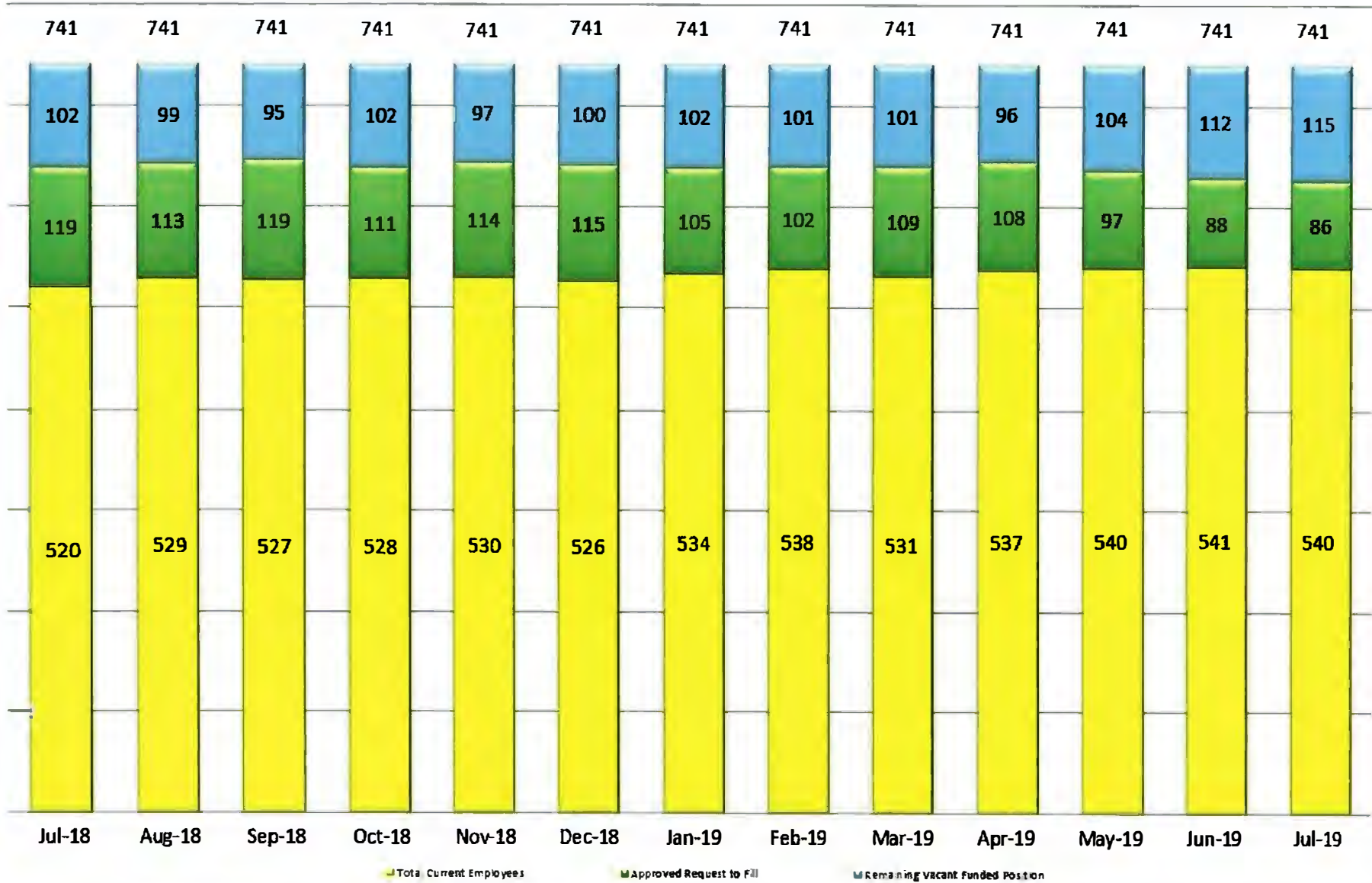
The foregoing was for information only.

DISCUSSION:

Michele Thomas, Executive Assistant, Human Resources, gave the report. There were no comments or discussion.

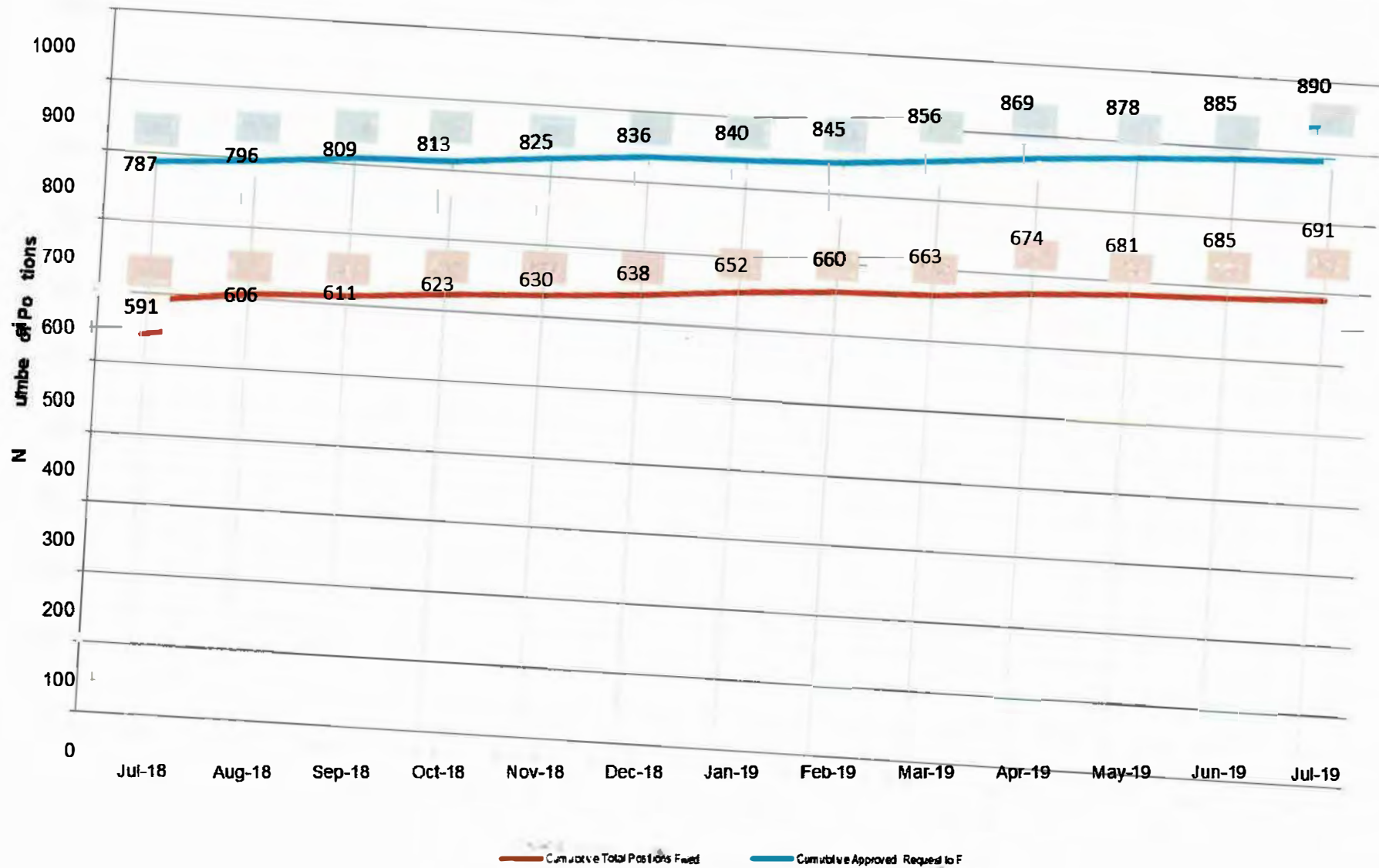


## Positions Filled Jul 1, 2018 through Jul 31, 2019



For the Period May19 - Jul19 Actions: 15 New Hires, 2 Promotions, 12 Separations, 21 New approvals to Fill, 26 Cancelled request

## Cumulative Totals Jul 1, 2018 through Jul 31, 2019





# BOARD OF WATER SUPPLY

City and County of Honolulu

## RECRUITMENT AND SEPARATION STATUS

For Period May 31, 2019 to July 31, 2019

### Status of Positions Under Recruitment

	as of		
	5/31/2019	6/30/2019	7/31/2019
Pending DHR Classification Action	13	1	1
Pending DHR Open List	31	28	17
Pending IDCE	9	5	7
Pending Interview Questions	6	12	14
Pending Interviews	30	31	28
Anticipated Starts	8	11	19
Total Positions Under Recruitment	97	88	86

### Filled Positions

Month	May-19	Jun-19	Jul-19
Open list	5	4	5
IDCE list	1	0	1

### Separations

Month	May-19	Jun-19	Jul-19
Retire	0	2	2
Resign	3	1	4

#### Legend:

DHR = Department of Human Resources City and County of Honolulu

IDCE = Intra-Departmental Competitive Examination

ITEM FOR INFORMATION NO. 4

"August 26, 2019

GROUNDWATER  
LEVELS

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

There were no aquifer index wells within low groundwater status for the production month of July 2019. The monthly production average for July 2019 was 144.51 million gallons per day.

The Board of Water Supply rainfall index for the month of July 2019 was 58 percent of normal; with a 5-month moving average of 77 percent. As of August 6, 2019, the Hawaii Drought Monitor shows abnormally dry conditions for all of Oahu.

