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# DEPARTMENT OF WATER SUPPLY

## COUNTY OF MAUI

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FISCAL YEAR 2018  
ANNUAL REPORT

EXHIBIT M-2

# DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

**Cover and back pages: 2018 water conservation poster contest winners**

**Cover page top: Sage Campbell, Kihei Public Charter School grade 6**

**Cover page bottom: Ava Torres, Lihikai Elementary School grade 5**

**Back page top: Valentina Lewis, Saint Anthony School grade 8**

**Back page bottom: Paris Talavera, Sacred Hearts School, grade 8**

**Department of Water Supply  
County of Maui**

**Annual Report  
Fiscal Year 2018**

**Alan M. Arakawa, Mayor**

**County of Maui**

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**Council Chair and  
Members of the Maui County Council**

**Michael B. White, Council Chair**

**Robert Carroll, Council Vice-Chair**

**Alika Atay, Councilmember**

**Elle Cochran, Councilmember**

**Stacy Helm Crivello, Councilmember**

**Don S. Guzman, Councilmember**

**G. Riki Hokama, Councilmember**

**Kelly T. King, Councilmember**

**Yuki Lei Sugimura, Councilmember**

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**Wailuku, Maui, Hawaii**

# DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

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MICHAEL P. VICTORINO  
Mayor



JEFFREY T. PEARSON, P.E.  
Director

HELENE KAU  
Deputy Director

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

Honorable Michael P. Victorino  
Mayor, County of Maui  
And Chairperson and Members of the Maui County Council  
Wailuku, HI 96793

Ladies and Gentlemen:

I am proud to present to you the 2018 annual report for the Department of Water Supply. This report includes the accomplishments of the department's employees on Maui and Molokai, construction projects completed and in progress, and the Independent Auditor's Report. I am pleased to say that once again, the department's financial soundness is demonstrated by the annual independent audit with a clean opinion and with no significant findings.

Highlights for FY18 include:

- The water audit. Much work was done by many at the department to complete this project. We will continue to do this yearly and with the information derived from this effort, work to reduce water losses both in the field and on the accounting side.
- 60 letters issued to customers on the Upcountry water meter list
- \$2.14 million in grants provided for water resource protection
- Over 19,000 water quality samples collected to ensure your water meets or exceeds all state and federal drinking water standards

Goals for FY19 include:

- Continued improvement in customer service
- Development of a department-wide strategic plan
- Valve inspection and replacement to minimize impact area during waterline breaks
- Source development

As incoming Director, I will strive to continue to bring clean, quality water to our customers in the most efficient and reliable manner. I will also work closely with staff and customers to address their needs and expectations.

In closing, I would like to express my appreciation to the Board of Water Supply; to the Governor and the State Legislators for their support of our water programs; and to the Mayor, the Maui County Council, and other County, State and Federal agencies for their cooperation and support. Most of all, I would like to extend my appreciation for the employees of the DWS who, on a daily basis, serve the people of Maui County with dedication and commitment.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey T. Pearson".

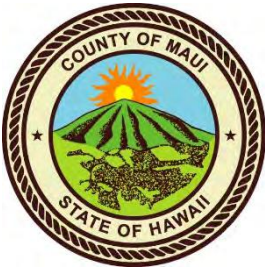
Jeffrey T. Pearson, Director of Water Supply

*By Water All Things Find Life*

# DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

## EXECUTIVE SUMMARY

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The Department of Water Supply (DWS) is proud to present its Fiscal Year 2018 Annual Report which provides an overview of the department, its goals and objectives, and highlights of activities performed throughout the fiscal year. The mission of the department is to **provide clean water efficiently**. In FY18, the department provided 11.75 billion gallons of water to 36,615 customers. The 200 DWS employees focus on maintaining the department's goal to strive toward economically producing the highest quality potable water that meets or exceeds all state and federal water quality standards to meet the needs of customers on the islands of Maui and Molokai.

This year, the department invested in training all personnel to refocus on teambuilding and the department's core goals and mission. Based on feedback from employees, the training was highly successful. Further coaching for managers continues in FY19.

Other accomplishments include a clean fiscal audit, a 3-month operations reserve throughout the year, timely capitalization of current CIP, completion of 10 CIP projects, significant strides in the completion of the Water Use & Development Plan, over \$2m in grants provided for water resources protection, response to over 2,500 consumer complaints and after-hours calls, and over 11 billion gallons of high-quality water provided to customers.

### HIGHLIGHTS

The 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 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.

According to the County Charter Chapter 11 Section 8-11.2, "the department of water supply shall manage and operate all water systems owned by the county. In order to protect and manage the water resources of the county, the department of water supply shall make studies, surveys, and investigations relating to the locations and sources of water supply within the county, the amounts available for current and prospective uses, the water resources which may be available for such uses and the maximum sustainable yield of such sources. The department of water supply shall implement the county's general plan and community plans in the administration of its affairs. The department of water supply shall prepare and annually update a long-range capital improvement plan and an updated water use and development plan, which shall be subject to approval of the council, as provided by law."

## **DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT**

The DWS is subject to the rules and regulations of the US Environmental Protection Agency's Safe Drinking Water Act, which is enforced by the Hawaii State Department of Health (DOH) 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.

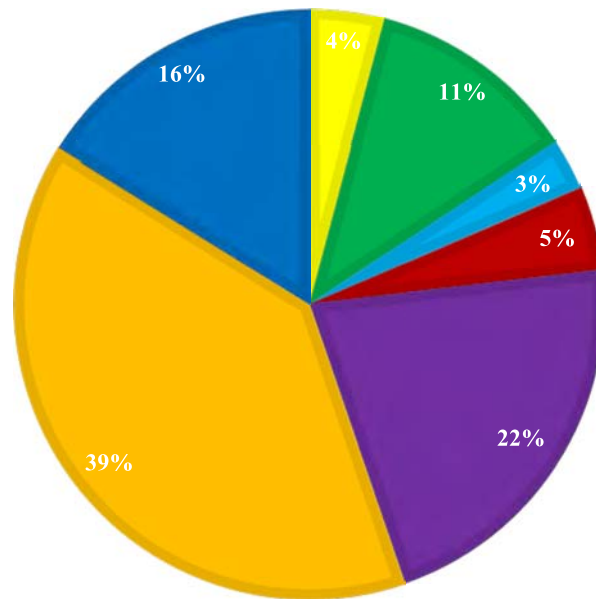


# DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

## DEPARTMENTAL BUDGET

### FY 2018 EXPENDITURES BY DIVISION

■ Director's Office      ■ Fiscal      ■ WR&P  
■ Engineering      ■ Field Operations      ■ Plant Operations  
■ WTP



DIVISION	FY 2017	FY 2018
<b>Water Administration</b>		
Director's Office	1,894,110	1,367,239
Fiscal	4,210,958	3,844,012
Water Resources & Planning	3,156,116	932,895
Engineering	1,954,682	1,526,404
<b>Water Operations</b>		
Field Operations	7,782,710	7,158,368
Plant Operations	13,288,230	12,986,509
Water Treatment Plant	5,177,720	5,324,517
<b>Total</b>	<b>\$37,464,526</b>	<b>\$33,121,944</b>

# DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

## DIRECTOR'S REPORTS

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### ENGINEERING

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The Engineering Division is responsible for the daily administration of Maui County Code Title 14 – Water related to subdivision applications, building permit applications, and water service requests and the implementation of the majority of the department's capital improvement program budget. Division staff also provides technical support to all other divisions and processes the department's land acquisitions and easements. The Engineering Division is divided into four sections: Administration, District I, District II, and Capital Improvement Program.

The Administration Section provides the operational and clerical support for the other sections and is responsible for the intake of subdivision applications, building permit applications, and water service requests. This section is also responsible for residential building permit applications.

The District I Section is responsible for subdivision applications, commercial building permit applications, and water service requests served from the Wailuku Water System (Kahului, Kihei, Maalaea, Makena, Paia, Wailea, Waihee, Waiehu and Wailuku), the Keanae Water System, the Nahiku Water System, and the Hana Water System (Wakiu, Hana and Hamoa). This district is responsible for approximately 58% of existing water services.

The District II Section is responsible for subdivision applications, commercial building permit applications, and water service requests served from the Upper Kula Water System (Upper Kula, Waiakoa, Keokea, Ulupalakua and Kanaio) and the Lower Kula Water System (Olinda, Kula Kai, Omaopio and Pulehu), the Makawao Water System (Haiku, Haliimaile, Makawao, and Pukalani), the Lahaina Water System (Puamana, Wainee, Kelawea, Lahaina, Wahikuli, Honokowai, Mahinahina, Kahana, Alaeloa, and Napili), the Honokohau Water System, the three water systems on Molokai (Kaunakakai Water System, Ualapue Water System, and the Kalae Water System). This district is responsible for approximately 42% of existing water services.

The Capital Improvement Program Section is responsible for the implementation of annual capital improvement program budget that involves the planning, design, and construction of capital improvement projects. This section is also responsible for coordinating the long-term capital improvement program with the other divisions.

The fiscal year 2018 capital improvement projects are listed below along with the respective phase of the project (planning, design, construction, completed construction).

<u>CIP Project</u>	<u>Phase</u>
<b>OpaePilau Water System Analysis, Haiku, Maui</b> – Analysis to improve water distribution to the service area.	Planning
<b>Upper Kimo Road Chloramine System Analysis, Kula, Maui</b> – Analysis of the Upper Kula Water System and the current chloramine disinfection process.	Planning

**DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT**

<b>Keanae Motor Control Center (MCC) Upgrades, Keanae, Maui</b> – Replacement of the existing motor control center. Construction estimated to start in 2019.	Design
<b>Mokuhau and Kepaniwai Motor Control Center (MCC) Upgrades, Wailuku, Maui</b> – Replacement of the existing motor control center. Construction estimated to start in 2019.	Design
<b>Pookela Well “B” – Development, Makawao, Maui</b> - Development of a potable groundwater well source that will provide a reliable back-up for the Upcountry. Construction estimated to start in 2019.	Design
<b>Piiholo Water Treatment Plant Roof Replacement, Makawao, Maui</b> – Replacement of approximately 8,000 square feet of clay tile roofing on the water treatment plant building. Construction estimated to start in Spring 2019.	Design
<b>Upcountry 10 Booster Pump Upgrades, Kula, Maui</b> – Replacement of the existing booster pumps for reliability and additional capacity, including and upgrade of the electrical controls. Construction estimated to start in Spring 2019.	Design
<b>West Maui Well Development, Mahinahina, Maui</b> – Development of a potable groundwater well source that will provide additional water source. Construction estimated to start in Fall 2019.	Design
<b>Makaala Drive Service Lateral Replacement, Wailuku, Maui</b> – Replacement of existing water service laterals. Project estimated to be completed in March 2019.	Construction
<b>Olinda Water Treatment Plant Embankment Improvements, Olinda, Maui</b> – Reinforcement of the existing sludge drying bed embankment. Project estimated to be completed in March 2019.	Construction
<b>Omaopio Tank Booster Pump and Controls Upgrade, Kula, Maui</b> – New booster pumps to service the Olinda residents when the Olinda WTP is down for maintenance and cleaning. Project estimated to be completed in Summer 2019.	Construction
<b>Omaopio Tank Replacement, Kula, Maui</b> – A new 2 million gallon storage tank and demolition of the existing 2-million gallon tank. Project estimated to be completed in Summer 2019.	Construction
<b>Wailuku Heights Booster Pump Stations Upgrades, Wailuku, Maui</b> – Replacement of the existing two booster pump stations (Kuikahi and Waiale). Project estimated to be completed in Spring 2019.	Construction
<b>Wailuku Heights Tank #30 Booster Pump Upgrade, Wailuku, Maui</b> – Replacement of the existing booster pumps and electrical controls. Project estimated to be completed in Spring 2019.	Construction

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<b>Holokai Road Waterline Replacement, Haiku, Maui</b> - Replacement of approximately 3,350 linear feet of 8-inch waterline. Project completed March 2017.	Construction Completed
<b>Emergency Generators</b> – New emergency back-up generators at Napili C, Ualapue, Hamoa, and Honokahua B well sites. Project completed in July 2017.	Construction Completed
<b>West Maui Well #2 Exploratory, Mahinahina, Maui</b> – Drilling of a 1390-foot deep exploratory well. Drilling and testing completed in July 2017.	Construction Completed
<b>Ulupalakua Tank Replacement, Kula, Maui</b> – New 100,000 gallon glass-lined steel water tank and demolition of the existing 40,000 tank. Project put into service July 2017.	Construction Completed
<b>Kamole Water Treatment Plant Chlorine Scrubber and Containment, Makawao, Maui</b> – Improvements for safety venting for the existing chlorine containment. Project put into service in November 2017.	Construction Completed
<b>Upcountry 6 Booster Pump Upgrades, Kula</b> – New booster pump motors, pumps and motor control center for the 3 existing booster pumps to provide reliability for Upcountry. Project put into service November 2017.	Construction Completed
<b>Kualapu’u Well Motor Control Center Upgrade, Kualapu’u Molokai</b> – Replacement of the existing motor control center. Project put into service December 2017.	Construction Completed
<b>Piihola Water Treatment Plant Organic Carbon Reduction, Kula, Maui</b> – Improvements to reduce organic carbon to meet the disinfection byproducts standards of the drinking water. Project put into service December 2017.	Construction Completed
<b>NASKA Baseyard Roof Replacement, Kahului, Maui</b> – Replacement of approximately 8,000 square feet of metal roofing over the Meter Shop, Weld Shop, and Motor Pool Garage. Project completed in September 2018.	Construction Completed
<b>Iao Water Treatment Plant Upgrade, Wailuku, Maui</b> – A new treatment plant to replace the existing facility and increase capacity. Project estimated to be completed in November 2018.	Construction Completed

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### FIELD OPERATIONS DIVISION

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Field Operations consists of the following sections: Maintenance sections in the Districts – Central, Upcountry, Lahaina, Hana, and Molokai; Construction, Support

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

Services and the Dispatch Office. Field Operations is responsible for approximately 780 miles of water transmission and distribution lines, servicing 36,615 accounts on Maui and Molokai and remaining available on a 24/7 basis.

The Central, Lahaina, Upcountry, Hana and Molokai districts are responsible to control, repair, replace, install, and maintain main and service waterlines and all appurtenances, including meters, hydrants, standpipes, relief valves, gate valves and stopcocks. The District crews assist the Construction section, contractors, other divisions and departments, and consumers as needed to patch roadways and sidewalks, conduct inspections for agriculture water rate requests, participate and comply with Department of Health Sanitary Survey requirements, perform leak detection, prepare for hurricane and tsunami events, and request One Call Utility locations. Personnel in the Maintenance Sections receive and address consumer water complaints, flush water systems and perform tank and grounds maintenance.

### Annual Number of Responses per District

<u>Maintenance District</u>	<u>Consumer Complaints</u>	<u>After-Hours Calls</u>
Central	1,069	120
Upcountry	621	107
Lahaina	214	19
Molokai	198	72
Hana	88	28

### Central Maintenance

This year the following pipelines were replaced:

- 580' of ¾" copper pipe
- 1285' of 1" copper or drisco pipe
- 920' of 1 ¼" of copper pipe
- 200' of 1 ½" of copper pipe
- 340' of 2" of copper pipe
- 10' of 4" of ductile iron pipe
- 43' of 6" of ductile iron pipe
- 38' of 8" of ductile iron pipe
- 5' of 12" of ductile iron pipe'

The Central crew responded to 153 shut and open meter requests, 45 consumer complaints of dirty water or no water, and 75 high or low pressure complaints. The crew participated in 15 tie-ins, 11 bores, 20 taps and other contractor related projects, a lot which involved after hours and night work which results in overtime. Personnel also replaced or repaired 39 relief valves and/or gate valves/stopcocks, replaced or repaired approximately 347 meters, repaired approximately 84 service laterals, replaced 126 service laterals, installed 14 service laterals, and relocated 10 service laterals. Replaced 39 hydrants/standpipes, and completed 170 FA requests, 53 Job Orders, and 6 AG Inspections.

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The Laborers in the Central crew flushed the Upcountry water system daily for water quality purposes (a total of 6,610 hydrants flushed and 10,148,850 gallons of water) and performed Tank and grounds maintenance in the Lahaina, Upcountry and Central districts.

The Leak Detection Crew surveyed 445 miles of pipe in the Central, Hana, Lahaina, Molokai and Upcountry Districts, and found 254 leaks. They located main lines, isolation valves and water service laterals throughout Maui and Molokai for Hawaii One Call utility, maintenance crews, Water Treatment Plant Operators, and Engineering.

### Upcountry Maintenance

The Upcountry maintenance crew completed 51 Job Orders which consisted of shutting down and opening of valves for tie-ins, installing corporation taps and bores for contractors. They also completed 42 Field activities which consisted of relocating meters, raising meters, closing and reopening meters, installing service laterals and meters.

The crew repaired and replaced a total 162 services ranging from 1" to 1 1/2". A total of 1,114' of service laterals were replaced with copper. FY2018 a total of 86 main lines were repaired ranging from 2" to 12". A total of 510' of main lines were replaced with DI, PE, or copper pipe. The UpCountry crew responded to the following complaints - 56 calls and found no leaks, 64 private leaks, 53 meter leaks, 14 dirty water complaints, 59 hydrants / stand pipes, 39 high / low psi issues and 81 miscellaneous complaints. In the course of the year the crew conducted and completed 11 finals for jobs with contractors all meeting DWS standards. They also conducted 19 Agricultural Rate inspections for the Upcountry area.

### Lahaina Maintenance

The Lahaina Maintenance crew completed a total of 238 Field Activities. They also repaired main line leaks, service laterals, leaking meters, hydrants/standpipes and stopcocks. They replaced 366' of main line pipe ranging from 2" to 8" and 208' of service laterals ranging from 3/4" to 1 1/4", plastic/CI meter boxes, air relief valves, gate valves and stand pipe laterals. Personnel resolved no water/low-high pressure complaints, shut/open water requests, located meters/valves, replaced /unlocked meter covers, and verified leaks or meter numbers. They completed Job Orders which involved various jobs including bores and taps ranging from 1" to 8" for contractors and maintained hydrants in the Lahaina District.

Weekly and sometimes daily system checks were performed on the Honokohau Valley System, which consists of over 7 miles of 2" – 6" PE/GI main line pipe. This is the most problematic system in the Lahaina District, which accounted for 76% of all main line repairs, and 85% of all main line footage replaced district wide. The system started experiencing major problems in the middle of April and lasted till the beginning of June.

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The following is a list of work done on the Honokohau system by crews with the support of personnel in both the Construction and Support Sections.

- Repaired 48 main line leaks ranging from 1½" – 6" PE/GI pipe.
- Replaced 313' of main line ranging from 2" – 4" PE pipe.
- Replaced 6 ARV's ranging from ¾" – 1".
- Assisted Support Service repair/replace 3 PRV's ranging from 1½" to 2".
- Cut and plugged 8 illegal taps on DWS water line.
- Walked and cleared trail while bleeding air from transmission line.

In the beginning of April, the pump at Napili Well Site "B" broke down. Approval was given by the DOH and Aqua Engineers to interconnect to Kapalua Water System which was done. A 3" temporary construction meter at was installed on a Kapalua Hydrant and 550' of 2" PE pipe was layed and hooked up to DWS Hydrant #1. Following proper chlorination and all necessary Lab testing, the temporary jumper was put on line on April 13<sup>th</sup> and removed on May 14<sup>th</sup> after installation of the new pump. A total of 1.96 million gallons of water was supplied from the Kapalua System to the Napili system.

### Molokai Maintenance

The Molokai crew checked chlorine residuals daily, and flushed hydrants as needed on the East side and rotated pumps at Kamiloloa, Ualapue and Kawela. Weekly they filled hypo at all tank sites, picked up pH readings, and maintained baseyard, equipment and vehicles. Monthly the crew read meters, picked up meter readings as needed, hung tags for delinquency, locked meters for non-payment, picked up freight as needed, inspected transmission lines and picked up bacti sampling and meter readings at well sites. Note that when meter readings are picked up staff prepares approximately 150 to 200 high/low Field Activities to recheck faulty meter reads. This process takes a couple of days to reread. The number of Field Activities was reduced with replacing of defective transponders and/or meters. A pilot program was implemented with the new cellular meters however it was unsuccessful because of the limited service to the island.

The Molokai crew repaired 21 service lines ranging from ¾" to 2". They repaired leaking meters and both service and main lines. A total of 180' of pipe ranging from 2" to 12" was used for repairs or replacement. During the course of the year 2 hydrants were replaced on island due to normal wear and tear.

### Hana Maintenance

The Hana district covers Keanae to Kaupo which has extremely rough terrain. The crew completed 313 Field Activities which included replacing 272 meters and transponders in September as part of the meter replacement program. Daily personnel logged all tank, chlorine levels, amount of hours pump and amount of water pump from each well sites. Visual checks were done daily on the system from Koali to Keanae.

Weekly the crew collected tank and end of line chlorine residual samples to ensure adequate chlorination was delivered throughout the distribution system. Personnel ensured all chlorine containers were topped off at 4 different tank sites, checked stand

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by generators that there was adequate fuel in case of an emergency. The crew collected chloride samples from each well for the Lab. They maintained 7 tank sites, landscaped, cut trees, weed control and performed building maintenance.

Monthly the crew read 550 meters from Keanae to Kaupo. Presently the Hana office is capable of downloading and uploading all pertinent files for meter readings for Fiscal/ for billing, lock out meters. Staff also collected monthly payments including delinquent payments on accounts. The crew picked up meter readings at the EMI ditch at Makapii which feeds the Nahiku system. Periodically, the crew was asked to collect microbiological samples for chlorinate lines, well etc. Samplers were certified by DWS laboratory for proper sampling procedures.

The Hana crew has continued on working to reduce leaks whenever possible by utilizing the leak detection crew, SCADA information and replacing lines that have more than a couple leaks wherever and whenever possible. Throughout the year, the crew has kept all hydrant and standpipe in good appearance and physical order. With the rainy season over, hydrant and standpipe painting began in June. Semi-annually all hydrants and stand pipes are flushed. In addition, the crew has actively replaced old ARV's with new ones when identified.

### Construction Section

The Construction crew's projects cover all water systems and include patching roads, sidewalks, and trenches; installing and replacing fencing, clearing tank sites and other DWS properties of trees. This crew assists the districts and other divisions with their duties including replacement and repairs of main lines, valves, service laterals, hydrants, treatment plants, tanks, standpipes and meters.

