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# COUNTY OF MAUI DEPARTMENT OF WATER SUPPLY

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## ANNUAL REPORT FY 2019

**Jeffrey T. Pearson, P.E., Director**  
**Helene Kau, Deputy Director**



Iao Water Treatment Plant, Wailuku, Maui

# DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

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## EXECUTIVE SUMMARY



Jeffrey T. Pearson  
*Director*

The Department of Water Supply (DWS) is proud to present its Fiscal Year 2019 Annual Report which provides an overview of the department, its goals and objectives, and highlights of activities performed throughout the fiscal year.

### HIGHLIGHTS

It was big year for our Water Treatment Plants Division, with completion of the new state-of-the-art Iao Water Treatment Plant in April 2019. Conversion was completed at all six water treatment plants from chlorine gas to on-site generation of liquid chlorine solution using salt and electricity. Our first application at Lahaina made KITV news in Honolulu. These retrofits were a major project, saving the county money in the long run and making the plants safer for the operators and the surrounding communities.



Helene Kau  
*Deputy Director*

Engineering CIP can also claim the accomplishment of the completion of the Iao Water Treatment Plant Upgrade to replace the aging previous facility and increase capacity. Completion of the Olinda Water Treatment Plant Embankment improvements, with reinforcement of the existing sludge drying bed embankment in March 2019 is a highlight of FY19.

Water Resources and Planning oversaw the completion of Phase 1 of the department's Strategic Plan. We have moved the Water Use and Development Plan draft from public review to approval by the Board of Water Supply, to getting on the County Council agenda.

Once approved by the full council, likely not until FY20 or later, it will go to the state Commission on Water Resources & Management for final acceptance.

Also, in collaboration with the County Information Technology Services Division, the division completed design and applied the enterprise system CivicPlus to design a custom web sub-site for better public outreach, including a module for a future mobile application which can collect customer information and relay events and information at the division.

## DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

DWS is the only County department that has its own payroll staff; all other departments use the Payroll Section of the Finance Department for the processing of payroll. The Fiscal Accounting section put in hundreds of hours preparing for the implementation of the new Workday HR and Payroll system over the past year, including converting a number of divisions within Water from paper to online time tracking.

For many years the DWS co-hosted its customer service and billing data base with the Honolulu Board of Water Supply and then the County of Kauai. During FY19 the DWS separated from the Honolulu Board of Water Supply and launched its own billing data base, Customer Care & Billing. The transition was seamless for our customers and the ability to operate our own single user system has provided numerous additional options and benefits for the department.

Our Water Plant Operations laboratory obtained reaccreditation of NELAC (National Environmental Laboratory Accreditation Conference) audit for FSMO (Field Sampling and Measurement Organization) and was also deeply involved in the conversion of all six water treatment plants from chlorine gas to on-site generation of liquid chlorine solution using salt and electricity. Again, a major accomplishment for the safety of our operators and the entire community.

Field Operations had another very busy year. We employ pipefitters, welders, carpenters, electricians, equipment operators, mechanics, technicians and laborers in yards in Hana, Moloka'i, Upcountry, Central Maui and Maui's West Side, responsible for approximately 780 miles of water transmission and distribution lines and for the system infrastructure including baseyards and plants, in service to 36,719 accounts on Maui and Moloka'i, fielding incoming calls on a 24/7 basis. Their contribution is too large to summarize and the detail is laid out in their division report. Field Operations crews also put in hundreds of man hours to get systems back in order after Tropical Storm Olivia.

All goals and objectives each year lead to the top priority, which is to continue to provide reliable, 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 and after work hours, DWS continues to work toward its mission, "**to provide clean water efficiently**".

ORGANIZATIONAL CHART

Prepared By: *[Signature]* Date: **DEC 12 2018**  
 Department Head  
 Approved: *[Signature]* Date: **12/11/18**  
 Managing Director

**ADMINISTRATION** EP Count = 9  
 The Administration Program is managed by the Director and the Deputy Director. This division manages and controls all water systems of the County on a day-to-day basis, which includes overseeing all DWS functions and keeping staff focused on "Providing Clean Water Efficiently". They coordinate DWS affairs with Board of Water Supply, Mayor, County Council and are in charge of human resources, community relations and preparing the annual report. Administration provides water education and technical interpretation for legal issues.

DEPARTMENT OF WATER  
 SUPPLY  
 COUNTY OF MAUI  
 FUNCTIONAL CHART  
 AS OF 09/30/18

**FISCAL/CUSTOMER SERVICE** EP Count = 32  
 The Fiscal/Customer Service Program provides customer services and general accounting to both internal and external customers. Customer services include meter reading, pre-audit, billing, collections, new customer and agricultural applications, jobbing, cashing, and administration of regulations. The accounting section includes budget development and control, the annual audit, long-range financial planning, payroll processing, accounts payable and payment distribution, fixed asset tracking, depreciation calculations, expense and revenue reconciliation, CIP reconciliation and capitalization, centralized purchasing, and maintenance of the Kahului warehouse and stores inventory. Fiscal/Customer Service also advises the Board of Water Supply on related matters.

**ENGINEERING** EP Count = 25  
 The Engineering Program reviews all development plans for conformity with departmental standards. They prepare plans and specifications for water supply projects. Coordination and preparation of plans and specifications for projects to be advertised for competitive bidding is another duty of this program. Engineering administers DWS CIP (Capital Improvement Projects) and coordinates consultant contracts. They prepare and administer agreements with public agencies and private developers. They also prepare plans and specifications for in-house projects. This program develops and maintains water supply standards and conduct studies for feasibility of pipeline alignment and sites for reservoirs, pump stations, wells, water treatment facilities, and other facilities. They provide engineering services and field survey support to all divisions and is in charge of inspecting the construction of all water system facilities for adherence to departmental standards and policies. Finally, Engineering conducts studies, tests, and investigations on water resources.

**FIELD OPERATIONS** EP Count = 83  
 The Field Operations Program is responsible for water transmission and distribution. This includes responding to customer complaints; installing, maintaining, and replacing pipelines in all areas of the county water system including hazardous mountain and valley terrain; water storage tank maintenance; leak detection; fixing main breaks, service laterals, meters and water pressure problems 24/7; and water system flushing. Field Operations also provides support services for vehicles and equipment; fire hydrants, reservoir sites, system hydraulic valves, heavy equipment, carpentry, and water meter installation. Field Operations maintains baseyards in Kahului, Makawao, Lahaina, Hana, and Mokolai.

**WATER TREATMENT PLANT OPERATIONS** EP Count = 28  
 The Water Treatment Plant (WTP) Operations Program operates and maintains surface water treatment facilities. For the Upcountry area, WTP is in charge of the Kamole Weir microfiltration, the Piipolo direct filtration, and the Olinda microfiltration sites. In the Lahaina area, WTP is in charge of the Lahainaluna microfiltration and the Mahinahina direct filtration sites. In Waiuku, the WTP division operates the microfiltration facility at Iao. WTP manages Upcountry water resources and inventories and ensures compliance with federal and state Surface Water Treatment Rules and water quality standards. This division also reviews and evaluates pending water regulations and their impact on DWS operations. Development and implementation of surface water compliance strategies are also handled by WTP.

**WATER RESOURCES & PLANNING** EP Count = 9  
 The Water Resources and Planning Program is responsible for long-range and area planning and resource management, including Water Use and Development Plans and conservation plans; planning and geospatial information systems including water consumption, supply and demand, mapping; permit review; oversight of regulatory compliance. They also manage water resource development and source protection, water pollution prevention, and conservation.

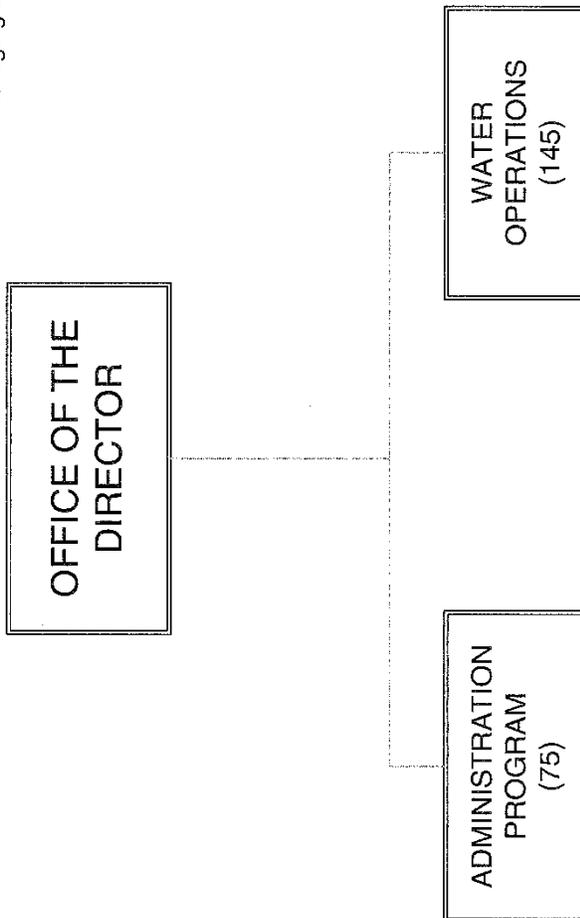
**PLANT OPERATIONS** EP Count = 34  
 The Plant Operations Program is comprised of four sections: Plant Maintenance, Water Quality, SCADA-Telemetry, and Backflow Prevention. The Plant Maintenance section operates and maintains groundwater wells and booster pumping facilities. The SCADA-Telemetry section provides ongoing development and support to the Supervisory Control and Data Acquisition System that monitors and controls pumping, water treatment facilities, and storage facilities within the distribution system. Both sections also provide electrical and process control support to other divisions. The Water Quality Laboratory tests and ensures that safe drinking water is supplied to our consumers in accordance with current and proposed federal and state water standards. The Backflow Prevention section installs and inspects backflow units, conducts field surveys, and issues annual inspection notices to insure that backflow units adhere to federal, state, and local standards.

# DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

DEPARTMENT OF WATER SUPPLY  
County of Maui  
Effective Date: September 30, 2018  
FY 2019 Organizational Chart

Prepared By: *[Signature]*  
Department Head DEC 12 2018  
Date

Approved: *[Signature]*  
Managing Director 7/6/19  
Date

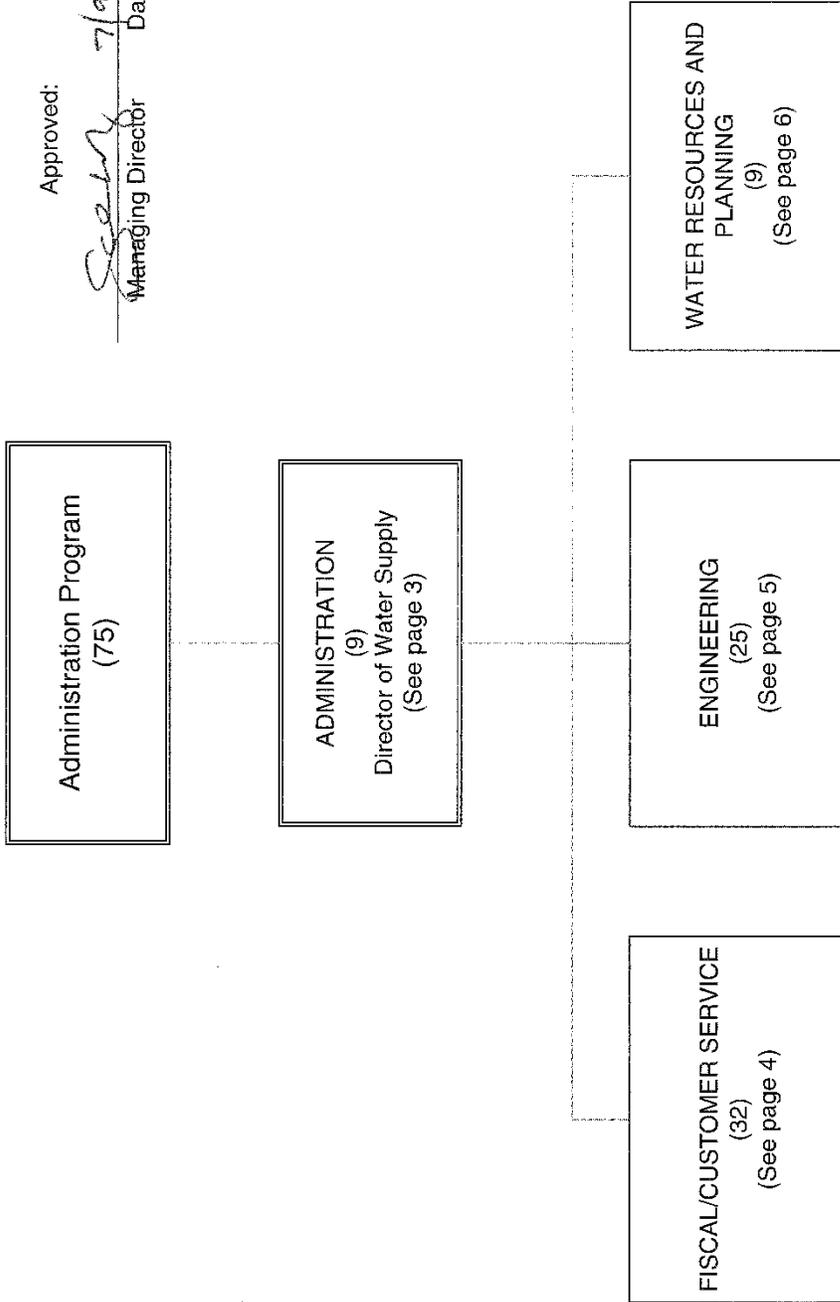


# DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

DEPARTMENT OF WATER SUPPLY  
 County of Maui  
 Effective Date: September 30, 2018  
 FY 2019 Organizational Chart

Prepared By: [Signature] Date: DEC 12 2018  
 Department Head

Approved: [Signature] Date: 7/19/19  
 Managing Director

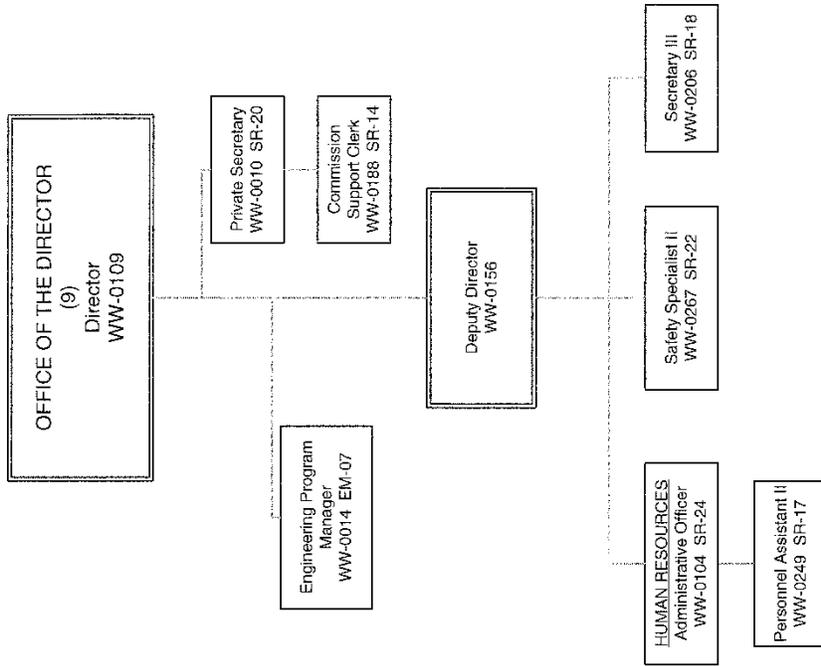


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DEPARTMENT OF WATER SUPPLY  
 County of Maui  
 Effective Date: September 30, 2018  
 FY 2019 Organizational Chart

