

## MINUTES

### REGULAR MEETING OF THE BOARD OF WATER SUPPLY

September 23, 2013

At 2:00 PM on September 23, 2013 in the Board Room of the Public Service Building at 630 South Beretania Street, Honolulu, Hawaii, Board Chair Miyashiro called to order the Regular Meeting.

Present: Duane R. Miyashiro, Board Chair  
Mahealani Cypher, Vice Chair  
Adam C. Wong  
David C. Hulihee  
Ross S. Sasamura

Also Present: Ernest Lau, Manager and Chief Engineer  
Ellen Kitamura, Deputy Manager and Chief Engineer  
Tracy Burgo  
Alex Ubiadas  
Daryl Hiromoto  
Marc Chun  
Karen Tom  
Tom Otaguro  
Kevin Ihu  
Amy Tsuneyoshi  
Keoni Mattos  
Ann Wong  
Jacqueline Lum  
Lyann Okada  
Lorna Heller  
Alan Hakoda  
Tony Shing  
Isaac Hayashi  
Janelle Sebastian  
Lloyd Tanaka  
Ron Wada  
Jason Takaki  
Jo Ann Wong  
Iris Oda

Others Present: Krishna Jayaram, Deputy Corporation Counsel  
Marilyn Ushijima, Deputy Corporation Counsel  
Kaulana Park  
Dave Jochim, Stepp Consulting, Incorporated  
Craig Von Bargaen, CDM Smith  
Gordon Pang, Honolulu Star-Advertiser  
Dan Purcell

Absent: Glenn M. Okimoto  
Theresa C. McMurdo

"September 23, 2013

APPOINTMENT  
OF NEW BOARD  
MEMBER -  
DAVID C.  
HULIHEE

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

Chairman and Members:

Subject: Appointment of New Board Member – Mr. David C. Hulihee

Mr. David C. Hulihee has been appointed to the Board of Water Supply by Mayor Kirk Caldwell to succeed Mr. Kaulana H. R. Park whose term expired on June 30, 2013.

On September 11, 2013, the City Council confirmed Mr. Hulihee's appointment for a term expiring on June 30, 2018.

We extend congratulations to David Hulihee on his appointment and welcome him as a Member of the Board.

Respectfully submitted,

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

The foregoing was for information only.

DISCUSSION:

Chair Miyashiro and Manager Lau welcomed Mr. Hulihee and thanked him for serving on the Board.

APPROVAL  
OF MINUTES

Approval of the Minutes of the Regular Meeting held on August 26, 2013

MOTION  
TO APPROVE

Adam Wong and Ross Sasamura motioned and seconded, respectively, to approve the Minutes of the Regular Session Meeting of August 26, 2013. The motion was unanimously carried.





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

**RESOLUTION NO. 836, 2013**

**KAULANA H. R. PARK**  
**IN APPRECIATION FOR SERVING AS A MEMBER OF THE**  
**BOARD OF WATER SUPPLY**

**WHEREAS**, KAULANA H. R. PARK has ably served as a member of the Board of Water Supply, City and County of Honolulu since September 2012; and

**WHEREAS**, MR. PARK's endeavors in the public and private sectors and in the community have brought additional recognition, reputability and respect for the Board; and his awareness of operational and administrative issues involved with managing a government agency has made him a helpful resource for Board deliberations; and

**WHEREAS**, this Board has drawn upon MR. PARK's extensive knowledge and experience in land development, water systems, community building, business development, finance, budget controls, forecasting, project management, and strategic planning; and

**WHEREAS**, MR. PARK has supported and encouraged initiatives that improve efficiency in overall Departmental operations; and

**WHEREAS**, as a Board member, MR. PARK has volunteered his time and expertise to help effect business and policy decisions for the Board that will impact the direction and operations of this Department for many years to come; and

**WHEREAS**, his service is a testament to his commitment to maintaining a municipal water system deserving of trust from the public it serves; now, therefore

**BE IT RESOLVED** by the Members of the Board of Water Supply, City and County of Honolulu, that we do hereby express to KAULANA H. R. PARK our deep appreciation and gratitude for his committed service to this Board and Department; and

**BE IT FURTHER RESOLVED** that the Members of this Board extend to KAULANA H. R. PARK our sincere aloha and best wishes for continued success in all his future endeavors; and

**BE IT FINALLY RESOLVED** that this Resolution be presented to KAULANA H. R. PARK.



Resolution No. 836, 2013

Adopted this 23rd day of September 2013  
Board of Water Supply, Honolulu, Hawaii

DUANE R. MIYASHIRO  
Chairman of the Board

**MOTION TO  
ADOPT**

Mahealani Cypher motioned to adopt Resolution No. 836, 2013, Kaulana H. R. Park – In Appreciation for Serving as a Member of the Board of Water Supply. The motion was seconded by Adam Wong and unanimously carried.

Mr. Park thanked all of the Board Members, the Manager and Deputy Manager, the Deputy Corporation Counsels, and the Board of Water Supply staff and expressed his great appreciation for everyone's hard work. He thanked Chair Miyashiro for his great leadership and patience; Vice Chair Cypher for her cultural values and institutional knowledge of the Department; and Manager Lau for his passion, leadership and steadfastness.

Mr. Miyashiro stated that it was an absolute pleasure serving with Mr. Park and thanked him for all that he has brought to the Department. Mr. Miyashiro presented a framed signed copy of the resolution along with a commemorative mug to Mr. Park.

| RESOLUTION NO. 836, 2013, ADOPTED ON<br>SEPTEMBER 23, 2013 – KAULANA H. R. PARK, IN<br>APPRECIATION FOR SERVING AS A MEMBER OF<br>THE BOARD OF WATER SUPPLY |     |    |         |
|---|-----|----|---------|
|   | AYE | NO | COMMENT |
| DUANE R. MIYASHIRO  | X   |    |         |
| MAHEALANI CYPHER  | X   |    |         |
| THERESIA C. MCMURDO   |     |    | ABSENT  |
| ADAM C. WONG  | X   |    |         |
| DAVID C. HULIHEE  | X   |    |         |
| ROSS S. SASAMURA  | X   |    |         |
| GLENN M. OKIMOTO  |     |    | ABSENT  |



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

**RESOLUTION NO. 837, 2013**

**THOMAS S. OTAGURO, JR.**  
**2013 EMPLOYEE OF THE YEAR**

**WHEREAS**, THOMAS S. OTAGURO, JR., a Civil Engineer VI who oversees the Water Systems Planning Branch of the Water Resources Division, has been selected as the Board of Water Supply's (BWS) Employee of the Year for 2013; and

**WHEREAS**, MR. OTAGURO who joined the BWS in January 1990, has saved the Department an estimated \$400,000 in energy savings, by theorizing various connection scenarios making the BWS water system work even more effectively; and

**WHEREAS**, his perseverance led to the correction of major valves that allowed full use of the pumping stations that had been re-circulating a large amount of water with no appreciable gain in water delivery and resulted in significant electrical savings at two stations and negated the need for a \$25 million pumping station; and

**WHEREAS**, MR. OTAGURO maintained a comprehensive manual log for every valve that was inspected and altered to implement the FLEXMAP system that worked with the BWS Geographic Information System; and

**WHEREAS**, MR. OTAGURO volunteered for more than 20 years in the Water for People food booth at the Halawa Xeriscape Garden's annual open house to raise money to provide third-world country residents with healthy drinking water supplies; and

**WHEREAS**, his knowledge and ability to lead a team to pursue solutions has earned him the respect of his subordinates, peers, and supervisors; and

**WHEREAS**, MR. OTAGURO's selection as the 2013 Board of Water Supply Employee of the Year and his nomination for the City Employee of the Year Award have brought pride and honor to the BWS and all his family and friends; now, therefore

**BE IT RESOLVED** by the Members of the Board of Water Supply, City and County of Honolulu, that we do hereby express to THOMAS S. OTAGURO, JR., our heartfelt appreciation for his outstanding service to the Department and to the City and County of Honolulu; and

**BE IT FURTHER RESOLVED** that the Members of this Board express to THOMAS S. OTAGURO, JR., our sincere congratulations upon his selection as the Board of Water Supply Employee of the Year for 2013; and

**BE IT FINALLY RESOLVED** that this Resolution be presented to THOMAS S. OTAGURO, JR., with our warmest aloha and best wishes for all his future endeavors.



Resolution No. 837, 2013

Adopted this 23rd day of September 2013  
Board of Water Supply, Honolulu, Hawaii

DUANE R. MIYASHIRO  
Chairman of the Board

MOTION TO  
ADOPT

Ross Sasamura motioned to adopt Resolution No. 837, 2013, Thomas S. Otaguro, Jr., - 2013 Board of Water Supply Employee of the Year. The motion was seconded by Mahealani Cypher and unanimously carried.

Mr. Lau stated that he is very proud of Mr. Otaguro's accomplishments and that he is a true servant of the community working hard to ensure that the water system works properly.

Mr. Miyashiro congratulated Mr. Otaguro for the award and for saving the public and the Department about \$1 million per year.

In recognition as the BWS 2013 Employee of the Year, Chairman Miyashiro presented Mr. Otaguro with a plaque and a framed signed copy of the resolution. Mr. Otaguro will represent the Board of Water Supply at the City and County of Honolulu's annual Employees' Recognition Program later this year.

| RESOLUTION NO. 837, 2013, ADOPTED ON<br>SEPTEMBER 23, 2013 – THOMAS S. OTAGURO, JR.,<br>2013 EMPLOYEE OF THE YEAR |     |    |         |
|---|-----|----|---------|
|   | AYE | NO | COMMENT |
| DUANE R. MIYASHIRO  | X   |    |         |
| MAHEALANI CYPHER  | X   |    |         |
| THERESIA C. MCMURDO   |     |    | ABSENT  |
| ADAM C. WONG  | X   |    |         |
| DAVID C. HULIHEE  | X   |    |         |
| ROSS S. SASAMURA  | X   |    |         |
| GLENN M. OKIMOTO  |     |    | ABSENT  |





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

**RESOLUTION NO. 838, 2013**

**KEVIN T. IHU**  
**2013 MANAGER OF THE YEAR**

**WHEREAS**, KEVIN T. IHU, Program Administrator of the Water System Operations Division, has been selected as the Board of Water Supply's (BWS) Manager of the Year for 2013; and

**WHEREAS**, MR. IHU joined the BWS as a Civil Engineer I in September 1997, and since that time has consistently demonstrated excellence in his work, as evidenced in his selection as the BWS's 2001 Employee of the Year, as he steadily worked his way through the ranks to his current position where he oversees the operations of Oahu's water treatment, transmission, storage, and distribution systems; and

**WHEREAS**, in this capacity, KEVIN T. IHU works diligently to harness the participation of his staff as well as other Divisions to monitor, maintain, and repair the BWS's diverse water systems that include well and booster stations, control valves, water treatment facilities, and fleet of vehicles and construction equipment; and

**WHEREAS**, using his knowledge, experience, and leadership, MR. IHU has implemented projects that improve the water system's efficiency and reduce the BWS's expenditures. Most recently, he led an effort to resolve issues of re-circulation of a large amount of water between two pumping stations, resulting in electrical cost savings of \$400,000 per year and eliminating the need to design and build a new \$25 million pumping station; and

**WHEREAS**, MR. IHU has proven himself to be a dedicated and excellent manager who leads by example, is willing to go out into the field to provide assistance to his staff, generously shares his knowledge with them, and purposely provides them with professional growth opportunities, taking the necessary time to provide guidance and support as needed; and

**WHEREAS**, MR. IHU's selection as the 2013 Board of Water Supply Manager of the Year and his nomination for the City Manager of the Year Award have brought pride and honor to the BWS and all his family and friends; now, therefore

**BE IT RESOLVED** by the Members of the Board of Water Supply, City and County of Honolulu, that we do hereby express to KEVIN T. IHU our heartfelt appreciation for his outstanding service to the Department and to the City and County of Honolulu; and

**BE IT FURTHER RESOLVED** that the Members of this Board express to KEVIN T. IHU our sincere congratulations upon his selection as the Board of Water Supply Manager of the Year for 2013; and

**BE IT FINALLY RESOLVED** that this Resolution be presented to KEVIN T. IHU with our warmest aloha and best wishes for all his future endeavors.



