

MINUTES

REGULAR MEETING OF THE BOARD OF WATER SUPPLY

November 19, 2018

At 2:00 p.m. on November 19, 2018 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
Kay C. Matsui
Ray C. Soon
Ross S. Sasamura
Jade T. Butay
Max J. Sword

Also Present: Ernest Lau, Manager and Chief Engineer
Ellen Kitamura, Deputy Manager and Chief Engineer
Daniel Lee
Erwin Kawata
Mike Fuke
Jason Takaki
Jennifer Elflein
Joe Cooper
Kathy Mitchell
Kevin Ihu
Kathleen Pahinui
Henderson Nuuhiwa
Robert Morita
Marc Chun
Michele Thomas
Mike Matsuo
Barry Usagawa

Others Present: Jeff Lau, Deputy Corporation Counsel
Moana Yost, Deputy Corporation Counsel

Absent: Kapua Sproat, Vice Chair

**APPROVAL OF
MINUTES**

Approval of the Minutes of the Regular Meeting held on October 22, 2018.

**MOTION
TO APPROVE**

Max Sword and Ross Sasamura motioned and seconded, respectively, to approve the Minutes of the Regular Meeting of October 22, 2018. The motion was unanimously carried.

ITEM FOR INFORMATION NO. 1

"November 19, 2018

**UPDATE
ESPC
PROJECT**

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

Chair and Members:

**Subject: Status Update of the Energy Savings Performance Contracting
 (ESPC) Project**

The ESPC project continues through the construction phase. The attached provides the Board a brief overview of the project, as well as status update of the ESPC 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 of the Water Resources Division, provided an update on the ESPC.

The ESPC is a financial mechanism that will allow the BWS to have cost saving from this project to pay for the improvements. The savings are contractually guaranteed. The contract term is up to 20 years with the savings guarantee being about 17 years because of the three years of construction.

Utility costs are about \$27 million a year and ESCO would guarantee reduction of the utility costs by \$3 million a year. To accomplish this savings, we would pay ESCO \$35 million for the work to be performed and they would reduce our annual utility bill by \$3 million per year.

After the completion of the construction, the avoided utility costs will be used to recoup the project costs for the remaining 17 years. After 17 years when all is paid off, the \$3 million savings per year will be realized by the BWS.

Mr. Chun then reviewed in detail the status quo if BWS did nothing and also the situation when the contract was active - where the utility costs would go down but some things will have to be paid back. In this case, the debt service would take up most of the savings. Other costs during the contract term are maintenance of the equipment as well as Measurement and

Verification (M&V) costs. At the end of the contract term, the debt service and the M&V costs will end.

The types of improvements included well pump replacements with more efficient assemblies, energy efficient lights, upgrading the HVAC with more efficient HVAC units, and converting our fleet to hybrids.

Another potential savings program is Demand Response (DR) program with the Hawaiian Electric Company where a potentially mutually beneficial customized program between the two companies would be developed.

Mr. Lau asked if the dollars mentioned on the slides are actual savings projected per year. Also about the converting part of our fleets to hybrids, the power factor, and the time of use. Mr. Chun concurred that is was per year.

Mr. Lau clarified that they are currently in discussions with Hawaiian Electric Company to look at a pilot demand response program and asked Mr. Chun to provide more information.

Mr. Chun explained that the basic concept of the program is to cut back on using energy when Hawaiian Electric Company was experiencing peak demands so that they don't have to keep more generators online or build more generation capacity. Extending that idea, HECO would like to see if BWS could schedule the use of energy to maximize use of the PV when there is an influx of energy during the day.

The pilot is designed for Hawaiian Electric Company and BWS to communicate with each other in order to help Hawaiian Electric Company stabilize their electric grid as well as shift the load.

Mr. Lau added that in light of what is happening with our climate globally, reducing our greenhouse gas emissions is a responsible thing to do. He spoke to someone in San Francisco who said that the air quality is extremely bad right now because the winds have brought smoke from the Camp Fire over 200 miles in to the Bay area in San Francisco. Schools are closing and people are asked to stay indoors. BWS must do its part to reduce emissions wherever possible. It may be little on BWS's part but with all working together BWS can make a difference for our planet.

Mr. Chun reported on the current status of the following projects: Lighting retrofits – 100% complete. There are a few punchlist items that need to be completed, but otherwise, the retrofit of the older lights has been completed. PV – about 50% complete. Ground-mounted PV is in the design phase. PVs are being put on the water tanks at the reservoirs. At some of our pumping stations, it is also going on the ground. Beretania carport PV – the employee parking lot and the equipment lot will have a carport with PV on top of that. Time of Use – 4/10 are complete. Rider M – 6/10. Power factor correction – 9/15. HVAC upgrades – 2/3 sites complete. Beretania will start up when those designs are complete. Pump replacements – final design phase. Currently, they are working with NORESO and HECO to design the pilot.

Mr. Soon asked about the Beretania carport PV. Will the PVs be going on the roof of any potential building being done by the Beretania Redevelopment project? Mr. Chun replied potentially it will.

Mr. Lau added that they could be relocated to some of the baseyards. When they looked at the option of building our own carport now to reduce the energy costs and take advantage of the window of time, maybe five to seven years, before the construction might start, the decision was made to do so because the return investment for the PV would be about nine years. Mr. Chun replied that it would be less, seven to eight years.

Mr. Lau continued to say that they would invest and buy the equipment now, install it, and start generating renewable energy on the site. At the time of the development, if that comes through, then it can be relocated onto the project or at other location.

Mr. Lau clarified the picture of the image of the tank is distorted. The tanks are actually round, but the photo gives the general idea that the PVs are on the roof of the water tanks, and some will be on the ground around the tanks or the pump station.

Mr. Chun clarified that the Ewa side of the employee lot will have three structures, and the equipment lot will have one large structure.

Mr. Soon asked Mr. Chun about the savings of \$3 million a year, recouping our costs after 17 years. Referencing one of the slides, Mr. Soon stated that it showed savings being enjoyed right now, but it should be more like \$8 million in savings.

Mr. Lau clarified that the measurement was in kilowatt hours saved per year. He further stated that AC stands for alternating current. The PV systems produce DC current, and by using the inverter, it converts to AC. Mr. Chun was actually referring to the hybrid fleet, the power factor time of use and the DR which is to be determined in projecting dollar savings per year.

Mr. Soon requested that the slide be updated to actual savings, and Mr. Chun agreed.

Mr. Lau continued that the cost of electricity won't necessarily go down which is tied to oil. With the ESPC projects, you have to project what the cost of electricity is going to be over a long period of time, making it a long-term projection.

Mr. Butay asked if the lighting retrofit is being monitored.

Mr. Chun replied that they are not at the M&V stage, yet. He said they reviewed previous accounts and the electric accounts for the corporate yards, and he saw a general trend down. However, there is not enough information to tell exactly what the LED is doing.

Mr. Butay commented that they don't know whether BWS is hitting the target or the projected savings of lighting.

Mr. Chun replied that, hopefully, they will have that information next time.

Mr. Sword asked about the \$3 million a year from utility through ESCO and how is it guaranteed.

Mr. Chun explained that it is a combined savings of \$3 million. As far as the guarantee, there is a measurement and verification process which is part of the contract. Every year BWS collects the data to show that their particular energy conservation measures save the amount that they totaled up. If they do not reach the goal, the company writes a check for the difference.

Mr. Sword asked for clarification on the savings of \$11,893 per year on the auto fleet which seems low. Mr. Chun explained that it turned out not to be as advantageous to switch to the hybrids because of how BWS uses the cars. The technology for this type of vehicles is not conducive to how the cars are driven at BWS.

