

# BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HI 96843

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June 21, 2016

KIRK CALDWELL, MAYOR

DUANE R. MIYASHIRO, Chair  
ADAM C. WONG, Vice Chair  
DAVID C. HULIHEE  
KAPUA SPROAT  
BRYAN P. ANDAYA

ROSS S. SASAMURA, Ex-Officio  
FORD N. FUCHIGAMI, Ex-Officio

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

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

## NOTICE

The Regular Meeting of the Board of Water Supply, will convene on Monday, June 27, 2016, at 2:00 p.m. in the Board Room, Public Service Building, 630 South Beretania Street, Honolulu, Hawaii. The United States Environmental Protection Agency, Region IX Office in San Francisco, will be participating via Video Conferencing Bridge.

### SPEAKER REGISTRATION

The Board of Water Supply is committed to allowing public testimony at open meetings of the Board.

Please provide your name, phone number and subject matter of testimony when registering **prior to the day of the meeting** by one of the following options:

1. Emailing to [board@hbws.org](mailto:board@hbws.org);
2. Faxing to 748-5079;
3. Calling 748-5061;
4. In person – 630 S. Beretania Street, Room 311

Persons wishing to testify may also register by filling out the registration form **on-site on the day of the meeting**.

Persons who have not registered to testify will be given an opportunity to speak on an item following the oral testimonies of the registered speakers.

Testimony is limited to three minutes and shall be presented by the registered speaker only.

### WRITTEN TESTIMONY

Written testimony may be emailed to [board@hbws.org](mailto:board@hbws.org) or faxed to 748-5079, **prior to the day of the meeting**, for distribution at the meeting.

13 copies are requested if written testimony is submitted **on-site on the day of the meeting**.

If submitted, written testimonies, including the testifier's address, email address, and phone number may be posted on the Board of Water Supply website.

### PHYSICALLY CHALLENGED REQUESTS

If you require special assistance, auxiliary aid and/or service to participate in this meeting (i.e. sign language interpreter; interpreter for language other than English, or wheelchair accessibility), please contact 748-5061 or email your request to [board@hbws.org](mailto:board@hbws.org) **at least three business days prior to the meeting date**.

The agenda for the June 27, 2016 Regular Meeting of the Board of Water Supply is as follows:

#### ITEMS REQUIRING BOARD ACTION

1. Approval of the Minutes of the Public Hearing and Regular Meeting Held on May 23, 2016
2. Adoption of Resolution No. 865, 2016, to Honor and Commend James Kelekolio for His Exceptional Act of Heroism
3. Election of the Chair and Vice Chair of the Board of Water Supply Beginning July 1, 2016

#### ITEMS FOR INFORMATION

1. Update of the Red Hill Bulk Fuel Storage Facility Administrative Order on Consent by the United States Environmental Protection Agency Region IX Office (via Video Conferencing Bridge) and the Hawaii State Department of Health. (No Board Member will be physically attending from the video conferencing bridge site. In the event the connection is lost, the Meeting will continue.)
2. Water System Revenue Bonds – Compliance with Covenant Rate
3. Status Update of Groundwater Levels at All Index Stations
4. Water Main Repair Report for May 2016

#### EXECUTIVE SESSION

1. Approval of the Minutes of the Executive Session Meeting Held on April 25, 2016
2. To Consult with the Board's Attorney on Questions and Issues Pertaining to the Board of Water Supply's Proposed Settlement of Claim #15-016 Relating to Water Damage at the Aloha United Way, 200 N. Vineyard Boulevard, Due to a Water Main Break [HRS §92-5(a)(4)]
3. To Consult with the Board's Attorney on Questions and Issues Pertaining to the Status of Litigation in the Civil Action Entitled, Okada Trucking, Ltd. v. Board of Water Supply, City and County of Honolulu, Civil No. 14-1-2104-10 JHC, First Circuit Court, State of Hawaii [HRS §92-4 and §92-5(a)(4)]

# MINUTES

## PUBLIC HEARING AND THE REGULAR MEETING OF THE BOARD OF WATER SUPPLY

May 23, 2016

The Public Hearing was held in the Board Room of the Public Service Building at 630 South Beretania Street, Honolulu, Hawaii, to Consider (1) Adoption of the Operating and Capital Improvement Program Budget for the Fiscal Year 2016-2017 and Appropriating Funds Therefor.

Present: Duane R. Miyashiro, Board Chair  
Adam C. Wong, Vice Chair  
Bryan P. Andaya  
Ross S. Sasamura

Also Present: Ernest Lau, Manager and Chief Engineer  
Ellen Kitamura, Deputy Manager and Chief Engineer  
Robert Morita  
Stuart Wong  
Erwin Kawata  
Daryl Hiromoto  
Jason Takaki  
Jonathan Suzuki  
Kevin Ihu  
Barry Usagawa  
Henderson Nuuhiwa  
Mike Matsuo  
Paul Kikuchi  
Joe Cooper  
Tracy Burgo  
Jennifer Elflein  
Marc Chun  
Karen Tom

Others Present: Moana Yost, Deputy Corporation Counsel  
Jeff Lau, Deputy Corporation Counsel  
Chris Cleveland, Brown and Caldwell

Absent: David C. Hulihee  
Kapua Sproat  
Ford N. Fuchigami

The meeting was taken out of order.

At 2:02 PM, Chair Miyashiro called to order the Public Hearing announcing that this Public Hearing is to consider the proposed 2016-2017 Operating and Capital Improvement Program (CIP) Budget for the fiscal year (FY) beginning July 1, 2016. A Public Hearing Notice appeared in the May 9, 2016, Honolulu Star Advertiser newspaper.

Before beginning the Public Hearing, Mr. Miyashiro stated that this Board is dedicated to the provision of a safe, dependable, and affordable supply of water to their customers. One of the best ways they ensure that this occurs is to thoughtfully plan and fund a regular program of water facility replacement and improvement as reflected in the annual Operating and CIP Budget they are considering today.

On May 16, 2016 a budget informational workshop was presented. This workshop outlined the Department's goals and objectives, and the proposed Operating and CIP budgets for the FY 2016-2017.

Before taking testimony, Ernest Lau, Manager and Chief Engineer of the Board of Water Supply (BWS) explained that the proposed budget for FY 2016-2017 consists of the Operating Budget and the CIP Budget. The Operating Budget provides for operational and maintenance costs for continuing water services to our customers; while the CIP Budget provides funding for research and facility replacement costs; as well as funding for major water system additions or expansions.

Combined, these budgets propose total expenditures of \$291.7 million. Approximately 72 percent of the combined budgets are allocated to operating expenditures totaling \$211 million, while 28 percent or \$80.7 million is allocated to the CIP.

Operating Budget expenditures of \$211 million are proposed for funding next year's operating costs. CIP Budget expenditures are proposed at \$80.7 million and funding will be: \$74.4 million by the Operating Fund, \$2.3 million by the Special Expendable Fund and \$4 million by the Reserve Release Fund. Of the \$74.4 million in Operating Funds proposed for the CIP, \$21.9 million is eligible for participation in the State of Hawaii, Department of Health State Revolving Fund (SRF) loan program. Taken together, total Operating and CIP Budget expenditures increased by 7.8 percent or \$21.1 million over the amount budgeted for the current fiscal year. This was primarily attributable to increases in funding for debt service (increase of \$15.5 million); increase in funding for materials, supplies and services (increase of \$6.9 million); increase in funding for equipment purchases (increase of \$1.4 million) and an increase in funding for personnel services (increase of \$896,000). These increases were offset by a decrease in funding for fixed charges (decrease of \$822,000).

To fund these budgets, revenues from all current sources and a carry-over balance from prior years, will allow BWS to provide an adequate unappropriated fund balance.

BWS will remain committed to providing water to our customers at a fair and reasonable cost.

Mr. Andaya thanked everyone again for their very hard work and very comprehensive report. He reiterated that BWS should do a press release to inform the public, the stakeholders, the City Councilmembers, and the Legislatures that the budget has been adopted and is available on BWS's website. Mr. Lau stated that they will follow up on that.

Mr. Lau introduced Robert Morita of the Executive Support Office who will give a presentation of the Operating Budget and Jonathan Suzuki of the Capital Projects Division who will give a presentation of the CIP Budget.

Mr. Morita gave a presentation on the Operating Budget. He recognized and thanked Mr. Stuart Wong for his hard work in putting this budget together. Mr. Morita stated that the FY 2017 budget is for the period from July 1, 2016 to June 30, 2017, which is the same fiscal year period used by the State and other counties. The 2017 Operating and CIP Budgets are in alignment with the Board's priorities and the Department's plans and objectives for the upcoming budget period and beyond. The comparisons between the FY 2017 proposed budget and the FY 2016 budget are as follows:

Total revenues are projected to increase by 5.3 percent as a result of higher billing trends and a conservative estimate in FY 2016.

Operating expenditures are projected to increase by 12.8 percent due to pay down of higher interest loans and initiatives to improve the delivery of water and to increase efficiency in our meter reading process.

The proposed Operating Budget for FY 2017 is based upon total operating fund resources of about \$332.5 million. This will be derived from operating revenues of approximately \$230.8 million, (water revenues) and an anticipated carryover balance from FY 2016 of nearly \$96 million.

To understand why revenues in FY 2017 appear to increase by 5 percent, BWS looked at what went into the projected revenues for FY 2016.

At this same time last year, BWS was presented with factors that were going to have some bearing on the project amount of revenues collected. This includes the rate increase of 9.65 percent, the demand elasticity (the reduced demand as customers adjust their usage due to higher rates), the impact of BWS conservation efforts, and the impact of El Nino.

This resulted in very conservative revenue forecasts for FY 2016, which in turn led to what appears to be an increase to FY 2017 revenues.

The 20-year meter replacement program has increased from \$1.2 million in FY 2015 to \$2.4 million in FY 2016 and \$4.3 million in FY 2017. Funding for the AMR program has increased from \$1.32 million in FY 2015 to \$2.4 million in FY 2016 and \$3.6 million in FY 2017.

Also, the contract road paving budget is increased by \$2.5 million over FY 2016, not due to a projected increase in main breaks, but due to rising costs for paving work, especially for small jobs such as valve leaks, meter replacements, and service lateral leaks. Recently, the cost for paving work has nearly tripled in comparison to historical prices. To better manage paving work, BWS is proposing to use up to \$450,000 for project management and inspection to keep paving work on schedule. Red Hill activity with the other parties is requiring greater than anticipated involvement and work related to the Administrative Order on Consent.

Jonathan Suzuki of the Capital Projects Division gave a presentation of the CIP Budget. Mr. Suzuki said the CIP is divided into three program categories, Research and Development, which explores new resources and system equipment needs; Renewal and Replacement, which is for the

existing water infrastructure; and the Capacity Expansion of Water Supply Facilities. In summary, the total for the CIP Budget is for \$80.8 million.

Mr. Morita concluded the presentation by providing a summary of the FY 2016-2017 Budget.

Chair Miyashiro announced that they will now take testimony on the proposed Operating and CIP Budget. There being no testimony, discussion, or questions, Chair Miyashiro closed the Public Hearing and continued on with the Regular Meeting of the Board.

The meeting was taken out of order.

APPROVAL  
OF MINUTES

Approval of the Minutes of the Regular Meeting held on April 25, 2016

MOTION  
TO APPROVE

Ross Sasamura and Adam Wong motioned and seconded, respectively, to approve the Minutes of the Regular Session Meeting of April 25, 2016. The motion was unanimously carried.

APPROVAL  
OF MINUTES

Approval of the Minutes of the Budget Workshop Meeting held on May 16, 2016

MOTION  
TO APPROVE

Ross Sasamura and Bryan Andaya motioned and seconded, respectively, to approve the Minutes of the Workshop Session Meeting of May 16, 2016. The motion was unanimously carried.