Resolution No. 838, 2013

Adopted this 23rd day of September 2013  
Board of Water Supply, Honolulu, Hawaii

DUANE R. MIYASHIRO  
Chairman of the Board

MOTION TO  
ADOPT

Mahealani Cypher motioned to adopt Resolution No. 838, 2013, Kevin T. Ihu – 2013 Board of Water Supply Manager of the Year. The motion was seconded by Adam Wong and unanimously carried.

Mr. Lau informed the Board that Mr. Ihu was recently promoted to head the Water Systems Operations Division and has done an excellent job. He and his staff look for ways to optimize the operation of the water system and to control pressure to reduce main breaks. Mr. Lau appreciates the leadership that Mr. Ihu has shown and is proud to serve with him.

In recognition as the BWS 2013 Manager of the Year, Chairman Miyashiro presented Mr. Ihu with a plaque and a framed signed copy of the resolution. Mr. Ihu will represent the Board of Water Supply at the City and County of Honolulu's annual Employees' Recognition Program later this year.

| RESOLUTION NO. 838, 2013, ADOPTED ON<br>SEPTEMBER 23, 2013 – KEVIN T. IHU, 2013 MANAGER<br>OF THE YEAR |     |    |         |
|--|-----|----|---------|
|  | AYE | NO | COMMENT |
| DUANE R. MIYASHIRO   | X   |    |         |
| MAHEALANI CYPHER   | X   |    |         |
| THERESIA C. MCMURDO  |     |    | ABSENT  |
| ADAM C. WONG   | X   |    |         |
| DAVID C. HULIHEE   | X   |    |         |
| ROSS S. SASAMURA   | X   |    |         |
| GLENN M. OKIMOTO   |     |    | ABSENT  |

"September 23, 2013

TOPICS FOR  
FUTURE BOARD  
MEETINGS

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

Chairman and Members:

Subject: Topics for Future Board Meetings

We would like to take this time to allow the members of the Board to inform us of any topic or concern pertaining to Board of Water Supply operations that the Board would want addressed at future Board Meetings.

There is one pending topic that was requested by the Board, which is the Human Resources long-term strategy plan that will be presented at the November 25, 2013 Board meeting.

Respectfully submitted,

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

DISCUSSION:

Board Member Wong suggested that the length of Power Point presentations be limited so that the Board has more time for discussion.

Mr. Wong requested two topics for future Board meetings: 1) With the amount of consultants the Department has hired, Mr. Wong requests a discussion on hiring consultants vs. utilizing in-house employees, primarily as it pertains to design and construction. Will the consultants be training the in-house employees to eventually do these jobs? Is there a zero liability policy for consultants – do we hold them liable if plans come back bad? 2) Does the Department have an upward evaluation in place for the leaders in the organization to give them an idea of what they're doing well and what they're not? Is there training provided to the leaders to give them opportunities to develop and improve as a leader?

Vice Chair Cypher requested a presentation on the effects of climate change and sea level rise to BWS's operations – system lines, pump stations, aquifers and fresh water resources and if there is any impact on the Beretania pump station.

ITEM FOR INFORMATION NO. 1

"September 23, 2013

WAIHEE FISH  
PASSAGE  
PROJECT  
PRESENTATION

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

Chairman and Members:

Subject: Waihee Fish Passage Project Presentation

Background:

The Waihee Ahupuaa (WAI) Initiative was formed in 2003 between the Board of Water Supply (BWS) and Kualoa-Heeia Ecumenical Youth Project (KEY). The goals of the partnership are to preserve, protect, restore, and enhance the natural and cultural resources of Waihee Ahupuaa from forested areas to the coastal marine habitats by western management as well as traditional Hawaiian stewardship.

Other parties participating in WAI included the State Department of Land and Natural Resources, Commission on Water Resource Management; Department of Land and Natural Resources, Division of Aquatic Resources (DLNR-DAR); Hui o Koolaupoko; and the U.S. Geological Survey (USGS) and U.S. Fish and Wildlife Service (USFWS).

In 2010 Hui o Koolaupoko signed on as a partner of WAI.

Issue:

Not long after the creation of WAI, one of the respected members of the community and active KEY member brought to WAI's attention the situation of the barrier impacting oopu migration in Waihee Stream. An abandoned USGS stream gage on BWS property posed a barrier to oopu migration to the upper stream reaches. The structure over time became undercut so the oopu were no longer able to climb up and over. The fish passage project was developed to repair the undercut portions to allow for oopu migration. DAR surveys confirmed that there were oopu along the lower stream reaches, but nothing was noted above the barrier.

The Hawaii Fish Habitat Partnership was formed in 2009, and they started a grant program for fish habitat projects. WAI applied for and received a \$45,000 1:1 matching grant for this project. Due to permitting issues, the project was not able to start until August 2012.



Construction:

BWS crews, WAI partners and volunteers came out to assist with the project. The water level of the pool below the work area was lowered; sandbags, plastic sheeting, and pipes were installed; and rocks were gathered on-site to fill in the undercut area.

Phase I = 3 days of construction (August 2012)

Phase II = 3 days of construction and 3 days for prep work (June 2013)

DLNR-DAR will be conducting a stream survey to verify if the project was a success.

Respectfully submitted,

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

Attachments"

The foregoing was for information only.

DISCUSSION:

Amy Tsuneyoshi from the Water Resources Division gave a presentation on the Waihee Fish Passage Project. She thanked Mr. Lau for supporting the project and thanked the Heeia Yard field crew and masons for their expertise and excellent work in assisting with the project.

Mr. Lau asked Ms. Tsuneyoshi to explain the 'o'opu life cycle.

Ms. Tsuneyoshi explained that the 'o'opu lay their eggs in streams and the streams wash the eggs/larvae out to the ocean where they float around in the salt water. It could take months before they hit a fresh water pocket, but once they hit that fresh water pocket, they have only 24 hours to make it back to a stream source or else they will die. Each 'o'opu species have a different habitat within the stream, so some live beyond the steep, vertical waterfalls way in the valley; some live midstream; and some live in the lower streams. Prior to this project, the 'o'opu that live high up in the waterfall areas could not make it pass the pool to get up to the waterfall. Mr. Lau stated that this project restored the ecosystem and built community support and involvement.

Mr. Lau replied to Ms. Cypher's and Mr. Wong's inquiries stating that this pond is within BWS's property and it is located by the entrance to Waihee tunnel.

Mr. Lau recognized and thanked Ms. Tsuneyoshi for her efforts to coordinate and lead this project for the BWS and for the community.



WATER FOR LIFE

*Ka Wai Ola*



Board of Water Supply  
City and County of Honolulu

# WAIHE'E FISH PASSAGE PROJECT

## WAIHE'E AHUPUA'A INITIATIVE PARTNERSHIP

Honolulu Board of Water Supply (BWS)

Kualoa-He'eia Ecumenical Youth Project (KEY)

Hui O Ko'olaupoko (HOK)

With assistance from US Fish and Wildlife Service, US Geological Survey, DLNR- Division of Aquatic Resources and Commission of Water Resource Management, and MANY volunteers!







## Background information

The Waihe'e Ahupua'a Initiative was formed in 2003 between BWS and KEY.

HOK officially signed on in 2010.

WAI became aware about a potential barrier for 'O'opu migration in Waihee Stream- an abandoned 1935 USGS stream gage on BWS lands.





# WATER FOR LIFE

*Kū Wai Ola*



Board of Water Supply  
City and County of Honolulu





# The project will benefit native stream life

‘O‘opu

(photos from University of Hawai‘i)



Hihiwai





# WATER FOR LIFE

Ka Wai Ola



Board of Water Supply  
City and County of Honolulu

## HAWAII FISH HABITAT PARTNERSHIP



The Hawaii Fish Habitat Partnership is composed of a diverse group of partners that have the capacity to plan and implement a technically sound statewide aquatic habitat restoration program.



U.S. Fish & Wildlife Service

### Waihee Stream Fish Passage Project

Community Partners Contribute to Restore Native Fish Populations



Volunteers, landowner representative, and resource agency personnel prepare the Waihee site for construction of the fish passage structure. Photo: Gordon Smith, FWS

#### A conservation-minded landowner, an engaged community

The Waihee Stream Fish Passage Project was recently completed on windward Oahu Island to restore a migratory native fish passage to over a mile of high-quality stream habitat. A human-made barrier, constructed in 1935, blocked upstream fish passage to upper Waihee Stream.

The project was initiated by the Waihee Allegany Initiative\*, a watershed-based environmental and educational organization that is composed of community members, local educators, large landowners and resource agency participants.

The project was completed with financial and technical assistance from the Service's National Fish Passage Program, the Hawaii Fish Habitat Partnership, the

\* In the Hawaiian language *allegany* refers to a sort of land encompassing the roughly defined watershed boundaries.

Honolulu Board of Water Supply (landowner), the Hawaii Department of Land and Natural Resources and other partners.

Waihee Stream is located in a watershed with moderate residential and agricultural impacts from development in its lower reaches. Resource inventories and water quality studies by federal and State aquatic resource managers indicate that Waihee Stream is of high quality compared to other Oahu streams. Upstream migrating diadromous fish and invertebrates that enter the mouth of Waihee Stream were blocked from ascending to the relatively undisturbed headwaters where the stream and surrounding lands are managed for conservation and preservation.



The fish passage structure was modified to provide a rock refuge that native species can ascend, while continuing to exclude non-native aquatic species. Photo: Gordon Smith, FWS

Leadership provided by the Waihee Allegany Initiative ensured that community members were integral to conceiving, planning and implementing the project. Participation by area residents, including students and teachers, increased the community's awareness, knowledge and understanding of native aquatic species conservation needs. A nearby community center provided critical



Pacific Islands Fish and Wildlife Office  
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# WATER FOR LIFE