WATER FOR LIFE

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



Board of Water Supply
City and County of Honolulu

Energy Savings Performance Contracting (ESPC) – BWS Facilities

FY 2016 CIP – I. Research and Development – Item 1.

An Update

November 19, 2018



What is an ESPC?

- Energy Savings Performance Contracting
- A contract for comprehensive energy efficiency and operational improvements
- Cost savings pay for the improvements
- Savings are contractually guaranteed (up to 20 years*)
- Involves a Measurement and Verification (M&V) phase
- State of Hawaii created procurement process for government agencies (Chapters 36 [Section 36-41] and 196 of the HRS, and SPO Vendor List No. 12-11)
- Currently being used by State DAGS, DOT, PSD, City ENV... to name a few.



Conceptual Example:

BWS
UTILITY COST =
\$27,000,000/year*

ESCO guarantees to reduce-
utility costs by \$3,000,000/year

ESCO will be paid \$34 M
For performing work to
reduce BWS annual utility
bill by \$3,000,000/year

After ESCO completes construction,
BWS uses avoided utility costs
to re-coup project costs in 17 years.

***After 17 years, BWS enjoys utility savings
of \$3,000,000 per year.***



The Value of Performance Contracting





Project Highlights

Energy Conservation Measure (ECM)	Annual Savings (Benefits)
Photovoltaic Systems (with Roof Repair)	5,265,850 kWh-AC
Well Pumps Replaced With More Efficient Assemblies	1,348,979 kWh-AC
Energy Efficient Lighting	717,027 kWh-AC
Energy Efficient HVAC Upgrades/Controls	661,245 kWh-AC
Converting Part of Auto Fleet to Hybrids	\$11,899
Power Factor Correction Equipment	\$102,963
Time of Use / Rider M Savings	\$368,113
Demand Response Measure Potential	\$\$\$ TBD



Green House Gas Reductions

Emission Type	Reductions
CO ₂	12,946,685 lbs.
SO _x	34,918 lbs.
NO _x	36,482 lbs.
Equivalent cars removed from the roads	2,105 cars

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Energy Conservation Measure (ECM)	Status Update
Lighting Retrofit	100% Complete*
Reservoir Photo Voltaic (PV)	About 50% Complete
Ground Mounted PV	Design Stage
Beretania Carport PV	Major Construction to Start Soon
Time Of Use	4 of 10 Complete*
Rider M	6 of 10 Complete*
Power Factor Correction	9 of 15 Complete
HVAC Upgrades	2 of 3 Sites Complete
Well Pump Replacement	Final Design
Demand Response Measures	Designing Pilot
Vehicle Update	21 of 28 purchased

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City and County of Honolulu

Questions?

ITEM FOR INFORMATION NO. 2

**Quarterly Capital Improvement Program Status Report
All Divisions
As of September 30, 2018**

Quarter Awarded	JUL - SEP		OCT - DEC		JAN - MAR		APR - JUN		Awarded to Date	Total Budgeted
Design Contracts Awarded (#/\$)	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$22,295,000.00
Construction Contracts Awarded (#/\$)	17	\$2,990,679.60	0	\$0.00	0	\$0.00	0	\$0.00	\$2,990,679.60	\$97,560,000.00
Project Totals	17	\$2,990,679.60	0	\$0.00	0	\$0.00	0	\$0.00	\$2,990,679.60	\$119,855,000.00
Quarter Completed	JUL - SEP		OCT - DEC		JAN - MAR		APR - JUN		Totals	
Design Contracts Completed (#/\$)	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	
Construction Contracts Completed (#/\$)	0	\$999,072.00	0	\$0.00	0	\$0.00	0	\$0.00	\$999,072.00	
Totals	0	\$999,072.00	0	\$0.00	0	\$0.00	0	\$0.00	\$999,072.00	
Ongoing Projects										
Ongoing Design Projects (#)	235									
Ongoing Design Projects (\$)	\$89,839,635.90									
Ongoing Construction Projects (#)	129									
Ongoing Construction Projects (\$)	\$268,759,913.09									

**Quarterly Capital Improvement Program Status Report
All Divisions**

DESIGN AND CONSTRUCTION PROJECTS AWARDED - FIRST QUARTER FY 2019

Item #	Project Title	Expend Type	Budget Amount	Awarded
005A	Pumping Unit Replacement: Newtown Wells Pump No. 3	CONST	\$199,771.81	\$199,771.81
005B	Pumping Unit Replacement: Hooeae Wells Pump No. 5	CONST	\$181,168.93	\$181,168.93
005D	Haleiwa Wells Hydropneumatic Tank Replacement	CONST	\$427,086.00	\$427,086.00
005H	Waialeale Wells I Discharge Piping Replacement	CONST	\$68,875.00	\$68,875.00
005K	Makaha Well VI Sounding Tube Replacement	CONST	\$173,249.00	\$173,249.00
051A	Removal and Replacement of Asbestos-containing Tiles at Beretania Public Service Building First Floor	CONST	\$7,870.00	\$7,870.00
045	GAC Interior Corrosion Control at Various Locations	CONST	\$777,218.00	\$777,218.00
005L	Makaha Well VI - Additional Work	CONST	\$20,934.86	\$20,934.86
051B	Maakua Well Power Conditioner Pilot	CONST	\$12,545.00	\$12,545.00
051H	Safety Platforms At Punaluu & Kainuki High School Well Monitoring Sites	CONST	\$404,000.00	\$404,000.00
051K	Aina Koa Booster No. 1	CONST	\$328,456.00	\$328,456.00
055A	Replace Mechanical Piping - Halawa Shaft Pump Station	CONST	\$161,140.00	\$161,140.00
055D	Halawa Wells Discharge Piping Replacement	CONST	\$228,365.00	\$228,365.00
1st Quarter totals			\$2,990,679.60	\$2,990,679.60

DESIGN AND CONSTRUCTION PROJECTS COMPLETED - FIRST QUARTER FY 2019

Job #	Project Title	Completion Date	Contract Amount
14-015	Kaamilo Booster Renovation	8/7/2018	\$794,882.00
16-029J	Road Repair and Drainage Improvements - Newtown-Royal Summit and Booth Road 740 Reservoir Access Roads	8/21/2018	\$204,190.00
1st Quarter totals			\$999,072.00

DISCUSSION:

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

Mr. Takaki reported on the Quarterly Capital Improvement Program covering encumbrances for all Divisions as of September 30, 2018. In the first quarter of the fiscal year, just under \$3 million was encumbered. There were also two construction contracts that were completed during the quarter. He referred to the second page listing details of the projects awarded and completed.

Mr. Soon asked why the budgeted amounts exactly equal the awarded amount. Mr. Takaki explained that these are lump sum appropriations, for example, Pump Renewal and Replacement. As the contracts are awarded, the encumbrances reduce the available budgeted amount. Most are using indefinite delivery, indefinite quantity (IDIQ) contracts and work orders are cut for the work required.

Mr. Soon asked if the construction jobs are awarded by competitive bids. Mr. Lau stated that construction is competitive and that that contracts are all competitively procured, including IDIQ contracts.

Mr. Andaya commented that awarded to date is \$3 million, but the total budgeted for the year is about \$120 million. Four quarters are not going to equal four parts. Is BWS expected to encumber the total budgeted for the year at the end? Mr. Takaki responded that for the projects for the Capital Projects Division the total budgeted amount will be encumbered by the end of the year. An effort is being made to even out the awards throughout the fiscal year, making it easier for everyone involved in the processing of contracts.

In comparison to previous years, this quarter's encumbrances of just under \$3 million compares favorably with the same quarter last fiscal year when just under \$900,000 was awarded. Although the budget is larger in FY19 than in FY18, the difference is still significant, 2.5% of the budget, as opposed to 0.8% of the budget in the first quarter of last year. Mr. Takaki emphasized that project planning will continue to improve the execution.