Prepared By: [Signature] **DEC 12 2018**  
 Department Head Date

Approved: [Signature] **7/1/19**  
 Managing Director Date

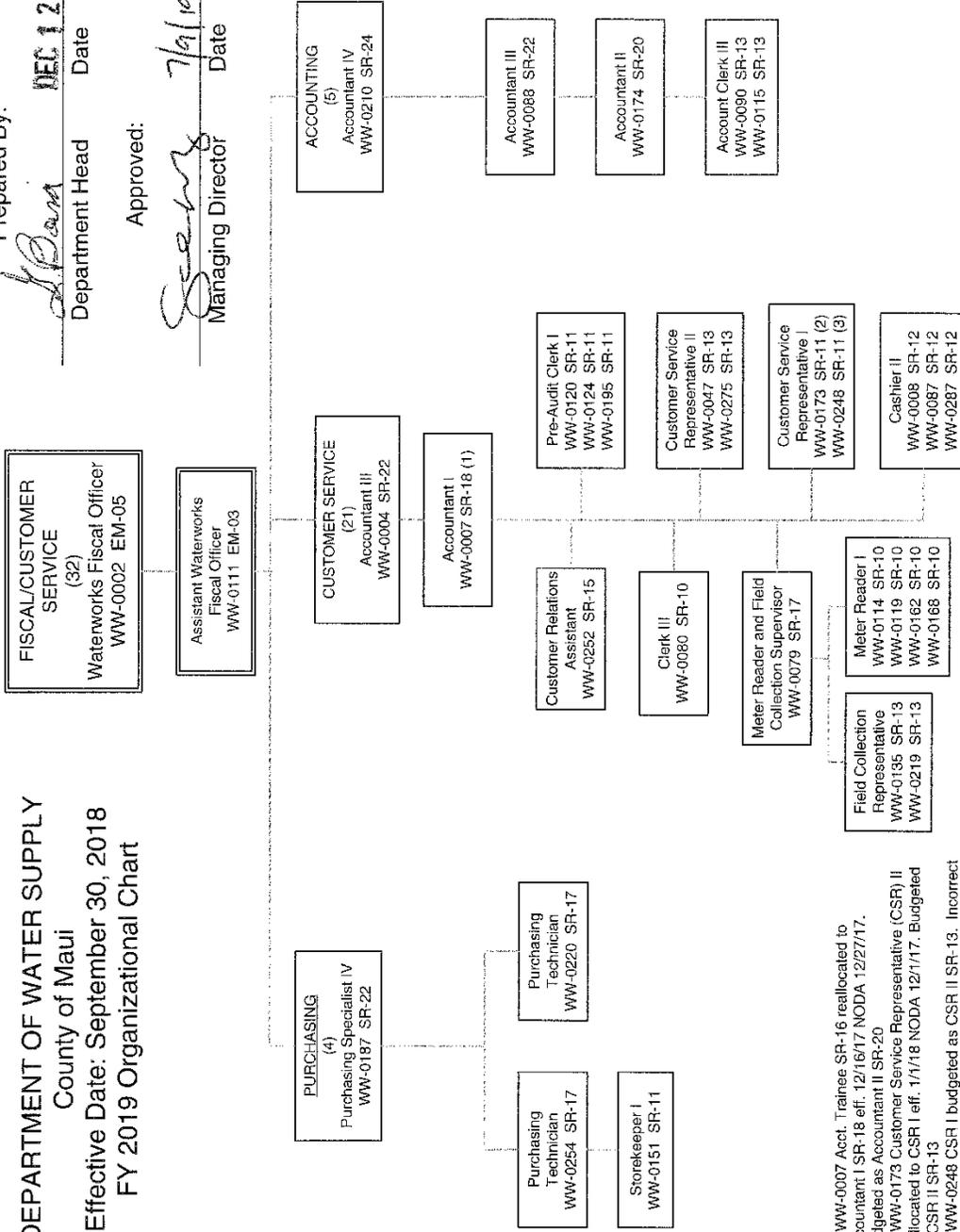


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DEPARTMENT OF WATER SUPPLY  
 County of Maui  
 Effective Date: September 30, 2018  
 FY 2019 Organizational Chart

Prepared By: *J. P. ...*  
 Department Head  
 Date: **DEC 12 2018**

Approved: *S. ...*  
 Managing Director  
 Date: **7/9/19**



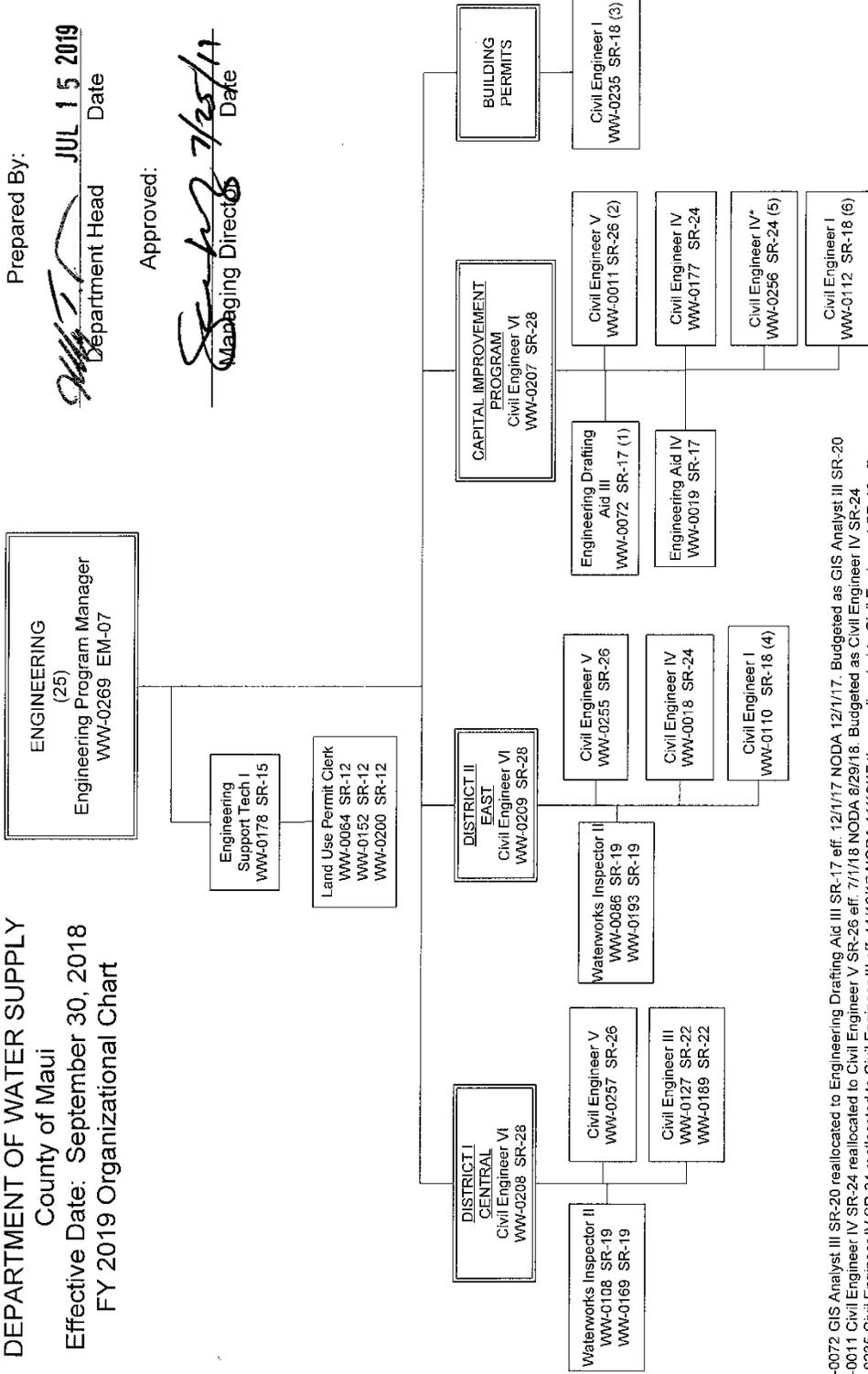
(1) WW-0007 Acct. Trainee SR-16 reallocated to Accountant I SR-18 eff. 12/16/17 NODA 12/27/17. Budgeted as Accountant II SR-20  
 (2) WW-0173 Customer Service Representative (CSR) II reallocated to CSR I eff. 1/1/18 NODA 12/1/17. Budgeted as CSR II SR-13  
 (3) WW-0248 CSR I budgeted as CSR II SR-13. Incorrect position title on FY 2019 budget - CSR I SR-13 should be CSR II SR-13

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 County of Maui  
 Effective Date: September 30, 2018  
 FY 2019 Organizational Chart

Prepared By: *[Signature]*  
 Department Head  
 Date: JUL 15 2019

Approved: *[Signature]*  
 Managing Director  
 Date: 7/25/19



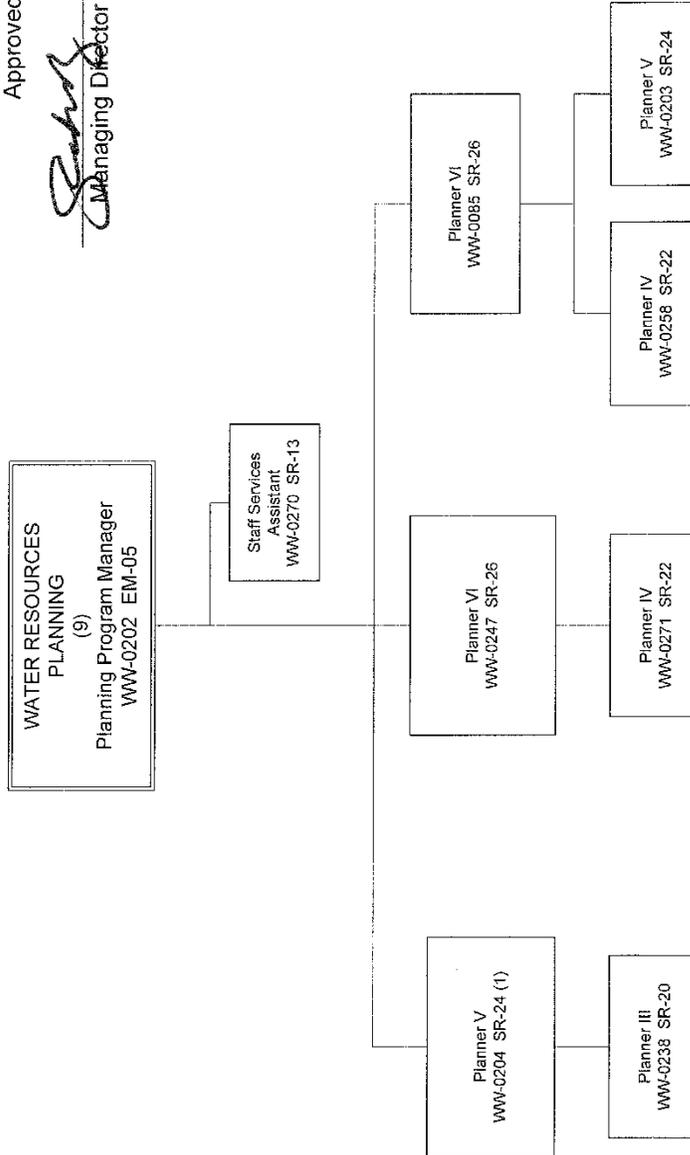
) WW-0072 GIS Analyst III SR-20 reallocated to Engineering Drafting Aid III SR-17 eff. 12/1/17 NODA 12/1/17. Budgeted as GIS Analyst III SR-20  
 ) WW-0011 Civil Engineer IV SR-24 reallocated to Civil Engineer V SR-26 eff. 7/1/18 NODA 8/29/18. Budgeted as Civil Engineer IV SR-24  
 ) WW-0235 Civil Engineer IV SR-24 reallocated to Civil Engineer III eff. 11/16/17 NODA 11/16/17 then reallocated to Civil Engineer I SR-18 eff. 6/18 NODA 9/25/18. Budgeted as Civil Engineer IV SR-24  
 ) WW-0110 Civil Engineer IV SR-24 reallocated to Civil Engineer I SR-18 eff. 12/1/17 NODA 11/30/17. Budgeted as Civil Engineer IV SR-24  
 ) WW-0256 Civil Engineer III SR-22 proposed reallocation to Civil Engineer IV SR-24 eff. 1/1/19  
 ) WW-0112 Waterworks Inspector II SR-19 reallocated to Civil Engineer I SR-18 eff. 5/16/18 NODA 5/17/18. Budgeted as Right of Way Agent V SR-24; however canceled action and filled as Civil Engineer I.

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 County of Maui  
 Effective Date: September 30, 2018  
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Prepared By: [Signature] JUL 15 2019  
 Department Head Date

Approved: [Signature] 7/20/19  
 Managing Director Date



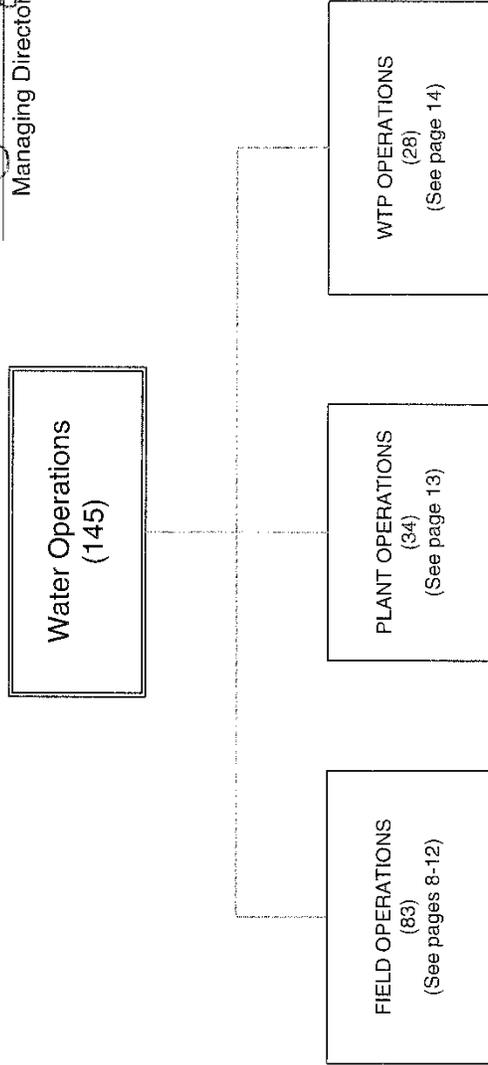
(1) WW-0204 Planner V SR-24 budgeted as Planner VI SR-26 pending reallocation.