Most monitoring wells are showing decreasing trends, resulting from increased pumping through the summer months.

Respectfully submitted,

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

Attachment"

The foregoing was for information only.

DISCUSSION:

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

**PRODUCTION, HEAD AND RAINFALL REPORT  
MONTH OF JULY 2019**

**POTABLE**

STATION	MGD
HONOLULU (1)	
KULIOUOU	0.08
WAILUPE	0.13
AINAKOA	0.39
AINA KOAM	0.22
MANOA II	0.00
PALOLO	1.17
KAIMUKI HIGH	2.73
KAIMUKI LOW	3.86
WILDER	4.86
BERETANIA HIGH	3.31
BERETANIA LOW	7.14
KALIHI HIGH	3.20
KALIHI LOW	2.26
KAPALAMA	0.35
KALIHI SHAFT	8.62
MOANALUA	1.39
HALAWA SHAFT	6.16
KAAMILO	0.89
KALAUAO	6.27
PUNANANI	10.66
KAHUMANU	0.25
HECO WAIKU	2.69
MANANA	0.24
WELLS SUBTOTAL:	66.86
MANOA TUNNEL	0.17
PALOLO TUNNEL	0.23
GRAVITY SUBTOTAL:	0.40
HONO. SUBTOTAL:	67.26

STATION	MGD
WINDWARD (2)	
WAIMANALO II	0.62
WAIMANALO III	0.00
KUOUA	1.54
KUOUAI	0.05
KUOU III	0.76
LULUKU	0.91
HAIKU	0.00
IOLEKAA	0.00
KAHALUU	0.67
KAHANA	1.02
PUNALUU I	0.00
PUNALUU II	2.80
PUNALUU III	0.19
KALUANUI	1.35
MAAKUA	0.27
HAUULA	0.26
WELLS SUBTOTAL:	10.44
WAIM. TUNNELS I & II	0.00
WAIM. TUNNELS III&IV	0.19
WAIHEE INCL. WELLS	0.54
WAIHEE TUNNEL	4.95
LULUKU TUNNEL	0.09
HAIKU TUNNEL	1.07
KAHALUU TUNNEL	1.56
GRAVITY SUBTOTAL:	8.40
WIND. SUBTOTAL:	18.84

STATION	MGD
NORTH SHORE (3)	
KAHUKU	0.68
OPANA	0.14
WAIALAE I	0.46
WAIALAE II	0.48
HALEIWA	0.00
WAIALUA	2.10
N.SHORE SUBTOTAL:	3.86

STATION	MGD
MILILANI (4)	
MILILANI I	2.16
MILILANI II	0.00
MILILANI III	0.79
MILILANI IV	1.76
MILILANI SUBTOTAL:	4.71

STATION	MGD
WAIHAWA (5)	
WAIHAWA	1.13
WAIHAWA II	1.91
WAIHAWA SUBTOTAL:	3.04

STATION	MGD
PEARL CITY-HALAWA (6)	
HALAWA 277	0.68
HALAWA 650	0.00
AIEA	1.17
AIEA GULCH 497	0.41
AIEA GULCH 550	0.22
KAONOHI I	1.06
WAIMALU I	0.00
NEWTOWN	1.04
WAIKU	0.83
PEARL CITY I	0.55
PEARL CITY II	1.13
PEARL CITY III	0.34
PEARL CITY SHAFT	0.92
PEARL CITY-HALAWA SUBTOTAL:	8.35

STATION	MGD
WAIPAHU-EWA (7)	
WAIPIO HTS.	1.11
WAIPIO HTS. I	0.72
WAIPIO HTS. II	0.27
WAIPIO HTS. III	1.10
WAIPAHU	5.60
WAIPAHU I	2.08
WAIPAHU II	1.65
WAIPAHU IV	3.13
KUNIAA	4.35
KUNIAA I	2.09
KUNIAA II	1.48
HOAEAE	4.81
HONOULIULI I	0.00
HONOULIULI II	5.69
MAKAKILO	0.30
WAIPAHU-EWA SUBTOTAL:	34.37

STATION	MGD
WAIANAE (8)	
MAKAHAA	0.01
MAKAHAA I	0.19
MAKAHAA II	0.67
MAKAHAA III	0.34
MAKAHAA IV	0.00
MAKAHAA SHAFT	0.00
KAMAILE	0.00
WAIANAE I	0.00
WAIANAE II	0.64
WAIANAE III	0.66
WELLS SUBTOTAL:	2.52
WAIK. C&C TUNNEL	1.40
WAIK. PLANT. TUNNELS	0.16
GRAVITY SUBTOTAL:	1.56
WAIANAE SUBTOTAL:	4.08

**NONPOTABLE**

NONPOTABLE	MGD
KALAUAO SPRINGS	0.68
BARBERS POINT WELL	1.37
GLOVER TUNNEL NP	0.41
NONPOTABLE TOTAL:	2.47

**RECYCLED WATER (JUNE 2019)**

RECYCLED WATER	MGD
HONOULIULI WRF R-1	6.01
HONOULIULI WRF RO	1.61
RECYCLED WATER TOTAL:	7.62

**PRODUCTION, HEAD AND RAINFALL REPORT  
MONTH OF JULY 2019**

**PRODUCTION SUMMARIES**

TOTAL WATER	MGD
PUMPAGE	134.15
GRAVITY	10.36
POTABLE TOTAL	144.51
NONPOTABLE	2.47
RECYCLED WATER	7.62
TOTAL WATER:	154.60

CWRM PERMITTED USE AND BWS ASSESSED YIELDS FOR BWS POTABLE SOURCES				
WATER USE DISTRICTS		A	B	C
		PERMITTED USE/ BWS YLDS	JUL 2019	DIFF. A-B
1	HONOLULU	82.93	66.86	16.07
2	WINDWARD	25.02	13.35	11.67
3	NORTH SHORE	4.70	3.86	0.84
4	MILILANI	7.53	4.71	2.82
5	WAhIAWA	4.27	3.04	1.23
6	PEARL CITY-HALAWA	12.25	8.35	3.90
7	WAIPAHU-EWA	50.63	34.37	16.26
8	WAIANA E	4.34	2.52	1.82
TOTAL:		191.67	137.06	54.60

CWRM PERMITTED USE FOR BWS NONPOTABLE SOURCES				
WATER USE DISTRICTS		A	B	C
		PERMITTED USE	JUL 2019	DIFF. A-B
7	WAIPAHU-EWA (BARBERS POINT WELL)	1.00	1.37	-0.37
TOTAL:		1.00	1.37	-0.37

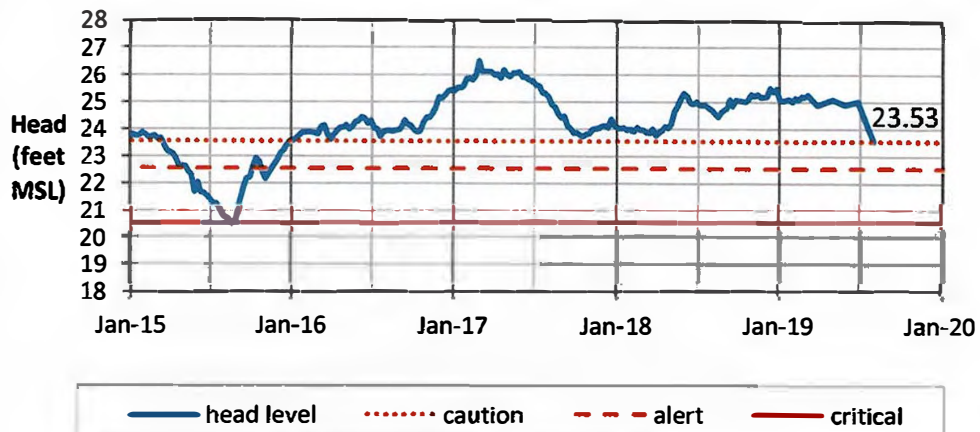
**EFFECTIVE WATER DEMAND PER DISTRICT**

IMPORT/EXPORT BETWEEN WATER USE DISTRICTS			
FROM	TO		MGD
2	1	WINDWARD EXPORT	1.15
7	8	BARBERS PT LB	6.12

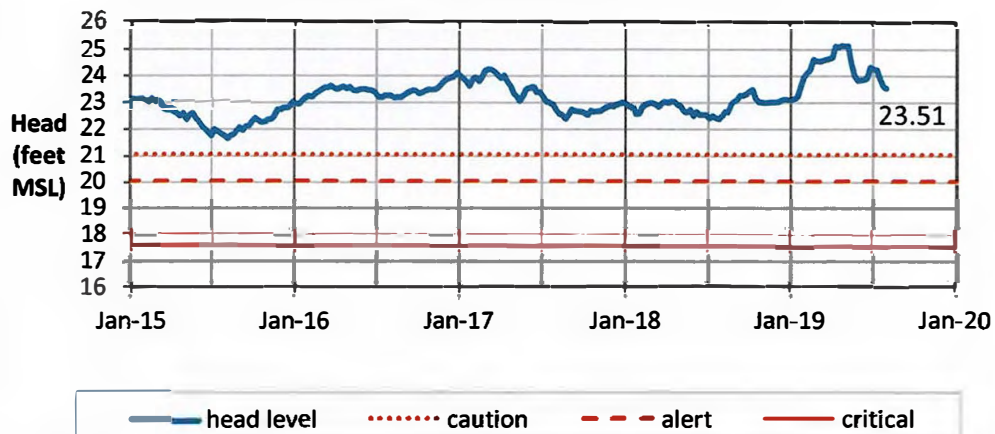
WATER USE DISTRICTS		SUBTOTAL	IMPORT	EXPORT	EFFECTIVE WATER DEMAND
1	HONOLULU	66.86	1.15	-	68.01
2	WINDWARD	13.35	-	1.15	12.19
3	NORTH SHORE	3.86	-	-	3.86
4	MILILANI	4.71	-	-	4.71
5	WAhIAWA	3.04	-	-	3.04
6	PEARL CITY-HALAWA	8.35	-	-	8.35
7	WAIPAHU-EWA	34.37	-	6.12	28.26
8	WAIANA E	2.52	6.12	-	8.64
TOTAL:		137.06	7.27	7.27	137.06

