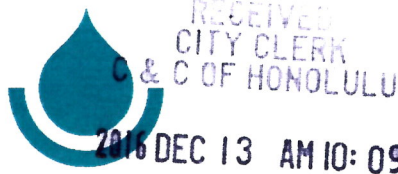


BOARD OF WATER SUPPLY

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



December 13, 2016

KIRK CALDWELL, MAYOR

BRYAN P. ANDAYA, Chair
ADAM C. WONG, Vice Chair
DAVID C. HULIHEE
KAPUA SPROAT
KAY C. MATSUI

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, December 19, 2016, at 2:00 p.m. in the Board Room, Public Service Building, 630 South Beretania Street, Honolulu, Hawaii.

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;
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 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 **at least three business days prior to the meeting date**.

The agenda for the December 19, 2016 Regular Meeting of the Board of Water Supply is as follows:

ITEMS REQUIRING BOARD ACTION

1. Approval of the Minutes of the Regular Meeting Held on November 28, 2016

ITEMS FOR INFORMATION

1. Enterprise Organizational Study Update
2. Status Update of Groundwater Levels at All Index Stations
3. Water Main Repair Report for November 2016

EXECUTIVE SESSION

1. Approval of the Minutes of the Executive Session Meeting Held on November 28, 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 # 14-091, Relating to Damages to Hawaiian Telcom Cables and Facility Due to a Water Main Break [HRS 95-5(a)(4)]"
3. To Consider the Evaluation of the Chief Engineer, Where Consideration of Matters Affecting Privacy will be Involved [HRS §92-5(a)(2)]

M I N U T E S
REGULAR MEETING
OF THE
BOARD OF WATER SUPPLY

December 19, 2016

At 2:02 PM on December 19, 2016 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
Adam C. Wong, Vice Chair
David C. Hulihee
Kapua Sproat
Ross S. Sasamura

Also Present: Ernest Lau, Manager and Chief Engineer
Ellen Kitamura, Deputy Manager and Chief Engineer
Erwin Kawata
Karen Tom
Daryl Hiromoto
Joe Cooper
Mike Matsuo
Kathleen Pahinui
Jennifer Elflein
Mike Fuke
Jason Takaki
Stuart Wong

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

Absent: Ford N. Fuchigami
Kay C. Matsui

APPROVAL OF
MINUTES

Approval of the Minutes of the Regular Meeting held on November 28, 2016

MOTION
TO APPROVE

Ross Sasamura and Adam Wong motioned and seconded, respectively, to approve the Minutes of the Regular Session Meeting of November 28, 2016. The motion was unanimously carried.

ITEM FOR INFORMATION NO. 1

"December 19, 2016

ENTERPRISE
ORGANIZATIONAL
STUDY
UPDATE

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

Chair and Members:

Subject: Enterprise Organizational Study Update

An Enterprise Organizational Study was initiated to analyze the current Board of Water Supply (BWS) organizational structure and work processes, recommend improvements to increase operational efficiencies and develop an implementation plan. The implementation plan includes the appropriate organizational structure, span of control, staffing levels, competencies and training programs specifically for BWS. The selected consultant, Matrix Consulting Group, from Mountain View, California, began their work on June 29, 2015.

We plan to conduct a peer review of the preliminary recommendations to ensure that the recommendations are not in conflict with actions that past managers and boards have implemented. There are several dozen recommendations from very small to sizable reorganization suggestions that need to be carefully vetted to maintain consistency with the current strategic planning process and the recently adopted 30-year master plan.

The peer review should take about 3 to 4 months to complete as it requires a number of meetings with the divisions and could involve moving functions within the department to gain greater efficiencies in operations.

Respectfully submitted,

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

The foregoing was for information only."

DISCUSSION: Stuart Wong, Executive Support Office Budget Analyst, gave the report.

Mr. Lau stated that the BWS is planning to hire a consultant to assist in facilitating the discussions and help with the high level peer review of the organization study.

Vice Chair Wong asked if the peer review is within the department and Ms. Kitamura replied yes, it is going to be internal within the department. Ms. Kitamura reported that the consultant would organize the recommendations, meet with the various division heads, and try to determine which of the recommendations should go forward.

Vice Chair Wong requested for a copy of the draft report and Mr. Lau and Ms. Kitamura stated they would provide him a copy.

In response to Ms. Sproat's question of how this plan will be considered in the strategic planning and the peer review taking 3 to 4 months to complete, Ms. Kitamura stated that one of the action plans is to look at or implement some of the recommendations of the organizational study and the final strategic plan will be approved approximately in June.

Mr. Lau commented that the BWS may have to go through a reorganization process and a budget process in the future if any major changes are made to the organization.

Ms. Kitamura also commented that the BWS may have to consult with the unions too, because it may affect personnel.

Mr. Andaya asked if the BWS conducted similar studies in the past. Ms. Kitamura responded that approximately in the year 2000, a consultant did an employee study/survey and helped BWS with a reorganization plan and implemented some of the recommendations.

Mr. Lau mentioned that the BWS is currently a very flat organization, meaning all the divisions report to the Deputy Manager and Manager. The study did not recommend any major changes to the flat organization, allowing for effective communications.

ITEM FOR INFORMATION NO. 2

"December 19, 2016

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 November 2016. The monthly production average for November 2016 was 137.92 million gallons per day.

The Board of Water Supply rainfall index for the month of November 2016 was 85 percent of normal; with a 5-month moving average of 162 percent. As of December 6, 2016, the Hawaii Drought Monitor shows abnormally dry conditions for most of the island of Oahu, except for the upper reaches of the Ko'olau Mountain Range, and moderate drought conditions for the leeward coastal areas from Ewa Beach to Makaha.

The National Weather Service is forecasting above normal rainfall from December 2016 to May 2017, with higher probabilities in windward areas during the winter season.

Most leeward index monitoring wells are exhibiting slightly increasing trends due to the decreased pumpage during the fall months. Windward wells, which are more sensitive to fluctuations in rainfall, are exhibiting slight decreasing trends during the same time period.