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DEPARTMENT OF WATER SUPPLY  
County of Maui  
Effective Date: September 30, 2018  
FY 2019 Organizational Chart

Prepared By:  
*S. Deane*  
Department Head  
Date: **DEC 12 2018**

Approved:  
*Seery*  
Managing Director  
Date: **7/1/19**

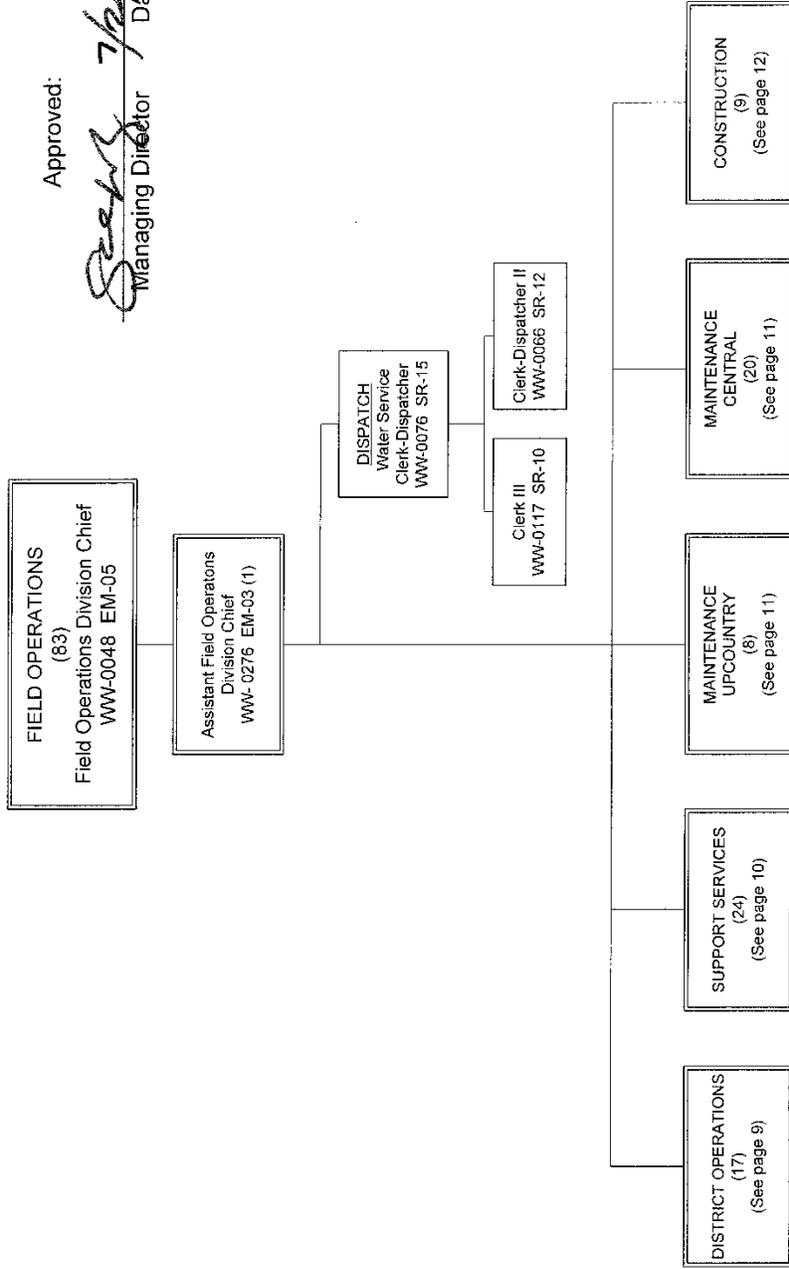


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 Effective Date: September 30, 2018  
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Prepared By: *[Signature]*  
 Department Head  
 Date: JUL 15 2019

Approved: *[Signature]*  
 Managing Director  
 Date: 7/15/19



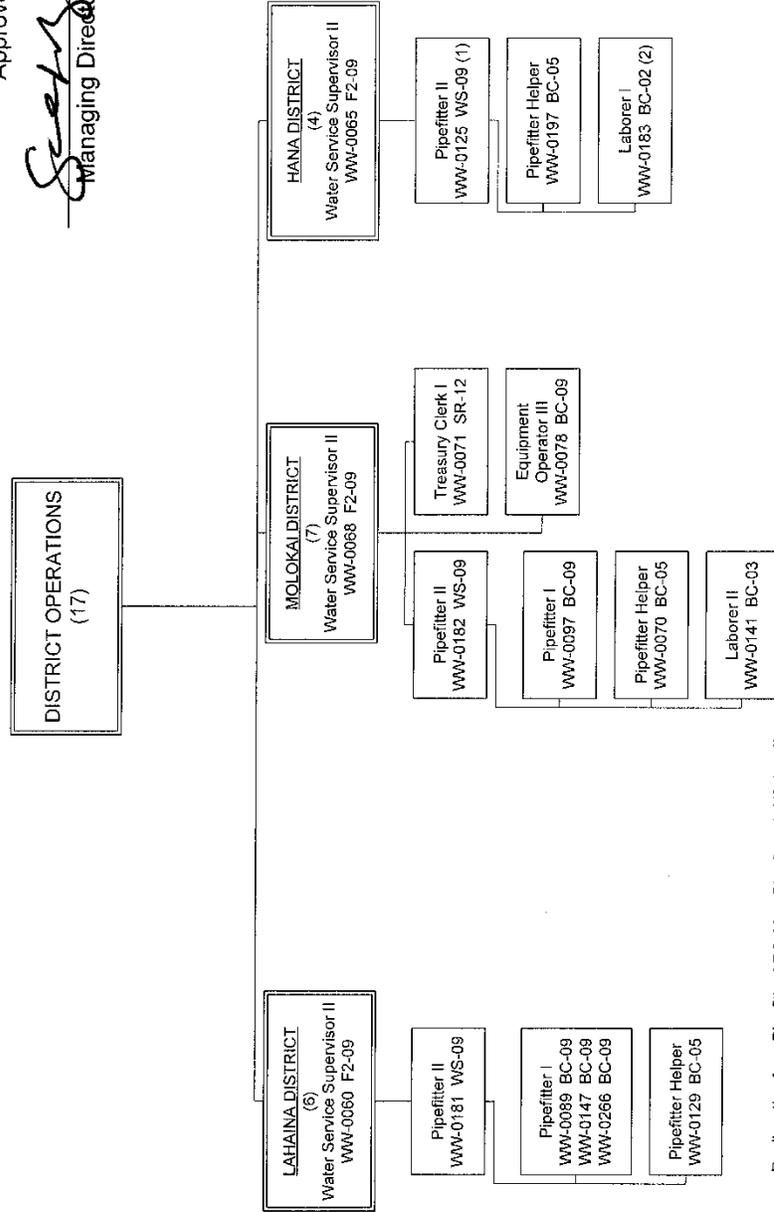
(1) WW-0276 Assistant Field Operations Division Chief EM-03 budgeted at Water Service Supervisor II F2-09, canceled action and filed as an Asst. Field Operations Division Chief.

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 County of Maui  
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Prepared By: *[Signature]* JUL 15 2019  
 Department Head Date

Approved: *[Signature]*  
 Managing Director Date



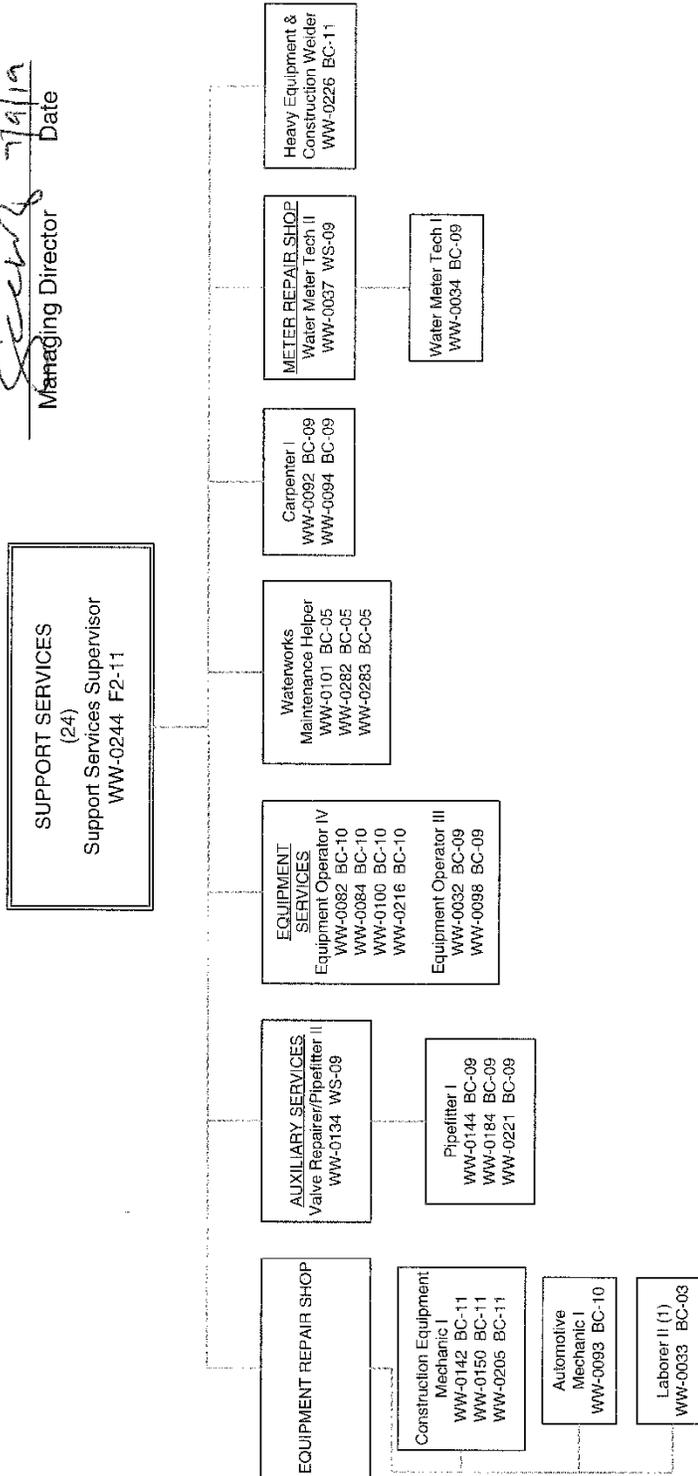
(1) WW-0125 Temporary Reallocation from Pipefitter I BC-09 to Pipefitter II WS-09 eff. 6/8/18. Budgeted as Pipefitter I BC-09  
 (2) WW-0183 reallocated from Pipefitter II WS-09 to Laborer I BC-02 eff 6/8/18 NODA 7/2/18. Budgeted as Pipefitter II WS-09  
 (3) WW-0141 Laborer II BC-03 relocated from Central Maintenance District to Moloai District eff. 10/1/17 NODA 10/6/17

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Prepared By: *J. B. [Signature]*  
 Department Head  
 Date: DEC 12 2018

Approved: *[Signature]*  
 Managing Director  
 Date: 7/9/18



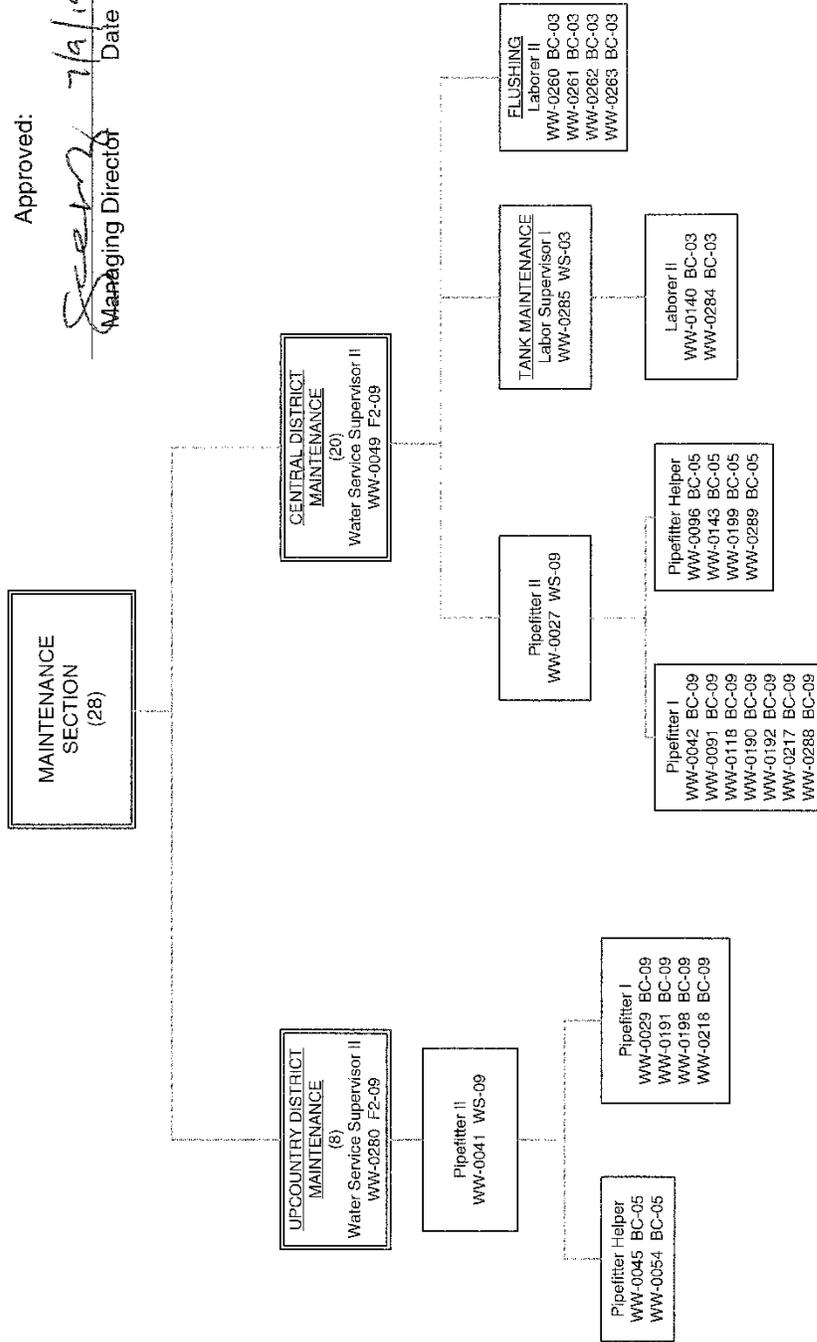
(1) WW-0033 Construction Equipment Mechanic II WS-11 reallocated to Laborer II BC-03  
 eff. 7/9/18, NODA 877/18. Budgeted as Construction Equipment Mechanic II WS-11

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 County of Maui  
 Effective Date: September 30, 2018  
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Prepared By:  
*H. Chan*  
 Department Head  
 Date: DEC 12 2018

Approved:  
*S. [Signature]*  
 Managing Director  
 Date: 7/2/19

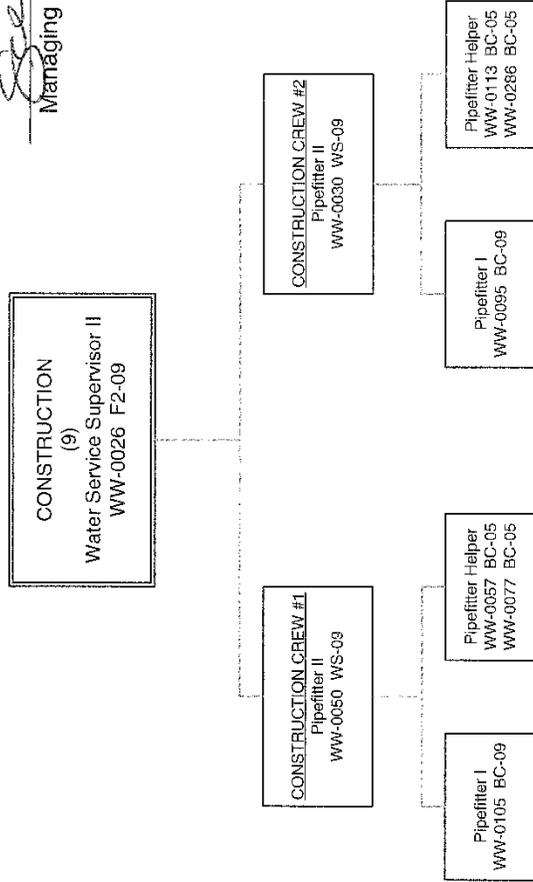


DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

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 County of Maui  
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Prepared By: J. Bauer **DEC 12 2018**  
 Department Head Date