Projects throughout the year included:

- Koene Place - replaced 180' of 2" copper pipe and 60' of 1" copper pipe. Installed 6 new service laterals and a 2" gate valve, and transferred 5 – 5/8" water meters
- Lahaina Water Treatment Facility – exposed 12" drain line valve, removed service lateral and re-installed bonnet shaft, packing, and gate valve; tested for leaks, and installed sliding valve boxes and poured concrete donut for valve cover, locate lines, assisted support services in cleaning site, pouring cement for curbing, driveway and drain spill way, cut concrete floor, exposed 1" leaking copper line, cut and plug lateral, back filled, compacted floor, and re-cemented floor. Cleaned area and hauled away materials.
- Polipoli Road, Nagamatsu Tank, Waiehu Tank, Kealahou #2, Haleakala Acres #367, Naalae #362, Mauka Estates #404, Ulupalakua tanks, Kanaio Tank #351, and Kamaole Tank #354 – cleaned tanks and tank sites
- Makena Tank #34 – replaced stand pipe riser, sample outlet wharf head and cleaned site
- Waikamoi – Walked line and checked for damage on intakes 2 and 3
- Napili C – cut road and concrete apron, then replaced 12" pump line valve and exposed 8" pump line



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- Haiku Road – transferred three 5/8” water meters
- Kehalani Subdivision and Waikapu Gardens – repaired 149 leaking meters
- Hale Mahaolu, Kula Highway, Kupulau Drive, South Kihei Road, Amala Place, Makawao Avenue, Pauwela Road, Kahiapo Road, Aliiolani Street, Holomakani Place, Auhana Road, South Oahu Street, Hobron Avenue, Hoomaha Street, Pau Hana Road, Baldwin Avenue, Hoomaha Road, Waiehu Beach Road, Wailuku Heights Phase 1 area, and at the Upper Kula System – replaced or repaired hydrants or standpipes
- Auhana Road – cut and cleared around hydrant valve box, PRV vault, and installed flanged posts with reflectors
- NASKA Baseyard – installed 100’ of 1” PE pipe, and installed a 1” meter and backflow
- Makena Road – replaced 380’ of 2” PE with 2” copper pipe, transferred 3 – 1” service laterals, repaired driveways and road area with cold mix
- Poni Place and Paia – installed 3” tee, 1 ½” ball valve, 160’ of 1 ½” and 80’ of copper pipe, and transferred two 5/8” water meters
- Installed 40 water source protection project signs in Central and Upcountry for DWS Water Resources & Planning Division
- Removed and replaced 110’ of 2 ½” galvanized stand pipe laterals and risers, gate valves, sliding valve boxes, cemented valve covers and painted 9 stand pipes in the Makawao District
- Iao Water Treatment Facility – shut ditch intake and installed 10” PRV; flushed lines
- Painted 13 water tanks
- East Camp 5 Road, Stable Road, Kamaaina Road, L. Main Street, Makena Road, Olinda Road, Pauwela Road, W. Lanai Street, Calasa Road, E. Kuiaha Road, L. Honoapiilani Highway and Honokohau Valley – replaced or repaired main lines
- Papa Avenue and Uluniu Road – replaced or repaired stop cocks or ball valves
- Wakea Avenue, South Oahu Street, Kahekili Highway, Makawao Avenue, Olinda Road, Hoalike Street, Malaihi Road, Pulehu Road, Kahiki Street, Meha Street and Makaala Drive – repaired or replaced service laterals
- Malaihi Road – located meters
- South Kihei Road – removed meters
- Ulumalu Road, Ikai Street, Baldwin Avenue, Piliwali Road and Lower Honoapiilani Road – patched and cleaned roads.
- Holua Drive and South Kihei Road – repaired or replaced driveways and sidewalks
- Kuualoha Street – replaced meter boxes
- Assisted meter technicians in locating valves, preparing and replacing turbo, compound, meters, etc.

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

- Pau Hana Road, Hoomaha Road, Apau Place, Holomakani Street - painted and cemented hydrant or standpipe pads and valve covers
- Honokohau Valley – replaced 1200' of 2" PE, and 1200' of 1" PE, checked for leaks and breaks on lines and in tunnels; repaired leaks on 4" and 2" mainline
- Lower Ulumalu Road – located, exposed, and cleaned out PRV vault and repaired leaking PRV
- Kahulu lateral east tank #355 and upper tank #395 – dug and cleared inside and outside of fence line cut and lowered fence line for erosion and gaps for sanitary survey
- Molokai (Kalae and Manila Camp area) – replaced 111 meters and transponders and repaired 5 service laterals as part of replacement program
- Molokai Kamehameha V Highway – cemented main line and stand pipe valves, cast iron meter pads, and manhole covers
- Maui Meadows Tank #17 – exposed 12" drain line, installed 12"x8" tapping tee, and trenched for new 8" drain line; poured cement for thrust blocks, re-installed concrete barrier posts, painted pop off line, and cleaned tank site
- Assisted meter technicians with replacement of large meters. The crew completed 486 Field Activities – replaced 79 defective meters, replaced 187 defective transponders, tested 75 meters and found them all working properly, tested 25 meters and found them faulty so replaced them, upgraded 3 meters, reinstalled 3 meters, checked 1 meter cover that was stuck, locked 1 meter cover, replaced 1 plastic meter box cover, removed 1 meter due to tampering, removed 1 meter due to non-payment and installed 1 tamper screw
- County-wide Facilities Maintenance Project/Lahaina Tank – exposed 16" tank outlet line and traced lines to locate 4" CI line for cut-in and boring; removed and re-installed and cemented valve covers
- County-wide Facilities Maintenance Project/Omaopio Tank – met with Engineering, installed and plumbed hydroelectric unit in tank bypass vault
- Napili – Removed 600' of 2" PE pipe, hydrant meter, wharf head and regulator, and cleaned site area.

### Support Services Section

The Support Services section has a wide scope of responsibilities, including maintaining an entire fleet of vehicles, repairing large and small equipment, assisting with the repair of sidewalks, driveways, and valve boxes, participating in the Sanitary Survey process; repairing DWS buildings and offices, repairing and maintaining fire hydrants, stand pipes, tanks, regulator boxes, and valve boxes. This section also repairs, maintains and replaces system hydraulic valves water meters, transponders, and appurtenances, operates heavy equipment to dig out main and service waterlines, repair roads, and cut brush in remote areas. The meter shop completed 3,344 field activities which included defective transponders, defective meters, new meters, non-payment, illegal connections, construction meters, meter boxes, etc.

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The hydrant maintenance section repaired and serviced 357 hydrants or standpipes in the Paia area and is now working in the Haiku area.

The Welder and Carpenters worked on the Sanitary Survey in the Central district. All tank hatches and gaskets were replaced as needed. All vent screens with nylon screen were changed. The Carpenters replaced screens, roof vents and misc. deficiencies on water tanks to meet compliances with DOH regulations.

### Dispatch Office

The Dispatch Office provides clerical and administrative support for the division. The personnel assists with varied processes and tasks, such as fielding incoming calls on a 24/7 basis and addressing complaints in a timely basis, processing paperwork, recording and reporting daily attendance, ensuring submittal of timesheets and required payroll documents, processing job orders, receiving agriculture applications, processing purchase orders, maintaining accurate call-out schedules, arranging travel, and monitoring security access.

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## PLANT OPERATIONS DIVISION

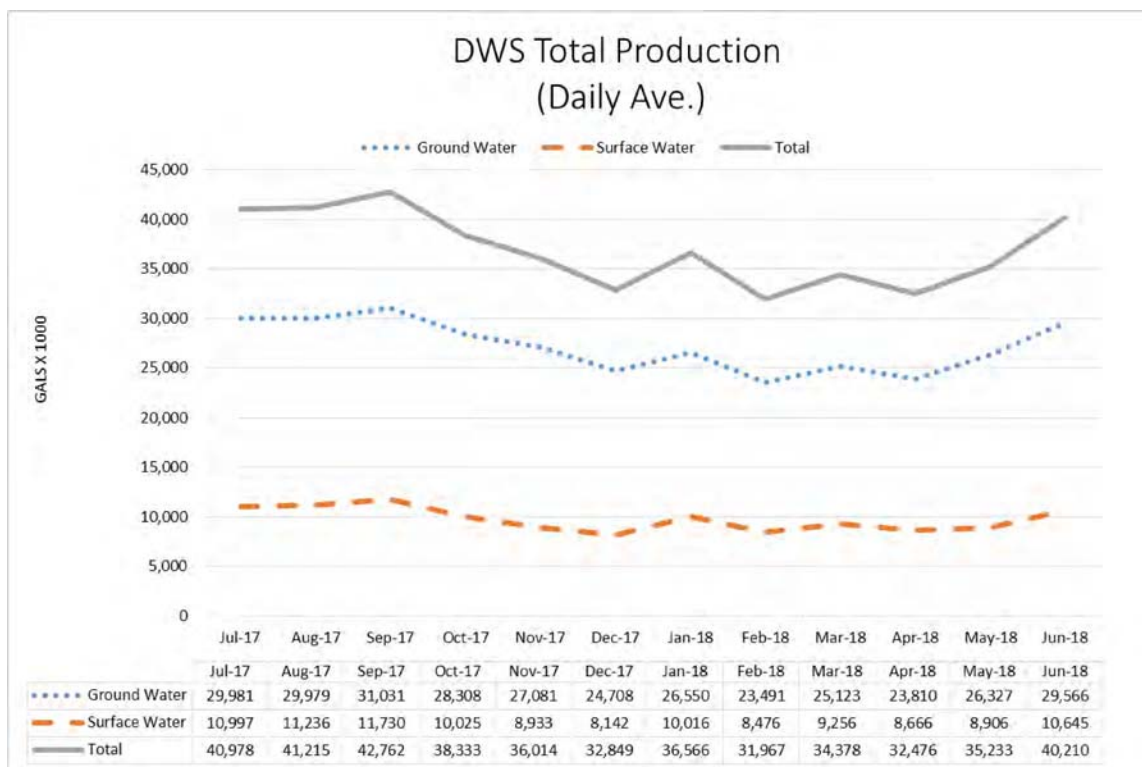
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The Plant Operations Division consists of 33 positions in 5 sections: Water Quality Laboratory, Backflow Prevention, Electrical, Mechanical, and Electronics. Each section plays an integral role in the daily operations of the Department of Water Supply.

### Electrical, Mechanical, and Electronics

The Electrical, Mechanical, and Electronic Sections maintain and operate 49 ground water sources (approximately 70% of the Department's total daily production), 79 booster pumps, GAC treatment facilities, 24 disinfection systems, and 143 remote Supervisory Control and Data Acquisition System (SCADA) sites. The SCADA System provides 24x7x365 control of the distribution system, alarming, real time, and historic information. The Electrical and Electronic sections also provide technical support for 6 surface water treatment facilities.

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*Total production of ground and surface water for Fiscal Year 2018*

Aside from normal daily operations and maintenance, notable in-house and CIP projects for FY18 include:

- Planned and completed in-house control system design / installation and programming for logic control systems and SCADA integration at Wailuku Heights #30 booster pumps, Kula Kamole tank, and Napili C hydro-lubrication system.
- Continued upgrades to online chlorine analyzers at wells and tank sites under US EPA method 334 for groundwater rules.
- NELAC (National Environmental Laboratory Accreditation Conference) audit for FSMO (Field Sampling and Measurement Organization).
- Conversion and upgrade of Waihee wells generator transfer switch to automatic.
- Completion of Honokahua B well pump replacement.
- Completion of Napili C well pump replacement.
- Completion of Waipuka well #1 pump replacement.
- Source water flow meter calibration for the Central, Upcountry, and Lahaina districts.
- Upgrade SCADA RTU (remote terminal unit) program to incorporate variable sodium hypochlorite feed systems at Kualapuu and Kawela wells on Molokai.
- Replaced SCADA cabinets at Wailuku heights #29 tank, Maalaea tank, Maalaea control valve, and Malaihi tank.
- Integrate CMF flow meter upgrades at Lahaina water treatment plant.

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- Integrate SCADA control for Maui Electric “Fast Demand Response Program” on the following sites: Kupaa well, Diamond Resort boosters, Kula Ag park A & B, Maui Meadows #17 & #18, and Mokuhau wells.

### Scheduled and Unscheduled Maintenance Events

	Electrical	Mechanical	Electronics
Central	50	54	370
Upcountry	34	24	137
Lahaina	18	9	56
Napili	11	9	56
Molokai	2	0	66
Hana	8	16	31
Water Treatment Facilities	22	<i>na</i>	101
Preventive Maintenance	165	48	190

### Water Quality Laboratory

The Water Quality Laboratory strives to ensure that all sampling and analysis are done competently and all data produced is legally defensible and has documented precision and accuracy. The laboratory maintains accreditation with the State of Hawaii, Department of Health for Chemistry and Microbiology, Utah Department of Health Environmental Laboratory Certification Program, an accrediting body with the National Environmental Laboratory Accreditation Program; FSMO accreditation through ANSI-ASQ National Accreditation Board (ANAB).

#### Microbiology:

- 2,752 compliance samples collected & analyzed
- 143 non-compliance samples collected & analyzed
- 6 total coliform positive samples

#### Chemistry:

- 2 of 2 tri-annual compliance samples for the 2017-2019 monitoring period completed for all systems.
- Triennial Lead and Copper testing was completed for 2 systems.

Process control samples analyzed in house: 16,540.

Analytes include fluoride, nitrates/nitrite, sulfate, chloride, phosphate, total organic carbon, pH, conductivity, total & free chlorine residual.

### Backflow and Cross-Connection Control

The Backflow and Cross Connection Control Section currently consist of two positions. We continue to conduct final inspections, test new backflow preventer installations and on-site field surveys. Working closely with Engineering, Distribution, Support Services, Water Treatment Plants, Water Resources, Fiscal and other state/county departments,

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

residential property owners, agricultural farmers, bed & breakfasts' (B&B), condominium property regimes (CPR), transient vacation rentals (TVR), commercial properties, property management companies, construction & plumbing contractors, engineering consultants & engineering firms with backflow and cross connection issues, concerns and recommendations.

The Backflow section monitors required annual testing of backflow preventers, and sends notices monthly. For FY18, we conducted 73 final inspections and 608 field surveys. There were 11 requests to install backflow preventers issued. Currently we track 3,419 backflow preventers in the database system. As construction in Maui County continues to grow, the Backflow section continues to enforce rules and regulations to keep Maui's drinking water safe.

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### WATER TREATMENT PLANT OPERATIONS DIVISION

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The WTP Division consists of 30 staff members in 2 districts, East and West. This includes the Division Manager and Staff Services Assistant. The Staff Services Assistant works under the directive of both the Water Treatment Plant and Plant Operations Division Managers. The Water Treatment Plant division is fully staffed at this time.

In the WTP Division there are 6 surface water treatment plants, (4 East and 2 West) utilizing rain water runoff from Maui's streams and ditches. Due to the nature of surface water sources and the greater possibility of contamination in relation to ground water sources, stringent rules are in place and enforced by the State of Hawaii's Department of Health and the EPA in terms of treatment technique required as well as regulations regarding maximum contaminant levels and disinfection that must be met and are in most cases far exceeded by the DWS Treatment Division.

The 6 surface water treatment plants account for about 1/3 of Maui's potable water supplied to the consumers each day. This amounts to approximately 10 million gallons per day. The other 2/3 is supplied by groundwater sources and managed by the Plant Operations Division.

Goals for the Water Treatment Plant Operations Division in FY19:

- Complete construction of the new Iao Water Treatment Plant.
- Convert all chlorine gas applications at the 6 treatment plants to onsite sodium hypochlorite generation using salt and electricity.
- Retrofit the new SCADA automated control system at the West District baseyard facility in Mahinahina.
- Continue to meet and exceed all state and federal regulations on drinking water quality.

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Total water produced East District: 2,254,099,000 gallons  
Total water produced West District: 1,308,377,000 gallons  
Total water produced during FY18: 3,562,476,000 gallons

### East District

**Olinda Water Treatment Plant:** Water produced during FY18: 484,370,000 gallons.  
Daily average: 1.33 million gallons per day (MGD).

The original plant service air compressors were replaced at this facility in September 2017. The filtration system is dependent on compressed air in order for it to operate. This was a significant retrofit/replacement of original components.

Work began on a much needed sediment drying basin for the Olinda plant. This will facilitate regular cleanouts of the 8 mg raw water basin prior to the filtration process. The dried material will be removed to an approved landfill site. This is a CIP project. The Olinda plant had ample supplies of raw water available for treatment and distribution to customers in the Upper Kula system this year due to consistent rainfall, significantly reducing instances of drought conditions. Engineering projects rebuilding the Waikamoi flume and repairing leaks in the Waikamoi reservoirs undoubtedly contributed to these favorable conditions.

Dr. Steven Duranceau and the University of Central Florida continued studies on treatment methods to try and determine a means to convert the Upper Kula system to free chlorine and provide disinfection consistency with the rest of the treatment plants. Olinda is currently the only plant using chloramine disinfectant, which is a mixture of chlorine and ammonia used to prevent the formation of disinfectant by-products. The latest study (still underway) by UCF is to test an air-stripping system for the removal of disinfection byproduct regulated contaminants. Results pending soon.



Olinda Sediment Drying Basin

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**Piiholo Water Treatment Plant:** Water produced during FY18: 1,197,415,000 gallons.  
Daily average: 3.28 MGD

Piiholo WTP continued to be the largest producer of treated surface water of the 6 DWS facilities. Water at this elevation can be distributed not only to the Lower Kula system but gravity fed to the Makawao system as well thereby reducing pumping costs at the Kamole WTP. When drought conditions occur at the higher elevation plants, Kamole plant can be counted on to supplement Lower Kula by pumping water up while also supplying the Makawao system.

A new SCADA plant controls system was installed at Piiholo and is now operating at full capacity. This system is an automated plant process controller. We have experienced greater efficiency here due to “auto backwashing” of the filters at any time day or night without an operator needing to be present. Greater monitoring of the process and reporting to the regulatory agencies is also achieved through “real time” trend graphing. The automated process can also be viewed remotely by the manager, supervisors and tech support staff as well as operators after hours.

A full 4 vessel replacement of the GAC (30,000 lbs each) was contracted out and completed in March 2018. The Treatment division is in the process of installing Variable Frequency Drives (VFD's) on the pump motors feeding this disinfection byproduct reduction system which will result in cost savings on electricity and less frequent carbon replacement.

**Kamole Water Treatment Plant:** Water produced during FY18: 449,530,000 gallons.  
Daily average: 1.50 MGD

All diesel fuel lines from the storage tank to the emergency generator were replaced by field operations. The original lines had significant corrosion and damage. Incoming electrical surge suppressors/line conditioners were installed at Kamole this year. This is now the 4<sup>th</sup> plant to retrofit this equipment into the process. This has proven to significantly reduce instances of costly damaged electrical components due to fluctuations of incoming power.

The chlorine gas cylinder containment open bay area was fully enclosed in November 2017, with double doors that can be opened wide enough to facilitate removal and replacement of expended one ton gas cylinders. This was an important improvement to the plant in the area of chlorine inventory safe and secure storage.

The Wailoa ditch raw water intake forebay was drained and thoroughly cleaned by EMI in January 2018. Much debris and decaying organic matter had accumulated here through the years. There were concerns that this could possibly contribute to taste and odor issues in the finished water. Many thanks to Mark Vaught and his crews for their prompt assistance with this.



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Wailoa Ditch cleanout – before and after

**lao Water Treatment Plant:** Water produced during FY18: 122,784,000 gallons. Daily average – 340,000 GPD

The original lao WTP is near the end of its useful life. This “temporary” treatment plant built in 2000 has provided many years of service to the county but is due to be decommissioned after the startup of the new treatment plant now in the final stages of construction. Anticipated shut down of the original lao and startup of the new is the end of October.

The new lao Water Treatment Facility will be a centrally located, state of the art, technologically advanced facility. It will be the newest generation “N” style PVDF membranes creating what is known in the industry as barrier filtration. The disinfection system will be sodium hypochlorite generated on site by passing a brine solution over a series of electrolytic cells. There will be no potentially hazardous chlorine gas stored or used at this site. The control system (SCADA) is also an upgraded version of the original manufacturer’s equipment with some added capabilities in terms of monitoring and historical information backup. We look forward to presenting the new lao Water Treatment Plant to the Maui community very soon.



New lao Water Treatment Plant

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### West District

**Mahinahina Water Treatment Plant:** Water produced during FY18: 673,350,000 gallons. Daily average – 1.84 MGD

Plant staff fabricated stands/support hardware and installed security cameras at the Honolulu ditch intake and travelling screen area in October 2017. An upgraded, all around security camera system was also installed inside the fence line of the facility. These cameras transmit real time images directly to the control room and are also motion activated, recording any instances for review after the fact. This security system can also be accessed by the supervisors remotely via smart phone.

A control systems upgrade project, (engineering phase), was initiated in December 2017. This will eventually provide the Mahinahina base yard facility with the same control system capabilities and features as Piiholo WTP. This will be a technologically advanced control system providing the operators with a greater ability to efficiently provide safe water to the public. Auto back washing of the filters, enhanced alarming capabilities for after- hours process issues, and remote monitoring are some of the improvements we anticipate this system to provide.

Collaborative work (grading, addition of road base) on the dirt access road to the Mahinahina base yard in February 2018 went very well. The road had become rough after ML&P stopped maintaining it. This is the second time Public Works has done a fine job repairing this access road to the plant.

**Lahaina Water Treatment Plant:** Water produced during FY18 – 635,027,000 gallons. Daily average: 1.74 MGD

The sedimentation drying bed was renovated at Lahaina WTP in July 2017. This involved removal of all dried sediment, sand and felt underlay and replacement of new felt and sand. This facilitates percolation of water and retainment of sediment removed from the pre-sed basin prior to the filtration process.

Plant staff completed repainting of all exterior piping at the plant. This not only looks good but more importantly provides corrosion control.

In September 2017, a much needed equipment storage Quonset hut was constructed at the plant. Many thanks to field operations constructions crews for some very fine concrete work.

As at Olinda plant, two new critical process air compressors were installed here. The old compressors that had been having frequent problems were Atlas-Copco's, the new compressors are Ingersol-Rand units and seem to be operating much more efficiently with no problems thus far.

During the heavy rains and island wide power outage of October 2017, the raw water intake in the Kanaha Valley feeding the plant became totally obstructed shutting the

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

plant down. Power was restored but it took many people many hours, in rough weather conditions, manually and with machinery, to clear obstructions to the intake created by mud and debris being washed down into the valley. This was a fine example of the DWS working together and using all resources to get this plant up and running as soon as possible.

Preparations began in FY18 for the conversion over from chlorine gas to onsite sodium hypochlorite generation at Lahaina as described earlier. Both Lahaina and Iao should have operational alternative disinfection systems online by the first week of September. The strength of the hypochlorite solution is below the threshold limit of hazardous substance which is 1.0 parts per million. The OSG system will be making 0.80 ppm solution. This will make it safer for staff handling, eliminate transport of chlorine gas on the roadways and be far more cost effective than other forms of chlorine available in Hawaii. Eventual conversion to this technology is planned for all 6 plants.