# Weekly Head Report

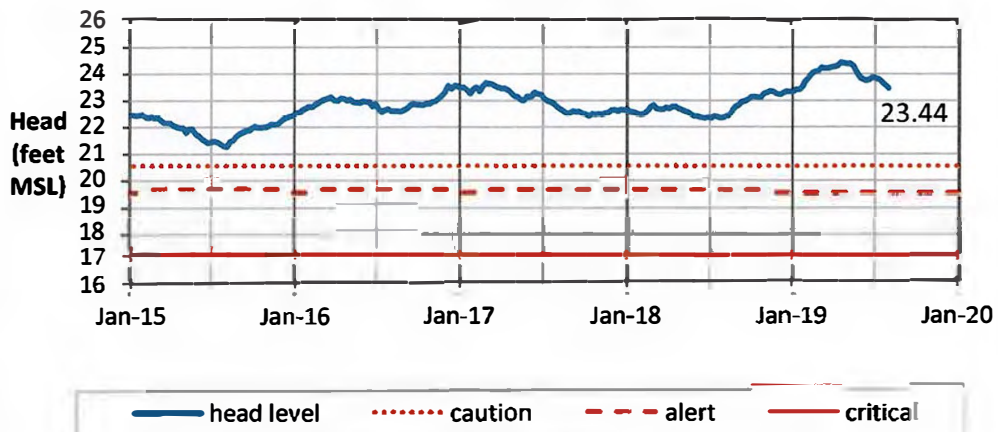
## Kaimuki 08/06/19



## Beretania 08/07/19



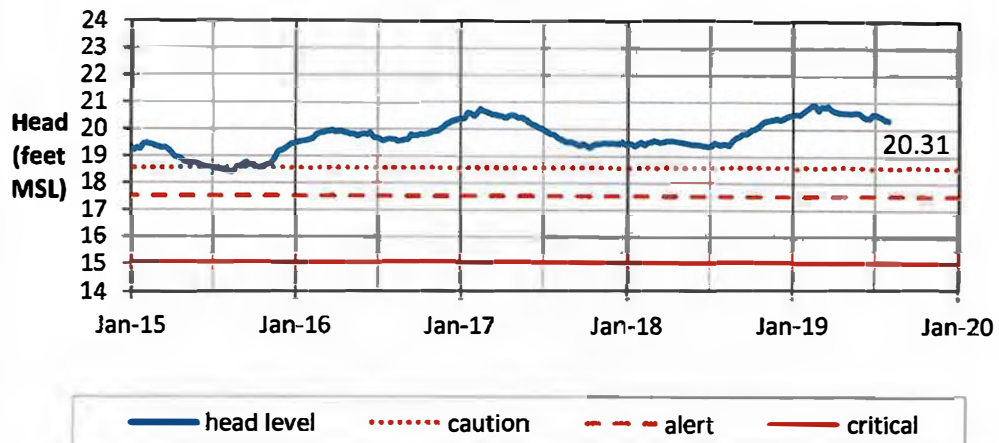
## Kalihi 08/07/19



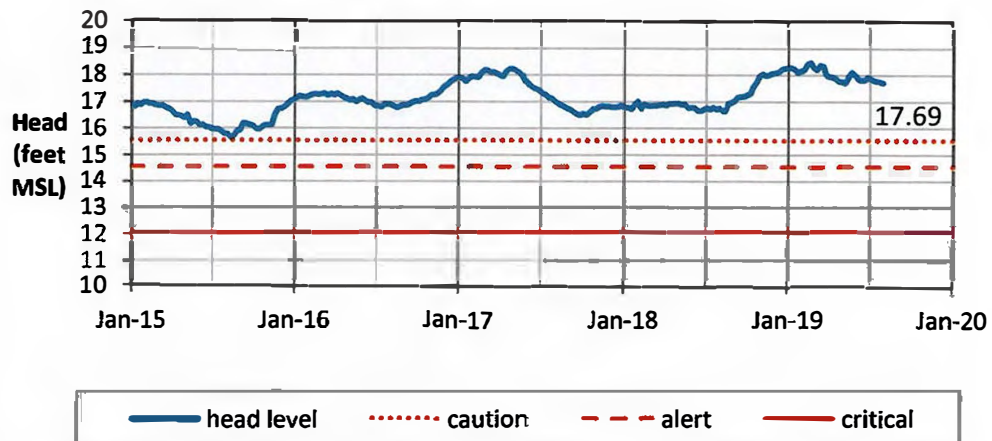


# Weekly Head Report

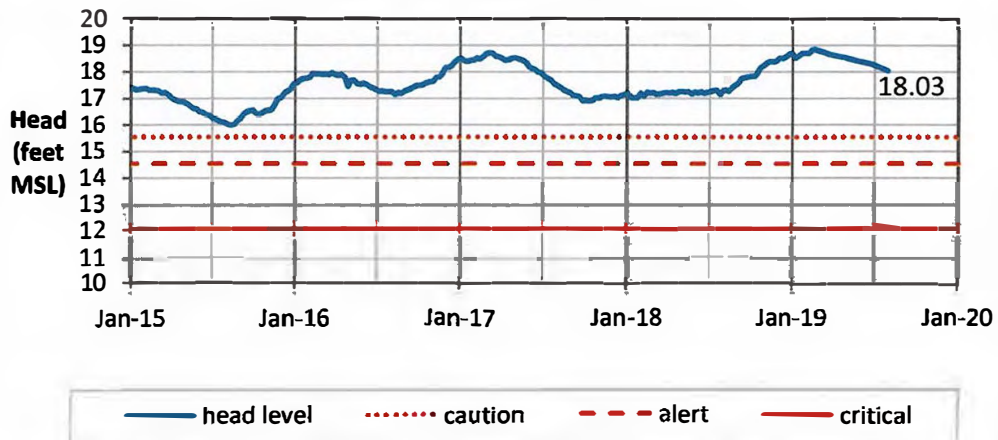
## Moanalua 08/07/19



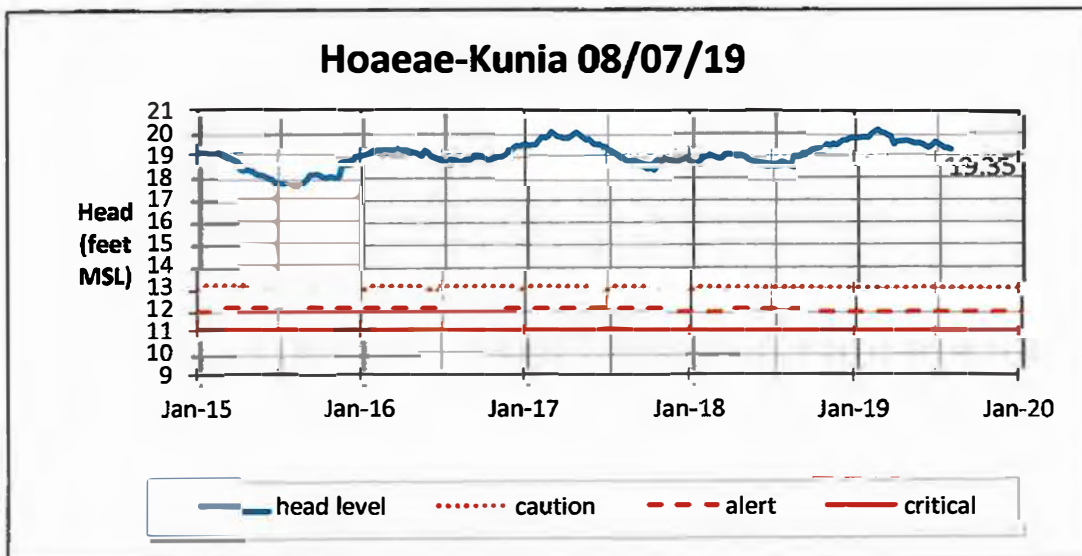
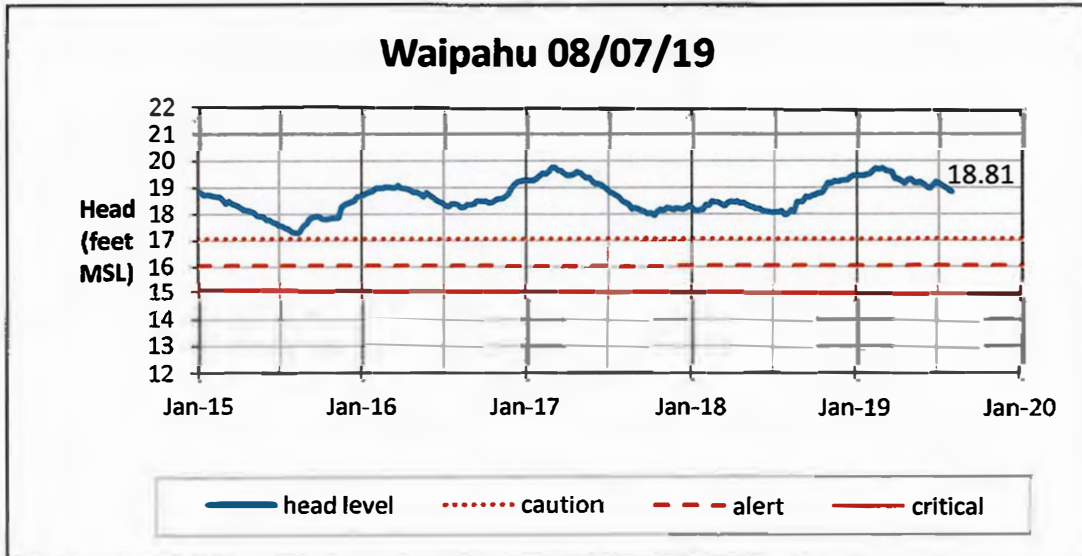
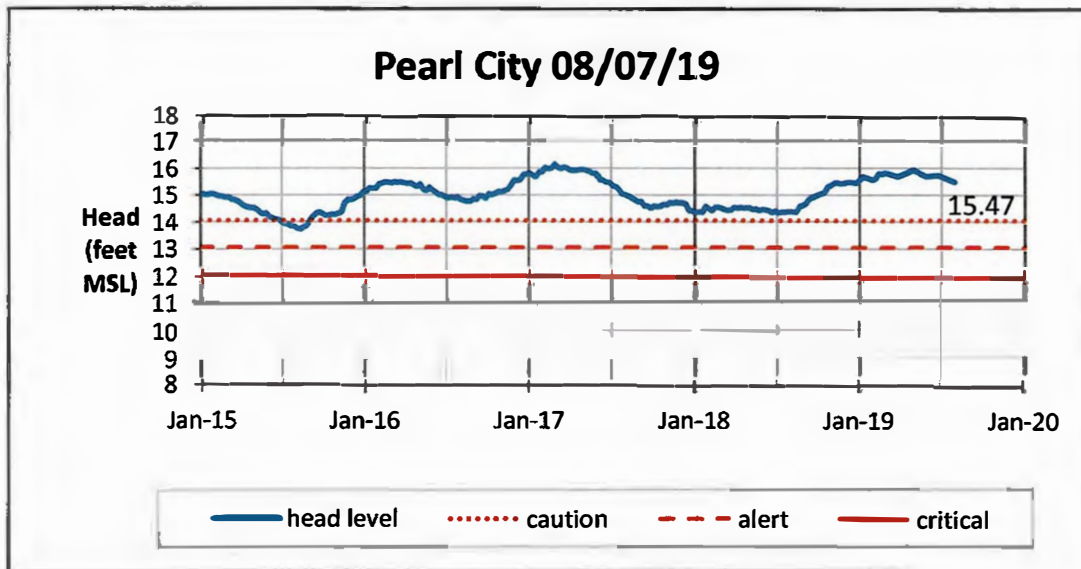
## Halawa 08/07/19



