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2018 APR -5 AM 9:33

OFFICE OF THE  
COUNTY COUNCIL



**BOARD OF WATER SUPPLY  
COUNTY OF MAUI**

200 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793-2155  
TELEPHONE (808) 270-7816 • FAX (808) 270-7951 • www.mauiwater.org

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2018 APR -3 AM 8:49

OFFICE OF THE MAYOR

April 2, 2018

Honorable Alan M. Arakawa  
Mayor, County of Maui  
200 South High Street  
Wailuku, Maui, Hawaii 96793

For Transmittal to:

Honorable G. Riki Hokama, Chair  
Budget and Finance Committee  
200 South High Street  
Wailuku, Maui, HI 96793

A handwritten signature in black ink, appearing to read "Alan Arakawa", followed by the date "4/4/18".

**SUBJECT: FISCAL YEAR ("FY") 2019 BUDGET (BF-1)**

Thank you for your letter of March 27, 2018 regarding the Board of Water Supply's (the Board's) review and submission to the mayor the annual appropriation for operations and capital improvements of the Department of Water Supply. We have attached the following information pursuant to your request:

1. A copy of the March 15, 2018 meeting agenda of which the review of the department's proposed budget for operations and capital improvements were reviewed.
2. A copy of the March 15, 2018 summary minutes relating to the proposed budget.
3. A copy of the budget prepared by the Director, approved by the Board and submitted to the Mayor for inclusion in the Mayor's proposed budget for Fiscal Year 2019.
4. A copy of the Board's letter to Mayor Arakawa dated Marcy 20, 2018.

*"By Water All Things Find Life"*



Alan M. Arakawa, Mayor  
For Transmittal to:  
G. Riki Hokama, Chair  
April 2, 2018  
Page 2

The Board has by a vote of 5 ayes, no nays, recommended their approval to the mayor the Department of Water Supply's proposed Fiscal Year 2019 budget for operations and capital improvements as submitted at their March 15, 2018 meeting.

Sincerely,

A handwritten signature in black ink, appearing to read "Anders Lyons".

Anders Lyons  
Chair

AL:ghh

copy: Sandy Baz, Budget Director  
Gladys Baisa, Deputy Director  
Edward S. Kushi, Jr., First Deputy Corporation Council

RECEIVED

2018 MAR -9 AM 11: 30

BOARD OF WATER SUPPLY, COUNTY OF MAUI  
REGULAR MEETING

OFFICE OF THE  
COUNTY CLERK

BOARD MEMBERS: Anders Lyons, Chair  
R. Raymond Cabebe, Vice Chair  
Shay Chan Hodges  
Norman Franco  
Sylvia Ho  
Cyrus Kodani  
Zoltan Milaskey  
Michael Nakashima  
Thomas Watanabe

DATE: March 15, 2018

TIME: 9:00 a.m.

PLACE: Planning Department Conference Room  
First Floor, Kalana Pakui Building  
250 South High Street  
Wailuku, Hawaii 96793

AGENDA

- I. CALL TO ORDER
- II. APPROVAL OF MINUTES
  - A. Minutes of January 18, 2018
- III. TESTIMONY FROM THE PUBLIC

All testimony shall be relevant to the meeting agenda's specific items.

The Board shall receive testimony first from persons whose testimony forms are submitted prior to the convening of the meeting. Three (3) minutes will be granted for each testimony item. At the discretion of the Board Chair, an additional minute may be granted to conclude testimony. An additional three (3) minutes on each testimony presentation may be granted to those who are unable to conclude their testimony in the originally allotted time period, after all testifiers have been heard.

(Continue)

IV. UNFINISHED BUSINESS

- A. Maui Water Use and Development Plan Update, Overview of Part III, Chapter 16, Ko'olau Aquifer Sector

V. FY2019 BUDGET

- A. Discussion and possible action on the Department of Water Supply's Proposed FY2019 Operations and CIP Budget for the Board's Review and Submittal to the Mayor

VI. OTHER BUSINESS

- A. Discussion and possible action for Current Board Members to review the Board's Previous Determinations and Communications to Director Taylor, Department of Water Supply, regarding "A Bill For An Ordinance Amending Title 19, Maui County Code, To Establish A Wellhead Protection Overlay District"
- B. Overview of Department of Water Supply's Ultra-High Efficiency Toilet Replacement Program
- C. Receipt of Board Member request for agenda items to be placed on future agendas

VII. DIVISION REPORTS

- A. January Division Operational Reports (copies available upon request)
  - 1. Plant Operations
    - a. Monthly Source Reports
    - b. Monthly Report – January 2018
  - 2. Water Treatment Plants
    - a. Water Treatment Facilities Production Log
    - b. Water Treatment Monthly Report
  - 3. Field Operations
    - a. Monthly Status Report - January 2018
  - 4. Water Resources and Planning
    - a. Groundwater Use – Maui for January 2018
    - b. Groundwater Use – Molokai for January 2018
- B. February Division Operational Reports (copies available upon request)

(Continue)

Board of Water Supply  
Agenda – Regular Meeting  
March 15, 2018

1. Plant Operations
  - a. Monthly Source Reports
  - b. Monthly Report – February 2018
2. Water Treatment Plants
  - a. Water Treatment Facilities Production Log
  - b. Water Treatment Monthly Report
3. Field Operations
  - b. Monthly Status Report - February 2018
4. Water Resources and Planning
  - a. Groundwater Use – Maui for February 2018
  - b. Groundwater Use – Molokai for February 2018

VIII. RESOLUTIONS

- A. Resolution 18-01, Commending Cyrus Kodani for his service and presentation of a koa plaque
- B. Resolution 18-02, Commending Thomas Watanabe for his service and presentation of a koa plaque

IX. ADJOURN

Agenda items are subject to cancellation. For a confirmation of the meeting date and time, and for tentative scheduling of agenda items, please contact the Board of Water Supply secretary at 270-7304.

Oral or written testimony on any agenda item will be accepted. Written testimony must be submitted by delivering a legible copy to the Board of Water Supply secretary, 200 South High Street, Fifth Floor, Wailuku, Hawaii 96793-2155; or faxing to 808-270-7951, 24 hours prior to the meeting so copies can be provided to the Board members. If written testimony is submitted at the meeting, please provide 15 copies prior to the close of oral testimony.

Individuals who intend to attend the meeting who have special needs or require special accommodations that will assist in his or her successful participation in the meeting (e.g., large print, taped materials, sign-language interpreter, accessible parking, etc.), should call the Board of Water Supply secretary at least three working days prior to the meeting date.

Documents on file with the Board and which may include correspondence relating to the agenda items above, may be inspected prior to the meeting date. Photocopies may be ordered, subject to charges imposed by law (Maui County Code, Sec 2-64-010). Please contact the Board of Water Supply secretary to make arrangements for inspection or photocopying of documents.

(Continue)

Board of Water Supply  
Agenda – Regular Meeting  
March 15, 2018

Pursuant to HRS §92-5(a)(4), an executive session may be called in order for the board to consult with their attorney on questions and issues pertaining to the board's powers, duties, privileges, immunities, and liabilities.

BOARD OF WATER SUPPLY  
COUNTY OF MAUI

REGULAR MEETING  
MINUTES OF MARCH 15, 2018

The regular meeting of the Maui County Board of Water Supply was held at the Department of Planning Conference Room, 250 South High Street, Wailuku, Maui, on Thursday, March 15, 2018.

CALL TO ORDER

The meeting was called to order by Chair Lyons at 9:07 a.m.

ATTENDANCE

Members present: Anders Lyons, Chair  
R. Raymond Cabebe  
Shay Chan Hodges  
Cyrus Kodani  
Thomas Watanabe

Staff present: Gladys C. Baisa, Deputy Director  
Jennifer Oana, Deputy Corporation Counsel  
Alex De Roode, Planner VI  
Alex Buttaro, Planner IV  
Robert DeRobles, Planner VI  
Holly Ho, Fiscal Officer  
Wendy Taomoto, Engineering Program Manager  
Thomas Ochwat, Civil Engineer VI  
Gaye Hayashida, Commission Support Clerk

APPROVAL OF MINUTES

Minutes of January 18, 2018

Chair Lyons asked for a motion to approve the minutes of January 18, 2018.

Motion: Vice Chair Cabebe moved to approve the minutes of January 18, 2018

Second: Member Chan Hodges

Discussion: None

Vote: Unanimous. Motion carried. The minutes of January 18, 2018 were approved as submitted.

### TESTIMONY FROM THE PUBLIC

Copies of two written testimony on the proposed Wellhead Protection Overlay District ordinance are attached.

Lucienne deNaie, gave public testimony on the Wellhead Protection Plan and on the Water Use and Development Plan.

Ms. deNaie said that she has been to 3 meetings on the proposed Wellhead Protection Overlay District ordinance and as someone who depends on her well she wants to make sure that she knows what is going on up slope and this ordinance is a good tool. She urged this board to support the long work that has been done and support the county moving forward to protect the public water supply.

Ms. deNaie also spoke on the Ko'olau Sector of the Maui Island Water Use and Development Plan.

She explained that the whole Ko'olau area has probably many more private wells than have been included in the report. It is kind of a tricky sector because a lot of the water generated in this sector has gone elsewhere. But that's shifting around now and no one knows how much water will be taken or where it is going.

Ms. deNaie added that this report needs to carefully explain that we don't have information about the stream flows in East Maui. There are only 3 gauges for the 60 streams in this area which is not much information gathering and yet we all want to use that water.

Though she is in support of these watershed partnerships, the people of Keanae and Wailuanui were never included. We really need a robust conversation on taking care of the lower parts where all the diversions are taking place and the delivery system.

### UNFINISHED BUSINESS

#### Maui Water Use and Development Plan Update, Overview of Part III, Chapter 16, Ko'olau Aquifer Sector

Alex De Roode, Planner VI, Water Resources and Planning Division, presented Chapter 16, Ko'olau Aquifer Sector Area of the Maui Island Water Use and Development Plan. A copy of the power point presentation is attached.

After Mr. De Roode's presentation, Mr. Caleb Rowe, Deputy Corporation Counsel, updated the board on the East Maui IIFS proceeding.

The water use at the Waikamoi Ditch has been preserved in its entirety. The commission determined that there is only a 1.8% habitat loss and as a result there were no competing costs and benefits between restoration and continued diversions.

The hearing officer's decision stated that 16 million gallons a day out of the Wailoa Ditch for use by MDWS is reasonable and it was included in the calculations for how much to restore to the stream flow and that is currently 7.5 million gallons a day more than our current capacity at Kamole Weir. He considered both the projected future needs of HC&S, the projected 16 million gallons a day for Maui DWS and the shortage is only going to be about 3.5 - 4 million gallons a day, well within the realm of error.

In the end, the county is quite happy with this result. It recognizes basically all future needs going into 2035. But again, this all depends on development of additional treatment capacity.

### FY2019 BUDGET

#### Discussion and possible action on the Department of Water Supply's Proposed FY2019 Operations and CIP Budget for the Board's Review and Submittal to the Mayor

Chair Lyons explained that the board is being asked to provide some feedback to the mayor and council on the FY2019 budget but was unable to take action at the last meeting.

Deputy Director Baisa pointed out that there was a revision in the CIP proposed budget and provided the members with a letter, dated March 12, 2018, explaining what the department will be giving to the mayor is a little bit more than what was presented previously. The members reviewed the letter

Chair Lyons stated that while he appreciates the amount of money that has been allotted towards watershed protection and watershed partnership, he would like to see it increase in future years. The amounts that the federal, state and county provide is not enough.

Motion: Member Chan Hodges moved to support the department's Fiscal Year 2019 Operating and CIP Budget as presented with additional comments on watershed protection

Second: Member Cabebe

Discussion: None

Vote: 5 Ayes, no nays. Motion carried. The Board will send their recommendation to Mayor Arakawa.

### OTHER BUSINESS

#### Discussion and possible action for Current Board Members to review the Board's Previous Determinations and Communications to Director Taylor, Department of Water

Supply, regarding "A Bill For An Ordinance Amending Title 19, Maui County Code, To Establish A Wellhead Protection Overlay District"

Chair Lyons stated that it seems that at least 3 board members still felt that the board should not reverse their original recommendations, though all the members present felt that in principle protecting our wells is a very good idea.

Ms. Oana proposed a compromised wording expressing the board's support of wellhead protection but expressing concerns with how the ordinance will be implemented and about costs to landowners for permitting and best management practices (bmp) and the board welcomes the WRC and county council to pursue this matter further.

Motion: Vice Chair Cabebe moved to accept Ms. Oana's suggestion that "the Board supports wellhead protection but does have concerns with how the ordinance will be implemented and the costs for landowners for permitting and bmp's. The Board welcomes the Water Resources Committee and the council to further pursue this matte" and send the letter to the Council's send a letter to the Water Resources Committee.

Second: Member Kodani

Discussion: No further discussion.

Vote: 5 ayes, no nays. Motion carried. Staff will draft the letter for the chair's signature.

Overview of Department of Water Supply's Ultra-High Efficiency Toilet Replacement Program

Robert DeRobles, Planner VI, Water Resources and Planning Division, shared with the board the department's new toilet replacement pilot program. Even with a 1.6 gallon per flush toilet it will be a 50% reduction per household. Their goal is to implement 100 toilets at .8 gallons per flush this year.

In 1992 everyone was required to install toilets with 1.6 galloon per flush. Since then there have been a lot more efficient household fixtures so the department is trying to implement this for the rate-payers.

The qualifications for this program is that they must have at least a 2.5 gallons per flush toilet and then procure a contractor to install it. The applicant must fill out a form and submit it to the Water Resources and Planning Division. Staff will then review the applications and make the decision on who gets it and where it's going. The applicant must go to Lowe's with a certificate from the department and then Lowe's will give them a new toilet. The department will require before and after bills to see what the actual savings are. And this program is only for single family residential customers.

Receipt of Board Member request for agenda items to be placed on future agendas

1. Discuss drafting a letter to the mayor regarding more gender diversity for boards and commisions
2. Report by the chair and vice chair about their meeting with Council Member Atay
3. Maui Island Water Use and Development Plan, chapters on the Wailuku and Central Aquifer Sectors

DIVISION REPORTS

January Division Operational Reports

February Division Operational Reports

Deputy Director Baisa reported that there is nothing unusual to report. She pointed out that thanks to all the crazy rain that the Maui has been having everything is full. So we can quit worrying about drought for a little while.

RESOLUTIONS

Chair Lyons read the following resolutions into the record.

Resolution 18-01, Commending Cyrus Kodani for his service and presentation of a koa plaque

“Whereas, Cyrus Kodani of Lahaina, Maui was appointed to the Board of Water Supply of the County of Maui on April 1, 2013 and his term will expire on March 31, 2018; and

Whereas, during the time of his service as a Board Member, the said Cyrus Kodani greatly influenced and helped to shape the Board of Water Supply’s recommendation to the Director, the Mayor, and the County Council regarding the Wellhead Protection Overlay District Ordinance; and

Whereas, the said Cyrus Kodani was instrumental in drafting language to stratify the Agriculture Water Rates; and

Whereas, the said Cyrus Kodani has unselfishly and with dedication devoted, without compensation, his time and energy into matters dealing with the Board of Water Supply, all in the interest of the people of the County of Maui; and

Whereas, during the time of his service as a Board Member, the said Cyrus Kodani contributed his knowledge and skills to make business and policy decisions for the Board of Water Supply that will influence its direction and operation for the years ahead; and

Whereas, the said Cyrus Kodani’s interest in this Board of Water Supply and the Department of Water Supply has been greatly appreciated by his fellow Board Members; now, therefore,

Board of Water Supply  
Minutes of March 15, 2018

Be it resolved by the Board of Water Supply of the County of Maui that it does hereby congratulate, commend, and thank the said Cyrus Kodani for the 5 years of faithful and outstanding service he has rendered as a member of the Board of Water Supply; and

Be it further resolved that the Members of this Board extend to Cyrus Kodani our sincere Aloha and Best Wishes for his continued success and much happiness in his future endeavors; and

Be it further resolved that a certified copy of this Resolution be transmitted to the said Cyrus Kodani, the Mayor, and to the Maui County Council.”