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### WATER RESOURCES AND PLANNING

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#### Goals

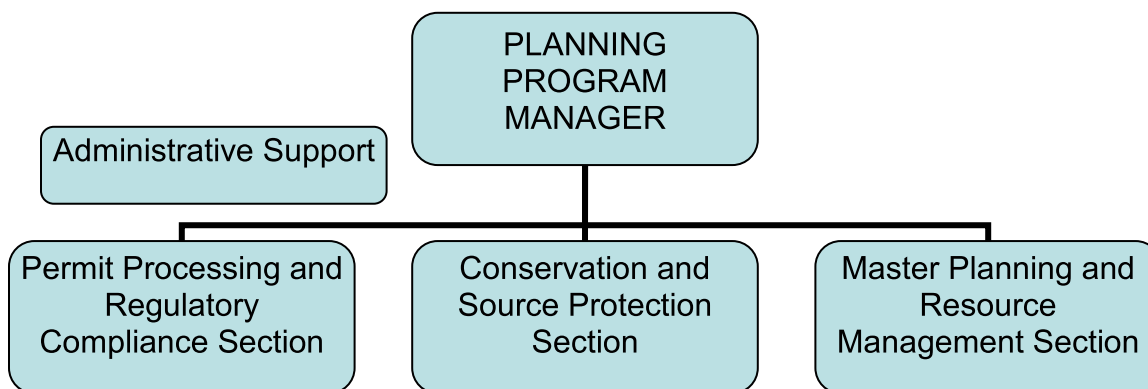
1. Maintain and improve water service and quality
2. Provide master and area planning support and research necessary to meet department needs
3. Provide timely and pertinent permit review, responses and information to other agencies, divisions and the public
4. Increase water use efficiency through water conservation supply and demand side measures

#### Objectives

1. Support watershed protection and rehabilitation programs by maintaining consistent funding for pertinent projects with watershed management plans
2. Formulate long range goals of the department and support development of capital improvement program
3. Ensure quality and efficiency in all communications
4. Standardize and stream line data collection, permit processing and grant administration
5. Deploy conservation program measures with quantifiable savings
6. Support water quality/regulatory compliance

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### Organizational Chart



The division has nine employees with no vacancies at the end of the fiscal year.

### Highlights

This division is responsible for department long range and area planning and resource management; planning and geospatial information systems; discretionary permit review, support processing of meter reservations and other permits and assessments. The division provides oversight and department support of regulatory compliance, including requirements for designated water management areas, dam safety programs, emergency action plan, operation and maintenance manuals and sanitary surveys. The division manages water source protection and conservation programs, including the watershed protection and restoration grants program. The division identifies water resource data and research needs and administers resource data monitoring and research contracts.

### Watershed Partnerships Grant Management

DWS strives to support projects that protect the county's watersheds and freshwater resources. The department has provided financial support to ten watershed partnerships and organizations on Maui and Molokai to ensure perpetual protection of upland watersheds. These organizations collectively address a variety of threats to the watershed through activities such as: ungulate control through fencing and targeted hunting practices; eradication of invasive plants; reforestation and native vegetation of upland areas and habitats critical to the recharge and protection of water supply.

This fiscal year, DWS provided a total of \$2,142,000 in grants to the following watershed partnerships and organizations aimed at protecting water resources:

- Honokowai and Wahikuli Source Protection Project – The Nature Conservancy
- Waikamoi Haipua'ena Source Protection Project – The Nature Conservancy
- East Maui Watershed Partnership –University of Hawai'i Office of Research Services (UH ORS)
- Leeward Haleakala Restoration Watershed Partnership – UH ORS
- West Maui Mountains Watershed Partnership - UH ORS
- East Molokai Watershed Partnership- The Nature Conservancy
- Maui Invasive Species Committee - UH ORS
- Hawaii Agriculture Research Center

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- Pu'u Kukui Watershed Preserve – Tri-Isle RC&D
- Auwahi Forest Restoration Project - UH ORS

A standardized DWS Watershed Protection Grant Application form was used this fiscal year and an updated Request for Proposal was released for FY19. Improvements were made in the digitized submission forms to help collect more useful data on the progress of our grantees. The improvements create a better accounting structure for grantees to follow to which will continue to increase transparency, streamline the application process, make it easier for DWS to track expenditures and benchmark project deliverables.



FIGURE 1: POSTER CONTEST 2<sup>ND</sup> PLACE  
MOLLY VANDEN BOS, CARDEN ACADEMY GR. 7

### Resource Management

The division maintained contracts with the United States Geological Survey (USGS) for ground and surface water monitoring; assessment of groundwater availability in the Waikapu, Iao and Waihee aquifer systems; a study to assess impacts of land-cover changes on groundwater recharge, a cooperative study with State Department of Hawaiian Homelands and the Office of Hawaiian Affairs to study groundwater recharge and availability in Molokai; and a study to quantify the impacts of high-priority

non-native and dominant native plant species on freshwater availability on Maui. Contract completion of all but one study was extended on request by USGS, due to their internal delays. The findings are expected to improve resource management, distribution of pumpage and sustainable source development and provide additional research support for watershed protection efforts.

### Discretionary Permit and Water Meter Reservation Processing

The division processed 67 discretionary permits, responses to Environmental Assessments, Environmental Impact Statements, Well Construction Permits and other consultation requests. Educational materials on groundwater protection and water conservation were distributed with the division's responses. The reviews included analysis and recommendations to address any potential impacts on water resources and system infrastructure.

The division processed 44 applications which include 19 meter reservations and 44 extension requests. In total, 98 water meters were requested in these applications.

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### Public Inquiries

More than 50 verbal and written inquiries were fielded from the public, businesses, non-county agencies and consultants. Inquiries relate to topics such as water consumption, DWS water purchases, water production, rates, Upcountry priority list, hydrological data, water distribution system data, demand queries, water availability, water quality, source water assessment, meter data, empirical use, best management practices, and conservation measures.

### Conservation

The department water conservation plan lays out integrative projects and initiatives designed to help reduce the overall water consumption in Maui County. Goals include continue to make improvements in survey, data and information collection related to water consumption, savings and losses. New technologies are available to improve our public outreach.

Major program components include an interdepartmental water audit and leak detection program in collaboration with Field Operations Division. Demand side measures and incentives provide free water conserving solutions to the public such as high efficiency toilets and rain barrels. The division continues to encourage sustainable landscaping with native plants with a stronger push to inform the public to increase xeriscaping in drier areas and reduce planting water intensive non-native ornamental plants.

### Water Audit and Leak Detection

Results from the FY17 water audit shed light on areas of improvement for the department to consider. It has provided an avenue to find more reliable data and knowledge about water losses in the distribution system – the results of which also yielded targeted recommendations for conservation CIP improvements. A conservation CIP project to install effluent meters at source water tanks is underway for FY18. The initiative is expected to help DWS account for post-production water sent into the distribution system. The same collected data will provide information about what may be happening to unaccounted-for, non-revenue water within water system sub-districts.

### Public Outreach

Public outreach about the importance of water conservation and source protection included staffing educational events, developing and publishing outreach materials. Continued use of iPads and digital surveys to gather data at events has helped to increase public interactivity, productivity, and significantly reduced administrative costs for public outreach events.

Advertisements in the following local newspapers, magazines and radio stations were published:

<u>Media Outlet</u>	<u># of Advertisements</u>
Maui News	8
Maui Family Magazine	4
Hanaside News	4
Fil-Am Voice	5

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Pacific Media Group	2,176
KAOI Radio	<u>1,000</u>
Total:	2,959

Posters advertising the water conservation and source protection contests were displayed at the busiest location at Queen Kaahumanu Center.

The following events and direct outreach efforts were undertaken:

- Maui County Ag Fest
- Maui County Fair Booth
- Construction Industry of Maui Home Expo Booth
- Lihikai School 3<sup>rd</sup> Grade Science Day Presentations
- East Maui Taro Festival Booth
- Arbor Day at MNBG
- Annual Water Conservation Grade School Poster Contest
- Second Annual Source Water Protection Video Contest
- Maui High School Conservation and Source Protection Presentation

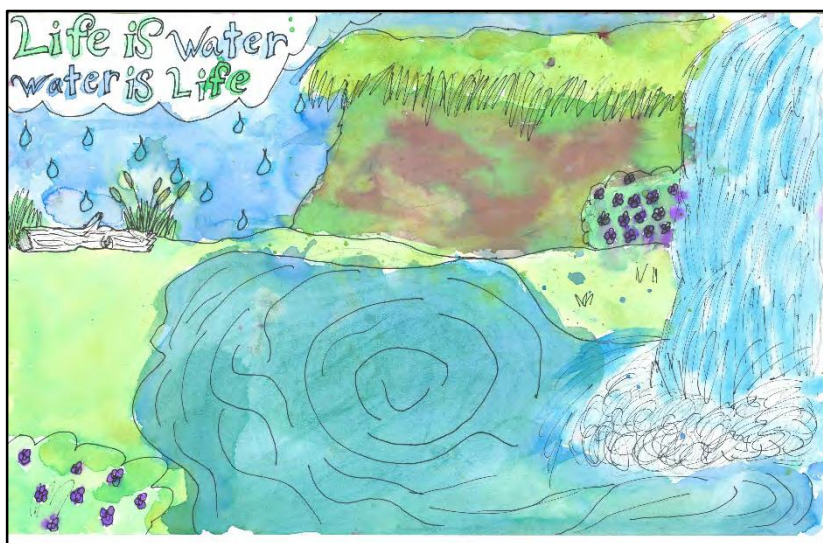
### Fixture Distribution

Fixture Type	# of Fixtures
Showerheads (1.25 – 1.5 gpm)	593
Bathroom Faucet Aerators (1.0 gpm)	587
Kitchen Faucet Aerators (1.5 gpm)	397
Hose Nozzles (max flow – 2.4 gpm)	557
Toilet Tank Bags (displace .08 gpf)	<u>167</u>
Total	2,301

Leak detection tablets to check for leaks in toilets and dish scrapers were also distributed to the public.

### Pre-Rinse Spray Nozzle Trade-Out Program

The Department continues to provide pre-rinse spray nozzles for food service establishments. The 1.15 gpm, high efficiency, high velocity pre-rinse nozzles are being offered in exchange for the old less efficient nozzles. The



**FIGURE 2: POSTER CONTEST HONORABLE MENTION  
ZARA DESILVA, CARDEN ACADEMY, GR. 6**

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device helps save on water and energy. Three were distributed in FY 2018.

### Park Showers Retrofit Pilot

In cooperation with the County of Maui Parks and Recreation Department, DWS has replaced six park showers with high efficiency, ADA approved, showers, including meters set to collect data at each new shower location.

### Toilet Replacement Program

This fiscal year we launched our toilet replacement program. Demand and enthusiasm continues to grow as we improve the program to assist customers and facilitate participation. The division distributed 20 toilets and we expect to dispense the remaining inventory over FY19. Anticipated annual water savings from this program is at least 17.5 million gallons, and about \$39,000 annually in production and operation costs.

### Water Conservation Poster Contest

The Department's annual Water Conservation Poster Contest continues to engage elementary and middle school students to showcase water conservation through artwork. This year's theme was "Use Water Wisely," and the department received 765 entries. The top five posters from each grade category are featured in the 2019 Water Conservation Calendar. The award ceremony in the Mayor's lounge is co-hosted with the winners of the Source Protection Video Contest.

## **Source Protection**

### Public Outreach and Field Work

Road signs announcing location of public water supply protection areas were installed throughout Maui. The surface and subsurface areas that contribute water to a DWS well were mapped using hydrologic models. Signs announcing these "wellhead protection areas" raise awareness of drinking water locations where intentional or unintentional human activities can cause spills, leaks and dumping of contaminating substances.

The second Source Water Protection Video Contest for high school students resulted in more entries and some outstanding video productions showcasing the importance of protecting our ground and surface water sources. This interactive initiative is meant to provide our youth with an opportunity to learn about source water protection and use their creative talents to produce a 1.5 – 3 minute long video that addresses drinking water protection. The winning videos are online at [www.mauewater.org](http://www.mauewater.org).

Grant funded wellhead protection activities in Department well capture zones this fiscal year included:

- Completed Maui's and Molokai's Potentially Contaminating Activities (PCAs) Survey Update in sensitive areas around the department's 2-year capture zone areas.
- A successful West Maui, Mahinahina, PCA cleanup around DWS water infrastructure within the 2-year capture zone area, removing over 10 tons of PCA materials for proper disposal.



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- Two successful East and North-West Maui PCA cleanups within DWS wells 2-year capture zone areas in Huna Wai, Upcountry, and Kahakuloa in the Central areas. Over 40 tons of PCA materials and oil barrels were removed for proper disposal.

### Regulatory Wellhead Protection

The proposed Wellhead Protection Overlay District Ordinance (WHPOD) gained momentum this fiscal year and was heard in council committee and revisited by the Board of Water Supply. At the end of the fiscal year, council scheduled the bill with minor revisions to be referred to the Maui, Molokai and Lanai planning commissions for further review.

### Planning Information Systems

The division maintained the following databases:

- Water meter reservations
- Pumps and tank service areas
- Water use permits vs. production and aquifer sustainable yield
- Discretionary projects
- Source availability
- Monthly billed consumption and production
- Water use and projected demand by type and demographics
- GIS data digitizing and updating various resource and infrastructure layers, including to the county MAPPS Enterprise program
- DWS water purchases from private purveyors

### Regulatory Compliance/Council Requests & Bills

- Responses were coordinated for Sanitary Survey Reports for three of the Department systems.
- Assistance was provided to Department of Land & Natural Resources inspections for dam safety for six department dams. Emergency Action Plans and Operation and Maintenance manuals for five dam facilities are updated.
- Tracking and modification requests for current water use permits in the Iao Aquifer Groundwater Management Area to ensure pumping compliance on a 12 month moving average basis.
- Tracked relevant water industry bills and responded to eleven requests for information from County Council on various matters.

### Water Use & Development Plan

The Water Use and Development Plan (WUDP) required by state law and Maui County Code Section 2.88A sets forth a plan by which water needs will be met, inventorying short and long term resources; allocating water to land uses; addressing water resource protection and augmentation, traditional and customary uses while considering a 20-year time frame for planning. Maui Island is divided into six aquifer sectors as hydrologic units. A regional plan was completed for each of the six aquifer sectors this fiscal year. The much anticipated resolution of East Maui streams contested case was concluded the last week of this fiscal year as the Commission on Water Resource Management

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established Interim Instream Flow Standards for 26 East Maui streams. The decision and pertinent water resource availability was incorporated into the Central Aquifer Sector Report, which was then published in early August 2018. Targets for FY19 are WUDP approval by the Board of Water Supply and County Council, briefings to the Commission on Water Resource Management, and outreach on Molokai to advance the public process for the Molokai WUDP Update.

### Major Accomplishments

- The scoping and drafting of a Request for Proposal (RFP) to procure a consultant to assist DWS in the development of a viable department-wide strategic plan was completed. This important project will help our organization find the best direction into the future and outline measurable goals. The plan will also be a useful guide for day-to-day decisions and policies that shape our business processes, help retain and train staff and to assist in progress evaluation to adapt to important changes in the industry.
- A water audit for calendar year 2017 based on current AWWA standards and software was successfully completed and audited by a third-party consultant, in accordance with Act 169. The water audit continues to guide conservation CIP and leak detection priorities, but also has far reaching implications for the benefit of how data and information is gathered, handled and recorded, and helps guide towards a more efficient infrastructure planning, maintenance, and development.
- The division was a key participant in the development of the MAPPs county wide permitting system with Energov/Tyler Technologies. Staff finalized permit and plan business processes and an interface for future wellhead protection permit process.
- Division manager participated in a panel hosted by the U.S. Geological Survey on current and future water resource management challenges in Hawaii; the Maui Drought Committee and the H2O Roundtable to identify solutions to promote water security for East Maui water users. The division takes an active part in formulating models for long term sustainable water development, augmentation and use.
- An interdepartmental effort between DWS and the Parks & Recreation Department is successfully underway to install the State's first viable grey water system at a county park. The system will filter used shower and sink water for irrigation in a specially designed landscape that will also help capture run-off into the beaches and ocean from Launiupoko Beach Park in West Maui.

### Fiscal Year 2019 Goals

1. The department's watershed protection grant program will continue to fund eligible projects that provide benefits to the freshwater resources utilized by the department systems. Studies on the impact of watershed protection on freshwater hydrology, including groundwater recharge, will be promoted and funded to provide improved quantitative benchmarks for the watershed protection grant program.
2. Approval of the Maui Island Water Use and Development Plan by the Board of Water Supply and the County Council is anticipated by the end of fiscal year 2019. Subsequent approval by the Commission on Water Resource Management is anticipated in FY20.

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

Consulting contract and advancing the public process for development of the Molokai Water Use and Development Plan is anticipated to be underway during FY19. Completion of the Molokai WUDP Update is estimated by FY21.

3. A collaborative effort with the County ITSD is expected to develop media technologies for better public outreach. The division sees a need to reach all demographic types that are more online media savvy. The effort includes utilizing existing enterprise systems like CivicPlus to develop a custom sub-site and module for a mobile application which can collect customer information, and relay all matters, events and information at the division.
4. Conservation goals include launching our first Rain Barrel Catchment Program. Distribution of up to 230 50-gallon Ivy Rain Barrels to eligible DWS customers are expected to result in annual water savings of up to 1.73 million gallons. The barrels are made in the US by Rain Water Solutions using 100% recycled materials.



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### FISCAL DIVISION

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The Fiscal Division is committed to maintaining fiscal responsibility while focusing on customer service. Fiscal operates with internal goals concurrent with water utility industry practices for strengthening the financial stability of the Department. These goals include meeting or exceeding debt coverage requirements and maintaining responsible cash levels.

Fiscal is faced with financial challenges to fund daily operations, capital projects designed to address increased state and federal utility requirements, and maintenance and replacement of aging infrastructure systems. The Fiscal Division also assists other division heads in the establishment and daily management of annual budgets.

#### Accounting

As evidenced by continued clean opinions on annual independent audits, Accounting continues to adhere to strict guidelines imposed by Generally Accepted Accounting Principles as well as the Government Accounting Standards Board. The Accounting section is anchored by technically proficient staff that support our commitment to maintaining fiscal responsibility and goals consistent with industry practices.

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

Accounting produces an array of high-quality work from its processing of payables and payroll to periodic financials and other internal reports. This provides management with support and tools necessary to maintain a financially strong enterprise.

In direct support of the Water Administration Program's goal to provide reliable, top quality service at a reasonable cost, the Department has maintained more than a three-month operations reserve throughout FY18. Other FY18 accomplishments included timely capitalization of current CIP projects as well as cleaning up older project balances on the books. Accounting also continues to provide direct support in the implementation of the County's Workday human resources/payroll system.

### Purchasing

In accordance with State of Hawaii procurement laws and with technical oversight provided by the Department of Finance's Purchasing Division, the Purchasing section provides procurement services as well as management of warehouses in Kahului, Lahaina, Molokai, and Hana with a collective balance of nearly \$1.7M in inventory. In FY18, implementation of bar coding and installation of WiFi boosters at the warehouse have resulted in enhanced operational efficiencies including improved work processes and inventory maintenance.

### Customer Service

The Customer Service section is responsible for payment processing and addressing customer concerns for more than 36,615 accounts. This section is the primary contact for customers opening and closing accounts, seeking answers to billing issues, requesting field visits about equipment, payment processing, and addressing payment issues. Despite technological and staffing challenges, in FY18 we strove to improve timeliness of call response, quality of response, and ease of doing business as these are critical factors to achieving a good customer experience and high levels of customer satisfaction.

### Meter Reading and Collections

The Meter Reading section is responsible for meter reading as well as field collection. Each day, meter readers travel to various commercial and residential locations to gather accurate data about the amount of water used. Field collectors in this section work closely with Customer Service staff to assist in the collection of overdue account balances and frequently help customers avoid discontinuance of water service. In FY18, this section continued to gather timely and accurate meter readings despite staffing challenges. Field collection efforts suffered from inadequate staffing.

### Fiscal Year 2019 Goals and Expectations

The Fiscal Division will continue the process of reassessing staffing, work assignments, and work flow which may have changed due to the implementation of the cloud-based billing system. This includes an evaluation of position descriptions and related job classifications. The goal is to create a more efficient and effective work environment for the entire Division. Practically speaking, this process will be ongoing for a few years. Like many other Divisions in the County, Fiscal Division will experience a series of staff retirements in FY19 and the ensuing five years. We need to create, evaluate, and

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

implement appropriate succession plans as key experienced personnel will be leaving the work force.

Fiscal will continue to support the Water Administration Program's goal to recruit and retain needed staff by encouraging relevant training opportunities. We will also continue efforts to promote effective communication throughout the division.

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### ADMINISTRATION

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The Administration Division includes the director's office and provides overall support to the department, including management, human resources, and public relations. Administration staff participates in the development of the MAPPS county-wide permitting system, coordinates meetings and agencies for the Board of Water Supply, prepares daily water supply updates for Upcountry, drafts press releases, maintains and facilitates all human resources transactions such as position reallocations, promotions, demotions, transfers, reorganizations and terminations; processes workers' compensation, responds to union issues, maintains leave accruals, enforces county policies, and facilitates drug and alcohol testing for UPW employees. Administration personnel coordinates training and are also actively involved in the county's new HR/Payroll project to implement Workday, which is scheduled for FY19.

#### Board of Water Supply

The Board of Water Supply is an advisory board and consists of nine volunteers from the community who have been appointed by the mayor and approved by the county council. Acting as ex-officio members are the directors from the Department of Planning and Department of Public Works. The board acts as advisor to the director of the Department of Water Supply, the mayor, and the county council in all matters concerning the county's water system. The board reviews the department's operating and capital improvements budget, the department's request for adjustments to the water rates and submits their recommendations to the mayor.

The board has adjudicatory powers in that they hear appeals filed by persons who feel they have been aggrieved by a decision or order of the director of water supply. The board's final decision and order in these appeals cannot be overturned by the director. Should either party not agree with the decision and order of the board, they may further pursue their case to the circuit court.

The board met 10 times, and 2 meetings were canceled due to quorum issues. On March 15, 2018 the board bade farewell to Members Michael Suzuki and Thomas Watanabe and acknowledged their 5 years of faithful service. Then at their April 19, 2018 meeting, the board welcomed 2 new members, Joseph Aquino and Dean Frampton.

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

For FY18 period the board reviewed the department's FY19 operations and CIP budget and sent their recommendations supporting the budget to Mayor Arakawa on March 20, 2018.

They responded to the Council's Water Resources Committee on March 20, 2018 regarding the proposed wellhead protection overlay district and gave their recommendation that the board generally supports this proposed ordinance but does have reservations especially in costs of permitting and best management practices for landowners. They encouraged the council to pursue this matter further.

No appeals were filed during the FY18 period. Only one appeal was heard by the board but after several months of testimony the appellant withdrew his appeal. Over the course of this period, the department staff presented the Maui Island Water Use and Development Plan to the board. The final chapter was posted in August 2018 so now the board will have 180 days to make their recommendations to the county council.