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.

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

POTABLE

| STATION | MGD |
|-------------------|-------|
| HONOLULU (1) | |
| KULIOUOU | 0.08 |
| WAILUPE | 0.04 |
| AINA KOA | 0.30 |
| AINA KOA II | 1.00 |
| MANOA II | 0.00 |
| PALOLO | 1.13 |
| KAIMUKI HIGH | 1.93 |
| KAIMUKI LOW | 1.28 |
| WILDER | 7.46 |
| BERETANIA HIGH | 5.17 |
| BERETANIA LOW | 0.73 |
| KALIH I HIGH | 1.60 |
| KALIH I LOW | 3.47 |
| KAPALAMA | 0.55 |
| KALIH I SHAFT | 8.42 |
| MOANALUA | 0.74 |
| HALAWA SHAFT | 7.53 |
| KAAMILO | 0.00 |
| KALAUAO | 7.13 |
| PUNANANI | 12.01 |
| KAHUMANU | 0.68 |
| HECO WAI AU | 2.68 |
| MANANA | 0.42 |
| WELLS SUBTOTAL: | 64.36 |
| MANOA TUNNEL | 0.17 |
| PALOLO TUNNEL | 0.23 |
| GRAVITY SUBTOTAL: | 0.40 |
| HONO. SUBTOTAL: | 64.76 |

| STATION | MGD |
|----------------------|-------|
| WINDWARD (2) | |
| WAIMANALO II | 0.33 |
| WAIMANALO III | 0.39 |
| KUOU I | 0.68 |
| KUOU II | 0.09 |
| KUOU III | 0.24 |
| LULUKU | 1.03 |
| HAIKU | 0.00 |
| IOLEKAA | 0.00 |
| KAHALUU | 0.85 |
| KAHANA | 0.76 |
| PUNALUU I | 0.00 |
| PUNALUU II | 1.92 |
| PUNALUU III | 1.13 |
| KALUANUI | 0.00 |
| MAAKUA | 0.36 |
| HAUULA | 0.00 |
| WELLS SUBTOTAL: | 7.79 |
| WAIM. TUNNELS I & II | 0.00 |
| WAIM. TUNNELS III&IV | 0.19 |
| WAIHEE INCL. WELLS | 0.94 |
| WAIHEE TUNNEL | 5.05 |
| LULUKU TUNNEL | 0.10 |
| HAIKU TUNNEL | 0.00 |
| KAHALUU TUNNEL | 1.59 |
| GRAVITY SUBTOTAL: | 7.88 |
| WIND. SUBTOTAL: | 15.66 |

| STATION | MGD |
|-------------------|------|
| NORTH SHORE (3) | |
| KAHUKU | 0.31 |
| OPANA | 0.50 |
| WAI ALEE I | 0.00 |
| WAI ALEE II | 0.38 |
| HALEIWA | 0.00 |
| WAI ALUA | 2.01 |
| N.SHORE SUBTOTAL: | 3.21 |

| STATION | MGD |
|--------------------|------|
| MILILANI (4) | |
| MILILANI I | 2.77 |
| MILILANI II | 0.00 |
| MILILANI III | 0.00 |
| MILILANI IV | 1.62 |
| MILILANI SUBTOTAL: | 4.39 |

| STATION | MGD |
|-------------------|------|
| WAHIAWA (5) | |
| WAHIAWA | 1.71 |
| WAHIAWA II | 1.35 |
| WAHIAWA SUBTOTAL: | 3.06 |

| STATION | MGD |
|-----------------------------|------|
| PEARL CITY-HALAWA (6) | |
| HALAWA 277 | 0.90 |
| HALAWA 550 | 0.00 |
| AIEA | 0.97 |
| AIEA GULCH 497 | 0.53 |
| AIEA GULCH 550 | 0.21 |
| KAONOHI I | 0.82 |
| WAIMALU I | 0.00 |
| NEWTOWN | 0.89 |
| WAI AU | 0.71 |
| PEARL CITY I | 0.51 |
| PEARL CITY II | 1.04 |
| PEARL CITY III | 0.33 |
| PEARL CITY SHAFT | 0.93 |
| PEARL CITY-HALAWA SUBTOTAL: | 7.83 |

| STATION | MGD |
|-----------------------|-------|
| WAIPAHU-EWA (7) | |
| WAIPIO HTS. | 1.52 |
| WAIPIO HTS. I | 0.99 |
| WAIPIO HTS. II | 0.31 |
| WAIPIO HTS. III | 1.23 |
| WAIPAHU | 1.45 |
| WAIPAHU II | 0.78 |
| WAIPAHU III | 3.93 |
| WAIPAHU IV | 3.19 |
| KUNIA I | 5.06 |
| KUNIA II | 2.51 |
| KUNIA III | 1.37 |
| HOAEAE | 7.33 |
| HONOULIULI I | 0.00 |
| HONOULIULI II | 4.46 |
| MAKAKILO | 0.32 |
| WAIPAHU-EWA SUBTOTAL: | 34.47 |

| STATION | MGD |
|-----------------------|------|
| WAIANAE (8) | |
| MAKAHA I | 0.73 |
| MAKAHA II | 0.20 |
| MAKAHA III | 0.61 |
| MAKAHA V | 0.26 |
| MAKAHA VI | 0.00 |
| MAKAHA SHAFT | 0.00 |
| KAMAILE | 0.30 |
| WAIANAE I | 0.17 |
| WAIANAE II | 0.01 |
| WAIANAE III | 0.71 |
| WELLS SUBTOTAL: | 2.99 |
| WAI A. C&C TUNNEL | 1.40 |
| WAI A. PLANT. TUNNELS | 0.16 |
| GRAVITY SUBTOTAL: | 1.56 |
| WAIANAE SUBTOTAL: | 4.55 |