Resolution 18-02, Commending Thomas Watanabe for his service and presentation of a koa plaque

“Whereas, Thomas Watanabe of Kula, Maui was appointed to the Board of Water Supply of the County of Maui on April 1, 2013 and his term will expire on March 31, 2018; and

Whereas, during the time of his service as a Board Member, the said Thomas Watanabe greatly influenced and helped to shape the Board of Water Supply’s recommendation to the Director, the Mayor, and the County Council regarding the Wellhead Protection Overlay District Ordinance; and

Whereas, the said Thomas Watanabe greatly influenced and helped to stratify the Agriculture Water Rates; and

Whereas, the said Thomas Watanabe has unselfishly and with dedication devoted, without compensation, his time and energy into matters dealing with the Board of Water Supply, all in the interest of the people of the County of Maui; and

Whereas, during the time of his service as a Board Member, the said Thomas Watanabe contributed his knowledge and skills to make business and policy decisions for the Board of Water Supply that will influence its direction and operation for the years ahead; and

Whereas, the said Thomas Watanabe’s interest in this Board of Water Supply and the Department of Water Supply has been greatly appreciated by his fellow Board Members; now, therefore,

Be it resolved by the Board of Water Supply of the County of Maui that it does hereby congratulate, commend, and thank the said Thomas Watanabe for the 5 years of faithful and outstanding service he has rendered as a member of the Board of Water Supply; and

Be it further resolved that the Members of this Board extend to Thomas Watanabe our sincere Aloha and Best Wishes for his continued success and much happiness in his future endeavors; and

Be it further resolved that a certified copy of this Resolution be transmitted to the said Thomas Watanabe, the Mayor, and to the Maui County Council.”

Members Kodani and Watanabe were presented with Mayor Arakawa’s Letter of Appreciation and a Certificate. Also, the department and the board presented them with a koa plaque and lei.

Board of Water Supply  
Minutes of March 15, 2018

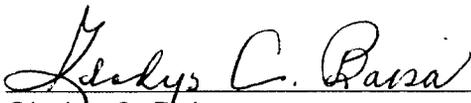
ADJOURNMENT

There being no further business the regular meeting was adjourned at 11:51 a.m.

Prepared by:

  
\_\_\_\_\_  
Gaye Hayashida  
Commission Support Clerk

Approved for distribution:

  
\_\_\_\_\_  
Gladys C. Baisa  
Deputy Director

Written Public Testimony #1

182 Uakoko Place  
Haiku, Hawaii 96708

Mr. Anders Lyons, Chair  
Maui Board of Water Supply  
200 S. High Street  
Wailuku, Hawaii 96793

Dear Chair Lyons and Members of the Board,

I am writing in opposition to your recommending the adoption of an Ordinance Amending Title 19, Maui County Code, to establish a Well Head Protection Overlay District.

As a former Member of the Board, this subject matter has been thoroughly discussed by previous Boards and not approved or adopted by the Maui County Council. The rationale for this not being adopted is that there are present State regulations that currently cover the protection of wells and any more regulation is not necessary. In addition, homeowners that fall into these proposed districts have not been individually notified of this potential impending action.

The Board has many important areas to focus their efforts to moving the Maui Dept. of Water Supply forward. For example, developing a plan to eliminate the upcountry water meter list.

Sincerely,

  
John W. Hoxie, Jr.  
Member 2009-2014

Cc: Ms. Gladys Balsa  
Chair Mike White

Written Public Testimony #2

**TESTIMONY**  
**Agenda Item – A**  
**Wellhead Protection Overlay District**  
BWS Meeting of March 15, 2018

March 12, 2018

Chairman Anders Lyons  
and The Board of Water Supply  
200 S. High Street, 5th Floor  
Wailuku, HI 96793

**Chairman Lyons and BWS Members:**

I was a member of the BWS when the presentation of the Wellhed Protection ordinance was first presented in 2013.

My first concern was that the supporting data was extremely poor regarding the pollution of wells from potential contamination. The study provided to support the need only utilize one contaminant and the presumption made was that all potential contaminants traveled at the same rate in the soil as this single contaminant. This is an impossibility, and the study did nothing regarding any discussion regarding the natural breakdown of any potential contaminants in the soil.

There were just too many unknowns to justify such an ordinance that would draw lines around wells that would surely devalue properties adjacent to these wells with little data to support the size of the arbitrary protected area.

Additional testimony provided by local expertise convinced me that such an ordinance would have many unintended consequences that would do more harm than good for Maui County.

I strongly suggest that the BWS read the available testimony given on this subject in the minutes of the BWS Meeting of December 19, 2013 before proceeding with any action, so that a very misguided project is not repeated again.

Mahalo for allowing me to present testimony.

Sincerely,



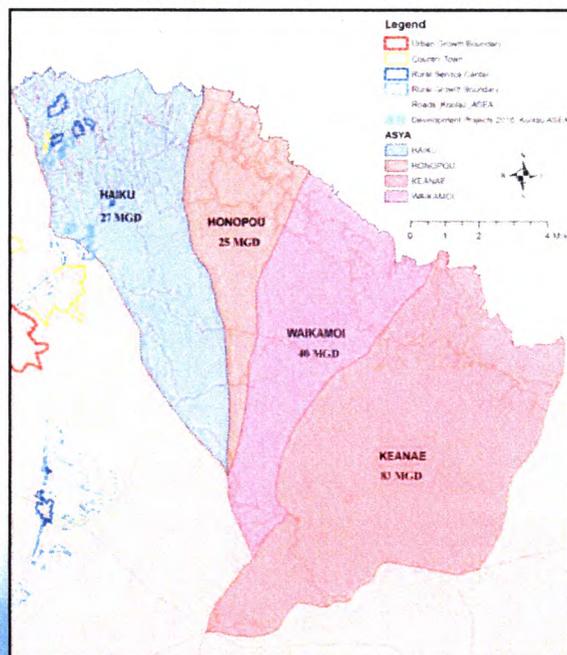
Don R. Gerbig  
6 Tulip Place  
Lahaina, HI 96761

Maui Water Use and Development Plan, Ko'olau Aquifer Sector

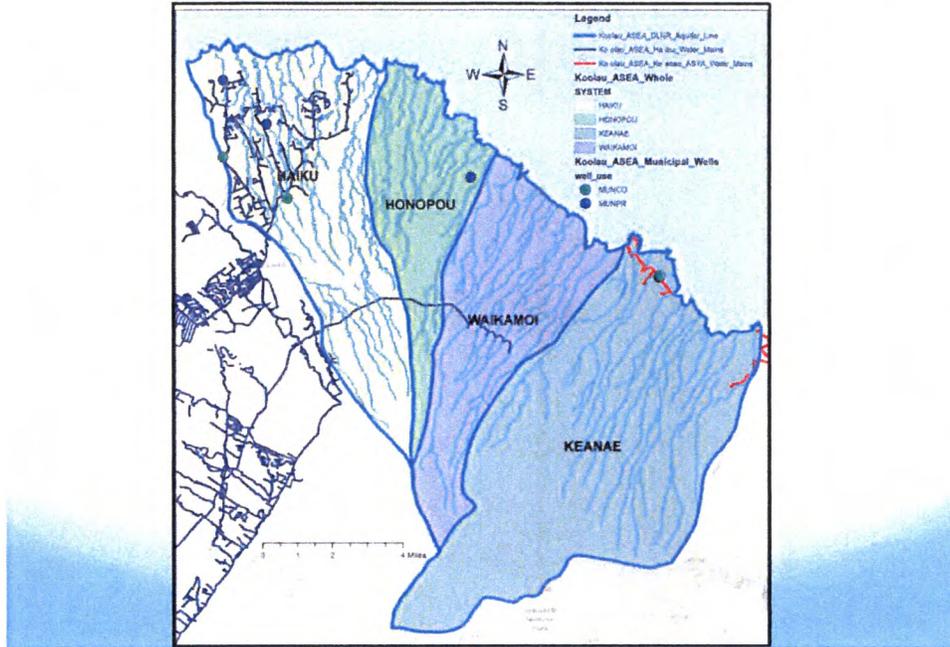


OLA NĀ MEA A PAU I KA WAI  
*By Water All Things Find Life*

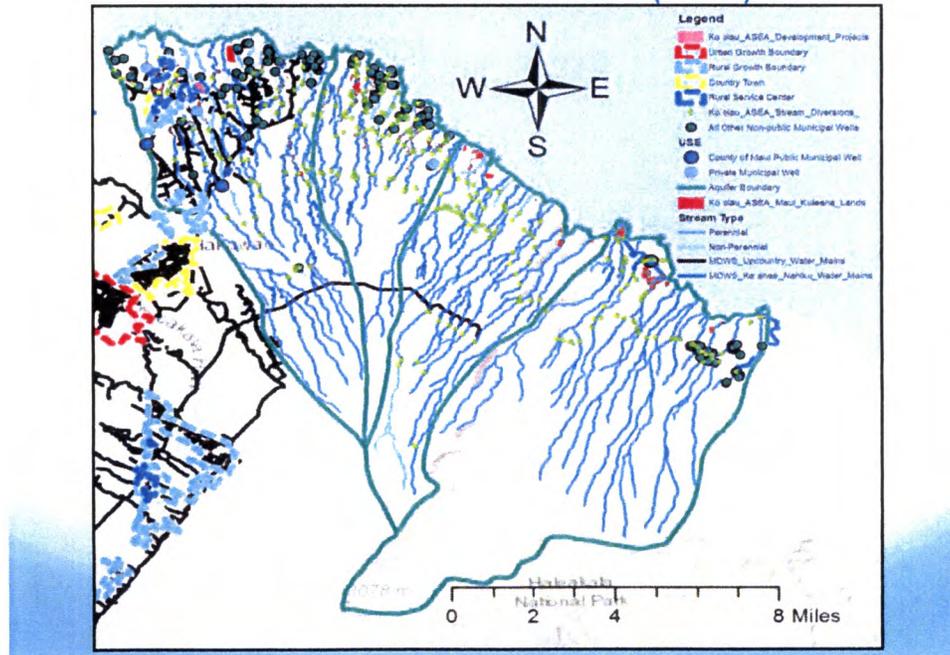
Koolau ASEA: Sustainable Yield and Growth Boundaries



### Koolau ASEA: Overview



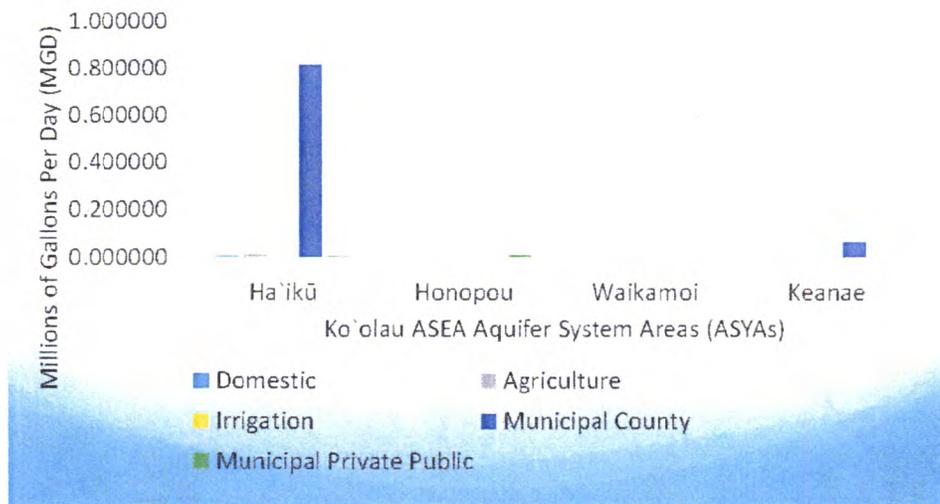
### Koolau ASEA: 2014 Water Use (Cont.)



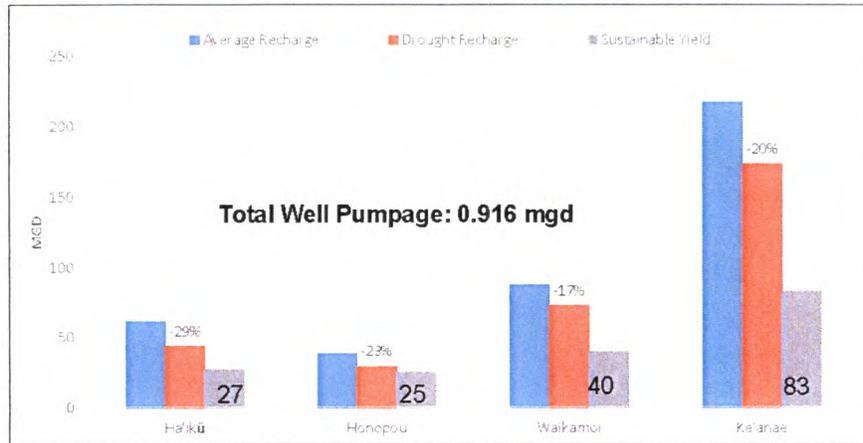
## GW Pumpage by Well Type for Ko`olau Aquifer System Areas (mgd)

Aquifer	Domestic	Industrial	Agriculture	Irrigation	Municipal	Military	Total
<b>Total No. of Production Wells</b>	59	0	43	22	7	0	131
Ha`ikū	7,143	0	13,942	1,695	816,255	0	839,035
Honopou	652	0	0	0	9,786	0	10,438
Waikamoi	0	0	0	0	0	0	0
Ke`anae	0	0	0	0	66,066	0	66,066
<b>Total Pumpage</b>	<b>7,795</b>	<b>0</b>	<b>13,942</b>	<b>1,695</b>	<b>892,107</b>	<b>0</b>	<b>915,539</b>
<b>% of Pumpage</b>	<b>0.85%</b>	<b>0%</b>	<b>1.52%</b>	<b>0.19%</b>	<b>97.44%</b>	<b>0%</b>	<b>100%</b>

## Pumpage by Well Type, Ko`olau ASYAs, 2014 (mgd)



## Koolau ASEA: Sustainable Yield & Groundwater Recharge

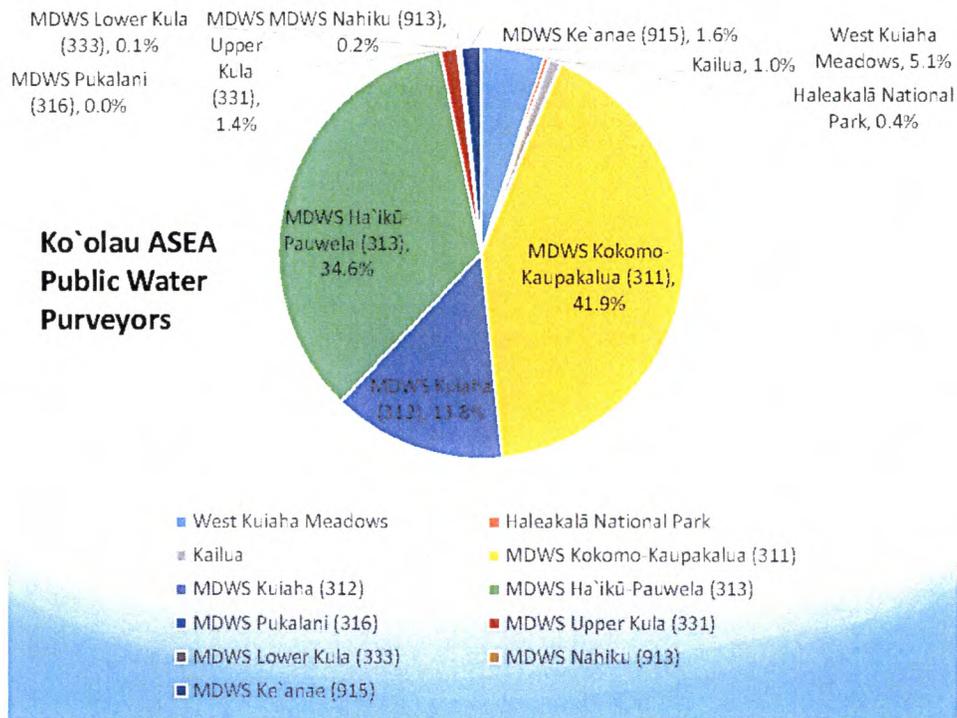


Recharge Average Climate Conditions (mgd)	Recharge Drought Climate Conditions (mgd)	% Decrease Drought Climate Conditions	<b>Total SY: 175 mgd</b>
404	319	21	