"May 23, 2016

ADOPTION OF  
RESOLUTION  
NO. 864, 2016

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

Chair and Members:

Subject: Adoption of Resolution No. 864, 2016, Adopting the Operating and Capital Improvement Program Budget for the Fiscal Year 2016-2017 and Appropriating Funds Therefor

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We recommend adoption of the proposed Operating and Capital Improvement Program Budget for the fiscal year beginning July 1, 2016 and ending June 30, 2017.

A public hearing to consider the proposed budget, as required by the City Charter, was held on May 23, 2016. The affidavit attesting to the publication of the public hearing notice is attached.

We further recommend adoption of the attached Resolution No. 864, 2016, appropriating funds for the Operating and Capital Improvement Program Budget for fiscal year 2016-2017 as follows:

1. The sum of \$210,909,776 from the Operating Fund for Operating Budget expenditures.
2. The sum of \$74,396,800 from the Operating Fund, \$2,360,000 from the Special Expendable Fund and \$4,033,700 from the Reserve Release Fund for Capital Improvement Program Budget expenditures.

Respectfully submitted,

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

Attachments"



# AFFIDAVIT OF PUBLICATION

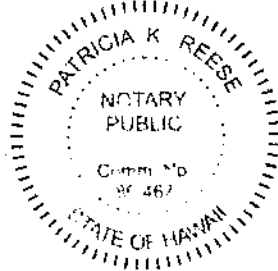
## IN THE MATTER OF NOTICE OF PUBLIC HEARING

STATE OF HAWAII

}  
} SS.  
}

City and County of Honolulu

Doc. Date:	MAY - 9 - 2016	# Pages:	1
Notary Name:	Patricia K. Reese	First Judicial Circuit	
Doc. Description:	Affidavit of Publication		
Notary Signature	Date		



Lisa Kaukani being duly sworn, deposes and says that she is a clerk, duly authorized to execute this affidavit of Oahu Publications, Inc. publisher of The Honolulu Star-Advertiser, MidWeek, The Garden Island, West Hawaii Today, and Hawaii Tribune-Herald, that said newspapers are newspapers of general circulation in the State of Hawaii, and that the attached notice is true notice as was published in the aforementioned newspapers as follows:

Honolulu Star-Advertiser	1	times on:
05/09/2016		
MidWeek	0	times on:
The Garden Island	0	times on:
Hawaii Tribune-Herald	0	times on:
West Hawaii Today	0	times on:

Other Publications: 0 times on:

And that affiant is not a party to or in any way interested in the above entitled matter.

Lisa Kaukani

Subscribed to and sworn before me this 9th day of May A.D. 2016

Patricia K. Reese, Notary Public of the First Judicial Circuit, State of Hawaii

My commission expires: Oct 07, 2018

Ad # 0000872733

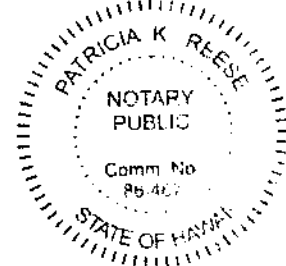
### NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the BOARD OF WATER SUPPLY, CITY AND COUNTY OF HONOLULU, will hold a PUBLIC HEARING in the Board Room, Public Service Building, 630 South Beretania Street, on MONDAY, MAY 23, 2016, at 2:00 p.m. or soon thereafter, where all interested persons shall be afforded the opportunity of being heard on the adoption of the Proposed FY 2017 Operating and Capital Improvement Program Budget of the Board of Water Supply for the fiscal year July 1, 2016 to June 30, 2017.

Information to be discussed at this public hearing is available at Room 319 of the Public Service Building, Board of Water Supply, 630 South Beretania Street. All comments on or suggested changes to the proposed FY 2017 Operating and Capital Improvement Program Budget of the Board of Water Supply should be filed in writing before the date of the public hearing or presented in person at the time of the hearing. Persons wishing to speak are requested to register by 1:00 p.m. with Winifred Ching, 748-5176, by providing your name, phone number, and subject matter of testimony. Testimony is limited to three minutes and shall be presented by the registered speaker only. Any questions, please call 748-5176. Any disabled person requiring special assistance who plans to attend the public hearing, may contact Ms. Winifred Ching at 748-5176, no later than May 16, 2016, so that appropriate accommodations can be provided.

BOARD OF WATER SUPPLY  
CITY AND COUNTY OF HONOLULU

(SAR72733 5/9/16)



SP.NO.: L.N.

DISCUSSION

There were no other comments or discussion.

MOTION TO  
ADOPT  
BUDGET

Bryan Andaya motioned to adopt Resolution No. 864, 2016, Adopting the Operating and Capital Improvement Program Budget for the Fiscal Year 2016-2017 and Appropriating Funds Therefor. The motion was seconded by Ross Sasamura and unanimously carried.

BOARD OF WATER SUPPLY  
CITY AND COUNTY OF HONOLULU

RESOLUTION NO. 864, 2016

**RESOLUTION ADOPTING THE OPERATING AND CAPITAL IMPROVEMENT  
PROGRAM BUDGET FOR FISCAL YEAR 2016-2017 AND APPROPRIATING FUNDS  
THEREFOR**

BE IT RESOLVED by the Board of Water Supply, City and County of Honolulu, State of Hawaii, that in accordance with the provisions of Article VII of the Charter of the City and County of Honolulu, the sum of TWO HUNDRED TEN MILLION NINE HUNDRED NINE THOUSAND SEVEN HUNDRED SEVENTY-SIX DOLLARS (\$210,909,776) be and the same is hereby appropriated out of all monies placed to the credit of the Operating Fund for expenditures of the Board of Water Supply Operating Budget for the fiscal year beginning July 1, 2016 and ending June 30, 2017 as follows:

OPERATING BUDGET

OPERATING FUND.....\$210,909,776

BE IT FURTHER RESOLVED that the said Operating Fund appropriation may be increased to the extent that any State or Federal environmental law, regulation, and/or electric power cost, causes the Board of Water Supply to exceed the cost thresholds as specified in the Schedule of Rates and Charges for the Furnishing of Water and Water Service; and

BE IT FURTHER RESOLVED that the sum of SEVENTY-FOUR MILLION THREE HUNDRED NINETY-SIX THOUSAND EIGHT HUNDRED DOLLARS (\$74,396,800) be and

the same is hereby appropriated out of all monies placed to the credit of the Operating Fund, the sum of TWO MILLION THREE HUNDRED SIXTY THOUSAND DOLLARS (\$2,360,000) be and the same is hereby appropriated out of all monies placed to the credit of the Special Expendable Fund and the sum of FOUR MILLION THIRTY-THREE THOUSAND SEVEN HUNDRED DOLLARS (\$4,033,700) be and the same is hereby appropriated out of all monies placed to the credit of the Reserve Release Fund for expenditures of the Board of Water Supply Capital Improvement Program Budget for the fiscal year beginning July 1, 2016 and ending June 30, 2017, as follows:

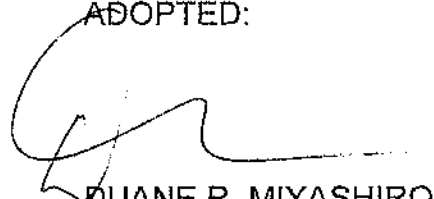
CAPITAL IMPROVEMENT PROGRAM BUDGET

OPERATING FUND.....	\$ 52,534,300
OPERATING FUND (SRF ELIGIBLE).....	\$ <u>21,862,500</u>
OPERATING FUND – SUB TOTAL.....	\$ 74,396,800
SPECIAL EXPENDABLE FUND.....	\$ 2,360,000
RESERVE RELEASE FUND.....	\$ 4,033,700

BE IT FURTHER RESOLVED that the Manager and Chief Engineer, at his discretion, shall have the authority to adjust the method of funding the Capital Improvement Program Budget and that the Manager and Chief Engineer may increase or decrease the amount appropriated out of the Operating Fund, Improvement Fund, State Revolving Fund and Special Expendable Fund in the Capital Improvement Program Budget, provided that the total consolidated appropriation of the Operating Budget and Capital Improvement Program Budget remains the same; and

BE IT FINALLY RESOLVED that revenue bonds of the Board of Water Supply, City and County of Honolulu, general obligation bonds of the City and County of Honolulu, commercial paper or other alternative forms of financing deemed appropriate by the Board of Water Supply, are authorized for issuance to yield the amount that may be necessary to finance projects listed in the Board of Water Supply Capital Improvement Program Budget and designated to be financed from the Improvement Fund and such additional amounts as may be deemed necessary to pay the expenses of issuance of such bonds or other financing; provided that the Board of Water Supply shall by resolution, and the Council of the City and County of Honolulu for general obligation bonds shall by ordinance, determine the form, date, amount, denomination, and maturity of the bonds herein authorized.

ADOPTED:



DUANE R. MIYASHIRO  
Chair

Honolulu, Hawaii  
May 23, 2016

RESOLUTION NO. 864, 2016, ADOPTING THE OPERATING AND CAPITAL IMPROVEMENT PROGRAM BUDGET FOR THE FISCAL YEAR 2016- 2017 AND APPROPRIATING FUNDS THEREFOR, WAS ADOPTED AT THE MAY 23, 2016 BOARD MEETING			
	AYE	NO	COMMENT
DUANE R. MIYASHIRO	X		
ADAM C. WONG	X		
DAVID C. HULIHEE			ABSENT
KAPUA SPROAT			ABSENT
BRYAN P. ANDAYA	X		
ROSS S. SASAMURA	X		
FORD N. FUCHIGAMI			ABSENT

ITEM FOR INFORMATION NO. 1

May 23, 2016

PERFORMANCE  
METRICS  
UPDATE

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

Chair and Members:

Subject: Board of Water Supply Performance Metrics Update

Jennifer Elflein, Program Manager for the Customer Care Division and Joseph Cooper, Waterworks Controller will present a brief update on the Board of Water Supply performance metrics to measure progress in meeting the three sustainability goals set in the strategic plan.

Respectfully submitted,

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

Attachment"

DISCUSSION

Jennifer Elflein and Joseph Cooper gave their report. There were no comments or discussion.

