

MINUTES  
REGULAR MEETING  
OF THE  
BOARD OF WATER SUPPLY

September 26, 2016

At 2:01 PM on September 26, 2016 in the Board Room of the Public Service Building at 630 South Beretania Street, Honolulu, Hawaii, Board Acting Chair Wong called to order the Regular Meeting.

Present: Adam C. Wong, Acting Chair  
David C. Hulihee (arrived at 2:04 p.m.)  
Kapua Sproat  
Bryan P. Andaya (arrived at 2:11 p.m.)  
Kay C. Matsui  
Ross S. Sasamura

Also Present: Ernest Lau, Manager and Chief Engineer  
Ellen Kitamura, Deputy Manager and Chief Engineer  
Erwin Kawata  
Barry Usagawa  
Karen Tom  
Daryl Hiromoto  
Jason Takaki  
Joe Cooper  
Robert Morita  
Mike Matsuo  
Kevin Ihu  
Tracy Burgo  
Kathleen Pahinui  
Henderson Nuuhiwa  
Jennifer Elflein

Others Present: Moana Yost, Deputy Corporation Counsel  
Jeff Lau, Deputy Corporation Counsel  
Duane Miyashiro, Carlsmith Ball LLP  
Chris Cleveland, Brown and Caldwell  
Eric Iwamoto, Bowers + Kubota  
Codi Kozacek  
Robert Fricke, Cox Fricke LLP  
Abigail Holden, Cox Fricke LLP  
C. Ramig, Hawaii Private Locators LLC

Absent: Ford N. Fuchigami

"September 26, 2016

APPOINTMENT  
OF NEW BOARD  
MEMBER -  
KAY C. MATSUI

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

Chair and Members:

Subject: Appointment of New Board Member – Kay C. Matsui

Ms. Kay Matsui has been appointed to the Board of Water Supply by Mayor Kirk Caldwell to succeed Mr. Duane Miyashiro.

On September 7, 2016, the City Council confirmed Ms. Matsui's appointment for a term expiring on June 30, 2021.

We extend congratulations to Kay Matsui on her appointment and welcome her 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:

Manager Lau introduced and welcomed Ms. Matsui as the newest member of the Board. He stated that Ms. Matsui was appointed to the BWS by Mayor Kirk Caldwell to succeed Mr. Duane Miyashiro. On September 7, 2016, the City Council confirmed Ms. Matsui's appointment for a term expiring on June 30, 2021. On behalf of the Board, Acting Chair Wong congratulated and thanked Ms. Matsui. Ms. Matsui thanked Mr. Wong and Mr. Lau and said that it is a great pleasure and she is looking forward to working with everyone.

APPROVAL OF  
MINUTES

Approval of the Minutes of the Regular Meeting held on August 22, 2016

MOTION  
TO APPROVE

Ross Sasamura and Kapua Sproat motioned and seconded, respectively, to approve the Minutes of the Regular Session Meeting of August 22, 2016. The motion was unanimously carried.



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

**RESOLUTION NO. 869, 2016**

**DUANE R. MIYASHIRO  
IN APPRECIATION FOR SERVING AS A MEMBER  
OF THE BOARD OF WATER SUPPLY**

**WHEREAS**, DUANE R. MIYASHIRO has ably served as a member of the Board of Water Supply (BWS), City and County of Honolulu, since August 2011, and as Chair since July 2012; and

**WHEREAS**, MR. MIYASHIRO's business accomplishments as a partner and the Chair of the Litigation and Dispute Resolution Group at Carlsmith Ball LLP, one of Hawaii's largest and oldest law firms; his reputation in the private sector and the local community; and the esteem of his colleagues has resulted in additional recognition and respect for the Board; and

**WHEREAS**, the Board of Water Supply has greatly benefitted from DUANE R. MIYASHIRO's skills, experience, and extensive knowledge in matters of law and dispute resolution, that lent to his credibility in discussions regarding a wide range of Departmental and community matters; and

**WHEREAS**, as Board Chair, DUANE R. MIYASHIRO has presided over the monthly meetings of this group, staunchly defended the BWS's semi-autonomous governance model, supported and encouraged initiatives that improve efficiency in overall Departmental operations, participated in numerous events in support of the Department's employees and programs, and has volunteered his time and expertise to help effect business and management related policy decisions for the Board that will impact the direction and operations of the Board of Water Supply for many years to come; and

**WHEREAS**, MR. MIYASHIRO's service is a testament to his commitment to maintain a municipal water system that is safe, dependable, and affordable as well as worthy 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 DUANE R. MIYASHIRO our deep appreciation and gratitude for his committed service to and leadership of this Board and Department; and

**BE IT FURTHER RESOLVED** that the Members of this Board extend to DUANE R. MIYASHIRO 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 DUANE R. MIYASHIRO.



Resolution No. 869, 2016

Adopted this 26<sup>th</sup> day of September 2016  
Board of Water Supply, Honolulu, Hawaii

  
ADAM C. WONG

Acting Chair of the Board



- DISCUSSION:** Mr. Lau recognized Mr. Miyashiro in the audience and read the Resolution. On behalf of the Board, Mr. Wong thanked Mr. Miyashiro for his years of leadership and providing the Board with a calm, guiding light throughout the course of all their actions.
- MOTION TO ADOPT** Ross Sasamura motioned to adopt Resolution No. 869, 2016, Duane Miyashiro – In Appreciation for Serving as a Member of the Board of Water Supply. The motion was seconded by Kapua Sproat and unanimously carried.
- DISCUSSION:** Mr. Wong presented Mr. Miyashiro with the Resolution and a token of appreciation. Mr. Miyashiro thanked the Board, Manager Lau and the BWS leadership team for giving him a better understanding about water and what the BWS does. Mr. Miyashiro said that it was a privilege and a pleasure working with everyone. On behalf of BWS, Mr. Lau expressed his sincere Mahalo and appreciation to Mr. Miyashiro for serving on the Board and also as the Chair.

RESOLUTION NO. 869, 2016, DUANE R. MIYASHIRO - IN APPRECIATION FOR SERVING AS A MEMBER OF THE BOARD OF WATER SUPPLY, ADOPTED ON SEPTEMBER 26, 2016			
	AYE	NO	COMMENT
ADAM C. WONG	X		
DAVID C. HULIHEE	X		
KAPUA SPROAT	X		
BRYAN P. ANDAYA			ABSENT
KAY C. MATSUI	X		
ROSS S. SASAMURA	X		
FORD N. FUCHIGAMI			ABSENT

The meeting was taken out of order.

"September 26, 2016

ROLE OF BOARD  
IN STRATEGIC  
PLAN PROCESS  
AND CREATION  
OF PERMITTED  
INTERACTION  
GROUP

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

Chair and Members:

Subject: To Determine the Role of the Board in the Five-Year Strategic  
Plan Development Process and Creation of a HRS Section  
92-2.5(b) Permitted Interaction Group

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The department is developing the Board of Water Supply (BWS) Five-Year strategic plan and requests the involvement of the Board in the process. The strategic plan will affirm the vision, mission, sustainability goals, near-term objectives, action plans and performance metrics for the department. We are seeking Board member(s) participation to work with the department's senior managers on the development of the Department's Five-Year Strategic Plan. Ultimately, the strategic plan will be presented to the Board for adoption at a regular meeting of the Board.

If two or more Board members would like to participate in the development of the strategic plan, we recommend the creation of a permitted interaction group. The pertinent section of Chapter 92, Hawaii Revised Statutes regarding the permitted interaction of members is as follows:

*§92-2.5 Permitted interactions of members. (a) Two members of a board may discuss between themselves matters relating to official board business to enable them to perform their duties faithfully, as long as no commitment to vote is made or sought and the two members do not constitute a quorum of their board.*

*(b) Two or more members of a board, but less than the number of members which would constitute a quorum for the board, may be assigned to:*

*(1) Investigate a matter relating to the official business of their board; provided that:*

*(A) The scope of the investigation and the scope of each member's authority are defined at a meeting of the board;*

*(B) All resulting findings and recommendations are presented to the board at a meeting of the board; and*

*(C) Deliberation and decisionmaking on the matter investigated, if any, occurs only at a duly noticed meeting of the board held subsequent to the meeting at which the findings and recommendations of the investigation were presented to the board; or*

*(2) Present, discuss, or negotiate any position which the board has adopted at a meeting of the board; provided that the assignment is made and the scope of each member's authority is defined at a meeting of the board prior to the presentation, discussion or negotiation.*

The strategic plan is an important opportunity to state overall near-term strategies of the Board and department that address the needs of the BWS and its customers, and to ensure that the Board and the department work together as a team.

Respectfully submitted,

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

## DISCUSSION

Ellen Kitamura, Deputy Manager, explained that the BWS is embarking on a Five-Year Strategic Plan and is requesting Board participation in the development of the plan.

Ms. Sproat asked when the meetings would be. Ms. Kitamura replied that no dates are set yet, but they are planning to have three, four-hour meetings, one in October and two in November, here at the BWS during the work day. Mr. Wong asked if the meetings would be facilitated, and Ms. Kitamura replied that Glenn Hamamura of Systems Excellence LLC, would facilitate the meetings.

Board Members Sproat, Matsui, and Andaya volunteered to participate as representatives from the Board to assist the Department in the development of the Five-Year Strategic Plan process. David Hulihee and Ross Sasamura motioned and seconded, respectively, to allow a Permitted Interaction Group consisting of Members Sproat, Matsui, and Andaya to assist the Department in the development of the Five-Year Strategic Plan. The motion was unanimously approved.

KAPUA SPROAT, KAY MATSUI, AND BRYAN ANDAYA APPROVED AS REPRESENTATIVES FROM THE BOARD TO ASSIST THE DEPARTMENT IN THE DEVELOPMENT OF THE FIVE-YEAR STRATEGIC PLAN PROCESS, AT THE SEPTEMBER 26, 2016 BOARD MEETING

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



"September 26, 2016

ELECTION OF  
CHAIR

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

Chair and Members:

Subject: Election of Chair of the Board of Water Supply  
Beginning September 26, 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.

Mr. Miyashiro was elected Chair by the appointed members of the Board on June 27, 2016. His term expired on June 30, 2016, and he has been succeeded by Kay Matsui, effective September 7, 2016.

Accordingly, election of a new Chair of the Board for the ensuing year commencing September 26, 2016, is now in order.

Respectfully submitted,

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

NOMINATION  
AND MOTION

Mr. Wong explained that he is operating as the Acting Chair, so they need to elect a member to fulfill the role of Board Chair until June 2017.

Kapua Sproat nominated Bryan Andaya as Board Chair. There were no other nominations. Mr. Wong asked Mr. Andaya if he was willing to serve as the Chair and Mr. Andaya said that he would be honored. Deputy Corporation Counsel Moana Yost asked Mr. Andaya if he would like to take over the remainder of the meeting or have Mr. Wong continue. Mr. Andaya asked Mr. Wong to continue and that he would start from the October Board meeting. The motion was seconded by Ross Sasamura. Bryan Andaya was unanimously elected to serve as Chair of the Board of Water Supply commencing September 26, 2016.

BRYAN ANDAYA ELECTED AS CHAIR OF THE BOARD OF WATER SUPPLY COMMENCING SEPTEMBER 26, 2016 THROUGH JUNE 2017, AT THE SEPTEMBER 26, 2016 BOARD MEETING

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

ITEM FOR INFORMATION NO. 1

"September 26, 2016

**WATER MASTER  
PLAN UPDATE**

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

Chair and Members:

Subject: Board of Water Supply Water Master Plan Update

The Draft Water Master Plan was made public on July 13, 2016 with a comment deadline of September 12, 2016. The comments were shared with the Board of Water Supply Stakeholder Advisory Group at our meeting of September 14, 2016.

Water Resources staff will be providing an update of the public outreach and comments received on the Draft Water Master Plan.

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 presentation. He stated that the draft Water Master Plan (WMP) was released for a 60-day public comment period that ended on September 12, 2016. Mr. Usagawa gave a summary of some of the comments received and concluded that there were no significant changes to the WMP. BWS will respond to all of the individual comments in writing and will finalize the WMP based on the input received. Mr. Usagawa spoke about the Stakeholder Advisory Group (SAG) who is very supportive of the WMP and voted to recommend to the Board to adopt the plan. Mr. Usagawa stated that BWS plans to submit the WMP to the Board for adoption at the October Board meeting.

Mr. Lau mentioned that Board Member Matsui attended the SAG meeting in September. Mr. Lau is glad to see that the SAG seems to have jelled together as a group and was pleasantly surprised at their decision to vote to recommend that the Board approve the plan. Mr. Lau and Mr. Wong thanked Mr. Usagawa for giving presentations of the WMP to communities all over the island into the evening hours.