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### HUMAN RESOURCES

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The Department of Water Supply had 195 employees as of June 30, 2018. There were 13 new hires, 4 transfers in, 6 transfers out, 4 retirements, 9 resignations and 2 terminations.

#### New Hires and Promotions:

The DWS welcomed those who were hired and congratulated those who were promoted during FY18 as follows:

#### Administration:

- **Jacky Takakura** transferred in from Planning Department as Administrative Officer

#### Engineering:

- **Robert Hollibaugh** was hired as a Civil Engineer IV
- **Piyalerg Kongsil** was promoted from Civil Engineer IV to Civil Engineer V
- **Ashley Anne Laroya** was hired as a Civil Engineer I
- **Jordan Molina** was reallocated from Civil Engineer II to Civil Engineer III
- **Cody Kekoa Walton** was hired as a Civil Engineer III

#### Field Operations:

- **Helaman Aiwohi** was promoted from Pipefitter I to Water Service Supervisor II
- **Harry Aki** transferred in from Public Works as a Laborer II on Molokai
- **Sherman Baisa** was promoted from Pipefitter I to Pipefitter II
- **Rodney Kama** transferred from Upcountry to Central Pipefitter I
- **Jared Keola Kauhaaha** transferred from Lahaina to Central Pipefitter I

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

- **Guy Kiaha** was hired as a Construction Equipment Mechanic I
- **Lopaka Medeiros** was promoted from Pipefitter Helper to Pipefitter I
- **Wilbert Pascua** transferred from Waterworks Maintenance Helper to Pipefitter Helper in Lahaina
- **Atoa Phillip** transferred in from Parks & Recreation as a Laborer II
- **Wesley Purdy** was promoted from Pipefitter Helper to Pipefitter I
- **Jerold Sanchez** transferred in from Parks & Recreations as a Laborer II
- **Kekoa Tom** was promoted from Laborer II to Pipefitter Helper
- **Rizal Tumacder** was promoted from Pipefitter Helper to Pipefitter I
- **Jason Wakamatsu** was promoted from Pipefitter Helper to Pipefitter I

### Fiscal/Customer Service:

- **Barbara Baehr** was hired as Pre-Audit Clerk I, then later promoted to Customer Relations Assistant
- **Naomi Esquivel** was hired from the Department of Finance for the Customer Relations Assistant position
- **Dell Estudillo** was promoted from Pre-Audit Clerk I to Cashier II
- **Rochelle Keahi** was hired as Storekeeper I
- **Asheley Kuhiiki-Hoopii** was hired as Cashier II
- **Jenny Lista** was promoted from Pre-Audit Clerk I to Customer Service Representative I
- **Renee Medeiros** was hired as Cashier II
- **Lori Ferreira** was reallocated from Accountant Trainee to Accountant I
- **Lori Quipotla** was hired as Customer Service Representative I
- **Teresa Rebolledo** was hired as Pre-Audit Clerk I

### Plant Operations:

- **Ransen Camara** was promoted from Water Plant Maintenance Mechanic Helper to Water Plant Maintenance Mechanic I
- **Ehren Kimo Ching** was promoted from Backflow/Cross Connection Technician II to Backflow/Cross Connection Technician III
- **Wayne Fujiwara** was promoted from Water Plant Maintenance Mechanic II to Water Plant Maintenance Mechanic Supervisor
- **Rowena Kellough** was promoted from Laboratory Technician I to Water Microbiologist I
- **Wesley Nishida** was promoted from Water Plant Maintenance Mechanic I to Water Plant Maintenance Mechanic II
- **Kamalani Uehara** was hired as a Water Microbiologist I

### Water Resources & Planning:

- **Dwight Baldwin** was hired on a temporary basis as a Planner IV
- **Alexander de Roode** was promoted from Planner IV to Planner VI
- **Diego Sanchez Gomez** was hired as a Planner IV

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

### Water Treatment Plant Operations:

- **Phillip Noetzel** was reallocated from Water Treatment Plant Operator II to Water Treatment Plant Operator IV
- **Daniel Paman** was promoted from Water Treatment Plant Worker to Water Treatment Plant Operator Trainee
- **Lucas Schleuter** was hired as Water Treatment Plant Operator II

### Departures:

Four employees retired this year. In the Administration Division, Administrative Officer **Jan Inouye-Ogata** retired after 19 years of service to the county. In the Fiscal Division, Customer Service Representative II **Nancy Carpio** retired after 36 years of service. In Plant Operations, Backflow/Cross Connection Technician IV **Jay Nakashima** retired after 35 years of service. And in the Water Treatment Plant Division, Assistant Water Treatment Plant Operations/Maintenance Supervisor **Scott Rarick** retired after 26 years of service to the county.

Resignations included GIS Analyst III **Delbert Pascua** and Civil Engineer III's **Jordan Molina** and **Kris McPhee** from the Engineering Division; Cashier II **Dell Estudillo** from the Fiscal Division; Water Microbiologist II **Matthew Linder**, Water Microbiologist I **David Barrar** and Water Plant Maintenance Mechanic I **David Rezens** from Plant Operations Division; Water Treatment Plant Operator IV's **Adam Smith** and **Mark Leili** from the Water Treatment Plant Operations Division.

Temporary hire **Dwight Baldwin** was released from his assignment as Planner IV when the position was filled on a permanent basis.

Transfers out to other departments include Field Operations Waterworks Maintenance Helper **Jayson Valdez** and Plant Operations Water Plant Maintenance Mechanic Helper **Joshua Meier**, both of whom accepted promotional opportunities at Parks & Recreation; Laborer II **Bowman Jeremiah** who accepted a promotional opportunity at the Department of Environmental Management; **Naomi Esquivel** who returned to the Department of Finance; Cashier II **Helaine Borge**, who transferred from Fiscal to Department of Environmental Management – Wastewater Division; and Director **Dave Taylor** who accepted the County CIP Coordinator position.

### Perfect Attendance:

The following employees were recognized for perfect attendance for calendar year 2017:

Leonore Amano	Warren Sardinha
Kekoa Babcock	Cari Sumabat
Cullen Falces	Wendy Taomoto
Ray Hirata	David Taylor
Michele Sakuma	



## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

### Years of Service:

The following employees are to be congratulated for their many years of admirable service:

#### 10 Years

Colin Y. Yoshida  
Herbert W. Sagon  
Willie C. Ramos  
Martina W. Buckner

#### 15 Years

Herbert Sagon Jr.  
Gerald L. Ponce  
Bruce A. Highland  
Barry M. Crowell

#### 20 Years

Kelly K. Wright  
Wendy M. Taomoto  
William J. Richard  
Allen N. Purdy  
John A. Linder

#### 25 Years

Wesley T. Nishida  
Marvin F. Ignacio  
Gaye H. Hayashida  
Michael G. Goslin  
John H. Cavaco

#### 30 Years

Lucille M. Tom  
Wayne K. Fujiwara

#### 35 Years

Jay A. Nakashima  
Nancy K. Carpio

### Awards:

**James Landgraf**, Water Treatment Plant Operator IV in the Water Treatment Plant Division, has been selected as the Department's 2018 Employee of the Year. James is an expert in water matters, and has a reputation for technical expertise. This opinion is shared by peers, new hires who are trained by James, managers, consultants and contractors.



In the Upcountry Water Treatment Plant section where James works, he has assisted with special projects such as MIEX, GAC, the University of Central Florida (UCF) water quality studies, and also most recently assisted Engineering with additions to the Olinda drying bed. He keeps his supervisors well informed and it is regularly noted on James' evaluation that he "makes his supervisor's job easier." He adjusts and assists with overtime duties and last minute requests for assistance. He is helpful, level headed, and a proven team player.

James has helped UCF build corrosion control racks and conducted daily corrosion measurements, sampled Lower Kula for disinfection byproducts, and built an aeration pilot at Olinda. He conducted the entire corrosion and disinfection byproduct control experiments on his own. James' expertise of the Upcountry water system was instrumental for the development of treatment strategies to control Lower Kula disinfection byproduct levels while providing significant

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

savings to consumers at the same time (approximately \$130,000 in annual operations savings for the county).

James was nominated by Tony Linder, the Water Treatment Plant Division Chief, and WTP Operations/Maintenance Supervisor, Marvin Ignacio.

**Cullen Falces**, Water Services Supervisor II in Field Operations – Construction Section, has been selected as the Department's 2018 Management Employee of the Year. Cullen has been with the Department since 1980. With many twists and turns in his career, Cullen worked his way up from Laborer II, taking on a variety of positions before filling his current position. This experience gives him the knowledge of the county water system from Honokohau to Hana to Molokai and everywhere in between.



He trains new people in his own section (Construction) and also after hours in the Maintenance districts. He runs construction jobs, assists when other supervisors are absent, oversees after-hours jobs as standby captain, and treats everyone fairly across the board. He knows the water system standards, county processes, and standard procedures. He works efficiently. Some examples of Cullen's contributions to improving services to the public are the restoration of water service to customers in Lao Valley after the storm and Honokohau Valley. He is also dedicated after-hours, taking on the challenges of stand-by captain which often entails working long hours at night, then reporting to work the next day to delegate assignments.

Cullen was nominated as the Department's 2018 Management Employee of the Year by Field Operations Division Chief Bobby Vlda.

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

The Department's Team of the Year is the Field Operations Dispatch Team, which includes Clerk-Dispatcher II **Barbara Watanabe** and Clerk III **Avismarie Lei Salzer**. The Team is constantly working hard to serve our community by answering their concerns regarding water issues. The volume of calls has grown yet this team keeps



their composure and is always professional. From the moment a call comes in, they are on it, listening first then determining what actions need to be taken, next dispatching Field Operations personnel out to address the problem right away. The Team stays focused on their goals and objectives, and are excellent in organizing and multi-tasking to make sure everything goes smoothly.

Barbara and Lei were nominated by Water Service Clerk-Dispatcher Charlene Sakamoto and Field Operations Division Chief Bobby Vida.

# DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

## DEPARTMENTAL PRIORITIES FOR FISCAL YEAR 2019

GOALS/OBJECTIVES	SUCCESS MEASUREMENTS	FY 2019 ESTIMATE
<b>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.</b>		
1. Minimize adverse impacts to the water system.	Number of system outages or water restrictions due to facility shutdown or deficient water quality	0
2. Identify and review regulatory compliance requirements that will impact operations and optimize performance to meet EPA and State of Hawaii DOH regulatory standards	Number of water quality violations received	0
3. Meet state and federal sampling requirements.	Number of samples analyzed to meet regulatory requirements.	15,000
<b>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.</b>		
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	\$500,000
2. Replacement of four well pumps and two booster pumps per year.	Number of well pumps replaced	4
	Number of booster pumps replaced	2
<b>Goal #3: Water loss prevention to ensure service lines are efficient and reliable in ensuring minimal interrupted service.</b>		
1. Minimize water loss	Number of miles of mainline inspected for leaks	900
	Number of miles of mainline repaired	150
2. Upgrade system	Number of feet of mainline replaced	12,000

## DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

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### DEPARTMENTAL PRIORITIES FOR FISCAL YEAR 2019

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One priority for FY19 is to plan, design, fund, and construct capital improvement projects in a timely manner. DWS is responsible to manage, operate, repair and replace water collection, transmission, and processing infrastructure and related facilities. It is important to be proactive with the construction of new infrastructure and replacement infrastructure that is irreparable or near the end of its life span.

In relation to the construction of new and replacement infrastructure, it is fiscally important to meet CIP deadlines and to complete phases in a timely manner. This goal is a priority not only for fiscal reasons, but also to ensure the continued provision of reliable, top quality water service to our consumers.

Other goals for FY19:

- Provide reliable, top quality water service at reasonable cost
- Recruit and retain needed staff, especially to assist with the Upcountry Water Meter List
- Improve public relations and customer service
- Support a sustainable water supply
- 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
- 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.
- Prevent water loss to ensure service lines are efficient and reliable in ensuring minimal interrupted service.

To meet these goals, the County Council approved a budget of \$8,531,561 and 75 positions for Water Administration, and \$30,695,912 and 145 positions for Water Operations. \$32,000,000 was approved for capital improvement, and \$2,616,500 was also approved for watershed protection grants. We thank the County Council for recognizing our needs and supporting our efforts by approving our funding amounts.

All goals and objectives lead to the top priority, which is to continue to provide reliable, top quality water at a reasonable cost. Many facets are involved in meeting this goal, from filling vacancies and retaining staff to ensuring compliance with state and federal regulations; from flushing of hydrants to minimizing outages and facility shutdowns. With the many dedicated employees, many who perform labor intensive work during work hours and off hours, DWS continues to work toward its mission . . . to **provide clean water efficiently**.

# DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT

## Members of the Board of Water Supply County of Maui 2017 – 2018

<b>Anders Lyons</b> Appointed April 2014 Term to expire March 31, 2019	<b>Chairperson</b>
<b>R. Raymond Cabebe</b> Appointed April 2014 Term to expire March 31, 2019	<b>Vice Chairperson</b>
<b>Sylvia Ho</b> Appointed April 2014 Term to expire March 31, 2019	<b>Member</b>
<b>Shay Chan Hodges</b> Appointed April 2016 Term to expire March 31, 2021	<b>Member</b>
<b>Zoltan Milaskey</b> Appointed April 2016 Term to expire March 31, 2021	<b>Member</b>
<b>Norman Franco</b> Appointed April 2017 Term to expire March 31, 2022	<b>Member</b>
<b>Michael Nakashima</b> Appointed April 2017 Term to expire March 31, 2022	<b>Member</b>
<b>Joseph Aquino</b> Appointed April 2018 Term to expire March 31, 2023	<b>Member</b>
<b>Dean Frampton</b> Appointed April 2018 Term to expire March 31, 2023	<b>Member</b>
<b>William Spence</b> , Director of Planning <b>David Goode</b> , Director of Public Works	<b>Ex-Officio Member</b> <b>Ex-Officio Member</b>

**Gladys C. Baisa, Deputy Director**

**DEPARTMENT OF WATER SUPPLY - FY 2018 ANNUAL REPORT**

**DEPARTMENT OF WATER SUPPLY  
COUNTY OF MAUI  
(A Proprietary Fund of the County of Maui)**

**FINANCIAL STATEMENTS AND SUPPLEMENTARY INFORMATION  
WITH INDEPENDENT AUDITOR'S REPORT**

Fiscal Year Ended June 30, 2018





**DEPARTMENT OF WATER SUPPLY  
COUNTY OF MAUI**

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## INDEPENDENT AUDITOR'S REPORT

To the Honorable Mike White, Chair,  
and Members of the Council  
County of Maui  
Wailuku, Maui, Hawaii

### Report on the Financial Statements

We have audited the accompanying financial statements of the Department of Water Supply of the County of Maui (the Department), a proprietary fund of the County of Maui, as of and for the fiscal year ended June 30, 2018, and the related notes to the financial statements, as listed in the table of contents.

### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express

no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### **Opinion**

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Department, as of June 30, 2018, and the changes in financial position and cash flows for the fiscal year then ended in accordance with accounting principles generally accepted in the United States of America.

### **Emphasis of Matter**

As discussed in Note 1, the financial statements of the Department, are intended to present the financial position, the changes in financial position, and cash flows of only that portion of the business-type activities of the County of Maui that is attributable to the transactions of the Department. They do not purport to, and do not present fairly the financial position of the County of Maui as of June 30, 2018, the changes in its financial position, or its cash flows for the fiscal year then ended in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

### **Adoption of New Accounting Principle**

As discussed in Note 13 to the financial statements, the Department adopted new accounting guidance, GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. Our opinion is not modified with respect to this matter.

### **Other Matters**

#### *Required Supplementary Information*

Management has omitted management's discussion and analysis, the schedules of proportionate share of the net pension liability, pension contributions, changes in the net OPEB liability and related ratios and OPEB contributions that accounting principles generally accepted in the United States require to be presented to supplement the financial statements. Such missing information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. Our opinion on the financial statements is not affected by this missing information.

### *Other Information*

Our audit was conducted for the purpose of forming an opinion on the Department's financial statements. The supplemental schedules of capital assets and of long-term debt - general obligation bonds as of June 30, 2018 are presented for purposes of additional analysis and are not a required part of the financial statements.

The schedules of capital assets and of long-term debt - general obligation bonds are the responsibility of management and was derived from and relate directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedules of capital assets and of long-term debt - general obligation bonds are fairly stated, in all material respects, in relation to the financial statements as a whole.

### **Other Reporting Required by *Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated December 21, 2018 on our consideration of the Department's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Department's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Department's internal control over financial reporting and compliance.

*N&K CPAs, Inc.*

Honolulu, Hawaii  
December 21, 2018

**Department of Water Supply  
County of Maui  
STATEMENT OF NET POSITION  
June 30, 2018**

**CURRENT ASSETS**

Equity in pooled cash and investments held in County Treasury	\$ 62,131,066
Customer receivables	
Billed	4,401,711
Less: allowance for doubtful accounts	<u>(72,649)</u>
	4,329,062
Unbilled	<u>2,908,443</u>
Total customer receivables	<u>7,237,505</u>
Materials and supplies	1,698,198
Other current assets	<u>202,425</u>
Total current unrestricted assets	<u>71,269,194</u>

**RESTRICTED ASSETS**

Equity in pooled cash and investments held in County Treasury	23,125,025
Total current assets	<u>94,394,219</u>

**CAPITAL ASSETS**

Utility plant in service	602,043,460
Less accumulated depreciation	<u>(302,840,984)</u>
	299,202,476
Land	7,905,059
Construction work in progress	<u>48,842,240</u>
Total capital assets	<u>355,949,775</u>
<b>TOTAL ASSETS</b>	<u>450,343,994</u>

**DEFERRED OUTFLOWS OF RESOURCES**

Deferred outflows of resources related to pensions	10,226,083
Deferred outflows of resources related to OPEB	2,528,321
Unamortized loss on advanced refunding	<u>132,986</u>
<b>TOTAL DEFERRED OUTFLOWS OF RESOURCES</b>	<u>12,887,390</u>

<b>TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES</b>	<b>\$ <u>463,231,384</u></b>
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See accompanying notes to financial statements.

**Department of Water Supply  
County of Maui  
STATEMENT OF NET POSITION (Continued)  
June 30, 2018**

**CURRENT LIABILITIES**

Payable from unrestricted current assets	
Bonds payable, current portion	\$ 2,578,899
Notes payable, current portion	1,602,385
Accounts payable	2,734,547
Accrued vacation, current portion	804,619
Accrued compensatory time off	125,292
Construction contracts payable, including retainages	302,701
Claims and judgments	844,093
Accrued interest payable	373,350
Customer advances for utility construction	<u>179,886</u>
	9,545,772
 Payable from restricted assets	
Construction contracts payable, including retainages	2,283,651
Customer deposits	677,427
Refundable advances	<u>1,000,000</u>
	<u>3,961,078</u>
 Total current liabilities	 <u>13,506,850</u>

**NON-CURRENT LIABILITIES**

Bonds payable, non-current portion	19,140,428
Notes payable, non-current portion	44,520,699
Net pension liability	39,254,115
Net OPEB liability	24,037,169
Accrued vacation, non-current portion	<u>1,061,193</u>
 Total non-current liabilities	 <u>128,013,604</u>

**TOTAL LIABILITIES**

141,520,454

**DEFERRED INFLOWS OF RESOURCES**

Deferred inflows of resources related to pensions	986,678
Deferred inflows of resources related to OPEB	<u>285,812</u>
 TOTAL DEFERRED INFLOWS OF RESOURCES	 <u>1,272,490</u>

**NET POSITION**

Net investment in capital assets	290,547,253
Restricted	20,211,812
Unrestricted	<u>9,679,375</u>
 TOTAL NET POSITION	 <u>320,438,440</u>

**TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES  
AND NET POSITION**

\$ 463,231,384

See accompanying notes to financial statements.

**Department of Water Supply  
County of Maui  
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION  
Fiscal Year Ended June 30, 2018**

**OPERATING REVENUES**

Water sales	\$ 63,352,395
Other revenues	<u>944,997</u>
Total operating revenues	<u>64,297,392</u>

**OPERATING EXPENSES**

Administrative and general	19,763,706
Depreciation and amortization	15,043,935
Power and pumping	11,455,472
Transmission and distribution	7,063,206
Purification	6,540,239
Customers' accounting and collection	2,183,997
Source of supply	<u>484,003</u>
Total operating expenses	<u>62,534,558</u>
Operating income	<u>1,762,834</u>

**NONOPERATING EXPENSES**

Interest expense, net of interest capitalized of \$122,234	(902,414)
Interest and investment losses	<u>(220,030)</u>
Total nonoperating expenses	<u>(1,122,444)</u>
Income before capital contributions	640,390
Capital contributions	<u>11,865,652</u>
Change in net position	12,506,042

**NET POSITION**

Beginning of year, as previously reported	329,785,798
Restatement adjustment: cumulative effect of implementation of new accounting standard	<u>(21,853,400)</u>
Beginning of year, as restated	<u>307,932,398</u>
End of year	<u>\$ 320,438,440</u>

See accompanying notes to financial statements.

**Department of Water Supply  
County of Maui  
STATEMENT OF CASH FLOWS  
Fiscal Year Ended June 30, 2018**

<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>	
Cash received from customers and others	\$ 63,863,909
Payments to suppliers for goods and services	(35,986,648)
Payments to employees for services	(9,079,793)
Refunds of utility construction advances	<u>(13,966)</u>
Net cash provided by operating activities	<u>18,783,502</u>
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>	
Interest and investment losses received from investments	<u>(220,030)</u>
Net cash used in investing activities	<u>(220,030)</u>
<b>CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES</b>	
Cash paid for acquisition of construction of capital assets, including capitalized interest	(23,235,635)
Principal paid on bonds and notes payable	(3,845,158)
Proceeds from bonds and notes payable	18,352,460
Cash received from capital contributions	4,384,687
Interest paid on bonds and notes payable	<u>(1,472,906)</u>
Net cash used in capital and related financing activities	<u>(5,816,552)</u>
<b>NET INCREASE IN CASH AND CASH EQUIVALENTS</b>	12,746,920
<b>CASH AND CASH EQUIVALENTS AT BEGINNING OF FISCAL YEAR</b>	<u>72,509,171</u>
<b>CASH AND CASH EQUIVALENTS AT END OF FISCAL YEAR</b>	<u>\$ 85,256,091</u>
<b>RECONCILIATION OF CASH AND CASH EQUIVALENTS TO THE STATEMENT OF NET POSITION</b>	
Unrestricted	\$ 62,131,066
Restricted	<u>23,125,025</u>
	<u>\$ 85,256,091</u>

See accompanying notes to financial statements.