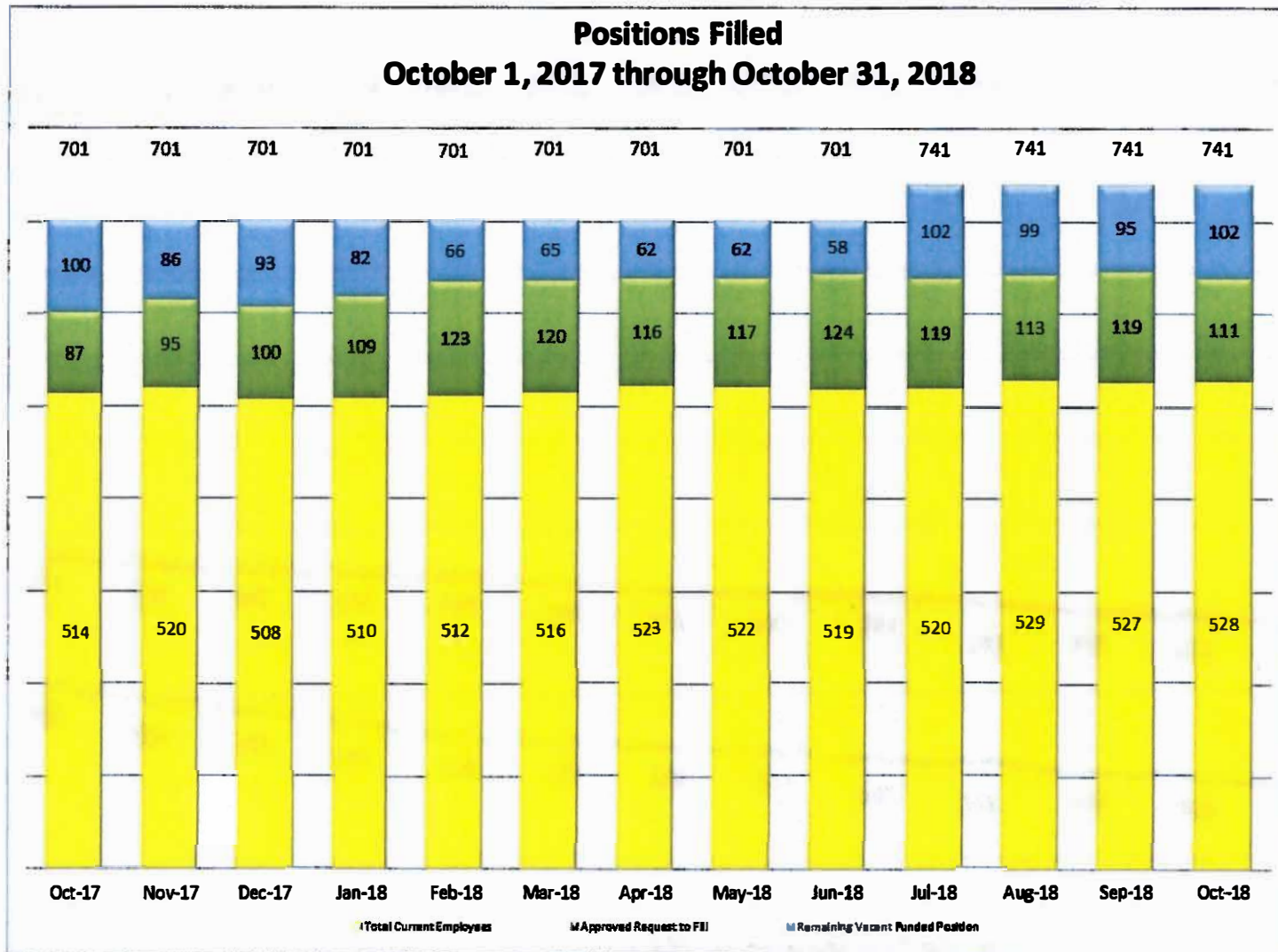
Mr. Lau asked what was the total CIP performance in previous years. Mr. Takaki responded that overall he did not think BWS has been below 95% of executing the total budgeted amount for recent years.

Mr. Lau continued that the challenge of government is that when the budget becomes available on July 1, it is getting procurements completed in time. In this case, it was a positive sign. They bid out and awarded \$3 million in construction in the first quarter of the fiscal year. Mr. Lau sees this as progress and that it is moving in the right direction. He would like to have more work in earlier quarters, so it is not all done all the second, third, or fourth quarters. Generally, there has been a big rush in the third and fourth quarters.

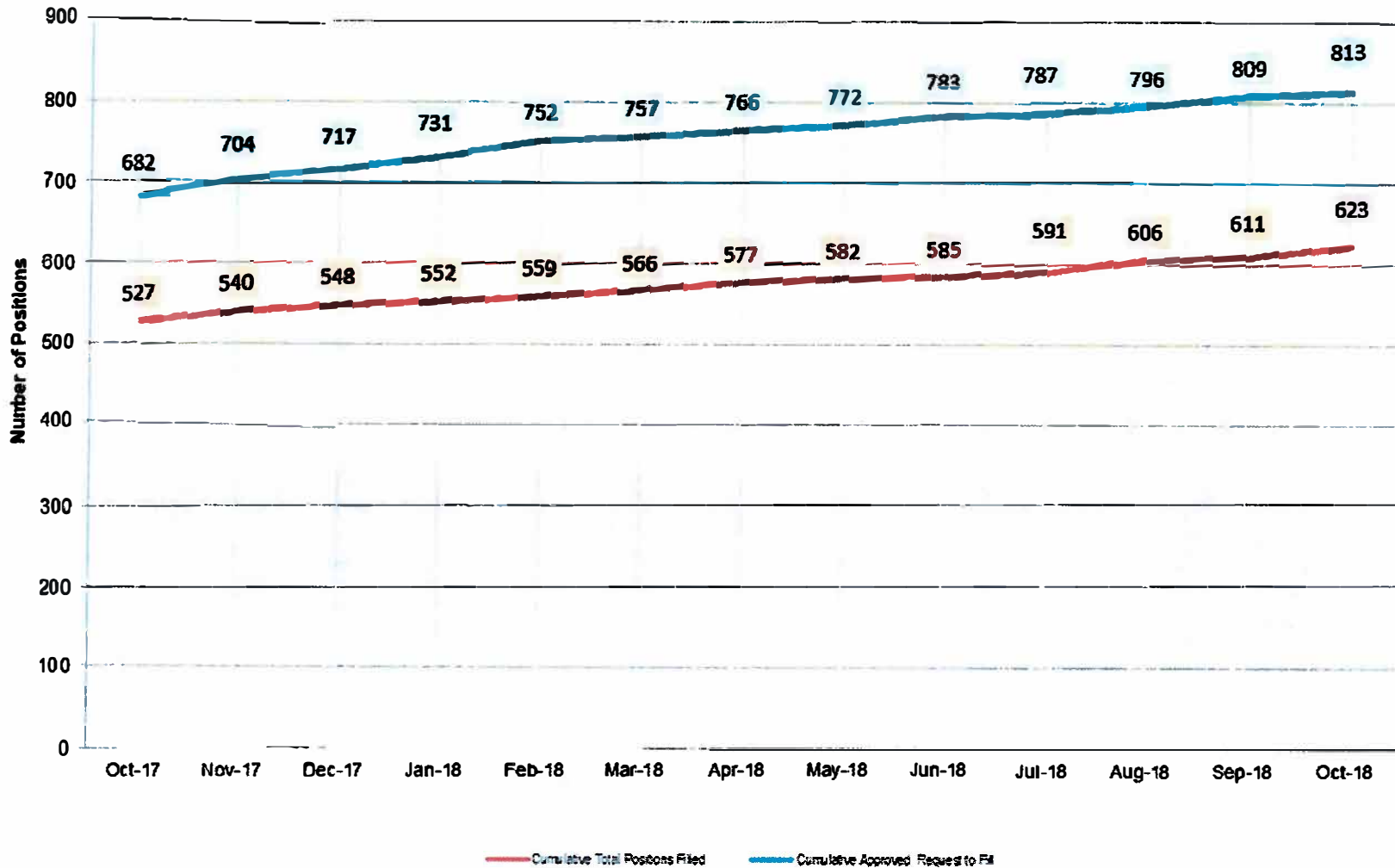
Mr. Takaki reiterated that he agrees with the Manager and they have been very successful in getting out the projects that they set out to do. This is a key to the improvements Capital Projects is making on planning ahead to improve the predictability of project delivery.