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

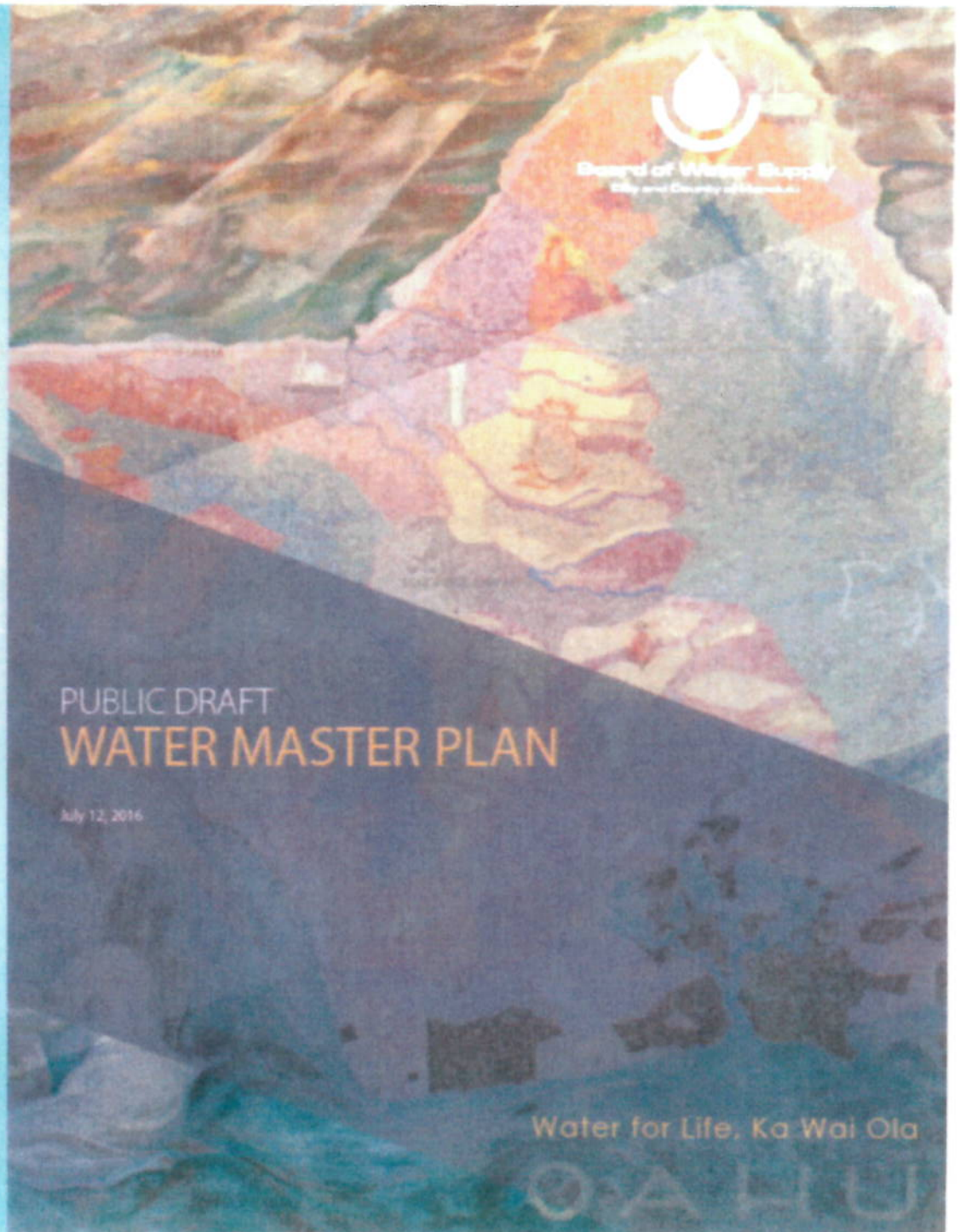
# **Water Master Plan Quarterly Update**

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

**Monday, September 26, 2016**



**Draft Water  
Master Plan  
Released for  
60-day Public  
Review on  
July 12, 2016**





# Water Master Plan

## SUMMARY



Board of Water Supply  
City and County of Honolulu

*Water for Life, Ka Wai Ola*

JULY 2016



# "10 Things You'll Want to Know" fact sheet sent to all customers

## WATER FOR YOU AND OUR COMMUNITY'S FUTURE

### 10 Things You'll Want to Know About the Board of Water Supply Water Master Plan

To secure O'ahu's water future, the City and County of Honolulu Board of Water Supply has prepared a long-range Water Master Plan. The Plan is a comprehensive, broad-based technical program that includes the data, investigation, assessments, and projections to make decisions for the water system for the next few decades. We selected 10 highlights from that visionary plan to share with you in this "10 Things To Know" fact sheet.

Mahalo for your interest!

#### 1 The Water System is Aging: Parts are 100 Years Old

As part of the Water Master Plan, the Board of Water Supply completed a rigorous assessment of its vast and aging water system. Pipelines, reservoirs, pumps, treatment plants and other facilities were inspected and evaluated. Detailed analyses and new technologies resulted in a wealth of information, new insights, and vital data about the water system's general health. Evaluation results indicate where investment in renewal and replacement projects is needed to keep the system flowing and strong.

#### 2 Water Infrastructure Will Be Planned and Built at the Right Time and Right Place

Using the power of computer modeling as well as sophisticated statistical tools, the Board of Water Supply has looked ahead 30 years to see where and how the water system needs to expand to dependably serve a growing population. The Water Master Plan anticipates that the greatest need for water will be in 'Ewa-Waipahu and the densely populated urban center area from downtown Honolulu and Waikiki to Hawai'i Kai. Knowing when and where demand for water will increase, and by how much, enables the Board of Water Supply to efficiently plan and build new infrastructure at the right times and the right places.

#### 3 We've Gained New Insights About Water Main Breaks

Reducing water main breaks has been an important focus for Water Master Plan investigations. Certain pipe materials and corrosion have been identified as the main reasons why pipes break on O'ahu. Cast iron pipes were the industry standard for water pipelines starting in the late 1940s. Now among our oldest, these cast iron pipes are more prone to corrosion. Other factors that can reduce the useful life of pipe are smaller diameters, higher water pressures, and corrosive soils. By understanding these underlying causes, the Board of Water Supply can proactively replace pipes to reduce the risk of future breaks.

#### 4 Future Infrastructure Plans Consider Risk

The Water Master Plan recommends using risk as one of the main factors for deciding which of the many important water system projects to pursue first and which can be deferred to a future time. Risk considers the likelihood of failure as well as the consequence of failure. For example: a break in a large water main near a school or hospital could have severe consequences compared to a break in a small water main adjacent to a parking lot. Thus, the large main would have a higher risk factor. Projects to renew or replace pipelines with the highest risk factors will be prioritized over others with lower risks.

#### 5 We Must Adapt to Hawai'i's Changing Climate

Evidence of climate change abounds in Hawai'i. Rainfall on O'ahu has steadily decreased since the 1920s. In the future, rainstorm intensity is expected to increase, with more water runoff into the ocean and less water retained to recharge our natural aquifers. Sea level is rising and the ocean is growing more acidic. Metallic pipelines will corrode faster in soils that absorb the encroaching seawater. Coastal erosion threatens the stability of water pipelines. The Board of Water Supply is working with the University of Hawai'i and others on climate change research, and has commissioned expert studies of impacts on water infrastructure. Study results will be combined with findings of the Water Master Plan to anticipate and adapt to climate change impacts.



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Board of Water Supply  
City and County of Honolulu

## SUMMARY OF OUTREACH ACTIVITIES





# Public Outreach

- 💧 Press Release
- 💧 Ernest Lau Interview – KHON Living808
- 💧 Newspaper coverage
- 💧 Letters & Draft WMP to all O‘ahu-based elected officials
- 💧 Notification to Neighborhood Commission Office
- 💧 Neighborhood Boards informed in person by BWS representatives
- 💧 Draft Water Master Plan and Summary available at all state public libraries throughout O‘ahu



# Top 10 Things You'll Want to Know

- 💧 Water bill insert to all customers, with letter from Manager
- 💧 Mailed with letter to Native Hawaiian Organizations and various community groups (*75 letters total*)
- 💧 Available by cashier counter in BWS Lobby for walk-in customers
- 💧 Distributed at Ready 2 React Emergency Preparedness Fair at Pearl Ridge Shopping Center
- 💧 All Draft WMP documents available on BWS Website



# Presentations

- 💧 17 presentations to Neighborhood Boards, community & service organizations, business groups
- 💧 3 presentations calendared ahead
- 💧 Estimated 420+ total attendance to date



# Summary of Public Comments



Board of Water Supply  
City and County of Honolulu

## PUBLIC DRAFT WATER MASTER PLAN

July 12, 2016

Water for Life, Ka Wai Ola

O A H U



# Number of Public Comments

- 💧 40 commenters
- 💧 9 of those identified affiliations
  - Trust for Public Lands
  - Ewa Beach NB
  - North Shore NB
  - Diamond Head – Kapahulu NB
  - Malama Manoa
  - Kapolei Rotary
  - East O‘ahu Farm Bureau
  - Poamoho Camp
  - The Nature Conservancy
- 💧 93 total comments and questions



# Public Comment Topics

## 💧 21 Technical

*main breaks (8)*

*energy and recycled water (3 each)*

*seawater desalination (2)*

*seawater intrusion and water pressure (1 each)*

## 💧 20 Policies

## 💧 17 Conservation and/or watersheds

## 💧 10 Water bills or rates

## 💧 8 Implementation

## 💧 7 Requests for more information

## 💧 5 Costs not being included in WMP

## 💧 4 Red Hill



## Public Comment Themes (in order of frequency)

- 💧 Complimentary of Water Master Plan

- 💧 Do More

  - Storm water capture and limit hardscape*

  - Reduce/prevent main breaks*

  - About Red Hill*

  - Recycled Water*

  - Protect Watersheds*

- 💧 Water is limited so development should be limited

- 💧 Mandate water conservation/conservation devices

- 💧 Power/emergency power/renewable energy

- 💧 Need enough water for agriculture

- 💧 Skeptical about WMP



# **BWS will Respond to All Public Comments**

- 💧 Table of comments and BWS responses will be prepared and posted on BWS website
- 💧 All commenters will receive individual responses
- 💧 Will be meeting with some of the commenters:
  - Poamoho
  - East Oahu County Farm Bureau



# Stakeholder Advisory Group Provided Extensive Input

- 💧 Developed WMP Objectives
- 💧 Received presentations on major plan components
  - Supply and Demand (Sept 2016)
  - Water Quality (Jan 2015)
  - Condition Assessment Part 1 (Jan 2016)
  - System Analysis (March 2016)
  - Condition Assessment Part 2 (July 2016)
  - WMP Overview (July 2016)
- 💧 Provided comments on WMP (Sept 2016)
- 💧 Recommends Board adoption of WMP



## Next Steps

- Respond to each individual who provided comments
- Finalize Water Master Plan based on public and Stakeholder Advisory Group input
- Submit Water Master Plan for possible Board Adoption in October 2016



ITEM FOR INFORMATION NO. 2

"September 26, 2016

CAPITAL  
PROJECTS AND  
CONSTRUCTION  
MANAGEMENT  
PROGRAM  
MANAGEMENT  
UPDATE

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

Chair and Members:

Subject: Capital Projects Division and Construction Management  
Program Management Update

Jason Takaki, Capital Projects Division Program Administrator, will provide an update on Capital Projects Division and Construction Management Program Management.

Respectfully submitted,

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

Attachment"

The foregoing was for information only.

DISCUSSION

Mr. Lau introduced Jason Takaki, Capital Projects Division Program Administrator, to new Board Member Matsui and apologized for not introducing Mr. Usagawa previously.

Mr. Takaki gave the presentation. There were no comments or discussion.

Mr. Lau thanked Mr. Takaki, BWS staff, and the consultant team for a great job.