**Department of Water Supply  
County of Maui  
STATEMENT OF CASH FLOWS (Continued)  
Fiscal Year Ended June 30, 2018**

<b>RECONCILIATION OF OPERATING INCOME TO</b>	
<b>NET CASH PROVIDED BY OPERATING ACTIVITIES</b>	
Operating income	\$ 1,762,834
Adjustments to reconcile operating income to net cash provided by operating activities:	
Depreciation and amortization	15,043,935
Provision for doubtful accounts	92,497
Loss on disposal	2,392
Changes in assets, deferred outflows, liabilities and deferred inflows:	
Customer receivables	(564,113)
Materials and supplies	(163,722)
Other current assets	1,353,581
Deferred outflows of resources related to pensions	2,744,247
Deferred outflows of resources related to OPEB	(114,543)
Accounts and construction contracts payable	(100,412)
Claims and judgments	(832,625)
Other liabilities and deposits	(312,455)
Net pension liability	119,756
Net OPEB liability	(230,009)
Deferred inflows of resources related to pensions	(303,192)
Deferred inflows of resources related to OPEB	<u>285,812</u>
Net cash provided by operating activities	<u>\$ 18,783,983</u>
 <b>SUPPLEMENTAL DISCLOSURE OF NONCASH CAPITAL AND RELATED FINANCING ACTIVITIES</b>	
Capital contributions	\$ 7,480,965
Amortization of deferred loss on refunding	\$ 25,309
Amortization of deferred gain on refunding	\$ 180,272
Amortization of bond premium	\$ 364,292

See accompanying notes to financial statements.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 1 - ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

- (1) **Organization** - The Department of Water Supply (the Department) operates as a proprietary fund in the County of Maui, State of Hawaii (the County), to develop adequate water sources, storage, and transmission for both urban and agricultural uses for the County. The County Charter amendment (effective January 2, 2003) provides the following:
- The Department is a regular County of Maui agency subject to the Mayor's executive management and Council's legislative oversight.
  - The current Board of Directors of the Department is an advisory body (with power to recommend budget proposals and rate adjustments).
  - The Mayor has the power to appoint the Director (with approval of Council).
  - The Department has the responsibility to survey public and private water sources.
  - The Department must prepare and annually update a long-range capital improvement plan (subject to Council approval) and implement such approved plans. The Council has the power to issue general obligation bonds and provide appropriations for capital improvements of the water system.
- (2) **Financial Statement Presentation** - The Department is a proprietary type fund of the County (the primary government). The accompanying financial statements present only the financial position and activities of the Department, and do not purport to, and do not present the financial position of the County, the changes in financial position, or its cash flows in conformity with accounting principles generally accepted in the United States of America (GAAP).
- (3) **Measurement Focus and Basis of Accounting** - The accompanying financial statements are presented using the economic resources measurement focus and the accrual basis of accounting. Under this method, revenues are recorded when earned and expenses are recorded at the time liabilities are incurred.
- (4) **Use of Estimates** - The preparation of financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows of resources, liabilities, deferred inflows of resources, and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant items subject to such estimates and assumptions include the carrying amount of capital assets, valuation allowances of receivables, accrued workers' compensation, and pension and post-retirement benefits. Actual results could differ from those estimates.
- (5) **Cash Equivalents** - For purposes of the statements of cash flows, the Department considers all equity in pooled cash and investments held in the County's Treasury (including restricted assets) to be cash equivalents.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 1 - ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES  
(Continued)**

- (6) **Cash and Investments** - The Department's cash and investments are maintained in an investment pool with the County's Treasury. The Department's share of the pooled cash and investments and income and losses arising from the investment activity of the pool are allocated to the Department based on the percentage of the Department's total cash and investment balance to the total cash and investments maintained by the County's Treasury.

Investments in negotiable time certificates of deposits and repurchase agreements are carried at cost, which approximates fair value. Investments in U.S. Treasury, U.S. government agencies obligations, municipal securities, and commercial paper are reported at fair value.

- (7) **Customer Receivables and Allowance for Doubtful Accounts** - Customer receivables are net of an allowance for doubtful accounts. The Department considers accounts delinquent once they have reached 31 days past due. Management charges off uncollectible customer receivables to expense and turns over delinquent accounts for collection when it is determined the amounts will not be realized. The allowance for doubtful accounts is based on the Department's prior experience of collections.

- (8) **Materials and Supplies** - Materials and supplies are stated at weighted average cost (which approximates the first-in, first-out method). The cost of materials and supplies are recorded as expenses when consumed rather than when purchased.

- (9) **Restricted Assets** - Funds received by the Department, which are refundable or restricted as to use, are recorded as restricted assets.

- (10) **Capital Assets** - Utility plant in service is stated at cost and include contributions by governmental agencies, private developers, and customers at their cost or estimated cost. Capital assets include individual assets or group of similar assets with an initial cost of more than \$5,000 and an estimated useful life in excess of one year.

Major replacements, renewals and betterments are capitalized. Interest costs are capitalized during the construction period of major capital projects. Maintenance, repairs, and replacements that do not improve or extend lives of the assets are charged to expense. Gains or losses resulting from the sale, retirement, or disposal of utility plant are charged or credited to operations.

Depreciation is computed over the estimated useful lives of the individual assets using the straight-line method. The estimated useful lives of the utility plant's capital assets are as follows:

Buildings and systems	10 - 50 years
Machinery and equipment	5 - 50 years
Other	5 - 50 years

- (11) **Debt Premium and Discounts** - Debt premium and discounts arising from the issuance of debt securities are amortized over the terms of the related issues on the bonds outstanding method. Amortization of debt premiums is recorded as a reduction of interest expense.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 1 - ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES  
(Continued)**

- (12) ***Deferred Amounts on Advance Refunding*** - For advance refunding resulting in defeasance of debt, the difference between the reacquisition price and the carrying amount of the old debt is deferred. This amount is amortized as a component of interest expense using the bonds outstanding method over the remaining life of the old debt or the life of the new, whichever is shorter. The amount deferred is reported as a deferred inflow or outflow of resources.
- (13) ***Compensated Absences*** - Employees earn vacation benefits at one and three-quarters working days for each month of service. Each employee is allowed to accumulate a maximum of 90 days of vacation as of the end of the calendar year. Unused vacation benefits are converted to pay upon termination of employment. Employees earn compensatory time off at the rate of one and a half hours for each hour of overtime worked. Unused compensatory time off is converted to pay upon termination of employment.
- (14) ***Deferred Outflows of Resources and Deferred Inflows of Resources*** - Deferred outflows of resources represent a consumption of net position that applies to a future period and will not be recognized as an outflow of resources (expense or expenditure) until that time. Deferred inflows of resources represent an acquisition of net position that applies to a future period and will not be recognized as an inflow of resources (revenue) until that time.
- (15) ***Net Position*** - Net position represents the difference between assets and deferred outflows of resources less liabilities and deferred inflows of resources. The three components of net position are defined as follows:
- ***Net investment in capital assets*** - This component of net position consists of capital assets, net of accumulated depreciation, and reduced by the outstanding balances of any bonds, mortgages, notes, or other borrowings that are attributable to the acquisition, construction, or improvement of those assets. If there are any significant unspent related debt proceeds at fiscal year-end, the portion of the debt attributable to the unspent proceeds are not included in the calculation of net investment in capital assets. Rather, that portion of debt is included in the same net position component as the unspent proceeds.
  - ***Restricted*** - This component of net position consists of constraints placed on net position use through external constraints imposed by creditors (such as through debt covenants), grantors, contributors, or laws or regulations of other governments or constraints imposed by law through constitutional provisions or enabling legislation. The Department's policy is generally to use restricted net position first, as appropriate opportunities arise.
  - ***Unrestricted*** - This component of net position consists of net position that does not meet the definition of "restricted" or "net investment in capital assets."
- (16) ***Operating Revenues and Expenses*** - Revenues and expenses are distinguished between operating and non-operating.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 1 - ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES  
(Continued)**

- Operating Revenues - Operating revenues generally result from providing goods and services in connection with the Department's principal ongoing operations. The principal operating revenues of the Department are fees for water service.

The Department's policy is to bill customers on a monthly basis for water usage. An estimated accrual for unbilled water revenues to the end of the fiscal period is made based on prorated actual usage from the first meter reading date subsequent to June 30th.

- Operating Expenses - Operating expenses include the costs associated with production, treatment, and transmission of water, including administrative expenses and depreciation on capital assets.

All revenues and expenses not meeting these definitions are reported as non-operating revenues and expenses.

- (17) **Water System Development Fee** - A water system development fee is levied against all new developments requiring water from the Department's systems, except those developments that have paid for and installed a complete water system, including source, transmission, and daily storage facilities. The amounts collected, net of costs incurred for water credits used to acquire additional water supply, are recorded as capital contributions.
- (18) **Capital Contributions** - The Department receives Federal and State of Hawaii grants to pay for portions of construction costs related to various capital projects. The Department also receives development fees and dedications of infrastructure assets for various developments. The amounts received are recorded as capital contributions in the accompanying statement of revenues, expenses, and changes in net position.
- (19) **Pensions** - For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions and pension expense, information about the fiduciary net position of the Employees' Retirement System of the State of Hawaii (ERS) and additions to/deductions from the ERS's fiduciary net position have been determined on the same basis as they are reported by the ERS. For this purpose, employer and employee contributions are recognized in the period in which the contributions are legally due and benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms. Investments are reported at their fair value.
- (20) **Postemployment Benefits Other Than Pensions ("OPEB")** - For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense, information about the fiduciary net position of the Hawaii Employer-Union Health Benefits Trust Fund ("EUTF") and additions to/deductions from EUTF's fiduciary net position have been determined on

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 1 - ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES  
(Continued)**

the same basis as they are reported by EUTF. For this purpose, EUTF recognizes benefit payments when due and payable in accordance with the benefit terms. Investments are reported at fair value, except for investments in commingled and money market funds, which are reported at net asset value (NAV). The NAV is based on the fair value of the underlying assets held by the respective fund less its liabilities.

- (21) ***New Accounting Pronouncements*** - The Government Accounting Standards Board (the "GASB") issued Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. The Statement replaces GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, and No. 57, *OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans*. The Statement will require the liability of employers for defined benefit OPEB to be measured as the portion of the present value of projected benefit payments to be provided to current active and inactive employees that is attributed to those employees' past periods of service, less the amount of the OPEB plan's fiduciary net position. The requirements of this Statement are effective for fiscal years beginning after June 15, 2017. Management has adopted the applicable requirements of the new standard as presented in the Department's financial statements.

The GASB issued Statement No. 83, *Certain Asset Retirement Obligations*. This Statement addresses accounting and financial reporting for certain asset retirement obligations ("AROs"). An ARO is a legally enforceable liability associated with the retirement of a tangible capital asset. A government that has legal obligations to perform future asset retirement activities related to its tangible capital assets should recognize a liability based on the guidance in this Statement. The requirements of this Statement are effective for reporting periods beginning after June 15, 2018. Management has not yet determined the effect this Statement will have on the Department's financial statements.

The GASB issued Statement No. 84, *Fiduciary Activities*. This Statement establishes specific criteria for identifying activities that should be reported as fiduciary activities and clarifies whether and how business-type activities should report their fiduciary activities. The requirements of this Statement are effective for reporting periods beginning after December 15, 2018. Management has not yet determined the effect this Statement will have on the Department's financial statements.

The GASB issued Statement No. 85, *Omnibus 2017*. This Statement addresses a variety of topics including issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (pensions and other postemployment benefits [OPEB]). The requirements of this Statement are effective for reporting periods beginning after June 15, 2017. Management has adopted the applicable requirements of the new standard as presented in the Department's financial statements.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 1 - ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES  
(Continued)**

The GASB issued Statement No. 86, *Certain Debt Extinguishment Issues*. This Statement addresses in-substance defeasance of debt when a government places cash and other monetary assets acquired with only existing resources, as opposed to proceeds of refunding debt, in an irrevocable trust to extinguish the debt. The requirements of this Statement are effective for reporting periods beginning after June 15, 2017. Management has determined that this Statement does not have a material impact on the Department's financial statements.

The GASB issued Statement No. 87, *Leases*. This Statement requires the recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this Statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. The requirements of this Statement are effective for reporting periods beginning after December 15, 2019. Management has not yet determined the effect this Statement will have on the Department's financial statements.

The GASB issued Statement No. 88, *Certain Disclosures Related to Debt, including Direct Borrowings and Direct Placements*. This Statement defines debt for purposes of disclosure in notes to financial statements and establishes additional financial statement note disclosure requirements related to debt obligations of governments, including direct borrowings (for example, a government entering into a loan agreement with a lender) and direct placements (for example, a government issuing a debt security directly to an investor). Direct borrowings and direct placements have terms negotiated directly with the investor or lender and are not offered for public sale. The requirements of this Statement are effective for reporting periods beginning after June 15, 2018. Management has not yet determined the effect this Statement will have on the Department's financial statements.

The GASB issued Statement No. 89, *Accounting for Interest Cost Incurred before the End of a Construction Period*. This Statement requires that interest cost incurred before the end of a construction period be recognized as an expense in the period in which the cost is incurred for financial statements prepared using the economic resources measurement focus. As a result, interest cost incurred before the end of a construction period will not be included in the historical cost of a capital asset reported in a business-type activity or enterprise fund. The requirements of this Statement are effective for reporting periods beginning after December 15, 2019. Changes adopted to conform to the provisions of this Statement should be applied prospectively. Management intends to early adopt the applicable requirements of the new standard for the fiscal year ending June 30, 2019.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 1 - ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES  
(Continued)**

The GASB issued Statement No. 90, *Majority Equity Interests - an Amendment of GASB Statements No. 14 and No. 61*. This Statement improves the consistency and comparability of reporting a government's majority equity interest in a legally separate organization and improves the relevance of financial statement information for certain component units. This Statement also requires that a component unit in which a government has a 100 percent equity interest account for its assets, deferred outflow of resources, liabilities, and deferred inflows of resources at acquisition value at the date the government acquired 100 percent equity interest in the component unit. The requirements for this Statement are effective for reporting periods beginning after December 15, 2018. Management has not yet determined the effect this Statement will have on the Department's financial statements.

**NOTE 2 - CASH AND INVESTMENTS**

The Department's cash and investments are maintained with the County's Treasury in a cash and investment pool available for use by all of the County's funds. At June 30, 2018, the amounts reported on the statement of net position as equity in pooled cash and investments held in County Treasury represents the Department's relative position in the County's cash and investment pool and amounted to \$85,256,091.

**County's Investment Policy**

The County's investment policy conforms with the State of Hawaii statutes (Chapter 46, Section 50), which authorize the County to invest in obligations of the U.S. Treasury and U.S. government agencies, municipal securities, auction rate securities collateralized by student loans, bank repurchase agreements, commercial paper, banker's acceptances, and money market funds.

Specific requirements under the County's investment policy are as follows:

- With the exception of U.S. Treasury securities and bank certificates of deposit fully insured by the Federal Deposit Insurance Corporation (FDIC) not to exceed \$250,000 per banking institution, no more than 30% of the County's investment portfolio will be invested in a single type of security, a single issuer, or financial institution.
- Investment maturities are not to exceed five years.



**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 2 - CASH AND INVESTMENTS (Continued)**

**Investment Risk** - The investments are subject to certain types of risk, including interest rate risk, credit quality risk, concentration of credit risk, and custodial credit risk.

**Interest Rate Risk** - Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The County has a formal investment policy that follows State of Hawaii statutes, which limits investment maturities to five years as a means of managing its exposure to fair value losses arising from increasing interest rates.

**Credit Quality Risk** - Credit risk is the risk that an issuer or counterparty to an investment will not fulfill its obligation. The County's investment policy limits investments in municipal securities, U.S. Treasury securities, negotiable time certificates of deposits, U.S. government agency obligations, repurchase agreements, commercial paper, bankers' acceptances, money market funds, and auction rate securities collateralized by student loans maintaining Triple-A rating. The bond ratings for the County's investments in U.S. agency obligations (government sponsored enterprises) at June 30, 2018 were as follows:

	<u>Rating</u>
AA+	\$ 171,781,995
AA	4,210,742
Not rated	<u>127,703,206</u>
	<u>\$ 303,695,943</u>

**Concentration of Credit Risk** - Concentration of credit risk is the risk of loss attributable to the magnitude of the County's investments in a single issuer or investment. The County diversifies its investments to minimize such risk and with the exception of U.S. Treasury securities, no more than 30% of the investment portfolio can be invested in a single type of security or financial institution.

**Custodial Credit Risk** - Custodial credit risk is the risk that in the event of failure of the counterparty to an investment, the County would not be able to recover the value of investment or collateral securities that are in the possession of an outside party. All of the County's investments are either insured or held by an agent in the name of the County, including the investment collateral underlying the repurchase agreements.

Custodial credit risk for bank depository accounts is the risk that in the event of a bank failure, the County's deposits may not be returned. It is the County's policy to place its bank deposits with State of Hawaii high credit quality financial institutions that are able to meet the collateral requirements for the County's deposits. As of June 30, 2018, substantially all of the County's negotiable time certificates of deposits and cash deposits were insured and collateralized.

**Pooled Cash and Investments Held in County Treasury**

Information relating to individual bank balances, insurance, and collateral of cash deposits is determined on a county-wide basis and not for individual departments and funds. Information regarding the carrying amount and corresponding bank balances of the County's cash and investment pool and collateralization of those balances is included in the County's comprehensive annual financial report.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 2 - CASH AND INVESTMENTS (Continued)**

The Department's share of the County's cash and investment pool, as summarized in the tables below was approximately 24.6% at June 30, 2018.

As of June 30, 2018, the County and fiduciary fund's cash and investments were as follows:

Type of Investment	% Yield	Maturity				Premiums (Discounts)	Fair Value
		Under 30 Days	31 - 180 Days	181 - 365 Days	1 - 5 Years		
Federal National Mortgage Association Coupon Notes	1.21 - 1.84	\$ --	\$ 1,000,000	\$ 6,000,000	\$ 26,565,000	\$ (761,602)	\$ 32,803,398
Federal Home Loan Bank Bank Notes	0.95 - 3.13	--	4,000,000	3,000,000	60,500,000	(1,585,920)	65,914,080
Federal Farm Credit Bank Notes	2.15 - 2.75	--	--	--	8,985,000	(75,375)	8,909,625
Federal Agricultural Mortgage Corporation Notes	3.07	--	--	--	5,000,000	(45,900)	4,954,100
Federal Home Loan Mortgage Corporation Notes	1.20 - 3.30	--	--	9,500,000	53,030,000	(1,161,317)	61,368,683
Tennessee Valley Authority Notes	2.33	--	--	--	1,000,000	(5,840)	994,160
U.S. Treasury Strips	1.41 - 1.94	--	3,000,000	--	2,000,000	(207,110)	4,792,890
U.S. Treasury Notes	1.78 - 2.53	--	--	--	4,000,000	(150,840)	3,849,160
Municipal Securities	1.25 - 2.26	1,840,000	5,825,000	--	18,145,000	(190,673)	25,619,327
Negotiable certificates of deposit	0.10 - 2.95	<u>18,498,000</u>	<u>7,500,000</u>	<u>13,493,000</u>	<u>56,680,000</u>	<u>(1,680,480)</u>	<u>94,490,520</u>
Total investments		\$ <u>20,338,000</u>	\$ <u>21,325,000</u>	\$ <u>31,993,000</u>	\$ <u>235,905,000</u>	\$ <u>(5,865,057)</u>	303,695,943
					Cash on hand and deposits		<u>43,551,274</u>
					Total equity in pooled cash and investments		\$ <u>347,247,217</u>

Unrestricted equity in pooled cash and investments held in County Treasury at June 30, 2018 include funds for the following purposes:

	<u>Amount</u>
Board-designated	
Capital improvements	\$ 22,660,639
Debt service	<u>1,824,158</u>
Total board-designated	24,484,797
Undesignated	<u>37,646,269</u>
Total	\$ <u>62,131,066</u>

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 2 - CASH AND INVESTMENTS (Continued)**

At June 30, 2018, construction contract payables, including retentions, to be paid with board-designated funds were approximately \$200,000. Construction contract commitments as of June 30, 2018, to be paid with board-designated funds, aggregated approximately \$4.6 million. There are no amounts included in the construction contract commitment amounts for 2018 for maintenance of compliance-order projects and no amounts included for management's estimates needed in anticipation of future regulations for compliance.

Restricted equity in pooled cash and investments held in County Treasury consisted of the following at June 30, 2018:

	Amount
Water system development fee	\$ 13,231,669
State funds	6,440,718
Bond funds	2,306,902
Customer deposits	677,428
Special assessment fund for storage	273,829
Source development fund assessments	192,525
Federal funds	1,954
Total	\$ 23,125,025

At June 30, 2018, construction voucher and contract payables, including retentions, to be paid with restricted assets were approximately \$1.8 million. Construction contract commitments as of June 30, 2018, to be paid with restricted assets, aggregated approximately \$11.2 million.

**NOTE 3 - FAIR VALUE MEASUREMENTS**

The framework for measuring fair value provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1) and the lowest priority to unobservable inputs (level 3). The three levels of the fair value hierarchy are described as follows:

**Level 1** - Inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that a government can access at the measurement date. An active market is a market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.

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**NOTE 3 - FAIR VALUE MEASUREMENTS (Continued)**

**Level 2** - Inputs other than quoted prices included within level 1 that are observable for an asset or liability, either directly or indirectly. If the asset or liability has a specified (contractual) term, a level 2 input must be observable for most of the full term of the asset or liability. Level 2 inputs include:

- Quoted prices for similar assets or liabilities in active markets,
- Quoted prices for identical or similar assets or liabilities in markets that are not active,
- Inputs other than quoted prices that are observable for the asset or liability,
- Inputs that are derived principally from or corroborated by observable market data by correlation or other means.

**Level 3** - Inputs are unobservable for an asset or liability.

Following is a description of the valuation techniques used by the Department to measure fair value:

U.S. Treasury obligations: Valued using quoted prices in active markets for identical assets.

U.S. government agency obligations and municipal securities: Valued using quoted prices for identical or similar assets in markets that are not active.

Negotiable certificates of deposit: Valued using quoted prices in markets that are not active or for which all significant inputs are observable, either directly or indirectly.