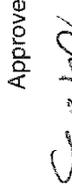
Approved: [Signature] 7/19/19  
 Managing Director Date

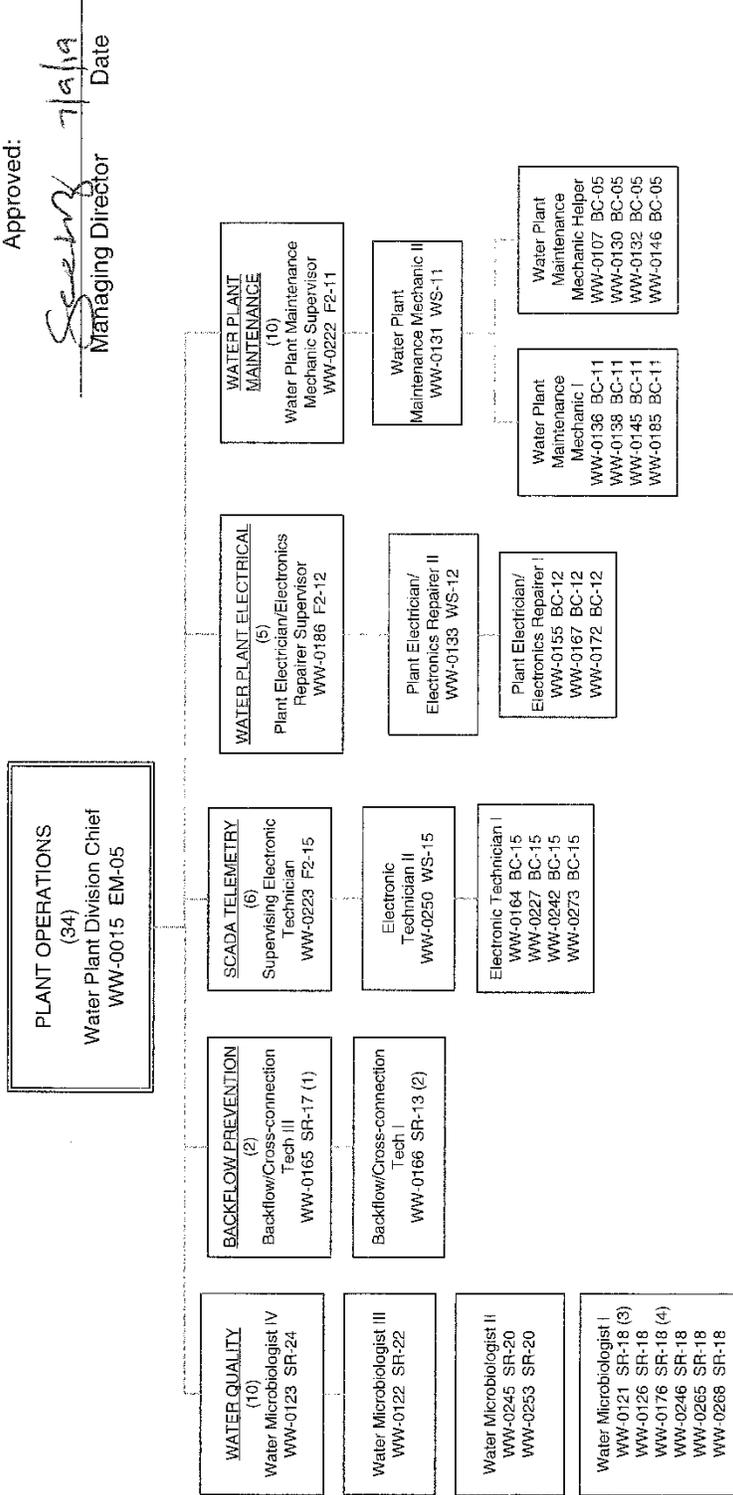


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Approved:  
  
 Managing Director  
 Date: 7/9/19



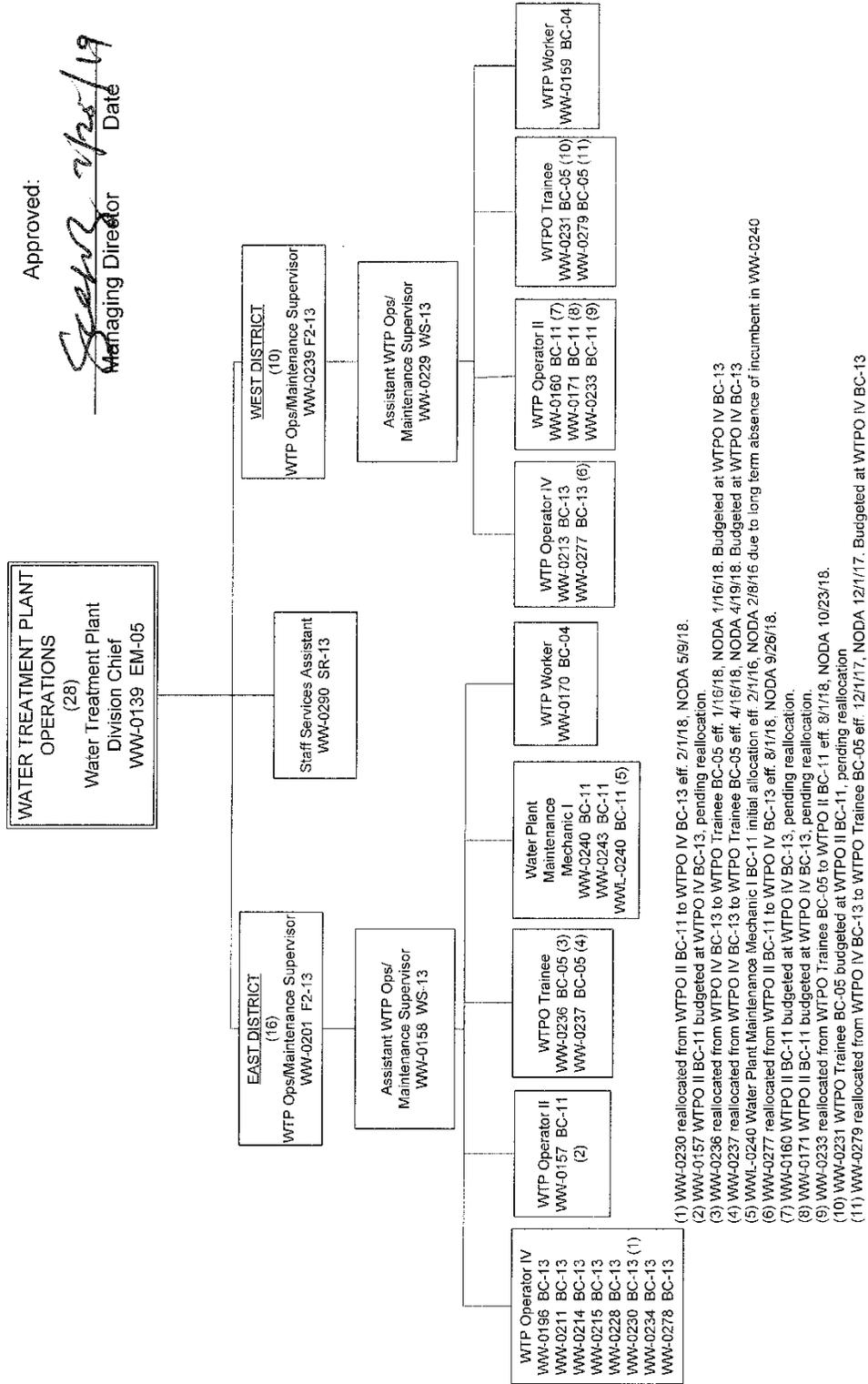
(1) WW-0165 reallocated from Backflow/Cross-connection (BFXC) Tech IV SR-19 to BFXC Tech III SR-17 eff. 5/1/18, NODA 5/4/18.  
 (2) WW-0166 reallocated from BFXC Tech II SR-15 to BFXC Tech I SR-13 eff. 6/16/18, NODA 6/8/18. Budgeted as BFXC Tech II SR-15  
 (3) WW-0121 reallocated from Laboratory Technician I SR-13 to Water Microbiologist I SR-18, eff. 12/16/17, NODA 12/27/17. Budgeted as Water Micro III SR-22  
 (4) WW-0176 reallocated from Laboratory Technician I SR-13 to Water Microbiologist I SR-18, eff. 4/16/18, NODA 5/15/18. Budgeted as Lab Tech I SR-13

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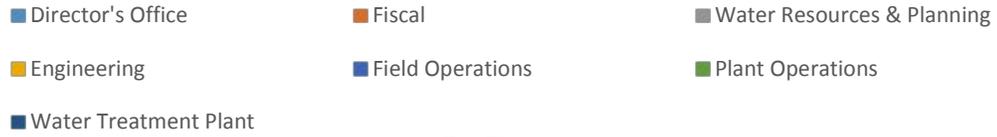
Prepared By: John T. A. JUL 15 2019  
 Department Head Date

Approved: [Signature]  
 Managing Director Date



- (1) WW-0230 reallocated from WTPO II BC-11 to WTPO IV BC-13 eff. 2/1/18. NODA 5/9/18.
- (2) WW-0157 WTPO II BC-11 budgeted at WTPO IV BC-13, pending reallocation.
- (3) WW-0236 reallocated from WTPO IV BC-13 to WTPO Trainee BC-05 eff. 1/16/18. NODA 1/16/18. Budgeted at WTPO IV BC-13
- (4) WW-0237 reallocated from WTPO IV BC-13 to WTPO Trainee BC-05 eff. 4/16/18. NODA 4/16/18. Budgeted at WTPO IV BC-13
- (5) WW-0240 Water Plant Maintenance Mechanic I BC-11 initial allocation eff. 2/1/16. NODA 2/16/16 due to long term absence of incumbent in WW-0240
- (6) WW-0277 reallocated from WTPO II BC-11 to WTPO IV BC-13 eff. 8/1/18. NODA 9/26/18.
- (7) WW-0160 WTPO II BC-11 budgeted at WTPO IV BC-13, pending reallocation.
- (8) WW-0171 WTPO II BC-11 budgeted at WTPO IV BC-13, pending reallocation.
- (9) WW-0233 reallocated from WTPO Trainee BC-05 to WTPO II BC-11 eff. 8/1/18. NODA 10/23/18.
- (10) WW-0231 WTPO Trainee BC-05 budgeted at WTPO II BC-11, pending reallocation
- (11) WW-0279 reallocated from WTPO IV BC-13 to WTPO Trainee BC-05 eff. 12/1/17. NODA 12/1/17. Budgeted at WTPO IV BC-13

## FY 2019 EXPENDITURES BY DIVISION



DIVISION	FY 2018	FY 2019
<b>Director's Office</b>	\$1,367,239	\$1,360,636
<b>Fiscal</b>	\$3,844,012	\$3,110,420
<b>Water Resources &amp; Planning</b>	\$932,895	\$1,092,997
<b>Engineering</b>	\$1,526,404	\$1,685,096
<b>Field Operations</b>	\$7,158,368	\$7,503,292
<b>Plant Operations</b>	\$12,986,509	\$14,202,959
<b>Water Treatment Plant</b>	\$5,324,517	\$5,723,327

# DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

## DIVISION REPORTS

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### ENGINEERING DIVISION

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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 with a current staff of 21. The Division 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 the approval of 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) which comprises approximately 58% of existing water services. This district is also responsible for overseeing the construction phase of capital improvement projects within this district.

The District II Section is responsible for the approval of 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) which comprises approximately 42% of existing water services. This district is also responsible for overseeing the construction phase of capital improvement projects within this district.

The Capital Improvement Program Section is responsible for coordinating the long-term capital improvement program with the other divisions as well as the design phase of capital improvement projects.

Capital improvement projects (CIP) in progress during Fiscal Year 2019, along with the respective phase of the project (planning, design, construction, completed construction) are listed below:

**DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT**

<u>Project Name</u>	<u>Phase</u>
<b>Dam Improvements – Olinda Water Treatment Plant, Olinda, Maui</b> – Ongoing seismic and stability analysis of the eight-million gallon basin for future design improvements. Design estimated to be completed in FY22.	Design
<b>Kamole Water Treatment Plant Clearwell – Structural Repairs, Haliimaile, Maui</b> – Restoration and repair of an existing three-million gallon concrete water tank. Design estimated to be completed end 2019 and construction anticipated FY20.	Design
<b>Mahinahina Water Treatment Plant Controls Upgrade, Kapalua, Maui</b> – Upgrade of the processing and automation controls. Design completed in 2019 and construction anticipated FY21.	Design
<b>Phase 10 Booster Pump Upgrades, Kula, Maui</b> – Replacement of the existing booster pumps for reliability and additional capacity, including an upgrade of the electrical controls. Design estimated to be completed end FY19.	Design
<b>Waiehu Heights Well #1 Replacement, Wailuku, Maui</b> – Replacement for existing well. Design for exploratory well drilling estimated to be completed in end 2019 and construction anticipated end FY19.	Design
<b>Waihee Well Tank By-Pass Piping, Wailuku, Maui</b> – Installation of a waterline bypass to allow for the maintenance and refurbishment of a one-million gallon concrete water tank. Design completed in FY19 and construction anticipated FY21.	Design
<b>Kamaole Tank Replacement, Kula, Maui</b> – Installation of replacement one half-million gallon steel tank. Project estimated to be completed in end FY19.	Construction
<b>Kamole Water Treatment Plant Traveling Screen Replacement, Haliimaile, Maui</b> – Replacement of existing traveling screen. Project estimated to be completed in September 2019.	Construction
<b>Kaupo Non-potable Tank Replacement, Kaupo, Maui</b> – Replacement of existing 40,000 gallon steel tank with a 100,000 gallon tank. Project estimated to be completed end FY19.	Construction
<b>Keanae Motor Control Center (MCC) Upgrades, Keanae, Maui</b> – Replacement of the existing motor control center. Project estimated to be completed early FY20.	Construction
<b>Keanae Wells Control Tank Replacement, Keanae, Maui</b> – Replacement of existing 15,000 gallon control tank. Project estimated to be completed early FY19.	Construction
<b>Kula 200 Lower Water Tank Replacement, Kula, Maui</b> – Replacement of existing 50,000 gallon tank with a 250,000 gallon tank. Project estimated to be completed early FY20.	Construction