## Ground Water Resources

Aquifer System	MDWS Municipal Pumpage 2014 Ave (mgd)	Private Public Municipal Pumpage 2014 (mgd)	Total Pumpage 2014 Ave (mgd)	Pump Capacity (mgd)	Sustainable Yield (mgd)	% of Aquifer System Pumped	% of Aquifer System Potentially Pumped
Ha'ikū	0.811	0.005	0.816		27	3.02%	
Honopou	0.000	0.010	0.010		25	0.04%	
Waikamoi	0.000	0.000	0.000		40	0.0%	
Ke'anae	0.066	0.000	0.066		83	0.08%	
<b>Total</b>	<b>0.877</b>	<b>0.015</b>	<b>0.892</b>	<b>14.314</b>	<b>175</b>	<b>0.51%</b>	<b>8.18%</b>

Board of Water Supply  
Minutes of March 15, 2018



**Koolau ASEA: 2014  
Surface Water Use**

Aquifer	Domes- tic	Indus- trial	Agriculture	Irrig.	Municipal	Milit- ary	Total
<b>Total No. of Surface Water Diversions</b>	0	0	323	0	0	0	305
Koʻolau ASEA	0	0	137,203,803*	0	1,847,000*	0	139,050,803
<b>Total Amount Diverted</b>	<b>0</b>	<b>0</b>	<b>137,203,803</b>	<b>0</b>	<b>1,847,000</b>	<b>0</b>	<b>139,050,803</b>
Percent of Surface Water	0%	0%	98.67%	0%	1.33%	0%	100%
<b>TOTAL GW +SW</b>	<b>7,795</b>	<b>0</b>	<b>137,217,745</b>	<b>1,695</b>	<b>2,739,107</b>	<b>0</b>	<b>139,966,342</b>

## Agricultural Water Use in Koolau ASEA, 2014

<u>Agricultural Land Areas in Ag Water use Analysis</u>	<u>Estimated Water Use (gpd)</u>	<u>Projected Water Use with 20% Increase, 2035 (gpd)</u>
<u>2015 Ag Baseline minus Kuleana Parcels</u>	<u>2,298,428**</u>	<u>2,758,114**</u>
<u>Kuleana Included in 2015 Ag Baseline Analysis (Subtracted from the Ag Baseline Total)</u>	<u>4,156,500**</u>	<u>4,987,800**</u>
<u>Kuleana not Included in 2015 Ag Baseline</u>	<u>12,823,500**</u>	<u>15,388,200**</u>
<u>1989 Declarations of Water Use</u>	<u>1,786,375*</u>	<u>2,143,650*</u>
<b><u>Total Estimated Agricultural Water Use</u></b>	<b><u>21,064,803</u></b>	<b><u>25,277,764</u></b>

## Delivery Capacity of EMI Ditch System

- The Ko`olau Department of Agriculture's AWUDP (2004) listed the average delivery at 165 mgd with a delivery capacity of 435 mgd.
- Wailoa Ditch                      195 mgd
- New Hamakua Ditch            100 mgd
- Lowrie Ditch                      70 mgd
- Ha`ikū Ditch                      70 mgd
- Total Capacity                    435 mgd

### IIFS and Undiverted Quantities for East Maui Streams in Contested Case

	IIFS	Natural undiverted	Available for diversion upstream
Makapipi	0.54	0.84	0.3
Hanawi	0.06		0
Waiohue	2.07		0
Kopliula	2.07		0
Puakaa	0.45		0
E Wailuaiki	2.39		0
W Wailuaiki	2.46		0
Wailuanui	2.52	3.94	1.42
Waikamilo	0	3.17	3.17
Palauhulu	0	7.11	7.11
Waikamoi	2.78		0
Hanehoi	0.71	2.52	1.81
Puolua	0.06	0.97	0.91
Honopou	2.71	4.2	1.49
<b>Total:</b>	<b>18.82</b>	<b>22.75</b>	<b>16.21</b>

#### MDWS Surface Water Needs from Ko'olau ASEA, 2015

Location	MDWS Average Daily Use (mgd)	Source	Water Use
Kamole Weir WTP	3.6	Ko'olau/Wailoa Ditch	Potable
Piiholo WTP	2.5	Lower Waikamoi Flume	Potable
Olinda WTP	1.6	Upper Waikamoi Flume	Potable
<b>Total Potable</b>	<b>7.7</b>		
Kula Ag Park	3.5	Ko'olau/Wailoa Ditch	Non-Potable/Irrigation
<b>Total Non-Potable</b>	<b>3.5</b>		
<b>Total</b>	<b>11.2</b>		

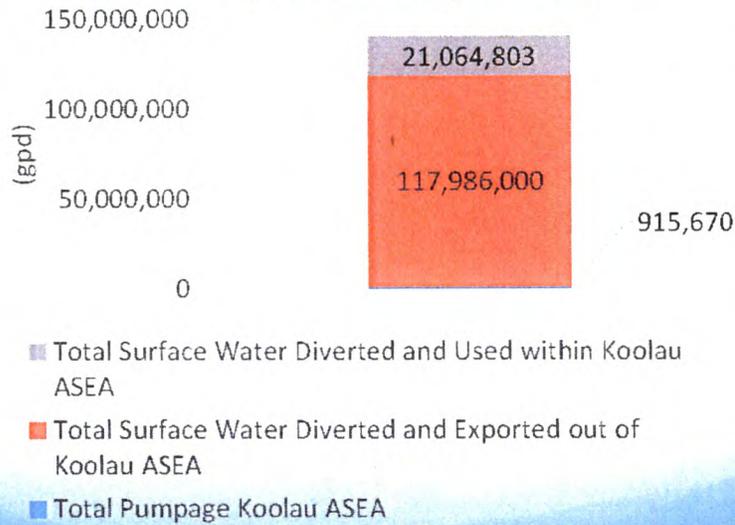
## Upcountry System Surface Water Needs

Upcountry System		Reliable Capacity	Future use (2035)
	Olinda	1.5	1.5
	Piiholo	2.5	2.5
	Kamole	3.6	10.5
	Pookela	0.8	0.8
	Haiku	0.5	0.5
	Kaupakalua	0.5	0.5
		9.4	16.3
source need	16.4-9.4	7	

### Comparison of Upcountry District Projected Consumption With and Without Meter List (mgd)

Criteria	2014	2035	Increase (mgd)
Upcountry/Makawao	6.2	7.0	0.7
Upcountry/Makawao + Meter List	6.2	9.9 – 13.7*	3.7 – 7.5

## Water Consumption, Koolau ASEA (incl. exports)



- Total Surface Water Diverted and Used within Koolau ASEA
- Total Surface Water Diverted and Exported out of Koolau ASEA
- Total Pumpage Koolau ASEA

## Potable Water Demand

DEMAND (GPD)	2015	2020	2025	2030	2035
MDWS Potable Groundwater for use Within Ko`olau ASEA	886,270	898,911	906,988	915,060	918,233
MDWS Potable Surfacewater for use Within Ko`olau ASEA	103,596	105,074	106,018	106,961	107,332
MDWS Potable Surfacewater for Export to Kamole Weir from from Ko`olau/Wailoa Ditch	2,006,341	3,034,545	4,589,681	6,941,790	10,500,000
Municipal Private Potable Groundwater for use Within Ko`olau ASEA	14,944	15,157	15,293	15,429	15,483
DHHL Potable Groundwater	0	3,400	3,400	3,400	3,400
Domestic Potable Groundwater	7,875	7,987	8,059	8,130	8,158
<b>Total Potable:</b>	<b>3,019,025</b>	<b>4,065,073</b>	<b>5,629,439</b>	<b>7,990,770</b>	<b>11,552,606</b>

## Non-Potable Water Demand

DEMAND (GPD)	2015	2020	2025	2030	2035
Irrigation within Ko`olau ASEA	1,695	1,774	1,857	1,943	2,034
Agriculture within Ko`olau ASEA (includes ag analysis + ag GW pumpage)	21,078,745	22,062,001	23,091,122	24,168,248	25,294,494
DHHL, Non Potable	0	6,871,400	6,871,400	6,871,400	6,871,400
A&B/HC&S needs from EMI Ditch System	92,340,000	92,340,000	92,340,000	92,340,000	92,340,000
<b>Total Non-Potable</b>	<b>113,420,440</b>	<b>121,275,175</b>	<b>122,304,379</b>	<b>123,381,592</b>	<b>124,507,928</b>
<b>TOTAL DEMAND</b>	<b>116,439,465</b>	<b>125,340,248</b>	<b>127,933,817</b>	<b>131,372,362</b>	<b>136,060,534</b>

## Water Resource Adequacy

DEMAND (GPD)	2015	2020	2025	2030	2035
<b>Total Potable:</b>	<b>3,019,025</b>	<b>4,065,073</b>	<b>5,629,439</b>	<b>7,990,770</b>	<b>11,552,606</b>
<b>Total Non-Potable</b>	<b>113,420,440</b>	<b>121,275,175</b>	<b>122,304,379</b>	<b>123,381,592</b>	<b>124,507,928</b>
<b>TOTAL DEMAND</b>	<b>116,439,465</b>	<b>125,340,248</b>	<b>127,933,817</b>	<b>131,372,362</b>	<b>136,060,534</b>
<b>SUPPLY (GPD)</b>					
Groundwater (SY)	175,000,000	175,000,000	175,000,000	175,000,000	175,000,000
Surfacewater (EMI Ditch System Average Flow)	130,810,000	130,810,000	130,810,000	130,810,000	130,810,000
<b>TOTAL SUPPLY</b>	<b>305,810,000</b>	<b>305,810,000</b>	<b>305,810,000</b>	<b>305,810,000</b>	<b>305,810,000</b>

## Koolau Aquifer Sector Area (ASEA)

### KEY ISSUES

Watershed protection

Maintain access to lands for gathering, hunting and other native Hawaiian traditional and customary practices

Improve the understanding of the concepts of "precautionary planning" and adapt to the effects of drought and climate change upon water resource availability and quality

Adapt future populations to local water resource conditions, integrating conservation and the use of alternative resources

Water needs of DHHL

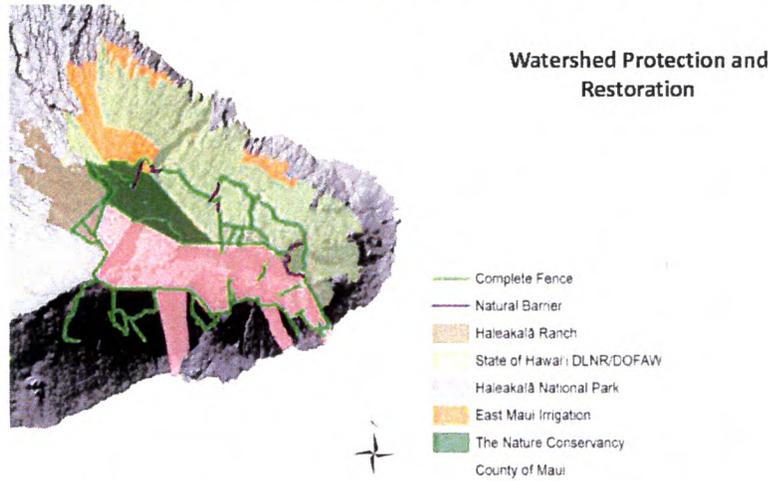
Consult and coordinate with Native Hawaiian community/moku and local experts on resource management

### Koolau ASEA: Strategies to Meet Planning Objectives

*Key issues identified in the WUDP public process focused watershed management and participation by the local community; maintenance of traditional resource management using the ahupua`a system and ensuring that traditional and customary practices are safe guarded; providing affordable water for future needs, providing for taro lo'i and other public trust uses during droughts, and managing resources in a sustainable way*

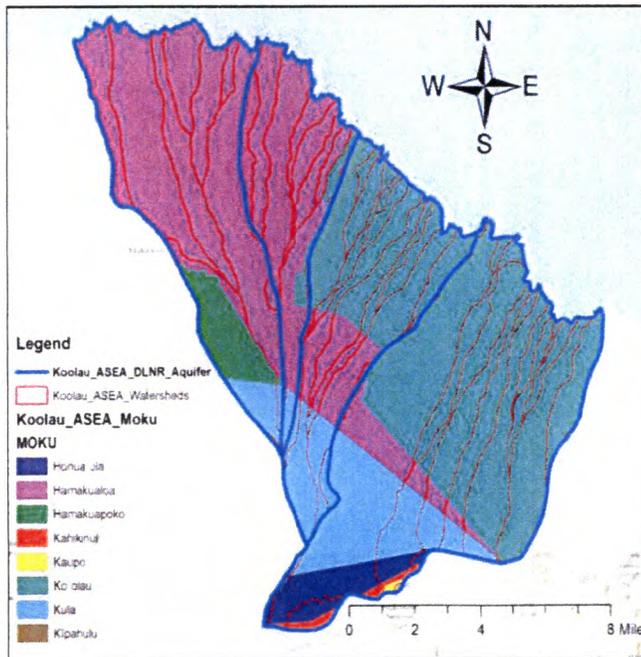
WUDP provides *guidance* for resource use and infrastructure development

### Koolau ASEA Strategies Resource Management



**Strategy:** Seek dedicated, long term and broad based core funding for maintaining and expanding watershed protection areas and providing for watershed maintenance in East Maui and Koolau watersheds for habitat protection and water security. The annual budget varies (\$0.8M – \$1M), with funding from Federal, State, County and private sources.

### Koolau ASEA Strategies Resource Management



**Strategy:** Support and promote community grassroots initiatives to collaborate with state and land owner partnerships to increase participation in natural resource management and to ensure adequate access and opportunities for traditional uses of the region's natural resources. Use established moku process to consult on resource management.

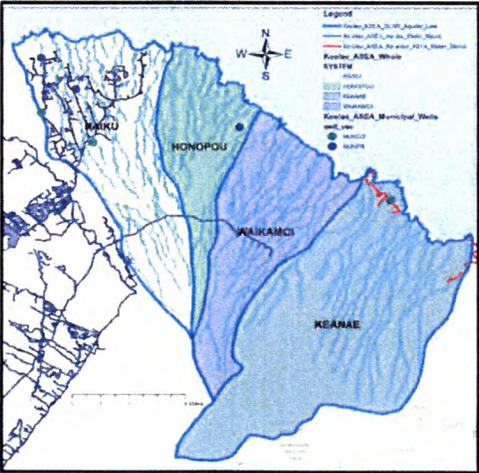
### Koolau ASEA Strategies Conventional Water Source

**Planning objectives:**

- Manage water equitably
  - Provide for Department of Hawaiian Homelands needs
  - Provide for agricultural needs
  - Protect cultural resources
  - Provide adequate volume of water supply
  - Maximize reliability of water service
  - Minimize cost of water supply
- Improving the understanding of the concepts of "precautionary planning" to reduce and adapt to the effects of drought and climate change upon water resource availability and quality
  - Adapting future populations to local water resource conditions, integrating conservation and the use of alternative resources
  - Water needs of DHHL in Koolau should be considered in general and in accordance with the 2017 State Water Projects Plan

### Koolau ASEA Strategies Conventional Water Source

Aquifer System	Installed Source Capacity	Estimated Available Capacity (16 h pumpage)	2035 Projected Demand	Sustainable Yield (MGD)	Potential Drought Yield Conditions
Haiku	12.58	8.39	0.878	27	19.26



**Strategy:** Complete optimization studies/source development analysis for MDWS subsystems to assess well development needs by 2025

## Koolau ASEA Strategies Conventional Water Source

### Department of Hawaiian Homelands

<u>Aquifer System</u>	<u>Project</u>	<u>Potable (gpd)</u>	<u>Non-potable (gpd)</u>
-		-	
<u>Ke`anae</u>	<u>Ke`anae</u>	<u>3,400</u>	<u>4,587,800</u>
<u>Ke`anae</u>	<u>Wailua</u>	<u>N/A</u>	<u>2,280,200</u>
<u>Total</u>	-	<u>3,400</u>	<u>6,868,000</u>

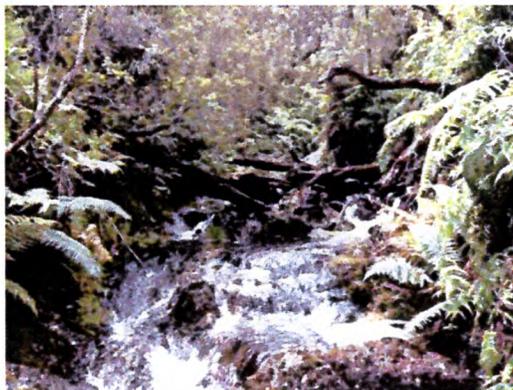
DHHL potable demand is accounted for in the demand projections and source development needs. Available capacity can serve project potable needs. Remaining capacity must be reassessed for DHHL scheduled project phases 2021 – 2031. Sustainable yield of the Keanae aquifer can support new source development, whether private or collaboratively with MDWS.