*Ka Wai Ola*



Board of Water Supply  
City and County of Honolulu





# WATER FOR LIFE

*Kū Wai Ola*



Board of Water Supply  
City and County of Honolulu





# WATER FOR LIFE

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*Ka Wai Ola*



Board of Water Supply  
City and County of Honolulu



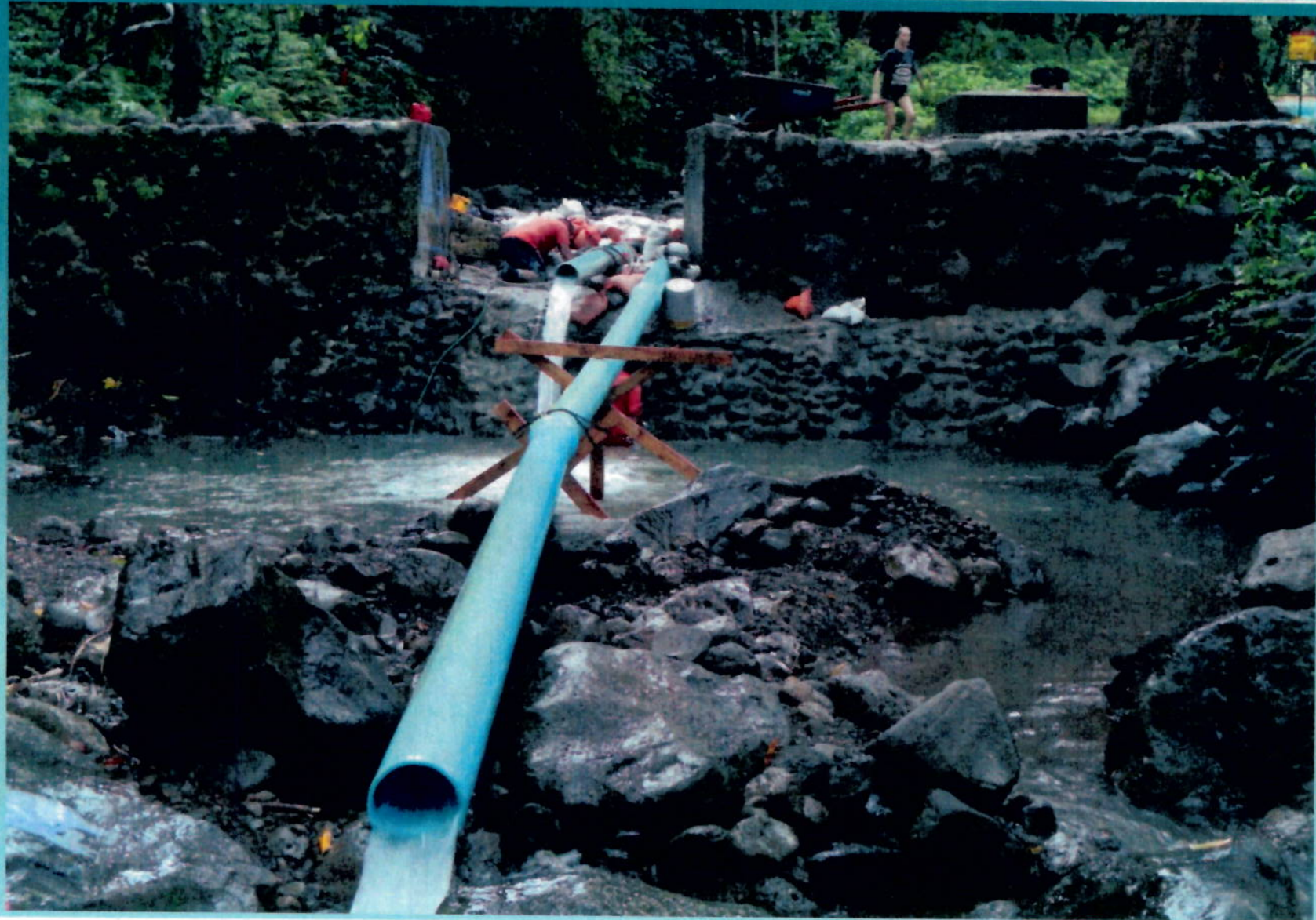


# WATER FOR LIFE

*Ka Wai Ola*



Board of Water Supply  
City and County of Honolulu





# WATER FOR LIFE

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# WATER FOR LIFE

*Ka Wai Ola*



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City and County of Honolulu





WATER FOR LIFE

*Ka Wai Ola*



Board of Water Supply  
City and County of Honolulu

# Thank you







U.S. Fish & Wildlife Service

# Waihee Stream Fish Passage Project

## *Community Partners Contribute to Restore Native Fish Populations*



Volunteers, landowner representatives, and resource agency personnel prepare the Waihee site for construction of the fish passage structure. Photo: Gordon Smith, FWS

Honolulu Board of Water Supply (landowner), the Hawaii Department of Land and Natural Resources and other partners.

Waihee Stream is located in a watershed with moderate residential and agricultural impacts from development in its lower reaches. Resource inventories and water quality studies by federal and State aquatic resource managers indicate that Waihee Stream is of high quality compared to other Oahu streams. Upstream migrating diadromous fish and invertebrates that enter the mouth of Waihee Stream were blocked from ascending to the relatively undisturbed headwaters where the stream and surrounding lands are managed for conservation and preservation.



The instream structure was modified to provide a rock surface that native species can ascend, while continuing to exclude non-native aquatic species. Photo: Gordon Smith, FWS

## **A conservation-minded landowner, an engaged community**

The Waihee Stream Fish Passage Project was recently completed on windward Oahu Island to restore a migratory native fish passage to over a mile of high-quality stream habitat. A human-made barrier, constructed in 1935, blocked upstream fish passage to upper Waihee Stream.

The project was initiated by the *Waihee Ahupuaa Initiative*<sup>\*</sup> a watershed-based environmental and educational organization that is composed of community members, local educators, large landowners and resource agency participants.

The project was completed with financial and technical assistance from the Service's National Fish Passage Program, the Hawaii Fish Habitat Partnership, the

Leadership provided by the *Waihee Ahupuaa Initiative* ensured that community members were integral to conceiving, planning and implementing the project. Participation by area residents, including students and interns, increased the community's awareness, knowledge and understanding of native aquatic species conservation needs. A nearby community center provided critical

<sup>\*</sup> In the Hawaiian language *ahupuaa* refers to a unit of land management that roughly follows watershed boundaries.



**Pacific Islands Fish and Wildlife Office**

300 Ala Moana Boulevard

Room 3-122, Box 50088

Honolulu, HI 96850

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assistance for completing the project efficiently by coordinating community and student volunteers, offering meeting space and providing a base yard for equipment and supplies.



This species of native migratory goby is called oopu nopili in Hawaiian and can ascend waterfalls. Inset show pelvic fins that are fused to form a suction cup. Photo: Gordon Smith, FWS

## Native Stream Fish of Hawaii Migrate to and from the Sea

The two-part life cycle of native Hawaiian stream animals (five fish, two shrimp and two snail species) starts when adults lay eggs in freshwater habitats, when the eggs hatch the larvae are dispersed downstream to the ocean, after a period of time the returning juveniles swim toward a stream mouth and begin an arduous upstream migration. Three of the native Hawaiian stream fish have pelvic fins that are fused into a ventral suction disk. This is used to cling to rock surfaces and allow the fish to climb vertical waterfalls. The native shrimp *opae kalaole* and the snail *hihiwai* are also very good climbers and easily climb steep stream channels.

## Restoring Aquatic Fauna in the Waihee Ahupuaa

A massive concrete water control structure associated with a stream gage was built in Waihee Stream in 1935 to monitor stream flow. This gage site was abandoned in the late 1970's, and the large structure remained in place. Over

time, the downstream edge of the structure was scoured to become a sharply overhanging slab of concrete that could not be negotiated by native fish and invertebrates. This structure blocked access to almost 30% of the length of Waihee Stream. The recently completed fish passage project features include a "concrete-rubble-masonry" (CRM) rock wall designed to be ascended by native stream organisms and various repairs to the lower margins and sides of the structure. The newly-created steep CRM face will continue to exclude non-native species that are present in the lower reaches of Waihee Stream.

## Native Aquatic Species Benefitted

Hawaiian stream gobies: Oopu nopili (*Sicypterus stimpsoni*), Oopu nakea (*Awous stamineus*); Hawaiian freshwater shrimp: Opae kalaole (*Atyoida bisulcata*)



Upstream movement of juvenile fish and invertebrates to newly available habitat is monitored using small fish traps. Photo: Paula Levin, FWS

## Project Partners

Honolulu Board of Water Supply (grant recipient); Hawaii Fish Habitat Partnership; U.S. Fish and Wildlife Service; KEY Project; Waihee Ahupuaa Initiative

## For More Project Information:

- Hawaii Fish Habitat Partnership [information](#)
- National Fish Passage Program [fact sheet](#)
- [Hui o Koolaupoko](#)



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ITEM FOR INFORMATION NO. 2

"September 23, 2013

PUBLIC  
OUTREACH AND  
ENGAGEMENT  
UPDATE

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

Chairman and Members:

Subject: Public Outreach and Engagement Update

Information Officer Tracy Burgo will provide an update of the Board of Water Supply's Public Outreach and Engagement Project.

Respectfully submitted,

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

Attachments"

The foregoing was for information only.

DISCUSSION:

Mr. Lau informed the Board that this presentation was requested by Ms. McMurdo and Ms. Cypher. Communications Information Officer Tracy Burgo gave the presentation.

Following the presentation, Mr. Wong stated that he appreciated all the time put into the presentation. He asked if Ms. Burgo interacted with any of the other division heads to incorporate their needs into this plan, as he felt that it's imperative they are linked to this plan. Ms. Burgo replied that the division heads were not consulted. Mr. Wong asked Ms. Burgo if she accomplished everything she listed in this plan, how would she know the plan succeeded. Ms. Burgo replied that she would feel the plan succeeded if the stakeholders fully supported the water master plan. Mr. Wong stated that it's important to determine what success would be defined as.

Ms. Cypher stated that she was very impressed with all the work put into this plan. She agreed with Mr. Wong that this is not just a plan for the Communications Office, so she recommends meeting with all the division heads to get their feedback to strengthen the plan. Ms. Cypher shared the following suggestions: 1) A key to good communications is to be a good listener – listen better; respond/take action appropriately; and embrace customers' ideas to show them that you care. 2) Be good role models – communications is a two-way street, don't just send out messages but receive them well, good and bad. Receiving negative feedback is the best because it tells you what needs to be improved. 3) Utilize all the tools and networking you have – get core messages out on Olelo or run series of

programs throughout the year telling the story about BWS, send out more newsletters to the employees that explain what programs are going on, what each division is doing. This could help build team spirit, to encourage everyone to work together to support the overall goal and mission of BWS. Every member of the leadership team is responsible for communicating to staff and to encourage feedback. 4) Maintain the physical presence of BWS - every pump station, booster station, and reservoir should be well kept. Not taking care of the facilities could give off the impression that the Department doesn't take care of the water. 5) Continue the Neighborhood Board Program. The BWS representatives do a great job and Ms. Cypher commended and thanked everyone for their hard work.

Mr. Wong commented that this presentation was a communications piece that an engineer put together. He stated that the message was good but difficult to digest. As this plan talks about delivering messages to the public, it's important to get out of the box. Ms. Burgo thanked Mr. Wong for his comments.



WATER FOR LIFE

*Ka Wai Ola*



Board of Water Supply  
City and County of Honolulu

# Public Outreach and Engagement Plan Update

September 23, 2013







## Proactive Communications Designed to Improve Awareness and Understanding

- Offers positive focus amid currently challenging conditions.
- Addresses critical success factor of employee, customer, and Board support identified during Water Master Plan (WMP) kickoff meeting.
- Requires developing and implementing a comprehensive strategy to earn this support.





## Our Plan's Focus is to Inform Customers and Other Stakeholders

- Complexities of delivering safe, reliable water service and the value to our community.
- Factors that affect water rates.
- BWS's proactive approach to address the condition of our water system, which is the single most critical issue affecting reliability and rates.
- The role of the WMP in accomplishing this.



## Communications Plan Objectives

- Develop trust and confidence in BWS as a provider of high-quality, safe, and reliable water.
- Instill understanding of the complexities of water service.
- Establish BWS as the source of information about water on Oahu.





## Overall Approach to These Objectives

- Broaden the scope, intensity, and frequency of communications with internal and external stakeholders.
- Use specific communication channels and messaging tailored to specific audience.
- Engage the media with timely, accurate, and complete information, tapping into their unique position as both a key audience and a communications channel.





## How We Developed our Plan and Strategy

- Analyze current communications environment:
  - Risk analysis
  - Stakeholder analysis
  - Current capacity
- Develop objectives.
- Identify communications principles.
- Develop core messages and link with most appropriate channel.
- Establish immediate and longer term actions and recommendations.





## Reaching Internal Stakeholders

### **Communications Principles:**

- Use multiple communications channels.
- Printed communications are important.
- Consistency is crucial.
- Share good news.
- Greater attention and understanding result from communications with BWS's leadership.





## Reaching External Stakeholders (Continued)

### **Communications Principles:**

- Identify and prioritize key stakeholders.
- Set meetings to show the people and “face” of BWS.
- Simplify messaging and tailor to each audience.
- Speak to the customer’s viewpoint.
- Build on existing relationships and nurture new ones.
- Share and leverage good news.





## Core Messages

- Value of water.
- Large water systems aren't simple and neither is ours.
- Our water system is facing significant challenges we must address.
- Our Water Master Plan is an infrastructure reliability program to identify problems, develop solutions and take action to ensure a safe, reliable, and affordable water supply now and for generations to come.





## Core Messages (Continued)

- As a water provider, BWS meets today's demands and also focuses on long-term goals, especially safety, reliability, and affordability. The governance structure for BWS should reflect that.





## Action Steps: Internal Communications

### **Within first 6 months:**

- Finalize key messages about WMP and current issues.
- Broadly inform all BWS staff about the WMP and its significance.
- Build understanding of how each employee's role is reflected in the WMP.
- Develop new communications channels and collateral.
- Reinforce existing communications resources.
- Document, manage, share, and integrate feedback.





## Action Steps: External Communications (Continued)

### **Within first 6 months:**

- Conduct individualized interviews with key stakeholders.
- Start to build a Community Advisory Group.
- Enhance City Council knowledge of BWS and water issues.
- Reinforce existing communications resources.
- Communicate progress in resolving issues.
- Build BWS's physical presence in the community.
- Identify opportunities for placements in others' publications.
- Review current interface with Neighborhood Boards.
- Build media relationships.





## Strengthening our Plan and its Implementation

### **Update the Plan Every 6 Months:**

- What actions were undertaken and what was the outcome?
- How have internal and/or external communications needs changed?
- What was the outcome of using new communications channels or using traditional channels in new ways?
- What additional information has been learned, both from and about identified stakeholders?





## Strengthening our Plan and its Implementation (Continued)

### **Update the Plan Every 6 Months:**

- What new stakeholders have been identified?
- What new/modified key messages and talking points should be incorporated?
- How can future communications be enhanced to improve success and progress towards our vision?