## Kalauao 08/07/19

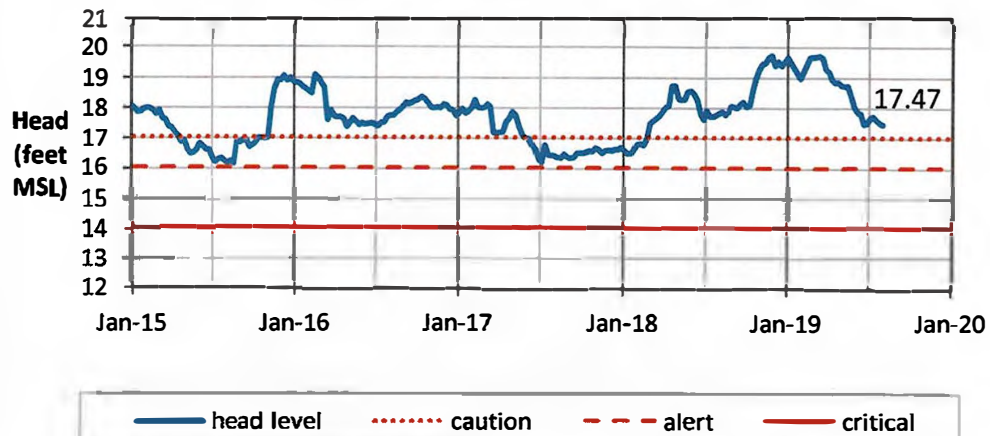


## Weekly Head Report

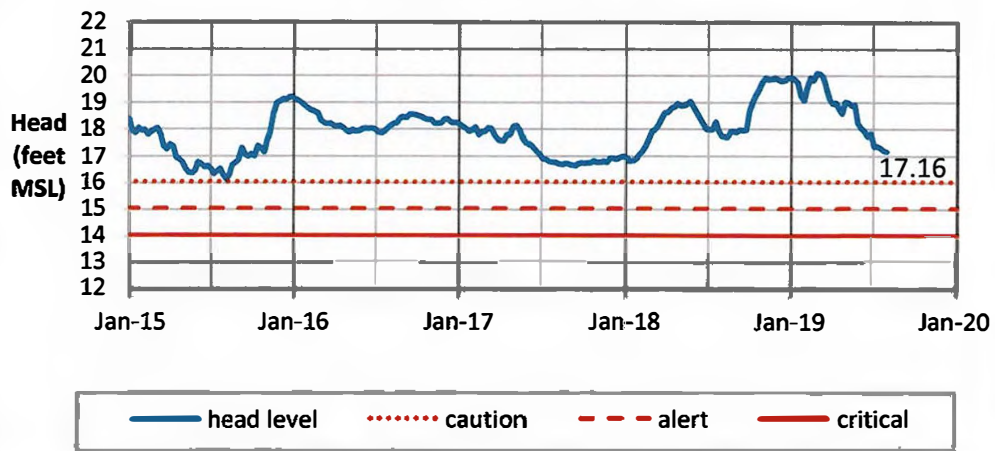


## Weekly Head Report

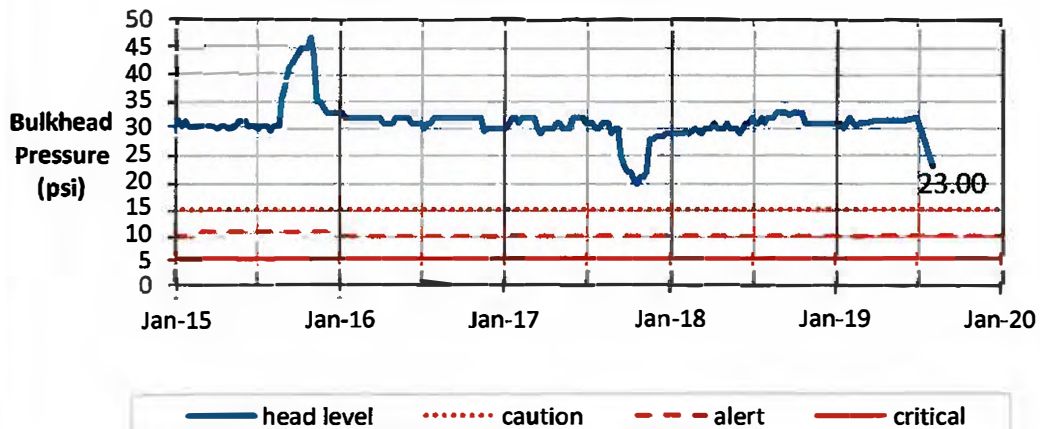
### Punaluu 08/07/19



### Kaluanui 08/06/19

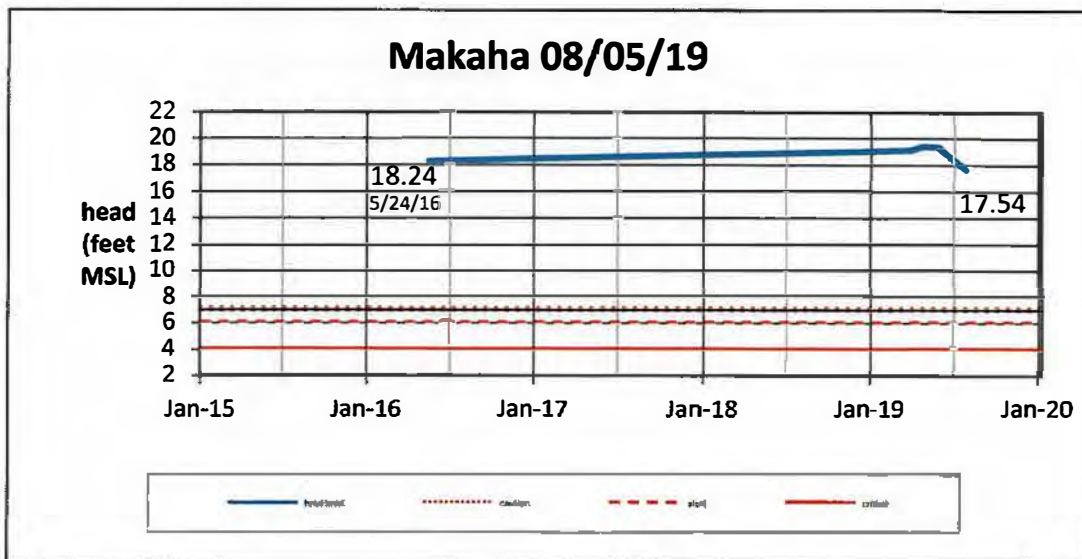
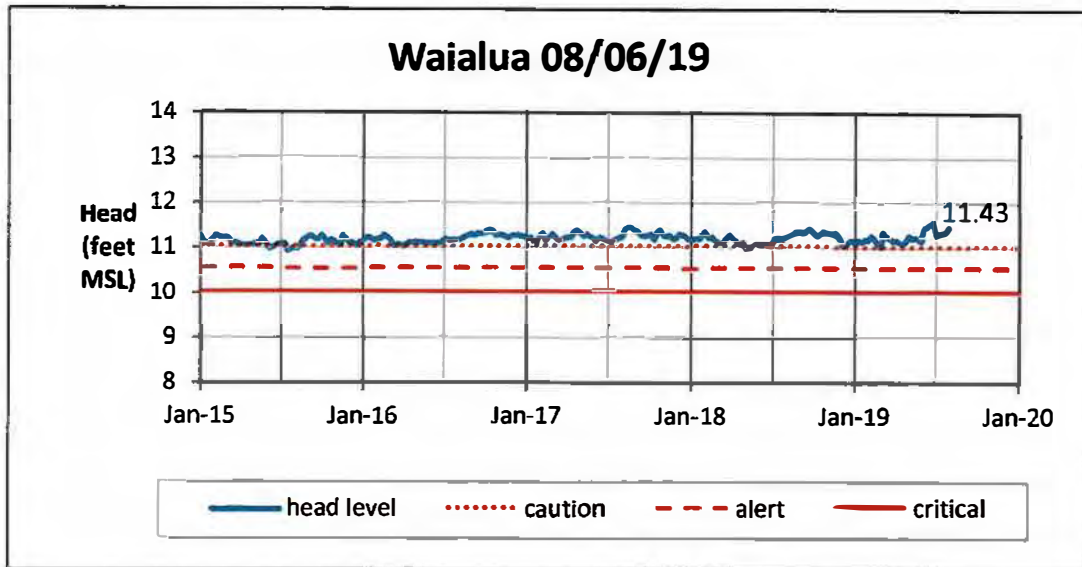


### Waihee Tunnel 08/06/19

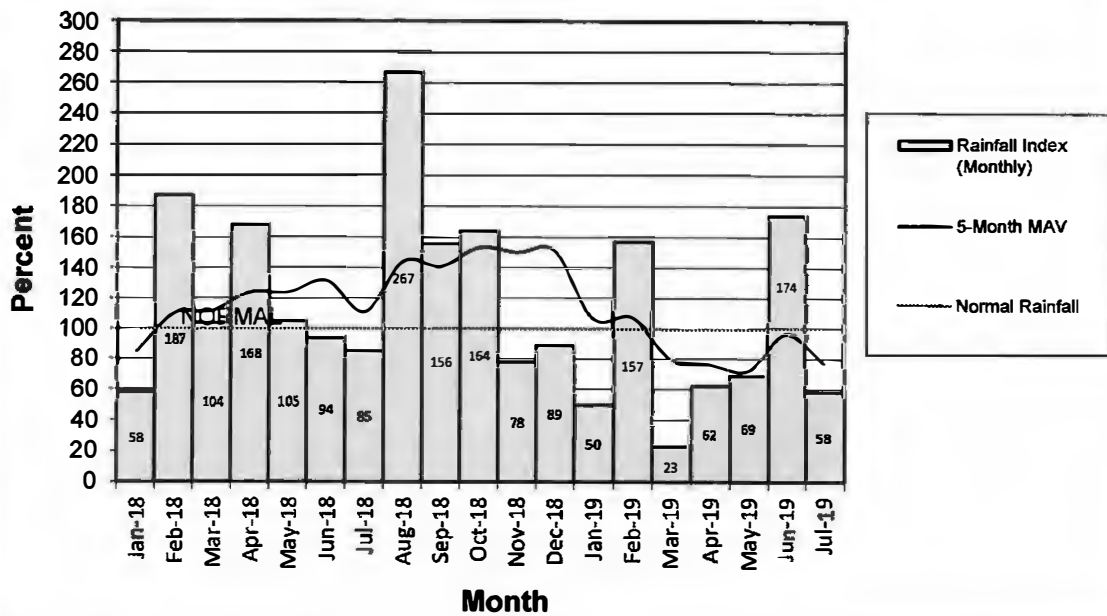




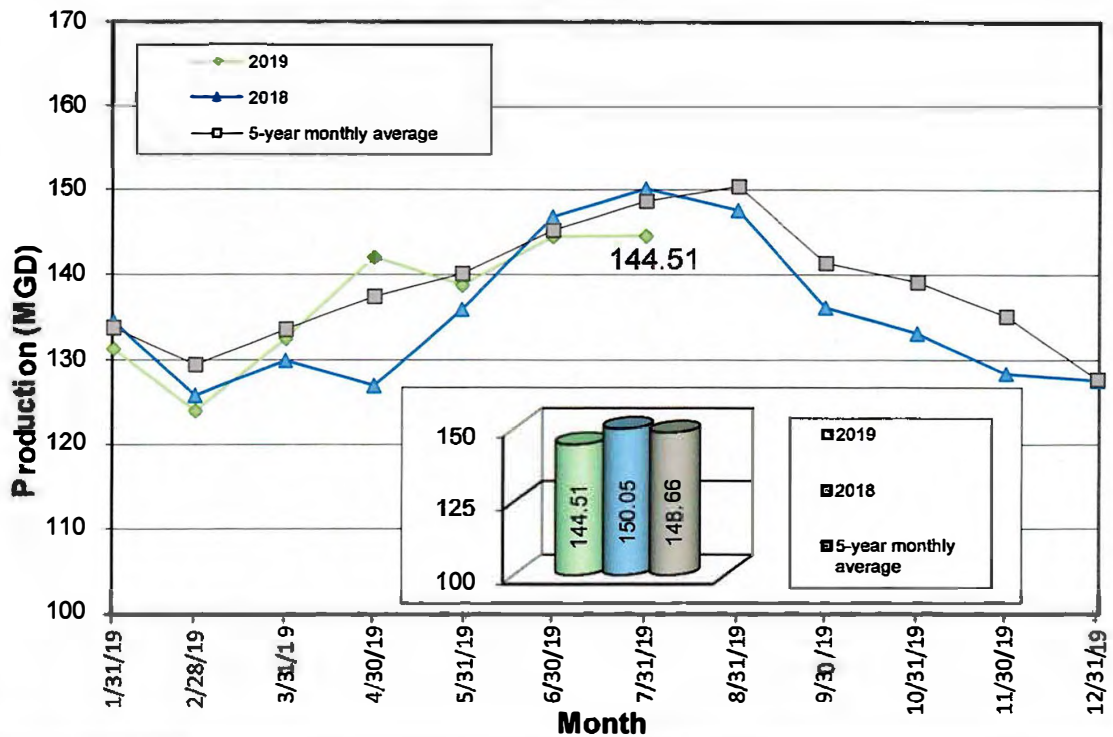
## Weekly Head Report



## HONOLULU WATERSHED AREA Rainfall Intake



## Monthly Production



ITEM FOR INFORMATION NO. 5

"August 26, 2019