DHHL non potable needs of 6,868,000 gpd can be sustained by a combination of ambient rainfall within the tract and stream diversions.

## Koolau ASEA Strategies Conventional Water Source

### Non Potable Surface Water Use and Development

**Strategy:** The Commission on Water Resource Management has established Interim Instream Flow Standards on a stream-by-stream basis. Recognizing that other regions have competing off-stream needs, this strategy ensures the protection of public interests of the Koolau aquifer sector.





FY 2019 DWS Proposed CIP Budget Amended

ALAN M. ARAKAWA  
Mayor



DAVID TAYLOR, P.E.  
Director

GLADYS C. BAISA  
Deputy Director

DEPARTMENT OF WATER SUPPLY  
COUNTY OF MAUI  
200 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793-2155  
www.mauiwater.org

March 12, 2018

Mr. Anders Lyons, Chairman  
Board of Water Supply  
200 South High Street, 5<sup>th</sup> Floor  
Wailuku, Hawaii 96793

RECEIVED  
2018 MAR 12 PM 2:57  
DEPARTMENT OF WATER SUPPLY  
COUNTY OF MAUI

Dear Mr. Lyons:

**Subject: Proposed CIP Fiscal Year 2019 Budget**

The Department of Water Supply would like to inform you and the Board Members that since the February 15<sup>th</sup> board meeting and the CIP PowerPoint presentation presented that day, the total requested budget amount has increased. The budget amount our department is requesting has increased from \$31,050,000.00 to \$31,400,000.00. The increase in funds is for the West Maui Reliable Capacity – West Maui Source Development Project.

The West Maui Source Development changed from \$10.0 million dollars to \$10.35 million dollars. The increase in the requested \$350,000.00 is for additional consultant services during bidding and construction (\$100,000.00) and the increase in construction funding from the State Revolving Fund (SRF) source from \$4.0 million dollars to \$4.25 million dollars. This increase in SRF funding will fall within their mid-level loan amounts, thus reducing the interest rate by 0.25 percent (0.25%).

Please be advised that the Mayor's Proposed Budget may be different than what we requested. Feel free to contact me or Tom Ochwat (270-7835) should you have any comments or questions.

Sincerely,

Handwritten signature of Gladys C. Baisa in cursive.

Gladys C Baisa,  
Deputy Director

dw TO/to

*"By Water All Things Find Life"*

**Department Summary**

**Mission**

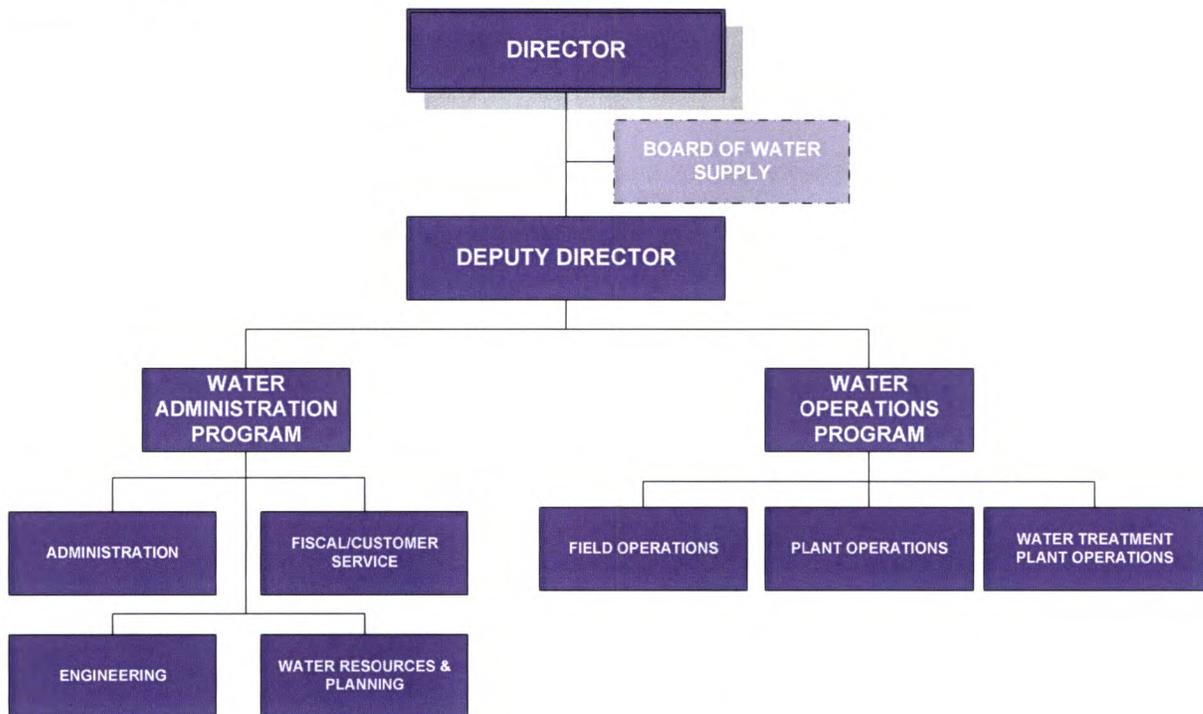
The Department of Water Supply (DWS) is responsible for efficiently providing clean and safe drinking water to customers on the islands of Maui and Molokai.

**Countywide Outcome(s)**

The Department of Water Supply supports the following countywide outcome(s):

- An Efficient, Effective and Responsive Government
- A Strong Diversified Economy
- Suitable Public Infrastructure
- A Prepared, Safe and Livable County
- A Healthy and Sustainable Community

**Organization Chart**



**Strategies**

The Department of Water Supply's strategies are as follows:

- Develop new and reliable sources, both independently and through public-private partnerships
- Produce high quality water at the lowest possible cost
- Prepare compliance strategy to meet or exceed current and future water quality regulations
- Reliability of existing facilities 99.9997% over the long term at the lowest possible cost

**Operations**

DWS is under the authority of the Mayor. The Board of Water Supply acts as an advisor to the Director, the Mayor, and the County Council in all matters concerning the county's water system. Nine of the

**Department Summary**

**Operations (Cont'd)**

eleven Board members are appointed by the Mayor and approved by the County Council; the other two ex-officio non-voting members are the Director of Planning and the Director of Public Works.

DWS is subject to the rules and regulations of the U.S. Environmental Protection Agency's Safe Drinking Water Act, which is enforced by the Hawaii State Department of Health Safe Drinking Water Branch. Each year, the DWS Laboratory tests thousands of water samples to ensure that the water provided is of the best possible quality. The Water Treatment Facility operators also take thousands of samples each year to ensure high-quality water from the surface water treatment plants.

DWS faces the multi-faceted challenge of satisfying its customers, following local government rules and complying with federal and state water quality rules and requirements.

**External Factors Description**

Designation of the Iao Aquifer in July 2003 by the Hawaii State Commission on Water Resource Management (CWRM) has raised concerns about the adequacy of supply for the Central Maui water system.

The U.S. Environmental Protection Agency's Safe Water Drinking Act rules become stricter every year. We are significantly impacted by Ground Water Rules, Surface Water Treatment Rules, Disinfection Byproduct Rules and the Unregulated Contaminant Monitoring Regulation.

In March 2008, the CWRM designated Na Wai Eha (Waihee, Waiehu, Iao and Waikapu Streams) for surface water management. The decision may impact the department's future use of surface water. Future use of this water may also be affected by the June 2010 CWRM decision to amend the interim stream flow standards for Na Wai Eha.

The September 2008 and May 2010 decisions by the CWRM to amend the interim stream flow standards for 27 East Maui streams may also impact the department's future use of surface water.

**Expenditures Summary by Character & Object**

CHARACTER/ OBJECT DESCRIPTION	2016 ACTUAL	2017 ACTUAL	2017 ADOPTED	2019 PROPOSED	CHANGE AMOUNT	CHANGE PERCENT
<b>Salaries and Wages</b>						
OTHER PREMIUM PAY	\$1,158,255	\$989,472	\$1,203,182	\$1,110,894	-\$92,288	-7.7%
WAGES & SALARIES	\$9,475,393	\$10,023,127	\$12,806,796	\$13,699,732	\$892,936	7.0%
<b>Salaries and Wages Total</b>	<b>\$10,633,648</b>	<b>\$11,012,599</b>	<b>\$14,009,978</b>	<b>\$14,810,626</b>	<b>\$800,648</b>	<b>5.7%</b>
<b>Operations</b>						
MATERIALS & SUPPLIES	\$5,266,311	\$5,287,093	\$6,643,060	\$6,816,218	\$173,158	2.6%
SERVICES	\$3,232,682	\$5,377,927	\$5,788,865	\$5,359,828	-\$429,037	-7.4%
UTILITIES	\$10,975,675	\$10,589,616	\$12,754,818	\$13,331,384	\$576,566	4.5%
TRAVEL	\$48,045	\$77,511	\$128,930	\$136,930	\$8,000	6.2%
OTHER COSTS	\$1,234,749	\$1,828,018	\$2,117,871	\$2,177,921	\$60,050	2.8%
INTEREST EXPENSE	-\$64,488	-\$507,469	\$0	\$0	\$0	N/A
INTERFUND COST RECLASSIFICATION	\$11,133,379	\$11,159,524	\$12,692,180	\$9,564,481	-\$3,127,699	-24.6%
OPERATING EXPENSE	\$4,154,646	\$3,798,179	\$1,121,088	\$1,097,832	-\$23,256	-2.1%
<b>Operations Total</b>	<b>\$35,980,998</b>	<b>\$37,610,399</b>	<b>\$41,246,812</b>	<b>\$38,484,594</b>	<b>-\$2,762,218</b>	<b>-6.7%</b>
<b>Debt Service</b>						
INTEREST EXPENSE	\$1,522,183	\$1,499,669	\$1,606,870	\$1,757,289	\$150,419	9.4%
DEBT SERVICE	\$3,160,134	\$3,686,551	\$4,393,130	\$4,111,739	-\$281,391	-6.4%
<b>Debt Service Total</b>	<b>\$4,682,317</b>	<b>\$5,186,219</b>	<b>\$6,000,000</b>	<b>\$5,869,028</b>	<b>-\$130,972</b>	<b>-2.2%</b>

**Department Summary**

**Expenditures Summary by Character & Object (Cont'd)**

CHARACTER/ OBJECT DESCRIPTION	2016 ACTUAL	2017 ACTUAL	2017 ADOPTED	2019 PROPOSED	CHANGE AMOUNT	CHANGE PERCENT
<b>Transfers Out</b>						
PROPRIETARY FUNDS	\$5,000,000	\$1,440,718	\$0	\$0	\$0	N/A
<b>Transfers Out Total</b>	<b>\$5,000,000</b>	<b>\$1,440,718</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>N/A</b>
<b>Equipment</b>						
LEASE PURCHASES	\$4,830	\$9,209	\$17,803	\$17,803	\$0	N/A
MACHINERY & EQUIPMENT	\$763,557	\$395,153	\$729,712	\$650,409	-\$79,303	-10.9%
<b>Equipment Total</b>	<b>\$768,387</b>	<b>\$404,362</b>	<b>\$747,515</b>	<b>\$668,212</b>	<b>-\$79,303</b>	<b>-10.6%</b>
<b>Department Total</b>	<b>\$57,065,350</b>	<b>\$55,654,298</b>	<b>\$62,004,305</b>	<b>\$59,832,460</b>	<b>-\$2,171,845</b>	<b>-3.5%</b>

**Equivalent Personnel Summary by Program**

PROGRAM	2016 ADOPTED	2017 ADOPTED	2018 ADOPTED	2019 PROPOSED	CHANGE AMOUNT	CHANGE PERCENT
Water Administration Program	75.0	75.0	75.0	76.0	1.0	1.3%
Water Operations Program	144.0	145.0	145.0	145.0	0.0	N/A
<b>Department Total</b>	<b>219.0</b>	<b>220.0</b>	<b>220.0</b>	<b>221.0</b>	<b>1.0</b>	<b>0.5%</b>

**Water Administration Program**

**Program Description**

The Water Administration Program ensures that the department’s long-term plans meet the capital, operational and economic needs of the department and county while remaining equitable for stakeholders and maintaining water sustainability and quality.

Currently, this program consists of the Director’s Office, Fiscal/Customer Service Division, Engineering Division, and Water Resources and Planning Division.

**Countywide Outcome(s)**

The Water Administration Program supports the following countywide outcome(s):

- An Efficient, Effective and Responsive Government
- A Strong Diversified Economy
- Suitable Public Infrastructure
- A Prepared, Safe and Livable County
- A Healthy and Sustainable Community

**Population Served**

The Water Administration Program serves the County of Maui, except for Lanai, Kaanapali, Kapalua, and parts of Kahakuloa and Molokai.

**Services Provided**

The Water Administration Program is responsible for overall management of the department, expenditures and revenues, and administering the water user charge system. This program monitors compliance with Maui County Code provisions, department rules and regulations, and water system standards; reviews and approves building permits, subdivision applications and water service requests. Water Administration identifies, plans and constructs water infrastructure to support community plans. Human resources, water conservation, safety and community outreach are also functions of Administration.

**Key Activity Goals & Measures**

GOALS/OBJECTIVES	SUCCESS MEASUREMENTS	FY 2017 ESTIMATE/ ACTUAL	FY 2018 ESTIMATE/ 6 MONTH ACTUAL	FY 2019 ESTIMATE
<i>Goal #1: Provide reliable, top quality water service at reasonable cost.</i>				
1. Plan, design, fund and construct CIPs in a timely manner	% of CIP design projects within schedule	100% / 78%	100% / 80%	100%
2. Maintain affordable and equitable rates and fees	Maintaining a three month operations reserve fund	100% / N/A	100% / 100%	100%
3. Complete Maui Water Use and Development Plan (WUDP)	In-house completion of WUDP	100% / 25%	100% / N/A	
4. Complete Molokai WUDP	Complete public process	15% / N/A	25% / N/A	

**Water Administration Program**

**Key Activity Goals & Measures (Cont'd)**

<b>GOALS/OBJECTIVES</b>	<b>SUCCESS MEASUREMENTS</b>	<b>FY 2017 ESTIMATE/ACTUAL</b>	<b>FY 2018 ESTIMATE/6 MONTH ACTUAL</b>	<b>FY 2019 ESTIMATE</b>
<i>Goal #2: Recruit and retain needed staff.</i>				
1. Retain and enhance opportunities for existing staff	# of staff promoted or obtaining new certifications	18 / 20	25 / 7	30
	# of staff training/ educational opportunities provided	148 / 148	280 / 110	300
	% of annual evaluations completed on time	60% / 60%	70% / 62%	80%
2. Design, complete and follow-up on employee satisfaction survey	# of completed and returned hard copy surveys	N/A /	N/A / 102	
	Compilation of results	N/A /	100% / 100%	
<i>Goal #3: Improve public relations and customer service.</i>				
1. Increase outreach to customers	# of flyers inserted in bills	N/A /	4 / 2	4
2. Design, complete and follow-up on a customer satisfaction survey	# of surveys completed and returned	N/A / N/A	475 / N/A	50
	Compilation of results	N/A / N/A	100% / Ongoing	100%
	Follow-up on findings	N/A / N/A	100% / N/A	100%
	# of completed on-line surveys	N/A / 59	10 / N/A	15
	Follow-up on findings	N/A / 100%	100% / N/A	100%
3. Process permits in a timely and efficient manner	# of Upcountry List requests processed (reoffers)	50 / 19	60 / 20	75
	Average days for single family residential permit review	21 / N/A	21 / 21	20
<i>Goal #4: Support a sustainable water supply.</i>				
1. Support a sustainable water supply. Protect watersheds, aquifers and stream resources	# of actionable watershed management plans in place	N/A / 10	10 / N/A	11