The following table sets forth by level, within the fair value hierarchy, assets measured at fair value on a recurring basis as of June 30, 2018:

	Assets at Fair Value at June 30, 2018			
	Total	Level 1	Level 2	Level 3
U. S. Treasury obligations	\$ 8,642,050	\$ 8,642,050	\$ --	\$ --
U. S. government agency obligations	174,944,046	--	174,944,046	--
Municipal securities	25,619,327	--	25,619,327	--
Negotiable certificates of deposit	<u>94,490,520</u>	<u>--</u>	<u>94,490,520</u>	<u>--</u>
	<u>\$ 303,695,943</u>	<u>\$ 8,642,050</u>	<u>\$ 295,053,893</u>	<u>\$ --</u>

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**NOTE 4 - RESTRICTED NET POSITION**

At June 30, 2018, restricted net position consisted of the following:

	Amount
Water system development fee	\$ 13,231,669
Special assessment fund for storage	273,829
Source development fund assessments	192,525
Other restricted funds	6,513,789
Total	\$ 20,211,812

**NOTE 5 - CAPITAL CONTRIBUTIONS**

Capital contributions during the fiscal year ended June 30, 2018, were as follows:

	Amount
Dedication of infrastructure assets	\$ 7,480,965
Source development fund assessments	3,956,336
Other	428,351
Total	\$ 11,865,652

**NOTE 6 - CAPITAL ASSETS**

Capital assets activity during the fiscal year ended June 30, 2018, was as follows:

	Balance July 1, 2017	Additions	Reductions/ Retirements	Balance June 30, 2018
Non-depreciable assets				
Land	\$ 7,905,059	\$ --	\$ --	\$ 7,905,059
Construction in progress	34,854,382	22,003,449	(8,015,591)	48,842,240
	42,759,441	22,003,449	(8,015,591)	56,747,299
Depreciable assets				
Buildings and systems	160,586,707	5,387,505	--	165,974,212
Machinery and equipment	413,301,480	11,141,431	(165,635)	424,277,276
Infrastructure	11,430,692	361,280	--	11,791,972
	585,318,879	16,890,216	(165,635)	602,043,460
Accumulated depreciation				
Buildings and systems	71,955,255	3,812,432	--	75,767,687
Machinery and equipment	211,392,518	11,002,939	(124,003)	222,271,454
Infrastructure	4,573,279	228,564	--	4,801,843
	287,921,052	15,043,935	(124,003)	302,840,984
Total Capital Assets	\$ 340,157,268	\$ 23,849,730	\$ (8,057,223)	\$ 355,949,775

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**NOTE 7 - LONG-TERM LIABILITIES**

A summary of changes in long-term liabilities of the Department for the fiscal year ended June 30, 2018, are as follows:

	Balance July 1, 2017	Additions	Reductions	Balance June 30, 2018	Due Within One Year
Bonds payable	\$ 24,530,976	\$ --	\$ 2,811,649	\$ 21,719,327	\$ 2,578,899
Notes payable	29,168,425	18,352,460	1,397,801	46,123,084	1,602,385
Accrued vacation payable	2,180,906	625,407	940,501	1,865,812	804,619
Accrued compensatory time off	170,868	92,018	137,594	125,292	125,292
Net pension liability	39,134,359	2,273,228	2,153,472	39,254,115	--
Net OPEB liability	24,267,178	2,183,769	2,413,778	24,037,169	--
Claims and judgments	1,676,718	195,664	1,028,289	844,093	844,093
Total	\$ <u>121,129,430</u>	\$ <u>23,722,546</u>	\$ <u>10,883,084</u>	\$ <u>133,968,892</u>	\$ <u>5,955,288</u>

**NOTE 8 - BONDS PAYABLE**

At June 30, 2018, bonds payable consisted of the following:

	Amount
General Obligation Refunding Bonds, 2010 Series B, due in annual installments through 2021, interest payable semi-annually from 4.0% to 5.0%.	\$ 1,253,055
General Obligation Refunding Bonds, 2012 Series B, due in annual installments through 2032, interest payable semi-annually from 2.1% to 5.0%.	3,251,432
General Obligation Refunding Bonds, 2012 Series C, due in annual installments through 2023, interest payable semi-annually from 4.0% to 5.0%.	4,945,000
General Obligation Refunding Bonds, 2014 Series C, due in annual installments through 2034, interest payable semi-annually from 3.0% to 5.0%.	5,830,000
General Obligation Refunding Bonds, 2015 Series B, due in annual installments through 2020, interest payable semi-annually at 5.0%.	1,123,428
General Obligation Refunding Bonds, 2015 Series D, due in annual installments through 2027, interest payable semi-annually from 3.0% to 5.0%.	3,269,112
	<u>19,672,027</u>
Less current portion	<u>(2,578,899)</u>
	17,093,128
Unamortized premium	<u>2,047,300</u>
Noncurrent portion	\$ <u><u>19,140,428</u></u>

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**NOTE 8 - BONDS PAYABLE (Continued)**

Future bond principal and interest payments are as follows:

<u>Fiscal Year Ending June 30,</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2019	\$ 2,578,899	\$ 807,512	\$ 3,386,411
2020	2,705,708	681,528	3,387,236
2021	2,232,697	564,404	2,797,101
2022	1,889,184	456,711	2,345,895
2023	1,986,742	361,817	2,348,559
2024 - 2028	4,616,761	1,000,021	5,616,782
2029 - 2033	3,197,036	363,548	3,560,584
2034	<u>465,000</u>	<u>15,113</u>	<u>480,113</u>
Total	\$ <u>19,672,027</u>	\$ <u>4,250,654</u>	\$ <u>23,922,681</u>

**NOTE 9 - NOTES PAYABLE**

At June 30, 2018, notes payable consisted of the following:

	<u>Amount</u>
Notes payable to State of Hawaii, Department of Health	
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 0.37%, and loan fee rate of 3.25%, maturing in 2029.	\$ 1,028,166
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 0.00%, and loan fee rate of 3.25%, maturing in 2031.	<u>449,606</u>
Balance forward	\$ 1,477,772

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**NOTE 9 - NOTES PAYABLE (Continued)**

	<u>Amount</u>
Notes payable to State of Hawaii, Department of Health (Continued)	
Balance carried forward	\$ 1,477,772
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 0.35%, and loan fee rate of 3.25%, maturing in 2032.	2,422,355
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 0.00%, and loan fee rate of 3.25%, maturing in 2032.	788,722
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 1.00%, and loan fee rate of 1.00%, maturing in 2032.	176,267
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 0.50%, and loan fee rate of 1.00%, maturing in 2033.	1,696,779
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 1.00%, and loan fee rate of 1.00%, maturing in 2033.	665,501
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 0.00%, and loan fee rate of 1.00%, maturing in 2033.	<u>6,187,147</u>
Balance forward	\$ 13,414,543



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**NOTE 9 - NOTES PAYABLE (Continued)**

	<u>Amount</u>
Notes payable to State of Hawaii, Department of Health (Continued)	
Balance carried forward	\$ 13,414,543
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 0.50%, and loan fee rate of 1.00%, maturing in 2034.	3,457,856
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 1.00%, and loan fee rate of 1.00%, maturing in 2034.	1,678,265
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 1.00%, and loan fee rate of 1.00%, maturing in 2035.	604,500
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 1.00%, and loan fee rate of 1.00%, maturing in 2035.	658,813
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 1.00%, and loan fee rate of 1.00%, maturing in 2034.	127,193
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 1.00%, and loan fee rate of 1.00%, maturing in 2038.	<u>1,693,916</u>
Balance forward	\$ 21,635,086

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**NOTE 9 - NOTES PAYABLE (Continued)**

	<u>Amount</u>
Notes payable to State of Hawaii, Department of Health (Continued)	
Balance carried forward	\$ 21,635,086
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 0.50%, and loan fee rate of 1.00%, maturing in 2037.	2,184,849
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 1.00%, and loan fee rate of 1.00%, maturing in 2037.	1,177,252
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 1.00%, and loan fee rate of 1.00%, maturing in 2037.	475,150
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 0.50%, and loan fee rate of 1.00%, maturing in 2038.	2,988,743
Note payable to State Revolving Loan Fund for a capital improvement project, payable in semi-annual installments of principal, interest at a rate of 0.00%, and loan fee rate of 1.00%, maturing in 2039.	<u>17,662,004</u>
	46,123,084
Less current maturities	<u>(1,602,385)</u>
	\$ <u>44,520,699</u>

**Department of Water Supply  
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**NOTE 9 - NOTES PAYABLE (Continued)**

Future principal and interest payments for notes payables are as follows:

<u>Fiscal Year Ending June 30,</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2019	\$ 1,602,385	\$ 693,544	\$ 2,295,929
2020	2,125,517	664,210	2,789,727
2021	2,554,530	625,008	3,179,538
2022	2,574,298	583,699	3,157,997
2023	2,594,378	542,008	3,136,386
2024 - 2028	13,281,410	2,073,835	15,355,245
2029 - 2033	12,928,828	1,016,221	13,945,049
Thereafter	<u>8,461,738</u>	<u>296,047</u>	<u>8,757,785</u>
Total	\$ <u>46,123,084</u>	\$ <u>6,494,572</u>	\$ <u>52,617,656</u>

**NOTE 10 - EMPLOYEE BENEFIT PLANS**

**Pension Plan**

**Pension Plan Description** - Generally, all full-time employees of the State and counties are required to be members of the ERS, a cost-sharing multiple-employer defined benefit pension plan that administers the State's pension benefits program. Benefits, eligibility, and contribution requirements are governed by HRS Chapter 88 and can be amended through legislation. The ERS issues publicly available annual financial reports that can be obtained at ERS' website: <http://ers.ehawaii.gov/>.

**Benefits Provided** - The ERS Pension Trust is comprised of three pension classes for membership purposes and considered to be a single plan for accounting purposes since all assets of the ERS may legally be used to pay the benefits of any of the ERS members or beneficiaries. The ERS provides retirement, disability and death benefits with three membership classes known as the noncontributory, contributory and hybrid retirement classes. The three classes provide a monthly retirement allowance equal to the benefit multiplier (generally 1.25% or 2%) multiplied by the average final compensation multiplied by years of credited service. Average final compensation for members hired prior to July 1, 2012 is an average of the highest salaries during any three years of credited service, excluding any salary paid in lieu of vacation for members hired January 1, 1971 or later and the average of the highest salaries during any five years of credited service including any salary paid in lieu of vacation for members hired prior to January 1, 1971. For members hired after June 30, 2012, average final compensation is an average of the highest salaries during any five years of credited service excluding any salary paid in lieu of vacation.

**Department of Water Supply  
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**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

Each retiree's original retirement allowance is increased on each July 1 beginning the calendar year after retirement. Retirees first hired as members prior to July 1, 2012 receive a 2.5% increase each year of their original retirement allowance without a ceiling. Retirees first hired as members after June 30, 2012 receive a 1.5% increase each year of their original retirement allowance without a ceiling. The annual increase is not compounded.

The following summarizes the provisions relevant to the largest employee groups of the respective membership class. Retirement benefits for certain groups, such as police officers, firefighters, some investigators, sewer workers, judges, and elected officials, vary from general employees.

*Noncontributory Class*

*Retirement Benefits* - General employees' retirement benefits are determined as 1.25% of average final compensation multiplied by the years of credited service. Employees with ten years of credited service are eligible to retire at age 62. Employees with 30 years of credited service are eligible to retire at age 55.

*Disability Benefits* - Members are eligible for service-related disability benefits regardless of length of service and receive a lifetime pension of 35% of their average final compensation. Ten years of credited service is required for ordinary disability. Ordinary disability benefits are determined in the same manner as retirement benefits but are payable immediately, without an actuarial reduction, and at a minimum of 12.5% of average final compensation.

*Death Benefits* - For service-connected deaths, the surviving spouse/reciprocal beneficiary receives a monthly benefit of 30% of the average final compensation until remarriage or re-entry into a new reciprocal beneficiary relationship. Additional benefits are payable to surviving dependent children up to age 18. If there is no spouse/reciprocal beneficiary or dependent children, no benefit is payable.

Ordinary death benefits are available to employees who were active at time of death with at least ten years of credited service. The surviving spouse/reciprocal beneficiary (until remarriage/re-entry into a new reciprocal beneficiary relationship) and dependent children (up to age 18) receive a benefit equal to a percentage of the member's accrued maximum allowance unreduced for age or, if the member was eligible for retirement at the time of death, the surviving spouse/reciprocal beneficiary receives 100% joint and survivor lifetime pension and the dependent children receive a percentage of the member's accrued maximum allowance unreduced for age.

*Contributory Class for Employees Hired prior to July 1, 2012*

*Retirement Benefits* - General employees' retirement benefits are determined as 2% of average final compensation multiplied by the years of credited service. General employees with 5 years of credited service are eligible to retire at age 55.

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**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

Police officers and firefighters' retirement benefits are determined using the benefit multiplier of 2.5% for qualified service, up to a maximum of 80% of average final compensation. Police officers and firefighters with five years of credited service are eligible to retire at age 55. Police officers and firefighters with 25 years of credited service are eligible to retire at any age, provided the last five years is service credited in these occupations.

*Death Benefits* - For service-connected deaths, the surviving spouse/reciprocal beneficiary receives a lump sum payment of the member's contributions and accrued interest plus a monthly benefit of 50% of the average final compensation until remarriage or re-entry into a new reciprocal beneficiary relationship. If there is no surviving spouse/reciprocal beneficiary, surviving dependent children (up to age 18) or dependent parents are eligible for the monthly benefit. If there is no spouse/reciprocal beneficiary or dependent children/parents, the ordinary death benefit is payable to the designated beneficiary.

Ordinary death benefits are available to employees who were active at time of death with at least one year of service. Ordinary death benefits consist of a lump sum payment of the member's contributions and accrued interest plus a percentage of the salary earned in the 12 months preceding death, or 50% Joint and Survivor lifetime pension if the member was not eligible for retirement at the time of death but was credited with at least ten years of service and designated one beneficiary, or 100% Joint and Survivor lifetime pension if the member was eligible for retirement at the time of death and designated one beneficiary.

*Contributory Class for Employees Hired After June 30, 2012*

*Retirement Benefits* - General employees' retirement benefits are determined as 1.75% of average final compensation multiplied by the years of credited service. General employees with ten years of credited service are eligible to retire at age 60. Judges and elected officers' retirement benefits are determined as 3.0% of average final compensation multiplied by the years of credited service up to a maximum of 75%. Judges and elected officers with ten years of credited service are eligible to retire at age 60.

Police officers and firefighters' retirement benefits are determined using the benefit multiplier of 2.25% for qualified service, up to a maximum of 80% of average final compensation. Police officers and firefighters with ten years of credited service are eligible to retire at age 60. Police officers and firefighters with 25 years of credited service are eligible to retire at age 55, provided the last five years is service credited in these occupations.

*Disability and Death Benefits* - Members are eligible for service-related disability benefits regardless of length of service and receive a lifetime pension of 50% of their average final compensation plus refund of contributions and accrued interest. Ten years of credited service is required for ordinary disability. Ordinary disability benefits are 3.0% of average final compensation for each year of service for judges and elected officers and 1.75% of average final compensation for each year of service for police officers and firefighters and are payable immediately, without an actuarial reduction, at a minimum of 30% of average final compensation.

Death benefits for contributory members hired after June 30, 2012 are generally the same as those for contributory members hired June 30, 2012 and prior.

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**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

*Hybrid Class for Employees Hired Prior to July 1, 2012*

*Retirement Benefits* - General employees' retirement benefits are determined as 2% of average final compensation multiplied by the years of credited service. General employees with five years of credited service are eligible to retire at age 62. General employees with 30 years of credited service are eligible to retire at age 55.

*Disability Benefits* - Members are eligible for service-related disability benefits regardless of length of service and receive a lifetime pension of 35% of their average final compensation plus refund of their contributions and accrued interest. Ten years of credited service is required for ordinary disability. Ordinary disability benefits are determined in the same manner as retirement benefits but are payable immediately, without an actuarial reduction, and at a minimum of 25% of average final compensation.

*Death Benefits* - For service-connected deaths, the surviving spouse/reciprocal beneficiary receives a lump sum payment of the member's contributions and accrued interest plus a monthly benefit of 50% of the average final compensation until remarriage or re-entry into a new reciprocal beneficiary relationship. If there is no surviving spouse/reciprocal beneficiary, surviving dependent children (up to age 18) or dependent parents are eligible for the monthly benefit. If there is no spouse/reciprocal beneficiary or dependent children/parents, the ordinary death benefit is payable to the designated beneficiary.

Ordinary death benefits are available to employees who were active at time of death with at least five years of service. Ordinary death benefits consist of a lump sum payment of the member's contributions and accrued interest plus a percentage multiplied by 150%, or 50% Joint and Survivor lifetime pension if the member was not eligible for retirement at the time of death but was credited with at least ten years of service and designated one beneficiary, or 100% Joint and Survivor lifetime pension if the member was eligible for retirement at the time of death and designated one beneficiary.

*Hybrid Class for Employees Hired After June 30, 2012*

*Retirement Benefits* - General employees' retirement benefits are determined as 1.75% of average final compensation multiplied by the years of credited service. General employees with ten years of credited service are eligible to retire at age 65. Employees with 30 years of credited service are eligible to retire at age 60. Sewer workers, water safety officers, and emergency medical technicians may retire with 25 years of credited service at age 55.

*Disability and Death Benefits* - Provisions for disability and death benefits generally remain the same except for ordinary death benefits. Ordinary death benefits are available to employees who were active at time of death with at least ten years of service. Ordinary death benefits consist of a lump sum payment of the member's contributions and accrued interest, or 50% Joint and Survivor lifetime pension if the member was not eligible for retirement at the time of death but was credited with at least ten years of service and designated one beneficiary, or 100% Joint and Survivor lifetime pension if the member was eligible for retirement at the time of death and designated one beneficiary.

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**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

**Plan Membership**

At June 30, 2017, ERS membership consisted of:

Inactive employees or their beneficiaries currently receiving benefits	46,927
Inactive employees entitled to but not yet receiving benefits	25,723
Active employees	<u>65,911</u>
Total	<u>138,561</u>

**Contributions** - Contributions are governed by HRS Chapter 88 and may be amended through legislation. The employer rate is set by statute based on the recommendations of the ERS actuary resulting from an experience study conducted every five years. Since July 1, 2005, the employer contribution rate is a fixed percentage of compensation, including the normal cost plus amounts required to pay for the unfunded actuarial accrued liabilities. The contribution rates for the fiscal year ended June 30, 2018 was 25.00% for police officers and firefighters, and 17.00% for all other employees. For the fiscal year ended June 30, 2018, contributions to the pension plan from the Department was \$2,237,373.

On May 18, 2017, the Governor signed into law Act 17 SLH 2017. Per Act 17, future employer contributions from the State and counties are expected to increase pursuant to a phased-in contribution rate increase over four years beginning July 1, 2017. The rate for police officers and firefighters increases to 28.00% on July 1, 2017; 31.00% on July 1, 2018; 36.00% on July 1, 2019; and 41.00% on July 1, 2020 and the rate for all other employees increases to 18.00% on July 1, 2017; 19.00% on July 1, 2018; 22.00% on July 1, 2019; and 24.00% on July 1, 2020.

The employer is required to make all contributions for noncontributory members. Contributory members hired prior to July 1, 2012 are required to contribute 7.8% of their salary, except for police officers and firefighters who are required to contribute 12.2% of their salary. Contributory members hired after June 30, 2012 are required to contribute 9.8% of their salary, except for police officers and firefighters who are required to contribute 14.2% of their salary. Hybrid members hired prior to July 1, 2012 are required to contribute 6.0% of their salary. Hybrid members hired after June 30, 2012 are required to contribute 8.0% of their salary.

**Pension Liability, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions** - At June 30, 2018, the Department reported a liability of \$39,254,115, for its proportionate share of the net pension liability of the County. The net pension liability was measured as of June 30, 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The Department's proportion of the net pension liability was based on a proportion of the Department's contributions to the pension plan relative to projected contributions of the County. At June 30, 2017, the Department's proportion of the County's proportion was 6.5592% which was a decrease of 0.0471% from its proportion measured at June 30, 2016.

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**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

There were no other changes between the measurement date, June 30, 2017, and the reporting date, June 30, 2018, that are expected to have a significant effect on the proportionate share of the net pension liability.

For the fiscal year ended June 30, 2018, the Department recognized pension expense of \$5,528,608. At June 30, 2018, the Department reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	<b>Deferred Outflows of Resources</b>	<b>Deferred Inflows of Resources</b>
Differences between expected and actual experience	\$ 638,507	\$ 446,969
Net difference between projected and actual earnings on pension plan investments	103,630	--
Changes in proportion and difference between Department contributions and proportionate share of contributions	1,186,006	539,709
Changes of assumptions	6,060,567	--
Department contributions subsequent to the measurement date	<u>2,237,373</u>	<u>--</u>
	<u>\$ 10,226,083</u>	<u>\$ 986,678</u>

The \$2,237,373 reported as deferred outflows of resources related to pensions resulting from contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the fiscal year ending June 30, 2019. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

<u>Fiscal Year Ending June 30,</u>	<u>Amount</u>
2019	\$ 1,550,007
2020	2,365,922
2021	2,111,222
2022	852,333
2023	<u>122,548</u>
Total	<u>\$ 7,002,032</u>



**Department of Water Supply  
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**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

**Actuarial Assumptions** - The total pension liability in the June 30, 2017 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation rate	2.50%
Payroll growth rate	3.50%
Investment rate of return, including inflation	7.00%
Salary increases, including inflation	
Police and fire employees	5.00% to 7.00%
General employees	3.50% to 6.50%
Teachers	3.75% to 5.75%

Mortality rates used in the actuarial valuation as of July 1, 2017 were based on the following:

Active members - Multiples of the RP 2014 mortality table for employees with generational projection using the BB projection table from the year 2014 based on the occupation of the member.

Healthy retirees - The 2016 Public Retirees of Hawaii mortality table, generational projection using the BB projection table from the year 2016 and with multipliers based on plan and group experience.

Disabled retirees - Base table for healthy retirees' occupation, set forward five years, generational projection using the BB projection table from the year 2016. Minimum mortality rate of 3.50% for males and 2.50% for females.

The actuarial assumptions used in the actuarial valuation as of June 30, 2017 were based on the results of an actuarial experience study for the five-year period ended June 30, 2015, dated July 5, 2016 and adopted by the Board of Trustees of the Employees' Retirement System of the State of Hawaii on December 12, 2016. The major changes to assumptions resulting from the 2015 actuarial experience study were (1) a decrease in the investment return assumption from 7.65% to 7.00% and (2) the mortality assumptions were modified to assume longer life expectancies as well as to reflect continuous mortality improvement.

The long-term expected rate of return on pension plan investments was determined using a "top down approach" of the Bespoke Client Constrained Simulation-based Optimization Model (a statistical technique known as "re-sampling with replacement" that directly keys in on specific plan-level risk factors as stipulated by the ERS Board) in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges

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**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of geometric real rates of return for each major asset class are summarized in the following table:

Strategic Allocation (Risk-Based Classes)	Target Allocation	Long-Term Expected Rate of Return	Long-Term Expected Real Rate of Return *
Broad growth	63.00%	8.05%	5.80%
Principal protection	7.00%	2.45%	0.20%
Real return	10.00%	5.80%	3.55%
Crisis risk offset	20.00%	5.35%	3.10%
	<u>100.00%</u>		

\*Uses an expected inflation of 2.25%

**Discount Rate** - The discount rate used to measure the net pension liability at June 30, 2018 was 7.00%. The projection of cash flows used to determine the discount rate assumed that employee contributions will be made at the current contribution rate and that contributions from the County will be made at statutorily required rates, actuarially determined. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

**Sensitivity of the Department's Proportionate Share of the Net Pension Liability to Changes in the Discount Rate** - The following presents the Department's proportionate share of the net pension liability calculated using the discount rate, as well as what the Department's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1-percentage point lower or 1-percentage point higher than the current rate:

	1% Decrease (6.00%)	Discount Rate (7.00%)	1% Increase (8.00%)
Department's proportionate share of the net pension liability	\$ <u>45,941,237</u>	\$ <u>39,254,115</u>	\$ <u>26,801,679</u>

**Pension Plan Fiduciary Net Position** - There were no significant changes after the report measurement date. Detailed information about the pension plan's fiduciary net position is available in the separately issued ERS financial report. ERS complete financial statements are available at <http://www.ers.ehawaii.gov>.