WATER FOR LIFE

*Ka Wai Ola*



Board of Water Supply  
City and County of Honolulu

**Mahalo for your attention.**

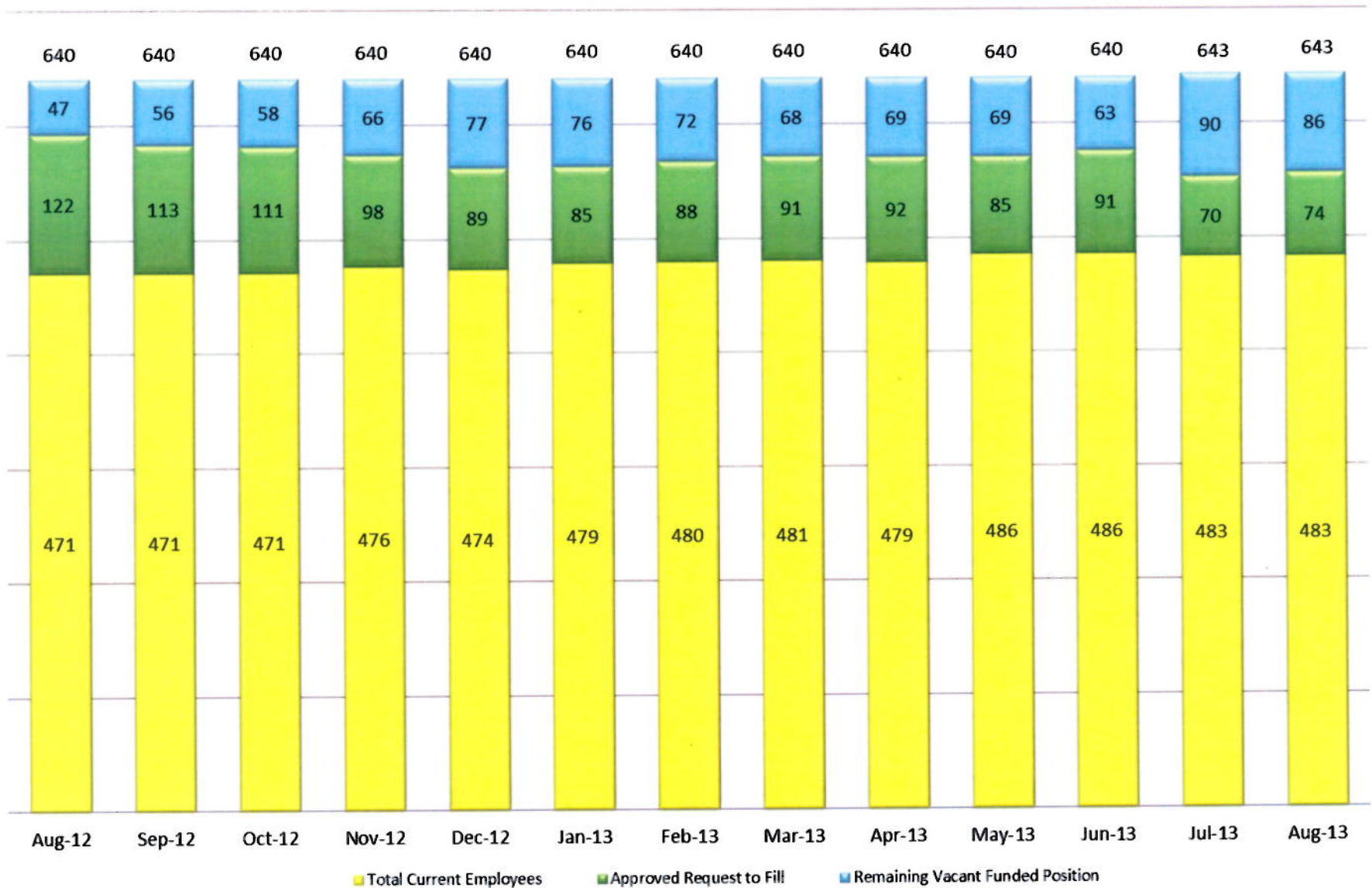
**Questions?**





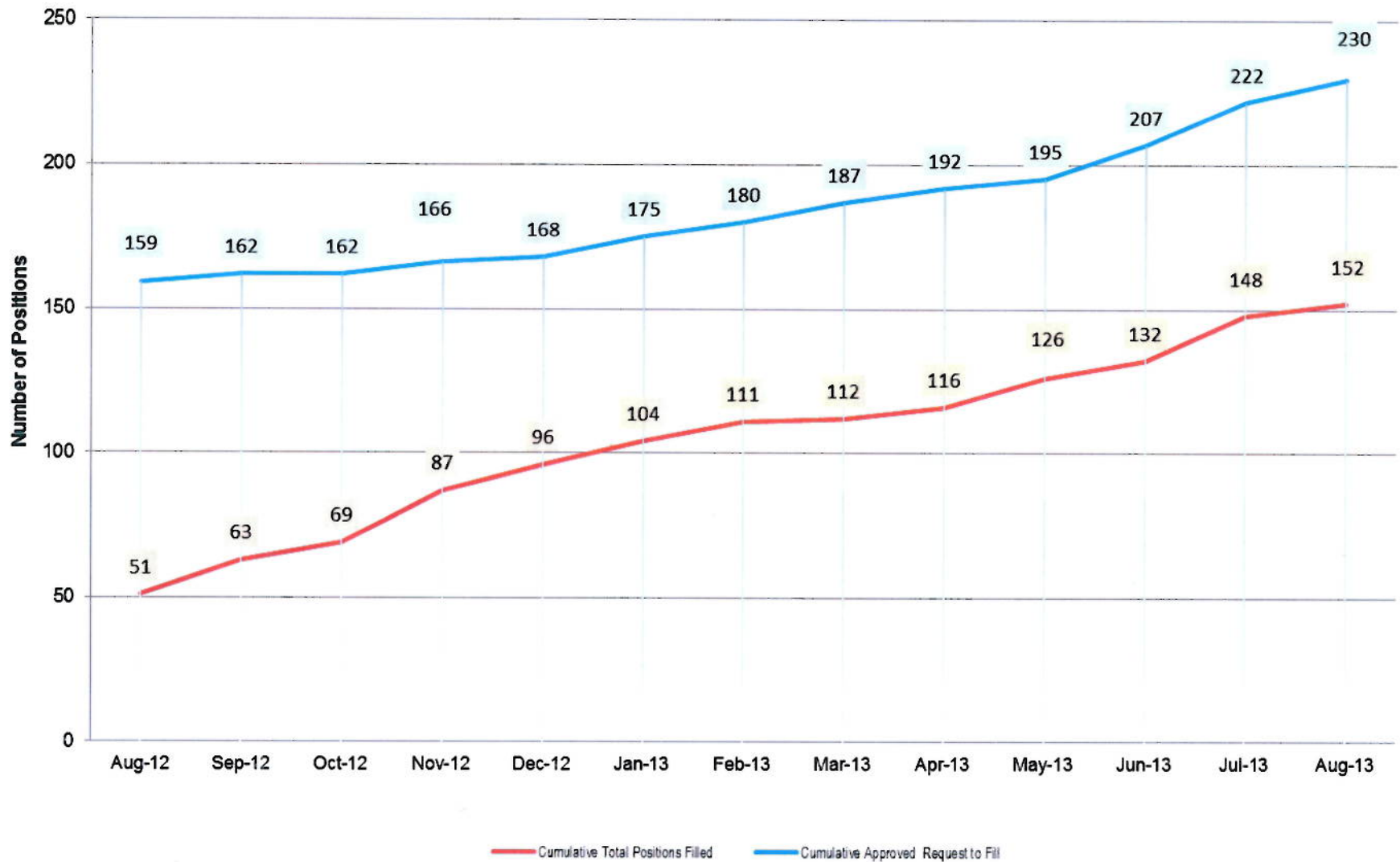
ITEM FOR INFORMATION NO. 3

## Positions Filled August 1, 2012 through August 31, 2013





## Cumulative Totals August 1, 2012 through August 31, 2013





DISCUSSION: Karen Tom from the Human Resources Office explained the graphs. She stated that since last year August, they have filled 101 positions, many of them were promotions.

Ms. Cypher inquired if BWS is adequately staffing line positions. Ms. Tom replied that as they receive requests to fill the line positions, they recruit from outside and fill. They have a steady stream of potential applicants for the line positions for regular recruitment as Program Administrator Daryl Hiromoto tries to fill at least 10 of these positions a year. There is no labor pool for mechanics/electricians so BWS is working on building its own pool, currently seeking approval from the Department of Labor. The City Department of Human Resources (DHR) provides BWS with recruitment lists for other line positions like clerks, customer service representatives, groundskeepers and custodians.

Ms. Cypher inquired about Mr. Hiromoto's reasoning for hiring 10 line positions a year. Mr. Hiromoto explained that the primary reason they hire 10 is to provide for a manageable training program since it requires one-on-one training with a journey level employee. Hiring 10 positions each year, over three years, also provides for a balanced proportion of 1<sup>st</sup> year, 2<sup>nd</sup> year, and 3<sup>rd</sup> year apprentices rather than hiring all 30 apprentices at the same time.

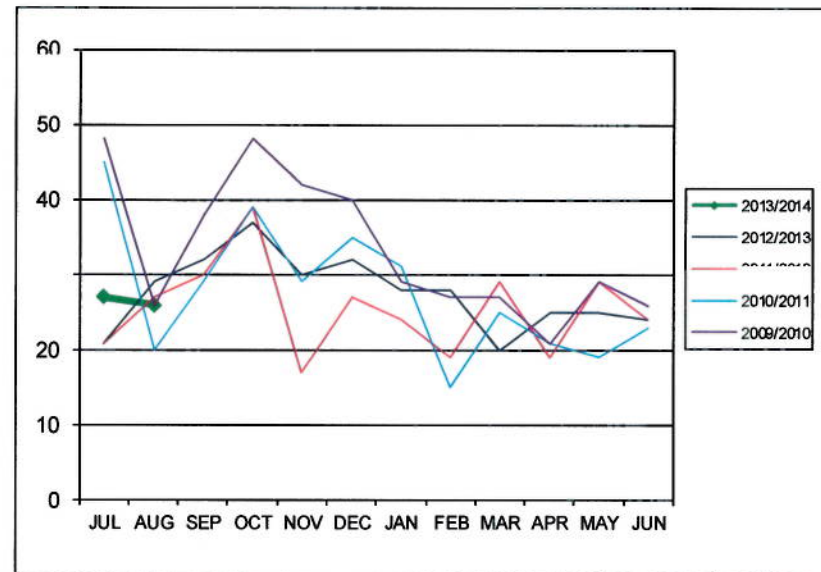
Mr. Wong asked whether a broad band method could be applied to the engineers so that higher pay could be offered, since the Department has a difficult time hiring engineers due to non-competitive salaries. Ms. Tom replied that they would have to check and work with the City DHR because that would be a classification and pay issue that would impact engineers in all of the City Departments. Ms. Tom explained that BWS engineers receive a shortage differential to be more competitive with the market. BWS is still below the market; however the differential is better than just the base salary.