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<p><b>Lahainaluna Road Booster Pumps – Portable Trailer Pumps, Lahaina, Maui</b> – Furnishing and delivery of portable trailer booster pumps to provide back source water. Project estimated to be completed in September 2019.</p>	<p>Construction</p>
<p><b>Lower Kula Transmission Line – Tree Clearing, Makawao, Maui</b> – Clearing of trees along the raw water transmission line that provides source water to the Piiholo Water Treatment Plan. Project estimated to be completed early FY20.</p>	<p>Construction</p>
<p><b>Makaala Drive Service Lateral Replacement, Wailuku, Maui</b> – Replacement of existing water service laterals. Project estimated to be completed in July 2019.</p>	<p>Construction</p>
<p><b>Mokuhaul Motor Control Center (MCC) Upgrades, Wailuku, Maui</b> – Replacement of the existing motor control center. Project estimated to be completed end FY20.</p>	<p>Construction</p>
<p><b>Omaopio Tank Booster Pump and Controls Upgrade, Kula, Maui</b> – New booster pumps to service the Olinda residents when the Olinda water treatment plant is down for maintenance and cleaning. Project estimated to be completed in Fall 2019.</p>	<p>Construction</p>
<p><b>Omaopio Tank Replacement, Kula, Maui</b> – A new two-million gallon storage tank and demolition of the existing two-million gallon tank. Project estimated to be completed end FY19.</p>	<p>Construction</p>
<p><b>On-site Sodium Hypochlorite Generation System for Water Treatment Plants</b> – Furnishing, delivery and installation of package systems at the Lahaina, Mahinahina, Piiholo, Kamole and Olinda water treatment plants to discontinue use of chlorine gas. Project estimated to be completed in July 2019.</p>	<p>Construction</p>
<p><b>On-site Sodium Hypochlorite Generation System for Well Sites</b> – Furnishing, delivery and installation of package systems for the Kanoa, Waihee and Mokuhaul well sites to discontinue use of chlorine gas. Project estimated to be completed in August 2020.</p>	<p>Construction</p>
<p><b>Napili A and Napili C Water Tank Refurbishments, Napili, Maui</b> – Restoration of two (2) 100,000 gallon concrete tanks to extend service life. Project estimated to be completed end FY19.</p>	<p>Construction</p>
<p><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. Project estimated to be completed in August 2019.</p>	<p>Construction</p>
<p><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 area. Project estimated to be completed early FY21.</p>	<p>Construction</p>

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<b>West Maui Well Development, Mahinahina, Maui</b> – Development of a potable groundwater well source that will provide an additional water source. Project estimated to be completed end FY21.	Construction
<b>Wailuku Heights Booster Pump Stations Upgrades, Wailuku, Maui</b> – Replacement of the Kuikahi booster pump station completed in 2019. Replacement of the Waiale booster pump station estimated to be completed early FY20.	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 end FY19.	Construction

Capital improvement projects completed in Fiscal Year 2019 are listed below:

<b>Iao Water Treatment Plant Upgrade, Wailuku, Maui</b> – A new treatment plant to replace the existing facility and increase capacity. Project completed in April 2019.	Construction Completed
<b>Olinda Water Treatment Plant Embankment Improvements, Olinda, Maui</b> – Reinforcement of the existing sludge drying bed embankment. Project completed in March 2019.	Construction Completed

During FY19, the Engineering Division reviewed approximately 1200 residential and commercial building permit applications. The division also received approximately 43 subdivision applications in FY19.

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### FIELD OPERATIONS DIVISION

The **Field Operations Division** consists of the following sections: Maintenance sections in the Districts – Central, Hana, Lahaina, Molokai and Upcountry; **Construction, Support Services** and the **Field Operations Office**. Field Operations is responsible for approximately 780 miles of water transmission and distribution lines, servicing 36,719 accounts on Maui and Molokai with a staff of 82.

The Central, Hana, Lahaina, Molokai and Upcountry districts are responsible to control, repair, replace, install and maintain main and service waterlines and all appurtenances, including meter, 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 hurricanes 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 ground maintenance. Training classes were conducted for Distribution System Operator (DSO) certification, drug testing, Hawaii Rural Water Association (HRWA) classes and Department of Transportation (DOT) testing.

#### Annual Number of Responses per District

<u>Maintenance District</u>	<u>Consumer Complaints</u>	<u>After-Hour Calls</u>
Central	1,164	229
Hana	80	23
Lahaina	258	28
Moloka'i	129	71
Upcountry	716	182

#### Central Maintenance

The Central crew responded to 176 shut and open meter requests, six consumer complaints of dirty water, 54 consumer complaints of no water and 75 high or low pressure complaints. The crew participated in 16 tie-ins, nine bores, 90 taps and other contractor related projects. A lot of this work involved after hours and night work, which resulted in overtime. The crew also replaced or repaired 35 relief valves and/or gate valves/stopcocks, replaced or repaired approximately 330 meters, repaired approximately 108 service laterals, replaced 115 service laterals, installed 11 new meters, installed 11 service laterals, replace/repared seven cast iron meter boxes, replaced three concrete meter box covers, reopened 15 locked meters for fiscal, and relocated five meters. We also replaced 25 hydrants/standpipes, completed 113 field activity requests, completed 53 job orders and one agricultural meter inspection.

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The Laborers in the Central crew flushed the Upcountry water system daily for water quality purposes (a total of 6,469 hydrants flushed and 9,232,350 gallons of water) and performed tank and ground maintenance in the Central, Lahaina and Upcountry districts.

The Leak Detection Crew surveyed 270.25 miles of pipe in the Central, Hana, Lahaina, Molokai and Upcountry districts and found 45 leaks. They located mainlines, isolation valves and water service laterals throughout Maui and Molokai for Hawaii One Call utility, maintenance crews, Water Treatment Plant Operations and Engineering.

This year the following pipelines were replaced:

- 410' of ¾" copper pipe
- 1380' of 1" copper or driscoll pipe
- 682' of 1 ¼" copper pipe
- 230' of 1 ½" copper pipe
- 103' of 2" copper pipe
- 73' of 2" copper pipe to replace mainline
- 26' of 6" ductile iron pipe
- 85' of 8" ductile iron pipe
- 5' of 12" ductile iron pipe
- 12' of 18" ductile iron pipe

### **Upcountry Maintenance**

The Upcountry crew responded to a total of 716 consumer complaints during working hours and 182 consumer complaints after hours. The crew completed 29 job orders which consisted of shutting down valves for cut ins and tie-ins, bores, taps, relocating meters and repairing and replacing damaged water service laterals and mainlines for contractors. They also completed 41 field activity requests consisted of replacing defective meter and transponders, installations of 21 new meters, service laterals, cast iron meter boxes, corporation stops, relocation of meters and meter boxes, and assisted Fiscal with locking meters for non-payment, reopened locked meters and verified meter and transponder numbers. The crew also completed 22 agriculture (AG) Inspections.

The crew repaired and replaced a total of 187 service laterals ranging from 1" to 1 ½". A total of 1613 feet of service laterals were replaced with copper. The crew also repaired and replaced a total of 128 mainlines ranging from 2" to 12". A total of 1380 feet of mainlines were replaced with ductile iron pipe, driscoll pipe and copper pipe. They responded to 53 no leak found complaints, 91 private leak complaints, 67 meter leak complaints, 32 dirty water complaints, 39 hydrant/standpipe complaints, 43 high/low pressure complaints and 174 miscellaneous complaints.

The crew attended Flagging and Work Safety Class, Maui Police Department Active Shooter Class and Equal Employment Opportunity (EEO) training.

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### Lahaina Maintenance

The Lahaina Maintenance crew completed a total of 258 consumer complaints during regular working hours and 28 consumer complaints after hours. They repaired 42 mainline leaks, 30 service lateral leaks, 39 meters and 17 hydrants/standpipes. The crew replaced 134 feet of mainline pipe ranging from 2" to 8" and 251 feet of service lines ranging from ¾" to 3". They also replaced seven service laterals, 16 gate valves/stopcocks, one air relief valve and seven plastic/cast iron meter boxes/covers. The crew cut and plugged one old existing corporation, resolved 16 no water or high/low pressure consumer complaints, 21 shut/open water requests from consumers and four dirty water consumer complaints. They assisted consumers in locating their meters/valves, replacing or unlocking meter covers and verified possible leaks.

The crew completed 381 field requests and 21 job orders for the Fiscal office, consumers and contractors. A total of two bores and two corporation taps ranging from 1' to 6" were completed. They shut and opened valves for contractor tie-ins. When completed, mainlines were flushed and tested for chlorine residual. The crew removed one temporary construction meter, installed 16 new meters, replaced 219 meters and 225 transponders, and upgraded seven meters.

The crew also serviced 68 hydrants throughout the Lahaina District and made system adjustments in the Lahaina/Wahikuli and Kahana areas when necessary. They backfilled and dressed up work sites, repaired road patches, raised sliding valve boxes and completed concrete work on valve donuts, etc. Utility locations requests were made with Hawaii One Call Center and all road patches were marked out for contractor repaving. The crew also assisted the Leak Detection and Valve Repair crews, located and cleaned out valves for Hurricane/Tsunami preparedness and prepared for upcoming Sanitary Surveys. They performed maintenance at the Lahaina base yard and at the various tank/pump sites throughout the district. The crew dropped off/picked up paper work, fittings, materials and equipment from the Central base yard. They dropped off water payments to the Fiscal office. The crew attended DSO classes, special training sessions and completed lab tests for pocket colorimeters.

Weekly system checks were performed on the Honokohau Valley system, which consists of over seven miles of 2" to 6" driscoll and galvanized mainline pipes. This is the most problematic system in Lahaina District, which accounted for 82% of all mainline repairs and 54% of all mainline footage replaced district wide. Below is a list of work performed on the Honokohau system. These amounts are included in the totals stated above.

- Repaired 31 mainline leaks ranging from 1 ½" to 6" driscoll/galvanized pipe.
- Replaced 72 feet of mainline ranging from 2" to 4" driscoll pipe.
- Cut and plugged one illegal tap on DWS water line.
- Reconnected mainlines and flushed water due to damage from Tropical Storm Olivia.
- Walked and cleared trail while bleeding air from transmission line.

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### **Molokai Maintenance**

The Molokai crew checked chlorine residuals daily, flushed hydrants 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 base yard, 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 samplings and meter readings at well sites. Note that when meter readings are picked up, the staff prepares 80–100 high/low field activities to recheck faulty meter readings. This process takes a couple of days to reread. The number for field activities was reduced due to replacing defective meters and transponders. A pilot program was implemented with a new cellular meters, however it was unsuccessful because of the limited service on the island.

The crew completed a total of 129 consumer complaints during working hours and 71 consumer or SCADA (Supervisory Control and Data Acquisition System) complaints after hours. They also completed one job order, one AG inspection and installed four new meters. The crew completed 480 field activities, which included replacement of 90 defective meters and 91 defective transponders. The crew repaired 26 service lines ranging from ¾" to 2". They repaired 60 leaking meters, and both service and main lines. A total of 220 feet of pipe ranging from 2" to 12" was used to for repairs or replacement. The crew repaired/replaced two hydrants due to normal wear and tear. They installed five new service lines and repaired 15 mainline breaks.

The crew attended American Water Works Association (AWWA) classes, DSO classes and EEO classes as well as assisted DWS Inspectors.

### **Hana Maintenance**

The Hana district covers Keanae to Kaupo, which has extremely rough terrain. They responded to 80 consumer complaints during working hours and 23 consumer/SCADA complaints after hours. They completed one job order and 114 field activities, which includes installment of one new meter, replacing three defective meters and 25 defective transponders. Daily personnel logged all tank chlorine levels, amount of hours pump and amount of water pump from each well site. 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 four different tank sites and checked stand by generators for adequate fuel in case of an emergency. The crew collected chlorine samples for each well for the lab. They maintained seven tank sites, landscaped, cut trees, weed control and performed building maintenance.

Monthly, the crew read 554 meters from Keanae to Kaupo. The Hana Field Office is capable of downloading and uploading all pertinent files for meter readings for Fiscal/ for billing, meter profiling, lock out meters. The staff also collected monthly payments

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including delinquent payments on accounts. The crew took meter readings at the East Maui Irrigation ditch at Makapipi, which feeds the Nahiku system. Periodically, they were asked to collect microbiological samples for chlorine lines, wells, etc. Samplers were certified by DWS laboratory for proper sampling procedures.

The crew completed 25 4" mainline repairs, with 90% of the repairs dug by hand. When the break was too big, an operator from Central base yard was requested to assist.

The crew 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 of leaks whenever and wherever possible. Throughout the year, the crew has kept all hydrants and standpipes in good appearance and physical order. Semi-annually all hydrants and standpipes are flushed. In addition, the crew has actively replaced old air relief valves (ARVs) with new ones when identified.

Earlier this past year, the crew identified that the 12,000 gallon storage tank at Koali was starting to leak badly from the floor of the tank. The tank was losing approximately 10,000 to 13,000 gallons daily. The daily pumping was between 20,000 to 23,000 gallons per day (gpd). The crew, with the assistance of Support Services, installed a 4,000 gallon temporary tank. The daily pumping is now between 6,000 to 10,000 gallons daily.

The crew attended CPR classes, DSO classes as well as the annual chlorine proficiency testing at the DWS laboratory.

### **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 replacement/repairs of mainlines and valves, service laterals, hydrants, standpipes, meters, traffic control, Sanitary Survey requirements, Hawaii One Call utility location requests, treatment plants and tanks. The crew attended DSO, continuing education and other classes that were offered by the County of Maui, AWWA and others.

Projects throughout the year included:

- Honokohau Valley – Cut and cleared pathway for existing mainline. Checked for leaks and/or breaks on existing mainline. Repaired leak on existing 2" and 4" mainlines. Installed 2" and ¾" ARVs, replaced 100 feet of 2" driscoll pipe and surveyed water lines and tunnels with Risk Management. Replaced re-connecting anchoring and flushing all mainlines, ARVs, service laterals and water meters. Installed 150 feet of 4" driscoll mainline and new cable lines, anchors and 150 feet of 2" mainline.
- Assisted Meter Technicians in locating valves replacing small and large meters in the Central and Upcountry districts.

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- Old Kanaio Steel Tank – Dismantled tank, loaded up and hauled away debris, cleaned and leveled tank site.
- Kamaole Tank #393 – Pumped and cleaned out tank drain and overflow vault, cut-in two 2” tees on 2” by-pass line and installed hydro generator on tank inlet by-pass line.
- Kealakapu Tank E07 – Cut and plugged 6” mainline to tank.
- Makena Road – Repaired leaks on 2” mainline.
- Omaopio Tank and Kanaio Tank – Checked for leaks on mainlines, cut and cleared path for existing mainline, serviced ARVs and checked service laterals and water meters.
- Nahiku Road – Removed steel plates, checked mainline, replaced damaged hydrant, tested valves and informed residents and businesses on upcoming job. Cut in 12” AC mainline, installed 12” x 6” tee, 6” gate valve, hydrant bury, hydrant, cemented trust blocks, backfilled and cleaned worksite.
- Piihola WTP – Located 3” PVC mainline to be replaced. Installed 1,200 feet of 3” PVC line, 200 feet of 1” PVC line, cut and repaired entrances and road, located eye wash station water line for tie-in.
- Puu Way – Cleaned worksite and installed 2” driscoll water line.
- Puunene School – Repaired 4” mainline.
- Maalaea – replaced eight feet of 8” mainline.
- Assisted base yard with hurricane preparation.
- Assisted with trafficControl for jobs in the various districts when needed.
- Omaopio Tank – Removed hydro generator and plugged 2” by-pass line. Installed new hydro turbine motor and meter.
- Kanae Tank – Met with Inspector and Contractor on upcoming jobs. Prepped worksite for 30x20 temporary tank. Installed 25,000 gallon tanks. Installed 4” PVC inlet, outlet, interconnect, pump line, by-pass line and overflow lines for tanks. Vacuum and cleaned tanks. Flushed and chlorinated tanks, drains, and hauled out water from tanks, installed thrust blocks.
- Kula Kamaole Tank – Installed hydro generator.
- Lower Honoapiilani Highway – Repaired road and assisted in repairing 8” mainline break.
- Kahana Mixing Tank – Pulled off grate of overflow vault and repaired 8” flappers on drain lines for Sanitary Survey.
- Waipuka Tank – Located and traced 8” mainline for Sanitary Survey.
- Hui Road F and Front Street – Assisted Lahaina maintenance in replacing service laterals.
- Iao WTP – Installed 100 feet of 12” PVC drain line, 200 feet of 8” PVC for drain line. Installed thrust blocks and cleaned up site area.
- Mahinahina WTP - Cut road and sidewalk and repaired 6” ductile iron fire line.
- Piihola – Lower Kula Transmission Line – Checked for leaks and serviced ARVs.
- Holua Drive – Replaced hydrant #246.