The County of Maui's comprehensive annual financial report contains further disclosures related to the County's proportionate share of the net pension liability and employer pension contributions.

**Department of Water Supply  
County of Maui  
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June 30, 2018**

**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

**Postemployment Benefits Other Than Pensions (OPEB)**

**Plan description** - Chapter 87A of the Hawaii Revised Statutes (“HRS”) established the EUTF, an agent multiple-employer defined benefit plan, which provides a single delivery system of health and other benefits for state and county workers, retirees and their eligible dependents. The EUTF issues a stand-alone financial report that is available to the public on its website at <https://eutf.hawaii.gov>.

**Benefits provided** - Chapter 87A of the HRS grants the authority to establish and amend the benefit terms to the board of trustees of the EUTF. The EUTF currently provides medical, prescription drug, dental, vision, chiropractic, supplemental medical and prescription drug, and group life insurance benefits for retirees and their dependents. The following table provides a summary of the number of employees covered by the benefits terms as of July 1, 2017:

Inactive employees or beneficiaries currently receiving benefits	1,470
Inactive employees entitled but not yet receiving benefit payments	248
Active employees	<u>2,494</u>
	<u>4,212</u>

For employees hired before July 1, 1996, the County pays the entire base monthly contribution for employees retiring with ten years or more of credited service, and 50% of the base monthly contribution for employees retiring with fewer than ten years of credited service. A retiree can elect a family plan to cover dependents.

For employees hired after June 30, 1996 but before July 1, 2001, and who retire with less than ten years of service, the County makes no contributions. For those retiring with at least ten years but fewer than 15 years of service, the County pays 50% of the base monthly contribution. For employees retiring with at least 15 years but fewer than 25 years of service, the County pays 75% of the base monthly contribution. For those employees retiring with at least 25 years of service, the County pays 100% of the monthly contribution. A retiree can elect a family plan to cover dependents.

For employees hired after June 30, 2001, and who retire with fewer than ten years of service, the County makes no contributions. For those retiring with at least ten years but fewer than 15 years of service, the County pays 50% of the base monthly contribution. For those retiring with at least 15 years but fewer than 25 years of service, the County pays 75% of the base monthly contribution. For employees retiring with at least 25 years of service, the County pays 100% of the base monthly contribution. Retirees can elect family coverage, but must pay the difference.

**Department of Water Supply  
County of Maui  
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**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

For active employees, the employee's contributions are based upon negotiated collective bargaining agreements. Employer contributions for employees not covered by collective bargaining agreements and for retirees are prescribed by the HRS.

On July 3, 2013, the Governor signed into law Act 268, Session Laws of Hawaii 2013. Act 268 requires the EUTF to establish and administer separate trust accounts for each public employer for the purpose of receiving irrevocable employer contributions to prefund post-employment health and other benefit costs for retirees and their beneficiaries. It establishes the Hawaii EUTF Trust Fund Task Force to examine further steps to address the unfunded liability and requires all public employers to make annual required public employer contributions effective fiscal year 2014. Commencing fiscal year 2019, the annual public employer contribution shall be equal to the annual required contribution, as determined by an actuary retained by the EUTF board. In any fiscal year, should an employer's contribution be less than the annual required public employer contribution, the difference shall be transferred to the appropriate trust account from a portion of all general excise tax revenues, for the State, or transient accommodations tax revenues, for the counties.

**Contributions** - Measurement of the actuarial valuation and the annual required contribution (ARC) are made for the County as a whole and are not separately computed for the individual County departments and agencies such as the Department. The ARC represents a level of funding that is sufficient to cover, 1) the normal cost, which is the cost of the other postemployment benefits attributable to the current year of service; and 2) an amortization payment, which is a catch-up payment for past service costs to fund the unfunded actuarial accrued liability over the next 30 years.

The County allocates the ARC to the various departments and agencies based upon a systematic methodology. The Department's contributions paid to the County for the fiscal year ended June 30, 2018 was \$1,121,088, which equaled the Department's allocated ARC for postemployment health care and life insurance benefits.

**Net OPEB Liability** - The Department's share of the net OPEB liability was measured as of July 1, 2017 for the County as a whole and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation as of that date.

The Department's proportion of the net OPEB liability was based on a proportion of the Department's contributions to the OPEB plan relative to projected contributions of the County. At June 30, 2018, the Department's proportion of the County's proportion was 7.569%.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

**Actuarial assumptions** - The total OPEB liability in the July 1, 2017 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement, unless otherwise specified:

Inflation	2.50%
Salary increases	3.50% to 7.00%, including inflation
Investment rate of return	7.00%
Healthcare cost trend rates	
PPO	Initial rates of 6.60%, 6.60% and 9.00%; declining to a rate of 4.86% after 14 years
HMO	Initial rate of 9.00%; declining to a rate of 4.86% after 14 years
Part B & base monthly contribution	Initial rates of 2.00% and 5.00%, declining to a rate of 4.70% after 14 years
Dental	3.50%
Vision	2.50%
Life insurance	0.00%

Mortality rates used in the actuarial valuation as of July 1, 2017 were based on the following:

Active members - Multiples of the RP 2014 mortality table for employees with generational projection using the BB projection table from the year 2014 based on the occupation of the member.

Healthy retirees - The 2016 Public Retirees of Hawaii mortality table, generational projection using the BB projection table from the year 2016 and with multipliers based on plan and group experience.

Disabled retirees - Base table for healthy retirees' occupation, set forward five years, generational projection using the BB projection table from the year 2016. Minimum mortality rate of 3.50% for males and 2.50% for females.

The actuarial assumptions used in the actuarial valuation as of July 1, 2017 were based on the results of an actuarial experience study for the five-year period ended June 30, 2015 as conducted for the ERS.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class as of July 1, 2017 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
U.S. equity	19.00%	5.50%
International equity	19.00%	7.00%
U.S. microcap	7.00%	7.00%
Private equity	10.00%	9.25%
REITs	6.00%	5.85%
Core real estate	10.00%	3.80%
Global options	7.00%	5.50%
Core bonds	3.00%	0.55%
Long treasuries	7.00%	1.90%
Trend following	7.00%	1.75%
TIPS	5.00%	0.50%
	100.00%	

**Discount rate** - The discount rate used to measure the total OPEB liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that the County contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the OPEB plan's fiduciary net position was projected to be available to make all projected future benefit payments for current active and inactive employees. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

**Changes in the Net OPEB Liability**

The following schedule presents the Department's share of the changes in the net OPEB liability for the fiscal year ending June 30, 2018:

	Increase (Decrease)		
	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
	(a)	(b)	(a) - (b)
<b>Balance at June 30, 2017</b>	\$ <u>37,248,935</u>	\$ <u>12,981,757</u>	\$ <u>24,267,178</u>
<b>Changes for the fiscal year:</b>			
Service cost	911,774	--	911,774
Interest on the total OPEB liability	2,597,699	--	2,597,699
Contributions - employer	--	2,413,778	(2,413,778)
Net investment income	--	1,309,402	(1,309,402)
Benefit payments	(1,189,661)	(1,189,661)	--
Administrative expense	--	(2,965)	2,965
Other	--	19,267	(19,267)
<b>Net changes</b>	<u>2,319,812</u>	<u>2,549,821</u>	<u>(230,009)</u>
<b>Balance at June 30, 2018</b>	\$ <u>39,568,747</u>	\$ <u>15,531,578</u>	\$ <u>24,037,169</u>

**Sensitivity of the Department's Proportionate Share of the Net OPEB Liability to Changes in the Discount Rate** - The following presents the Department's proportionate share of the net OPEB liability calculated using the discount rate, as well as what the Department's proportionate share of the net OPEB liability would be if it were calculated using a discount rate that is 1-percentage point lower or 1-percentage point higher than the current rate:

	1% Decrease (6.00%)	Discount Rate (7.00%)	1% Increase (8.00%)
Department's proportionate share of the net OPEB liability	\$ <u>30,677,639</u>	\$ <u>24,037,169</u>	\$ <u>18,711,876</u>

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

**Sensitivity of the net OPEB Liability to Changes in the Healthcare Cost Trend Rates -**  
The following presents the net OPEB liability of the Department, as well as what the Department's net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage point lower or 1-percentage point higher than the current healthcare cost trend rates:

	<u>1% Decrease</u>	<u>Current Healthcare Cost Trend Rates</u>	<u>1% Increase</u>
Department's proportionate share of the net OPEB liability	\$ <u>18,397,447</u>	\$ <u>24,037,169</u>	\$ <u>31,204,024</u>

**OPEB Expense, Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB -** For the fiscal year ended June 30, 2018, the Department recognized OPEB expense of \$2,469,581. At June 30, 2018, the Department reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Net difference between projected and actual earnings on OPEB plan investments	\$ --	\$ 285,812
Employer contributions subsequent to the measurement date	\$ <u>2,528,321</u>	\$ <u>--</u>
	\$ <u>2,528,321</u>	\$ <u>285,812</u>

The \$2,528,321 reported as deferred outflows of resources related to OPEB resulting from contributions subsequent to the measurement date will be recognized as a reduction of the net OPEB liability in the fiscal year ending June 30, 2019. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

<u>Fiscal Year Ending June 30,</u>	<u>Net Deferred Outflows (Inflows)</u>
2019	\$ (71,453)
2020	(71,453)
2021	(71,453)
2022	<u>(71,453)</u>
Total	\$ <u>(285,812)</u>



**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 10 - EMPLOYEE BENEFIT PLANS (Continued)**

**Deferred Compensation Plan**

The County participates in a deferred compensation plan established by the State of Hawaii in accordance with Internal Revenue Code Section 457. The plan is available to all the County employees, and permits employees to defer a portion of their salary until future years. The deferred compensation is not available to employees until termination, retirement, death, or unforeseeable emergency.

All plan assets are held in a trust fund to protect them from claims of general creditors and from diversion to any uses other than paying benefits to participants and beneficiaries. The County has no responsibility for loss due to the investment or failure of investment of funds and assets in the plans, but does have the duty of due care that would be required of an ordinary prudent investor.

**NOTE 11 - SICK LEAVE**

Accrued sick leave aggregated to approximately \$5.5 million as of June 30, 2018. Sick leave can accumulate at the rate of one and three-quarters working days for each month of service without limit, but can be taken only in the event of illness and is not convertible to pay upon termination of employment. However, a County employee who is vested in the retirement system and retires or leaves government service in good standing with 60 days or more of unused sick leave is entitled to additional service credit in the ERS.

**NOTE 12 - RISK MANAGEMENT**

The Department participates in the County's insurance program, which is self-insured for worker's compensation, vehicle, and general liabilities. The County has excess insurance for vehicle and general liability losses over \$500,000. The liability for claims and judgments was estimated based on a combination of case-by-case review and the application of historical experience. Because of the inherent uncertainties in estimating future projected liabilities of claims and judgments, it is at least reasonably possible that the estimates used may change within the near-term.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2018**

**NOTE 13 - ADOPTION OF NEW ACCOUNTING PRINCIPLE**

The Department adopted the applicable requirements of GASB Statement No. 75. The cumulative effect of applying the requirements of GASB Statement No. 75 resulted in a reduction to beginning net position by \$21,853,400 as of June 30, 2017, which is summarized as follows:

	Amount
Net position at June 30, 2017, as previously stated	\$ 329,785,798
Cumulative effect of applying GASB 75:	
Net OPEB liability at June 30, 2017	(24,267,178)
Deferred outflows of resources - employer contributions paid during the fiscal year ended June 30, 2017	2,413,778
Net position at June 30, 2017, as restated	\$ <u>307,932,398</u>

Management of the Department concluded that it was not practical to determine the amounts of all applicable deferred inflows of resources and deferred outflows of resources related to OPEB as of June 30, 2017. Accordingly, as permitted under the provisions of GASB 75, the restatement of beginning balances as of June 30, 2017 only includes deferred outflows of resources for OPEB contributions by the Department made subsequent to the measurement date of the beginning net OPEB liability (June 30, 2016) but before June 30, 2017.

## **SUPPLEMENTARY INFORMATION**

**Department of Water Supply  
County of Maui  
SCHEDULE I - SCHEDULE OF CAPITAL ASSETS  
June 30, 2018**

Description	Balance	Additions and Transfers		Retirements	Balance	Accumulated	Retirements		Accumulated
	July 1, 2016	\$	\$	\$	June 30, 2018	Depreciation	June 30, 2017	June 30, 2018	Depreciation
Land	7,905,059	--	--	--	7,905,059	--	--	--	--
Source of Supply Structures	1,843,362	--	--	--	1,843,362	422,188	35,831	--	458,019
Collecting and Impounding Reservoirs	4,251,683	--	--	--	4,251,683	3,607,615	53,716	--	3,661,331
Wells & Springs	20,831,410	--	--	--	20,831,410	3,933,227	416,795	--	4,350,022
Power & Pumping Structures	17,864,101	2,850,740	--	--	20,714,841	1,831,077	427,840	--	2,258,917
Purification Buildings	34,417,534	238,679	--	--	34,656,213	30,346,282	759,776	--	31,106,058
Distribution Reservoirs	78,041,915	2,298,086	--	--	80,340,001	29,215,562	2,063,345	--	31,278,907
Office Building	1,672,930	--	--	--	1,672,930	1,167,347	32,702	--	1,200,049
Field Operation Building	1,072,693	--	--	--	1,072,693	849,414	18,406	--	867,820
Utility Plant - Unclassified	591,079	--	--	--	591,079	582,543	4,021	--	586,564
Electric Pumping Equipment	32,373,288	4,416,274	--	--	36,789,562	23,490,960	1,585,399	--	25,076,359
Other Power Pumping Equipment	2,708,773	--	--	--	2,708,773	2,012,003	238,461	--	2,250,464
Purification System - Chlorinators	3,136,099	--	--	--	3,136,099	2,438,606	246,140	--	2,684,746
Purification System - Filter Plants	54,918,359	--	--	--	54,918,359	42,890,804	1,277,063	--	44,167,867
Transmission & Distribution Mains	296,205,591	5,976,868	--	--	302,182,459	124,765,628	6,563,904	--	131,329,532
Service Laterals	4,061,491	195,753	--	--	4,257,244	2,365,821	135,842	--	2,501,663
Meters	8,825,008	76,730	--	--	8,901,738	5,082,733	396,268	--	5,479,001
Office Furniture & Equipment	54,155	--	--	--	54,155	30,528	2,598	--	33,126
Stores Equipment	237,625	--	--	(39,240)	198,385	104,702	5,276	--	109,978
Shop Equipment	72,674	--	--	--	72,674	63,966	1,745	--	65,711
Laboratory Equipment	493,337	42,658	--	--	535,995	309,532	21,951	--	331,483
Work Equipment	2,470,484	264,385	--	(5,489)	2,729,380	1,472,857	113,905	(4,048)	1,582,714
Communication Equipment	1,688,747	--	--	(6,010)	1,682,737	1,147,449	84,898	(5,059)	1,227,288
Meter Boxes	291,058	--	--	--	291,058	290,962	96	--	291,058
Hydrants	10,819,961	361,280	--	--	11,181,241	4,165,529	214,273	--	4,379,802
Standpipes	246,277	--	--	--	246,277	208,554	4,672	--	213,226
Office Machines	587,094,693	16,721,453	--	(50,739)	603,765,407	282,795,889	14,704,923	(9,107)	297,491,705
Transportation Equipment	753,507	5,955	--	(114,896)	644,566	670,836	27,863	(114,896)	583,803
Total Capital Assets (1)	593,223,938	16,890,216	--	(165,635)	609,948,519	287,921,052	15,043,935	(124,003)	302,840,984
Construction in Aid	\$	7,820,349	--	--	\$	--	--	--	--
Capital Replacement Fund		2,877,327	--	--		--	--	--	--
2014 GO Bonds		2,450,757	--	--		--	--	--	--
State Revolving Fund		1,629,263	--	--		--	--	--	--
Construction in Aid - Direct		1,119,395	--	--		--	--	--	--
Revenue Fund		555,667	--	--		--	--	--	--
Water System Development Fund		398,218	--	--		--	--	--	--
		<u>16,850,976</u>							

(1) Excludes construction in progress.

**Department of Water Supply  
County of Maui  
SCHEDULE II - SCHEDULE OF LONG-TERM DEBT - GENERAL OBLIGATION BONDS  
June 30, 2018**

County of Maui General Obligation Bonds	Fiscal Year	Coupon Interest Rate	Bond Dated	Maturing Serially From	Call Dates	Authorized and Issued	Outstanding June 30, 2018	Payable Within One Year
G.O. Refunding Bonds, 2010 Series B (a)								
	2019	4.000	12/1/2010	6/1/2019	Noncallable	\$ 401,441	401,441	\$ 401,441
	2020	4.000	12/1/2010	6/1/2020	Noncallable	417,419	417,419	--
	2021	4.000	12/1/2010	6/1/2021	6/1/2020	434,195	434,195	--
Total 2010 Series B Issue						<u>1,253,055</u>	<u>1,253,055</u>	<u>401,441</u>
G.O. Refunding Bonds, 2012 Series B (b)								
	2019	5.000	11/1/2012	6/1/2019	Noncallable	\$ 178,002	\$ 178,002	\$ 178,002
	2020	5.000	11/1/2012	6/1/2020	Noncallable	186,708	186,708	--
	2021	5.000	11/1/2012	6/1/2021	Noncallable	196,382	196,382	--
	2022	5.000	11/1/2012	6/1/2022	Noncallable	206,056	206,056	--
	2023	4.000	11/1/2012	6/1/2023	Noncallable	216,214	216,214	--
	2024	2.125	11/1/2012	6/1/2024	6/1/2023	224,921	224,921	--
	2025	3.000	11/1/2012	6/1/2025	6/1/2023	229,758	229,758	--
	2026	3.000	11/1/2012	6/1/2026	6/1/2023	236,529	236,529	--
	2027	3.000	11/1/2012	6/1/2027	6/1/2023	243,785	243,785	--
	2028	3.000	11/1/2012	6/1/2028	6/1/2023	251,040	251,040	--
	2029	3.000	11/1/2012	6/1/2029	6/1/2023	258,779	258,779	--
	2030	3.000	11/1/2012	6/1/2030	6/1/2023	266,519	266,519	--
	2031	3.000	11/1/2012	6/1/2031	6/1/2023	274,258	274,258	--
	2032	3.000	11/1/2012	6/1/2032	6/1/2023	282,481	282,481	--
Total 2012 Series B Issue						<u>\$ 3,251,432</u>	<u>\$ 3,251,432</u>	<u>\$ 178,002</u>

**Department of Water Supply  
County of Maui  
SCHEDULE II - SCHEDULE OF LONG-TERM DEBT - GENERAL OBLIGATION BONDS (Continued)  
June 30, 2018**

County of Maui General Obligation Bonds	Fiscal Year	Coupon Interest Rate	Bond Dated	Maturing Serially From	Call Dates	Authorized and Issued	Outstanding June 30, 2018	Payable Within One Year
G.O. Refunding Bonds, 2012 Series C (c)								
	2019	5.000	11/1/2012	6/1/2019	Noncallable	\$ 895,000	\$ 895,000	\$ 895,000
	2020	5.000	11/1/2012	6/1/2020	Noncallable	940,000	940,000	--
	2021	5.000	11/1/2012	6/1/2021	Noncallable	985,000	985,000	--
	2022	5.000	11/1/2012	6/1/2022	Noncallable	1,035,000	1,035,000	--
	2023	4.000	11/1/2012	6/1/2023	Noncallable	1,090,000	1,090,000	--
Total 2012 Series C Issue						<u>4,945,000</u>	<u>4,945,000</u>	<u>895,000</u>
G.O. Refunding Bonds, 2014 Series C (d)								
	2019	5.000	12/1/2014	6/1/2019	Noncallable	\$ 260,000	\$ 260,000	\$ 260,000
	2020	5.000	12/1/2014	6/1/2020	Noncallable	275,000	275,000	--
	2021	5.000	12/1/2014	6/1/2021	Noncallable	290,000	290,000	--
	2022	5.000	12/1/2014	6/1/2022	Noncallable	305,000	305,000	--
	2023	5.000	12/1/2014	6/1/2023	Noncallable	320,000	320,000	--
	2024	5.000	12/1/2014	6/1/2024	Noncallable	335,000	335,000	--
	2025	3.000	12/1/2014	6/1/2025	6/1/2024	350,000	350,000	--
	2026	3.000	12/1/2014	6/1/2026	6/1/2024	360,000	360,000	--
	2027	4.000	12/1/2014	6/1/2027	6/1/2024	370,000	370,000	--
	2028	3.000	12/1/2014	6/1/2028	6/1/2024	385,000	385,000	--
	2029	3.000	12/1/2014	6/1/2029	6/1/2024	400,000	400,000	--
	2030	3.000	12/1/2014	6/1/2030	6/1/2024	410,000	410,000	--
	2031	3.125	12/1/2014	6/1/2031	6/1/2024	420,000	420,000	--
	2032	3.250	12/1/2014	6/1/2032	6/1/2024	435,000	435,000	--
	2033	3.250	12/1/2014	6/1/2033	6/1/2024	450,000	450,000	--
	2034	3.250	12/1/2014	6/1/2034	6/1/2024	465,000	465,000	--
Total 2014 Series C Issue						<u>5,830,000</u>	<u>5,830,000</u>	<u>260,000</u>

**Department of Water Supply  
County of Maui  
SCHEDULE II - SCHEDULE OF LONG-TERM DEBT - GENERAL OBLIGATION BONDS (Continued)  
June 30, 2018**

County of Maui General Obligation Bonds	Fiscal Year	Coupon Interest Rate	Bond Dated	Maturing Serially From	Call Dates	Authorized and Issued	Outstanding June 30, 2018	Payable Within One Year
G.O. Refunding Bonds, 2015 Series B (e)								
	2019	5.000	3/1/2016	9/1/2019	Noncallable	\$ 547,960	\$ 547,960	\$ 547,960
	2020	5.000	3/1/2016	9/1/2020	Noncallable	575,468	575,468	--
Total 2015 Series B Issue						<u>1,123,428</u>	<u>1,123,428</u>	<u>547,960</u>
G.O. Refunding Bonds, 2015 Series D (f)								
	2019	5.000	3/1/2016	9/1/2019	Noncallable	\$ 296,496	\$ 296,496	\$ 296,496
	2020	5.000	3/1/2016	9/1/2020	Noncallable	311,112	311,112	--
	2021	5.000	3/1/2016	9/1/2021	Noncallable	327,120	327,120	--
	2022	5.000	3/1/2016	9/1/2022	Noncallable	343,128	343,128	--
	2023	5.000	3/1/2016	9/1/2023	Noncallable	360,528	360,528	--
	2024	5.000	3/1/2016	9/1/2024	Noncallable	378,624	378,624	--
	2025	5.000	3/1/2016	9/1/2025	Noncallable	397,416	397,416	--
	2026	3.000	3/1/2016	9/1/2026	9/1/2025	416,904	416,904	--
	2027	3.000	3/1/2016	9/1/2027	9/1/2025	437,784	437,784	--
Total 2015 Series D Issue						<u>3,269,112</u>	<u>3,269,112</u>	<u>296,496</u>
Total General Obligation Bonds						\$ <u>19,672,027</u>	\$ <u>19,672,027</u>	\$ <u>2,578,899</u>

**Department of Water Supply  
County of Maui  
SCHEDULE II - SCHEDULE OF LONG-TERM DEBT -  
GENERAL OBLIGATION BONDS (Continued)  
June 30, 2018**

**NOTES:**

- (a) The General Obligation Refunding Bonds, 2010, Series B, maturing on or before June 1, 2020 are issued without the right or option of the County of Maui to redeem the same prior to their respective maturity dates. The County of Maui reserves the right and option to redeem the Bonds maturing on June 1, 2021, prior to their stated maturity, on or after June 1, 2020, in whole or in part at any time, in order of maturity selected by the County of Maui and by lot within a maturity, at 100% of the principal amount.
- (b) The General Obligation Refunding Bonds, 2012, Series B, maturing on or before June 1, 2023 are issued without the right or option of the County of Maui to redeem the same prior to their respective maturity dates. The County of Maui reserves the right and option to redeem the Bonds maturing on June 1, 2024 to June 1, 2032, prior to their stated maturity, on or after June 1, 2023, in whole or in part at any time, in order of maturity selected by the County of Maui and by lot within a maturity, at 100% of the principal amount.
- (c) The General Obligation Refunding Bonds, 2012, Series C, maturing before June 1, 2023 are issued without the right or option of the County of Maui to redeem the same prior to their respective maturity dates.
- (d) The General Obligation Refunding Bonds, 2014, Series C, maturing on or before June 1, 2024 are issued without the right or option of the County of Maui to redeem the same prior to their respective maturity dates. The County of Maui reserves the right and option to redeem the Bonds maturing on June 1, 2025 to June 1, 2034, prior to their stated maturity, on or after June 1, 2024, in whole or in part at any time, in order of maturity selected by the County of Maui and by lot within a maturity, at 100% of the principal amount.
- (e) The General Obligation Refunding Bonds, 2015, Series B, maturing before September 1, 2025 are issued without the right or option of the County of Maui to redeem the same prior to their respective maturity dates.
- (f) The General Obligation Refunding Bonds, 2015, Series D, maturing on or before September 1, 2025 are issued without the right or option of the County of Maui to redeem the same prior to their respective maturity dates. The County of Maui reserves the right and option to redeem the Bonds maturing on September 1, 2026 to September 1, 2027, prior to their stated maturity, on or after September 1, 2025, in whole or in part at any time, in order of maturity selected by the County of Maui and by lot within a maturity, at 100% of the principal amount.