**Water Administration Program**

**Expenditures Summary by Character & Object – Water Supply Fund**

CHARACTER/ OBJECT DESCRIPTION	2016 ACTUAL	2017 ACTUAL	2018 ADOPTED	2019 PROPOSED	CHANGE AMOUNT	CHANGE PERCENT
<b>Salaries and wages</b>						
OTHER PREMIUM PAY	\$128,128	\$114,015	\$189,872	\$70,700	-\$119,172	-62.8%
WAGES & SALARIES	\$2,637,672	\$2,966,967	\$4,803,336	\$5,127,316	\$323,980	6.7%
<b>Salaries and Wages Total</b>	<b>\$2,765,800</b>	<b>\$3,080,982</b>	<b>\$4,993,208</b>	<b>\$5,198,016</b>	<b>\$204,808</b>	<b>4.1%</b>
<b>Operations</b>						
MATERIALS & SUPPLIES	\$991,116	\$1,218,561	\$1,287,100	\$1,285,418	-\$1,682	-0.1%
SERVICES	\$2,099,306	\$3,688,917	\$4,313,180	\$3,471,643	-\$841,537	-19.5%
UTILITIES	\$95,465	\$86,458	\$129,930	\$119,723	-\$10,207	-7.9%
TRAVEL	\$28,419	\$18,648	\$50,230	\$50,230	\$0	N/A
OTHER COSTS	\$732,194	\$1,351,001	\$931,371	\$1,000,871	\$69,500	7.5%
<b>Operations Total</b>	<b>\$3,946,500</b>	<b>\$6,363,585</b>	<b>\$6,711,811</b>	<b>\$5,927,885</b>	<b>-\$783,926</b>	<b>-11.7%</b>
<b>Transfers Out</b>						
PROPRIETARY FUNDS	\$5,000,000	\$1,440,718	\$0	\$0	\$0	N/A
<b>Transfers Out Total</b>	<b>\$5,000,000</b>	<b>\$1,440,718</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>N/A</b>
<b>Equipment</b>						
LEASE PURCHASES	\$4,830	\$9,209	\$17,803	\$17,803	\$0	N/A
MACHINERY & EQUIPMENT	\$120,512	\$47,486	\$64,500	\$62,309	-\$2,191	-3.4%
<b>Equipment Total</b>	<b>\$125,342</b>	<b>\$56,695</b>	<b>\$82,303</b>	<b>\$80,112</b>	<b>-\$2,191</b>	<b>-2.7%</b>
<b>Program Total</b>	<b>\$11,837,642</b>	<b>\$10,941,979</b>	<b>\$11,787,322</b>	<b>\$11,206,013</b>	<b>-\$581,309</b>	<b>-4.9%</b>

**Equivalent Personnel Summary by Position Title – Water Supply Fund**

POSITION TITLE	2016 ADOPTED	2017 ADOPTED	2018 ADOPTED	2019 PROPOSED	CHANGE AMOUNT	CHANGE PERCENT
Account Clerk III	2.0	2.0	2.0	2.0	0.0	N/A
Accountant II	2.0	2.0	2.0	2.0	0.0	N/A
Accountant III	2.0	2.0	2.0	2.0	0.0	N/A
Accountant IV	1.0	1.0	1.0	1.0	0.0	N/A
Administrative Officer	1.0	1.0	1.0	1.0	0.0	N/A
Assistant Fiscal Officer	1.0	1.0	1.0	1.0	0.0	N/A
Cashier II	3.0	3.0	3.0	3.0	0.0	N/A
Civil Engineer III	3.0	3.0	3.0	3.0	0.0	N/A
Civil Engineer IV	5.0	5.0	5.0	5.0	0.0	N/A
Civil Engineer V	2.0	2.0	2.0	2.0	0.0	N/A
Civil Engineer VI	3.0	3.0	3.0	3.0	0.0	N/A
Clerk III	1.0	1.0	1.0	1.0	0.0	N/A
Commission Support Clerk	1.0	1.0	1.0	1.0	0.0	N/A
Customer Relations Assistant	1.0	1.0	1.0	1.0	0.0	N/A
Customer Service Representative I	1.0	1.0	1.0	1.0	0.0	N/A
Customer Service Representative II	3.0	3.0	3.0	3.0	0.0	N/A
Deputy Director	1.0	1.0	1.0	1.0	0.0	N/A
Director	1.0	1.0	1.0	1.0	0.0	N/A
Engineering Aide IV	1.0	1.0	1.0	1.0	0.0	N/A
Engineering Program Manager	2.0	2.0	2.0	2.0	0.0	N/A
Engineering Support Technician I	1.0	1.0	1.0	1.0	0.0	N/A
Field Collection Representative II	2.0	2.0	2.0	2.0	0.0	N/A
Fiscal Officer	1.0	1.0	1.0	1.0	0.0	N/A
GIS Analyst III	1.0	1.0	1.0	1.0	0.0	N/A
Land Use Permit Clerk	3.0	3.0	3.0	3.0	0.0	N/A

**Water Administration Program**

**Equivalent Personnel Summary by Position Title – Water Supply Fund (Cont'd)**

POSITION TITLE	2016 ADOPTED	2017 ADOPTED	2018 ADOPTED	2019 PROPOSED	CHANGE AMOUNT	CHANGE PERCENT
Meter Reader I	4.0	4.0	4.0	4.0	0.0	N/A
Meter Reading/Field Collection Supervisor	1.0	1.0	1.0	1.0	0.0	N/A
Personnel Assistant II	1.0	1.0	1.0	1.0	0.0	N/A
Planner III	1.0	1.0	1.0	1.0	0.0	N/A
Planner IV	2.0	2.0	2.0	2.0	0.0	N/A
Planner V	1.0	1.0	1.0	1.0	0.0	N/A
Planner VI	3.0	3.0	3.0	3.0	0.0	N/A
Planning Program Manager	1.0	1.0	1.0	1.0	0.0	N/A
Pre-Audit Clerk I	3.0	3.0	3.0	3.0	0.0	N/A
Private Secretary	1.0	1.0	1.0	1.0	0.0	N/A
Purchasing Specialist IV	1.0	1.0	1.0	1.0	0.0	N/A
Purchasing Technician	2.0	2.0	2.0	2.0	0.0	N/A
Right-of-Way Agent V	1.0	1.0	1.0	1.0	0.0	N/A
Safety Specialist II	1.0	1.0	1.0	1.0	0.0	N/A
Safety Technician	0.0	0.0	0.0	1.0	1.0	N/A
Secretary III	1.0	1.0	1.0	1.0	0.0	N/A
Staff Services Assistant	1.0	1.0	1.0	1.0	0.0	N/A
Storekeeper I	1.0	1.0	1.0	1.0	0.0	N/A
Waterworks Inspector II	4.0	4.0	4.0	4.0	0.0	N/A
<b>Program Total</b>	<b>75.0</b>	<b>75.0</b>	<b>75.0</b>	<b>76.0</b>	<b>1.0</b>	<b>1.3%</b>

**Continuation Budget Changes (+/- \$10,000) from FY 2018 Adopted Budget**

EXPLANATION OF BUDGET CHANGES	CHANGE AMOUNT	CHANGE E/P
<b>Salaries and Wages</b>		
<b>WAGES AND SALARIES:</b>		
953000A-5101 Regular Wages: Adjustments in salaries based on collective bargaining increases and a position filled at a higher pay scale.	\$37,632	
953083A-5101 Regular Wages: Adjustments in salaries based on collective bargaining increases and a position reallocations.	\$78,804	
953109A-5101 Regular Wages: Adjustments in salaries based on collective bargaining increases and a position reallocations.	\$126,204	
953158A-5101 Regular Wages: Adjustments in salaries based on collective bargaining increases.	\$56,172	
<b>OTHER PREMIUM PAY:</b>		
953000A-5250 Salary Adjustments: Deletion of \$128,372 one-time appropriation for anticipated FY 2018 bargaining unit increases offset by \$600 one-time lump sum payment based on Collective Bargaining Agreement for BU 03/04.	-\$127,772	
<b>Operations</b>		
<b>SERVICES:</b>		
953083B-6129 Other Services: Deletion of one-time appropriation for Oracle software upgrade to release 2.5.0.	-\$225,000	
953083B-6132 Professional Services: Deletion of one-time appropriation for post go-live support from Oracle billing system consultant.	-\$100,000	
953092B-6132 Professional Services: Decrease in line-item grant to Hawaii Agricultural Research Center due to some proposed activities were not funded.	-\$11,500	

**Water Administration Program**

**Continuation Budget Changes (+/- \$10,000) from FY 2018 Adopted Budget (Cont'd)**

EXPLANATION OF BUDGET CHANGES	CHANGE AMOUNT	CHANGE E/P
<b>Operations (Cont'd)</b>		
<b>SERVICES:</b>		
953095B-6132 Professional Services: Deletion of one-time appropriation to assist with resolving the Upcountry water meter wait list.	-\$900,000	
953097B-6132 Professional Services: Deletion of one-time appropriation for the planning and design of water infrastructure at the Kula Agricultural Park expansion area.	-\$100,000	
953158B-6112 Contractual Services: No janitorial contract at One Main Plaza; \$5,000 budget transferred to 953471B-6138 and \$8,000 to 953471B-6201.	-\$13,000	
953170B-6132 Professional Services: Decrease in line-item grant to Puu Kukui Watershed Preserve due to some proposed activities were not funded.	-\$13,797	
<b>UTILITIES:</b>		
953000B-6154 Telephone: Decrease in anticipated expenditures; \$3,000 budget transferred to 953109B-6154, \$500 to 953158B-6230; \$2,000 to 953471B-6024; \$4,500 to 953471B-6235.	-\$10,000	
<b>Equipment</b>		
<b>MACHINERY AND EQUIPMENT:</b>		
953000C-7031 Computer Equipment: Deletion of one-time appropriation approved in FY 2018 for the replacement of ten computers for the Administration Program.	-\$15,000	
953083C-7040 Motor Vehicles: Deletion of one-time appropriation approved in FY 2018 to replace a 2004 Chevy Blazer used by meter readers.	-\$39,000	
953109C-7044 Other Equipment: Deletion of one-time appropriation approved in FY 2018 for the purchase of two desktop computers and three utility water line locaters.	-\$10,500	

**Expansion Budget Request from FY 2018 Adopted Budget**

EXPLANATION OF BUDGET CHANGES	CHANGE AMOUNT	CHANGE E/P
<b>Salaries and Wages</b>		
<b>WAGES AND SALARIES:</b>		
953000A-5101 Regular Wages: Proposed expansion position in FY 2019 for a Safety Technician.	\$25,168	1.0
<b>OTHER PREMIUM PAY:</b>		
953158A-5215 Premium Pay: Additional funding due to the approximately 15 outreach events and mandated policy plan public meetings staffed by division, most of which take place after office hours.	\$3,500	0.0
<b>Operations</b>		
<b>SERVICES:</b>		
953083B-6110 Computer Services: Increase for additional reports needed by staff.	\$82,000	
953083B-6132 Professional Services: Additional funding for Water Department's portion of iNOVAH conversion.	\$100,000	
953091B-6132 Professional Services: Increase of line-item grant to Auwahi Forest Restoration Project will allow double the number of volunteer trips and community based plantings.	\$24,291	

**Water Administration Program**

**Expansion Budget Request from FY 2018 Adopted Budget (Cont'd)**

<b>EXPLANATION OF BUDGET CHANGES</b>	<b>CHANGE AMOUNT</b>	<b>CHANGE E/P</b>
<b>Operations (Cont'd)</b>		
<b>SERVICES:</b>		
953158B-6132 Professional Services: Additional funding for USGS monitoring, anticipate decreased USGS match; services related to Molokai Water Use Development Plan and for a software development application.	\$40,800	
953162B-6132 Professional Services: Increase of line-grant to West Maui Watershed Protection to fund increased travel, vehicle purchase, supplies and materials, a Weed Specialist and for fence maintenance due to storm damage.	\$135,461	
953169B-6132 Professional Services: Increase to line-item grant to East Maui Watershed Protection will allow The Nature Conservancy to expand weed control in remote areas of Waikamoi and assist the East Maui Watershed Partnership with the increased cost of helicopter operations and increase the number of traps in the Kuhiwa unit.	\$34,000	
953862B-6132 Professional Services: Increase in line-item grant to Countywide Watershed Protection for bioeconomic models and anticipated storm/drought related needs.	\$117,186	
<b>OTHER COSTS:</b>		
953158B-6278 Conservation Program: Additional for Source Protection (video contest, public outreach) activities, to continue toilet rebate, new greywater or rainwater harvesting incentives, and public facility fixture replacement.	\$73,000	
<b>Equipment</b>		
<b>MACHINERY AND EQUIPMENT:</b>		
953000C-7031 Computer Equipment: Replace five computers at \$1,500 each for the Administration Program; \$5,000 to replace one Dell Precision T5500 for MAPPs development and \$2,500 to purchase a computer for Safety Technician expansion position.	\$15,000	
953109C-7031 Computer Equipment: \$1,750 to replace desktop computer used for building permits, subdivisions, water service and CIP projects; \$10,000 to replace Dell Precision T5500 computers at \$5,000 each; \$12,000 to purchase twelve 23"x 34" large screen computer monitors for electronic plans review, subdivision, water services and CIP projects at \$1,000 each; and \$4,400 to purchase four large screen iPads for use for construction inspections, subdivision, water service and CIP projects at \$1,100 each.	\$28,150	
953158C-7031 Computer Equipment: \$14,000 to replace Trimble handheld GPS unit with a similar unit for continuation of leak detection activities and \$5,159 to replace oldest of existing staff's computer with Dell Precision Tower.	\$19,159	
<b>TOTAL PROPOSED EXPANSION BUDGET</b>	<b>\$697,715</b>	<b>1.0</b>

**Water Administration Program**

**County Grant Subsidy Detail**

<b>Name of Grantee/Program</b>	<b>FY 2016 Actual</b>	<b>FY 2017 Actual</b>	<b>FY 2018 Adopted</b>	<b>FY 2019 Proposed</b>
Auwahi Forest Restoration Project	\$0	\$37,000	\$37,000	\$61,291
Countywide Watershed Protection	\$150,000	\$59,110	\$98,000	\$215,186
East Maui Watershed Protection	\$384,675	\$469,619	\$516,000	\$550,000
East Molokai Watershed Protection	\$156,957	\$250,000	\$250,000	\$250,000
Hawaii Agriculture Research Center	\$0	\$68,000	\$68,000	\$56,500
Honokowai/Wahikuli Watershed Management	\$75,000	\$64,739	\$75,000	\$75,000
Lokahi Pacific, Inc	\$0	\$219,000	\$0	\$0
Leeward Haleakala Forest Restoration	\$160,267	\$195,000	\$198,000	\$190,022
Miconia Containment and Removal	\$170,974	\$249,948	\$250,000	\$250,000
Puu Kukui Watershed Preserve	\$219,033	\$265,311	\$300,000	\$286,203
West Maui Watershed Protection	\$206,908	\$350,000	\$350,000	\$485,461
<b>TOTAL COUNTY GRANT SUBSIDY - WATER ADMINISTRATION PROGRAM</b>	<b>\$1,523,814</b>	<b>\$2,227,727</b>	<b>\$2,142,000</b>	<b>\$2,419,663</b>

**County Grant Subsidy Program Description**

**Auwahi Forest Restoration Project**

Restore dry forest lands on Leeward Haleakala, assess the effects of native forest restoration on soil moisture dynamics and potential aquifer recharge, support hydrological research and continue to provide a successful community based volunteer forest restoration and outreach component. Continue to exclude grazing animals, control non-native kikuyu grass, and plant closely spaced, rapidly growing native shrubs. This project provides a demonstration site for policy makers.

**Countywide Watershed Protection**

Funds will be used to support various watershed preservation and restoration efforts in Maui County including, but not limited to, ungulate control, weed management, fencing and fence repairs, re-planting, monitoring, demo projects, support hydrological research and best management practices and educational events.