ITEM FOR INFORMATION NO. 3

For the period Aug17- Oct17 Actions: 20 New Hires, 10 Promotions, 2 Demotions,
12 Separations, 26 New Approvals to Fill, 2 Cancelled Requests



Cumulative Totals October 1, 2017 through October 31, 2018



BOARD OF WATER SUPPLY

City and County of Honolulu

RECRUITMENT AND SEPARATION STATUS For Period August 31, 2018 to October 31, 2018

Status of Positions Under Recruitment

	as of		
	8/31/2018	9/30/2018	10/31/2018
Pending DHR Classification Action	27	30	20
Pending DHR Open List	16	25	24
Pending IDCE	6	3	3
Pending Interview Questions	25	17	24
Pending Interviews	31	33	34
Anticipated Starts	8	11	6
Total Positions Under Recruitment	113	119	111

Filled Positions

Month	Aug-18	Sep-18	Oct-18
Open list	12	5	3
IDCE list	3	0	9

Separations

Month	Aug-18	Sep-18	Oct-18
Retire	1	4	1
Resign	1	3	1

Legend:

DHR = Department of Human Resources City and County of Honolulu

IDCE = Intra-Departmental Competitive Examination

PD = Position Description

DISCUSSION:

Michele Thomas, Executive Assistant of the Human Resources Office, gave the report.

Ms. Thomas reported on the quarterly update for the quarter for August through October 2018. They are ramping up for the recruitment for the accelerated Capital Improvement Program.

This quarter, there were 20 new hires, 10 promotions, two demotions, 12 separations, 25 new approvals to fill. There was an average of over 100 positions that are in recruitment during this last quarter. They anticipate that in the next quarter there will be some additional retirements, as we are hitting the end of the year which is when there are more retirements.

Mr. Andaya asked if there was a way to predict approximately how many retirements to expect. Ms. Thomas responded that unless the employees inform HRO or their management ahead of time, there is no way to predict when the retirement will occur. The requirement is 30 days in advance.

Mr. Lau added that BWS receives a notice from the Employee's Retirement System informing the BWS that an employee has filed for retirement. Mr. Lau said that about one third of the workforce is eligible to retire.

ITEM FOR INFORMATION NO. 4

"November 19, 2018

**SCHEDULE OF
MONTHLY BOARD
MEETINGS FOR
CALENDAR YEAR
2018**

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

**Subject: Schedule of Monthly Board Meetings for Calendar Year
 2019**

**Attached for your information is the schedule of Board Meetings for the
calendar year 2019.**

Respectfully Submitted,

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

Attachment"

The foregoing was for information only.

DISCUSSION:

**Mr. Lau informed the Board Members that the schedule is for information
and hopes that the Board Members will attend so quorums are met.
Mr. Andaya asked the Board to let him know if they have conflicts with the
schedule. Mr. Lau requested that the Board contact Gerrene Yukuno, the
Board Secretary, to let her know of their attendance. Mr. Lau pointed out
that a couple of meetings this past year had to be cancelled due to lack of
quorum.**

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

2019 BOARD MEETING SCHEDULE

Board Meetings are scheduled for the fourth Monday of each month at 2:00 p.m., in the Public Service Building (PSB) Board Room, unless otherwise noted.

January 28

February 25

March 25

April 22

May 28 (Tuesday)*

June 24

July 22

August 26

September 23

October 28

November 25

December 16 (3rd Monday in December)

*Monday, May 27 is a holiday

ITEM FOR INFORMATION NO. 5

"November 19, 2018

**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 October 2018. The monthly production average for October 2018 was 133.04 million gallons per day.

The Board of Water Supply rainfall index for the month of October 2018 was 164 percent of normal; with a 5-month moving average of 153 percent. As of November 6, 2018, the Hawaii Drought Monitor shows no drought conditions for the Island of Oahu.

Most monitoring wells are showing increasing trends, likely resulting from decreased pumping due to increased rainfall as we approach the winter months.

Respectfully submitted,

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

Attachments"

The foregoing was for information only.

DISCUSSION: Barry Usagawa, Program Administrator of the Water Resources Division, provided the report and explained the graphs in detail for Mr. Sword.

**PRODUCTION, HEAD AND RAINFALL REPORT
MONTH OF OCTOBER 2018**

POTABLE

STATION	MGD
HONOLULU (1)	
KULIOUOU	0.06
WAILUPE	0.10
AINA KOA	0.14
AINAKOA II	0.78
MANOA II	0.99
PALOLO	1.15
KAIMUKI HIGH	1.18
KAIMUKI LOW	2.50
WILDER	6.83
BERETANIA HIGH	4.32
BERETANIA LOW	4.32
KALIHI HIGH	1.82
KALIHI LOW	2.29
KAPALAMA	0.68
KALIHI SHAFT	7.92
MOANALUA	1.08
HALAWA SHAFT	5.36
KAAMILO	0.87
KALAUAO	6.56
PUNANANI	10.37
KAHUMANU	0.18
HECO WAIU	2.58
MANANA	0.34
WELLS SUBTOTAL:	62.43
MANOA TUNNEL	0.17
PALOLO TUNNEL	0.23
GRAVITY SUBTOTAL:	0.40
HONO. SUBTOTAL:	62.83

STATION	MGD
WINDWARD (2)	
WAIMANALO II	0.24
WAIMANALO III	0.00
KUOU I	0.64
KUOU II	0.06
KUOU III	0.12
LULUKU	0.95
HAIKU	0.00
IOLEKAA	0.00
KAHALUU	0.83
KAHANA	0.41
PUNALUU I	0.00
PUNALUU II	1.05
PUNALUU III	1.05
KALUANUI	0.38
MAAKUA	0.15
HAUULA	0.27
WELLS SUBTOTAL:	6.14
WAIM. TUNNELS I & II	0.00
WAIM. TUNNELS III&IV	0.19
WAIHEE INCL. WELLS	0.92
WAIHEE TUNNEL	4.85
LULUKU TUNNEL	0.13
HAIKU TUNNEL	0.90
KAHALUU TUNNEL	1.84
GRAVITY SUBTOTAL:	8.84
WIND. SUBTOTAL:	14.98

STATION	MGD
NORTH SHORE (3)	
KAHUKU	0.30
OPANA	0.05
WAIALEE I	0.45
WAIALEE II	0.47
HALEWA	0.00
WAIALUA	1.51
N.SHORE SUBTOTAL:	2.78