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- S Oahu Street – Repaired 8” AC mainline.
- Kaiolohia Street – Located 18” mainline for contractors.
- Makaala Drive – Met with contractors on upcoming jobs.
- Mill Street – Repaired service lateral.
- Kauhikoa Rd, Une PI, Ulumalu Rd, Kokomo Rd, Olinda Rd, Kaupakalua Rd - Located valves, mainlines and service laterals to replace standpipes. Backfilled trenches and concreted valve donuts.
- Kaupakalua Road – Replaced standpipe #17.
- Aulii Place – Replaced standpipe.
- Noela Street – Replaced ¾” gate valve for consumer.
- Makawao Avenue – Patched road.
- Kanaha Valley – Cleared river crossings and cut fallen trees.
- Olinda WTP – Replaced 12” gate valve. Installed sliding valve boxes and concreted valve donut. Repaired leaks on 3” PVC water line. Repaired two separate 4” mainline breaks and cut and plug 1” galvanized service lateral.
- Honokohau Valley Tank – Cut and cleared away trees in tank site area.
- Kepaniwai Park – Reinstalled meter and transponder.
- Kapalua Tank – Cleared tank site area.
- Nagamatsu Tank – Cut trees for Sanitary Survey.
- Kauhikoa Tank, Opaipelau Tank, Kula 200 Tank, Haiku Wells, Lower Holokai Tank – Cleared tank sites for Sanitary Survey.
- Kauhikoa Road – Installed pop off valve and wharf head on standpipes.
- Kauhikoa Tank – Assisted in putting tank on by-pass, flushing mainlines and traffic control.

### **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 excavate main and service waterlines, repairs road and cuts brush in remote areas.

The meter shop completed 1,882 field activities which included defective meters and transponders, new meters, non-payment, illegal connections, construction meters, meter boxes, etc.

The hydrant maintenance section repaired and serviced 351 hydrants in the Haiku area and is now working in the Kahului Airport area. This section also has threaded over 80 standpipes.

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The Welder and Carpenters worked on Sanitary Survey in the Upcountry District. All tank hatches and gaskets were replaced as needed. All vent screens with nylon screens were changed. The Carpenters replaced screens, roof vents and miscellaneous deficiencies on water tanks to meet compliances with state Department of Health regulations.

### **Field Operations Office**

The Field Operations Office provides all administration and clerical support for the Field Operations Division. The personnel assists with varied processes and tasks. Some of these tasks include fielding incoming calls on a 24/7 basis and addressing complaints in a timely way, 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. This section also responds in a timely manner to all inquiries from other divisions in the Water Department.

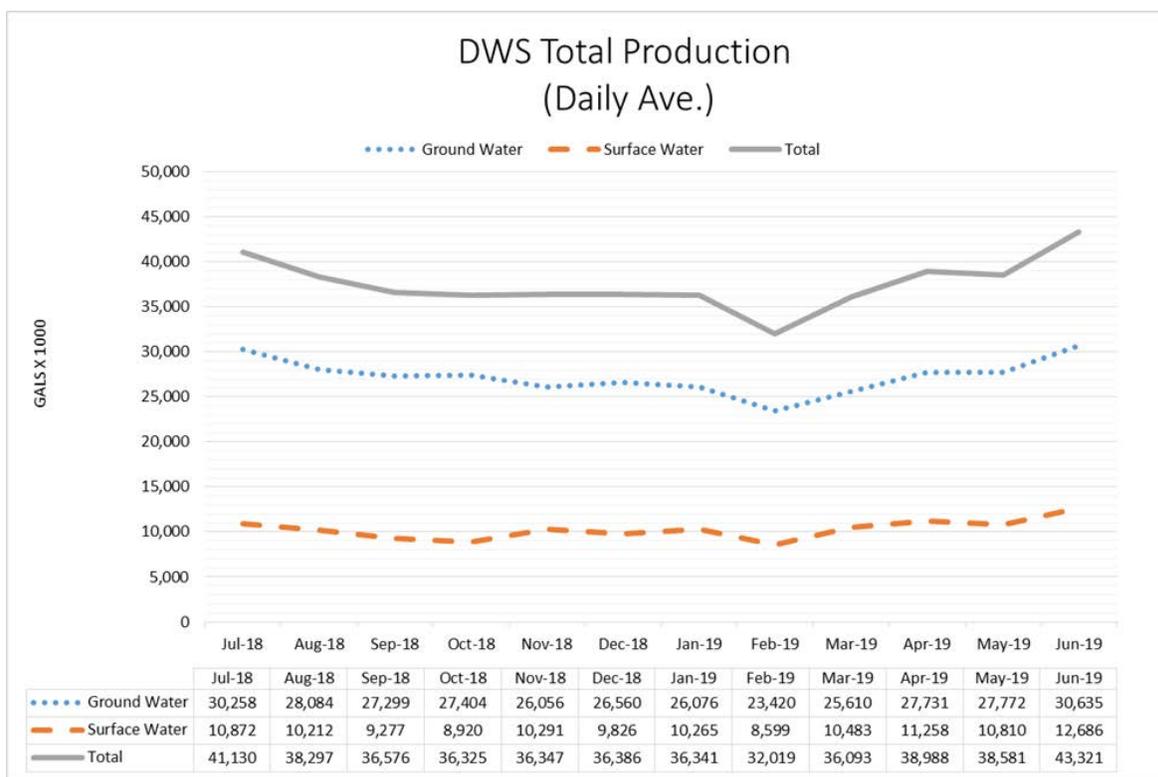
# DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

## PLANT OPERATIONS DIVISION

The **Plant Operations Division** consists of 33 positions in five 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 Departments total daily production), 79 booster pumps, ultra-violet and granular activated carbon treatment facilities, 24 disinfection systems, and 143 remote Supervisory Control and Data Acquisition System (SCADA) sites. The SCADA System provides 24-hour, around the clock control of the distribution system, alarming, real time, and historic information. The Electrical and Electronic sections also provide electrical and electronic tech support for our six surface water treatment facilities.



*Total production of ground and surface water for Fiscal Year 2019*

Aside from normal daily operations and maintenance, notable in-house and CIP projects for FY2019 include:

- Planned and completed in-house control system design / installation and programming for logic control systems and SCADA integration at the new Omaopio tank, Keanae wells electrical upgrades.

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- NELAC (National Environmental Laboratory Accreditation Conference) audit for FSMO (Field Sampling and Measurement Organization).
- Source water flow meter calibration for the Central, Upcountry, and Lahaina districts.
- Upgrade SCADA Remote Terminal Unit program to incorporate adjustable sodium hypochlorite feed systems at Ualapue Well and Kapalua Booster.
- Electrical/Electronic integration/installation of Sodium Hypochlorite On-Site Generation (OSG) systems at Lahaina, Mahinahina, Olinda, Piihola, Kamole Water Treatment Facilities and Kanoa Well #2.
- Ualapue Well repairs, Install new hatch door, video survey.
- Integrate SCADA control for Maui Electric “Fast Demand Response Program” on the following sites: Napili Well C, Waihee wells, Maui Meadows boosters, and Kupaa Well.
- Napili Well A install tablet feeder chlorination system to replace gas chlorine.

### Scheduled and Unscheduled Maintenance Events

	Electrical	Mechanical	Electronics
<b>Central</b>	61	67	266
<b>Upcountry</b>	33	41	157
<b>Lahaina</b>	10	25	52
<b>Napili</b>	10	35	100
<b>Moloka'i</b>	0	5	27
<b>Hana</b>	5	16	46
<b>Water Treatment Facilities</b>	49	<i>na</i>	97
<b>Preventive Maintenance</b>	88	43	190

### Backflow and Cross-Connection Control:

The Backflow Cross-Connection Control Section currently consists of two employees, a Backflow Cross-Connection Technician III & Backflow Cross-Connection Technician I. Together, we ensure the public's drinking water safety, by monitoring the annual testing and proper installation of backflow assemblies in Maui County. A properly working backflow assembly prevents contaminants and pollutants from entering our water

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system through backpressure or back siphon age. The Backflow Cross-Connection Control Section also conducts field surveys and tests all newly installed backflow assemblies.

In FY19 the Backflow Cross-Connection Control Section performed 698 field surveys, 64 final inspections and mailed 2,457 test due letters. Currently, there are 3,583 backflow assemblies monitored in Maui County.

For FY19 and FY20, the Backflow Cross-Connection Section's main priorities included updating all backflow assemblies delinquent on annual testing. We would like to update our database, to provide accurate information for all backflow assemblies in Maui County. The Backflow Section's top priority is keeping Maui County's drinking water safe and free from any backflow contamination.



Back Flow Technician Rory Honda testing a newly installed Reduced Pressure Back Flow Preventer at Maui Tech Park in Kihei.



Back Flow Technician Supervisor Kimo Ching testing a new Double Check Detector Assembly at Kalama Kai Condo in Kihei.

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### **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 for Chemistry and Microbiology, with the State of Hawaii, Department of Health as well as with Utah Department of Health Environmental Laboratory Certification Program, an accrediting body with the National Environmental Laboratory Accreditation Program; FSMO accreditation (Field Sampling and Measurement Organization) through ANSI-ASQ (American National Standards Institute - American Society of Quality) National Accreditation Board (ANAB).

### **Microbiology**

- 2641 Compliance samples collected and analyzed.
- 583 Non-compliance samples collected and analyzed.
- Nine total coliform positive samples.
- Sample collection for compliance with the Long Term 2 Enhanced Surface Water Rule (LT2) was completed for three water treatment facilities.

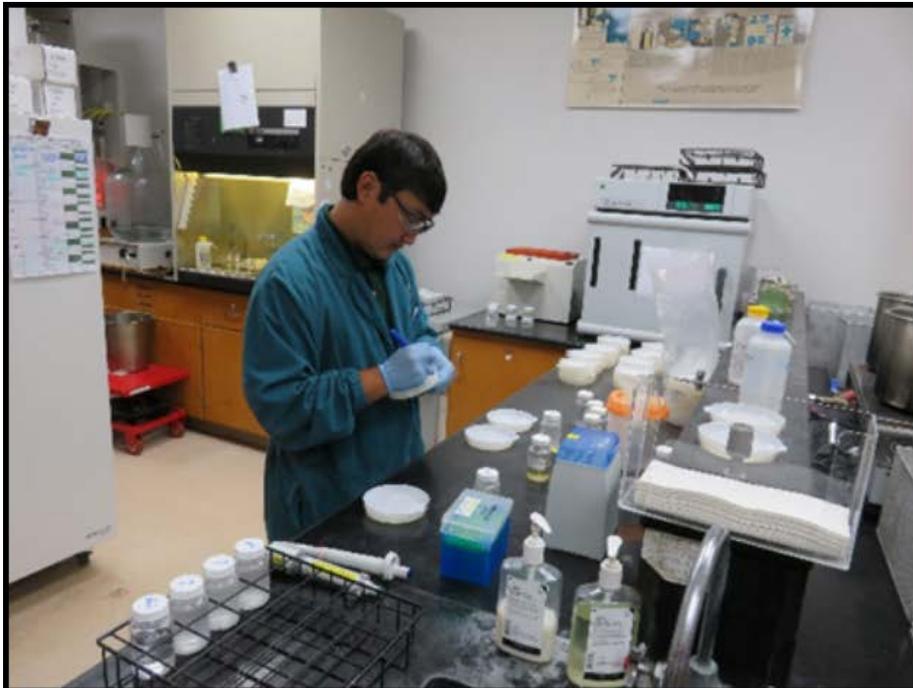
### **Chemistry**

- Triennial lead and copper testing was completed for three systems.
- Process control samples analyzed in house: 12,295
- Analytes include fluoride, nitrates/nitrite, sulfate, chloride, phosphate, total organic carbon, pH, conductivity, total & free chlorine residual.
- Two out of three phases of the UCMR 4 (Unregulated Contaminant Monitoring) sample collection was completed for the Lahaina, Makawao, and Wailuku systems. Quarterly samples were tested for 20 different chemical contaminants (two metals, eight pesticides, one pesticide manufacturing byproduct, three brominated haloacetic acid disinfection by-product groups, three alcohols, and three semi-volatile organic chemicals) to assist the Environmental Protection Agency in assessing possible contaminants for regulation.

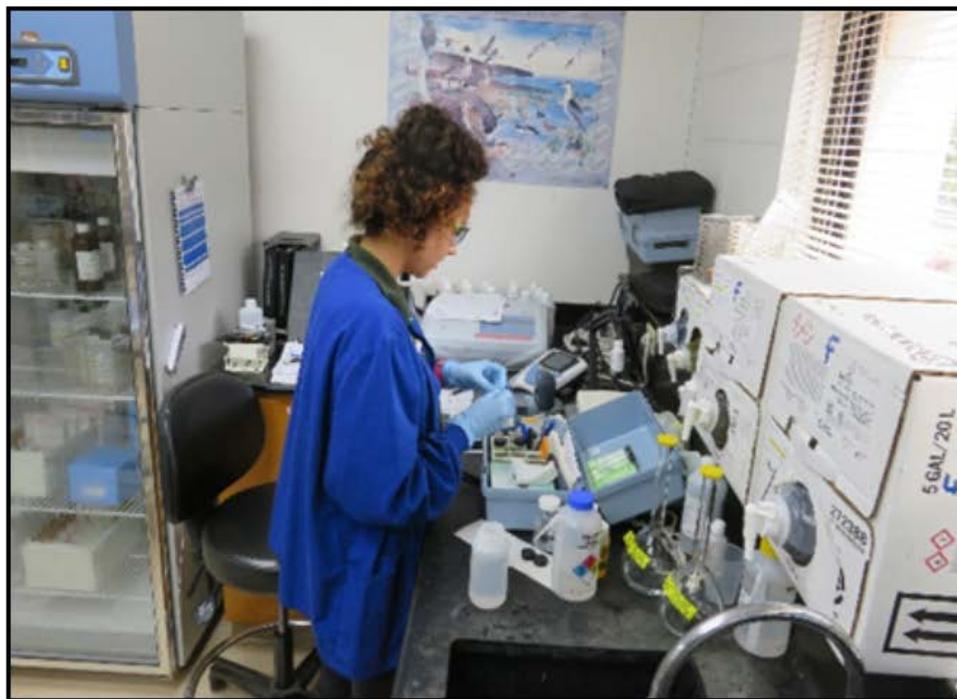
**Priorities for FY 20** include the following:

- On-going LT2 sample collection for two water treatment facilities.
- Triennial lead and copper testing for seven water systems.
- Phase 3 of the UCMR 4 sample collection for three water systems. Analytes to be tested during Phase 3 includes nine cyanotoxins and one cyanotoxin group.
- Start tri-annual chemistry compliance sample collection at all entry points to the distribution system for the Department of Health 2020-2022 monitoring period.