\$95,186 will be used to fund research to design cost-effective management decisions to protect the mauka catchment basins in the East Maui Watershed against incipient miconia incursions. The proposed Bio-Economic Models approach compliments traditional methods of widely attacking long-established miconia populations by focusing on the biological features and fecundity (reproduction) of miconia at higher elevations and targeting remote areas where isolated, incipient plants are unimpeded and thriving using Herbicide Ballistic Technology. This may slow dissemination of seeds and seed banking of up to 2100 acres of watershed by one plant alone and should ultimately reduce the number of miconia reaching early maturity when they are highly effective in bearing fruit. DWS is hopeful that

**Water Administration Program****County Grant Subsidy Program Description (Cont'd)****Countywide Watershed Protection (Cont'd)**

this approach and collaboration with watershed partners can then be repeated in other high-priority areas to decelerate future costs and expansion of miconia.

**East Maui Watershed Protection**

The East Maui Watershed consists of approximately 120,000 acres and provides the largest harvested source of surface water in the state. This watershed services Upcountry residents and farmers from Haiku to Kanaio. Ongoing efforts to protect the watershed include fencing, ungulate control, invertebrate and small mammal control, weed management, rare species protection, removal of invasive species, monitoring, education, public outreach and volunteer recruitment to repair and install fencing, and plant native species.

**East Molokai Watershed Protection**

The East Molokai watershed is approximately 18,500 acres. Major problems in the area include feral animals, invasive weeds and fire. Ongoing efforts include ungulate control, weed sweeps, fencing and fence maintenance, re-planting, erosion control, monitoring, mapping and continuous research that measure water quality.

**Hawaii Agriculture Research Center – Developing Wilt Resistant Acacia Koa**

With major land use change and declines in sugarcane, pineapple and cattle production, there is an opportunity and keen interest in utilizing native koa in reforestation and restoration efforts, especially in watershed rehabilitation. Moderate to high mortality rates caused by *Fusarium oxysporum* f.sp. koae in many plantings have impeded past efforts. The reintroduction of koa on a landscape level will directly benefit the long-term sustainability of Maui County's water supply in high priority watersheds. HARC develops a network of sites and establish wilt resistant koa seed orchards in multiple eco-regions.

**Honokowai/Wahikuli Watershed Management**

The Honokowai and Wahikuli watersheds, located within the Kapunakea Preserve in West Maui, have been designated priority watersheds by DOH, EPA, and NOAA. The project area encompasses 1,264 acres. Feral ungulates and invasive weeds are major threats to these watersheds. Axis deer have greatly expanded their range on Maui. Control efforts include replacement and retrofit of 1.1 miles of fence from 6" to 8" are currently underway.

**Leeward Haleakala Forest Restoration**

Protect and restore dry forest lands on Leeward Haleakala and examine impacts on moisture holding to improve both recharge and water quality in the area. Preserve and provide a reserve from which certain important forest species can recover, install fencing, increase productive vegetation using native species, broadcast seed, conduct biological survey, and recruit volunteers to help with an intensive labor effort.

**Invasive Weed Containment and Removal**

Support efforts to monitor and remove the spread of miconia through repeated removal, treatments of existing areas of growth and prevention of seed dispersal. Similarly, manage other target weeds, including pampas grass, fountain grass, ivy gourd, giant reed, rubber vine, Jerusalem thorn, malabar malestome, downy rose myrtle, ruby salt bush and others. Seek to detect, identify and control potential problem weeds before they become difficult to control.

**Water Administration Program**

**County Grant Subsidy Program Description (Cont'd)**

**Puu Kukui Watershed Preserve**

Over 8,600 acres of Puu Kukui Watershed Preserve is being protected and preserved. Ongoing efforts include ungulate control through fencing, trapping and surveying on foot, invasive plant control, rare species protection research and water quality testing.

**West Maui Watershed Protection**

Over 47,321 acres of the West Maui Mountains is being protected and preserved. This watershed is a key water recharge area that provides potable water to West and Central Maui residents. The major threats to this watershed are feral ungulates, invasive weeds, human disturbances and wildfires. Ongoing efforts include ungulate control through fence construction, retrofitting and regular trap checks weed management, planting and enclosures, monitoring, and human activities management through outreach, education and curbing use of area.

**Summary by Grant Award – Grant Revenue Fund**

Grant Award Name	New grant	Required County match? Yes/No and	FY 2016 Adopted	FY 2017 Adopted	FY 2018 Adopted	FY 2019 Proposed
		Match \$ or %				
State of Hawaii – Water Transmission and Storage, Maui	No	No	\$2,500,000	\$0	\$0	\$0
<b>TOTAL</b>			<b>\$2,500,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

**Water Department Wide Expenses**

**Expenditures Summary by Character & Object – Water Supply Fund**

CHARACTER/ OBJECT DESCRIPTION	2016 ACTUAL	2017 ACTUAL	2018 ADOPTED	2019 PROPOSED	CHANGE AMOUNT	CHANGE PERCENT
<b>Salaries and Wages</b>						
OTHER PREMIUM PAY	\$0	\$0	\$0	\$0	\$0	N/A
WAGES & SALARIES	\$0	\$0	\$0	\$0	\$0	N/A
<b>Salaries and Wages Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>N/A</b>
<b>Operations</b>						
OTHER COSTS	\$356,559	\$328,923	\$975,000	\$975,000	\$0	N/A
INTEREST EXPENSE	-\$64,488	-\$507,689	\$0	\$0	\$0	N/A
INTERFUND COST RECLASSIFICATION	\$11,133,379	\$11,159,524	\$12,692,180	\$9,564,481	-\$3,127,699	-24.6%
OPERATING EXPENSE	\$4,154,646	\$3,798,179	\$1,121,088	\$1,097,832	-\$23,256	-2.1%
<b>Operations Total</b>	<b>\$15,580,096</b>	<b>\$14,778,937</b>	<b>\$14,788,268</b>	<b>\$11,637,313</b>	<b>-\$3,150,955</b>	<b>-21.3%</b>
<b>Debt Service</b>						
INTEREST EXPENSE	\$1,522,183	\$1,499,669	\$1,606,870	\$1,757,289	\$150,419	9.4%
DEBT SERVICE	\$3,160,134	\$3,686,551	\$4,393,130	\$4,111,739	-\$281,391	-6.4%
<b>Debt Service Total</b>	<b>\$4,682,317</b>	<b>\$5,186,219</b>	<b>\$6,000,000</b>	<b>\$5,869,028</b>	<b>-\$130,972</b>	<b>-2.2%</b>
<b>Equipment</b>						
MACHINERY & EQUIPMENT	\$0	\$0	\$0	\$0	\$0	N/A
LEASE PURCHASES	\$0	\$0	\$0	\$0	\$0	N/A
<b>Equipment Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>N/A</b>
<b>Program Total</b>	<b>\$20,262,414</b>	<b>\$19,965,156</b>	<b>\$20,788,268</b>	<b>\$17,506,341</b>	<b>-\$3,281,927</b>	<b>-15.8%</b>

\*\*Note: Expenditures are for fringe benefits, overhead costs and debt service.

**Water Operations Program**

**Program Description**

The Water Operations Program is responsible for the management, operation and repair of county water collection, transmission and processing infrastructure and related facilities.

**Countywide Outcome(s)**

The Water Operations Program supports the following countywide outcome(s):

- An Efficient, Effective and Responsive Government
- A Strong Diversified Economy
- Suitable Public Infrastructure
- A Prepared, Safe and Livable County
- A Healthy and Sustainable Community

**Population Served**

The Water Operations Program serves the island of Maui and Kaunakakai, Molokai.

**Services Provided**

The Water Operations Program is responsible for the process control; safety and training; regulatory reporting and compliance; laboratory analysis; preventive maintenance; and efficient operation of the collection, transmission and processing activities.

**Key Activity Goals & Measures**

GOALS/OBJECTIVES	SUCCESS MEASUREMENTS	FY 2017 ESTIMATE/ ACTUAL	FY 2018 ESTIMATE/ 6 MONTH ACTUAL	FY 2019 ESTIMATE
<i>Goal #1: Economically produce the highest quality potable water that meets or exceeds all state and federal water quality standards in sufficient quantity to meet the needs of the customers.</i>				
1. Minimize adverse impacts to the water system	# of system outages or water restrictions due to facility shutdown or deficient water quality	0 / 6	0 / 0	0
2. Identify and review regulatory compliance requirements that will impact operations and optimize performance to meet Environmental Protection Agency (EPA) and State of Hawaii Department of Health regulatory standards	# of water quality violations received	0 / 3	0 / 0	0
3. Meet state and federal sampling requirements	# of samples analyzed to meet regulatory requirements	9,500 / 18,613	13,445 / 9,299	15,000

**Water Operations Program**

**Key Activity Goals & Measures (Cont'd)**

GOALS/OBJECTIVES	SUCCESS MEASUREMENTS	FY 2017 ESTIMATE/ ACTUAL	FY 2018 ESTIMATE/ 6 MONTH ACTUAL	FY 2019 ESTIMATE
<i>Goal #2: Operate and maintain the collection, transmission, and processing infrastructure in an efficient manner to ensure that our customers receive the maximum useful life from their facility investment.</i>				
1. Optimize, maintain or replace facilities' electrical equipment, motors and switch gear for the most reliable and efficient use of electrical energy	Cost of repair and maintenance	\$350,000 / \$150,000	\$350,000 / \$189,703	\$500,000
2. Replacement of four well pumps and two booster pumps per year	# of well pumps replaced	3 / 4	4 / 1	4
	# of booster pumps replaced	2 / 1	2 / 2	2
<i>Goal #3: Water loss prevention to ensure service lines are efficient and reliable in ensuring minimal interrupted service.</i>				
1. Minimize water loss	# of miles of mainline inspected for leaks	N/A / 889	900/ N/A	900
	# of miles mainline repaired	N/A / 166	150 / N/A	150
2. Upgrade system	# of feet of mainline replaced	N/A / 6,965	15,000 / N/A	12,000

**Expenditures Summary by Character & Object – Water Supply Fund**

CHARACTER/ OBJECT DESCRIPTION	2016 ACTUAL	2017 ACTUAL	2018 ADOPTED	2019 PROPOSED	CHANGE AMOUNT	CHANGE PERCENT
<b>Salaries and Wages</b>						
OTHER PREMIUM PAY	\$1,030,127	\$875,457	\$1,013,310	\$1,040,194	\$26,884	2.7%
WAGES & SALARIES	\$6,837,721	\$7,056,161	\$8,003,460	\$8,572,416	\$568,956	7.1%
<b>Salaries and Wages Total</b>	<b>\$7,867,848</b>	<b>\$7,931,618</b>	<b>\$9,016,770</b>	<b>\$9,612,610</b>	<b>\$595,840</b>	<b>6.6%</b>
<b>Operations</b>						
MATERIALS & SUPPLIES	\$4,275,196	\$4,068,531	\$5,355,960	\$5,530,800	\$174,840	3.3%
SERVICES	\$1,133,375	\$1,689,011	\$1,475,685	\$1,888,185	\$412,500	28.0%
UTILITIES	\$10,880,209	\$10,503,158	\$12,624,888	\$13,211,661	\$586,773	4.6%
TRAVEL	\$19,626	\$58,863	\$78,700	\$86,700	\$8,000	10.2%
OTHER COSTS	\$145,996	\$148,094	\$211,500	\$202,050	-\$9,450	-4.5%
INTEREST EXPENSE	\$0	\$220	\$0	\$0	\$0	N/A
<b>Operations Total</b>	<b>\$16,454,402</b>	<b>\$16,467,878</b>	<b>\$19,746,733</b>	<b>\$20,919,396</b>	<b>\$1,172,663</b>	<b>5.9%</b>
<b>Equipment</b>						
MACHINERY & EQUIPMENT	\$643,045	\$347,667	\$665,212	\$588,100	-\$77,112	-11.6%
<b>Equipment Total</b>	<b>\$643,045</b>	<b>\$347,667</b>	<b>\$665,212</b>	<b>\$588,100</b>	<b>-\$77,112</b>	<b>-11.6%</b>
<b>Program Total</b>	<b>\$24,965,294</b>	<b>\$24,747,162</b>	<b>\$29,428,715</b>	<b>\$31,120,106</b>	<b>\$1,691,391</b>	<b>5.7%</b>

**Water Operations Program**

**Equivalent Personnel Summary by Position Title – Water Supply Fund**

<b>POSITION TITLE</b>	<b>2016 ADOPTED</b>	<b>2017 ADOPTED</b>	<b>2018 ADOPTED</b>	<b>2019 PROPOSED</b>	<b>CHANGE AMOUNT</b>	<b>CHANGE PERCENT</b>
Assistant Water Treatment Plant Operations/Maintenance Supervisor	2.0	2.0	2.0	2.0	0.0	N/A
Automotive Mechanic I	1.0	1.0	1.0	1.0	0.0	N/A
Backflow Control Technician II	1.0	1.0	1.0	1.0	0.0	N/A
Backflow Cross Connection Technician III	1.0	1.0	1.0	1.0	0.0	N/A
Carpenter I	2.0	2.0	2.0	2.0	0.0	N/A
Clerk Dispatcher II	1.0	1.0	1.0	1.0	0.0	N/A
Clerk III	1.0	1.0	1.0	1.0	0.0	N/A
Construction Equipment Mechanic I	3.0	3.0	3.0	3.0	0.0	N/A
Construction Equipment Mechanic II	1.0	1.0	1.0	1.0	0.0	N/A
Electrician/Electronic Repairer Supervisor	1.0	1.0	1.0	1.0	0.0	N/A
Electronic Technician I	4.0	4.0	4.0	4.0	0.0	N/A
Electronic Technician II	1.0	1.0	1.0	1.0	0.0	N/A
Equipment Operator III	3.0	3.0	3.0	3.0	0.0	N/A
Equipment Operator IV	4.0	4.0	4.0	4.0	0.0	N/A
Field Operations Division Chief	1.0	1.0	1.0	1.0	0.0	N/A
Heavy Equipment & Construction Welder	1.0	1.0	1.0	1.0	0.0	N/A
Labor Supervisor I	1.0	1.0	1.0	1.0	0.0	N/A
Laboratory Technician I	1.0	1.0	1.0	1.0	0.0	N/A
Laborer II	7.0	7.0	7.0	7.0	0.0	N/A
Pipefitter Helper	13.0	13.0	13.0	13.0	0.0	N/A
Pipefitter I	21.0	21.0	21.0	21.0	0.0	N/A
Pipefitter II	7.0	7.0	7.0	7.0	0.0	N/A
Plant Electrician/Electronic Repairer I	3.0	3.0	3.0	3.0	0.0	N/A
Plant Electrician/Electronic Repairer II	1.0	1.0	1.0	1.0	0.0	N/A
Plant Operations Division Chief	1.0	1.0	1.0	1.0	0.0	N/A
Staff Services Assistant	0.0	1.0	1.0	1.0	0.0	N/A
Supervising Electronic Technician	1.0	1.0	1.0	1.0	0.0	N/A
Treasury Clerk I	1.0	1.0	1.0	1.0	0.0	N/A
Valve Repair/Pipefitter II	1.0	1.0	1.0	1.0	0.0	N/A
Water Meter Technician I	1.0	1.0	1.0	1.0	0.0	N/A
Water Meter Technician II	1.0	1.0	1.0	1.0	0.0	N/A
Water Microbiologist I	4.0	4.0	4.0	4.0	0.0	N/A
Water Microbiologist II	2.0	2.0	2.0	2.0	0.0	N/A
Water Microbiologist III	2.0	2.0	2.0	2.0	0.0	N/A
Water Microbiologist IV	1.0	1.0	1.0	1.0	0.0	N/A
Water Plant Maintenance Mechanic Helper	4.0	4.0	4.0	4.0	0.0	N/A
Water Plant Maintenance Mechanic I	6.0	6.0	6.0	6.0	0.0	N/A
Water Plant Maintenance Mechanic II	1.0	1.0	1.0	1.0	0.0	N/A
Water Plant Maintenance Mechanic Supervisor	1.0	1.0	1.0	1.0	0.0	N/A
Water Service Clerk Dispatcher	1.0	1.0	1.0	1.0	0.0	N/A
Water Service Supervisor II	7.0	7.0	7.0	7.0	0.0	N/A
Water Support Services Supervisor	1.0	1.0	1.0	1.0	0.0	N/A