## WATER MAIN REPAIR REPORT for August 2013

|           | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | Total |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 2013/2014 | 27  | 26  |     |     |     |     |     |     |     |     |     |     | 53    |
| 2012/2013 | 21  | 29  | 32  | 37  | 30  | 32  | 28  | 28  | 20  | 25  | 25  | 24  | 331   |
| 2011/2012 | 21  | 27  | 30  | 39  | 17  | 27  | 24  | 19  | 29  | 19  | 29  | 24  | 305   |
| 2010/2011 | 45  | 20  | 29  | 39  | 29  | 35  | 31  | 15  | 25  | 21  | 19  | 23  | 331   |
| 2009/2010 | 48  | 26  | 38  | 48  | 42  | 40  | 29  | 27  | 27  | 21  | 29  | 26  | 401   |

| Date | Address                         | Size      | Cause     |
|------|---------------------------------|-----------|-----------|
| 8/2  | 91-503 Pupu St.                 | 8" C.I.   | corrosion |
| 8/3  | 55-080 Kamehameha Hwy.          | 4" A.C.   | corrosion |
| 8/4  | 2433 Kini Pl.                   | 6" C.I.   | unknown   |
| 8/6  | 1262 Loko Dr.                   | 6" C.I.   | unknown   |
| 8/7  | 328 Keolu Dr.                   | 12" C.I.  | unknown   |
| 8/7  | 628 Kealahou St.                | 8" P.V.C. | joint     |
| 8/7  | 1242 Loko Dr.                   | 6" C.I.   | corrosion |
| 8/7  | 901 Belser St.                  | 6" C.I.   | corrosion |
| 8/8  | 1403 Honokahua St.              | 8" C.I.   | unknown   |
| 8/8  | 1404 Honokahua St. (2nd break)  | 8" C.I.   | unknown   |
| 8/9  | 1402 Glen Ave.                  | 6" C.I.   | corrosion |
| 8/10 | 1145 Akumu St.                  | 12" C.I.  | corrosion |
| 8/13 | 515 Keolu Dr.                   | 12" D.I.  | joint     |
| 8/14 | 3654 Keanu St.                  | 8" D.I.   | unknown   |
| 8/18 | 46-123 Yacht Club Pl.           | 8" C.I.   | corrosion |
| 8/21 | 46-288 Auna St.                 | 8" C.I.   | unknown   |
| 8/24 | 237 Kalihi St                   | 12" C.I.  | unknown   |
| 8/26 | 92-109 Palahia Pl.              | 4" D.I.   | corrosion |
| 8/27 | 45-527 Paleka Rd.               | 16" C.I.  | joint     |
| 8/28 | 92-515 Akaawa St.               | 8" C.I.   | corrosion |
| 8/28 | Aakea & Nimitz Hwy.             | 6" C.I.   | unknown   |
| 8/29 | 59-555 Akanoho Pl.              | 8" C.I.   | corrosion |
| 8/29 | 170 Ala Moana Blvd.             | 8" C.I.   | corrosion |
| 8/29 | 170 Ala Moana Blvd. (2nd break) | 8" C.I.   | corrosion |
| 8/30 | 1339 Aupapaohe St.              | 6" D.I.   | corrosion |
| 8/31 | 59-444 Makana Rd.               | 8" C.I.   | unknown   |



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

16.7 miles of pipelines were surveyed by the Leak Detection Team in the month of August



DISCUSSION:

Mr. Hiromoto explained the water main repair report. Mr. Lau informed the Board that they are working on moving the Leak Detection Program under Mr. Hiromoto's division, where greater resources could be provided to obtain more miles of pipeline surveyed in the future.

Mr. Miyashiro commented that it was hard to tell if anything on the chart was bolded to indicate a pro-active leak repair. Mr. Hiromoto replied that no main leaks were found by the Leak Detection Team. Mr. Hiromoto reminded the Board that the Leak Detection Team doesn't only locate main leaks but it also locates meter, service lateral, valve and hydrant leaks, which get repaired as well.



ITEM FOR INFORMATION NO. 5

"September 23, 2013

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 are three aquifer index wells within low groundwater status for the production week that ended on September 7, 2013. Kaluanui is in caution status, and Kaimuki and Punaluu are under an alert status. Makaha has recovered since last month's report. The weekly production average for the period was 148.96 million gallons per day.

The Board of Water Supply rainfall index for the month of August was 72 percent of normal, with a 5-month moving average of 101 percent. As of September 3, 2013, the U. S. Drought Monitor site is reporting moderate D1 drought conditions for the leeward side of the island of Oahu. This is an increase in severity level from last month. The National Weather Service is forecasting below normal precipitation through December 2013. Aquifer levels are still trending downward in response to pumpage demands.

Respectfully submitted,

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

Attachments"

The foregoing was for information only.

DISCUSSION: There were no comments or discussion.



# PUMPAGE, HEAD, AND RAINFALL REPORT

Week of 9/01/13 to 9/07/13

| STATION                   | MGD   | HEAD  | STATION          | MGD   | HEAD  | STATION             | MGD   | HEAD  |                      | MGD     | HEAD     |
|---------------------------|-------|-------|------------------|-------|-------|---------------------|-------|-------|----------------------|---------|----------|
| METRO                     |       |       | WINDWARD         |       |       | EWA-WAIAANAE (CONT) |       |       | PH (CONT)            |         |          |
| KULIOUOU                  | 0.00  |       |                  |       |       | MAKAHA IV           | 0.00  |       | PEARL CITY II        | 1.18    |          |
| WAILUPE                   | 0.00  |       | WAIMANALO II     | 0.35  |       | MAKAHA V            | 0.00  |       | PEARL CITY III       | 0.45    |          |
| WAIALAE-IKI               | 0.00  |       | WAIMANALO III    | 0.49  |       | MAKAHA VI           | 0.75  |       | WAI AU               | 1.08    |          |
| AINA KOA                  | 0.49  |       | KUOU I           | 0.08  |       | MAKAHA SHAFT        | 0.00  | 7.30  | NEWTOWN              | 1.29    |          |
| AINA KOA II               | 0.81  |       | KUOU II          | 0.10  |       | KAMAILE             | 0.40  |       | KAONOHI I            | 0.90    |          |
| WAIALAE SHAFT             | 0.00  |       | KUOU III         | 0.51  |       | WAIAANAE I          | 0.00  |       | WAIMALU I            | 0.00    |          |
| MANOA II                  | 0.00  |       | LULUKU           | 1.07  |       | WAIAANAE II         | 0.81  |       | AIEA                 | 0.00    |          |
| PALOLO                    | 1.05  |       | HAIKU            | 0.00  |       | WAIAANAE III        | 0.00  |       | AIEA GULCH 497       | 0.48    |          |
| KAIMUKI HIGH              | 3.21  | 21.41 | IOLEKAA          | 0.13  |       | MAKAKILO            | 0.36  |       | AIEA GULCH 550       | 0.26    |          |
| KAIMUKI LOW               | 1.65  |       | KAHALUU          | 0.49  |       | HONOULIULI I        | 0.62  |       | HALAWA 277           | 0.00    |          |
| WILDER                    | 9.87  |       | WAIHEE           | 0.00  |       | HONOULIULI II       | 6.97  |       | HALAWA 550           | 0.00    |          |
| BERETANIA HIGH            | 4.22  | 21.62 | KAHANA           | 0.78  |       | SUBTOTAL:           | 12.36 |       | KAHUMANU MTR(-)      | 0.00    |          |
| BERETANIA LOW             | 2.82  |       | PUNALUU I        | 0.00  | 15.78 | IMPORT FROM PH      |       |       | KAAMILO FLO MTR (-)  | 0.00    |          |
| KALIH I HIGH              | 1.25  | 21.42 | PUNALUU II       | 2.62  |       | KAPOLEI LINE BSTR   | 16.67 |       | KUNIA I              | 5.76    | 18.19    |
| KALIH I LOW               | 1.87  |       | PUNALUU III      | 1.98  |       | HONOULIULI LB FLOW  | 0.18  |       | KUNIA II             | 2.27    |          |
| KAPALAMA                  | 1.51  |       | KALUANUI         | 1.19  |       | EWA BEACH FLOW      | 0.05  |       | KUNIA III            | 1.41    |          |
| KALIH I SHAFT             | 8.20  |       | MAAKUA           | 0.82  |       | HONOULIULI I (-)    | -0.62 |       | HOAEAE               | 7.21    |          |
| MOANALUA                  | 1.51  | 18.53 | HAUULA           | 0.17  |       | HONOULIULI II (-)   | -6.97 |       | EWA SHAFT            | 0.00    |          |
| SUBTOTAL:                 | 38.46 |       |                  |       |       | SUBTOTAL:           | 9.31  |       | WAI PAHU INTCON. (-) | -2.62   |          |
|                           |       |       | KAHUKU           | 0.43  |       |                     |       |       | EWA-WAIAANAE (-)     | -9.31   |          |
| IMPORT FROM PH            |       |       | OPANA            | 0.64  |       | PEARL HARBOR        |       |       | PH LOCAL USE:        | 32.35   |          |
| HALAWA SHAFT              | 8.51  | 16.19 | WAI ALEE I       | 0.48  |       | WAIHAWA             | 1.59  |       | TOTAL SUBURBAN:      | 68.67   |          |
| KAAMILO                   | 0.00  |       | WAI ALEE II      | 0.54  |       | WAIHAWA II          | 1.80  |       |                      |         |          |
| KALAU AO                  | 8.34  | 16.73 | SUNSET BEACH     | 0.00  |       | MILILANI I          | 3.11  |       | KALAU AO SPRINGS     | 0.29    |          |
| PUNANANI                  | 10.47 |       | SUBTOTAL:        | 12.87 |       | MILILANI II         | 0.00  |       | BARBERS POINT (NP)   | 2.10    |          |
| KAONOHI II                | 0.00  |       |                  |       |       | MILILANI III        | 0.87  |       | GLOVER TUNNEL (NP)   | 0.52    |          |
| WAIMALU II                | 0.00  | 14.69 | WIND. EXPORT     | 0.50  |       | MILILANI IV         | 1.96  |       |                      |         |          |
| KAHUMANU                  | 0.89  |       |                  |       |       | WAIPIO HTS.         | 0.15  |       | HEAD CONDITION       |         |          |
| HECO WAI AU               | 2.75  |       | HALEIWA-WAI ALUA |       |       | WAIPIO HTS. I       | 0.23  |       | CAUTION              | ALERT   | CRITICAL |
| MANANA                    | 0.49  |       | HALEIWA          | 0.00  |       | WAIPIO HTS. II      | 0.19  |       | Kaluanui             | Kaimuki |          |
| KAHUMANU FLOW MT          | 0.00  |       | WAI ALUA         | 2.28  |       | WAIPIO HTS. III     | 1.02  |       |                      | Punaluu |          |
| KAAMILO FLOW MTR          | 0.00  |       | SUBTOTAL:        | 2.28  |       | WAI PAHU            | 2.62  | 17.86 |                      |         |          |
| TOTAL IMP/EXP WAI P. INT: | 2.62  |       |                  |       |       | WAI PAHU II         | 0.44  |       |                      |         |          |
| IMPORT FRM WIND:          | 0.50  |       | EWA-WAIAANAE     |       |       | WAI PAHU III        | 3.84  |       |                      |         |          |
| SUBTOTAL:                 | 34.57 |       | MAKAHA I         | 0.70  |       | WAI PAHU IV         | 2.82  |       |                      |         |          |
|                           |       |       | MAKAHA II        | 0.48  |       | PEARL CITY SHAFT    | 0.96  | 14.40 |                      |         |          |
| TOTAL METRO:              | 73.03 |       | MAKAHA III       | 1.27  |       | PEARL CITY I        | 0.39  |       |                      |         |          |

| CWRM PERMITTED USE FOR BWS POTABLE SOURCES |               |        |           |            |           | PUMPAGE    | 2013   | 2012   | GRAVITY      | 2013 | 2012  |
|--|---------------|--------|-----------|------------|-----------|------------|--------|--------|--------------|------|-------|
|  | A             | B      | C         | D          | E         | SUBURB.    | 68.67  | 65.29  | SUBURB.      | 6.82 | 14.03 |
| WATER DISTRICTS                            | PERMITTED USE | 2013   | DIFF. B-A | YEAR/ DATE | DIFF. D-A | METRO      | 73.03  | 69.85  | METRO        | 0.44 | 0.37  |
|  |               |        |           |            |           | TOTAL:     | 141.70 | 135.14 | TOTAL:       | 7.26 | 14.40 |
| HONOLULU                                   | 45.27         | 38.90  | -6.37     |            |           |            |        |        | Manoa        | 0.17 |       |
| WINDWARD                                   | 25.21         | 15.97  | -9.24     |            |           | NUUANU #5  |        |        | Palolo       | 0.27 |       |
| NORTH SHORE                                | 4.08          | 4.36   | 0.28      |            |           | (rainfall) | 0.64"  | 1.81"  | Waim. I&II   | 0.20 |       |
| WAIHAWA                                    | 4.27          | 3.39   | -0.88     |            |           |            |        |        | Waim. III&IV | 0.19 |       |
| WAIANAE                                    | 4.34          | 4.62   | 0.28      |            |           |            |        |        | Waihee incl. | 0.97 |       |
| EWA-KUNIA                                  | 15.88         | 7.96   | -7.93     |            |           |            |        |        | Waihee tun.  | 1.83 |       |
| PEARL HARBOR                               | 92.66         | 72.34  | -20.32    |            |           |            |        |        | Luluku       | 0.12 |       |
| TOTAL:                                     | 191.71        | 147.53 | -44.18    |            |           |            |        |        | Haiku        | 0.00 |       |
|  |               |        |           |            |           |            |        |        | Kahaluu      | 2.04 |       |
|  |               |        |           |            |           |            |        |        | Waia. C&C    | 1.37 |       |
|  |               |        |           |            |           |            |        |        | Waia plant.  | 0.11 |       |