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Christopher Kawaguchi, Water Microbiologist I, setting up Sim-Plate HPC (heterotrophic plate count) for routine bacte- analysis



Juleen Flory, Water Microbiologist I, Analyzing samples for total and free residual chlorine

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### WATER TREATMENT PLANT DIVISION

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The Water Treatment Plants (WTP) Division consists of 28 staff members in two districts, East District and West District. This includes the Division Chief and Staff Services Assistant. The Staff Services Assistant works under the directive of both the WTP and Plant Operations Division managers. The East District has 16 positions; the West District has 12.

There are six surface water treatment plants in the WTP Division, four in the East District and two in the West District. These facilities process drinking water from streams and ditches on Maui and produce approximately 30% of the DWS demand for potable water with the Plant Operation ground water systems (wells), producing the remainder.

#### Goals for WTP Division in 2019-20

- Retrofit a new SCADA automated plant control system at the Mahinahina WTP.
- Continue to encourage all water treatment plant operators to upgrade their certification levels and become proficient at operating each plant in their district.
- Continue to meet and exceed all state and federal regulations on water quality.
- Adhere to the DWS mission statement and “Provide clean water efficiently”.

### East District

#### **Olinda Water Treatment Facility**

#### **FY19 Production – 350,270,000 gallons; 0.96 million gallon daily average**

A sludge drying bed was constructed at Olinda in order to facilitate regular clean-outs of the 8.5 million gallon pre-sedimentation basin. Not having a suitable place to “dry the mud” here has been problematic in years past. This CIP project should prove to be a long term solution and prolong the life of the membrane filters by preventing settled material from being drawn in on them. Regular scheduled sedimentation removal is anticipated to occur approximately every two years, now that we have this sludge drying area designated.

The new sodium hypochlorite (bleach) on-site generation system was installed here and became operational in June 2019. This system replaces the old chlorine gas application using only salt and electricity to produce our disinfectant to be used in the process.

Thanks to the new Waikamoi flume and relined 15 mg raw water storage basins at Waikamoi, (along with a good supply of rain), the Waikamoi and Kahakapao reservoirs remained at operational levels through fiscal year 2018-19, allowing the treatment plant to process needed water to meet demand in Upper Kula.

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### **Piiholo Water Treatment Facility**

**FY19 Production – 1,180,223,000 gallons; 3.23 million gallon daily average**

Variable frequency drive (VFD) motor controllers were installed on the Granular Activated Carbon (GAC) systems feed pumps in FY18-FY19. These motor controllers will allow us to better regulate the flow of water through this disinfection by-product reduction system. It will also save on electrical expense as well as prolong the life of the carbon used in the process thereby reducing instances of carbon replacement.

Tree removal contractors were hired by DWS to remove trees on or near the Piiholo 50 mg reservoir in January 2019. The Piiholo reservoir is designated as a dam by State of Hawaii Department of Land and Natural Resources. All large growth and vegetation must be mitigated in order to preserve the integrity of the dam.

A project to replace the original roof at the plant, constructed in 1995, began in March of 2019.

Another on-site generation (OSG) system went on-line here in June of 2019. This replaces chlorine gas using salt and electricity to create a weak bleach to be used in the process for disinfection of the drinking water.

### **Kamole Water Treatment Facility**

**FY19 Production – 610,880,000 gallons; 1.67 million gallon daily average**

All metal halide lighting at this facility was removed and replaced with LED in January of 2019. This saves money on electricity and provides better lighting to work under for the staff with less heat generated over head.

A new automated chemical control system was installed at Kamole water treatment facility replacing the outdated and inefficient original one. This “streaming current monitor” locks in on the electrical charge in the water to devise the optimal coagulant chemical dose.

Another on-site generation system went on-line at this facility in June of 2019 which enabled the WTP Division to discontinue the use of chlorine gas and produce needed disinfectant at the site. Trucking of dangerous chlorine gas is eliminated as well as handling by treatment plant staff. The sodium hypochlorite generated on site is classified as non hazardous.

Mahi Pono has been proactive in fiscal year 2018-19 in assisting treatment plant personnel with cleaning and debris removal at the Wailoa ditch intake. This has helped ensure higher quality water to the filtration process and less wear and tear on equipment.

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### **lao Water Treatment Facility**

**FY19 Production – 326,584,000 gallons; 0.895 million gallon daily average**

The existing lao “temporary” plant was decommissioned in September of 2018. This plant was able to stay on line and produce high quality water much longer than originally anticipated through operator diligence and oversight. Being an outdoor membrane treatment facility it had been exposed to the elements since being constructed in 2000. The new lao WTP began production of high quality drinking water in October of 2018.

This plant has many state of the art features including next generation membrane technology, OSG of chlorine solution for disinfection and an advanced capability automated SCADA control system. The lao Water Treatment Facility will be an asset to the County of Maui and drinking water consumers for many years to come. It’s centralized location in Wailuku makes it an excellent facility for tours, thus building confidence for the people of Maui County in their drinking water and providing an educational experience for any schools who wish to visit.

The new treatment plant in Wailuku was constructed with a self-cleaning “travelling screen” at the raw water intake at the lao ditch. This equipment is an important part of the treatment process removing sticks, leaves and other debris and preventing this larger material from reaching the membrane filtration system.

### **West District**

#### **Mahinahina Water Treatment Facility**

**FY19 Production – 557,680,000 gallons; 1.53 million gallon daily average**

The West District base yard plant at Mahinahina experienced an outage of raw water to the intake on September 13, 2018, due to Hurricane Olivia. The Honolua ditch supplying water to the plant was cleared of debris and the plant placed back on line on October 17, 2018. While the plant was out of service, staff removed and replaced the 12” influent valve and actuator device for filter #1 as well as the combined filtered water valve and actuator. This was good use of plant down time to perform necessary replacement of original components. A thorough cleaning of the flocculator (coagulant mixing) basins was also performed by plant staff during the down period.

Original inefficient lighting over each of the four filters were replaced with LED lighting providing a much brighter light which creates less heat and reduces energy cost. This work performed by DWS electricians in January of 2019.

Mahinahina WTP converted from chlorine gas to an OSG sodium hypochlorite system as mentioned earlier in this report for the plants in the East District. This plant began using an OSG system in May of 2019.

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### Lahaina Water Treatment Facility

#### **FY19 Production – 733,516,000 gallons; 2.01 million gallon daily average**

The On-Site Sodium Hypochlorite generation system was installed at this facility in September of 2018. This was the first plant to make the conversion off chlorine gas. The decision was made that this plant would be the first due to its close proximity to the Lahainaluna High School. Plant staff worked diligently with the contractor and equipment manufacturer to make this first application of alternative disinfection equipment for the County of Maui a success.

In March of 2019, heavy equipment was contracted to enter the Kanaha Valley and move debris and rocks away from the plant raw water intake system which had become partially obstructed during heavy rains. This work took three days to complete. The plant was off-line during this period.

The overflow outfall from the plants raw water intake screen box back to the Kanaha Valley was reinforced with concrete by DWS Field Operations construction crews in June of 2019.

**Total FY19 Production East District: 2,467,957,000 gals.**

**Total FY19 Production West District: 1,291,196,000 gals.**

**Total FY19 Production WTP Division: 3,759,153,000 gals.**



The O.S.G. (Sodium Hypochlorite Generation) system at the new Lao plant. This system produces liquid chlorine (bleach) using salt and electricity. It replaces potentially hazardous chlorine gas. The replacement/retrofit from chlorine gas to O.S.G. was done at all 6 treatment plants in last fiscal year.

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Clockwise from Left: The Blessing/Grand Opening of the new lao WTP. Tony Linder, West District O&M Supervisor David Haddock and O.S.G. contractor Rob Craw from Aqueous Vets; Lloyd Shiraki, Marvin Ignacio and Tom Ochwat working the decommission of the old lao Water Treatment Plant; The membrane filtration system of the new lao Water Treatment Facility.

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### WATER RESOURCES AND PLANNING DIVISION

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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. The division has nine employees.

#### 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.

#### DIVISION ACTIVITIES

##### **Watershed Protection and Grant Management**

DWS strives to support projects that protect the county's watersheds and freshwater resources. The department 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, invasive plant control, and reforestation. The native vegetation in upland areas and habitats is critical to the recharge and protection of drinking water

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supply. This fiscal year, the County Council allocated a total of \$2,616,000 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 Hawaii Office of Research Services (U.H. ORS)
- Leeward Haleakala Restoration Watershed Partnership - U.H. ORS
- West Maui Mountains Watershed Partnership - U.H. ORS
- East Molokai Watershed Partnership - The Nature Conservancy
- Maui Invasive Species Committee - U.H. ORS
- Hawaii Agriculture Research Center
- Puu Kukui Watershed Preserve - Tri-Isle RC&D
- Auwahi Forest Restoration Project - U.H. ORS

Facing a real threat of the fungal pathogen *Ceratocystis Fimbriata*, known as Rapid Ohia Death (ROD) reaching Maui and decimating watersheds, the division provided funding for a Maui based ROD coordinator this fiscal year.

### **Resource Management**

The division maintained contracts with the United States Geological Survey (USGS) for ground and surface water monitoring; a study to quantify the impacts of high-priority non-native and dominant native plant species on freshwater availability on Maui; assessment of groundwater availability in the Waikapu, Iao and Waihee aquifer systems; and a cooperative study with State Department of Hawaiian Homelands and the Office of Hawaiian Affairs to study groundwater recharge and availability in Moloka'i. No cost extensions were approved for the two latter studies. The findings of the studies and monitoring data 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 51 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 potential impacts on water resources and system infrastructure.

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### **Public Inquiries**

Approximately 92 verbal and written inquiries were fielded from the public, businesses, non-county agencies and consultants. Inquiries relate to topics such as water consumption, water production, rates, Upcountry priority list, hydrological data, water distribution system data, demand queries, water availability, water quality, source water assessment, meter data, best management practices, and conservation measures.

### **Conservation**

The department water conservation program initiates and implements measures designed to help reduce the overall water consumption in Maui County. Objectives include to continue to make improvements in survey, data and information collection related to water consumption, savings and losses. Major program components include an interdepartmental water audit, demand side measures and incentives to provide free water conserving solutions to the public such as high efficiency toilets and rain barrels. The division continues to encourage sustainable water efficient landscaping with native plants and provide community outreach through school presentations, public events and multiple media as described below.

### **Water Audit**

The water audit investigates water flow from production to customer billing throughout all the department's systems. Results from the fiscal year 2018 water audit inform data and system improvement needs to reduce water losses on the supply side. Leaks, reporting errors and data handling are areas of improvement for the department to consider.

### **Public Outreach**

Division staff participated in educational community events and presented to various community groups to inform the community about water conservation, source protection and the value of water resources. Continued use of iPads and digital surveys to gather data at events has helped to increase public interactivity. Advertisements in local newspapers, magazines and radio stations were published, reaching the broader community.

Three division staff were trained and certified as Project WET (Water Education for Teachers) instructors to train school teachers on water conservation and source protection. The division chief participated in the TV documentary "Forests for Life", produced by the state Department of Land and Natural Resources. Other events and direct outreach this fiscal year included:

- East Maui Taro Festival
- Molokai Hoolaulea
- Kamehameha School Sustainability Event
- St. Anthony High School presentation and tour of the Iao Water Treatment Facility
- Maui County Fair

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- Annual Water Conservation Grade School Poster Contest
- Second Annual Source Water Protection Video Contest
- Maui High School Conservation and Source Protection Presentation

### **Fixture Distribution**

<b><u>Fixture Type</u></b>	<b><u># of Fixtures</u></b>
Showerheads (1.25 – 1.5 gpm)	<b>478</b>
Bathroom Faucet Aerators (1.0 gpm)	<b>308</b>
Kitchen Faucet Aerators (1.5 gpm)	<b>423</b>
Hose Nozzles (max flow – 2.4 gpm)	<b>580</b>
Toilet Tank Bags (displace .08 gpf)	<b><u>90</u></b>
<b>Total</b>	<b>1879</b>

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

### **Rain Barrel Program**

The division launched its first Rain Barrel Catchment Program, distributing 200 50-gallon Ivy Rain Barrels to eligible DWS customers. The program is estimated 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.

### **Toilet Replacement Program**

92 vouchers for replacing old inefficient toilets were issued this fiscal year. Estimated 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 tenth Water Conservation Poster Contest continued to engage elementary and middle school students to showcase water conservation through artwork. Winning posters are featured in the 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**

The third 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 one-and-a-half to three minute-long video that address drinking water protection. The theme this year was "Clean Water, It's in your hands".

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### **Planning Information Systems**

The division maintained the following databases:

- 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 (geographic information system) data digitizing and updating various resource and infrastructure layers, including to the county MAPPS (Management Association for Private Photogrammetric Surveyors) Enterprise program.
- DWS water purchases from private purveyors.

### **Regulatory Compliance/ Council Requests & Bills**

- Responses were coordinated for Sanitary Survey Reports for the Lahaina and Upper Kula systems.
- Annual updates to six Emergency Action Plans for department reservoirs were completed.
- Tracking and modification requests for current water use permits in Groundwater Management Areas to ensure pumping compliance on a 12-month moving average basis.
- Tracked relevant water industry bills and responded to 11 requests for information from County Council on various matters.

### **Water Use & Development Plan**

The final Draft update to the Maui Island Water Use and Development Plan (WUDP) was submitted to the Board of Water Supply in August 2018. The Board held five public hearings and recommended support of the Draft Plan in January 2019. The plan was submitted by the Department to the County Council in March 2019 for adoption by ordinance. Targets for FY20 are approval by County Council, briefings to the Commission on Water Resource Management, and outreach on Moloka`i to advance the public process for the Moloka`i WUDP Update.

## **WATER RESOURCES AND PLANNING DIVISION - MAJOR ACCOMPLISHMENTS**

- Staff coordinated a contract with Harris & Associates as consultant to assist DWS in the development of a first department-wide strategic plan. Phase 1 of the strategic plan was successfully completed this fiscal year. All divisions contributed generously in identifying business processes, gaps and a long term vision for the department. Contracting the next phase of the strategic plan is a FY20 objective.
- A water audit for calendar year 2018 based on current AWWA standards and software was completed in accordance with Act 169. The water audit helps inform

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and prioritize department data and infrastructure needs, including meter replacement and data handling.

- The division contracted design and system installation of a grey water system at Launiupoko Beach 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. The design was completed for this project as an interdepartmental effort between DWS and the Parks & Recreation Department. The effort caught the attention of the State Legislature resulting in appropriation of state capital funds to design and build a second greywater reuse system at Kanaha Beach Park, starting FY20.
- In collaboration with the County Information Technology Services Division, the division completed design of a web sub-site for better public outreach. This project meets the need to reach all demographic types that are more online media savvy. The division applied the enterprise system CivicPlus to design a custom sub-site and module for future mobile application which can collect customer information, and relay all matters, events and information at the division.