WATER MAIN  
REPAIR REPORT

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

Chair and Members:

Subject: Water Main Repair Report for July 2019

Michael Fuke, Program Administrator, Field Operations Division, will report on water main repair work for the month of July 2019.

Respectfully submitted,

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

Attachment"

The foregoing was for information only.

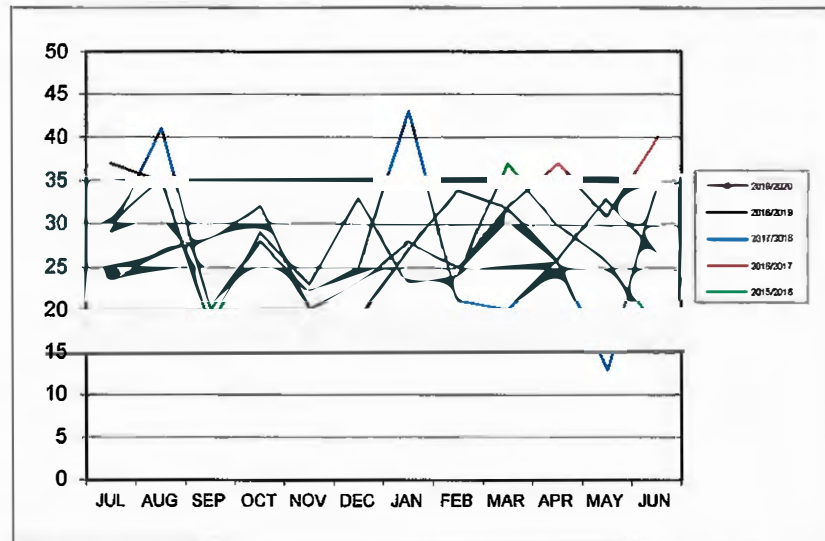
DISCUSSION:

Mike Fuke, Program Administrator, Field Operations Division, gave the report. There were no comments or discussion.