DROUGHT STATUS REPORT  
DRAFT IN MGD

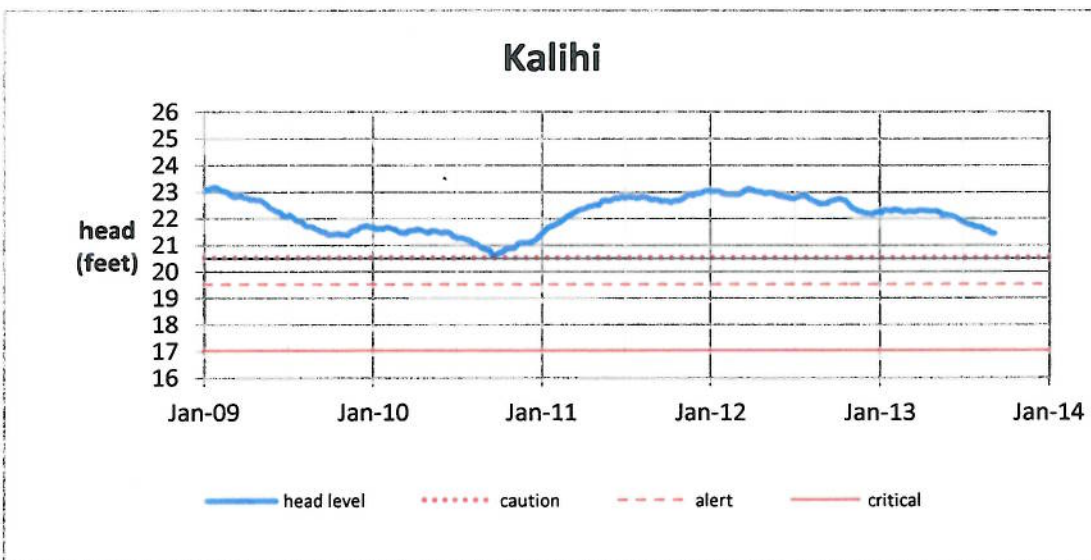
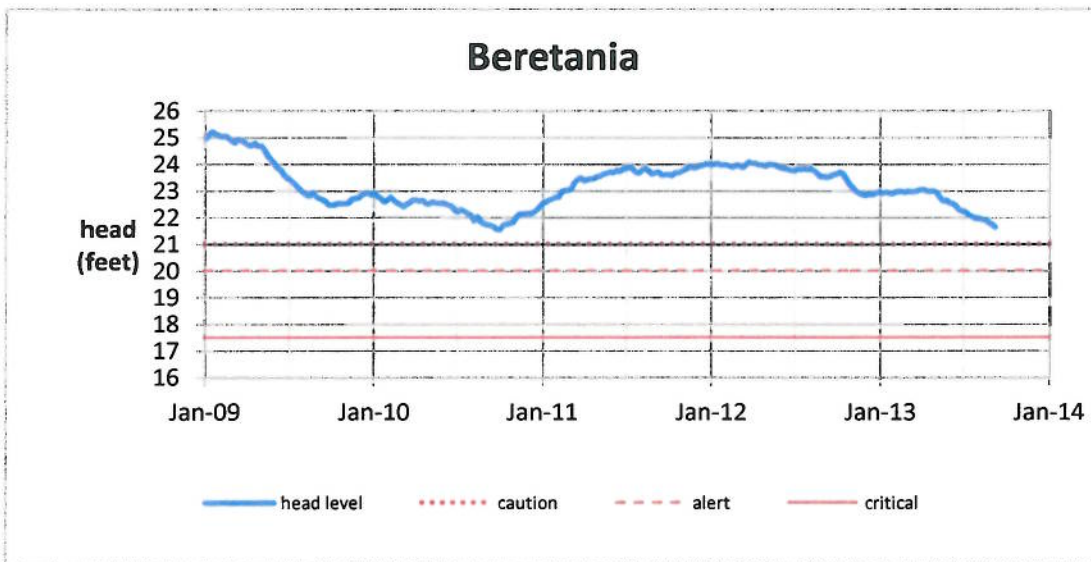
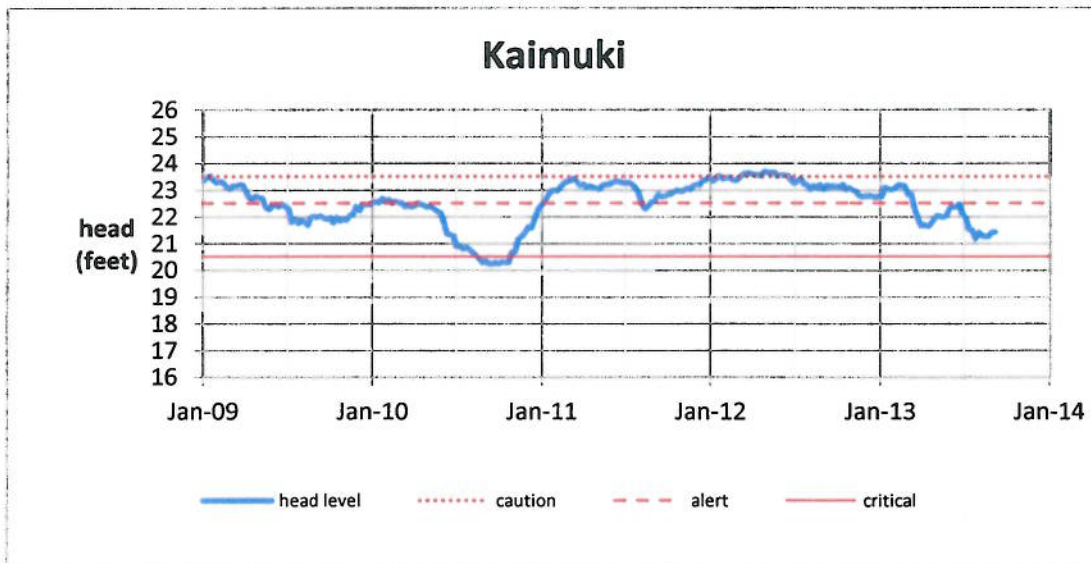
| WATER USE DISTRICT | AUTHORIZED USE | 2012   | 8/11-8/17 2013 | 2012   | 8/18-8/24 2013 | 2012   | 8/25-8/31 2013 | 2012   | 9/01-9/07 2013 |
|--------------------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| HONOLULU           | 45.27          | 34.55  | 38.95          | 33.85  | 40.12          | 32.67  | 39.74          | 32.77  | 39.40          |
| WINDWARD           | 25.21          | 19.36  | 14.67          | 20.17  | 15.36          | 19.92  | 15.73          | 21.31  | 15.64          |
| NORTH SHORE        | 4.08           | 4.26   | 4.11           | 4.11   | 4.19           | 3.75   | 4.36           | 3.53   | 4.36           |
| WAHIAWA            | 4.27           | 3.08   | 3.34           | 2.96   | 3.42           | 2.92   | 3.56           | 2.78   | 3.39           |
| EWA-WAIANAE        | 20.22          | 25.81  | 21.96          | 25.54  | 24.33          | 24.05  | 23.95          | 25.38  | 23.14          |
| PEARL HARBOR       | 92.66          | 66.94  | 60.93          | 67.56  | 62.77          | 64.84  | 63.63          | 63.20  | 63.03          |
| TOTAL              | 191.71         | 154.00 | 143.96         | 154.18 | 150.20         | 148.15 | 150.97         | 148.96 | 148.96         |

Accounts for in-district pumpage and transfers

HEAD IN FEET

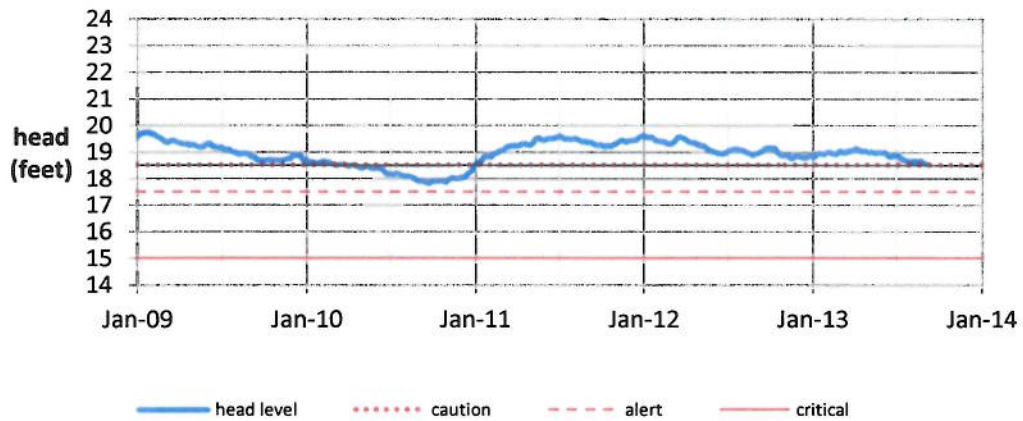
|              |  | 2012  | 8/11-8/17 2013 | 2012  | 8/18-8/24 2013 | 2012  | 8/25-8/31 2013 | 2012  | 9/01-9/07 2013 |
|--------------|--|-------|----------------|-------|----------------|-------|----------------|-------|----------------|
| HONOLULU     |  |       |                |       |                |       |                |       |                |
| KAIMUKI      |  | 23.06 | 21.24          | 23.20 | 21.24          | 23.02 | 21.40          | 23.16 | 21.41          |
| BERETANIA    |  | 26.65 | 21.89          | 23.51 | 21.80          | 23.53 | 21.73          | 23.50 | 21.62          |
| KALIHI       |  | 22.61 | 21.55          | 22.54 | 21.53          | 22.55 | 21.43          | 22.55 | 21.42          |
| MOANALUA     |  | 18.95 | 18.65          | 18.89 | 18.66          | 18.91 | 18.57          | 18.96 | 18.53          |
| PEARL HARBOR |  |       |                |       |                |       |                |       |                |
| HALAWA       |  | 16.35 | 16.31          | 16.28 | 16.28          | 16.27 | 16.19          | 16.28 | 16.19          |
| KALAUAO      |  | 17.05 | 16.85          | 16.99 | 16.79          | 16.93 | 16.76          | 16.94 | 16.73          |
| PEARL CITY   |  | 14.77 | 14.54          | 14.71 | 14.44          | 14.69 | 14.42          | 14.69 | 14.40          |
| WAIPAHU      |  | 18.31 | 17.99          | 18.20 | 17.93          | 18.24 | 17.85          | 18.24 | 17.86          |
| KUNIA        |  | 18.61 | 18.34          | 18.57 | 18.28          | 18.55 | 18.13          | 18.55 | 18.19          |
| EWA-WAIANAE  |  |       |                |       |                |       |                |       |                |
| MAKAHA       |  | 10.97 | 4.94           | 10.66 | 5.78           | 10.95 | 6.82           | 11.28 | 7.30           |
| WINDWARD     |  |       |                |       |                |       |                |       |                |
| PUNALUU      |  | 15.76 | 15.72          | 15.67 | 15.93          | 15.60 | 15.90          | 15.63 | 15.78          |
| KALUANUI     |  | 15.84 | 15.78          | 15.62 | 15.83          | 15.61 | 15.79          | 15.49 | 15.71          |
| NORTH SHORE  |  |       |                |       |                |       |                |       |                |
| WAIALUA      |  | 11.13 | 11.25          | 11.08 | 11.26          | 11.06 | 11.24          | 11.10 | 11.23          |