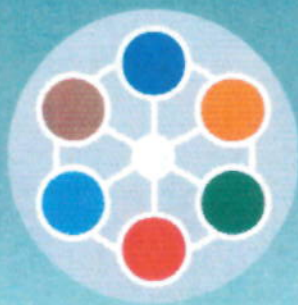
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**Board of Water Supply**  
City and County of Honolulu

# **Capital Projects Division and Construction Management Program Management Update**



**Board of Water Supply**  
**September 26, 2016**







## Capital Projects Division

- Design and construction
- Ensure compliance with Standards
- Deliver projects for water infrastructure repairs, renewals and expansions
  - Water System Operations
  - Field Operations
  - Water Quality
  - Water Resources







## Capital Projects Division

- Support BWS mission
- Renewal, replacement and expansion strategy defined in the Water Master Plan
- Capacity and capability to predictably deliver projects drives future





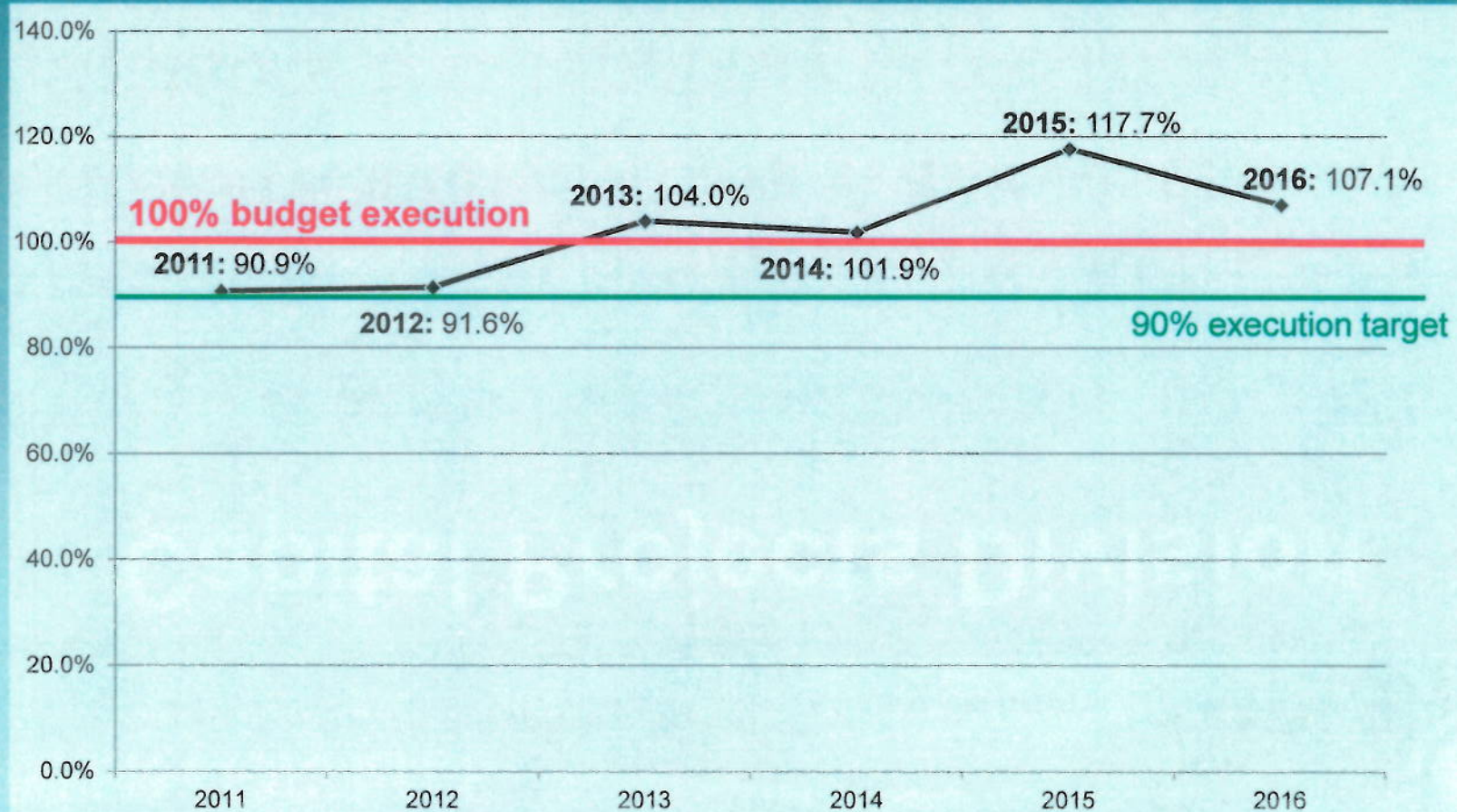
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Board of Water Supply  
City and County of Honolulu

# CPD project performance







## CPD Program Overview

Continuing Organizational Optimization







## Assessment

- Confidential staff interviews
- Collect expectations, perceptions and suggestions
- June 2013
- Internal and external to Division







## Assessment

- Customers' view
  - Project definition
  - Organizational silos
  - Coordination
  - Project predictability
  - Subpar field inspection oversight
  - Standards inadequate
  - Understaffed
  - Improve communications

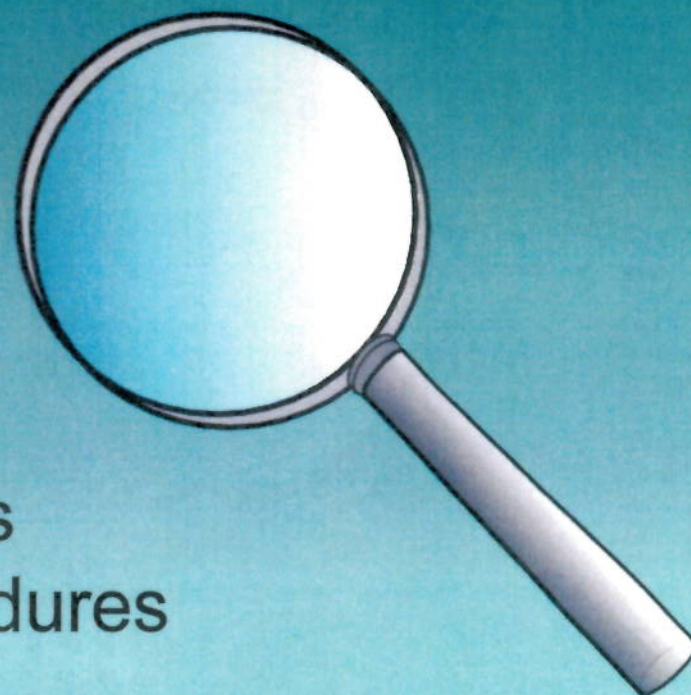






## Assessment

- Division perspective
  - Commitment to quality
  - Project definition
  - Communications
  - Improve interaction
  - Better business processes
  - Standard operating procedures
  - Data management tools
  - Need and willingness to do better

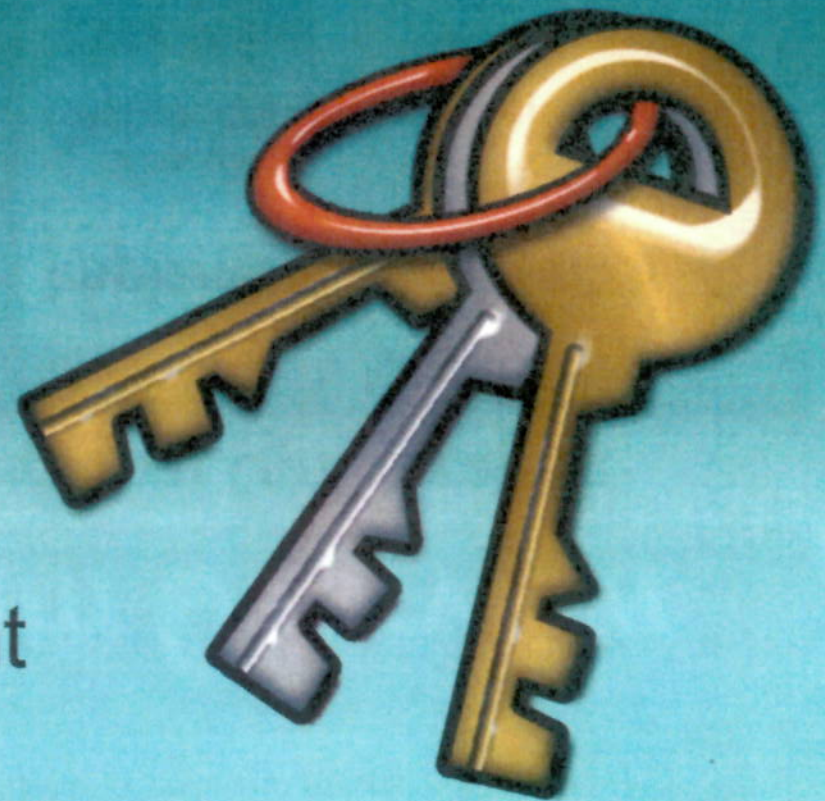






## Keys to the future

- Staffing
- Collaboration
- Coordination
- Communication
- Predictability
- Quality management
- Sustainability