ITEM FOR INFORMATION NO. 2

Quarterly Capital Improvement Program Status Report  
All Divisions

Quarter Awarded	JUL - SEP		OCT - DEC		JAN - MAR		APR - JUN		Awarded to Date	Total Budgeted
Design Contracts Awarded (#/\$)	0	\$0.00	6	\$2,308,115.00	4	\$1,021,966.63		\$0.00	\$3,330,081.63	\$17,805,000.00
Construction Contracts Awarded (#/\$)	0	\$0.00	6	\$4,504,486.91	3	\$33,439,323.00		\$0.00	\$37,943,809.91	\$86,875,000.00
Project Totals	0	\$0.00	12	\$6,812,601.91	7	\$34,461,289.63	0	\$0.00	\$41,273,891.54	\$104,680,000.00

Quarter Completed	JUL - SEP		OCT - DEC		JAN - MAR		APR - JUN		Totals
Design Contracts Completed (#/\$)	3	\$748,430.04	2	\$559,034.89	3	\$2,712,819.00		\$0.00	\$4,020,283.93
Construction Contracts Completed (#/\$)	1	\$684,648.68	2	\$1,527,397.00	0	\$0.00		\$0.00	\$2,212,045.68
Totals	4	\$1,433,078.72	4	\$2,086,431.89	3	\$2,712,819.00	0	\$0.00	\$6,232,329.61

Ongoing Projects	
Ongoing Design Projects (#)	191
Ongoing Design Projects (\$)	\$60,052,388.80
Ongoing Construction Projects (#)	101
Ongoing Construction Projects (\$)	\$208,897,900.47

Quarterly Capital Improvement Program Status Report  
All Divisions

**DESIGN AND CONSTRUCTION PROJECTS AWARDED - THIRD QUARTER FY 2016**

<b>Item #</b>	<b>Project Title</b>	<b>Expend Type</b>	<b>Budget Amount</b>	<b>Awarded</b>
16-001	Energy Savings Performance Contracting (ESPC) - BWS Facilities	CONST	\$35,500,000.00	\$32,881,833.00
2016-011	Pump Renewal and Replacement: Mililani Wells I - Replacement of Pumping Units and MCC	P & E	\$299,189.56	\$299,189.56
2016-025	Ala Aolani 12-Inch Main	P & E	\$570,000.00	\$539,402.00
2016-028	Service Lateral Replacement at Various Locations	P & E	\$150,000.00	\$115,762.07
16-029J	Facility Repair and Renovation: Road Repair and Drainage Improvements - Newtown-Royal Summit Access Road	CONST	\$224,190.00	\$224,190.00
16-029M	Facility Repair and Renovation: Replacement of Freight Elevator located in the BWS Engineering Building	CONST	\$333,300.00	\$333,300.00
2016-043A	Facility Repair and Renovation - Reservoir Repair: Waimanalo 230 and Waialae Iki 180	P & E	\$67,613.00	\$67,613.00
<b>3rd Quarter totals</b>			<b>\$37,144,292.56</b>	<b>\$34,461,289.63</b>

**DESIGN AND CONSTRUCTION PROJECTS COMPLETED - THIRD QUARTER FY 2016**

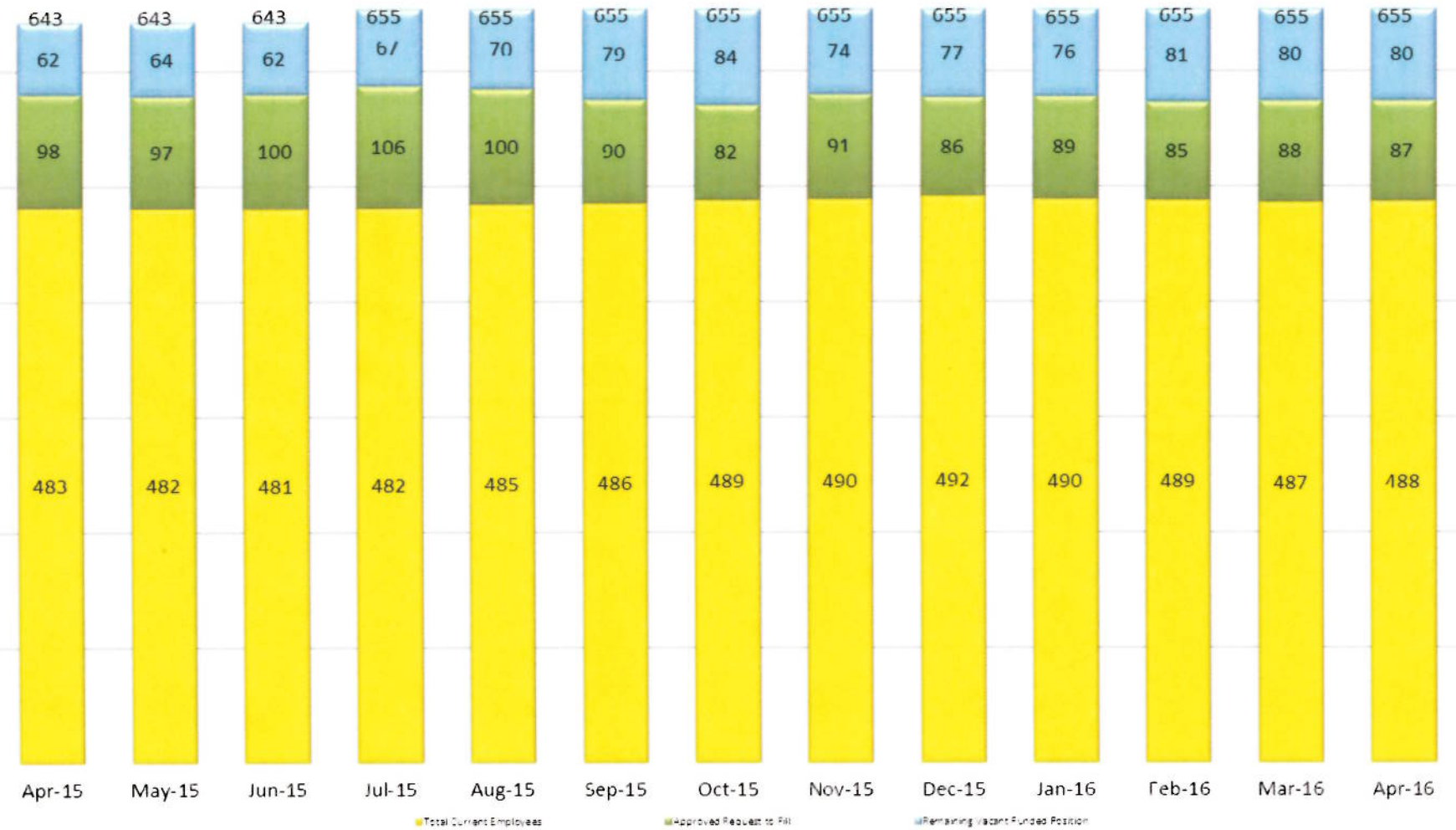
<b>Job #</b>	<b>Project Title</b>	<b>Completion Date</b>	<b>Contract Amount</b>
2002-086E	Waimalu Wells I Erosion Mitigation	2/4/2016	\$59,899.00
2015-060A	Geotechnical Survey for Various Projects	3/17/2016	\$123,966.00
C14005501	CIS Support Services	12/31/2015	\$2,528,954.00
<b>3rd Quarter totals</b>			<b>\$2,712,819.00</b>



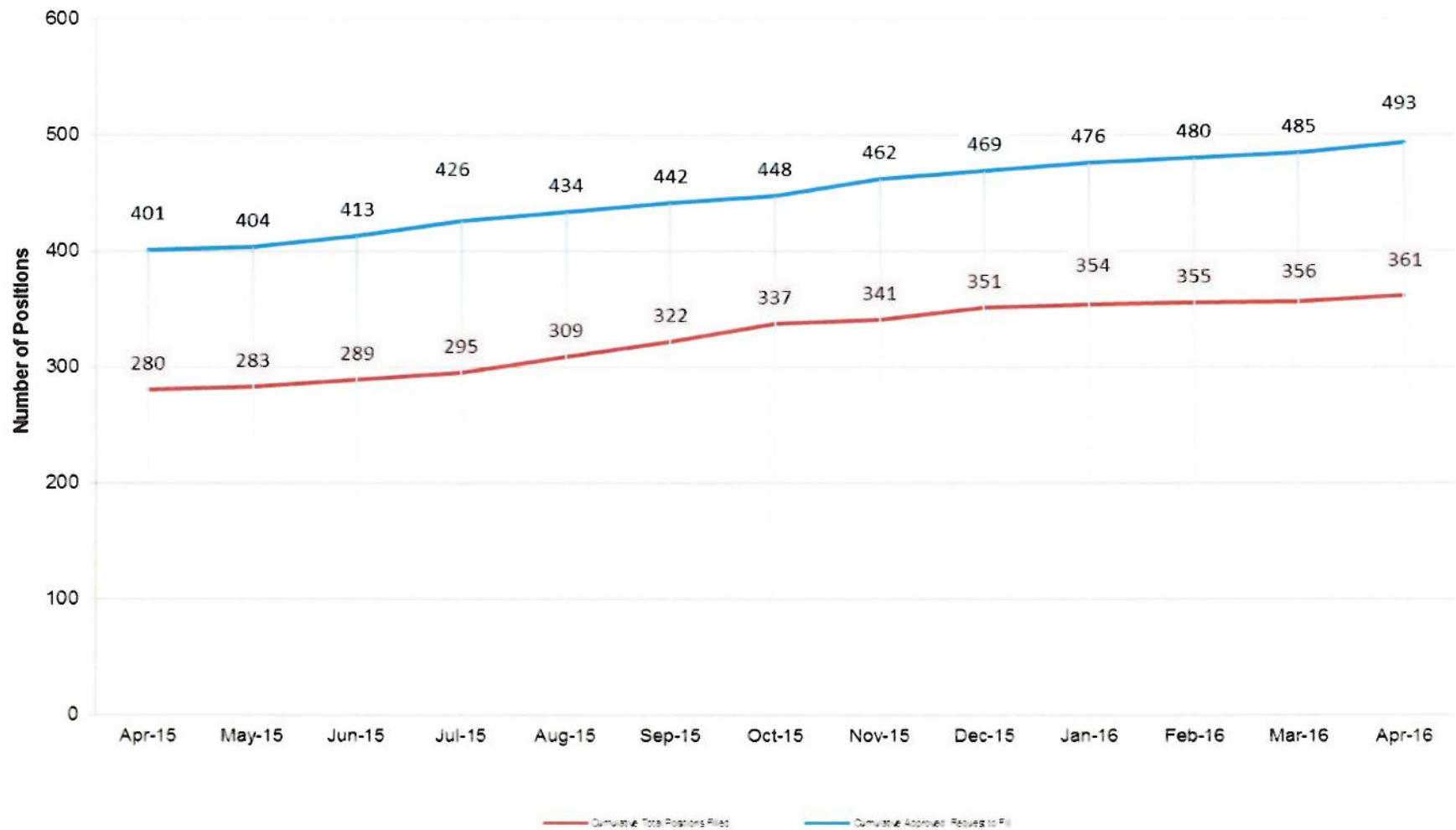
## DISCUSSION

Jason Takaki, Capital Projects Program Administrator, gave the report. There were no comments or discussion.

### Positions Filled April 1, 2015 through April 30, 2016



## Cumulative Totals April 1, 2015 through April 30, 2016



DISCUSSION:

Karen Tom of the Human Resources Office reported seven new employees started work during the past three months (February, March, April). Ms. Tom indicated that the City Department of Human Resources now sends "related lists" with candidates who possess experience close to what BWS wants before conducting recruitments for the actual class requested. However, BWS' philosophy is they do not settle for any applicant. BWS interviews until the right person is hired for the job, thereby, having less personnel problems. From March, various BWS divisions have been busy interviewing for 34 positions. Next quarter will show an increase in employees, unless BWS has legislation that the Employee's Retirement System is changing the benefits, resulting in employees retiring. BWS hired 15 new employees in May. BWS now has 500 civil service employees. Fifty more and the count will be where it was 10 years ago. Mr. Lau said good job.

ITEM FOR INFORMATION NO. 4

"May 23, 2016

GROUNDWATER  
LEVELS      Chairman and Members  
                 Board of Water Supply  
                 City and County of Honolulu  
                 Honolulu, Hawaii 96843

Chairman 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 April 2016. The monthly production average for April 2016 was 141.32 million gallons per day.

The Board of Water Supply rainfall index for the month of April 2016 was 95 percent of normal; with a 5-month moving average of 47 percent. As of May 10, 2016, the Hawaii Drought Monitor shows moderate drought conditions for leeward and southern Oahu.

Per the National Weather Service, enhanced probabilities for above median rainfall are favored from July to November 2016. Climate models indicate El Niño conditions may transition to neutral conditions by late spring or early summer.

Most index monitor wells are beginning to exhibit decreasing trends, reflecting the influences of limited rainfall from previous months and the increases in pumpage typical for this time of year.