NONPOTABLE

| NONPOTABLE | MGD |
|--------------------|------|
| KALAUAO SPRINGS | 0.49 |
| BARBERS POINT WELL | 1.18 |
| GLOVER TUNNEL NP | 0.42 |
| NONPOTABLE TOTAL: | 2.10 |

RECYCLED WATER (OCTOBER 2016)

| RECYCLED WATER | MGD |
|-----------------------|------|
| HONOULIULI WRF R-1 | 8.15 |
| HONOULIULI WRF RO | 1.57 |
| RECYCLED WATER TOTAL: | 9.72 |

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

PRODUCTION SUMMARIES

| TOTAL WATER | MGD |
|----------------|--------|
| PUMPAGE | 128.09 |
| GRAVITY | 9.84 |
| POTABLE TOTAL: | 137.92 |
| NONPOTABLE | 2.10 |
| RECYCLED WATER | 9.72 |
| TOTAL WATER: | 149.74 |

| CWRM PERMITTED USE AND BWS ASSESSED YIELDS FOR BWS POTABLE SOURCES | | | | |
|-----------------------------------------------------------------------|-------------------|-------------------------------|-------------|--------------|
| WATER USE DISTRICTS | | A | B | C |
| | | PERMITTED USE/ BWS YLDS | NOV 2016 | DIFF. A-B |
| 1 | HONOLULU | 82.93 | 64.36 | 18.57 |
| 2 | WINDWARD | 25.02 | 9.67 | 15.35 |
| 3 | NORTH SHORE | 4.74 | 3.21 | 1.53 |
| 4 | MILILANI | 7.53 | 4.39 | 3.14 |
| 5 | WAHIAWA | 4.27 | 3.06 | 1.21 |
| 6 | PEARL CITY-HALAWA | 12.25 | 7.83 | 4.42 |
| 7 | WAIPAHU-EWA | 50.63 | 34.47 | 16.16 |
| 8 | WAIANAE | 4.34 | 2.99 | 1.35 |
| TOTAL: | | 191.71 | 129.97 | 61.74 |

| CWRM PERMITTED USE FOR BWS NONPOTABLE SOURCES | | | | |
|--------------------------------------------------|----------------------------------------|------------------|-------------|--------------|
| WATER USE DISTRICTS | | A | B | C |
| | | PERMITTED USE | NOV 2016 | DIFF. A-B |
| 7 | WAIPAHU-EWA (BARBERS POINT WELL) | 1.00 | 1.18 | -0.18 |
| TOTAL: | | 1.00 | 1.18 | -0.18 |

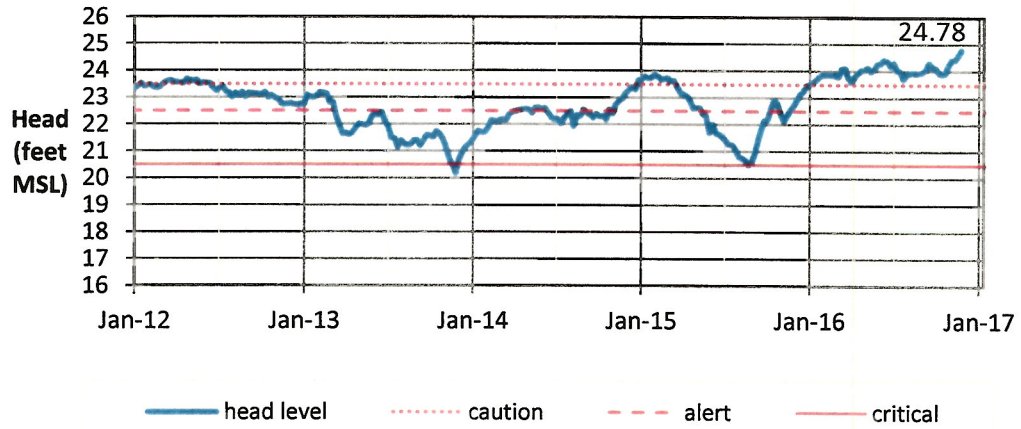
EFFECTIVE WATER DEMAND PER DISTRICT

| IMPORT/EXPORT BETWEEN WATER USE DISTRICTS | | | |
|-------------------------------------------|----|-----------------|------|
| FROM | TO | | MGD |
| 2 | 1 | WINDWARD EXPORT | 0.14 |
| 7 | 8 | BARBERS PT LB | 5.44 |

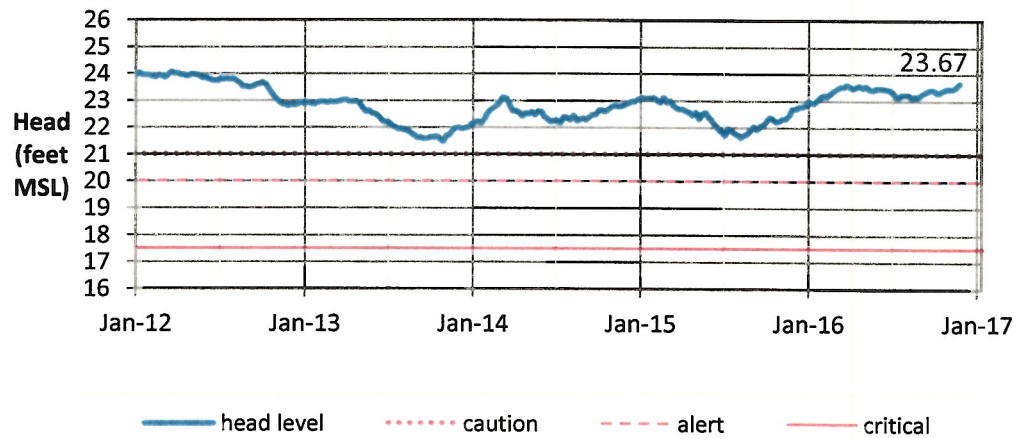
| WATER USE DISTRICTS | | SUBTOTAL | IMPORT | EXPORT | EFFECTIVE WATER DEMAND |
|---------------------|-------------------|----------|--------|--------|------------------------------|
| 1 | HONOLULU | 64.36 | 0.14 | - | 64.50 |
| 2 | WINDWARD | 9.67 | - | 0.14 | 9.53 |
| 3 | NORTH SHORE | 3.21 | - | - | 3.21 |
| 4 | MILILANI | 4.39 | - | - | 4.39 |
| 5 | WAHIAWA | 3.06 | - | - | 3.06 |
| 6 | PEARL CITY-HALAWA | 7.83 | - | - | 7.83 |
| 7 | WAIPAHU-EWA | 34.47 | - | 5.44 | 29.02 |
| 8 | WAIANAE | 2.99 | 5.44 | - | 8.43 |
| TOTAL: | | 129.97 | 5.58 | 5.58 | 129.97 |