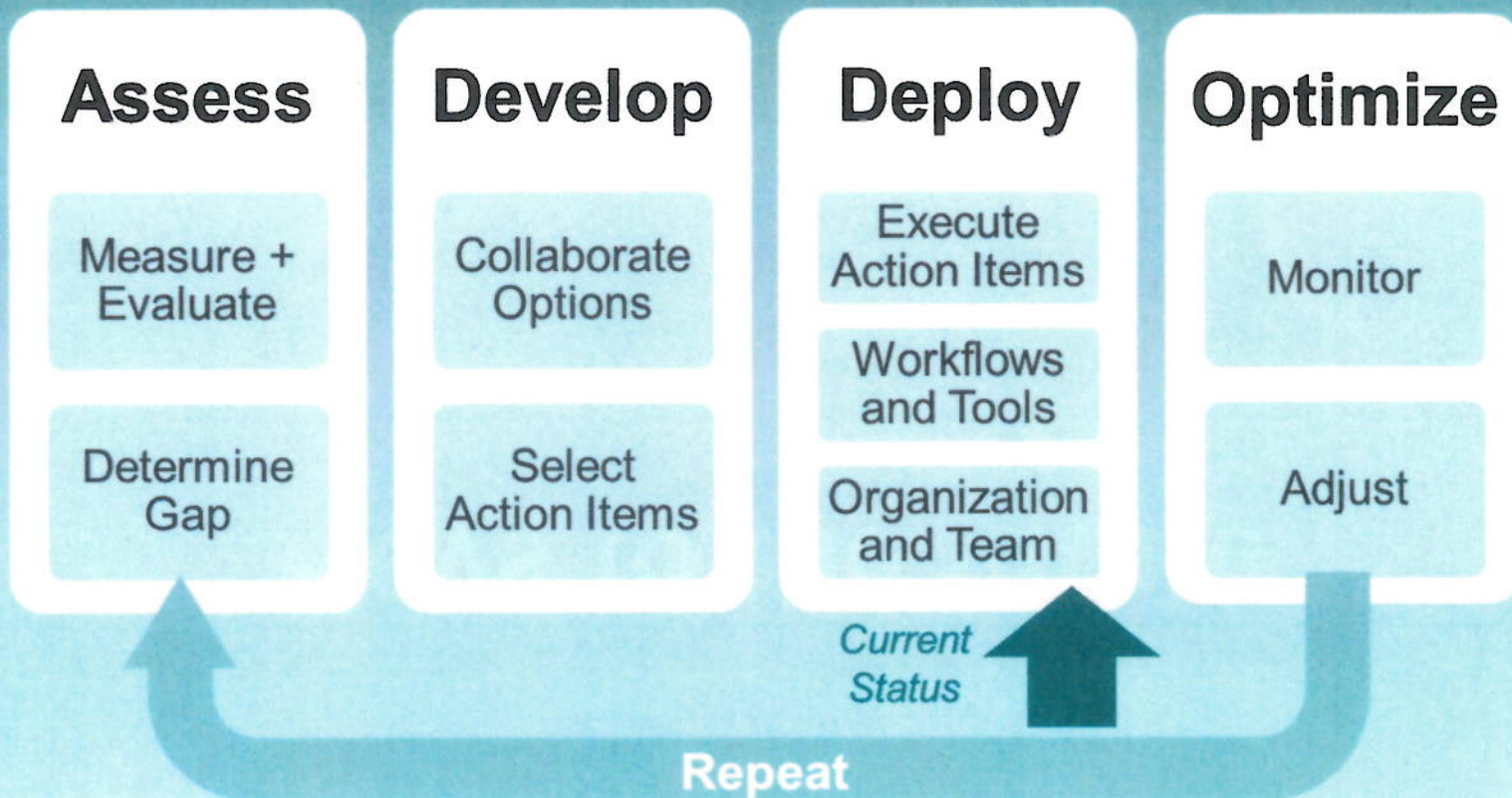






## CPD Program Overview

Continuing Organizational Optimization







## Planning

- Core teams
  - Action plans







## Planning

Table 12: Proposed Initial Action Plan

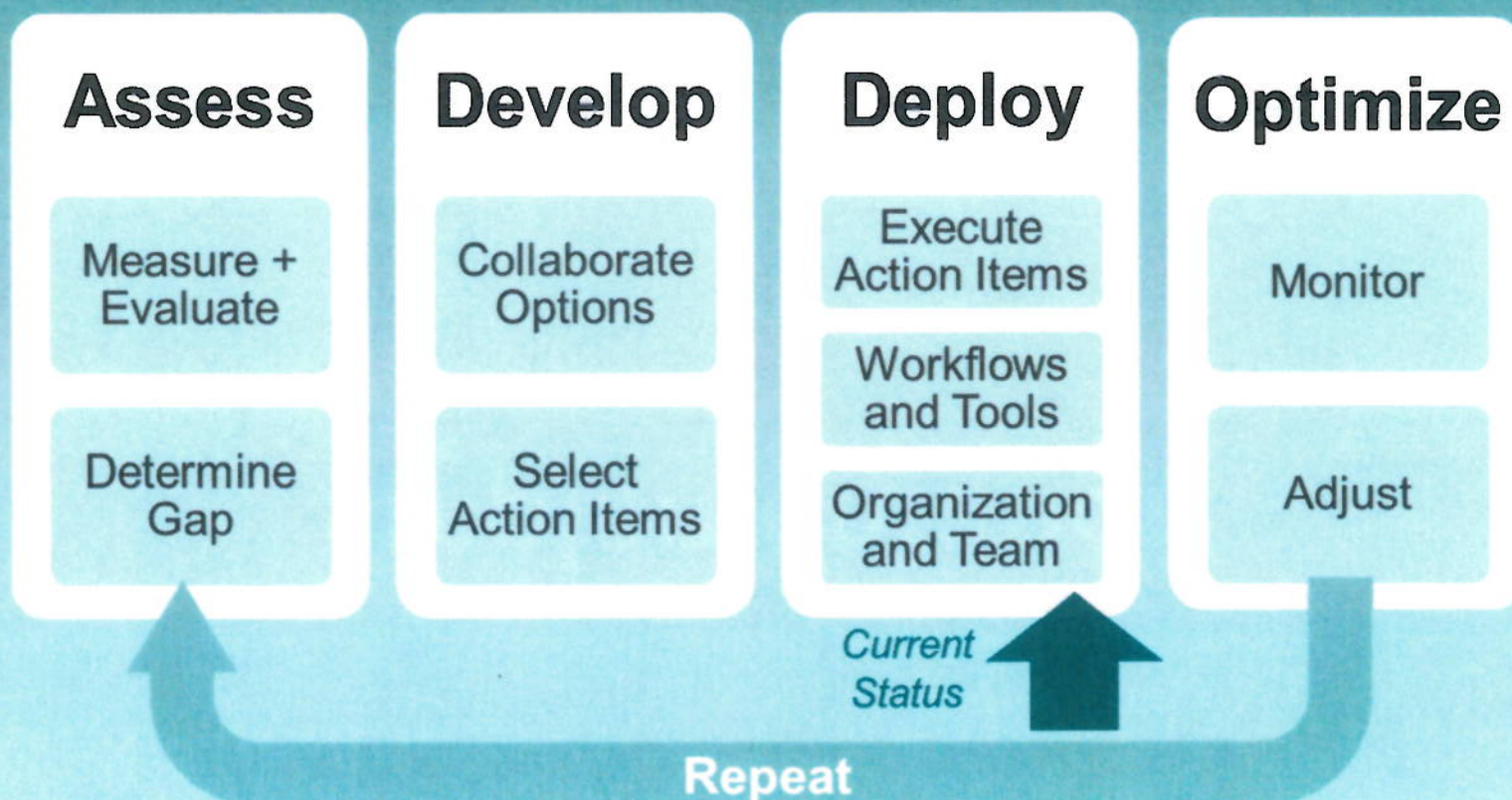
Function / Activity	Industry Practice / Standard	BWS Practice	Best Industry Practice	Solution Progression (months)		
				0-6	6-24	24-48
Project Identification and Initiation						
Planning process coordination	Capital program staff generally leads the long range planning activity or at least has a major role if the planning activity is led by another department.	Planning is lead and largely accomplished by the WR Planning Division to develop the 30-yr and 5-yr CIP with little input and coordination with CPD. CPD manages the 1-yr CIP	CPD should assign one FTE to the planning process and make it this person's responsibility to work with Planning Division on all planning issues and communicate the planning activities back to the CPD staff.	✓		
Project Initiation process	This process is variable from organization to organization and no general practice is followed. Generally, the larger an organization the more likely a formal process is in place.	CPD has a project initiation form that is not widely known about or used. There is also no clear understanding of how projects are placed into the CIP.	Develop a process, along with any necessary forms or tools, to manage project requests and allow them to be vetted through a standard decision making process that is documented and communicated to staff.	✓		
Project approval process (to be placed into CIP)	Usually the decision to place projects into a CIP is limited to very few individuals within an organization. The reasoning for placing or not placing projects into a CIP are communicated to staff for future reference.	CPD decision making relative to the CIP is limited. However, the rationale for including and deleting or deferring projects for the CIP are not known. Also reasons for not placing a project on the CIP are not communicated to staff.	Develop a process, along with any necessary forms or tools, to manage project requests and allow them to be vetted through a standard decision making process that is documented and communicated to staff. A set of criteria for including a project on the CIP should be defined so the appropriate information can be provided to address criteria.	✓		
Delivery method analysis process	Most agencies have a process for making delivery method decisions; however it is not formal in most cases.	CPD has no process to make delivery decision. All projects are assumed to go with a DDB delivery unless another method is chosen, based on unknown criteria.	Develop a formal process that all CIP projects are subjected to in order to define a delivery method. The process should provide for an early off-ramp to DDB unless certain initial screening criteria are met to establish a more rigorous assessment.		✓	
Controls						
Cost Tracking	Costs are typically collected and stored from two perspectives; one for project management information and secondly for financial and accounting purposes. All agencies do the second practice well because they have to keep track of the money, but the first practice is done to a lesser extent. Any mature capital program within a utility will have a project management cost tracking and reporting system which is primarily used to monitor consultant and contractor expenditures compared to authorized budgets. These systems will have some kind of reporting capability as well in order to communicate project cost status to the capital project staff and other staff within the utility.	CPD has no formal cost monitoring and tracking system beyond the one used by the finance division. Some project engineers maintain their own method of cost tracking for their projects and some rely solely on the finance division's data.	Develop a formal cost monitoring, tracking, projection, and reporting system. A process should also be implemented to reconcile cost information with the finance division's data on a frequent basis, ideally no longer interval than monthly.		✓	
Scheduling	Schedule tracking is not as common as cost tracking, however most mature capital project groups utilize some type of formal scheduling system, primarily to estimate cash flow and projected capital spending needs.	CPD has no formal scheduling system that is widely seen and used by all CPD staff. A general schedule is developed by CPD management that is used to estimate the capital funding needs for	Develop a formal scheduling system that is seen and used by all CPD staff and that is accessible for viewing by all BWS staff. The level of detail maintained in the CPD schedule should be evaluated and compared to the		✓	





## CPD Program Overview

Continuing Organizational Optimization

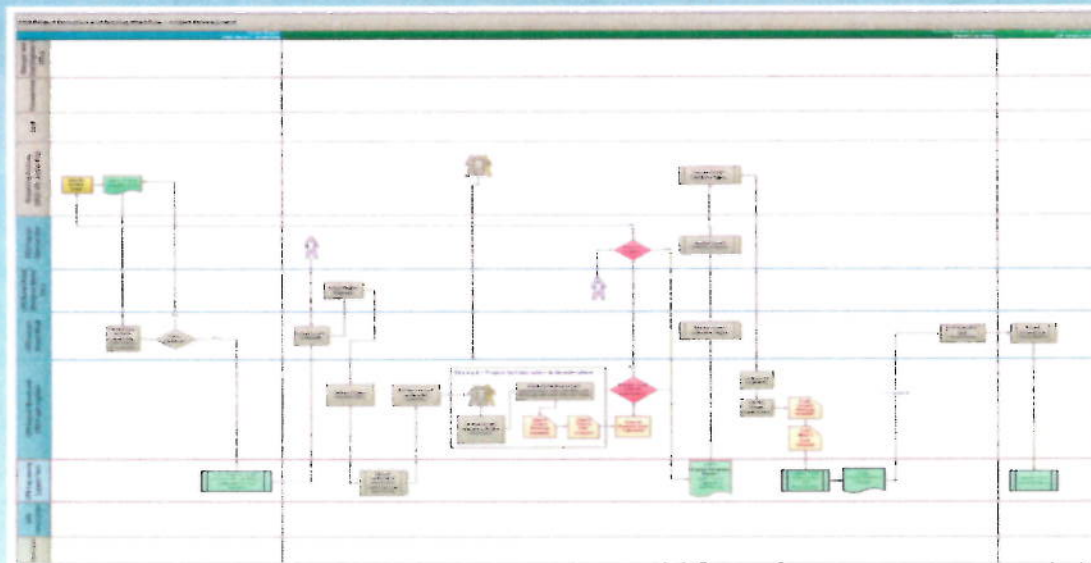






## Implementation

- Workflow analysis
- Revised work processes
- Standard operating procedures







## Top Priority: Project Definition

- Project Definition Report (PDR) to accompany each proposed CIP item
- Modify the project initiation process
  - ✓ Collaborate on objectives with requestor
  - ✓ Identify schedule drivers *e.g., permitting, agency approvals, procurement, etc.*
  - ✓ Cost estimate standards
  - ✓ Develop “business case” for action





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Board of Water Supply  
City and County of Honolulu

## Project Definition Reports: Outline for Project Execution

- Record of intent and support inquiries
- Adhere to standards

### Project Definition Report

Kahuku Wells, Unit 3  
October 10, 2014

- 1.0 Project Background
- 2.0 Description of Project
- 3.0 Additional Project Information
- 4.0 Photos
- 5.0 Budget Information
- 6.0 Schedule Information
- 7.0 Attachments

Attachment A – Detailed Scope for Conceptual Cost Estimate  
Attachment B – AACE Class 3 Conceptual Cost Estimate  
Attachment C – Conceptual Project Schedule  
Attachment D – Project Background/History

#### Recently completed Well Drilling Project:

- Job 12-001 Kahuku Wells Unit No. 3. Documents include Project Solicitation Notice, Final EA Background Summary, Final Progress and Payment Report, Construction Permit application.

See Attachment D for Additional Project Background/History.

#### 4.0 Photos



Figure 1: Well cap, General site and control building.  
Figure 2: Wellhead, Hydrogeological well.  
Figure 3: Wellhead, Hydrogeological well.  
Figure 4: Wellhead, Hydrogeological well.

#### 5.0 Budget Information

Project Cost Estimate Notes:  
Total Project Cost (incl Eng and CM): \$2,518,000 (AACE Class 3 Cost Estimate)  
Range: \$1,238,500 to \$3,800,000  
Construction Cost: \$1,757,000 (AACE Class 3 Cost Estimate)  
Range: \$865,500 to \$3,474,000

#### 3.0 Additional Project Information

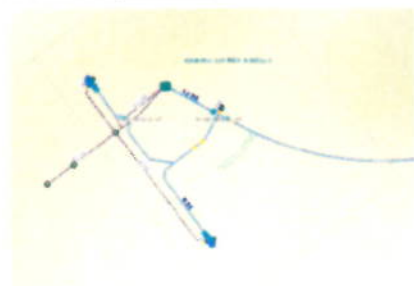


Figure 0-1: Kahuku Wells

Related information, studies, or reports:  
Available for previous projects include:

- Job 10-008 Kahuku Wells: Repair of Pump No. 1 and No. 2
- Job 09-005 Kahuku Wells: Repair of Pump No. 1 and No. 2
- Job 02-002 Kahuku Deep Monitor Well: Drilling and Casing One Monitor Well
- Job 00-057 Kahuku Wells: Replace Pumping Units and Appurtenances
- Job 00-041 Kahuku Water Development: Installation of Two Pumps, Control Building, Piping, Electrical Equipment, 0.5 MG Reservoir, Transmission Main, and Access Road
- Job 79-006A Kahuku Water Development: Drilling, Casing, and Testing Two Wells

Ongoing construction project:

- Job 11-018 Waianae Wells and Kahuku Wells Renovation

#### 1.0 Project Background

Project Name: Kahuku Wells, Unit 3  
Project Number:  
Start/Revision Date: October 10, 2014  
Contract:  
a. Pump Station/Water  
b. Reservoir  
c. Pipeline

#### Project Team:

- Existing Asset Area: a. Existing Asset Replacement b. New Asset Capacity c. New Asset Regulatory d. New Asset Level of Service

#### Project Background/History: Water Resources

Project Request Date: N/A  
Project Control Information:  
Name: Matthew Murtygama  
Email address: mmurtygama@hawaii.gov  
Telephone: (808) 740-8038

Project Location: TWR 5-4-05  
Additional Description of Location: Kahuku Wells accessible from 50-420 Kapolei's Loop



#### 2.0 Description of Project

Objective: The project will install a third well pump unit and a permanent emergency generator at the Kahuku Wells facility to ensure 800 capacity standards are met for the future demand scenario and to provide emergency backup power as this is a stand-alone source that services critical facilities including a hospital and school.

How Construction: This includes installing a pump and motor (700 gpm) on the existing nearest, including necessary piping, valves, instrumentation and control, electrical equipment and appurtenances, and installation of a new permanent emergency generator.