STATION	MGD
MILILANI (4)	
MILILANI I	2.17
MILILANI III	0.00
MILILANI III	0.68
MILILANI IV	1.21
MILILANI SUBTOTAL:	4.06

STATION	MGD
WAIHAWA (5)	
WAIHAWA	1.54
WAIHAWA II	1.37
WAIHAWA SUBTOTAL:	2.91

STATION	MGD
PEARL CITY-HALAWA (6)	
HALAWA 277	0.68
HALAWA 550	0.00
AIEA	1.11
AIEA GULCH 497	0.39
AIEA GULCH 550	0.20
KAONOHI I	0.96
WAIMALU I	0.00
NEWTOWN	0.79
WAIU	0.73
PEARL CITY I	0.51
PEARL CITY II	0.97
PEARL CITY III	0.40
PEARL CITY SHAFT	0.92
PEARL CITY-HALAWA SUBTOTAL:	7.66

STATION	MGD
WAIPAHU-EWA (7)	
WAIPIO HTS.	0.25
WAIPIO HTS. I	0.39
WAIPIO HTS. II	0.31
WAIPIO HTS. III	0.98
WAIPAHU	5.84
WAIPAHU II	1.92
WAIPAHU III	1.63
WAIPAHU IV	1.80
KUNIA I	4.42
KUNIA II	1.65
KUNIA III	1.50
HOAEAE	5.07
HONOULIULI I	1.26
HONOULIULI II	7.06
MAKAKILO	0.29
WAIPAHU-EWA SUBTOTAL:	34.38

STATION	MGD
WAIANAE (8)	
MAKAHA I	0.23
MAKAHA II	0.05
MAKAHA III	0.11
MAKAHA V	0.17
MAKAHA VI	0.00
MAKAHA SHAFT	0.00
KAMAILE	0.07
WAIANAE I	0.02
WAIANAE II	0.64
WAIANAE III	0.59
WELLS SUBTOTAL:	1.89
WAI. C&C TUNNEL	1.40
WAI. PLANT. TUNNELS	0.16
GRAVITY SUBTOTAL:	1.56
WAIANAE SUBTOTAL:	3.45

NONPOTABLE

NONPOTABLE	MGD
KALAUAO SPRINGS	0.86
BARBERS POINT WELL	1.35
GLOVER TUNNEL NP	0.40
NONPOTABLE TOTAL:	2.61

RECYCLED WATER (SEPTEMBER 2018)

RECYCLED WATER	MGD
HONOULIULI WRF R-1	7.23
HONOULIULI WRF RO	1.78
RECYCLED WATER TOTAL:	9.01

**PRODUCTION, HEAD AND RAINFALL REPORT
MONTH OF OCTOBER 2018**

PRODUCTION SUMMARIES

TOTAL WATER	MGD
PUMPAGE	122.24
GRAVITY	10.80
POTABLE TOTAL:	133.04
NONPOTABLE	2.61
RECYCLED WATER	9.01
TOTAL WATER:	144.66

CWRM PERMITTED USE AND BWS ASSESSED YIELDS FOR BWS POTABLE SOURCES				
WATER USE DISTRICTS		A	B	C
		PERMITTED USE/ BWS YLDS	OCT 2018	DIFF. A-B
1	HONOLULU	82.93	62.43	20.50
2	WINDWARD	25.02	9.20	15.82
3	NORTH SHORE	4.74	2.78	1.96
4	MILILANI	7.53	4.06	3.47
5	WAIHAWA	4.27	2.91	1.36
6	PEARL CITY-HALAWA	12.25	7.66	4.59
7	WAIPAHU-EWA	50.63	34.36	16.25
8	WAIANAE	4.34	1.89	2.45
TOTAL:		191.71	125.30	66.41

CWRM PERMITTED USE FOR BWS NONPOTABLE SOURCES				
WATER USE DISTRICTS		A	B	C
		PERMITTED USE	OCT 2018	DIFF. A-B
7	WAIPAHU-EWA (BARBERS POINT WELL)	1.00	1.35	-0.35
TOTAL:		1.00	1.35	-0.35

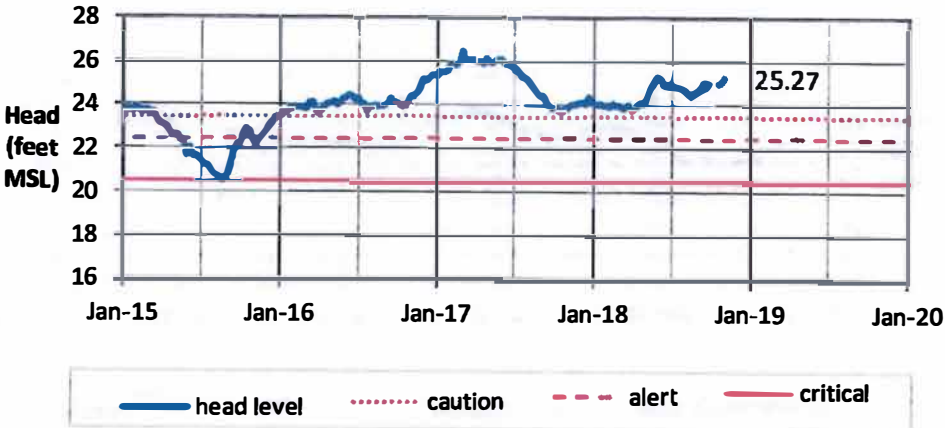
EFFECTIVE WATER DEMAND PER DISTRICT

IMPORT/EXPORT BETWEEN WATER USE DISTRICTS			
FROM	TO		MGD
2	1	WINDWARD EXPORT	1.15
7	8	BARBERS PT LB	6.40

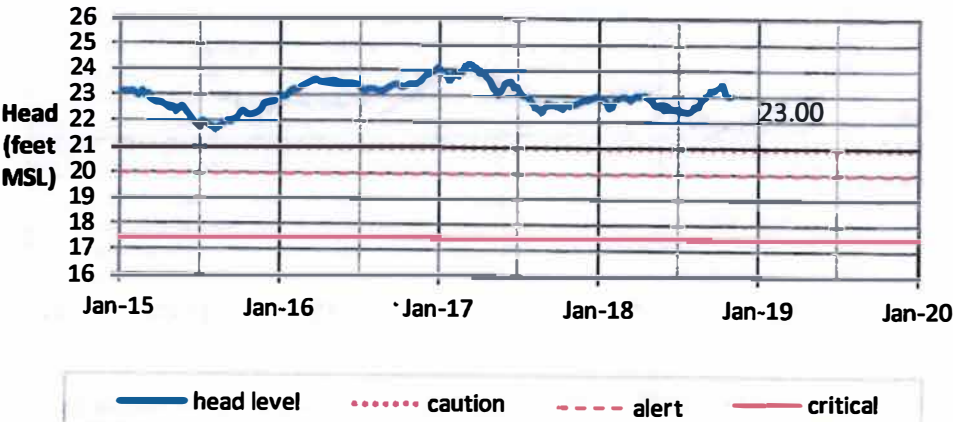
WATER USE DISTRICTS		SUBTOTAL	IMPORT	EXPORT	EFFECTIVE WATER DEMAND
1	HONOLULU	62.43	1.15	-	63.58
2	WINDWARD	9.20	-	1.15	8.05
3	NORTH SHORE	2.78	-	-	2.78
4	MILILANI	4.06	-	-	4.06
5	WAIHAWA	2.91	-	-	2.91
6	PEARL CITY-HALAWA	7.66	-	-	7.66
7	WAIPAHU-EWA	34.36	-	6.40	27.96
8	WAIANAE	1.89	6.40	-	8.29
TOTAL:		125.30	7.55	7.55	125.30