Weekly Head Report

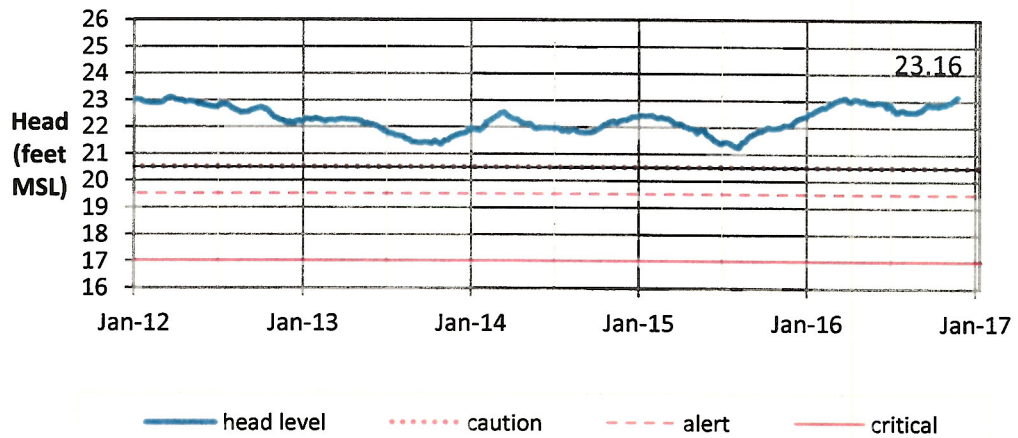
Kaimuki 11/27/16



Beretania 11/27/16

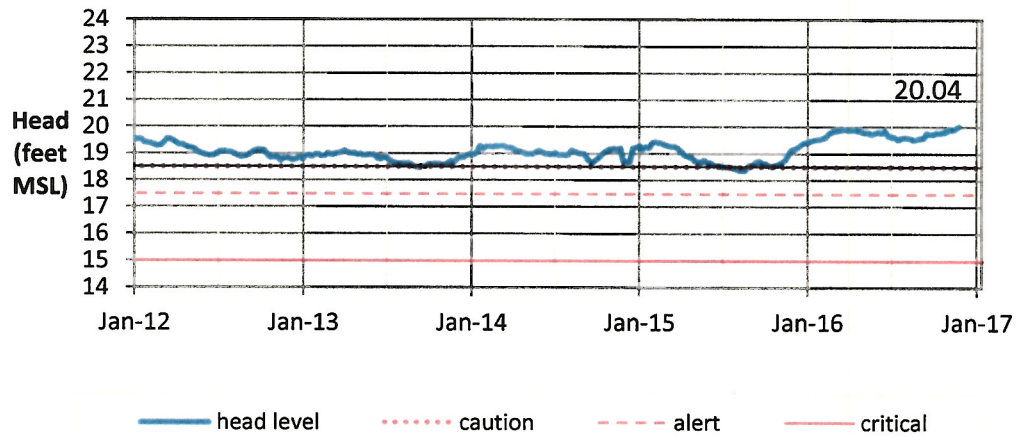


Kalihi 11/27/16

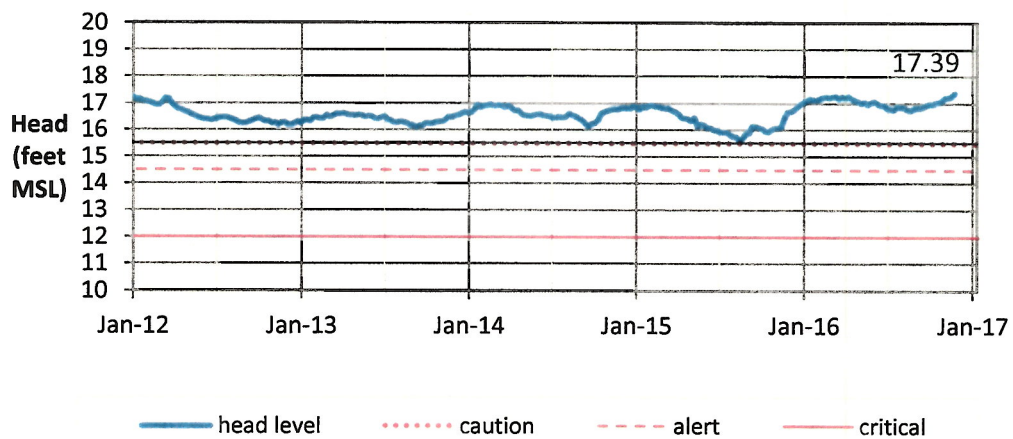