## WATER MAIN REPAIR REPORT for July 2019

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
2019/2020	24												24
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
2015/2016	30	35	18	29	23	33	23	24	37	30	26	18	326

Date	Address2	Size (In)	Pipe Type
7/2/2019	240 Ilima St, Wahiawa	8	PVC
7/2/2019	1556 Pahulu St, Honolulu	4	PVC
7/4/2019	3228 Oahu Ave, Honolulu	8	PVC
7/5/2019	1571 Meyers St, Honolulu	8	CI
7/5/2019	2375 Haumana Pl, Honolulu	4	CI
7/5/2019	3219 Paty Dr, Honolulu	8	PVC
7/8/2019	92-380 Kinohi Pl, Kapolei	8	CI
7/8/2019	94-473 Kealakaa St, Mililani2	8	AC
7/9/2019	3435 Waialae Ave, Honolulu	6	CI
7/10/2019	1605 Violet St, Honolulu	8	CI
7/11/2019	85-54 Kaupuni St, Waianae	8	AC
7/15/2019	46-299 Ahui Nani Pl, Kaneohe	8	CI
7/15/2019	98-1686 Piki St, Aiea	12	CI
7/17/2019	1096 Maiha Circle, Pearl City	8	CI
7/19/2019	41 Niniko Pl, Honolulu	4	CI
7/22/2019	2143 Aamanu St, Pearl City	8	CI
7/22/2019	3644 Kumuone St, Honolulu	12	CI
7/22/2019	2231 Apoeopoe St, Pearl City	8	CI
7/22/2019	4151 Nuuanu Pali Dr, Honolulu	4	AC
7/23/2019	94-689 Farrington Hwy, Waipahu	8	CI
7/24/2019	45-438 Nakuluai St, Kaneohe	8	CI
7/28/2019	3348 Kaimuki Ave, Honolulu	12	DI
7/28/2019	68-260 Au St, Waialua	8	CI
7/30/2019	771 Mokapu Rd, Kailua	4	DI



24 miles of pipeline were surveyed by the Leak Detection Team in the month of July.

ITEM FOR INFORMATION NO. 6

"August 26, 2019

RED HILL  
BULK UPDATE

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

Chair and Members:

Subject: Red Hill Bulk Fuel Facility Update

Erwin Kawata, Water Quality Division Program Administrator, will be presenting an update on the Red Hill Bulk Fuel Storage Facility.

Respectfully submitted,

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

Attachment"

The foregoing was for information only.

DISCUSSION

Erwin Kawata, Program Administrator, Water Quality Division, introduced Brian McDonald who will present on the Navy's recent reports on Destructive Testing and on Tank Risks and Vulnerability; Dr. Steve Young who will present on the Navy's conceptual site model and the subsurface geological features, and Department of Health (DOH) evaluation of groundwater flow-direction in Halawa Valley; and David Brown, special counsel, who will report on the Navy's permit application to operate the Red Hill underground storage tanks and the status of that process.

The Board raised questions after Mr. McDonald's presentation. Ms. Sproat asked for clarification on the inspection of the tanks at 20-year interval. According to Mr. McDonald, the Navy has determined the allowable pit depth based on the estimated growth of the pit in 20 years. If any deep pit growth is identified, a patch plate would be welded to the liner to cover it.

In Mr. McDonald's presentation, he said that certain Navy claims concerning its reports were inaccurate, and Ms. Sproat asked about the next steps to take. Mr. Lau replied that DOH and EPA approved the requirement under the Administrative Order on Consent (AOC). Tank 14 was the only one tested out of 15-20 tanks. Discussions with the AOC was that the test was not adequate and requested to expand the sample size. They denied our request.

Mr. McDonald added that the Navy's position is to find the deep pitting and add a patch plate to prevent corrosion from going through the tank wall.

From a technical standpoint, Mr. McDonald suggested the next step would be to weave the risk that the Navy's nondestructive evaluation (NDE) techniques could miss deep pits into the overall risk analysis.

Ms. Sproat expressed her concerns about the threat to the water resources and that the quantitative assessment is based on the 10 square feet samples out of 80,000 square feet per tank.

Ms. Sproat asked if there will be changes with the AOC or model since DOH acknowledged shortcomings of the Navy's modeling. Mr. Kawata said that BWS has been in contact with DOH and EPA, and there are no indications of any changes. BWS continues to stay in communication with the DOH and EPA.

Mr. Lau reported that the reports from the Safe Drinking Water Branch of the DOH are consistent with BWS findings, analysis of data and comments given.

After Mr. Brown's presentation, Ms. Sproat asked if there were any penalty provisions in the administrative rules applicable to operating without a permit since the Navy does not have one. Mr. Brown explained that there are provisions for enforcement by DOH where a regulated party is in violation of the administrative rules. The rules state that a permit to operate field-constructed tanks, like those at Red Hill, must be obtained by July 15, 2019.

Mr. Lau thanked the Board and shared that BWS will continue to supply updates on the Red Hill tank situation. The information is based on actual reports that are public information.

Ms. Sproat thanked Mr. Kawata and the rest of the team for all the work done on Red Hill and providing helpful summaries.



# **Red Hill Bulk Fuel Storage Facility**

## **Information Update**

**Board Meeting  
August 26, 2019**





# WATER FOR LIFE

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



Board of Water Supply  
City and County of Honolulu

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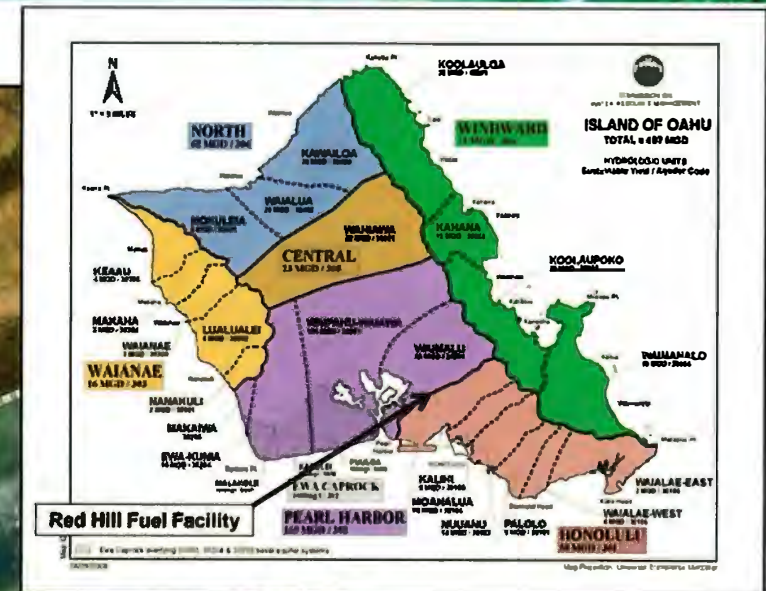
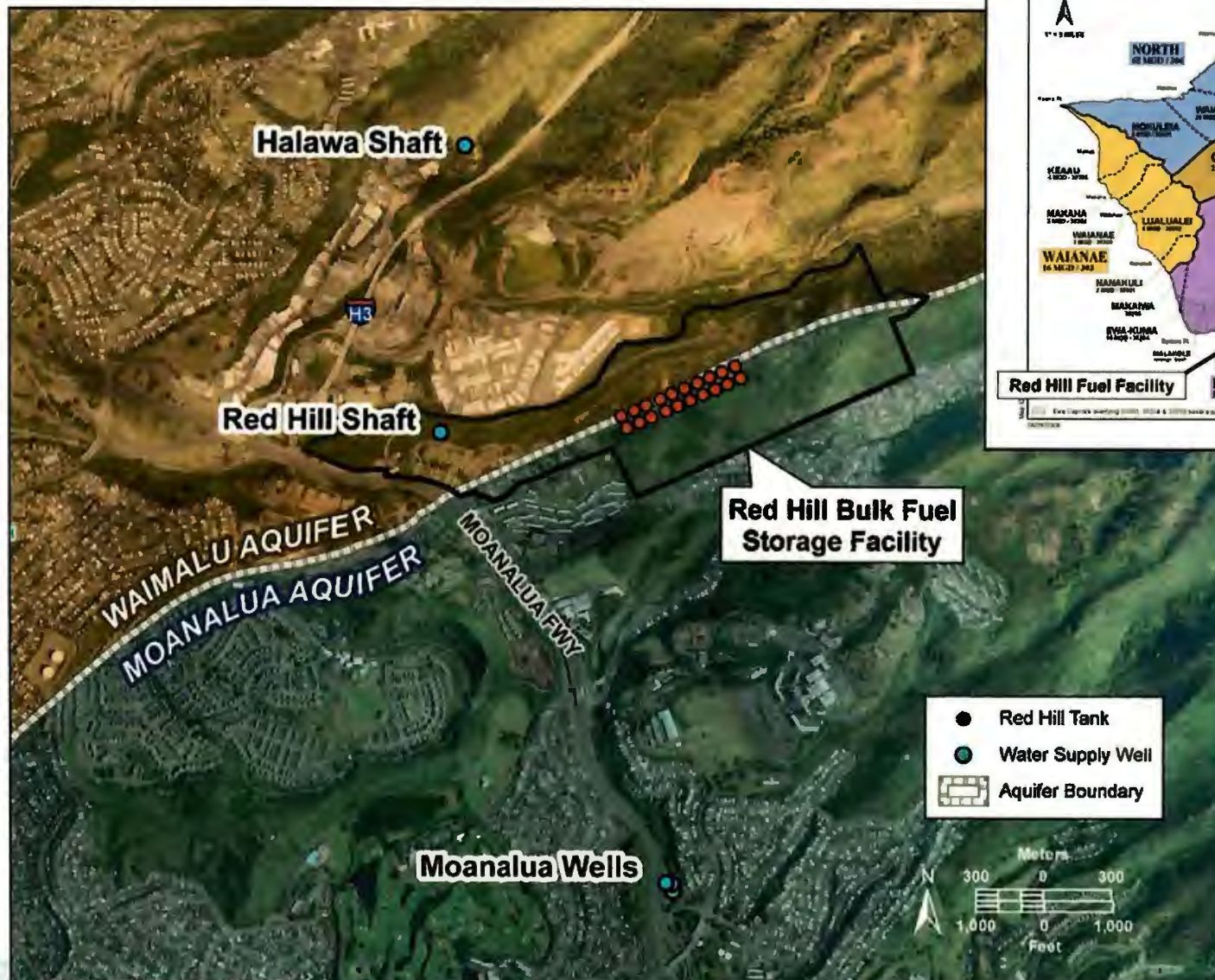