Weekly Head Report

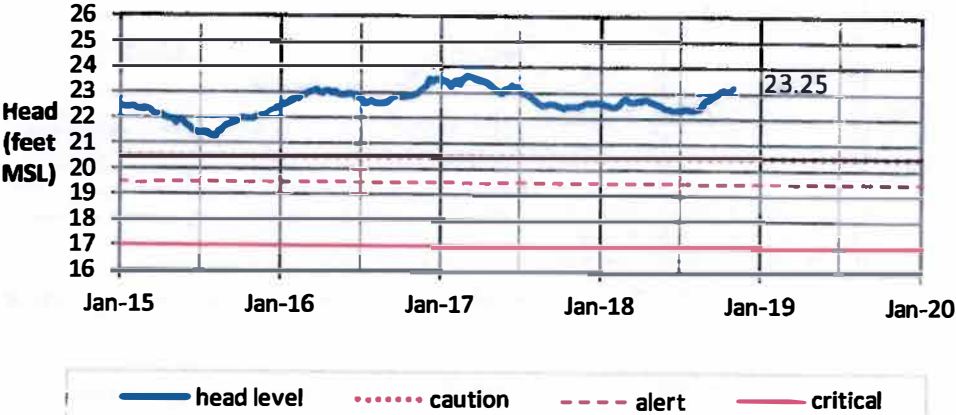
Kaimuki 11/05/18



Beretania 11/07/18

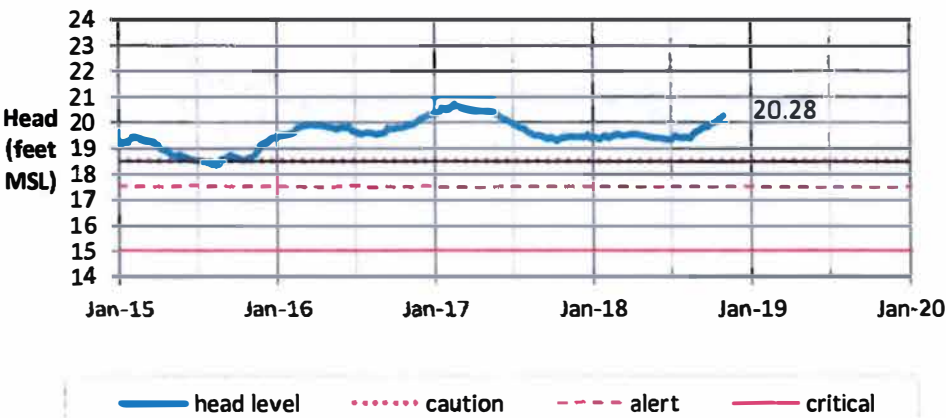


Kalihi 11/07/18

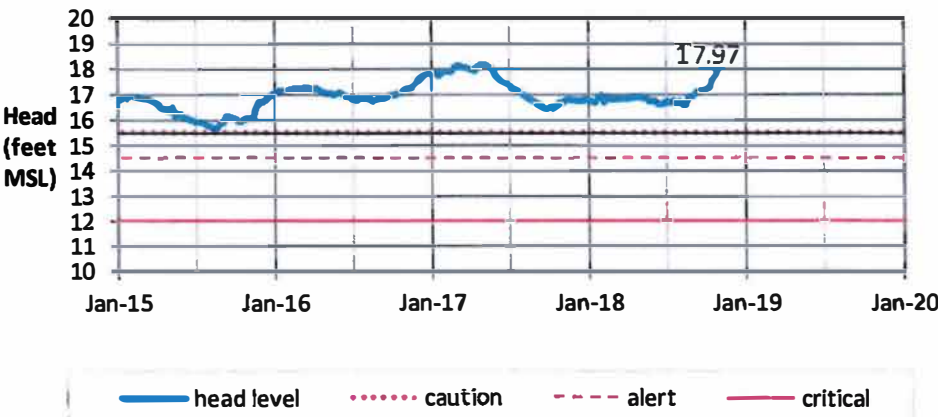


Weekly Head Report

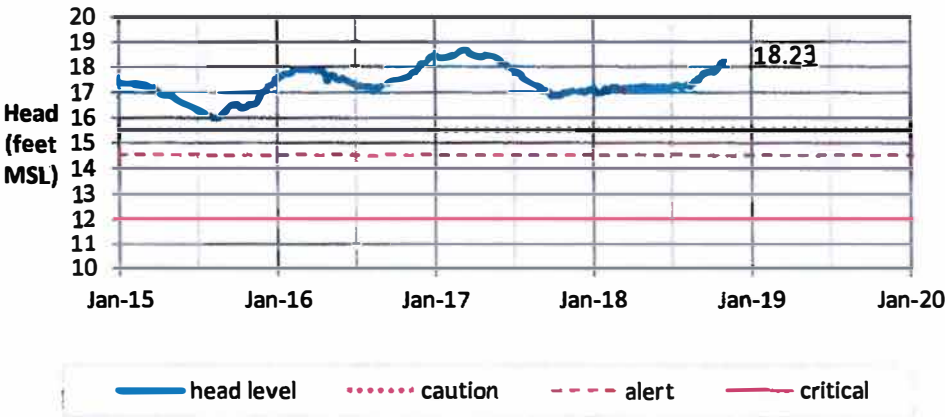
Moanalua 11/06/18



Halawa 11/07/18

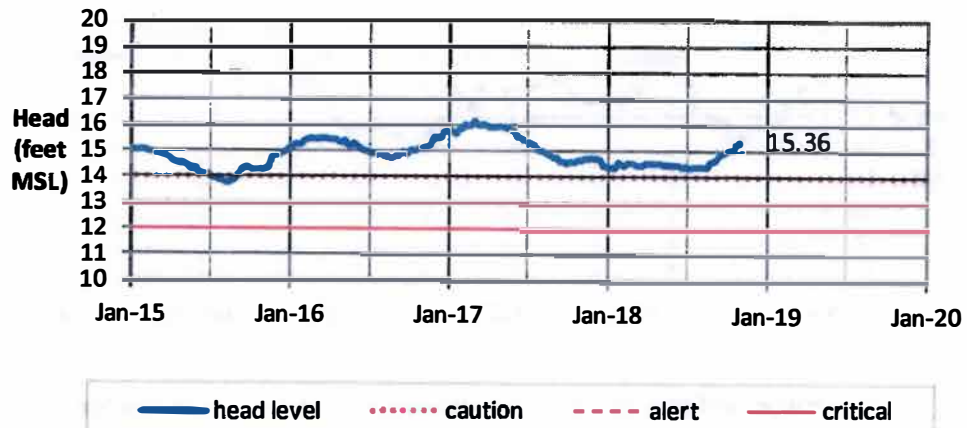


Kalauao 11/05/18

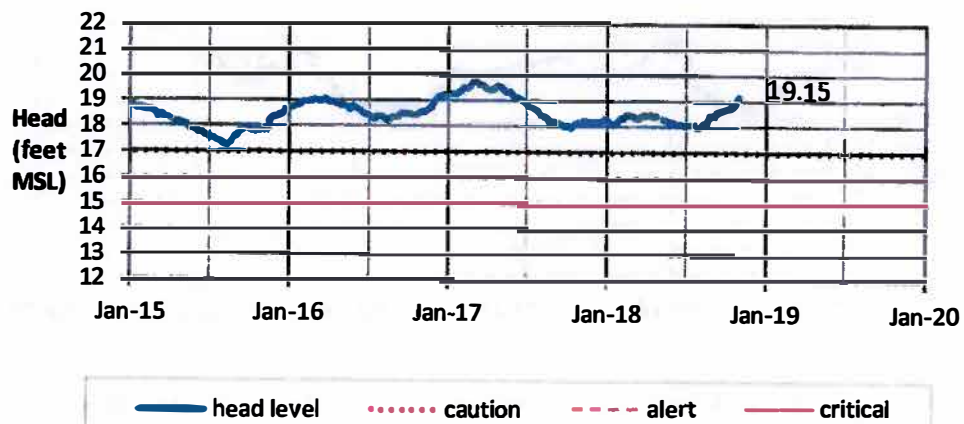


Weekly Head Report

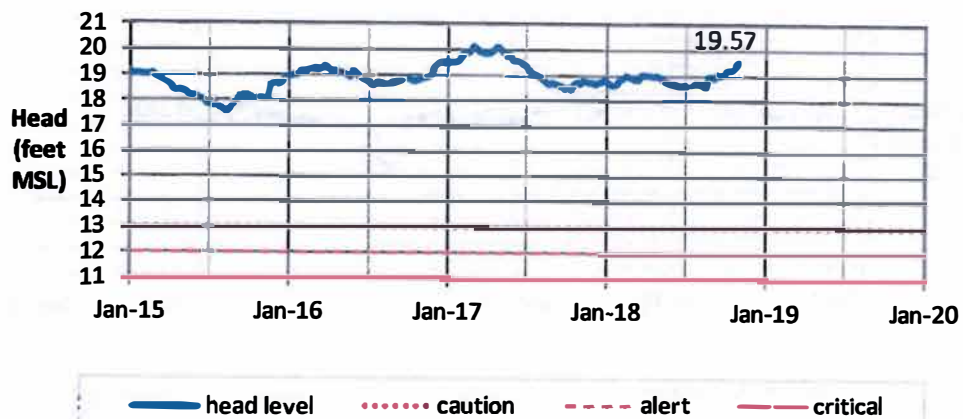
Pearl City 11/05/18



Waipahu 11/06/18

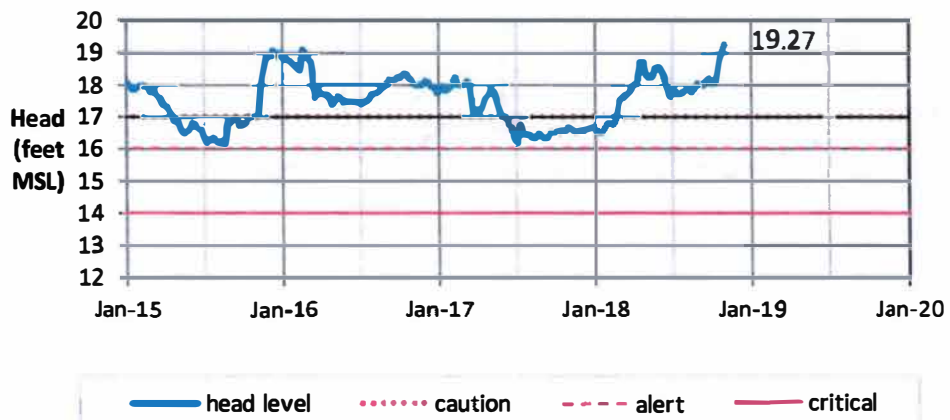


Hoaeae-Kunia 11/07/18

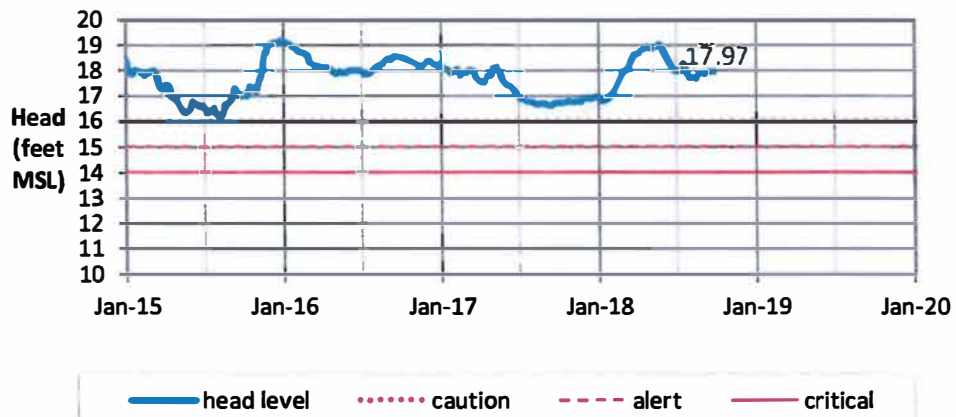


Weekly Head Report

Punaluu 11/07/18



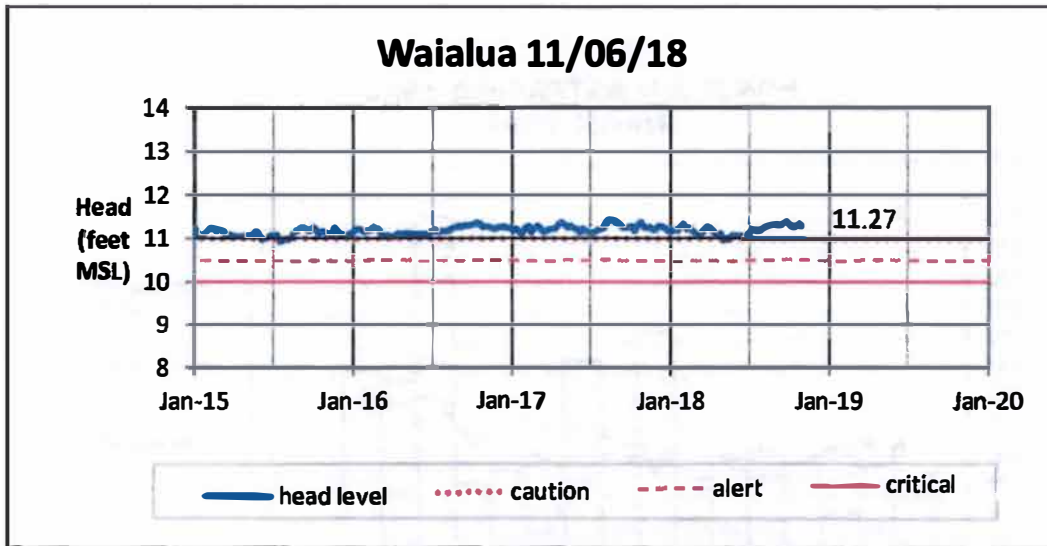
Kaluauui 10/01/18



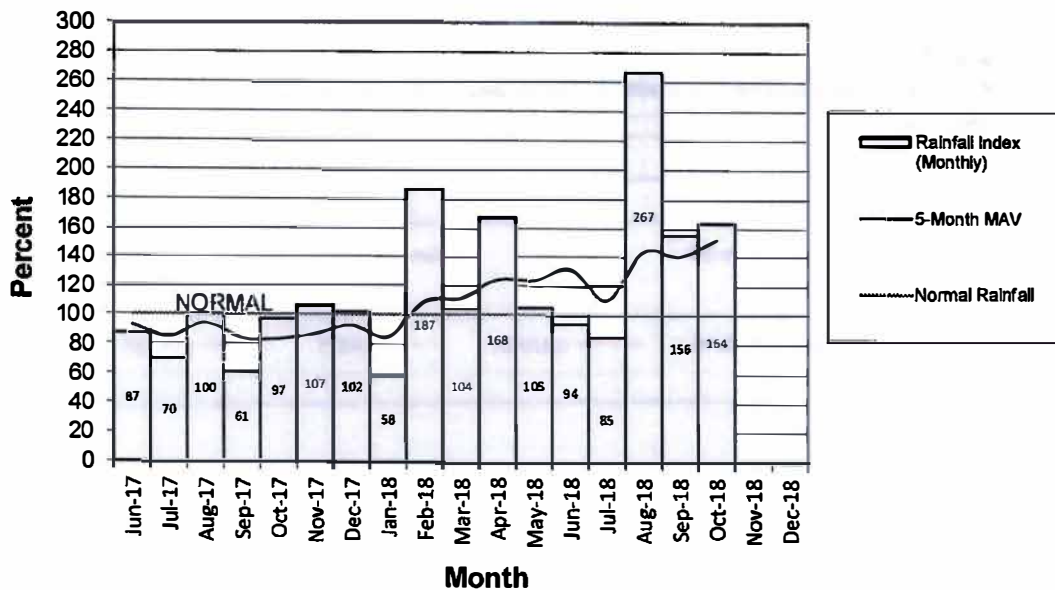
Waihee Tunnel 11/07/18



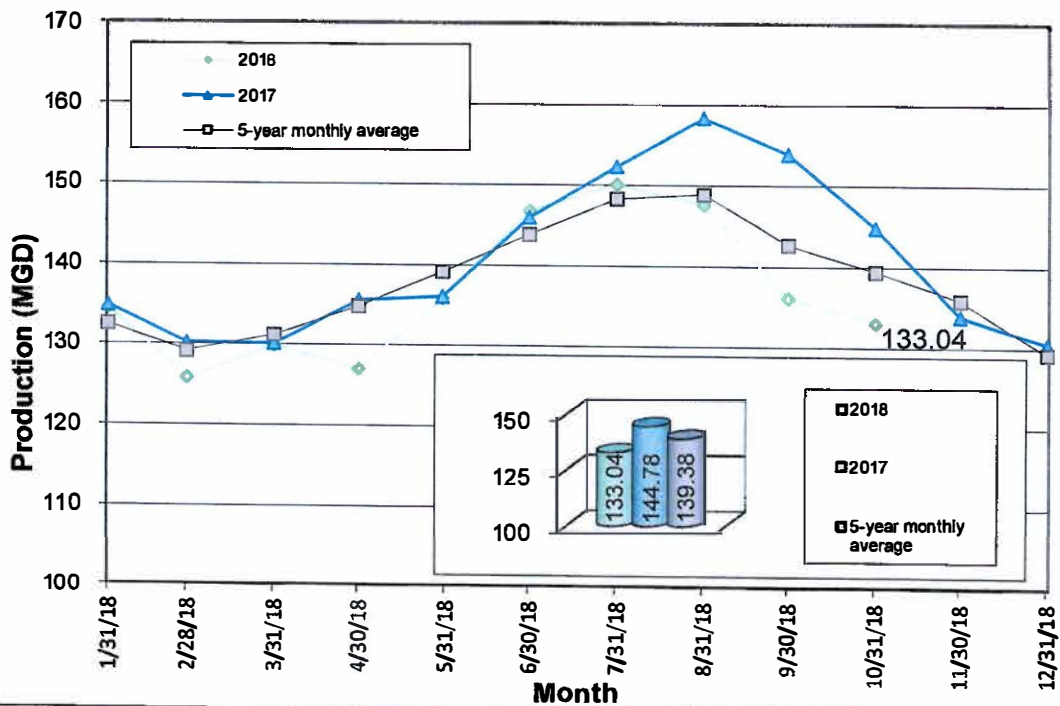
Weekly Head Report



HONOLULU WATERSHED AREA Rainfall Intake



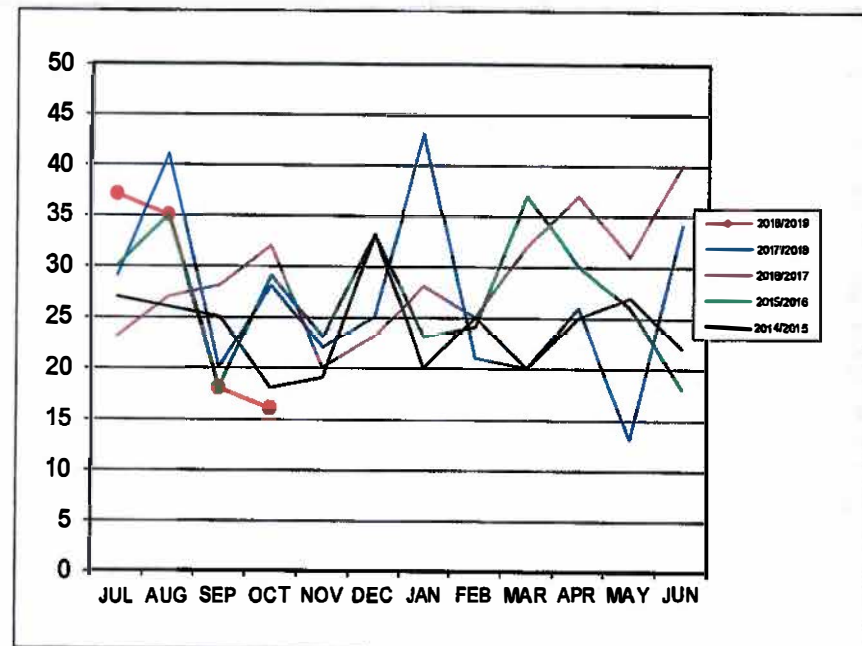
Monthly Production



WATER MAIN REPAIR REPORT for October 2018