Weekly Head Report

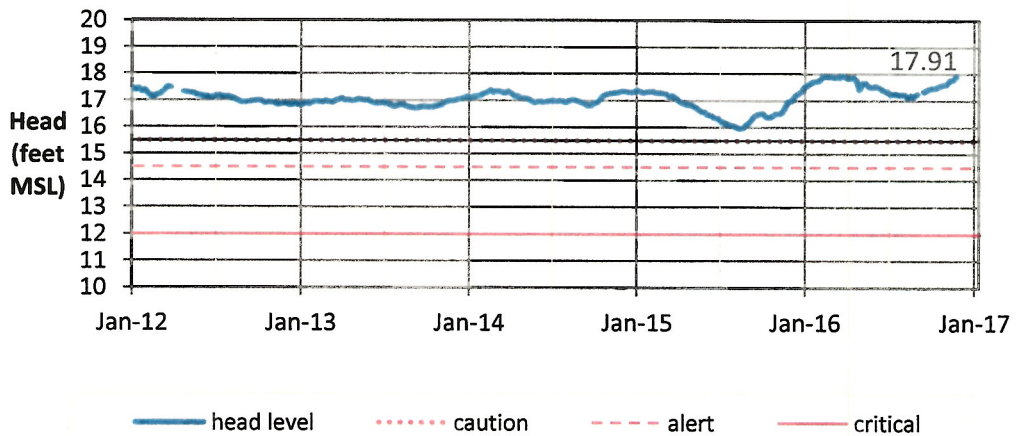
Moanalua 11/27/16



Halawa 11/27/16

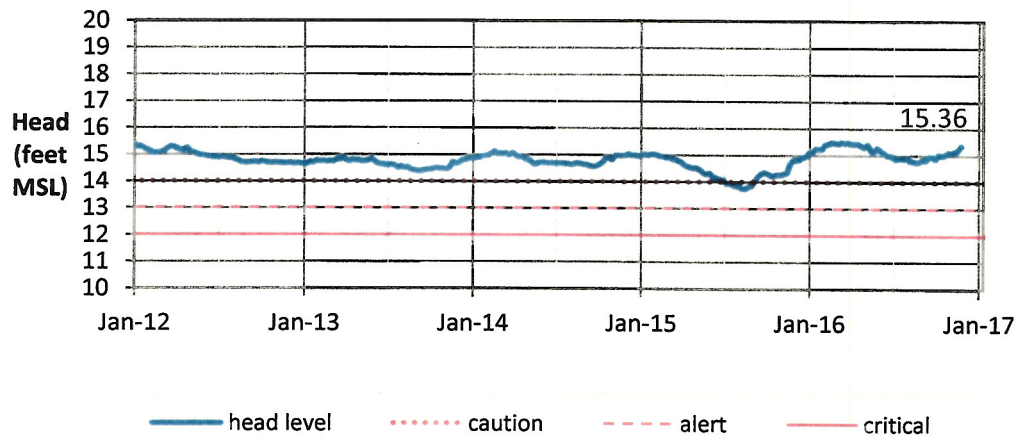


Kalauao 11/27/16

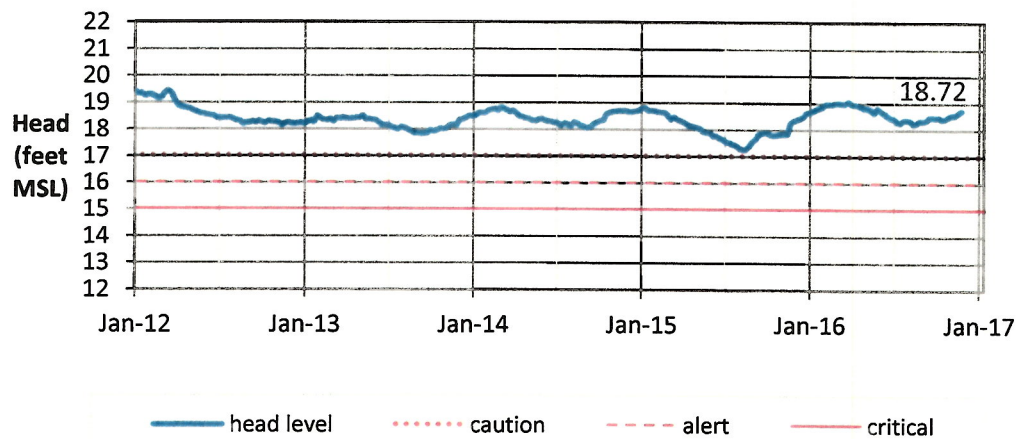


Weekly Head Report