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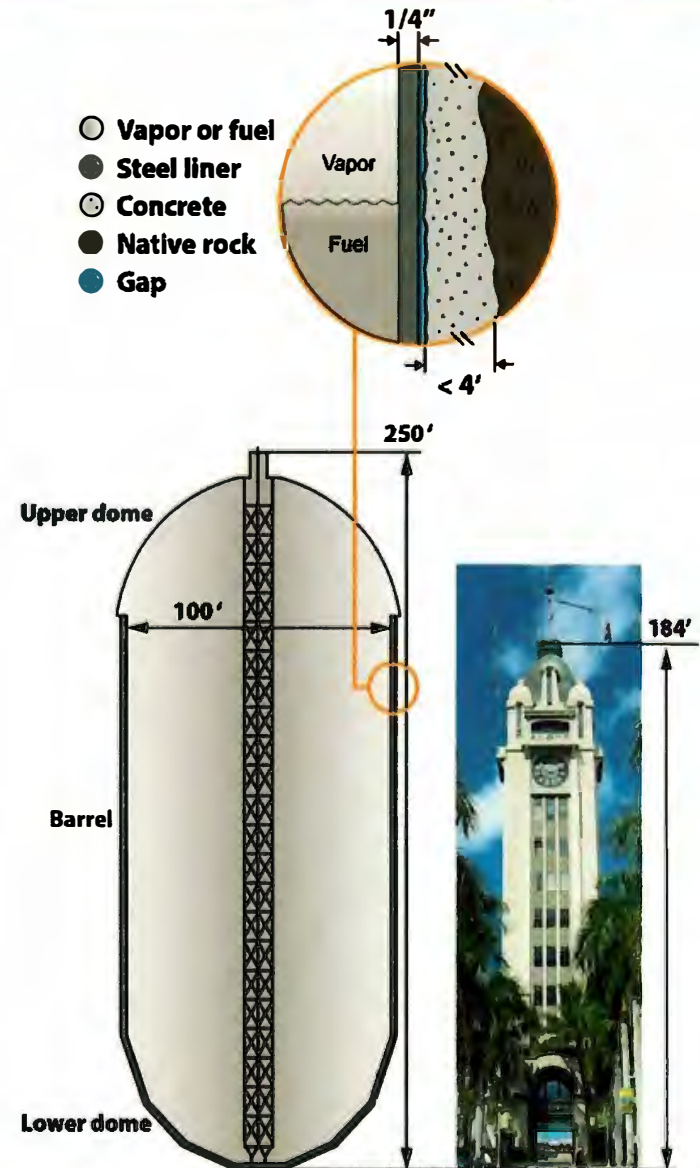
**Board of Water Supply**  
City and County of Honolulu





## Red Hill Tanks

- Concrete with  $\frac{1}{4}$  inch steel liner.  
(Lower dome base is  $\frac{1}{2}$  inch)
- Red Hill Tank large enough to hold Aloha Tower.
- Fuel storage
  - Currently JP-5, JP-8 and F-76 (marine diesel).
- 15 active tanks together store 187 million gallons of fuel.
- Rainwater seeping between  $\frac{1}{4}$  inch steel liner and concrete and corroding steel liner.

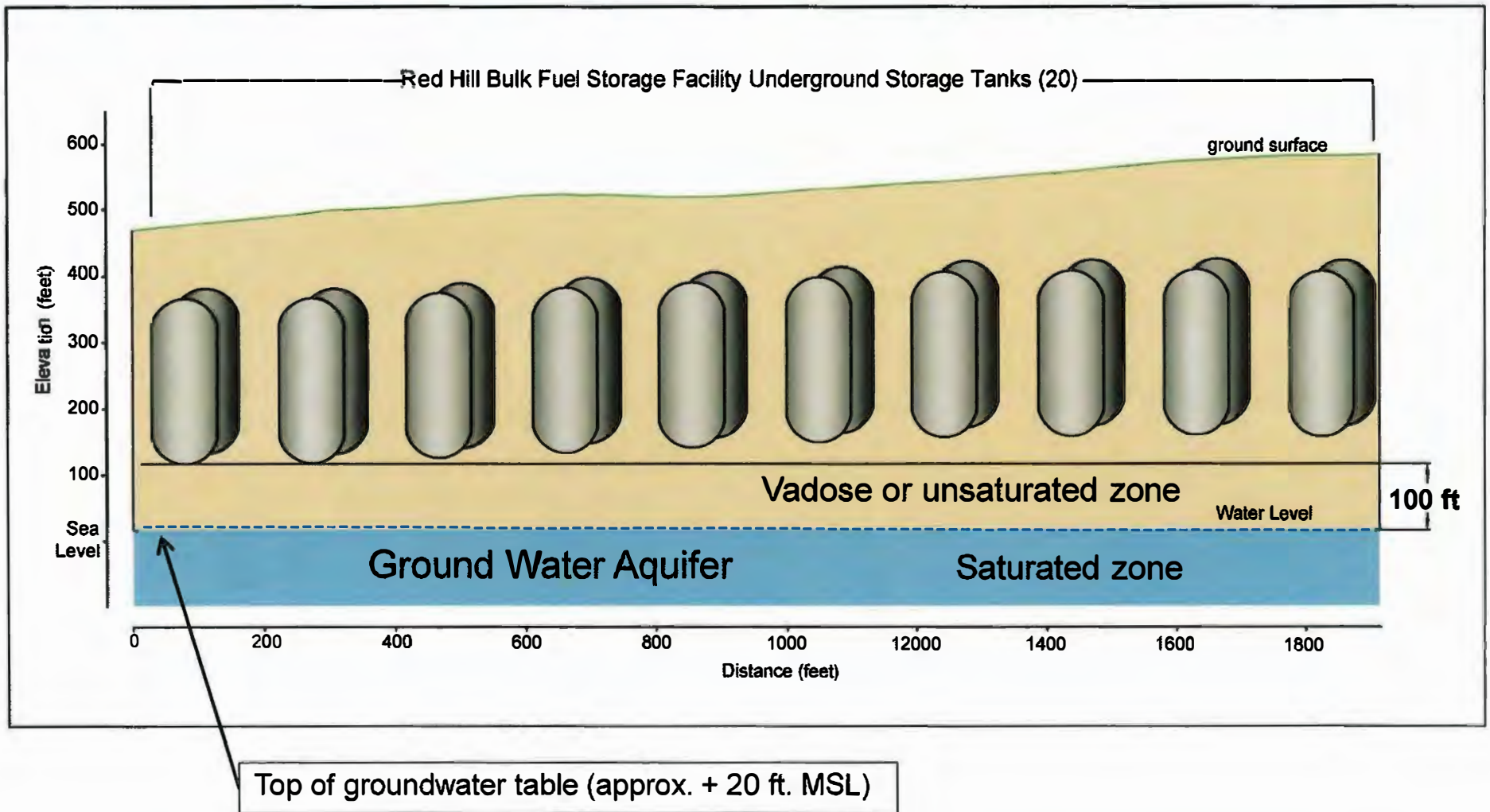


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## Today's Discussion

- Updates on:
  - Navy Destructive Testing (DT) Report
  - Navy Risk and Vulnerability Assessment Report on Red Hill tanks
  - Navy Conceptual Site Model (CSM) Update Report
  - Hawaii DOH evaluation document of groundwater flow paths in the Moanalua, Red Hill and Halawa area
  - Navy permit application for Red Hill tanks







## Navy Destructive Testing (DT) Report

- DT report describes the Navy's analysis of ten liner samples collected from Tank 14 to validate its non-destructive evaluation (NDE) methods
- DT report confirms:
  - Navy's NDE testing can not accurately and reliably identify areas of the liner in need of repair before the next inspection
  - Navy's NDE both significantly overestimated (Samples 3 & 6) and underestimated (Samples 1 & 5) liner thickness
  - Navy's NDE only found 50% of the coupons in need of repair
- Navy claims concrete is in "sound condition" despite tiny sample size and no core sampling