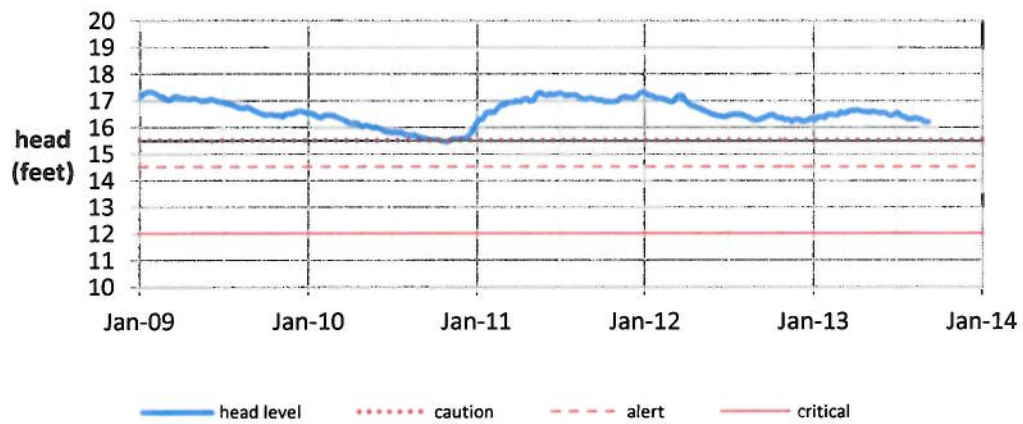




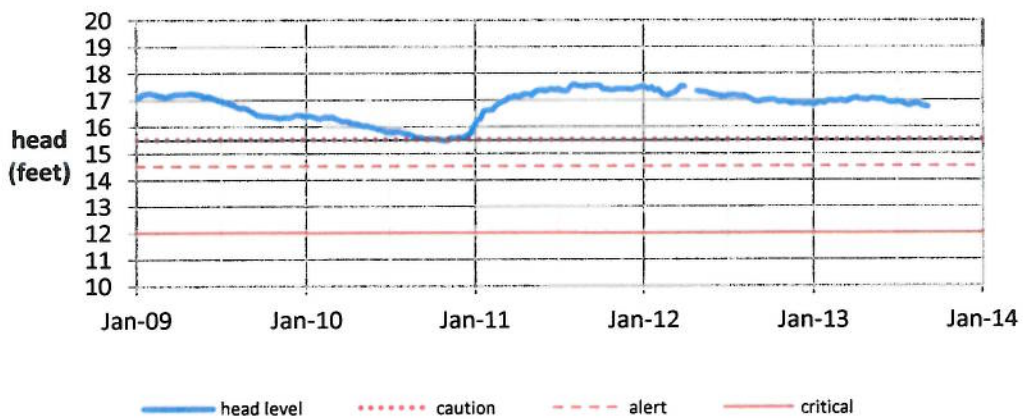
## Moanalua



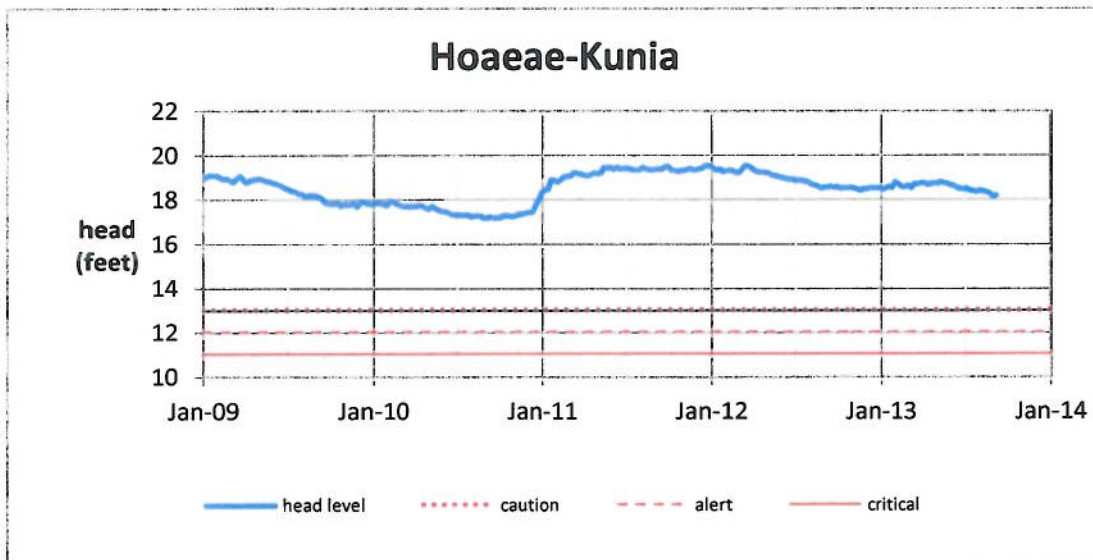
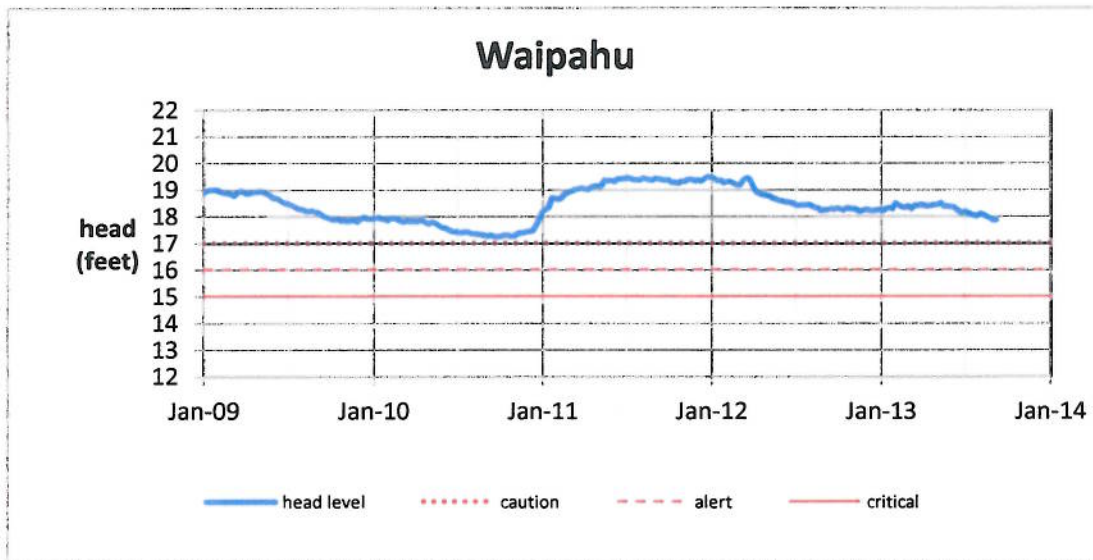
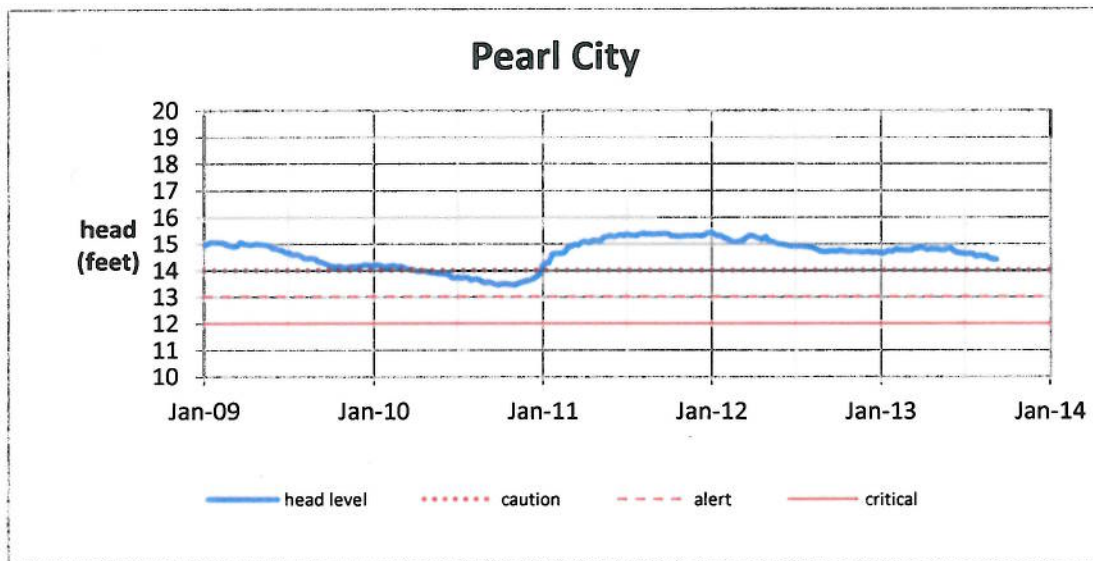
## Halawa