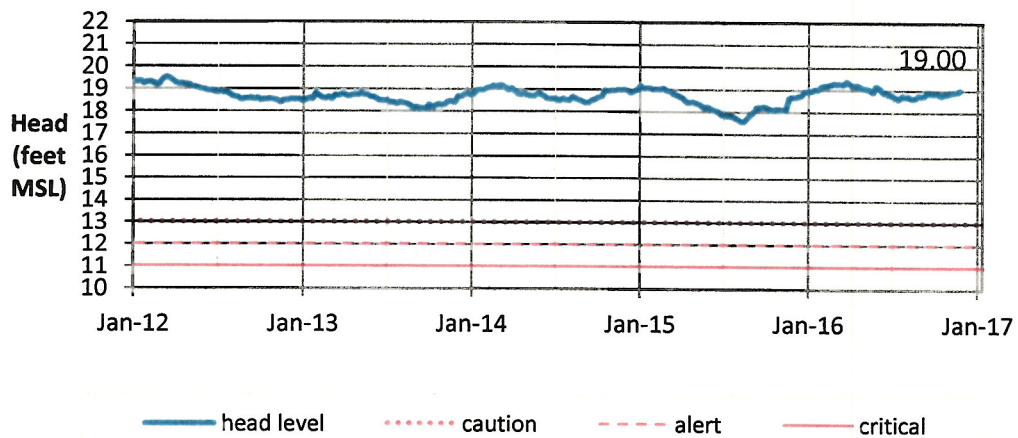
Pearl City 11/27/16



Waipahu 11/27/16

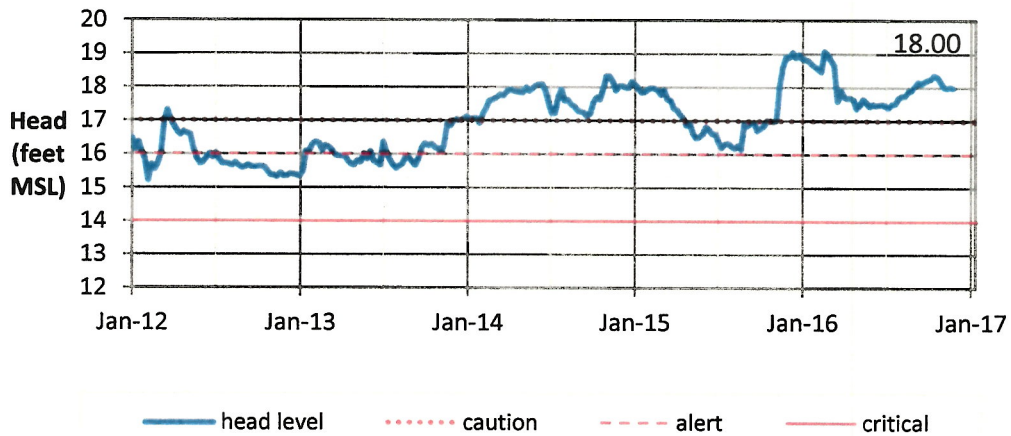


Hoaeae-Kunia 11/27/16

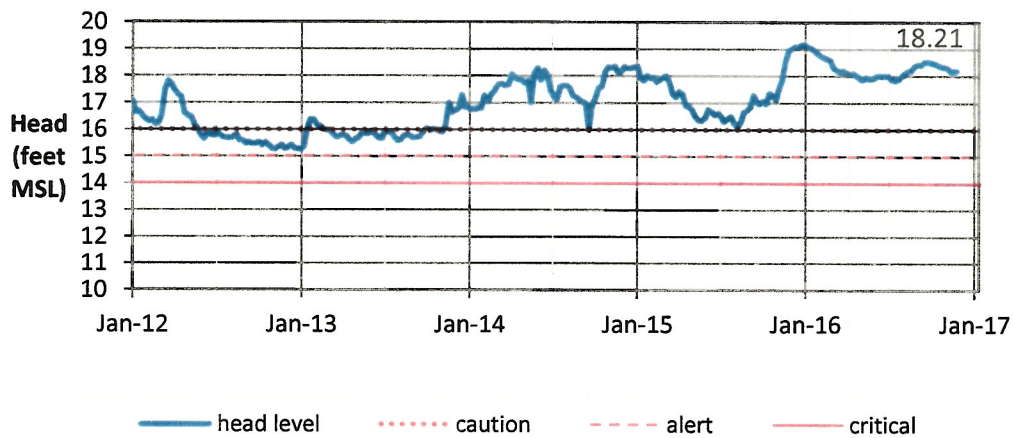


Weekly Head Report