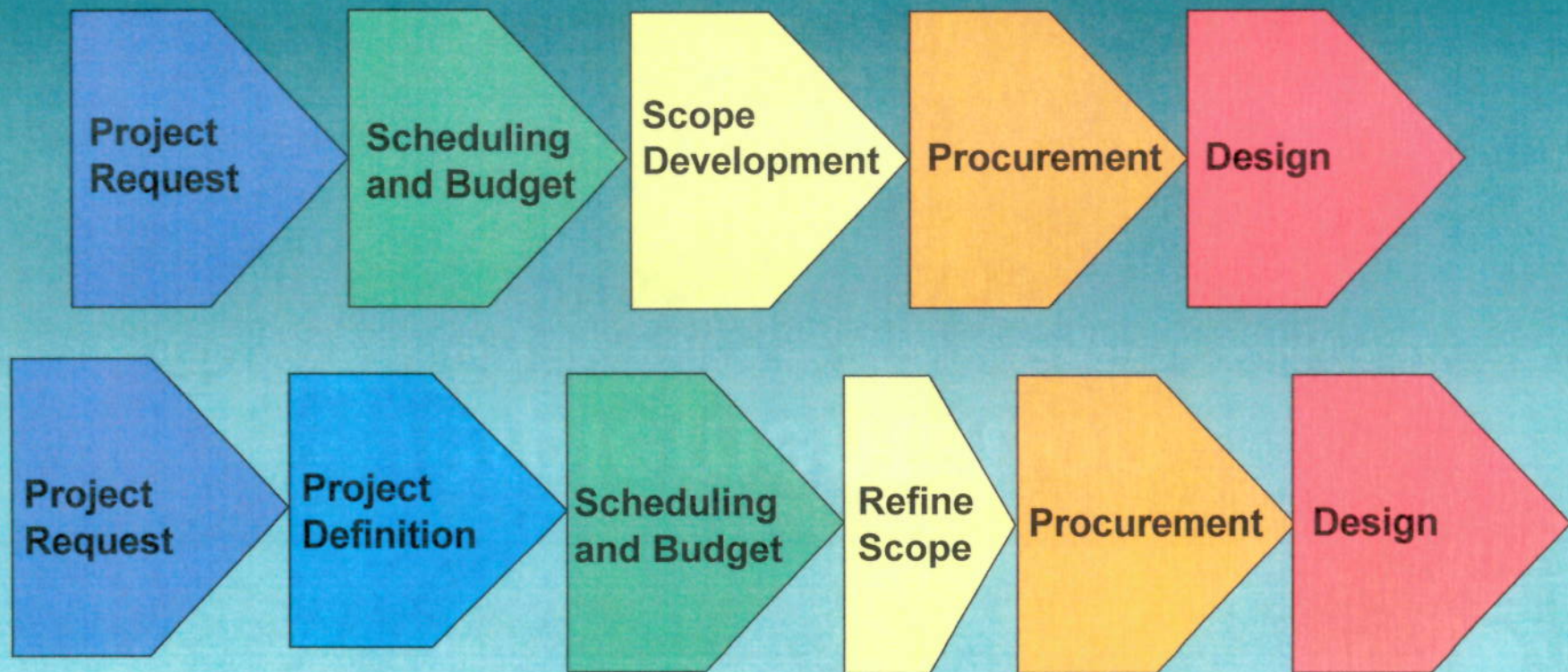
- Clarify expectations
- Set key project performance metrics





## Implementation

- Refined project definition process







## Implementation

- Standard operating procedures
  - ✓ Engineers
  - ✓ Construction inspectors

### BWS Project Request SOP 1

SOP Name	New Project Request		
Workflow Steps	x-x	Last Revision Date	1/7/15
Objective	Identify a system need and gather enough information to develop a Project Requirements Summary for a CPD engineer to use to scope a new potential CIP project. The information recorded in these steps all build towards the development of a Project Definition Report and ultimately a new project to be executed.		
Preconditions			
Personnel Involved	<ul style="list-style-type: none"> <li>• Requesting Division (WSO, WR, or FOP)</li> <li>• CPD Support Branch</li> </ul>		
Products/Outputs	<ul style="list-style-type: none"> <li>• Project Initiation Form</li> <li>• Project Requirements Summary</li> </ul>		
Notes/Assumptions			
Step	Responsible Party	Procedure	
1	Requesting Division	Identify a system need and submit a Project Request Form to	





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# MANAO

## Project Management Information System

- Management
- Administration
- Notification
- Accountability
- Organization



MANAO

My Tasks

Board Projects

Non-Board Projects

Construction Projects

Permits

Contractors External Site

Feedback

MANAO

Home

Announcements

Guidance Documents

Help Ticket

Recent

Site Contents

Recent

MK Test 3

### Portal Home Page

#### I want to...

#### Quick Links

##### Board Projects

- Create New Board Project Request
- See Board Project Request List
- See Board Projects in the Design Phase
- Dashboard - Prototype

##### Non-Board Projects

- Create New NB Project Record
- See Non-Board Projects List
- See Transmittal Log

##### Construction

- See RFIs List
- See Submittals List

##### Learn About

- Guidance - SOPs



MANOA My Tools **Board Projects** • Non-Board Projects Construction Projects Forms Contractors External Site Feedback

**Project Record ID**  
10214

**Request Date**  
3/10/2016

**Project Phase\***  
CIP Implementation

**Record Status**  
Open

---

**Project Name\***  
Manoa Wells II

**Requesting Division\***  
Water System Operations

**Asset Type\***  
Facility

**Project Type\***  
Existing Asset Replacement

**Requesting Division Contact\***

**Primary Email**  
SMCHM@brewland.com

**Primary Phone**  
808-111-2222

**Alternate Contact**

**Alternate Contact Email**

**Alt Phone**

---

**Add Next Location Information**

**Yes** ☐ **No** ☒ **Upload Section** **Link Documents**

**Title**  
B-9-SAS-001

**Relevant HDMS screenshots uploaded**  
**Yes** ☒

**List all relevant As-Builts**  
Jul 96-002

---

**Add New Section Link To Expand** **Upload Section** **Link Documents**

**Site Visited**  
**Yes** ☒

**Location map and key photos uploaded**  
**Yes** ☒

**Additional Description of Location**  
Located at.....

---

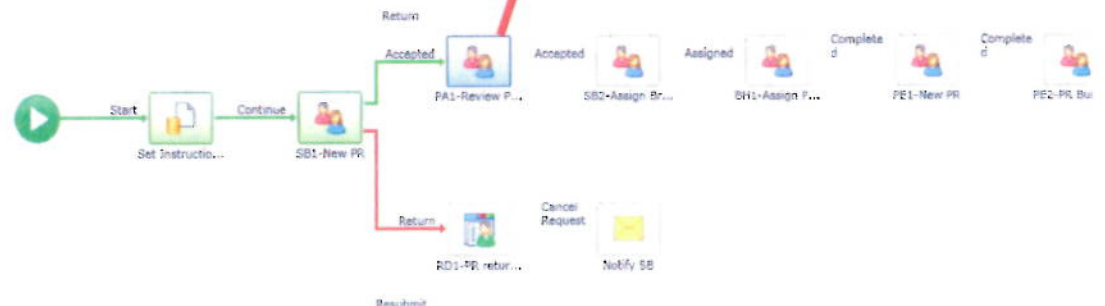
**Complete Scope developed and uploaded** **Upload**

**Conceptual Scope developed and uploaded**  
**Yes** ☒

**Detailed Description of Project**  
**Project Objective**  
Replace MOC and other electrical equipment

 Start  Continue  
Set Instructions...

Activity Summary (Web New PR)	
Overview	Participants Process Data
Name:	581-New PR
Description:	Review Request. Check for completeness. If information is incomplete, note deficiency and send form back to requesting division for clarification. If request is complete, fill out highlighted fields and upload relevant HDU images of project site.
Status:	Completed
Start Date:	4/13/2015 8:14:30 PM
Finish Date:	4/13/2015 8:39:42 PM
Running Duration:	00:00:25:12
Outcome:	Accepted







## Permits Module Tracks Permits Throughout Project

Permit List

Permits for Project 10198

Refresh

Permit Number	Title	Permit Type	Submitted By	Expires Date
50047	Building Permit	DPP (One-Time Review)		
50048	HECO	HECO		
50049	Hawaiian Tel	Hawaiian Telephone		
50050	SMA Approval	Special management area (SMA)		

Page 1

Edit Permit Form

Permit Number

50049

Project \*

10198 - Wai'alea Iki Booster No. 1 Relocation

Other Related Projects

Add New

Permit Type \*

Hawaiian Telephone

Permit Name \*

Hawaiian Tel

Agency POC

John Smith

Agency POC Phone

808-555-1873

Agency POC Email

jsmith@htel.com

Responsible Party

J. Smith

Submitted By

Consultant

Lead Time Required

20 Days

Fee

\$1,000.00

App Submittal Date

3/18/2016

Issued Date

3/17/2016

Expiration Date

4/22/2016

Permit Closed Date

Notes

Will probably need new Hawaiian Tel feed. Contact John Smith at Hawaii Tel. ASAP

Created on Monday, February 1, 2016 3:41:37 PM by Stephanie Chin

Last modified on Monday, February 1, 2016 3:42:01 PM by Stephanie Chin

Linked Docs

Save

Close/Cancel



# WATER FOR LIFE

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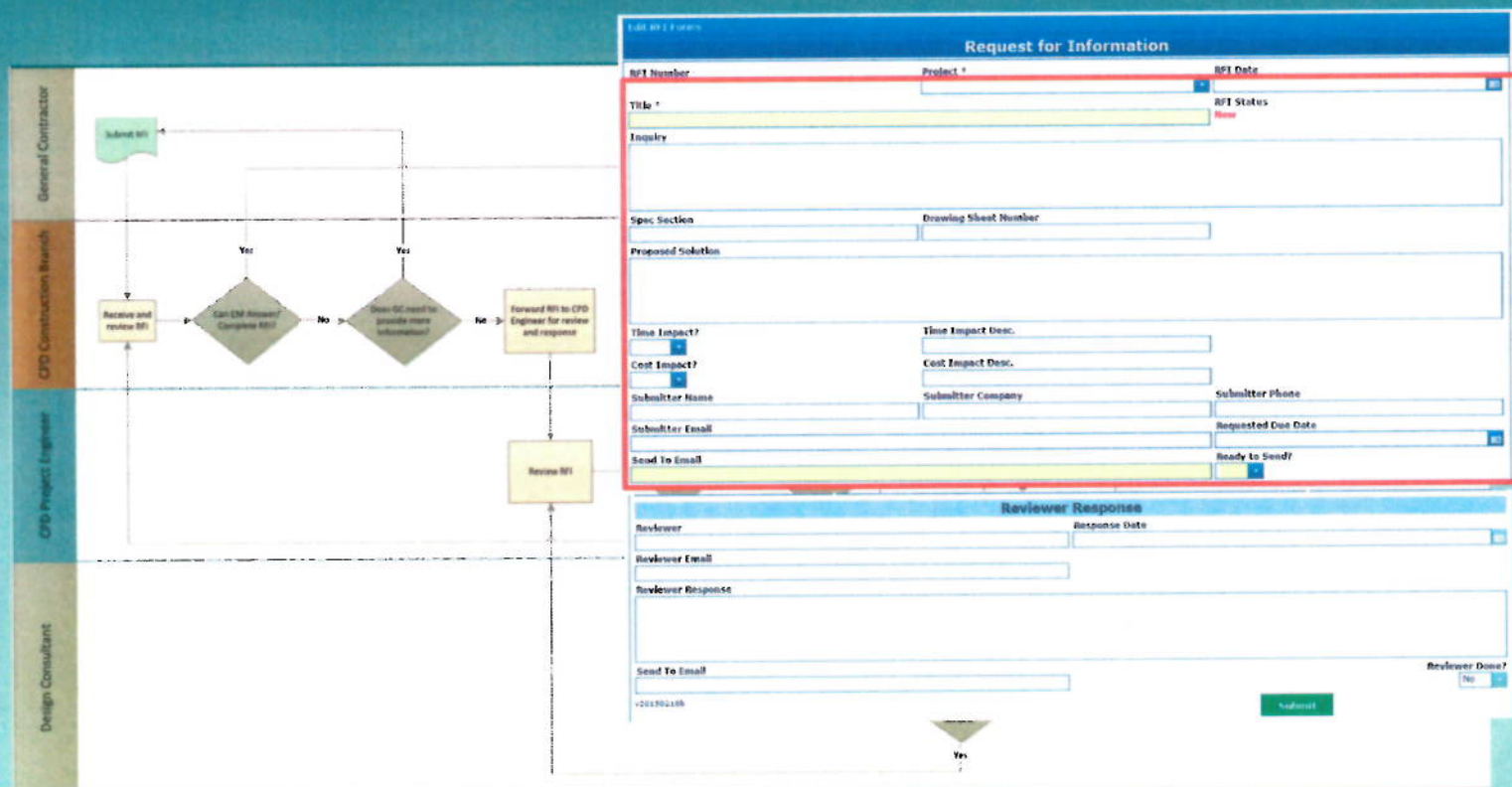


Board of Water Supply  
City and County of Honolulu

## Construction RFI module

*Request for Information* - Form supports workflow

Link supporting documents to a specific RFI record on each project







## 3-Month Training Schedule SOPs and MANAO

Proposed SOP Training Schedule

Shading color represents different sessions

		Branch or Section						MANAO
		Plan Review	Design-Civil	Mech/Elec	Support	Construction	Inspectors	Sessions
Share Point Essentials								
Non-Board	Non-Board Project Initiation and Assignment							
	Review Cycles							
	Approval							
BWS Project Definition and Scoping	New Project Request							
	Proposed Project Scope Development (PDR)							
	Schedule Development							
	Cost Estimating							
	Permitting							
	BCE							
BWS Project Execution	Identify Selection Committee							
	Consultant Selection							
	Consultant Ranking							
	Scope and Fee Negotiation							
	Contract/NTP Development							
	Preliminary Design							
	Pre-Final Design							
	Final Design							
	Design Change Order							
Construction	RFI							
	Submittal							
	Change Order							
	Meeting Minutes							
	Daily Reports							
	Photo Management							
MANAO Update	SOP Update							





## Implementation

- Human Resources
  - ✓ Project Coordinators
  - ✓ Construction Inspector Aides
  - ✓ Filling of vacant positions
    - ✓ Engineers
    - ✓ Project Coordinators
    - ✓ Construction Inspector Aides

Form 10, Rev. 10/10  
**City & County of Honolulu**  
**Position Description**

Position No: \_\_\_\_\_

1. For specific information on creating position descriptions, please refer to Department of Human Resources (DHR) Manual, Chapter 10.1: **Creating and Modifying Position Descriptions**.