Respectfully submitted,

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

Attachment"

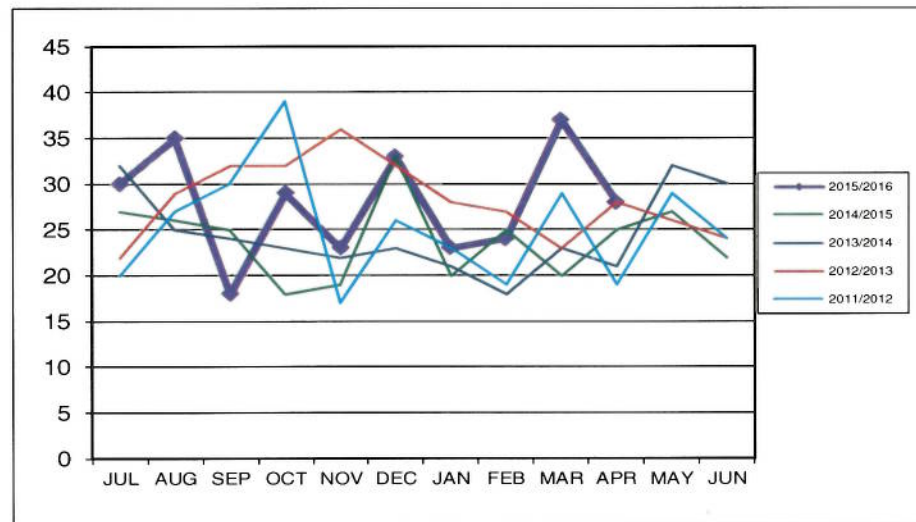
The foregoing was for information only.

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

## WATER MAIN REPAIR REPORT for April 2016

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
<b>2015/2016</b>	<b>30</b>	<b>35</b>	<b>18</b>	<b>29</b>	<b>23</b>	<b>33</b>	<b>23</b>	<b>24</b>	<b>37</b>	<b>28</b>			<b>280</b>
2014/2015	27	26	25	18	19	33	20	25	20	25	27	22	287
2013/2014	32	25	24	23	22	23	21	18	23	21	32	30	294
2012/2013	22	29	32	32	36	32	28	27	23	28	26	24	339
2011/2012	20	27	30	39	17	26	23	19	29	19	29	24	302

Date	Address	Size
4/1	3317 Ala Lehua Pl.	4" C.I.
4/2	6018 Haleola St.	8" C.I.
4/2	41-1641 Humupaa St.	8" C.I.
4/4	95-045 Waikalani Dr.	8" C.I.
4/5	731 Kamehameha Hwy.	8" C.I.
4/5	95-040 Waikalani Dr.	8" C.I.
4/5	4731 Kahala Ave.	6" C.I.
4/6	855 Kalanipuu St.	8" C.I.
4/7	94-1019 Lelepua Pl.	8" A.C.
4/8	45-733 Hinamoe Lp.	8" C.I.
4/9	2586 Kalakaua Ave.	8" C.I.
4/9	4731 Kahala Ave.	6" C.I.
4/11	Leahi Ave. & Hollinger St.	8" C.I.
4/14	45-221 Keana Rd.	8" C.I.
4/15	94-1102 Awalahi St.	8" C.I.
4/20	45 Kaneohe Bay Dr.	12" A.C.
4/21	Kalahealo Blvd.	20" C.C.
4/21	87-545 Kulaaupuni St.	8" C.I.
4/22	Ala Moana Blvd & Kalia Rd.	8" C.I.
4/23	1311 Maleko St.	8" C.I.
4/25	1578 Oili Lp.	8" C.I.
4/25	636 Wyllie St.	6" C.I.
4/26	84-786 Ala Mahiku St.	6" A.C.
4/27	95-268 Waimakua Dr.	6" C.I.
4/28	3034 Manoa Rd.	12" C.I.
4/29	46-138 Punalei Pl.	4" C.I.
4/29	98-159 Kamehameha Hwy.	12" C.I.
4/30	2246 Palolo Ave.	8" C.I.



**Bold \*** - Pro-active Leak Repair

9.8 miles of pipelines were surveyed by the Leak Detection Team in the month of April.

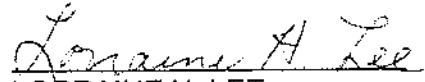
DISCUSSION:

Daryl Hiromoto, Field Operations Division Program Administrator, gave the report. There was an error in March's report, which showed 24 main breaks, but it should have been 37 main breaks. Also, BWS did 9.8 miles of pipeline surveying for leak detection, which is lower than normal for the month, because of loss of worker hours due to illness.

MOTION TO  
ADJOURN

There being no further business Chair Miyashiro at 2:46 PM called for a motion to adjourn the Open Session. Ross Sasamura so moved; seconded by Adam Wong and unanimously carried.

Respectfully submitted,

  
LORRAINE H. LEE

APPROVED:

\_\_\_\_\_  
DUANE R. MIYASHIRO  
Chair of the Board

\_\_\_\_\_  
Date





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

**RESOLUTION NO. 865, 2016**

**TO HONOR AND COMMEND**

**JAMES KELEKOLIO**

**FOR HIS EXCEPTIONAL ACT OF HEROISM**

**WHEREAS**, on Thursday, May 26, 2016, Board of Water Supply (BWS) employee JAMES KELEKOLIO valiantly, and without regard for his own safety, rushed to the aid of a customer who was dangerously dangling from a moving vehicle that propelled through the BWS customer parking lot which was filled with cars and pedestrians; and

**WHEREAS**, the incident began when a customer stopped at the parking control arm at the entrance to the BWS customer lot and had attempted to reach the intercom button from her Jeep as she partially stepped out of the vehicle – keeping one foot on the brake pedal while the car was in “Drive” mode – and lost her balance as well as her foothold on the brake; and

**WHEREAS**, the Jeep pushed forward and dragged the helpless customer with it as it broke through the parking control arm and entered the parking lot, where it narrowly missed hitting several employee cars parked in the lot, and headed towards a tree and a pole; and

**WHEREAS**, MR. KELEKOLIO, upon observing the woman’s plight from across Lisbon Street, immediately took quick and decisive action and sprinted across the street and through the parking lot to catch up to the Jeep and helped the driver right before the Jeep hit the curb and a pole that brought the vehicle to a stop; and

**WHEREAS**, thanks to JAMES KELEKOLIO’s speedy and heroic action that thwarted a more serious accident, the customer incurred only minor injuries, for which she was treated and released by paramedics; now, therefore

**BE IT RESOLVED** by the Members of the Board of Water Supply, City and County of Honolulu, that we do hereby honor and commend the outstanding bravery, courage, and exceptional heroism of MR. JAMES KELEKOLIO, who selflessly risked his own life to prevent an accident that could have resulted in serious harm and injury to BWS customers and employees; and

**BE IT FINALLY RESOLVED** that this Resolution be presented to JAMES KELEKOLIO.



Resolution No. 865, 2016

Adopted this 27<sup>th</sup> day of June 2016  
Board of Water Supply, Honolulu, Hawaii

---

DUANE R. MIYASHIRO  
Chair of the Board

## BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HI 96843




June 27, 2016

KIRK CALDWELL, MAYOR

DUANE R. MIYASHIRO, Chair  
ADAM C. WONG, Vice Chair  
DAVID C. HULIHEE  
KAPUA SPROAT  
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Manager and Chief Engineer

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

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

Chair and Members:

Subject: Election of Chair and Vice Chair of the Board of Water Supply  
Beginning July 1, 2016

The Bylaws of the Board of Water Supply provides that the Chair and Vice Chair of the Board shall be elected annually from among and by the appointed members of the Board at the first regular meeting in June.

Accordingly, election of the Chair and Vice Chair of the Board for the ensuing year commencing July 1, 2016, is now in order.

Respectfully submitted,



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

## BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HI 96843



June 27, 2016

KIRK CALDWELL, MAYOR

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Deputy Manager and Chief Engineer

Chair and Members  
Board of Water Supply  
City and County of Honolulu  
Honolulu, Hawaii 96813

Chair and Members:

Subject: Update of the Red Hill Bulk Fuel Storage Facility Administrative Order on Consent by the United States Environmental Protection Agency Region IX Office (via Video Conferencing Bridge) and the Hawaii State Department of Health

We are pleased to welcome the United States Environmental Protection Agency Region IX Office (via Video Conferencing Bridge) and the Hawaii State Department of Health to provide an update on their progress to implement the Red Hill Administrative Order on Consent statement of work and to explain their agency's letter date stamped February 4, 2016 that approved reducing the number of chemicals of potential concern tested in Navy groundwater monitor wells.

A copy of this letter is enclosed with your materials for reference.

Respectfully submitted,

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

Attachment



UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HI 96801-3378

FEB 04 2016

James A. K. Miyamoto, P.E.  
Deputy Operations Officer  
Naval Facilities Engineering Command, Hawaii  
400 Marshall Road  
Joint Base Pearl Harbor Hickam, HI 96860

Dear Mr. Miyamoto,

This letter serves two purposes. The first is to declare that the Scoping for Sections 6 & 7 of the Red Hill Administrative Order on Consent Statement of Work (AOC SOW) is now complete. The second purpose is to respond to the recommended list of chemicals of potential concern (COPC) submitted to the Regulatory Agencies for approval via email by Ms. June Shimabuku, NAVFAC Hawaii on January 12, 2016.

**Final Scoping for AOC SOW Sections 6 and 7**

The U.S. Environmental Protection Agency ("EPA") and Hawaii Department of Health ("DOH"), collectively the "Regulatory Agencies" have reviewed the revised meeting minutes from our in-person meeting held November 30 – December 3, 2015 (submitted via email on January 22, 2016), as well as the Preliminary Work Plan/Statement of Work Task List (submitted via email on December 18, 2015) and agree that they correctly capture what was agreed to at the meetings.

One issue not explicitly reflected in the Agreed Upon Items List is that the Navy will incorporate appropriate catastrophic releases scenarios in its Fate and Transport Modeling. Similar to the linkage reflected in #21 of the Agreed Upon items, the Risk/Vulnerability Assessment being performed under Section 8 of the AOC SOW will provide information that can be used in the Fate and Transport Models to determine the threat that a large scale fuel release poses to drinking water wells in the vicinity of Red Hill.

Per Sections 6.2, 7.1.2, 7.2.2, and 7.3.2 of the AOC SOW, the Navy will develop the following Scopes of Work for approval by the Regulatory Agencies: the Investigation and Remediation of Releases Scope of Work, the Groundwater Flow Model Report Scope of Work, the Contaminant Fate and Transport Model Report Scope of Work, and the Groundwater Monitoring Well Network Scope of Work. These will all be included in a single Work Plan/Scope of Work that will be submitted to the Regulatory Agencies within 90 days of the

Final Scoping Meeting, which is the date of this letter. While Section 6.2 of the AOC SOW states that the Investigation and Remediation of Releases Scope of Work is due 60 days after the final scoping meeting, the Navy requested that the deadline be extended to 90 days. The Regulatory Agencies approved this request on January 20, 2016.

#### **Navy's Proposed Chemical of Potential Concern (COPC) Recommendations**

The Regulatory Agencies have reviewed the Navy's proposed list of COPCs and for the most part agree with the proposal. While we agree with the list of COPCs, there are some additional requirements the Navy must meet in order for us to have confidence in the data submitted. We are willing to have further discussions about the specifics of these requirements, however, any further discussions on this subject does not suspend the 90 day deadline for submittal of the AOC SOW Section 6 & 7 Workplan/Scope of Work.