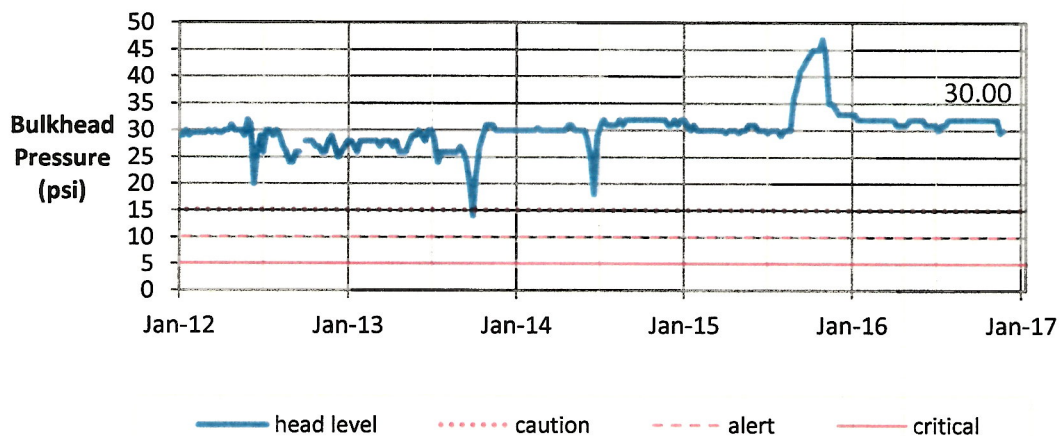
Punaluu 11/27/16



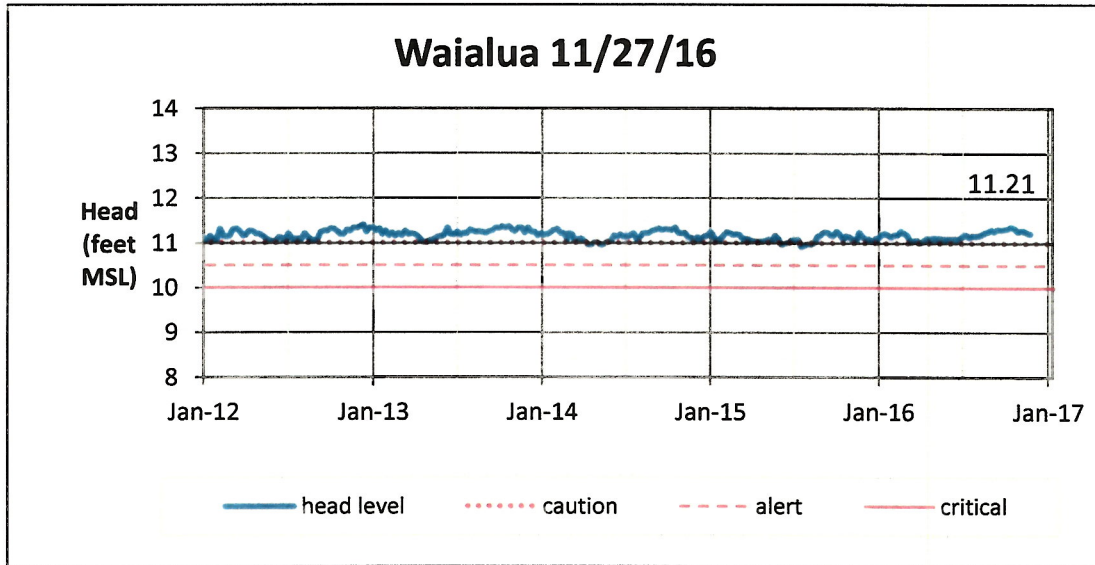
Kaluauui 11/27/16

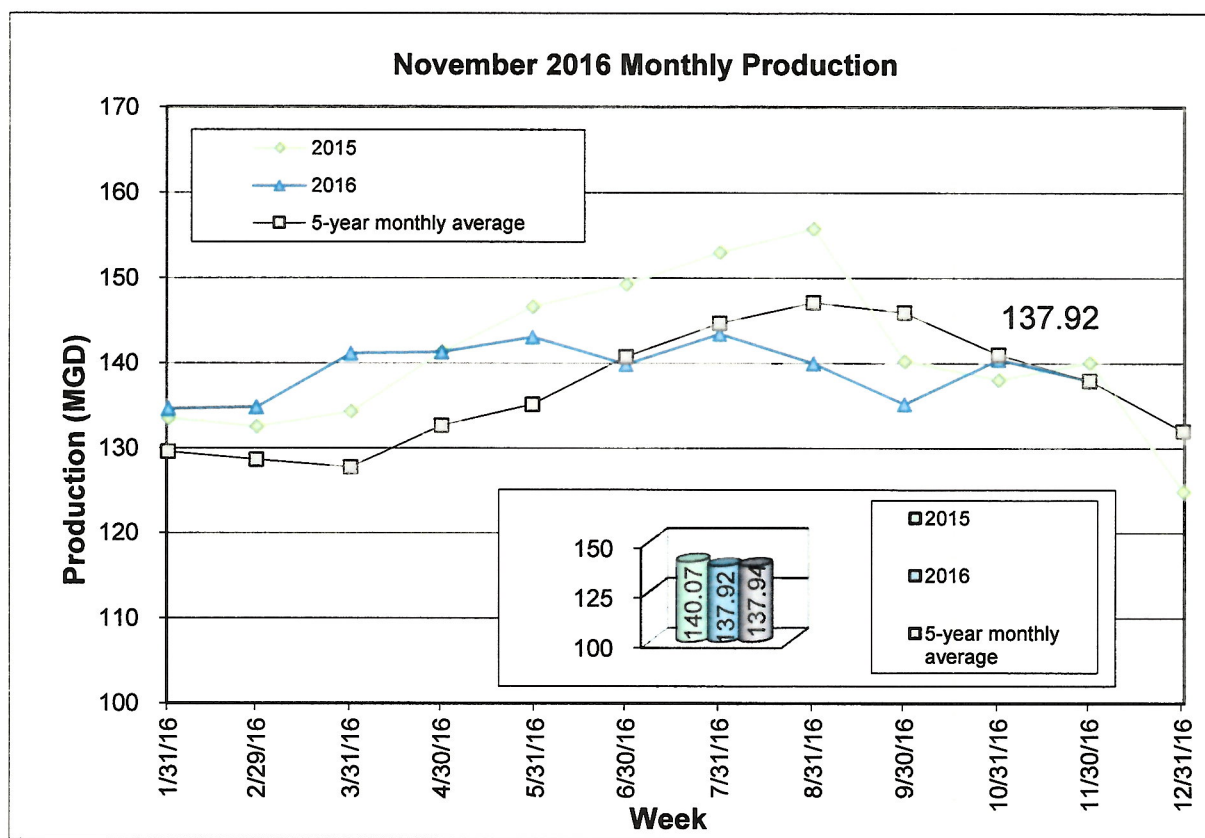
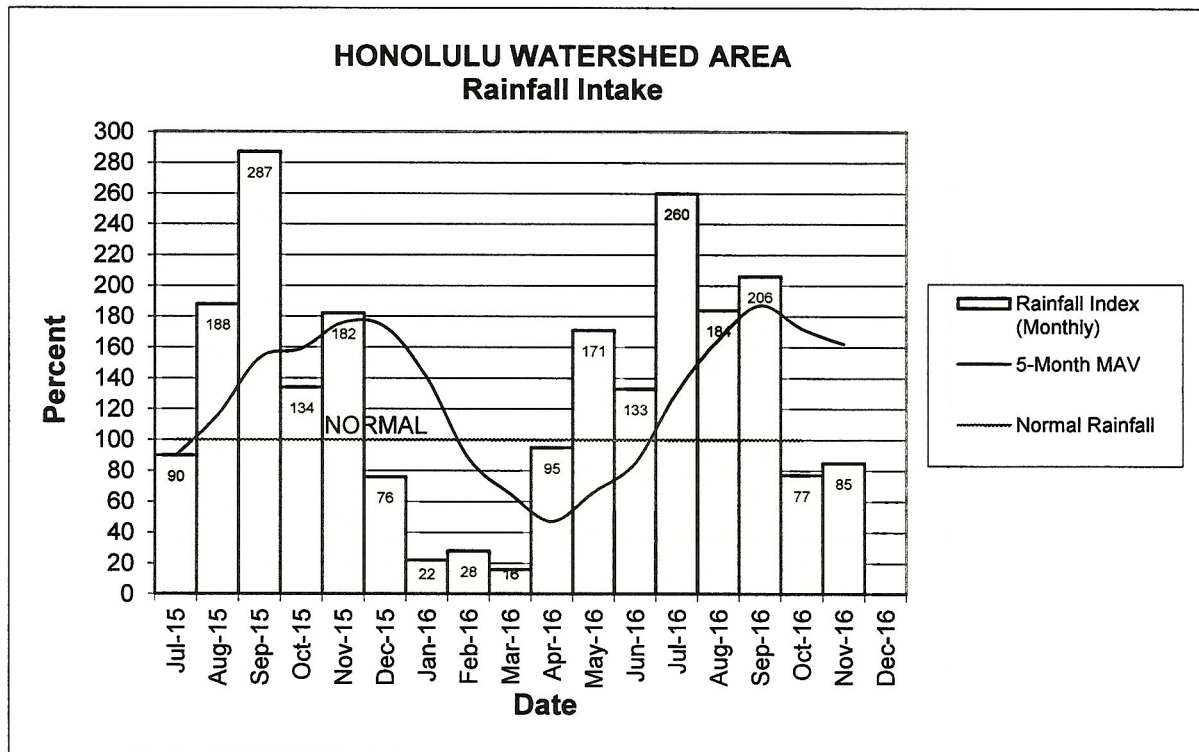