## Kalauao

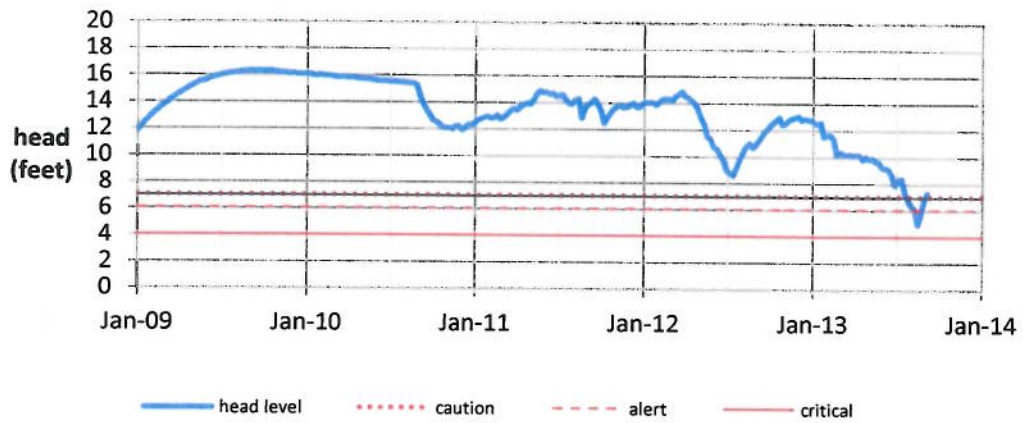




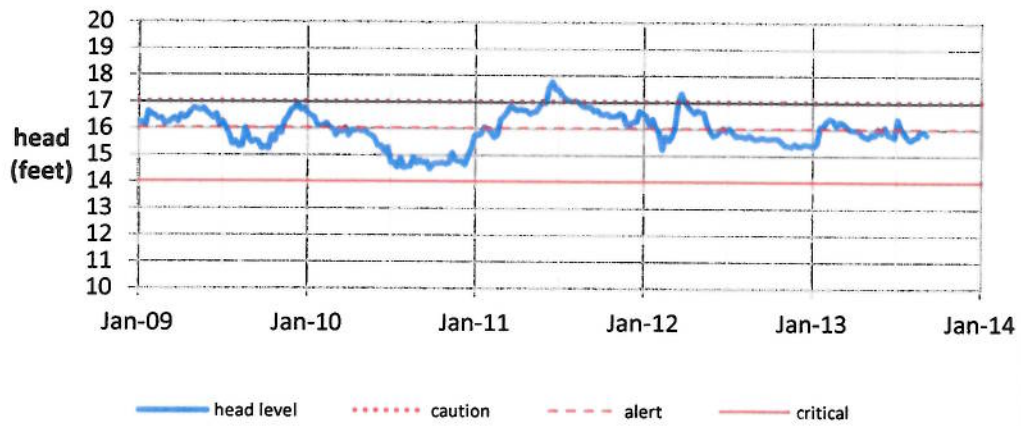




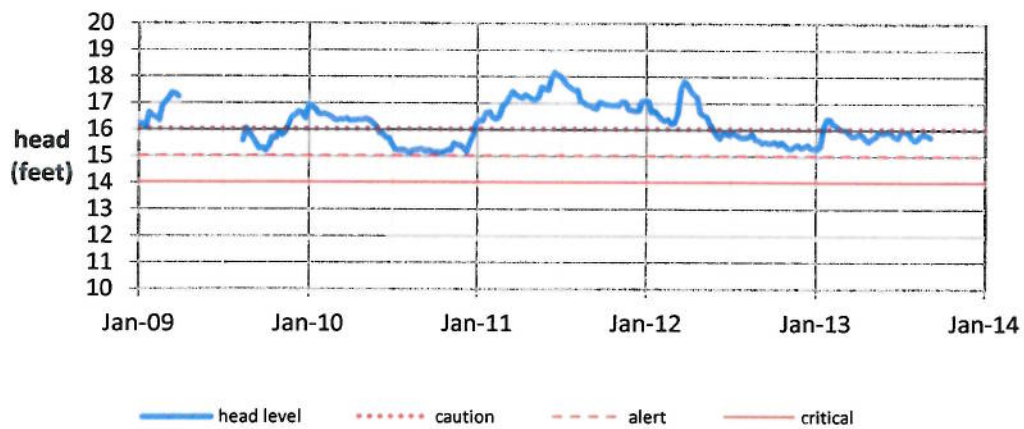
### Makaha



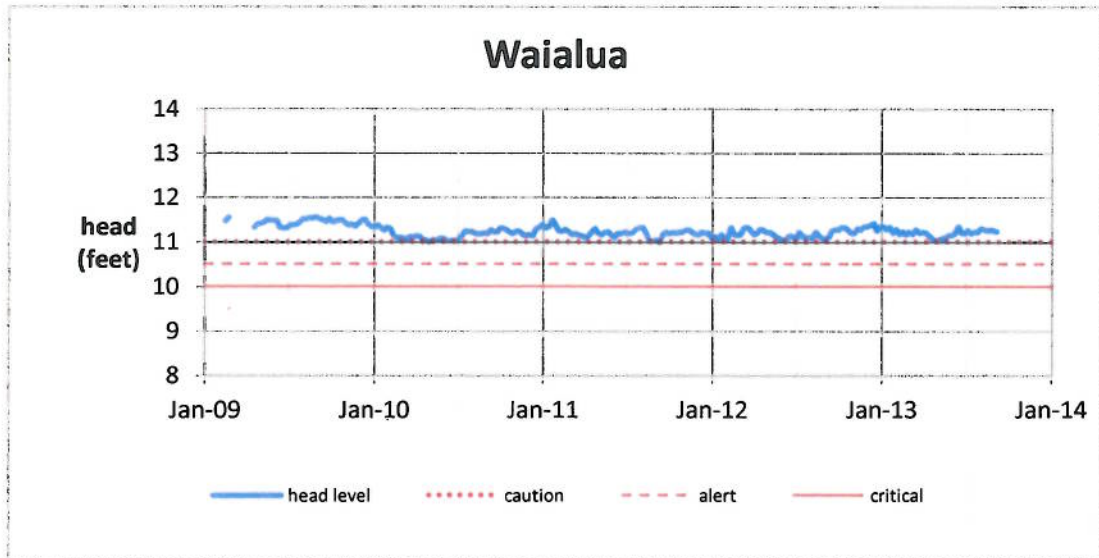
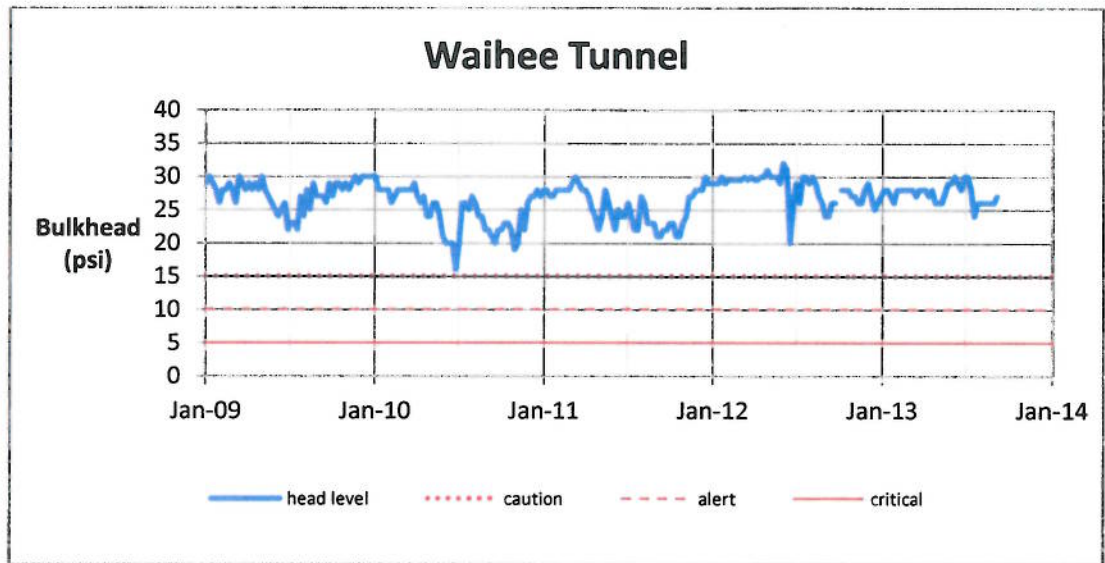
### Punaluu

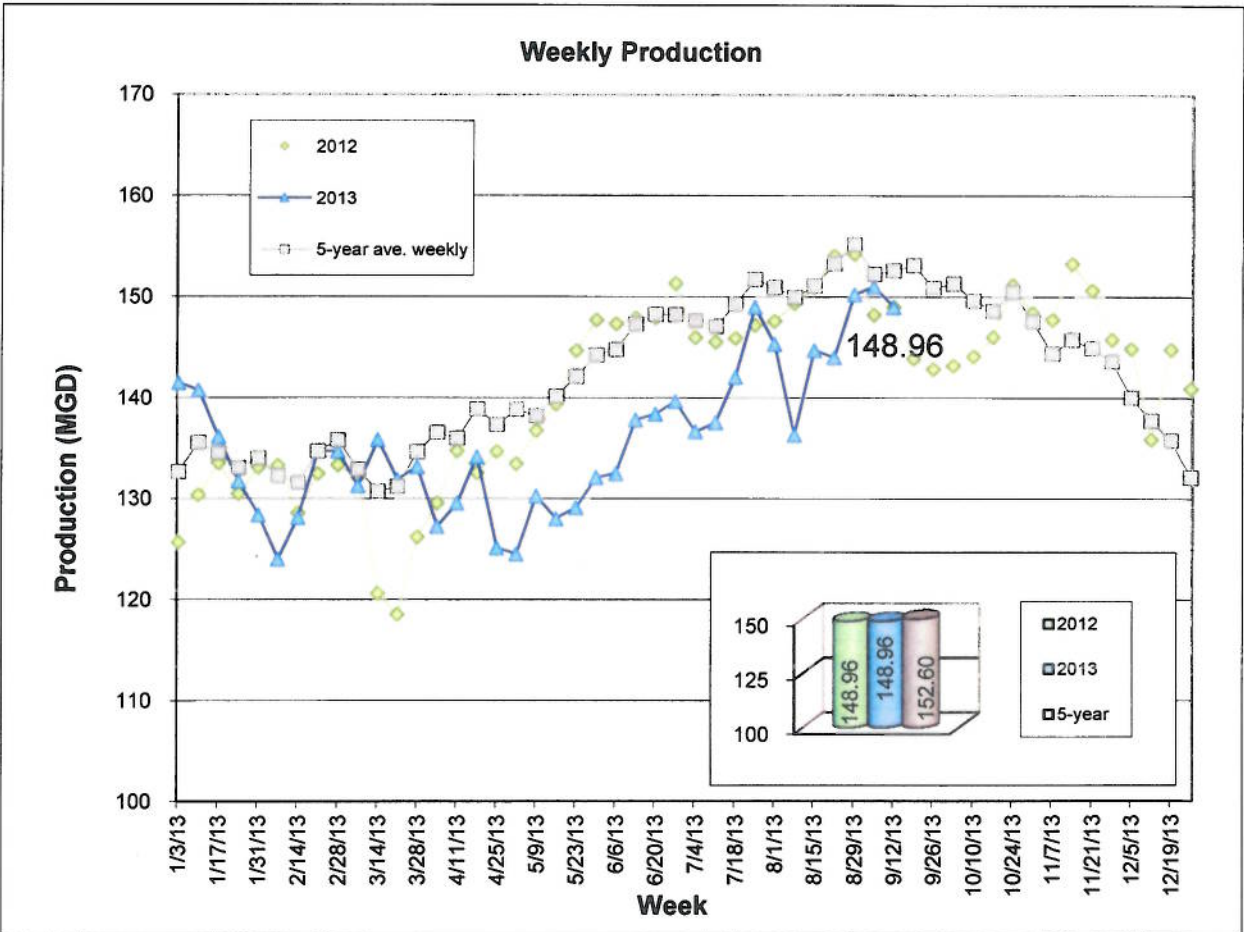
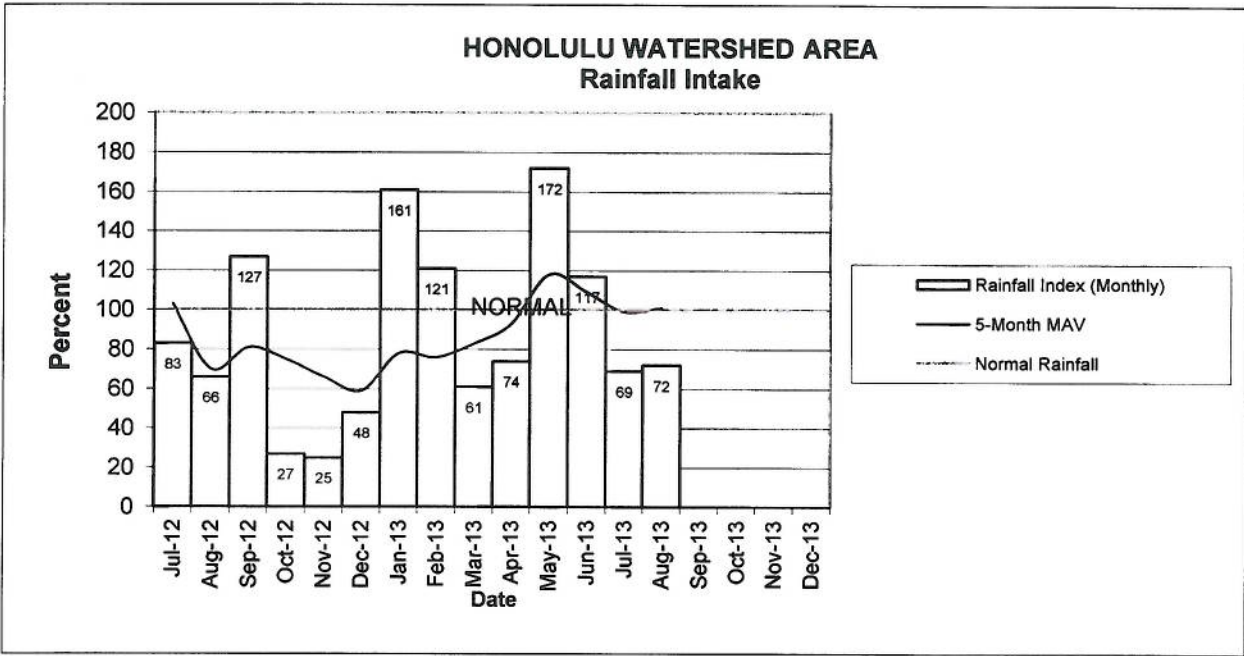


### Kaluanui











MOTION TO  
ADJOURN

There being no further business Chair Miyashiro at 3:19 PM called for a motion to adjourn the Open Session. Adam Wong so moved; seconded by Mahealani Cypher and unanimously carried.

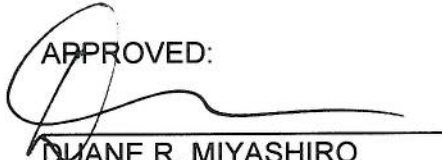
| THE MINUTES OF THE REGULAR SESSION BOARD MEETING ON SEPTEMBER 23, 2013 WERE APPROVED AT THE OCTOBER 28, 2013 BOARD MEETING |     |    |         |
|--|-----|----|---------|
|  | AYE | NO | COMMENT |
| DUANE R. MIYASHIRO   | X   |    |         |
| MAHEALANI CYPHER   | X   |    |         |
| THERESIA C. MCMURDO  |     |    | ABSENT  |
| ADAM C. WONG   |     |    | ABSENT  |
| DAVID C. HULIHEE   | X   |    |         |
| ROSS S. SASAMURA   | X   |    |         |
| GLENN M. OKIMOTO   | X   |    |         |

Respectfully submitted,



LISA K. KIM

APPROVED:



DUANE R. MIYASHIRO  
Chairman of the Board

OCT 28 2013

Date