All samples taken from existing groundwater monitoring wells, designated as RHMW01, RHMW02, RHMW03, RHMW04, RHMW05, RHMW06, RHMW07, RHMW2254-01, HDMW2253, and OWDFMW01, will be analyzed for the approved list of COPCs. All samples taken from any new groundwater monitoring wells installed by the Navy will also be analyzed for the approved list of COPCs as well as for lead scavengers 1,2 dichloroethane and 1,2 dibromoethane. Analysis for lead scavengers will be conducted for one year's worth of sampling and can be discontinued if the analyses show levels of these contaminants are below the groundwater action levels established by the Hawaii Department of Health (DOH).

The analytes and the appropriate action levels are summarized in Tables 1, 2 and 3 in Enclosure A to this letter.

The following are additional requirements the Navy shall meet in conducting groundwater and soil vapor sampling. These requirements are to be implemented in a timely manner and shall also be addressed in the Sampling and Analysis Plan to be developed under Task #3 of the Navy's Scope of Work for Sections 6 & 7 of the Administrative Order on Consent Statement of Work.

- Laboratory analysis of all samples shall be able to achieve quantification limits lower than DOH environmental action levels.
- All groundwater samples should be analyzed without dilution whenever possible to avoid laboratory "D" flags.
- Over the next year split samples for TPH in groundwater shall be taken at RHMW01, RHMW02, RHMW03, and OWDFM01 to run a silica gel prep before analysis. These split sampling events should be performed twice over the year, one during the dry season and one during the wet season. This should be done in order to show the ratio of polar (degraded) TPH in the samples without silica gel prep. This can provide a valuable measure of degradation of TPH at the site.
- Two or more consecutive months of soil vapor samples shall be analyzed with Methods TO-15 and/or TO-17 to obtain carbon ranges from C5 to C18 (see Hawaii Department of Health Hazard Evaluation and Emergency Response Technical Guidance Manual, Section 7.8.2) at all Soil Vapor monitoring locations.

- The Navy shall modify the quarterly groundwater sampling procedure at groundwater monitoring well HDMW2253-03. Sampling at this well shall use a low-flow groundwater sample collection method at bottom of casing in this well. Due to a lack of an appropriate screen in the well casing, this well, as currently constructed, does not meet DOH guidance which would qualify it to provide groundwater samples for assessing contamination.

Thank you for your cooperative efforts to develop this Scope of Work outline. We look forward to continuing the progress of implementing the work outlined in the Red Hill AOC. Please contact us with any questions or concerns.

Sincerely,



Bob Pallarino, EPA Region 9  
EPA Red Hill Project Coordinator



Steven Chang, DOH  
DOH Red Hill Project Coordinator

Enclosure

cc: Aaron Poentis, NAVFAC Hawaii  
June Shimabuku, NAVFAC Hawaii

**ENCLOSURE A**  
**ANALYTES AND ACTION LEVELS**

**TABLE 1**  
**ANALYTES AND ACTION LEVELS FOR RED HILL MONITORING WELLS**  
**RHMW01, RHMW02, AND RHMW03**

<b>ANALYTE</b>	<b>Environmental Action Level µg/L</b>	<b>SSRBL µg/L</b>
TPH-g	100	NA
TPH-d	100	4500
TPH-o	100	NA
Benzene	5	750
Ethylbenzene	30	NA
Toluene	40	NA
Total Xylenes	20	NA
Naphthalene	17	NA
1-Methylnaphthalene	4.7	NA
2-Methylnaphthalene	10	NA

NA - Not Applicable

**TABLE 2**  
**ANALYTES AND ACTION LEVELS FOR RED HILL MONITORING WELLS**  
**RHMW04, RHMW05, RHMW06, RHMW07, RHMW2254-01,**  
**HDMW2253, AND OWDFMW01**

<b>ANALYTE</b>	<b>Environmental Action Level µg/L</b>
TPH-g	100
TPH-d	100
TPH-o	100
Benzene	5.0
Ethylbenzene	30
Toulene	40
Total Xylenes	20
Naphthalene	17
1-Methylnaphthalene	4.7
2-Methylnaphthalene	10

**ENCLOSURE A**  
**ANALYTES AND ACTION LEVELS**

**TABLE 3**  
**ANALYTES AND ACTION LEVELS FOR FUTURE RED HILL MONITORING**  
**WELLS RHMW08, RHMW09, RHMW10, AND RHMW11**

<b>ANALYTE</b>	<b>Environmental Action Level µg/L</b>
TPH-g	100.0
TPH-d	100.0
TPH-o	100.0
Benzene	5.0
Ethylbenzene	30.0
Toulene	40.0
Total Xylenes	20.0
Naphthalene	17.0
1-Methylnaphthalene	4.7
2-Methylnaphthalene	10.0
1,2 Dichloroethane*	5.0
1,2 Dibromoethane*	0.04

\*Lead Scavengers can be discontinued after one year of sampling if all samples result in non-detection.



## BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
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
June 27, 2016

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Deputy Manager and Chief Engineer 

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

Chair and Members:

Subject: Water System Revenue Bonds – Compliance with Rate Covenant

In accordance with Article VIII, Section 8.02, Rates and Charges, of the Water System Revenue Bonds, Resolution No. 717, 2001, we have completed a review of the financial condition of the Board of Water Supply for the purpose of estimating whether the Net Revenues for the current fiscal year and the next succeeding fiscal year will be sufficient to comply with the rate covenant in Section 8.02.

Our review included an examination of the financial and accounting records which we considered necessary to express an opinion on the adequacy of the department's rates and other charges such that Net Revenues shall not be less than the Net Revenue Requirement in each fiscal year.

In our opinion, Net Revenues for fiscal years 2016 and 2017 will not be less than the Net Revenue Requirement for such fiscal years.

The attached schedules present the actual and estimated revenues and expenditures in compliance with the above rate covenant.

Respectfully submitted,



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

Attachments

**Board of Water Supply  
City and County of Honolulu  
SUPPLEMENTAL SCHEDULE OF NET REVENUE REQUIREMENT  
As of April 30, 2016**

	Actual July 1, 2015 - April 30, 2016	Projected May 1, 2016 - June 30, 2016	Total
REVENUES:			
Water sales	\$ 194,271,310	\$ 38,854,262	\$ 233,125,572
Interest	2,468,002	493,600	2,961,603
Other	6,091,041	1,218,208	7,309,249
Total revenues	202,830,354	40,566,071	243,396,425
DEDUCTIONS:			
Operating expenses	140,581,474	28,116,295	168,697,769
Less depreciation expense	(37,273,404)	(7,454,681)	(44,728,084)
Total deductions	103,308,071	20,661,614	123,969,685
Net revenues	\$ <u>99,522,283</u>	\$ <u>19,904,457</u>	\$ <u>119,426,740</u>
NET REVENUE REQUIREMENT:			
Greater of:			
1) Aggregate debt service			17,891,000
Required deposits - subordinate obligation fund			2,000,000
			<u>19,891,000</u>
2) Aggregate debt service			17,891,000
			1.20
			<u>21,469,200</u>
Net revenue requirement			<u>21,469,200</u>
Target Net Requirement of 1.6			28,625,600
Current ratio			<u>6.68</u>

Note: Subject to change after year end adjustments

BOARD OF WATER SUPPLY  
CITY AND COUNTY OF HONOLULU  
CALCULATIONS OF NET REVENUES AND NET REVENUE REQUIREMENT  
FISCAL YEAR ENDING JUNE 30, 2017

	<b>PROJECTED FY 2017</b>
<b>REVENUES</b>	
Water sales	\$ 225,606,000
Other charges & services	3,196,000
Interest revenue	2,000,000
Total revenues	\$ <u>230,802,000</u>
<b>DEDUCTIONS</b>	
Operating expenses	\$ 140,076,000
Net revenues	\$ <u>90,726,000</u>
<b>NET REVENUE REQUIREMENT</b>	
Greater of:	
1) Aggregate debt service for FY 17	\$ 17,788,000
Required deposits - subordinate obligation fund	1,000,000
	\$ <u>18,788,000</u>
2) Aggregate debt service for FY 17	\$ 17,788,000
	x 1.20
	\$ 21,345,600
	\$ <u>21,345,600</u>
Target Net Requirement of 1.6	\$ 28,460,800
Current Ratio	<u>5.10</u>

## BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HI 96843



June 27, 2016

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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 May 2016. The monthly production average for May 2016 was 143.08 million gallons per day.

The Board of Water Supply rainfall index for the month of May 2016 was 171 percent of normal; with a 5-month moving average of 66 percent. As of June 7, 2016, the Hawaii Drought Monitor shows moderate drought or abnormally dry conditions for leeward and southern Oahu.

Most index monitor wells continue to exhibit static or decreasing trends, reflecting the influences of limited rainfall from previous months and the increases in pumpage typical for this time of year.

Respectfully submitted,

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

Attachment

**PRODUCTION, HEAD AND RAINFALL REPORT  
MONTH OF MAY 2016**

**POTABLE**

STATION	MGD
HONOLULU (1)	
KULIOUOU	0.06
WAILUPE	0.06
AINA KOA	0.48
AINA KOA II	1.12
MANOA II	0.00
PALOLO	1.13
KAIMUKI HIGH	2.90
KAIMUKI LOW	1.57
WILDER	7.49
BERETANIA HIGH	4.76
BERETANIA LOW	1.65
KALIHI HIGH	1.95
KALIHI LOW	2.91
KAPALAMA	0.58
KALIHI SHAFT	8.26
MOANALUA	1.27
HALAWA SHAFT	8.54
KAAMILO	0.00
KALAUAO	9.47
PUNANANI	12.18
KAAHUMANU	0.93
HECO WAIU	0.00
MANANA	0.48
WELLS SUBTOTAL:	67.77
MANOA TUNNEL	0.17
PALOLO TUNNEL	0.23
GRAVITY SUBTOTAL:	0.40
HONO. SUBTOTAL:	68.17

STATION	MGD
WINDWARD (2)	
WAIMANALO II	0.34
WAIMANALO III	0.33
KUOU I	0.28
KUOU II	0.13
KUOU III	0.30
LULUKU	1.00
HAIKU	0.32
IOLEKAA	0.00
KAHALUU	0.88
KAHANA	0.85
PUNALUU I	0.00
PUNALUU II	2.54
PUNALUU III	1.22
KALUANUI	0.00
MAAKUA	0.29
HAUULA	0.00
WELLS SUBTOTAL:	8.49
WAIM. TUNNELS I & II	0.00
WAIM. TUNNELS III&IV	0.19
WAIHEE INCL. WELLS	0.96
WAIHEE TUNNEL	4.71
LULUKU TUNNEL	0.08
HAIKU TUNNEL	0.00
KAHALUU TUNNEL	1.55
GRAVITY SUBTOTAL:	7.49
WIND. SUBTOTAL:	15.98

STATION	MGD
NORTH SHORE (3)	
KAHUKU	0.36
OPANA	1.02
WAIALEE I	0.00
WAIALEE II	0.00
HALEIWA	0.00
WAIALUA	2.47
N.SHORE SUBTOTAL:	3.86

STATION	MGD
MILILANI (4)	
MILILANI I	3.09
MILILANI II	0.00
MILILANI III	0.23
MILILANI IV	1.64
MILILANI SUBTOTAL:	4.97

STATION	MGD
WAIHAWA (5)	
WAIHAWA	1.94
WAIHAWA II	1.29
WAIHAWA SUBTOTAL:	3.23

STATION	MGD
PEARL CITY-HALAWA (6)	
HALAWA 277	0.89
HALAWA 550	0.00
AIEA	0.93
AIEA GULCH 497	0.59
AIEA GULCH 550	0.25
KAONOH I	0.86
WAIMALU I	0.00
NEWTOWN	1.13
WAIU	0.82
PEARL CITY I	0.52
PEARL CITY II	1.00
PEARL CITY III	0.49
PEARL CITY SHAFT	0.93
PEARL CITY-HALAWA SUBTOTAL:	8.41