Waihee Tunnel 11/27/16



Weekly Head Report

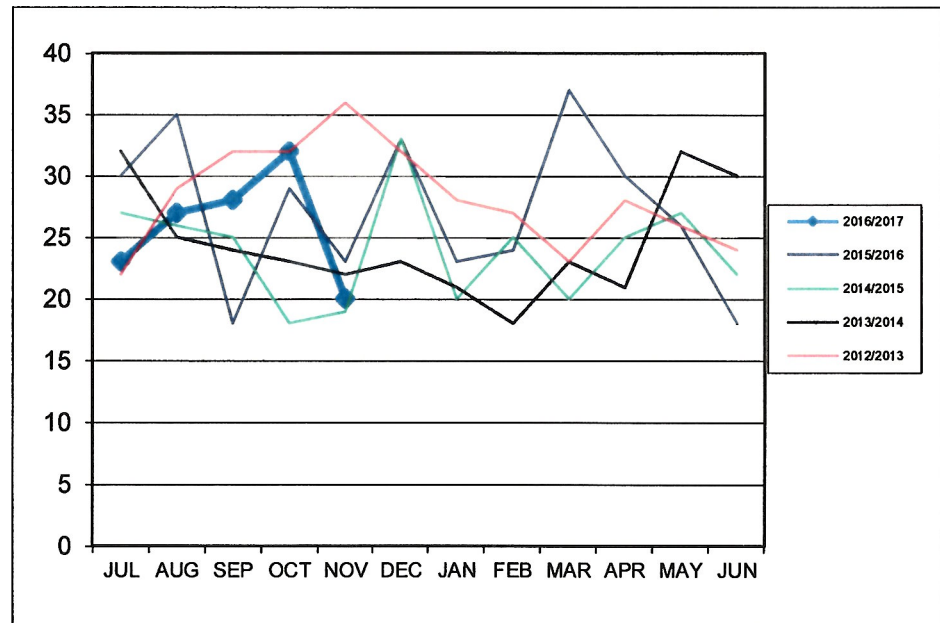




WATER MAIN REPAIR REPORT for November 2016

| | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | Total |
|------------------|-----------|-----------|-----------|-----------|-----------|-----|-----|-----|-----|-----|-----|-----|------------|
| 2016/2017 | 23 | 27 | 28 | 32 | 20 | | | | | | | | 130 |
| 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 |
| 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 |

| Date | Address | Size |
|-------|-------------------------|---------|
| 11/1 | 2284 WAIOMAO RD | 8" CI |
| 11/5 | 99-050 KINOOLE PL | 8" CI |
| 11/11 | 98-1155 KAONOHU ST | 12" CI |
| 11/11 | 92-812 NOHOHALE ST | 4" CI |
| 11/14 | 91-554 AEKAI PL | 4" CI |
| 11/14 | 41-849 B WAIKUPANAHA ST | 6" CI |
| 11/15 | 85-153 MCARTHUR ST | 8" PVC |
| 11/16 | 1104 HUI ST | 8" PVC |
| 11/16 | 3358 KEANU ST | 8" PVC |
| 11/16 | 91-653 FORT WEAVER RD | 16" PVC |
| 11/17 | 94-1267 PEKE PL | 8" CI |
| 11/18 | 322 AUWAIOLIMU ST | 4" GI |
| 11/18 | 2175 PALOLO AVE | 12" CI |
| 11/21 | 2930 KAHAWAI ST | 8" DI |
| 11/22 | 91-677 POHAKUPUNA RD | 12" CI |
| 11/23 | 86-090 FARRINGTON HWY | 12" CI |
| 11/23 | 830 AULOA RD | 16" CI |
| 11/23 | 1262 PIHANA ST | 8" CI |
| 11/27 | 1061 KOLOKOLO ST | 8" CI |
| 11/27 | 45-072 WAIKALUA RD | 6" CI |



Bold * - Pro-active Leak Repair

6.2 miles of pipelines were surveyed by the Leak Detection Team in the month of November.

DISCUSSION

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

MOTION TO
RECESS INTO
EXECUTIVE
SESSION

Upon unanimously approved motion, the Board recessed into Executive Session Pursuant to [HRS §92-5(a)(4)] at 2:16 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 2:48 PM

MOTION TO
ADJOURN

There being no further business Chair Andaya at 2:49 PM called for a motion to adjourn the Open Session. Adam Wong so moved; seconded by Ross Sasamura and unanimously carried.

THE MINUTES OF THE REGULAR SESSION BOARD
MEETING ON DECEMBER 19, 2016 WERE APPROVED
AT THE JANUARY 30, 2017 BOARD MEETING

| | AYE | NO | COMMENT |
|-------------------|-----|----|---------|
| BRYAN P. ANDAYA | X | | |
| ADAM C. WONG | X | | |
| DAVID C. HULIHEE | X | | |
| KAPUA SPROAT | | | ABSENT |
| KAY C. MATSUI | X | | |
| ROSS S. SASAMURA | X | | |
| FORD N. FUCHIGAMI | | | ABSENT |

Respectfully submitted,


LORRAINE H. LEE

APPROVED:


BRYAN P. ANDAYA
Chair of the Board

JAN 30 2017

Date