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
2018/2019	37	35	18	16									106
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
2014/2015	27	26	25	18	19	33	20	25	20	25	27	22	287

Date	Address	Size (In)	Pipe Type
10/1/2018	86-123 Kuwale Rd, Waianae	8	CI
10/3/2018	1645 Stillman Ln, Honolulu	6	CI
10/4/2018	2292 Halehaka St, Honolulu	8	CI
10/5/2018	3410 Pehu St, Honolulu	8	CI
10/5/2018	2207 Aamanu St, Pearl City	8	CI
10/8/2018	3366 Likini St, Honolulu	6	CI
10/14/2018	98-1529 Akaaka St, Aiea	8	CI
10/15/2018	1226 Punana Loop, Kailua	8	CI
10/19/2018	1140 Kilani Ave, Wahiawa	8	CI
10/19/2018	509 University Avenue, Honolulu	8	CI
10/22/2018	91-533 Huleia Pl, Ewa Beach	6	CI
10/23/2018	91-533 Huleia Pl, Ewa Beach	6	CI
10/25/2018	91-79 Malakole St, Kapolei	14	PVC
10/25/2018	23 Lauone Loop, Wahiawa	8	CI
10/27/2018	87-286 Laulele St, Waianae	8	CI
10/28/2018	45-586 Awanene Pl, Kaneohe	8	CI



15 miles of pipelines were surveyed by the Leak Detection Team in the month of October.