**SCHEDULES AND STATISTICS**

**FISCAL YEAR 2018**  
**Water Service Charges**

*Effective July 01, 2017*

**Schedule A**

Single Family Dwellings, Single-Family  
and Accessory Dwellings with 5/8" Meters

		<u>Monthly</u>
0 - 5,000 Gallons	\$	2.00
5,001 - 15,000 Gallons		3.80
15,001 - 35,000 Gallons		5.70
Over 35,000 Gallons		6.35

All Other General Water Consumers

0 - 5,000 Gallons	\$	2.00
5,001 - 15,000 Gallons		3.80
Over 15,000 Gallons		5.70

Agricultural Rates

0 - 5,000 Gallons	\$	2.00
5,001 - 15,000 Gallons		3.80
Over 15,000 Gallons		1.10

Non-Potable Agriculture Rates

All Usage	\$	1.00
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**Schedule B**

<u>Size of Meter</u>		<u>Per Meter/ Per Month</u>
5/8 inch	\$	19.25
3/4 inch		31.00
1 inch		46.00
1 1/2 inch		88.00
2 inch		137.00
3 inch		242.00
4 inch		420.00
6 inch		770.00
8 inch		1,215.00

**FISCAL YEAR 2018**  
**System Expansion Rates**  
*Effective July 01,2017*

**Water System Development Fee Schedule**

<u>Size of Meter</u>		<u>Meter Fee*</u>
5/8 inch	\$	12,060
3/4 inch		18,884
1 inch		33,356
1 1/2 inch		71,948
2 inch		125,012
3 inch		279,380
4 inch		496,460
6 inch		1,113,932
8 inch		1,977,428
10 inch		3,089,360
12 inch		4,447,436

\* Plus Installation Charges

NUMBER OF SERVICES BY METER SIZE  
FISCAL YEAR ENDED JUNE 30, 2018

DISTRICT	5/8"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	TOTAL
REGULAR SERVICE METERS										
Wailuku	17,449	1,704	591	436	426	58	35	6	1	20,700
Makawao	8,999	351	187	81	35	9	1	2	0	9,665
Lahaina	2,704	279	141	128	124	30	10	2	0	3,418
Hana	462	42	9	6	4	0	0	0	0	523
Molokai	1,564	44	33	15	17	2	0	1	0	1,676
Subtotal	31,178	2,420	961	666	606	99	46	11	1	35,986
AGRICULTURAL SERVICE METERS										
Wailuku	28	15	7	3	1	2	1	0	0	57
Makawao	286	52	68	82	31	0	0	0	0	519
Lahaina	4	3	5	0	1	0	1	0	0	14
Hana	27	0	2	0	0	0	0	0	0	29
Molokai	5	1	2	0	0	0	0	0	0	8
Subtotal	350	71	84	85	33	2	2	0	0	627
TOTAL	31,528	2,491	1,045	751	639	101	48	11	1	36,613
COMBINED TOTAL										
Wailuku	17,477	1,719	598	439	427	60	36	6	1	20,766
Makawao	9,285	403	255	163	66	9	1	2	0	10,184
Lahaina	2,708	282	146	128	125	30	11	2	0	3,432
Hana	489	42	11	6	4	0	0	0	0	552
Molokai	1,569	45	35	15	17	2	0	1	0	1,689
TOTAL	31,528	2,491	1,045	751	639	101	48	11	1	36,613

**OUTSIDE WATER DELIVERIES  
YTD FY2018**

<b>PURCHASE FROM</b>	1,000 Gallons	\$ YTD Amt	Cost Per 1,000 Gallons
East Maui Irrigation	2,234,467	\$ 134,738	0.060
Wailuku Water Co.	220,769	\$ 118,001	0.535
Maui Land & Pine	659,657	\$ 181,963	0.276
Hawaiian Home Lands <small>(Billed Bi-Monthly)</small>	7,372	\$ 48,115	6.527
<b>TOTAL</b>	<b>3,122,266</b>	<b>\$ 482,818</b>	<b>0.155</b>

<b>DISTRICT</b>	1,000 Gallons	\$ Amount	Cost Per 1,000 Gallons
Wailuku	220,769	\$ 118,001	0.535
Kula	190,572	\$ 11,492	0.060
Makawao	2,036,563	\$ 122,805	0.060
Lahaina	659,657	\$ 181,963	0.276
Hana	7,332	\$ 442	0.060
Molokai	7,372	\$ 48,115	6.527
<b>TOTAL</b>	<b>3,122,266</b>	<b>\$ 482,818</b>	<b>0.155</b>

**OTHER WATER**

Wailuku - Wlku. Water Co.	397,343
Wailuku - Hi. Land & Farming	0

Dept. of Water Supply, County of Maui  
Consumption By District  
General & Agricultural in Thousands of Gallons  
Fiscal Year To Date through June 30, 2018

<b>GENERAL</b>	<b>Total</b>	<b>Wailuku</b>	<b>Makawao</b>	<b>Kula</b>	<b>Lahaina</b>	<b>Molokai</b>	<b>Hana</b>
<b>July</b>	994,024.0	678,566.0	87,668.0	52,980.0	169,530.0	794.0	4,586.0
<b>August</b>	960,931.0	624,709.0	74,766.0	48,266.0	158,905.0	49,497.0	4,794.0
<b>September</b>	1,088,432.0	727,213.0	92,870.0	54,327.0	189,707.0	21,604.0	2,715.0
<b>October</b>	935,756.0	625,240.0	80,035.0	45,805.0	155,950.0	22,917.0	5,719.0
<b>November</b>	924,539.0	625,042.0	74,183.0	48,769.0	153,928.0	17,754.0	4,863.0
<b>December</b>	820,999.0	555,509.0	66,109.0	32,595.0	145,738.0	17,161.0	3,007.0
<b>Subtotal</b>	<b>5,724,681.0</b>	<b>3,836,279.0</b>	<b>475,631.0</b>	<b>282,742.0</b>	<b>973,758.0</b>	<b>129,727.0</b>	<b>26,452.0</b>
<b>January</b>	843,751.0	580,049.0	66,467.0	41,597.0	131,962.0	18,760.0	4,896.0
<b>February</b>	827,217.0	562,517.0	69,751.0	36,541.0	154,043.0	1,231.0	3,135.0
<b>March</b>	715,974.0	482,109.0	60,240.0	33,489.0	119,260.0	15,267.0	5,689.0
<b>April</b>	826,669.0	550,970.0	69,295.0	33,482.0	137,398.0	31,592.0	3,123.0
<b>May</b>	797,369.0	554,548.0	60,526.0	32,965.0	124,231.0	21,457.0	3,153.0
<b>June</b>	975,031.0	665,732.0	74,250.0	50,591.0	161,731.0	17,627.0	5,140.0
<b>Subtotal</b>	<b>4,986,011.0</b>	<b>3,395,925.0</b>	<b>400,529.0</b>	<b>228,665.0</b>	<b>828,625.0</b>	<b>105,934.0</b>	<b>26,452.0</b>
<b>Total General</b>	<b>10,710,692.0</b>	<b>7,232,204.0</b>	<b>876,160.0</b>	<b>511,407.0</b>	<b>1,802,383.0</b>	<b>235,661.0</b>	<b>52,904.0</b>
<b>AGRICULTURAL</b>							
<b>July</b>	111,223.0	25,510.0	5,848.0	77,284.0	2,047.0	-	2,534.0
<b>August</b>	98,391.0	20,559.0	4,611.0	69,681.0	1,979.0	951.0	1,571.0
<b>September</b>	121,223.0	28,820.0	5,517.0	83,630.0	2,559.0	491.0	1,106.0
<b>October</b>	103,528.0	24,775.0	5,382.0	69,715.0	2,176.0	356.0	1,000.0
<b>November</b>	83,613.0	21,452.0	4,633.0	54,996.0	1,791.0	243.0	791.0
<b>December</b>	73,816.0	20,986.0	3,262.0	47,069.0	1,792.0	368.0	603.0
<b>Subtotal</b>	<b>591,794.0</b>	<b>142,102.0</b>	<b>29,253.0</b>	<b>402,375.0</b>	<b>12,344.0</b>	<b>2,409.0</b>	<b>3,007.0</b>
<b>January</b>	77,664.0	18,622.0	3,495.0	53,457.0	1,276.0	373.0	1,817.0
<b>February</b>	68,187.0	18,052.0	4,282.0	43,902.0	1,467.0	27.0	1,523.0
<b>March</b>	61,140.0	14,999.0	2,796.0	41,401.0	1,075.0	351.0	1,519.0
<b>April</b>	66,305.0	16,260.0	3,567.0	43,985.0	1,457.0	711.0	1,390.0
<b>May</b>	65,460.0	17,324.0	2,506.0	43,704.0	1,030.0	455.0	1,351.0
<b>June</b>	108,342.0	23,950.0	3,827.0	77,628.0	1,728.0	666.0	1,291.0
<b>Subtotal</b>	<b>447,098.0</b>	<b>109,207.0</b>	<b>20,473.0</b>	<b>304,077.0</b>	<b>8,033.0</b>	<b>2,583.0</b>	<b>2,292.0</b>
<b>Total Agricultural</b>	<b>1,038,892.0</b>	<b>251,309.0</b>	<b>49,726.0</b>	<b>706,452.0</b>	<b>20,377.0</b>	<b>4,992.0</b>	<b>6,309.0</b>
<b>Grand Total</b>	<b>11,749,584.0</b>	<b>7,483,513.0</b>	<b>925,886.0</b>	<b>1,217,859.0</b>	<b>1,822,760.0</b>	<b>240,653.0</b>	<b>58,913.0</b>

COMPARISON OF WATER SALES TO GENERAL & AGRICULTURAL CONSUMERS  
BY DISTRICT & SYSTEMS  
TWELVE MONTHS ENDED JUNE 30, 2018 OVER 2017

BY DISTRICT	Services			Consumption (1,000 Gallons)			Revenues		
	2017	2018	Increase (Decrease)	2017	2018	Increase (Decrease)	2,017	2018	Increase (Decrease)
<b>Wailuku District</b>									
Wailuku	6,289	6,370	81	1,273,053	1,305,111	32,058	7,423,503	7,616,832	193,329
Waihee	195	196	1	21,760	25,226	3,466	126,397	131,166	4,769
Waikapu	969	970	1	121,427	124,417	2,990	648,105	666,830	18,725
Wailuku Heights	496	497	1	66,633	68,386	1,753	372,065	377,483	5,418
Kahului	5,304	5,336	32	1,439,259	1,503,536	64,277	8,112,642	8,512,076	399,434
Puunene	11	11	0	22,723	16,378	(6,345)	40,271	30,828	(9,443)
Kihei	6,008	6,017	9	3,893,460	3,908,780	15,320	21,131,102	21,335,156	204,054
Maalaea	45	45	0	87,870	107,242	19,372	519,920	631,491	111,571
Makena	203	203	0	216,684	212,718	(3,966)	1,251,862	1,228,004	(23,858)
Paia-Kuau	908	912	4	144,229	151,581	7,352	804,422	844,528	40,106
Spreckelsville	205	206	1	62,173	60,138	(2,035)	350,846	342,897	(7,949)
<b>Subtotal</b>	<b>20,633</b>	<b>20,763</b>	<b>130</b>	<b>7,349,271</b>	<b>7,483,513</b>	<b>134,242</b>	<b>40,781,135</b>	<b>41,717,291</b>	<b>936,156</b>
<b>Makawao District</b>									
Kokomo-Kaupakalua	1,145	1,147	2	141,670	148,680	7,010	779,437	817,013	37,576
Kuiaha	302	302	0	44,291	43,626	(665)	222,680	221,547	(1,133)
Haiku-Pauwela	849	853	4	107,794	119,911	12,117	578,738	646,426	67,688
Makawao	2,015	2,016	1	262,318	268,910	6,592	1,458,132	1,484,017	25,885
Pukalani	2,074	2,122	48	293,194	310,006	16,812	1,600,571	1,702,382	101,811
Haliimaile	199	200	1	34,214	34,753	539	183,257	177,381	(5,876)
Upper Kula	2,309	2,312	3	442,231	420,368	(21,863)	2,026,044	1,977,302	(48,742)
Lower Kula	1,105	1,112	7	605,642	611,233	5,591	1,793,789	1,858,943	65,154
Ulupalakua-Kanaio	82	81	(1)	46,673	45,746	(927)	124,230	110,766	(13,464)
Kula Ag Park	39	39	0	144,379	140,512	(3,867)	185,008	181,439	(3,569)
<b>Subtotal</b>	<b>10,119</b>	<b>10,184</b>	<b>65</b>	<b>2,122,406</b>	<b>2,143,745</b>	<b>21,339</b>	<b>8,951,888</b>	<b>9,177,216</b>	<b>225,328</b>
<b>Lahaina District</b>									
Lahaina	2,127	2,166	39	796,532	800,722	4,190	4,489,718	4,543,759	54,041
Honokowai	449	450	1	506,836	507,708	872	2,932,357	2,951,714	19,357
Alaeloa	802	803	1	539,009	513,282	(25,727)	3,077,206	2,948,151	(129,055)
Honokohau	13	13	0	1,225	1,048	(177)	7,585	6,586	(999)
<b>Subtotal</b>	<b>3,391</b>	<b>3,432</b>	<b>41</b>	<b>1,843,602</b>	<b>1,822,760</b>	<b>(20,842)</b>	<b>10,506,865</b>	<b>10,450,210</b>	<b>(56,655)</b>
<b>Molokai District</b>									
Kawela-Kaunakakai	1,162	1,169	7	189,189	178,135	(11,054)	1,088,950	1,034,636	(54,314)
Ualapue/Kamalo	392	396	4	51,003	55,254	4,251	305,243	325,959	20,716
Kalae	113	113	0	7,858	7,264	(594)	50,671	47,337	(3,334)
Halawa	6	6	0	1,006	0	(1,006)	4,164	0	(4,164)
<b>Subtotal</b>	<b>1,673</b>	<b>1,684</b>	<b>11</b>	<b>249,056</b>	<b>240,653</b>	<b>(8,403)</b>	<b>1,449,028</b>	<b>1,407,932</b>	<b>(41,096)</b>
<b>Hana District</b>									
Hana	403	407	4	48,017	48,172	155	275,237	286,716	11,479
Nahiku	39	38	(1)	3,331	3,046	(285)	21,012	18,968	(2,044)
Keanae	86	86	0	7,348	6,179	(1,169)	49,867	42,342	(7,525)
Kaupo	21	21	0	1,679	1,516	(163)	6,526	6,367	(159)
<b>Subtotal</b>	<b>549</b>	<b>552</b>	<b>3</b>	<b>60,375</b>	<b>58,913</b>	<b>(1,462)</b>	<b>352,641</b>	<b>354,393</b>	<b>1,752</b>
<b>Total ALL DISTRICTS</b>	<b>36,365</b>	<b>36,615</b>	<b>250</b>	<b>11,624,710</b>	<b>11,749,584</b>	<b>124,874</b>	<b>62,041,558</b>	<b>63,107,042</b>	<b>1,065,484</b>



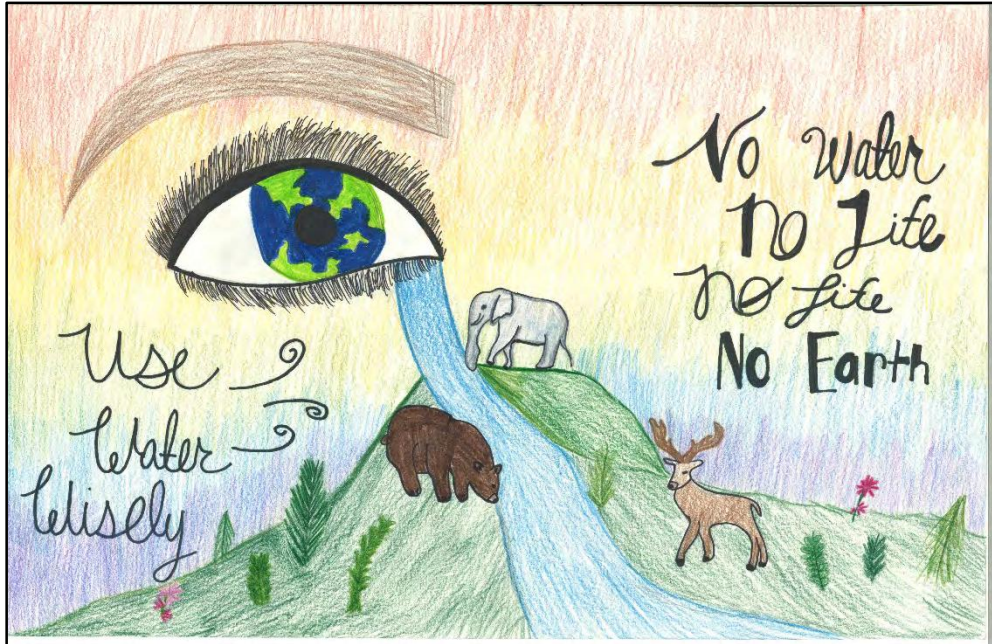
## FIVE - YEAR SUMMARY

	2017-18	2016-17	2015-16	2014-15	2013-14
<b>Customer and Sales</b>					
Number of Customers	36,615	36,365	36,211	36,104	36,040
Water Sales (M Gals.)	11,749,584	11,624,710	11,785,494	11,684,317	11,851,829
<b>Income and Expenses</b>					
Revenue from Sale of Water *	63,352,395	62,814,311	59,917,910	59,015,627	54,271,046
Total Operating Revenues	64,297,392	63,633,235	60,867,664	59,286,522	55,244,613
Operating Expense	62,534,558	61,818,557	42,493,570	63,767,954	39,079,385
Depreciation	15,043,935	14,406,243	15,248,728	14,431,573	15,383,921
Net Income or (Loss)	1,762,834	1,814,678	1,483,566	4,481,432	781,307
<b>Utility Plant</b>					
Net Plant Add. During Year	48,842,240	34,854,383	40,902,839	45,327,372	49,734,238
Total Plant Investment	658,790,761	628,078,322	564,620,815	583,532,811	563,126,434
Reserve for Depreciation	302,840,984	287,921,052	272,526,994	257,901,850	243,492,384
<b>Current Positions</b>					
Revenue Funds	37,646,269	42,416,273	28,433,036	30,631,574	24,214,527
Total Current Assets **	71,269,194	62,372,099	56,513,213	57,810,001	51,635,803
Total Current Liabilities	13,506,850	14,035,294	10,979,990	16,297,595	12,443,173
Net Current Assets	57,762,344	48,336,805	45,533,223	41,512,406	39,192,630
Current Ratio	5.2 to 1	4.4 to 1	3.2 to 1	3.5 to 1	4.2 to 1
<b>Capitalization</b>					
Municipal Equity & Surplus	170,580,820	166,100,997	159,033,530	152,205,067	147,140,173
Non-Current Liabilities	128,013,604	90,360,201	73,796,025	71,792,211	53,654,214
Contri. in Aid of Constr.	196,251,495	188,225,271	182,747,402	183,005,539	184,196,454

\* Includes Fire Protection

\*\* Current Assets were reclassified in 1995 to include the Capital Reserve Fund.

\*\*\* Information gathered via FY2018 Balance Sheet and FY2018 Auditor's Report



*By Water All Things Find Life*

Civ. No. 19-1-0019-01 (JPC)

Joint Exhibit \_\_\_\_\_

Plaintiff's Exhibit \_\_\_\_\_

Defendant's Exhibit M-2

FOR IDENTIFICATION \_\_\_\_\_

RECEIVED IN EVIDENCE \_\_\_\_\_

CLERK: \_\_\_\_\_