STATION	MGD
WAIPAHU-EWA (7)	
WAIPIO HTS.	0.16
WAIPIO HTS. I	0.23
WAIPIO HTS. II	0.40
WAIPIO HTS. III	1.23
WAIPAHU	3.17
WAIPAHU II	1.19
WAIPAHU III	1.54
WAIPAHU IV	3.12
KUNIA I	5.50
KUNIA II	2.00
KUNIA III	1.39
HOAEAE	7.35
HONOULIULI I	0.00
HONOULIULI II	5.74
MAKAKILO	0.32
WAIPAHU-EWA SUBTOTAL:	33.34

STATION	MGD
WAIANAE (8)	
MAKAHA I	0.87
MAKAHA II	0.07
MAKAHA III	0.98
MAKAHA V	0.23
MAKAHA VI	0.00
MAKAHA SHAFT	0.00
KAMAILE	0.06
WAIANAE I	0.04
WAIANAE II	0.88
WAIANAE III	0.44
WELLS SUBTOTAL:	3.57
WAI. C&C TUNNEL	1.40
WAI. PLANT. TUNNELS	0.16
GRAVITY SUBTOTAL:	1.56
WAIANAE SUBTOTAL:	5.13

**NONPOTABLE**

NONPOTABLE	MGD
KALAUAO SPRINGS	0.51
BARBERS POINT WELL	1.19
GLOVER TUNNEL NP	0.43
NONPOTABLE TOTAL:	2.12

**RECYCLED WATER (APRIL 2016)**

RECYCLED WATER	MGD
HONOULIULI WRF R-1	8.44
HONOULIULI WRF RO	1.45
RECYCLED WATER TOTAL:	9.89



**PRODUCTION, HEAD AND RAINFALL REPORT  
MONTH OF MAY 2016**

**PRODUCTION SUMMARIES**

TOTAL WATER	MGD
PUMPAGE	133.63
GRAVITY	9.45
POTABLE TOTAL:	143.08
NONPOTABLE	2.12
RECYCLED WATER	9.89
TOTAL WATER:	155.10

CWRM PERMITTED USE AND BWS ASSESSED YIELDS FOR BWS POTABLE SOURCES				
WATER USE DISTRICTS		A	B	C
		PERMITTED USE/ BWS YLDS	MAY 2016	DIFF. A-B
1	HONOLULU	82.93	67.77	15.16
2	WINDWARD	25.02	10.30	14.72
3	NORTH SHORE	4.74	3.86	0.88
4	MILILANI	7.53	4.97	2.56
5	WAHIAWA	4.27	3.23	1.04
6	PEARL CITY-HALAWA	12.25	8.41	3.84
7	WAIPAHU-EWA	50.63	33.34	17.29
8	WAIANAE	4.34	3.57	0.77
TOTAL:		191.71	135.45	56.26

CWRM PERMITTED USE FOR BWS NONPOTABLE SOURCES				
WATER USE DISTRICTS		A	B	C
		PERMITTED USE	MAY 2016	DIFF. A-B
7	WAIPAHU-EWA (BARBERS POINT WELL)	1.00	1.19	-0.19
TOTAL:		1.00	1.19	-0.19

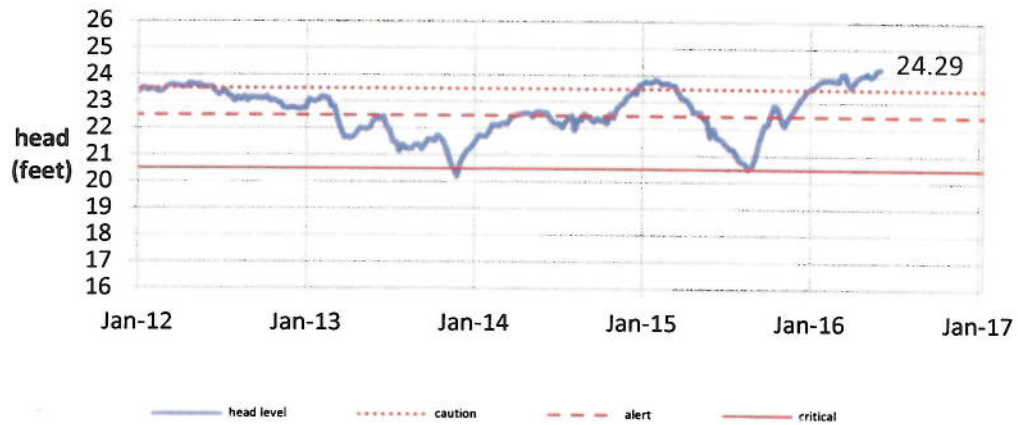
**EFFECTIVE WATER DEMAND PER DISTRICT**

IMPORT/EXPORT BETWEEN WATER USE DISTRICTS			
FROM	TO		MGD
2	1	WINDWARD EXPORT	0.14
7	8	BARBERS PT LB	5.17

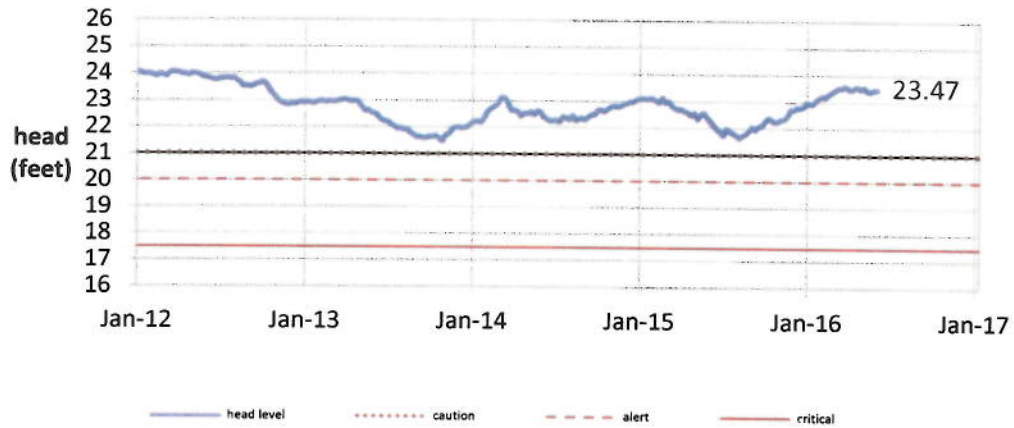
WATER USE DISTRICTS		SUBTOTAL	IMPORT	EXPORT	EFFECTIVE WATER DEMAND
1	HONOLULU	67.77	0.14	-	67.91
2	WINDWARD	10.30	-	0.14	10.16
3	NORTH SHORE	3.86	-	-	3.86
4	MILILANI	4.97	-	-	4.97
5	WAHIAWA	3.23	-	-	3.23
6	PEARL CITY-HALAWA	8.41	-	-	8.41
7	WAIPAHU-EWA	33.34	-	5.17	28.17
8	WAIANAE	3.57	5.17	-	8.74
TOTAL:		135.45	5.31	5.31	135.45