**Water Operations Program**

**Equivalent Personnel Summary by Position Title – Water Supply Fund (Cont'd)**

POSITION TITLE	2016 ADOPTED	2017 ADOPTED	2018 ADOPTED	2019 PROPOSED	CHANGE AMOUNT	CHANGE PERCENT
Water Treatment Plant Division Chief	1.0	1.0	1.0	1.0	0.0	N/A
Water Treatment Plant Operations/Maintenance Supervisor	2.0	2.0	2.0	2.0	0.0	N/A
Water Treatment Plant Operator II	2.0	2.0	2.0	2.0	0.0	N/A
Water Treatment Plant Operator IV	16.0	16.0	16.0	16.0	0.0	N/A
Water Treatment Plant Worker	2.0	2.0	2.0	2.0	0.0	N/A
Waterworks Maintenance Helper	3.0	3.0	3.0	3.0	0.0	N/A
<b>Program Total</b>	<b>144.0</b>	<b>145.0</b>	<b>145.0</b>	<b>145.0</b>	<b>0.0</b>	<b>N/A</b>

**Continuation Budget Changes (+/- \$10,000) from FY 2018 Adopted Budget**

EXPLANATION OF BUDGET CHANGES	CHANGE AMOUNT	CHANGE E/P
<b>Salaries and Wages</b>		
<b>WAGES AND SALARIES:</b>		
953307A-5101 Regular Wages: Adjustments in salaries based on collective bargaining increases, position reallocations and a position filled at a higher pay scale.	\$310,740	
953471A-5101 Regular Wages: Adjustments in salaries based on collective bargaining increases and position reallocations.	\$128,316	
953604A-5101 Regular Wages: Adjustments in salaries based on collective bargaining increases and position reallocations.	\$129,900	
<b>OTHER PREMIUM PAY:</b>		
953307A-5250 Salary Adjustments: Deletion of \$186,316 one-time appropriation for anticipated FY 2018 bargaining unit increases offset by a \$70,000 increase for one-time lump sum payments based on Collective Bargaining Agreement BU 01 and \$600 one-time lump sum payments for BU 03/04.	-\$115,716	
953471A-5250 Salary Adjustments: \$18,000 increase for one-time lump sum payments based on Collective Bargaining Agreement BU 01 and \$450 for one-time lump sum payments for BU 03/04.	\$18,450	
953604A-5250 Salary Adjustments: \$24,000 increase for one-time lump sum payments based on Collective Bargaining Agreement BU 01 and \$150 for one-time lump sum payment for BU 03/04.	\$24,150	
<b>Operations</b>		
<b>MATERIALS AND SUPPLIES:</b>		
953604B-6010 Chemical & Other Filter Supp: Deletion of one-time appropriation for three granular activated carbon changeouts at Piihoho treatment facility.	-\$750,000	
953604B-6012 Construction Materials: Decrease due to decrease in anticipated expenditures for FY 2019.	-\$68,500	
<b>SERVICES:</b>		
953471B-6138 R & M - Services/Contracts: Additional for annual SCADA software support services; \$5,000 budget transferred from 953158B-6071 and \$5,000 from 953158B-6112.	\$10,000	
<b>UTILITIES:</b>		
953471B-6120 Electricity: Inflationary adjustment.	\$821,595	
953604B-6120 Electricity: Department's recommended inflationary adjustment, funding required for 9.03% increase plus contingency.	-\$256,848	

**Water Operations Program**

**Continuation Budget Changes (+/- \$10,000) from FY 2018 Adopted Budget**

EXPLANATION OF BUDGET CHANGES	CHANGE AMOUNT	CHANGE E/P
<b>Operations (Cont'd)</b>		
<b>UTILITIES:</b>		
953604B-6178 Water Delivery Charges: Inflationary adjustment.	-\$27,841	
<b>Equipment</b>		
<b>MACHINERY AND EQUIPMENT:</b>		
953307C-7040 Motor Vehicles: Deletion of one-time appropriation approved in FY 2018 for the purchase of two trucks for the Lahaina division and one truck for meter repair technician.	-\$127,000	
953307C-7044 Other Equipment: Deletion of one-time appropriation approved in FY 2018 for the purchase of an excavator.	-\$200,000	
953471C-7031 Computer Equipment: Deletion of one-time appropriation approved in FY 2018 for the purchase of desktop computers and SCADA terminal.	-\$20,500	
953471C-7032 Software Programs: Deletion of one-time appropriation approved in FY 2018 for laboratory information system.	-\$86,712	
953471C-7044 Other Equipment: Deletion of \$60,000 one-time appropriation approved in FY 2018 to upgrade existing analytical instrumentation and \$20,000 to purchase chlorine pumps.	-\$80,000	
953604C-7044 Other Equipment: Deletion of one-time appropriation approved in FY 2018 for the purchase of pumps, water pumps, TOC analyzer and replacement of lab equipment and emergency power system SCADA.	-\$151,000	

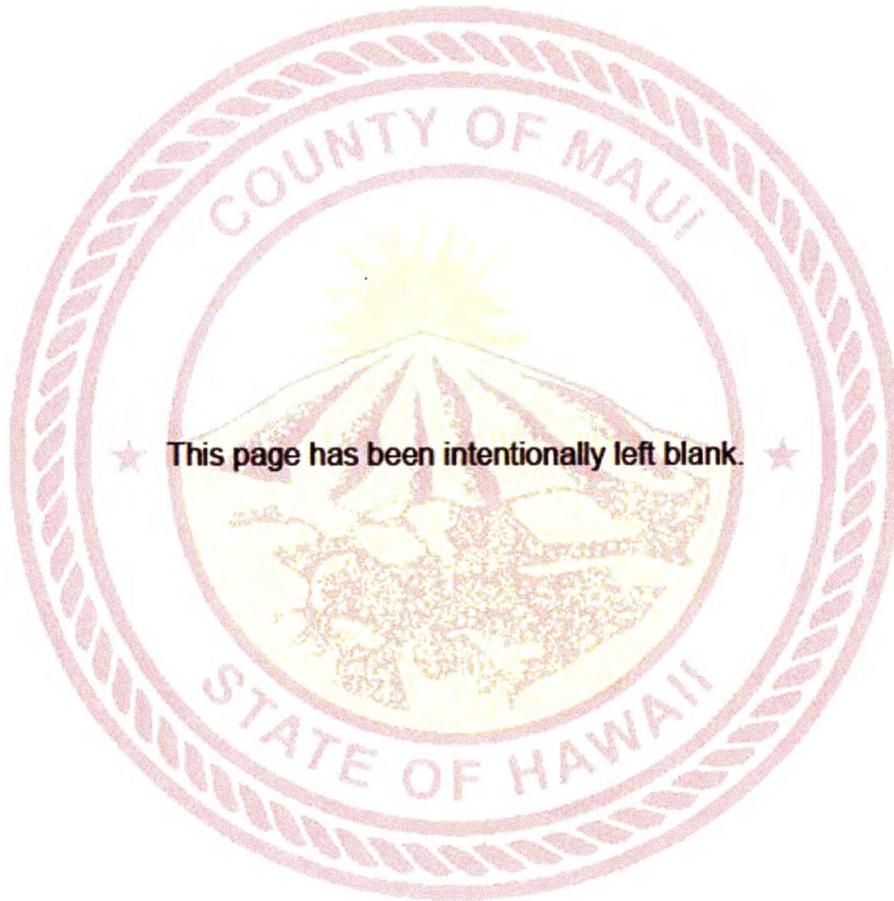
**Expansion Budget Request from FY 2018 Adopted Budget**

EXPLANATION OF BUDGET CHANGES	CHANGE AMOUNT	CHANGE E/P
<b>Salaries and Wages</b>		
<b>OTHER PREMIUM PAY:</b>		
953307A-5215 Premium Pay: Increase based on actual expenditures. Emergency call back, overtime, standby, temporary assignment expenses exceed \$125,000 per quarter.	\$100,000	0.0
<b>Operations</b>		
<b>MATERIALS AND SUPPLIES:</b>		
953307B-6005 Auto Parts: Increase for additional parts for maintenance of an aging fleet of vehicles. Average age of vehicle fleet is 7 years.	\$40,000	
953307B-6030 Mach & Equip Replacement Parts: Additional due to increased cost of parts required for ongoing repair and maintenance.	\$25,000	
953307B-6033 Meter Replacement Expenses: Additional for fittings required for additional meter replacement.	\$75,000	
953471B-6010 Chemical & Other Filter Supp: Additional costs associated with the only chlorine gas vendor servicing Hawaii.	\$200,000	
953471B-6025 Laboratory Supplies: Additional supplies necessary for required testings.	\$30,000	
953604B-6010 Chemical & Other Filter Supp: Additional \$250,000 for granular activated carbon changeouts and \$375,000 additional costs associated with the only chlorine gas vendor servicing Hawaii.	\$625,000	

**Water Operations Program**

**Expansion Budget Request from FY 2018 Adopted Budget (Cont'd)**

<b>EXPLANATION OF BUDGET CHANGES</b>	<b>CHANGE AMOUNT</b>	<b>CHANGE E/P</b>
<b>Operations</b>		
<b>SERVICES:</b>		
953471B-6122 Freight and Hauling: Additional costs associated with the only chlorine gas vendor servicing Hawaii.	\$30,000	
953471B-6144 Repair & Maintenance - Pumps: Additional for continued repair & maintenance necessary for (3) North Waihee booster pumps and North Waihee Well #1 pump.	\$150,000	
953604B-6122 Freight and Hauling: Increase due to the cost of hauling chlorine gas (\$10,000 per month).	\$127,500	
953604B-6129 Other Services: Additional for water testing and regulatory compliance.	\$40,000	
953604B-6132 Professional Services: Additional for ongoing water quality optimization engineering analysis.	\$50,000	
<b>UTILITIES:</b>		
953471B-6120 Electricity: Additional funding due to drought forecast usually results in increased pumping (+ \$75,018); projected 9.03% rate increase (\$8,856,934 x 9.03% = \$799,781) \$75,018 + \$799,781 = \$874,799.	\$53,204	
<b>Equipment</b>		
<b>MACHINERY AND EQUIPMENT:</b>		
953307C-7031 Computer Equipment: Purchase four Dell Optiplex 5250AIO desktop computers to replace old computers at \$1,600 each.	\$6,400	
953307C-7040 Motor Vehicles: \$165,000 to purchase three Ford F350s 4x4 w/ utility box, lift gate & pipe rack to replace COM-1997, COM-2077 and COM-2463; and \$70,000 to purchase Ford F350 4x4 w/ utility box, crew cab, pipe rack and lift gate to replace COM-2462.	\$235,000	
953307C-7042 Office Equipment: Purchase of a HP LI Pro 500 color printer.	\$1,200	
953307C-7044 Other Equipment: Purchase of three 300-500 gallon potable water tanker trailers to meet community need in the event of emergencies at \$30,000 each and \$10,000 to purchase a pipe threader.	\$100,000	
953471C-7031 Computer Equipment: Purchase two large screen iPads for use on construction inspections, subdivision, water service and CIP projects at \$1,100 each.	\$2,200	
953471C-7040 Motor Vehicles: \$50,000 to purchase half-ton pick-up, 4x4 w/ liftgate and pipe rack to replace COM-1763; \$55,000 to purchase 4x4 truck w/ utility box/bed to replace vehicle deemed a total loss in an accident and \$85,000 to purchase (1) half-ton flat bed 4x4 truck to replace COM-1923	\$190,000	
953471C-7044 Other Equipment: Replace or recondition a/c for DWS main building at NASKA baseyard.	\$25,000	
953604C-7044 Other Equipment: \$1,500 to replace lab refrigerator for laboratory chemicals at Kamole WTP; \$1,800 to replace a portable generator at Piholo Water Treatment Facility and \$25,000 to replace tw 20 year-old air compressors at \$12,500 each.	\$28,300	
<b>TOTAL PROPOSED EXPANSION BUDGET</b>	<b>\$2,133,804</b>	<b>0.0</b>



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**Capital Improvement Program**

**Project Detail by Department**

					\$ in 1000's		
					Fiscal Year		
District	Project Type	CBS No	Project Name	Fund	2019	2020-2024	6-Yr Total
Countywide	Water Supply	CBS-1075	Countywide Facility Improvements	WR	200	0	200
				WU	4,150	9,110	13,260
		CBS-1076	Countywide Conservation Program	WU	0	4,000	4,000
				CBS-2299	Countywide Upgrades and Replacements	WR	200
		WU	900	27,850	28,750		
Makawao-Pukalani-Kula		CBS-4615	Countywide Water System Modification	WU	500	2,000	2,500
				CBS-1106	Upcountry Reliable Capacity	WR	4,300
		WU	8,200	41,150	49,350		
Molokai		CBS-1098	Molokai Reliable Capacity	WU	0	5,900	5,900
Wailuku-Kahului		CBS-1102	Central Maui Reliable Capacity	WR	100	0	100
				WU	2,500	8,650	11,150
West Maui		CBS-1092	West Maui Reliable Capacity	SRF	4,250	0	4,250
				WU	6,100	12,500	18,600
<b>Total: Department of Water Supply</b>					<b>31,400</b>	<b>111,160</b>	<b>142,560</b>

<b>FUNDING SOURCE SUMMARY</b>			
\$ in 1000's			
Fiscal Year			
Fund	2019	2020-2024	6-Yr Total
SRF	4,250	0	4,250
WR	4,800	0	4,800
WU	22,350	111,160	133,510
<b>Total</b>	<b>31,400</b>	<b>111,160</b>	<b>142,560</b>

NOTE: PROJECT SHEETS ARE INCLUDED ONLY FOR PROJECTS WITH FY 2019 FUNDING.

**Capital Improvement Program**

CBS No: CBS-1075

Project Name: Countywide Facility Improvements

Department: Department of Water Supply

District: Countywide

Project Type: Water Supply

Anticipated Life: 10-15 years (pumps); 25 years (electrical upgrade); 50 years (tanks/pipes)



Prior Years	Appr	Ensuing	Subsequent Years					Total
Expend/Encb	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	6-Year
3,247,803	3,649,000	4,350,000	5,090,000	500,000	2,360,000	500,000	660,000	13,460,000

**PROJECT DESCRIPTION**

The Countywide Facilities Improvements project supports emergency or critical repairs to existing water supply facilities. Anticipated jobs in FY 2019 include:

- 1) Well and booster pump station improvements. Anticipated jobs include conversion of the disinfection systems at the Kanoa 2, Waihee, and Mokuhau Wells from chlorine gas to on-site hypochlorite generation;
- 2) Water treatment facility and water tank improvements. Anticipated jobs include refurbishing water tanks at Napili Well C; demolition of the existing Iao Water Treatment Plant; conversion of the disinfection systems at the Olinda, Piihoho, Kamole, Lahainaluna, and Mahinahina WTPs from chlorine gas to on-site hypochlorite generation;
- 3) Tree clearing along the raw water line serving the Piihoho Water Treatment Plant to establish access for maintenance work;
- 4) Re-roofing of the clearwell at the Olinda Water Treatment Plant;
- 5) Conduct facility assessments of all West Maui water treatment plants; and
- 6) Funding may also be used for unforeseen circumstances for other projects under design and/or construction that support emergency or critical repairs to existing water infrastructure.

**PROJECT JUSTIFICATION**

Funding for unforeseen circumstances and site conditions, emergency repairs, and annual system upgrades is necessary to minimize impact to project schedules, thereby avoiding costly delays and disruptions of service.

**STRATEGIC PLAN ALIGNMENT**

Department's Strategic Plan	Countywide Priority Results
Goal: Ensure facilities meet future needs. Objective(s): Minimize adverse impacts to the water system.	A Suitable Public Infrastructure An Efficient, Effective, and Responsive Government

**Operating Impact Narrative**

No impact is anticipated.