2. **Job Analysis** is completing this form as required by the City's Human Resources Code.

3. This form is a **draft** and is not to be used for official purposes until it has been reviewed and approved by the Human Resources Department.

4. Complete this form for all positions, including those that are not currently filled.

5. In general, this is an official document and any modification should be made in a formal manner. It may be subject to other internal review processes including professional consultation.

6. To complete processing, submit the completed position description to the Human Resources Department for review and approval. The Human Resources Department will then forward the position description to the Department of Human Resources for final review and approval.

7. This position description is not considered official until it has been reviewed and approved by the Department of Human Resources.

**Allocation**

Title Code: \_\_\_\_\_  
Pay Grade: \_\_\_\_\_  
Effective: \_\_\_\_\_  
BU: \_\_\_\_\_  
P/L/A: \_\_\_\_\_  
Other: \_\_\_\_\_  
Org Code: \_\_\_\_\_  
PPD: \_\_\_\_\_  
Reference: \_\_\_\_\_  
Accounting: \_\_\_\_\_  
Classification: \_\_\_\_\_  
Approved: \_\_\_\_\_  
Date: \_\_\_\_\_

**Position Information**

Position Title	Department	
Position Title Grade	Division	
Position Title Code	Branch	
Position Status	Permanent <input type="checkbox"/> <input checked="" type="checkbox"/> Temporary <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Other <input type="checkbox"/>	Work Location
Immediate Supervisor	Position No.	Title and Pay Grade
Subordinates	Position No.	Title and Pay Grade
License or Certificate required to perform the essential functions of this position		
Equipment or tools regularly operated in job		
Other notes, provide Code, Title, weight & number of items		
Special Requirements		

Form 10, Rev. 10/10  
Page 1 of 1





## Implementation

- Tools and resources
  - ✓ Inspector training program
  - ✓ Modifications to Standard Provisions
  - ✓ Collaboration initiatives
    - ✓ Constructability reviews
    - ✓ Mid-design consultations
    - ✓ Post construction briefings and checklists
  - ✓ Construction Mobile Initiative iPad Pilot







## Implementation

- Alternative Project Delivery
  - ✓ Alternatives to low sealed bid
  - ✓ Matrix of BWS project types and applicable methods
  - ✓ Indefinite delivery/indefinite quantity







## Implementation

- Outreach
  - ✓ State Historic Preservation
  - ✓ Hawaiian Electric Company
  - ✓ General Contractors Association
  - ✓ Government and Public Utilities Task Force
  - ✓ BWS Operations Meeting

State Historic  
Preservation  
Division



Hawaiian  
Electric







## Next Steps

- Training for new Construction Inspector Aides
- MANAO goes live – October 10
- New hires
- Populating MANAO system for future years







## Next Steps

- Formulating metrics and dashboards to determine effectiveness and opportunities for optimization
- Database enhancements for information sharing







## Looking ahead

- Building our future with thoughtful, collaborative solution
- Ensuring safe, dependable and affordable water now and into the future





WATER FOR LIFE

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



Board of Water Supply  
City and County of Honolulu

# Mahalo for your support





ITEM FOR INFORMATION NO. 3

"September 26, 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 August 2016. The monthly production average for August 2016 was 140.00 million gallons per day.

The Board of Water Supply rainfall index for the month of August 2016 was 184 percent of normal; with a 5-month moving average of 165 percent. As of September 13, 2016, the Hawaii Drought Monitor shows no dry conditions for the island of Oahu.

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

Most leeward index monitoring wells are exhibiting static or slightly decreasing trends due to the increased pumpage during the summer months, whereas windward wells are exhibiting increasing trends during the same time period.

Respectfully submitted,

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

Attachments"

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 AUGUST 2016**

**POTABLE**

STATION	MGD
HONOLULU (1)	
KULIOUOU	0.06
WAILUPE	0.05
AINA KOA	0.41
AINA KOA II	1.07
MANOA II	0.00
PALOLO	1.13
KAIMUKI HIGH	2.22
KAIMUKI LOW	2.15
WILDER	7.34
BERETANIA HIGH	5.03
BERETANIA LOW	1.10
KALIHI HIGH	1.72
KALIHI LOW	3.92
KAPALAMA	0.60
KALIHI SHAFT	8.43
MOANALUA	0.63
HALAWA SHAFT	7.39
KAAMILO	0.00
KALAUAO	7.24
PUNANANI	12.12
KAAHUMANU	0.92
HECO WAIU	2.68
MANANA	0.39
WELLS SUBTOTAL:	66.61
MANOA TUNNEL	0.17
PALOLO TUNNEL	0.23
GRAVITY SUBTOTAL:	0.40
HONO. SUBTOTAL:	67.01

STATION	MGD
WINDWARD (2)	
WAIMANALO II	0.40
WAIMANALO III	0.28
KUOU I	0.03
KUOU II	0.07
KUOU III	0.19
LULUKU	1.01
HAIKU	0.32
IOLEKAA	0.00
KAHALUU	0.83
KAHANA	0.79
PUNALUU I	0.00
PUNALUU II	2.61
PUNALUU III	1.14
KALUANUI	0.00
MAAKUA	0.40
HAUULA	0.00
WELLS SUBTOTAL:	8.09
WAIM. TUNNELS I & II	0.00
WAIM. TUNNELS III&IV	0.19
WAIHEE INCL. WELLS	0.95
WAIHEE TUNNEL	5.01
LULUKU TUNNEL	0.08
HAIKU TUNNEL	0.00
KAHALUU TUNNEL	1.57
GRAVITY SUBTOTAL:	7.79
WIND. SUBTOTAL:	15.88

STATION	MGD
NORTH SHORE (3)	
KAHUKU	0.33
OPANA	1.02
WAIALEE I	0.00
WAIALEE II	0.00
HALEIWA	0.00
WAIALUA	2.08
N.SHORE SUBTOTAL:	3.43

STATION	MGD
MILILANI (4)	
MILILANI I	2.94
MILILANI II	0.00
MILILANI III	0.00
MILILANI IV	1.57
MILILANI SUBTOTAL:	4.51

STATION	MGD
WAHIAWA (5)	
WAHIAWA	1.97
WAHIAWA II	1.34
WAHIAWA SUBTOTAL:	3.30

STATION	MGD
PEARL CITY-HALAWA (6)	
HALAWA 277	0.88
HALAWA 550	0.00
AIEA	0.95
AIEA GULCH 497	0.54
AIEA GULCH 550	0.23
KAONOH I	0.81
WAIMALU I	0.00
NEWTOWN	0.92
WAIU	0.72
PEARL CITY I	0.53
PEARL CITY II	1.06
PEARL CITY III	0.35
PEARL CITY SHAFT	0.93
PEARL CITY-HALAWA SUBTOTAL:	7.92

STATION	MGD
WAIPAHU-EWA (7)	
WAIPIO HTS.	0.98
WAIPIO HTS. I	0.87
WAIPIO HTS. II	0.35
WAIPIO HTS. III	1.14
WAIPAHU	1.79
WAIPAHU II	0.98
WAIPAHU III	3.82
WAIPAHU IV	2.46
KUNIA I	5.01
KUNIA II	2.47
KUNIA III	1.39
HOAEAE	7.32
HONOULIULI I	0.00
HONOULIULI II	4.37
MAKAKILO	0.34
WAIPAHU-EWA SUBTOTAL:	33.28

STATION	MGD
WAIANAE (8)	
MAKAHA I	0.48
MAKAHA II	0.09
MAKAHA III	0.92
MAKAHA V	0.44
MAKAHA VI	0.00
MAKAHA SHAFT	0.00
KAMAILE	0.13
WAIANAE I	0.09
WAIANAE II	0.33
WAIANAE III	0.64
WELLS SUBTOTAL:	3.11
WAI. C&C TUNNEL	1.40
WAI. PLANT. TUNNELS	0.16
GRAVITY SUBTOTAL:	1.56
WAIANAE SUBTOTAL:	4.67

**NONPOTABLE**

NONPOTABLE	MGD
KALAUAO SPRINGS	0.47
BARBERS POINT WELL	1.29
GLOVER TUNNEL NP	0.42
NONPOTABLE TOTAL:	2.19

**RECYCLED WATER (JULY 2016)**

RECYCLED WATER	MGD
HONOULIULI WRF R-1	7.93
HONOULIULI WRF RO	1.35
RECYCLED WATER TOTAL:	9.28



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

**PRODUCTION SUMMARIES**

TOTAL WATER	MGD
PUMPAGE	130.25
GRAVITY	9.75
POTABLE TOTAL:	140.00
NONPOTABLE	2.19
RECYCLED WATER	9.28
TOTAL WATER:	151.47

CWRM PERMITTED USE AND BWS ASSESSED YIELDS FOR BWS POTABLE SOURCES				
WATER USE DISTRICTS		A PERMITTED USE/ BWS YLDS	B AUG 2016	C DIFF. A-B
1	HONOLULU	82.93	66.61	16.32
2	WINDWARD	25.02	9.92	15.10
3	NORTH SHORE	4.74	3.43	1.31
4	MILILANI	7.53	4.51	3.02
5	WAIHAWA	4.27	3.30	0.97
6	PEARL CITY-HALAWA	12.25	7.92	4.33
7	WAIPAHU-EWA	50.63	33.28	17.35
8	WAIANAE	4.34	3.11	1.23
TOTAL:		191.71	132.08	59.63

CWRM PERMITTED USE FOR BWS NONPOTABLE SOURCES				
WATER USE DISTRICTS		A PERMITTED USE	B AUG 2016	C DIFF. A-B
7	WAIPAHU-EWA (BARBERS POINT WELL)	1.00	1.29	-0.29
TOTAL:		1.00	1.29	-0.29

**EFFECTIVE WATER DEMAND PER DISTRICT**

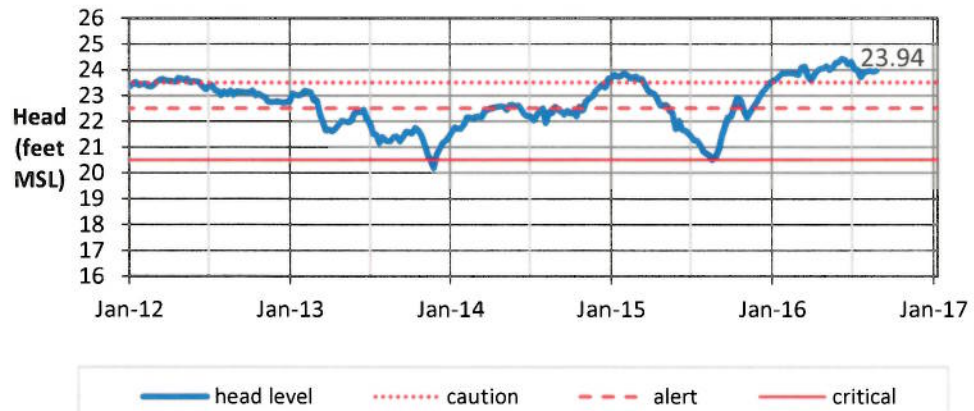
IMPORT/EXPORT BETWEEN WATER USE DISTRICTS			
FROM	TO		MGD
2	1	WINDWARD EXPORT	0.14
7	8	BARBERS PT LB	4.80

WATER USE DISTRICTS		SUBTOTAL	IMPORT	EXPORT	EFFECTIVE WATER DEMAND
1	HONOLULU	66.61	0.14	-	66.75
2	WINDWARD	9.92	-	0.14	9.78
3	NORTH SHORE	3.43	-	-	3.43
4	MILILANI	4.51	-	-	4.51
5	WAIHAWA	3.30	-	-	3.30
6	PEARL CITY-HALAWA	7.92	-	-	7.92
7	WAIPAHU-EWA	33.28	-	4.80	28.48
8	WAIANAE	3.11	4.80	-	7.91
TOTAL:		132.08	4.94	4.94	132.08