# Weekly Head Report

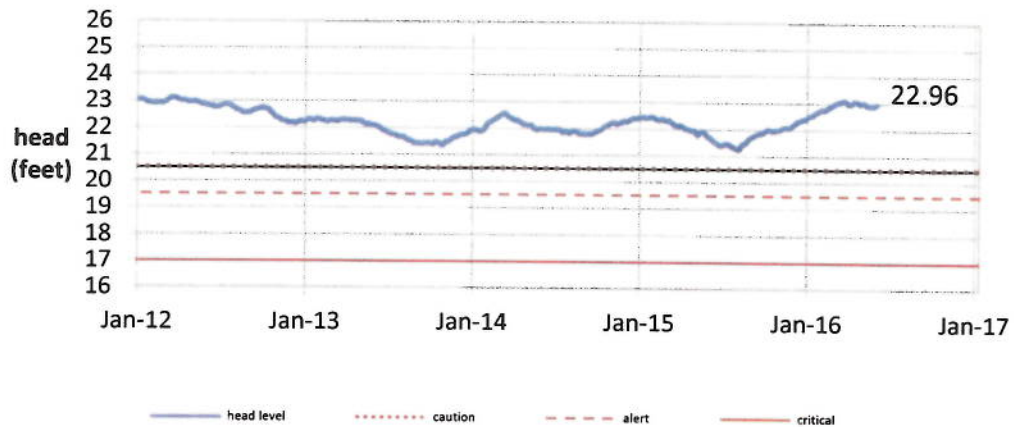
## Kaimuki 06/05/16



## Beretania 06/05/16

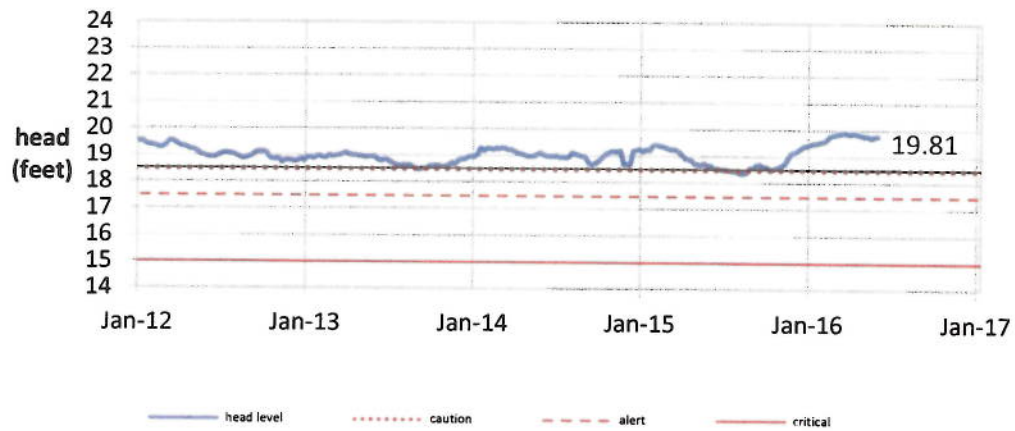


## Kalihi 06/05/16

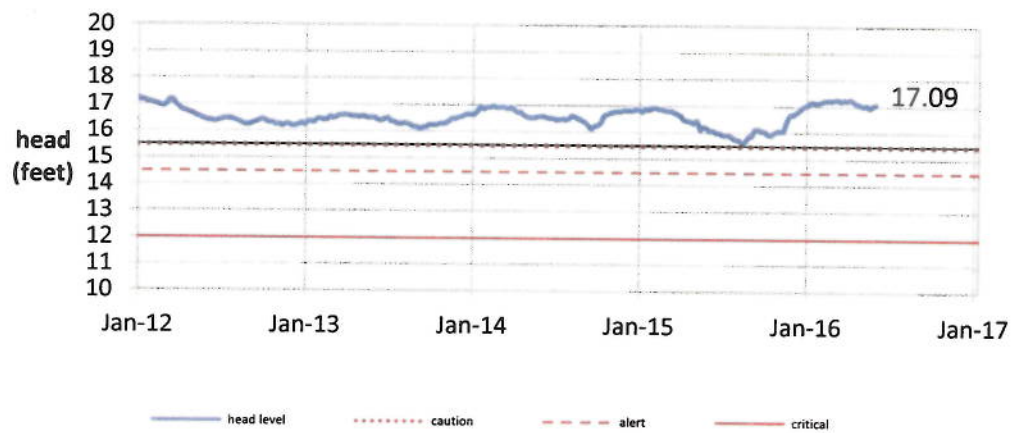


## Weekly Head Report

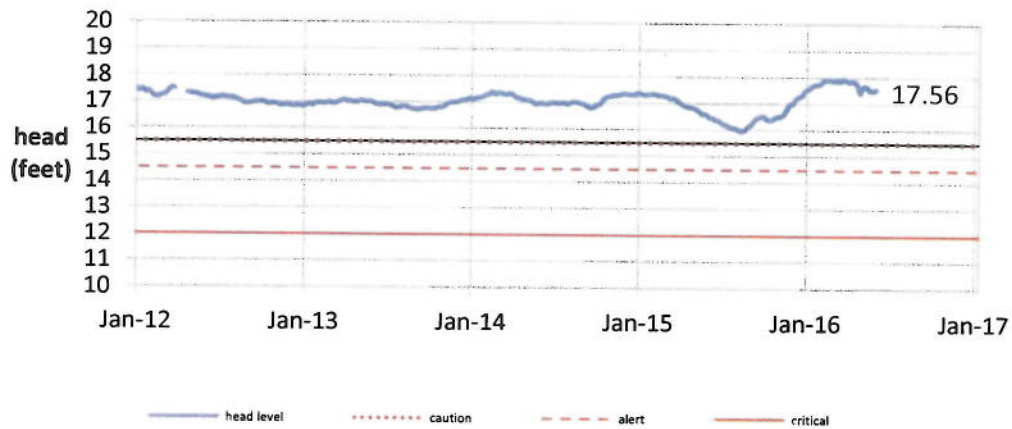
### Moanalua 06/05/16



### Halawa 06/05/16



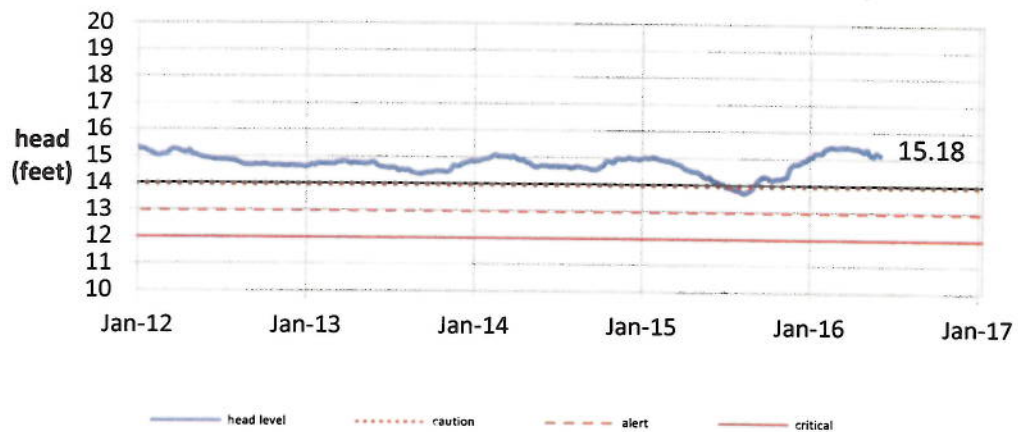
### Kalauao 06/05/16



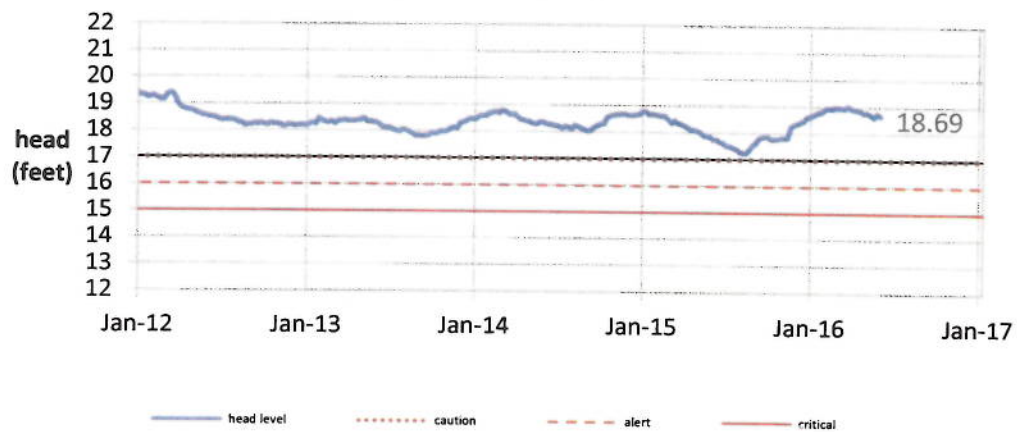


## Weekly Head Report

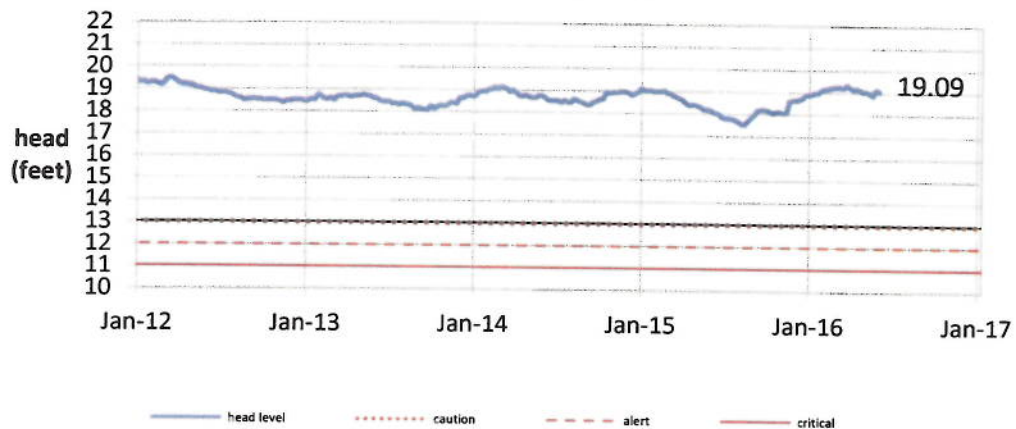
### Pearl City 06/05/16



### Waipahu 06/05/16

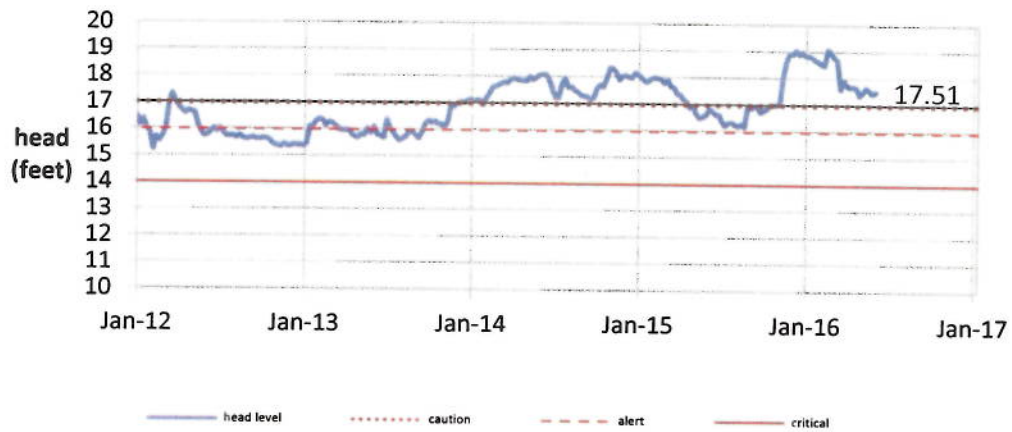


### Hoeaee-Kunia 06/05/16

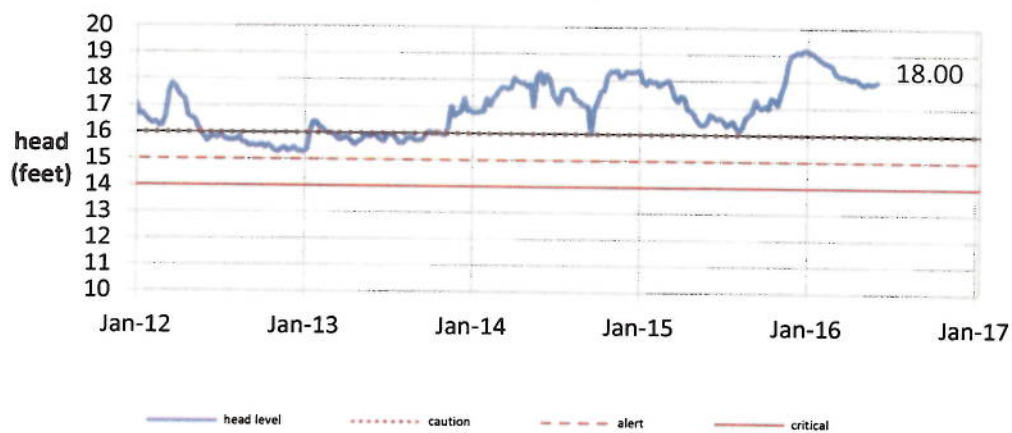


## Weekly Head Report

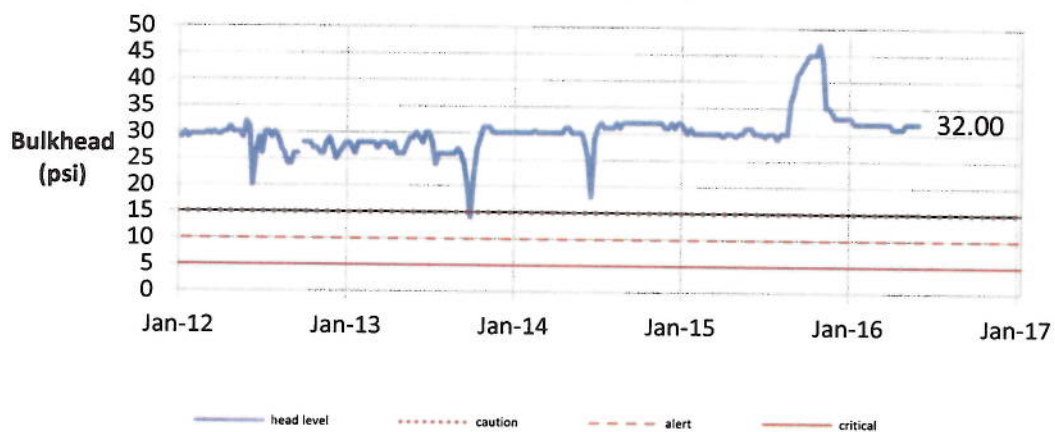
### Punaluu 06/05/16



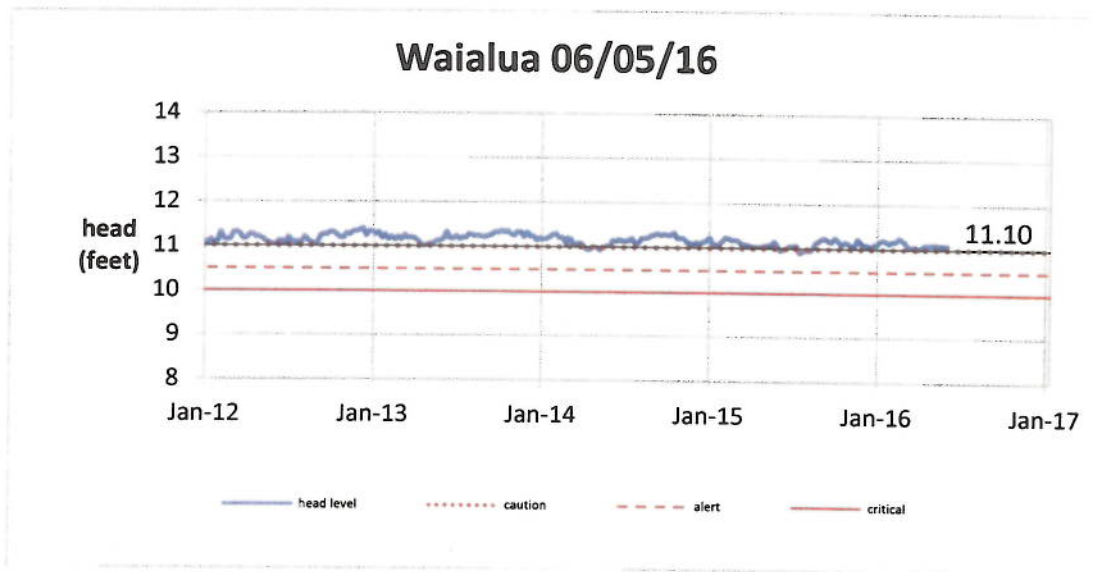
### Kaluanui 06/05/16

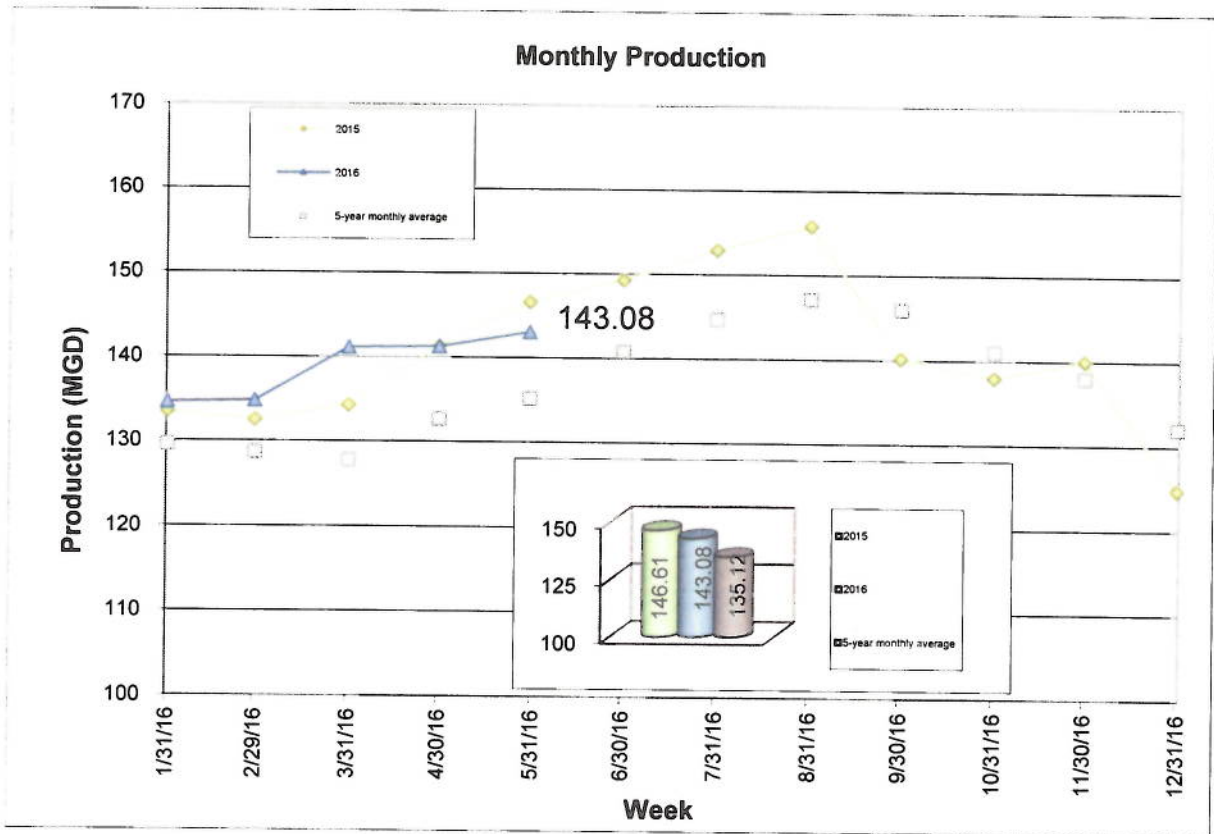
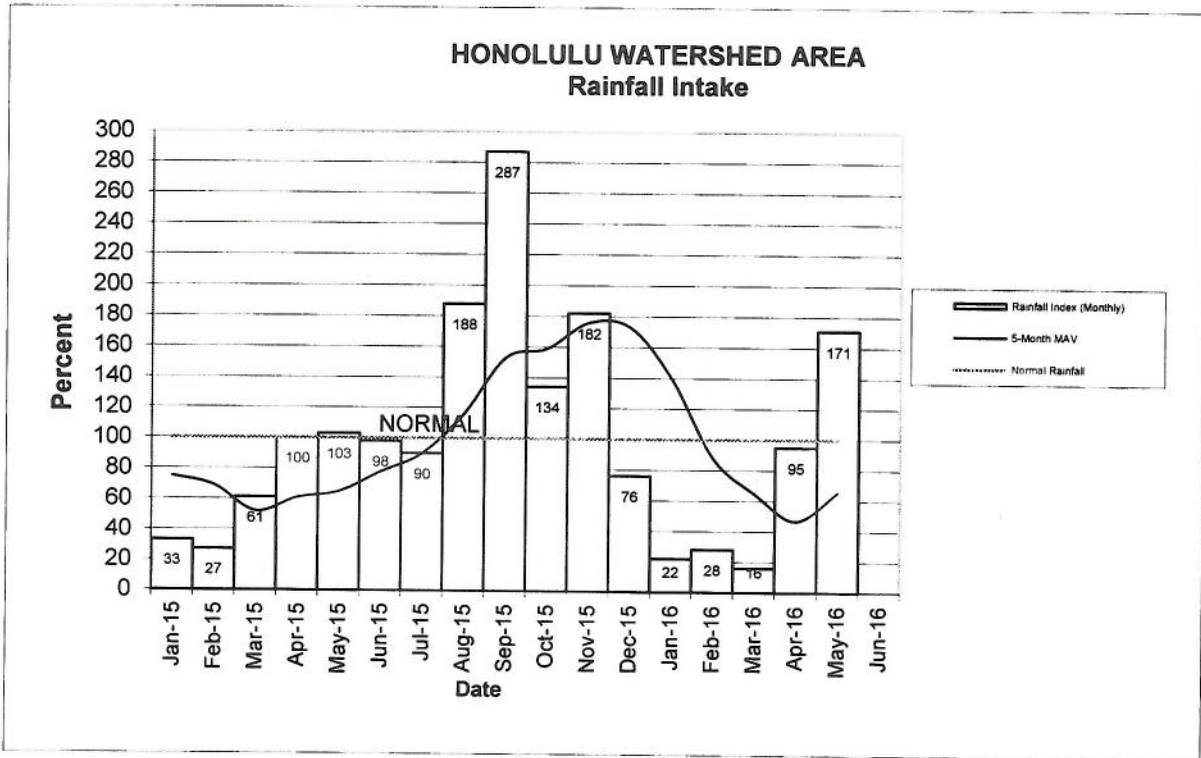


### Waihee Tunnel 06/05/16



## Weekly Head Report



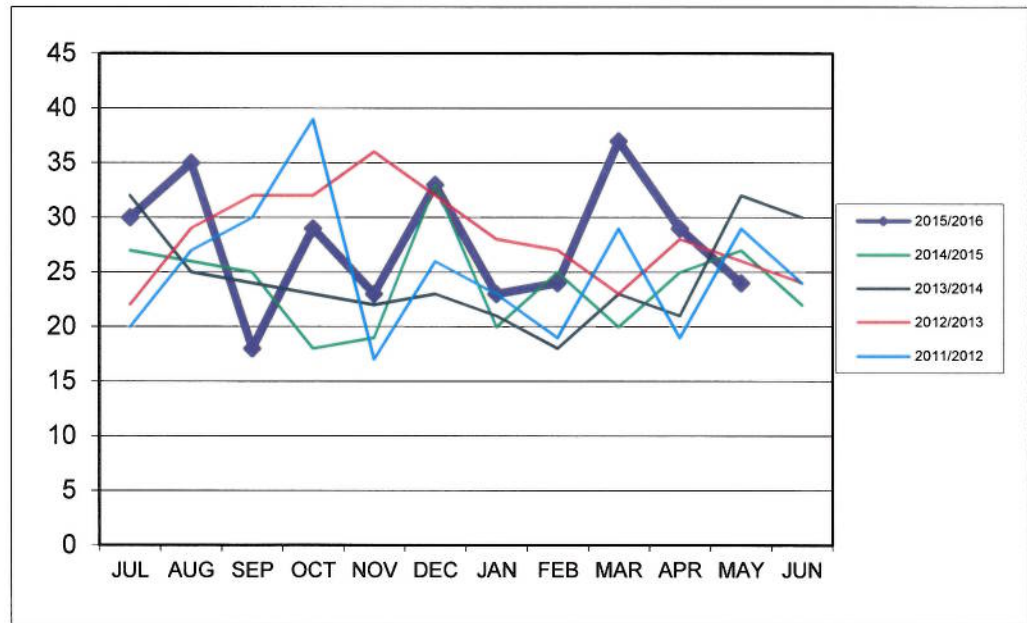


# WATER MAIN REPAIR REPORT

## for May 2016

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
<b>2015/2016</b>	<b>30</b>	<b>35</b>	<b>18</b>	<b>29</b>	<b>23</b>	<b>33</b>	<b>23</b>	<b>24</b>	<b>37</b>	<b>29</b>	<b>24</b>		<b>305</b>