DISCUSSION: Daniel Lee, Water Service Superintendent of the Field Operations Division, gave the report, and there were no comments or discussions.

**MOTION TO
RECESS INTO
EXECUTIVE
SESSION**

Upon unanimously approved motion, the Board recessed into Executive Session Pursuant to [HRS §92-5(a)(2)] at 2:31 p.m. to Consider Issues Pertaining to Matters Posted for Discussion at an Executive Session

**OPEN
SESSION**

The Board reconvened in Open Session at 2:45 p.m.

**MOTION TO
ADJOURN**

There being no further business Chair Andaya at 2:46 p.m. called for a motion to adjourn the Open Session. Max Sword so moved; seconded by Ross Sasamura, and unanimously carried.

Respectfully submitted,

THE MINUTES OF THE REGULAR SESSION BOARD
MEETING ON NOVEMBER 19, 2018 WERE APPROVED
AT THE DECEMBER 17, 2018 BOARD MEETING

	AYE	NO	COMMENT
BRYAN P. ANDAYA	X		
KAPUA SPROAT	X		
KAY C. MATSUI	X		
RAYC. SOON			ABSENT
ROSS S. SASAMURA	X		
JADE T. BUTAY	X		
MAX J. SWORD	X		


GERRENE YUKUNO

APPROVED:


BRYAN P. ANDAYA
Chair of the Board

DEC 17 2018

Date