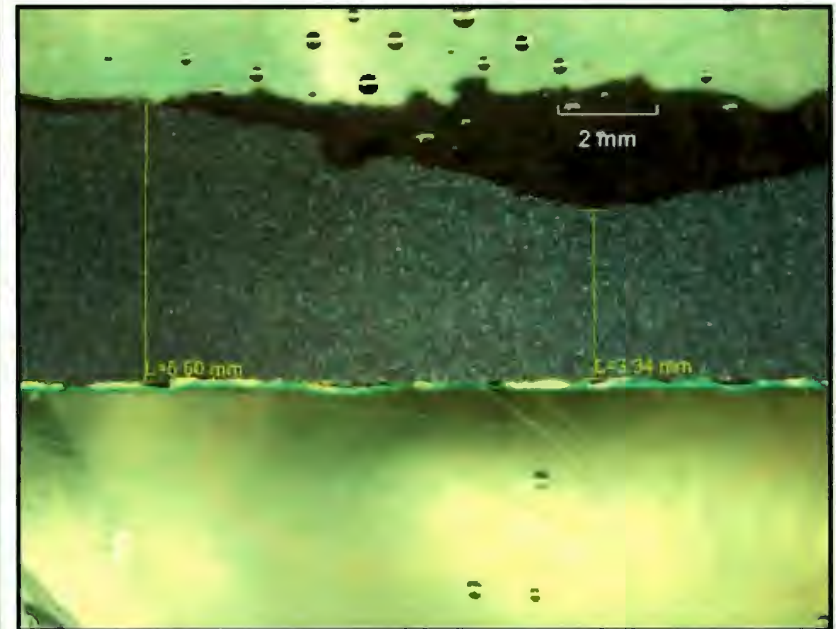
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## Navy DT Report – Liner Sample 3



Source: IMR Test Labs, Destructive Analysis of 10 Steel Coupons Removed from Red Hill Fuel Storage Tank #14, December 17, 2018 (Figures 155 and 188)





## Navy Risk Report on Red Hill tanks

- Navy Risk Report prepared by ABS Consulting, Navy's risk assessment consultant
- According to the Report:
  - 27% probability of up to 30,000 gallon release in a year
  - 34% chance of more than 120,000 gallon release in 100 years
  - 5% chance of more than 1 million gallon release in 100 years
  - For chronic, undetected releases, the expected fuel release is 5,803 gallons per year (facility-wide) [For example: 25 years x 5,803 gallons/year = 145,075 gallons released]
- BWS and our subject matter experts consider the probability values reported by ABS to present an unacceptable risk for fuel releases to the aquifer



## Navy Risk Report on Red Hill tanks – cont.

- Navy Cover Letter on the Navy Risk Report:
  - The results are “not absolutely accurate”, “does not align with historical records” and “needs further effort to refine models to improve accuracy”
  - “Navy will not expend further resources to improve the accuracy....”
  - Proposes to use qualitative approaches for the remaining risk assessment Phases 2, 3 and 4







## Navy Conceptual Site Model (CSM) Report

- The Navy's CSM does not accurately reflect field measurements:
  - Navy CSM does not acknowledge the evidence that groundwater flow is to the northwest (Halawa Shaft)
  - Navy continues to insist valley fill is a barrier to groundwater flow without sufficient field data
  - Navy continues to insist that fuel has not migrated to groundwater since 2008 even though recent Navy groundwater data contradict this conclusion





## DOH evaluation of groundwater flow

- DOH's evaluation:
  - Navy groundwater model unable to reproduce water levels measured in the field
  - Data supports groundwater flow to the Northwest (toward BWS Halawa Shaft)
  - Navy data does not support the existence of deep subsurface features (valley fills) that prevents groundwater flow toward Halawa Shaft, suggesting the feature is not as deep as the Navy claims
- DOH evaluation is consistent with BWS comments and concerns



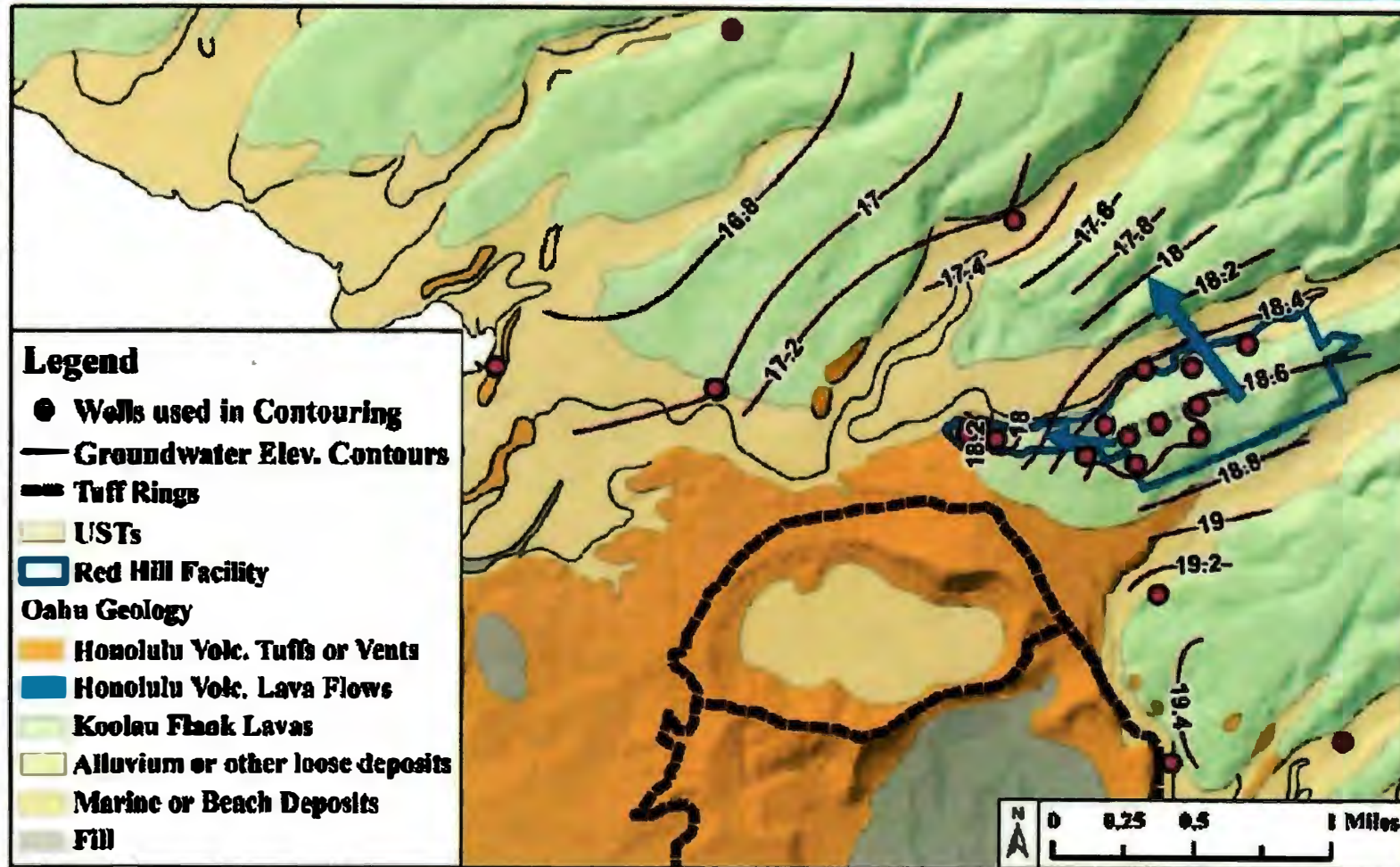


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Source: Hawaii Department of Health Evaluation of Groundwater Flow Paths in the Moanalua, Red Hill, and Halawa Regions; Revision 2 dated July 2019 (Figure 5)



## Navy permit application

- DOH revised Hawaii UST rules in 2018, requiring Navy to obtain a permit to operate Red Hill tanks by July 15, 2019
- DOH accepted public comment on Navy's permit application through June 28, 2019
- BWS submitted comments:
  - Red Hill tanks do not satisfy HRS 342L-32(b) requirement that all USTs and UST systems must "be...operated to prevent releases of the stored regulated substances for the operational life of the tank or tank system"
  - Red Hill tanks do not meet Section 11-280.1-20(b) for corrosion protection





## **Navy permit application – cont.**

- Sierra Club of Hawaii submitted request for contested case hearing on the Navy's application
- DOH did not issue permit to Navy by July 15, 2019, effectively the Navy is operating without a permit





## Navy permit application – cont.

- HAR, Title 11, § 11-1-35:
  - Any person or agency not a party to the contested case hearing may seek to become a party by filing a motion for leave to intervene
  - The motion must state the grounds upon which the person or agency claims to have an interest in the proceeding and must be filed at least ten days before the hearing





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**MOTION TO  
RECESS INTO  
EXECUTIVE  
SESSION**

Upon unanimously approved motion, the Board recessed into Executive Session Pursuant to [HRS §92-5] (a)(4) at 3:32 PM to Consult with the Board's Attorney and to Consider Issues Pertaining to Matters Posted for Discussion at an Executive Session.


**OPEN  
SESSION**

The Board reconvened in Open Session at 3:57 PM.

**MOTION TO  
ADJOURN**

There being no further business Chair Andaya at 3:58 PM called for a motion to adjourn the Open Session. Kapua Sproat so moved; seconded by Jade Butay and unanimously carried.

Respectfully submitted,

  
DEANNA L. THYSSEN

APPROVED:

BRYAN P. ANDAYA  
Chair of the Board

  
Date **OCT 28 2019**

THE MINUTES OF THE REGULAR BOARD MEETING ON AUGUST 26, 2019 WERE APPROVED AT THE OCTOBER 28, 2019 BOARD MEETING			
	AYE	NO	COMMENT
BRYAN P. ANDAYA	X		
KAPUA SPROAT	X		
KAY C. MATSUI	X		
RAY C. SOON			ABSENT
MAX J. SWORD			ABSENT
ROSS S. SASAMURA	X		
JADE T. BUTAY			ABSENT