**Capital Improvement Program**

**FUNDING DETAILS**

Phase Description	Fund Code	Appr	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Design	WU	0	250,000	290,000	0	160,000	0	160,000
New Construction	WR	0	200,000	0	0	0	0	0
New Construction	WU	0	3,900,000	4,800,000	500,000	2,200,000	500,000	500,000

Schedule of Activities			
Activity	Start	End	Amount
Acquisition	07/01/2017	12/31/2023	0
Design	07/01/2017	12/31/2023	860,000
New Construction	07/01/2017	12/31/2023	12,600,000
Total Capital Project Costs			13,460,000
Total O&M Costs			0
Total Capital & Operating Costs			13,460,000

Methods of Financing (Ensuing + 5 Years)	
Funding Source	Amount
Water Supply Fund - Restricted	200,000
Water Supply Fund - Unrestricted	13,260,000
Total Funding Requirements	13,460,000

**Capital Improvement Program**

CBS No: CBS-2299

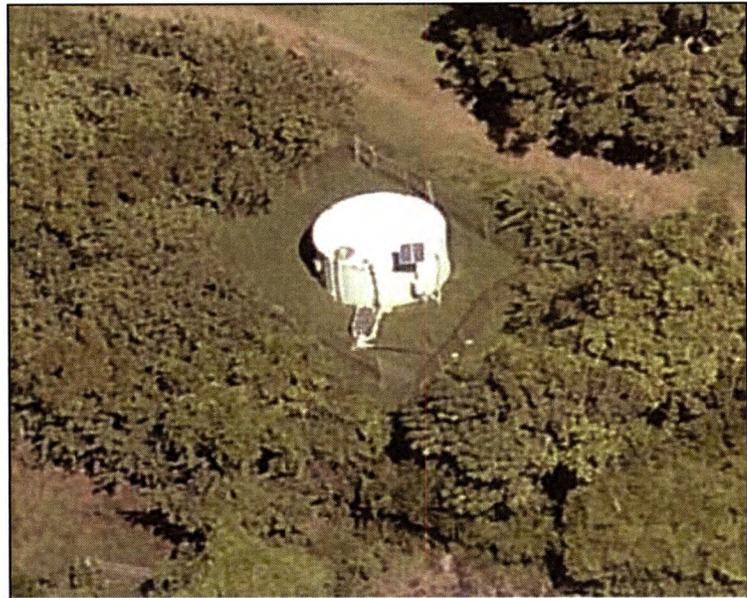
Project Name: Countywide Upgrades and Replacements

Department: Department of Water Supply

District: Countywide

Project Type: Water Supply

Anticipated Life: 10-15 years (pumps); 25 years (electrical); 50 years (piping, tanks, structures)



Prior Years	Appr	Ensuing	Subsequent Years					Total
Expend/Ench	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	6-Year
3,552,843	6,110,000	1,100,000	9,500,000	4,800,000	6,500,000	6,750,000	300,000	28,950,000

**PROJECT DESCRIPTION**

The Countywide Upgrades and Replacements project supports improvements that will sustain the reliable operation of existing water infrastructure or mitigate inadequacies of the water system. Anticipated jobs in FY 2019 include:

- 1) Water treatment facility, water tank and waterline improvements. Anticipated jobs include replacement of the existing 30,000 gallon Honokohau Tank;
- 2) Well and booster pump improvements: Anticipated jobs include replacement of pump and motor assemblies, electrical control systems, and installation of emergency generators at Kalae Booster Pump and the Waipuka Wells.
- 3) Funding may also be used for unforeseen circumstances for prior funded fiscal year projects under design and/or construction that supports improvements that will sustain the reliable operation of existing water infrastructure or mitigate inadequacies of existing water infrastructure.

**PROJECT JUSTIFICATION**

The Countywide Upgrades and Replacements is necessary for the water supply system to accommodate existing and future demands, provide reliable and efficient service by limiting disruption in service, and prevent any potential health and safety issues.

**STRATEGIC PLAN ALIGNMENT**

Department's Strategic Plan	Countywide Priority Results
Goal: Ensure facilities meet future needs. Objectives: Minimize adverse impacts to the water system.	A Suitable Public Infrastructure An Efficient, Effective, and Responsive Government

**Operating Impact Narrative**

No impact is anticipated.

**FUNDING DETAILS**

Phase Description	Fund Code	Appr	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Design	WR	0	200,000	0	0	0	0	0
Design	WU	0	400,000	1,100,000	600,000	500,000	200,000	0
New Construction	WU	0	500,000	8,400,000	4,200,000	6,000,000	6,550,000	300,000

**Capital Improvement Program**

<b>Schedule of Activities</b>			
<b>Activity</b>	<b>Start</b>	<b>End</b>	<b>Amount</b>
Acquisition	07/01/2017	12/31/2023	0
Design	07/01/2017	12/31/2023	3,000,000
New Construction	07/01/2017	12/31/2023	25,950,000
Total Capital Project Costs			28,950,000
Total O&M Costs			0
Total Capital & Operating Costs			28,950,000

<b>Methods of Financing (Ensuing + 5 Years)</b>	
<b>Funding Source</b>	<b>Amount</b>
Water Supply Fund - Restricted	200,000
Water Supply Fund - Unrestricted	28,750,000
Total Funding Requirements	28,950,000

**Capital Improvement Program**

1

CBS No: CBS-4615  
 Project Name: Countywide Water System Modification  
 Department: Department of Water Supply  
 District: Countywide  
 Project Type: Water Supply  
 Anticipated Life: 20 years



Prior Years	Appr	Ensuing	Subsequent Years					Total
Expend/Encb	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	6-Year
0	0	500,000	500,000	500,000	500,000	500,000	0	2,500,000

**PROJECT DESCRIPTION**

The Countywide Water System Modification supports all CIP projects, including prior fiscal year, ensuing fiscal year, and emergency projects to efficiently provide clean and safe drinking water to customers. An effective CIP program demands an ability to respond to unanticipated planning, design, and construction issues in a timely manner.

**PROJECT JUSTIFICATION**

Funding of unanticipated planning, design, and construction issues in a timely manner is critical to prevent project delays and potential added cost due to delays in funding.

**STRATEGIC PLAN ALIGNMENT**

Department's Strategic Plan

Countywide Priority Results

**Operating Impact Narrative**

No impact is anticipated.

**FUNDING DETAILS**

Phase Description	Fund Code	Appr	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
New Construction	WU	0	500,000	500,000	500,000	500,000	500,000	0

**Schedule of Activities**

Activity	Start	End	Amount
New Construction	07/01/2017	12/31/2023	2,500,000
<b>Total Capital Project Costs</b>			<b>2,500,000</b>
Total O&M Costs			0
<b>Total Capital &amp; Operating Costs</b>			<b>2,500,000</b>

**Methods of Financing (Ensuing + 5 Years)**

Funding Source	Amount
Water Supply Fund - Unrestricted	2,500,000
<b>Total Funding Requirements</b>	<b>2,500,000</b>

**Capital Improvement Program**

CBS No: CBS-1106

Project Name: Upcountry Reliable Capacity

Department: Department of Water Supply

District: Makawao-Pukalani-Kula

Project Type: Water Supply

Anticipated Life: 50 years



Prior Years	Appr	Ensuing	Subsequent Years					Total
Expend/Enchb	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	6-Year
314,076	3,300,000	12,500,000	3,750,000	15,800,000	1,700,000	19,700,000	200,000	53,650,000

**PROJECT DESCRIPTION**

The Upcountry Reliable Capacity project will support source, transmission, and storage expansion for the Upcountry system. Anticipated jobs in FY 2019 include:

- 1) Development of Pookela Well B;
- 2) New raw water reservoirs at the Kamole Water Treatment Plant; and
- 3) Phase 10 booster pump improvements (Pookela Tank, Maluhia Tank, West Olinda Tank sites).

**PROJECT JUSTIFICATION**

Pookela Well B Development will complete the construction of a backup source for Pookela Well A and increase the reliable capacity of the Upcountry Water System. The addition of raw water reservoirs at the Kamole WTP will increase source capacity for the Upcountry System. The existing Phase 10 booster pump facilities have reached the end of their service life. Additional booster pumps needed to ensure reliability of the system.

**STRATEGIC PLAN ALIGNMENT**

Department's Strategic Plan	Countywide Priority Results
Goal: Ensure facilities meet future needs. Objective(s): Minimize adverse impacts to the water system	A Suitable Public Infrastructure An Efficient, Effective, and Responsive Government

**Operating Impact Narrative**

New tank will require periodic inspections and refurbishing. Expansion of booster pump stations serves to provide backup capacity and will not impact operations.

**FUNDING DETAILS**

Phase Description	Fund Code	Appr	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Acquisition	WU	0	0	150,000	0	0	0	0
Design	WR	0	1,500,000	0	0	0	0	0
Design	WU	0	0	100,000	500,000	200,000	200,000	200,000
New Construction	WR	0	2,800,000	0	0	0	0	0
New Construction	WU	0	8,200,000	3,500,000	15,300,000	1,500,000	19,500,000	0

**Capital Improvement Program**

<b>Schedule of Activities</b>			
<b>Activity</b>	<b>Start</b>	<b>End</b>	<b>Amount</b>
Acquisition	07/01/2017	12/31/2023	150,000
Design	07/01/2017	12/31/2023	2,700,000
New Construction	07/01/2017	12/31/2023	50,800,000
Total Capital Project Costs			53,650,000
Total O&M Costs			0
Total Capital & Operating Costs			<u>53,650,000</u>

<b>Methods of Financing (Ensuing + 5 Years)</b>	
<b>Funding Source</b>	<b>Amount</b>
Water Supply Fund - Restricted	4,300,000
Water Supply Fund - Unrestricted	49,350,000
Total Funding Requirements	<u>53,650,000</u>

**Capital Improvement Program**

CBS No: CBS-1102

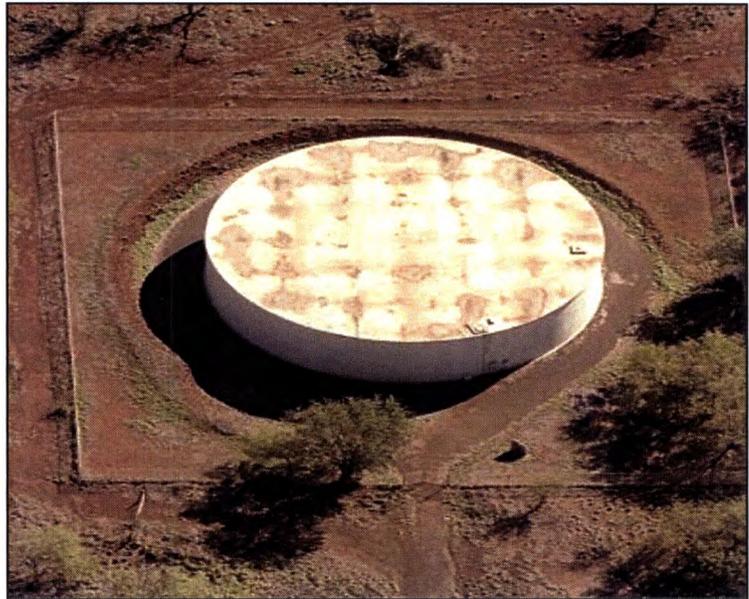
Project Name: Central Maui Reliable Capacity

Department: Department of Water Supply

District: Wailuku-Kahului

Project Type: Water Supply

Anticipated Life: 10-15 years (pumps);25 years (electrical); 50 years (piping, tanks, structures)



Prior Years	Appr	Ensuing	Subsequent Years					Total
Expend/Encb	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	6-Year
308,061	500,000	2,600,000	5,700,000	2,500,000	150,000	300,000	0	11,250,000

**PROJECT DESCRIPTION**

The Central Maui Reliable Capacity project will support source, transmission, and storage expansion for the Central Maui system.

Anticipated jobs in FY 2019 include:

- 1) New water tank for North Kihei; and
- 2) Replacement well for Waiehu Heights Well 1.

**PROJECT JUSTIFICATION**

The storage capacity of the existing Makai Height Tank is substandard for fire protection. Provide a new back up well for Waiehu Heights Well 2 for reliable operations since the Waiehu Heights Well 1 turned brackish and is no longer in operation.

**STRATEGIC PLAN ALIGNMENT**

Department's Strategic Plan	Countywide Priority Results
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Goal: Ensure facilities meet future needs.

Objective(s): Minimize adverse impacts to the water system

A Suitable Public Infrastructure

An Efficient, Effective, and Responsive Government

**Operating Impact Narrative**

New tank will required periodic inspections and refurbishing. Replacement well will not create new operational demand.

**FUNDING DETAILS**

Phase Description	Fund Code	Appr	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Acquisition	WR	0	100,000	0	0	0	0	0
Acquisition	WU	0	0	0	0	150,000	0	0
Design	WU	0	0	200,000	0	0	300,000	0
New Construction	WU	0	2,500,000	5,500,000	2,500,000	0	0	0

**Capital Improvement Program**

<b>Schedule of Activities</b>			
<b>Activity</b>	<b>Start</b>	<b>End</b>	<b>Amount</b>
Acquisition	07/01/2017	12/31/2023	250,000
Design	07/01/2017	12/31/2023	500,000
New Construction	07/01/2017	12/31/2023	10,500,000
Total Capital Project Costs			11,250,000
Total O&M Costs			0
Total Capital & Operating Costs			11,250,000

<b>Methods of Financing (Ensuing + 5 Years)</b>	
<b>Funding Source</b>	<b>Amount</b>
Water Supply Fund - Restricted	100,000
Water Supply Fund - Unrestricted	11,150,000
Total Funding Requirements	11,250,000

**Capital Improvement Program**

CBS No: CBS-1092

Project Name: West Maui Reliable Capacity

Department: Department of Water Supply

District: West Maui

Project Type: Water Supply

Anticipated Life: 10-15 years (pumps); 25 years (electrical); 50 years (piping, tanks, structures)



Prior Years	Appr	Ensuing	Subsequent Years					Total
Expend/Encb	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	6-Year
242,302	10,000,000	10,350,000	600,000	400,000	11,500,000	0	0	22,850,000

**PROJECT DESCRIPTION**

The West Maui Reliable Capacity project will support source, transmission, and storage expansion for the West Maui system. Anticipated projects in FY 2019 include:  
1) West Maui Source Development.

**PROJECT JUSTIFICATION**

Development of the West Maui Well 2 is needed to maintain reliable capacity of the Lahaina system based on Maui Island Plan growth projections.

**STRATEGIC PLAN ALIGNMENT**

Department's Strategic Plan

Countywide Priority Results

Goal: Ensure facilities meet future needs.  
Objective(s): Minimize adverse impacts to the water system.

A Suitable Public Infrastructure  
An Efficient, Effective, and Responsive Government

**Operating Impact Narrative**

**FUNDING DETAILS**

Phase Description	Fund Code	Appr	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Design	WU	0	100,000	400,000	200,000	0	0	0
New Construction	SRF	0	4,250,000	0	0	0	0	0
New Construction	WU	0	6,000,000	200,000	200,000	11,500,000	0	0

**Capital Improvement Program**

<b>Schedule of Activities</b>			
<b>Activity</b>	<b>Start</b>	<b>End</b>	<b>Amount</b>
Acquisition	07/01/2017	12/31/2023	0
Design	07/01/2017	12/31/2023	700,000
New Construction	07/01/2017	12/31/2023	22,150,000
Total Capital Project Costs			22,850,000
Total O&M Costs			300,000
Total Capital & Operating Costs			<u>23,150,000</u>

<b>Methods of Financing (Ensuing + 5 Years)</b>	
<b>Funding Source</b>	<b>Amount</b>
State Revolving Loan Fund	4,250,000
Water Supply Fund - Unrestricted	18,600,000
Total Funding Requirements	<u>22,850,000</u>

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**BOARD OF WATER SUPPLY**

**COUNTY OF MAUI**

200 SOUTH HIGH STREET

WAILUKU, MAUI, HAWAII 96793-2155

TELEPHONE (808) 270-7816 • FAX (808) 270-7951 • www.mauiwater.org

March 20, 2018

Honorable Alan M. Arakawa  
Mayor, County of Maui  
200 South High Street  
Wailuku, Maui, Hawaii 96793

Dear Mayor Arakawa

**SUBJECT: FISCAL YEAR 2019 BUDGET**

The Board of Water Supply met on March 15, 2018 to discuss the Department of Water Supply's proposed Fiscal Year 2019 budget for operations and capital improvements. The Board has unanimously voted to support the department's FY 2019 budget as submitted.

We thank you for the opportunity to review and provide comment on the Water Department's Proposed FY2019 Operations and CIP Budget.

Sincerely,

Anders Lyons  
Chair

AL:ghh

copy: Gladys C. Baisa, Deputy Director  
Edward S. Kushi, Jr., First Deputy Corporation Council

*"By Water All Things Find Life"*