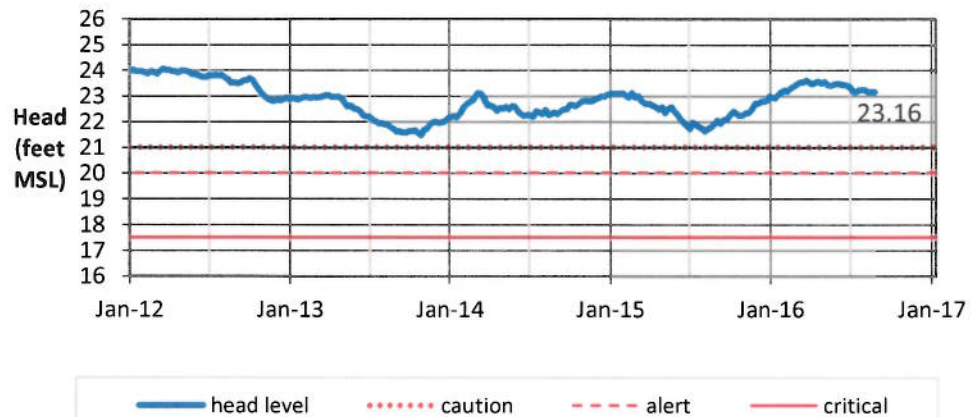


## Weekly Head Report

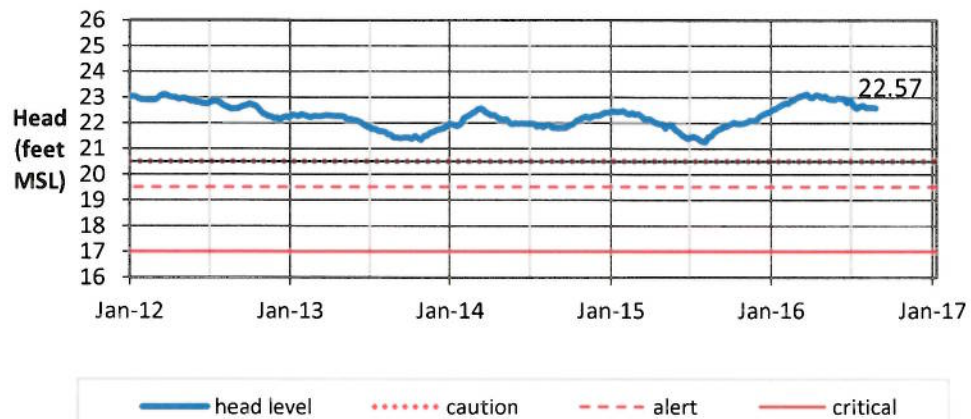
### Kaimuki 08/28/16



### Beretania 08/28/16



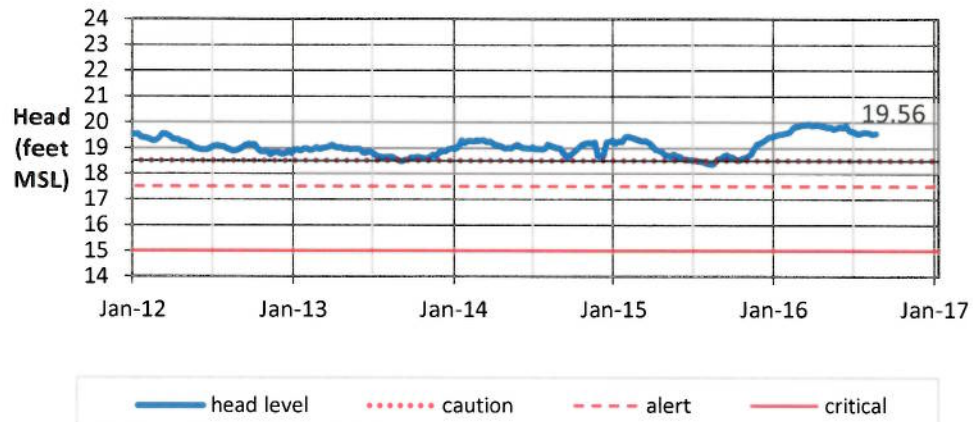
### Kalihi 08/28/16



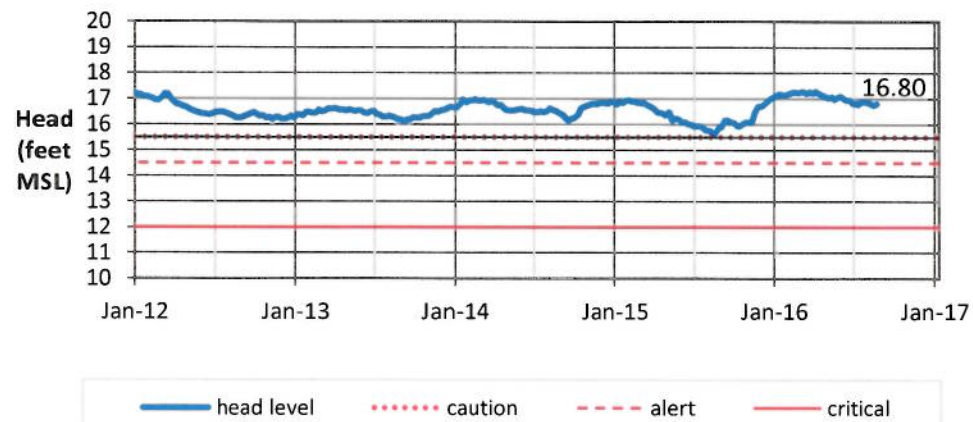


## Weekly Head Report

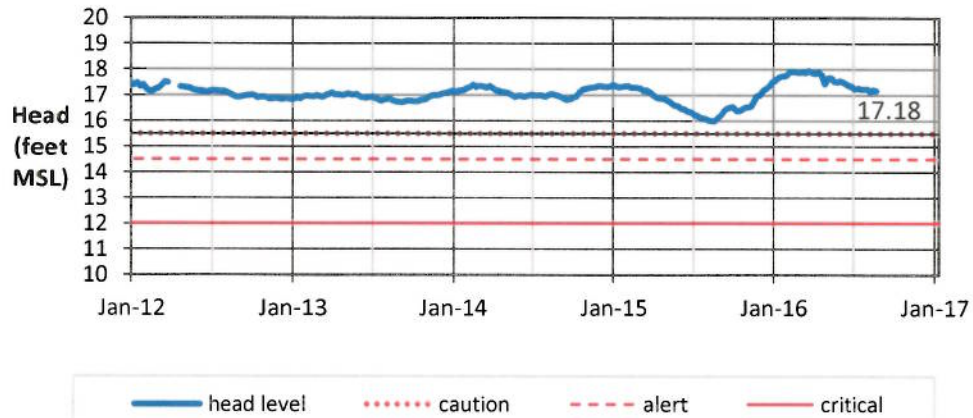
### Moanalua 08/28/16



### Halawa 08/28/16



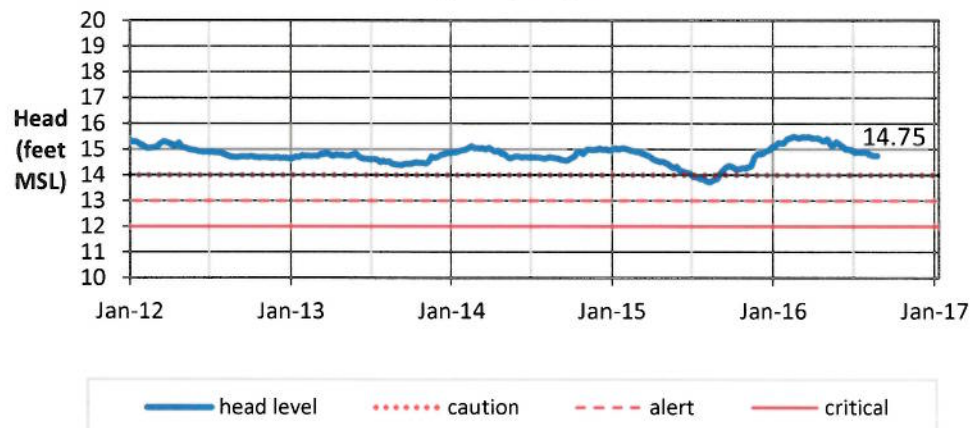
### Kalauao 08/28/16



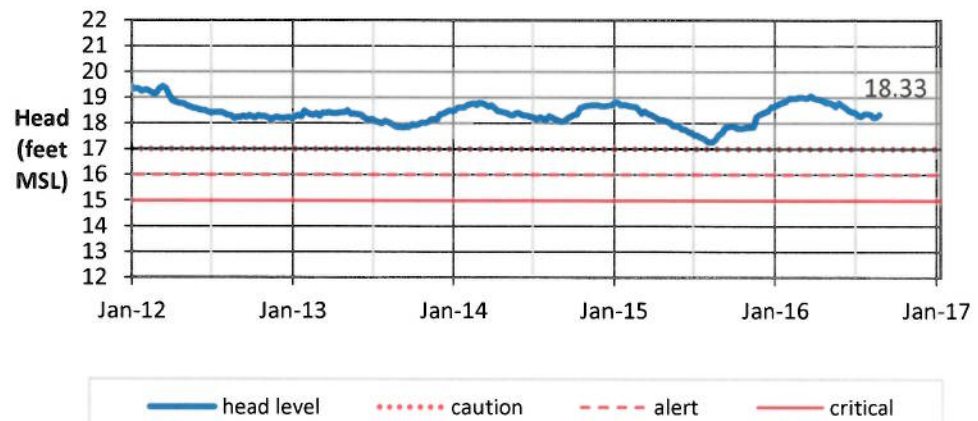


## Weekly Head Report

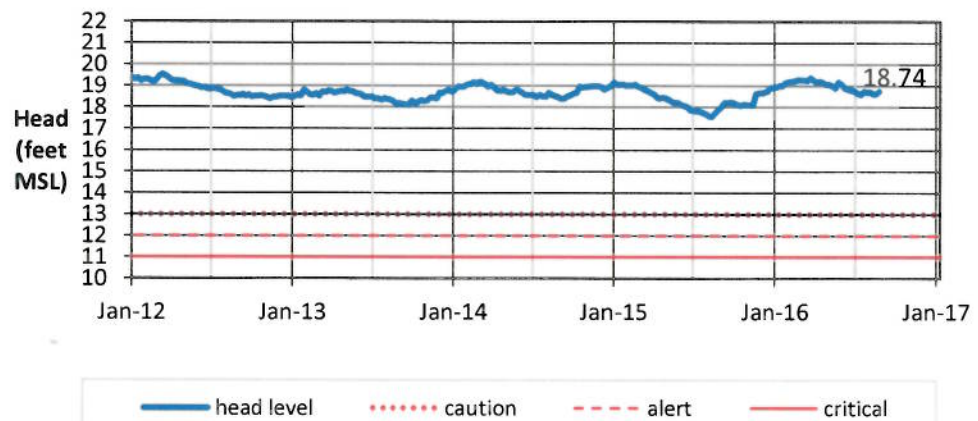
### Pearl City 08/28/16



### Waipahu 08/28/16



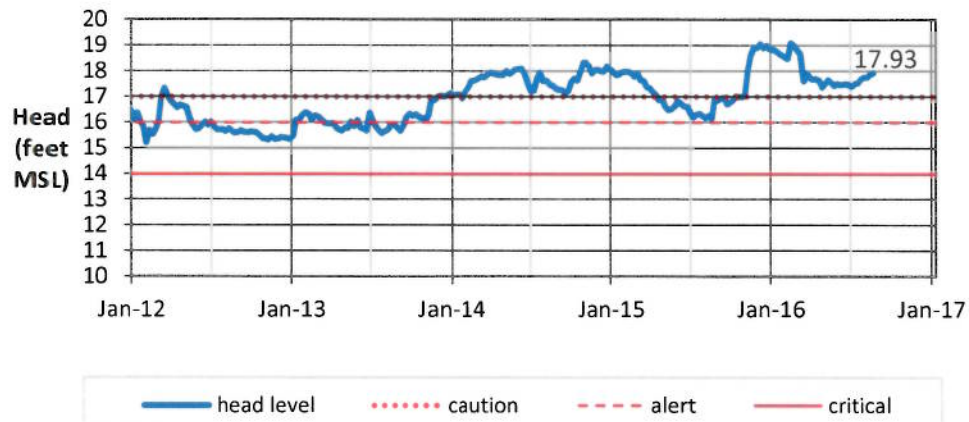
### Hoeaee-Kunia 08/28/16



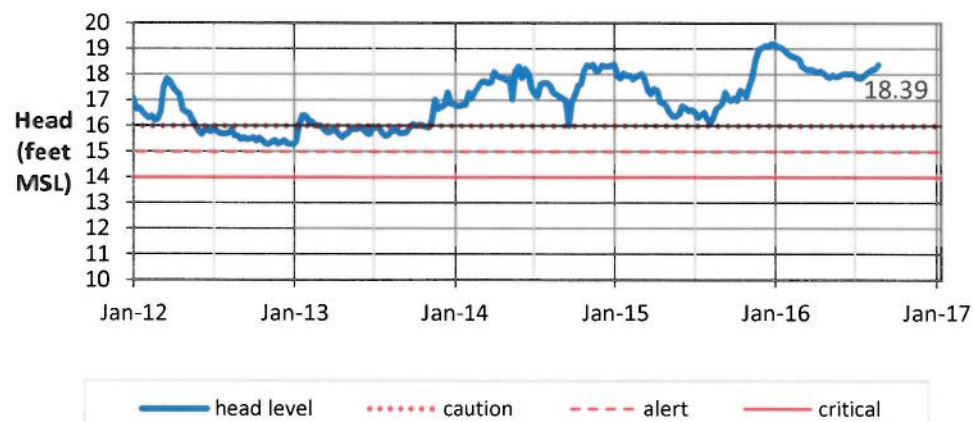


## Weekly Head Report

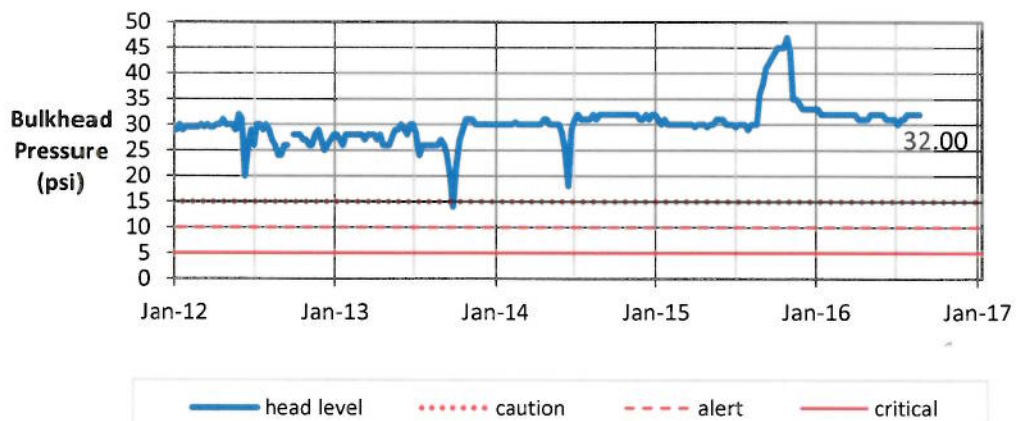
### Punaluu 08/28/16



### Kaluanui 08/28/16

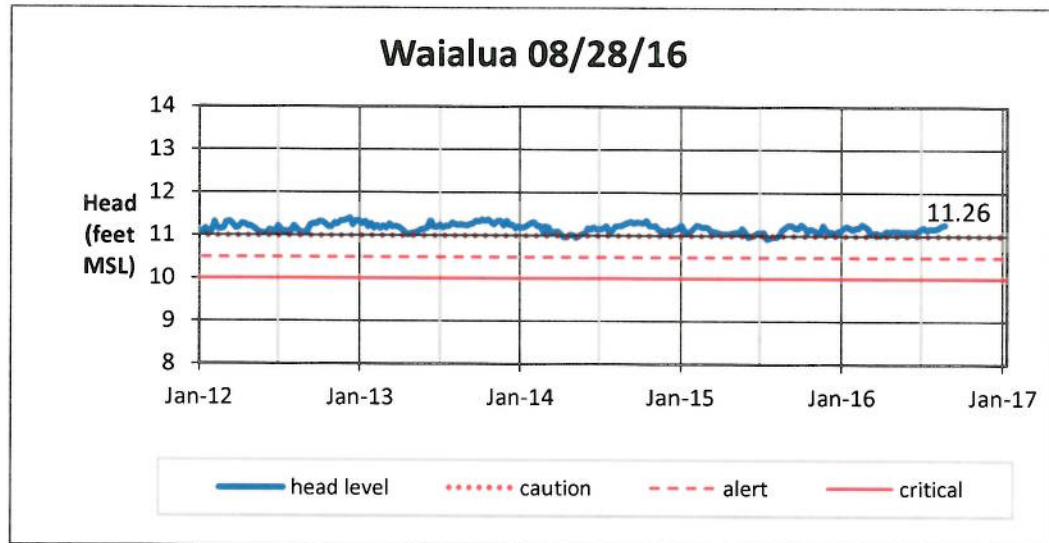


### Waihee Tunnel 08/28/16



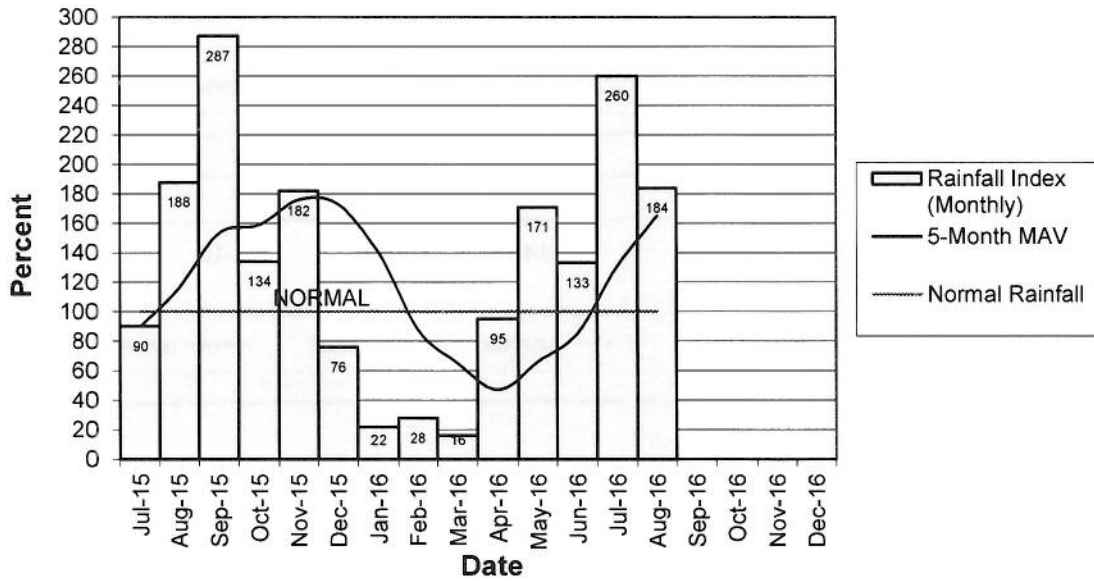


## Weekly Head Report

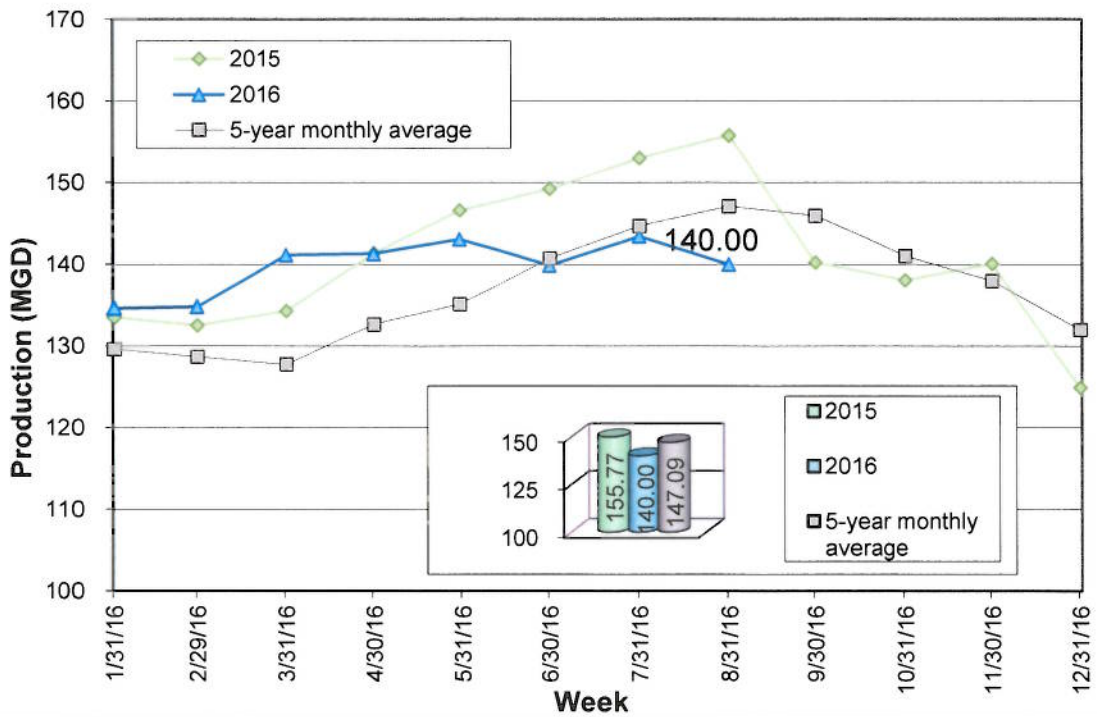




### HONOLULU WATERSHED AREA Rainfall Intake



### Monthly Production



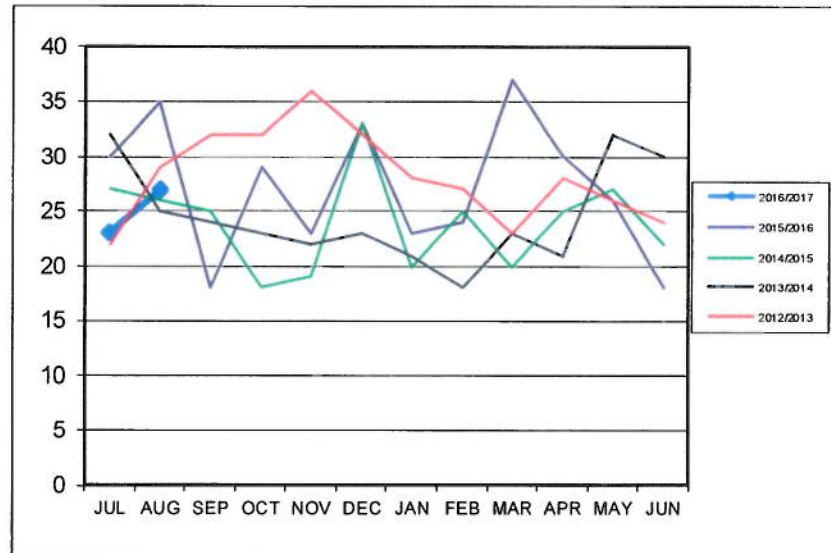


ITEM FOR INFORMATION NO. 4

**WATER MAIN REPAIR REPORT**  
**for August 2016**

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
2016/2017	23	27											50
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
8/1	2326 Kuahea St.	8" C.I.
8/2	1159 Kahului St.	8" D.I.
8/3	1103 Hoolai St.	6" C.I.
8/4	85-786 Old Government Rd.	6" C.I.
8/4	860 Mokulua Dr.	8" PVC
8/4	94-1024 Lelepua Pl.	8" A.C.
8/6	1476 Ala Iolani St.	8" PVC
8/7	42 Puiwa Rd.	12" PVC
8/8	702 Wyllie St.	6" C.I.
8/9	40 Dowsett Ave.	8" PVC
8/10	<b>67-27 Kaimanu Pl.*</b>	8" C.I.
8/11	95-176 Waikalani Dr.	8" C.I.
8/12	54-184 Kawaeku St.	8" C.I.
8/13	85-288 McArthur St.	8" PVC