<b>2014/2015</b>	27	26	25	18	19	33	20	25	20	25	27	22	287
<b>2013/2014</b>	32	25	24	23	22	23	21	18	23	21	32	30	294
<b>2012/2013</b>	22	29	32	32	36	32	28	27	23	28	26	24	339
<b>2011/2012</b>	20	27	30	39	17	26	23	19	29	19	29	24	302

<u>Date</u>	<u>Address</u>	<u>Size</u>
5/3	1550 Rycroft St.	6" CI
5/5	1888 Kalakaua Ave.	16" DI
5/6	94-108 Hulahe St.	8" CI
5/6	1103 S. King St.	12" CI
5/10	1737 Alewa Dr.	8" CI
5/10	85-145 Kaulawaha Rd.	8" DI
5/10	98-150 Kaonohi St.	8" CI
5/11	98-1066 Alania St.	8" CI
5/12	2353 Jasmine St.	8" CI
5/14	2462 Kuhio Ave.	4" CI
5/14	94-066 Leolua St.	6" CI
5/16	1805 Wahine Pl.	4" CI
5/17	Puiwa Rd. & Park Pl.	12" PVC
5/18	45-671 Kamehameha Hwy.	8" PVC
5/19	47-269 Waihee Rd.	12" CI
5/19	98-1774 Nahele St.	12" CI
5/20	1172 Panee St.	8" CI
5/24	5920 Haleola St.	12" CI
5/24	41-206 Ilauhole St.	12" DI
5/24	458 Keawe St.	6" CI
5/26	45-525 Keole Pl.	4" CI
5/28	47-432 Hui Keleu St	8" DI
5/28	86-29 Glennmonger St	8" PVC
5/29	878 Hoomalu St	8" CI



**Bold \* - Pro-active Leak Repair**

28.7 miles of pipelines were surveyed by the Leak Detection Team in the month of May.