8/15	98-160 Kamehameha Hwy.	12" C.I.
8/16	38 Bates St.	6" C.I.
8/16	94-1223 Awalahi St.	8" C.I.
8/16	103 Kaiolena Dr.	8" PVC
8/18	98-825 Moanalua Rd.	8" C.I.
8/19	94-113 Pupupuhi St.	8" C.I.
8/19	84-580 Farrington Hwy.	12" PVC
8/19	86-752 Puuhulu Rd.	8" C.I.
8/22	1462 Kolopua St.	8" C.I.
8/24	Farmers Rd. & Iiwi St.	8" C.I.
8/24	3209 Ualena St.	12" C.I.
8/25	91-544 Aekai Pl.	4" C.I.
8/31	5132 Poola St.	8" C.I.



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

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



## DISCUSSION

Mr. Lau introduced Daryl Hiromoto, Field Operations Division Program Administrator, to Ms. Matsui. He informed Ms. Matsui that Field Operations is the division that maintains the pipes, fire hydrants and valves in the system and the division that goes out at any time of the day or night to make repairs.

Mr. Hiromoto 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 §92-4 and §92-5(a)(4)] at 2:47 PM to Consult with the Board's Attorney and to Consider Issues Pertaining to Matters Posted for Discussion at an Executive Session.

OPEN  
SESSION

The Board reconvened in Open Session at 3:19 PM

MOTION TO  
ADJOURN

There being no further business Acting Chair Wong at 3:19 PM called for a motion to adjourn the Open Session. Kapua Sproat so moved; seconded by Bryan Andaya and unanimously carried.

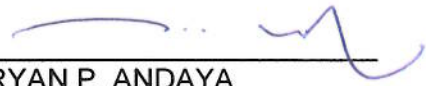
THE MINUTES OF THE REGULAR SESSION BOARD MEETING ON SEPTEMBER 26, 2016 WERE APPROVED AT THE OCTOBER 24, 2016 BOARD MEETING			
	AYE	NO	COMMENT
BRYAN P. ANDAYA	X		
ADAM C. WONG			ABSENT
DAVID C. HULIHEE	X		
KAPUA SPROAT	X		
KAY C. MATSUI	X		
ROSS S. SASAMURA	X		
FORD N. FUCHIGAMI	X		

Respectfully submitted,



LISA K. KIM

APPROVED:



BRYAN P. ANDAYA  
Chair of the Board

**OCT 24 2016**  
Date