### **WATER RESOURCES AND PLANNING DIVISION - FISCAL YEAR 2020 GOALS**

- 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.
- Adoption by ordinance of the Maui Island Water Use and Development Plan by the County Council is anticipated by the end of FY20. The plan must subsequently be approved by the Commission on Water Resource Management, anticipated no later than in FY21.
- Consulting contract and advancing the public process for development of the Molokai Water Use and Development Plan is anticipated to be underway during FY20.
- Grey water reuse system for Kanaha Beach Park, design contract and county permit processing is expected to be completed in FY20.
- Phase 2 of the department's strategic plan will identify and prioritize projects and programs, the tools and resources needed for implementing strategic actions that will meet department goals and address challenges in a changing water industry. Procurement of a consultant contract is expected in FY20 and Phase 2 completion in FY21.

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### **FISCAL/CUSTOMER SERVICES DIVISION**

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The Fiscal Division is committed to maintaining fiscal responsibility while focusing on our customer service for both external and internal customers. Fiscal operates with internal goals concurrent with water utility industry practices for strengthening our financial future. These goals include meeting or exceeding debt coverage requirements and maintaining responsible cash levels. The division has a staff of 22.

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. 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 FY19.

DWS is the only County department that has its own payroll staff; all other departments use the Payroll Section of the Finance Department for the processing of payroll. The Fiscal Accounting section put in hundreds of hours preparing for the implementation of the new Workday HR and Payroll system over the past year, including converting a number of divisions within Water from paper to online time tracking.

#### **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 \$1.6M in inventory with the challenge of staff at one person for most of FY19.

#### **Customer Service**

The Customer Service section is responsible for payment processing and addressing customer concerns for more than 36,700 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

## **DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT**

issues. Despite technological and staffing challenges, in FY19 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 FY19, this section continued to gather timely and accurate meter readings despite staffing challenges.

### **Fiscal Year 2020 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. This process will be ongoing for a few years.

Like many other divisions in the County, the Fiscal Division will experience a series of staff retirements in FY20 and the ensuing five years. We need to create, evaluate, and 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.

The Division is working on the Meter Replacement program which will take about five years to complete. We completed a study to assess current conditions of our commercial and residential meters. We will soon be determining a meter replacement schedule for all Department water meters.

With the first phase of a department-wide strategic plan completed, the Fiscal Division will work in support of our second phase.

For a many years the DWS co-hosted its customer service and billing data base with the Honolulu Board of Water Supply and then the County of Kauai. During FY19 the DWS separated from the County of Kauai and launched its own billing data base, Customer Care & Billing, with the assistance of Prithibi Consulting Services. The transition was seamless for our customers and the ability to operate our own single user system has provided numerous additional options and benefits for the department.

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### ADMINISTRATION DIVISION

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Administration provides overall support to the department, including management, safety, human resources, and public relations. Administrative staff prepared daily water supply updates for Upcountry, prepared press releases, and managed the DWS website, [www.mauiwater.org](http://www.mauiwater.org).

Our **Safety Section** updated Chlorine Response Plan for Plant Operations, worked with our Water Treatment division to update the Process Safety Management Plan and we updated the Lockout/Tagout Plan. Shooter awareness presentations from the Maui Police Department were shared throughout the County in FY19, and was held for Field and Plant Operations staff in May. Remote Access Team training was held in May and June and consisted of Wilderness First Aid and Rope and Rappelling skills. COM Risk Management conducted both Short Duration Traffic Control and Flagging classes for Field Operations staff in March.

Administration personnel also maintained the **Human Resources** for the department: onboarding, position reallocations, promotions, transfers, reorganizations, leave accruals, enforcement of County policies, administering workers compensation; relations with unions; drug and alcohol testing for UPW employees, training, and providing service to our customers, our employees.

**James Landgraf**, Upcountry Water Treatment Plant Operator IV, was our DWS Employee of the Year for 2018. Nominated by WTP Division Chief Tony Linder and WPT O/M Supervisor Marvin Ignacio, James' technical expertise and knowledge of the Upcountry water system was instrumental for developing strategies to control Lower Kula disinfection by-product levels while saving money for customers. He is described as a technical expert, helpful, level headed, a team player who, "makes his supervisor's job easier".

Field Operations Water Services Supervisor II, **Cullen Falces**, was our 2018 DWS Management Employee of the Year. Cullen has been with DWS since he was hired as a Laborer II in 1980, holding a variety of positions, which has led to him having deep knowledge of the entire county water system. He frequently the stand-by captain, working long hours at night then reporting to work the next day to delegate assignments. Cullen was nominated by Field Operation Division Chief Bobby Vida.

The 2018 DWS Team of the Year was our Field Operations Dispatch Team of Clerk-Dispatcher II **Barbara Watanabe** and Clerk III **Avismarie Lei Salazar**. They are described as organized multi-taskers, thoughtful listeners who take the time to understand the purpose of each call and deal with the customers' needs with composure and professionalism. They were nominated by Bobby Vida and Water Service Clerk-Dispatcher Charlene Sakamoto.

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### Perfect Attendance for Calendar Year 2018

Harry Aki	Cullen Falces	Warren Sardinha
Leonore Amano	Ray Hirata	Dean Tanimoto
Kekoa Babcock	Richard Okuda	Wendy Taomoto
Jason Bisera	Michele Sakuma	Jimmy Yanos

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

#### **10 Years**

Lance Boteilho  
Benjamin Buttarro  
Charles Decambra  
Conrad DeRego  
Lawrence Lee  
Misty Medina  
Christopher Otsuka  
Eugene Quemado

#### **15 Years**

Leon Burgos  
Edward Cabo  
Kimo Ching  
Bronson Gonsalves  
Pierson Kapuni  
Jase Miyabuchi  
Chad Otake  
Verna Pacheco

#### **20 Years**

Eva Blumenstein  
Freddy Lee Keahi  
Jonathan Takushi

#### **25 Years**

Holly Ho  
Ryan Nagoshi  
Rodney Nishida  
Troy Rickard

#### **30 Years**

Teri Evans  
Richard Okuda

#### **40 Years**

Michele Sakuma

At the end of FY19, the Department of Water Supply had a head count of 200 employees. Also this fiscal year, we welcomed 23 new hires, processed ten internal promotions, reallocated 12 employees into a higher position and honored four retirements.

The department also mourned the passing of long-time DWS employee Keala Waiau.

New Hires for FY19, by division:

Water Treatment Operations: Mr. Andrew-James Landgraf, Patrick Hannon, Keiven Murashige; Fiscal/Customer Service: Julie Powers, James Henry, Trent Helle, Kawena Tom, Cy Yoshizu, Scott Curran, Mark Walker; Plant Operations: Juan Nerveza, Jr., Juleen Flory, Christopher Kawaguchi, Gary Perreira, Jr.; Engineering: Rongchao Bi, Bonnie Saust; Field Operations: Eric A Okazaki, Jarrett Sakamoto, Kamuela Dizon, Sione Houa, Christian Tan, Kurt Yamamura, Jesse Mendes.

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Promotions for FY19, former position to new position:

Atoa Phillip, Laborer II to Pipefitter Helper; David Kinney, Pipefitter I to Waterworks Inspector II; Julie Powers, Pre-Audit Clerk to Acct Clerk III; Keiven Murashige, Water Treatment Plant Worker to WTPO Trainee; Neilson Waikiki, Laborer II to Pipefitter Helper; Pualani Fukuda, Laborer II to Pipefitter Helper; Stacey Quiniones, Laborer II to Pipefitter Helper; Teresa Rebolledo, Pre-Audit Clerk to Land Use Permit Clerk; Tyson Kauhi, Pipefitter Helper to Pipefitter II; Willie Ramos, Laborer II to Pipefitter Helper.

Reallocations for FY19, former position to new position:

Andrew-James Landgraf, WTPO Trainee to WTPO II; Ashley Laroya, Civil Engineer I to Civil Engineer II; Jenny Lista, Customer Service Rep I to Customer Service Rep II; Lori DelBello, Staff Services Assistant to Secretary I; Lori Perreira, Accountant I to Accountant II; Miki Mukai, WTPO Trainee to WTPO II; Kekoa Walton, Civil Engineer III to Civil Engineer IV; Lory Quipotla, Customer Service Rep I to Customer Service Rep II; Umialiloa Harding, Water Microbiologist I to Water Microbiologist II; Lucas Schlueter, WTPO Trainee to WTPO II; Jason Koskey, WTPO II to WTPO IV; Curtis Eaton, Civil Engineer IV to Civil Engineer V.

Retirements for FY19!

John Cavaco; Paul Silva; Timothy Galbraith; Wesley Nishida

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### GOALS AND OBJECTIVES FOR FISCAL YEAR 2019

Program Goal	Success Measure	FY 2019 Estimate	FY 2019 Actual
Goal #1: Provide reliable, top quality water service at reasonable cost.	% of CIP design projects within schedule	100%	67%
	Maintaining a three month operations reserve fund	100%	100%
	In-house completion of Water Use Development Plan	N/A	N/A
	Complete public process	N/A	N/A
Goal #2: Recruit and retain needed staff.	# of staff promoted or obtaining new certifications	30	17
	# of staff training/educational opportunities provided	300	383
	% of annual evaluations completed on time	80%	56%
	# of completed and returned hard copy surveys	N/A	N/A
	Compilation of results	N/A	N/A
Goal #3: Improve public relations and customer service	# of flyers inserted in bills	4	0
	% of surveys completed and returned	50	0%
	Compilation of results	100%	N/A
	Follow-up on findings	100%	N/A
	# of completed on-line surveys	15	0
	Follow-up on findings	100%	N/A
	# of Upcountry List requests processed	75	60
Average days for single family residential permit review	20	28	
Goal #4: Support a sustainable water supply.	# of actionable watershed management plans in place	11	11

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**GOALS AND OBJECTIVES FOR FISCAL YEAR 2019 CON'T**

<b>Program Goal</b>	<b>Success Measure</b>	<b>FY 2019 Estimate</b>	<b>FY 2019 Actual</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.	# of system outages or water restrictions due to facility shutdown or deficient water quality	0	0
	# of water quality violations received	0	0
	# of samples analyzed to meet regulatory requirements	15,000	15,519
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.	Cost of repair and maintenance	\$500,000	\$339,896
	# of well pumps replaced	4	1
	# of booster pumps replaced	2	1
Goal #3: Water loss prevention to ensure service lines are efficient and reliable in ensuring minimal interrupted service.	# of miles of mainline inspected for leaks	900	300
	# of mainlines repaired	150	206
	# of feet of mainline replaced	12,000	2,350

## DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

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### BOARD OF WATER SUPPLY

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#### **Board of Water Supply - Annual Report July 2018 to June 2019 (FY 2019)**

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.

The board reviews the department's operating and capital improvements budget, the department's requests 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 eleven times and one meeting was canceled due to lack of a quorum. A total of five public hearings were held on the draft of the Maui Island Water Use and Development Plan.

As a result of the five public meetings held throughout the island, the board provided a written outline to the director dated January 22, 2019, identifying the issues and comments from the public and the board.

At the February 21, 2019, meeting the board unanimously voted to support the department's proposed FY20 Operations and Capital Improvements Budget.

At the March 15, 2018, meeting the board bade farewell to Members Anders Lyons, Raymond Cabebe and Sylvia Ho and acknowledged and thanked them for their five years of faithful service. At the April 18, 2019, meeting the board welcomed two new members, Dr. Hanna Mounce and Buddy James Nobriga. At the June 20, 2019, meeting, the board welcomed one new member, Antonette G. Eaton.

A total of five appeals were filed. Three of the appeals were settled or withdrawn. Currently two appeals are scheduled for hearing before the board on November 21, 2019, and April 16, 2020.

DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

BOARD OF WATER SUPPLY

COUNTY OF MAUI

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MEMBER ROSTER as of June 30, 2019  
2019 - 2020

<u>MEMBERS</u>	<u>TERM EXPIRES</u>
Shay Chan Hodges (Haiku)	03/31/2021
Zoltan Milaskey (Lahaina)	03/31/2021
Norman Franco (Kahului)	03/31/2022
Michael Nakashima (Wailuku)	03/31/2022
Joseph Aquino (Lahaina)	03/31/2023
Dean Frampton (Pukalani)	03/31/2023
Dr. Hanna Mounce (Makawao)	03/31/2024
Buddy James Nobriga (Wailuku)	03/31/2024
Antonette Eaton (Wailuku)	03/31/2024

Michele Chouteau McLean, Director of Planning, Ex-Officio Member  
Rowena Dagdag-Andaya, Director of Public Works, Ex-Officio Member

Edward S. Kushi, Jr., First Deputy Corporation Counsel

## DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

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### CHANGES IN ADMINISTRATIVE RULES AND ORDINANCES

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Two new Administrative Rules were adopted in FY19:

[Amendments to Title 16, Chapter 201, Rules Relating to Water Service](#)

[Amendments to Title 16, Chapter 202, Rules Relating to Water Meter Reservations](#)

Two new ordinances to amend Maui County Code as it relates to water were approved by the Maui County Council effective January 29, 2019:

[Ordinance 4970: Relating to the Deadline for Response to a Upcountry Water Meter Offer](#)

[Ordinance 4971: Relating to the Duration of a Water Meter Reservation](#)

Also, [Rates, Fees, Assessments and Taxes as it relates to water for FY20](#) were approved by the Maui County Council and are effective July 1, 2019.

## DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

### 10<sup>TH</sup> ANNUAL WATER CONSERVATION POSTER CONTEST

### 3<sup>RD</sup> ANNUAL SOURCE WATER PROTECTION VIDEO CONTEST

The Department of Water Supply (DWS) is pleased to announce the winners of its 10<sup>th</sup> Annual Water Conservation Poster Contest and the 3<sup>rd</sup> Annual Source Water Protection Video Contest.

DWS received outstanding artwork from students from Kindergarten to Grade 8 and video entries from high school students. The panel of volunteer judges were immensely impressed by the talent displayed by our youth through their drawings and video recordings.

The theme for this year's poster contest is "**Conserving Water Starts with YOU**". Submitted artwork was judged based on three criteria: water conservation message, originality, and visual effectiveness (neatness and creativity).

The theme for the video contest is "**Clean Water, It's In Your Hands**". Protecting source water from contamination reduces risks to public health from exposure to contaminated water, minimizes potentially negative environmental impacts on our natural resources, and reduces water treatment costs. In creative videos, high school students expressed their understanding of the importance of protecting and preserving Maui's drinking water.

Winning posters will be featured in the 2020 DWS Water Conservation Calendar, on the department website at [www.mauiwater.org](http://www.mauiwater.org) and will be on display at the 5<sup>th</sup> floor of the County Building for one year. [Winning videos will also be available to watch on the department website.](#)

DWS would like to extend a sincere mahalo to our panel of judges for the poster contest: Ms. Barbara Silverstein, a retired art teacher, Ms. Debbie Von Tempsky, an artist and Ms. Kimberly Thayer, Program Associate at West Maui Mountains Watershed Partnership. Video entries were judged by DWS staff.

#### CONGRATULATIONS TO THE WINNERS: 10<sup>th</sup> Annual Water Conservation Poster Contest

##### KINDERGARTEN

<b>First Place</b>	Meiko Kurokawa, Kamehameha Schools of Maui
<b>Second Place</b>	Gracie Cunningham, Haiku Elementary School
<b>Third Place</b>	Chloe Tun, Haiku Elementary School
<b>Honorable Mention</b>	Coraline Unrhu, Sacred Hearts School
	Netane Savou, Haiku Elementary School
	Anastasia Momoa-Smythe-Winter, Haiku Elementary School

##### GRADES 1 & 2

<b>First Place</b>	Sadie Ledesma, Grade 1, Makawao Elementary School
<b>Second Place</b>	Kayo Wallace, Grade 1, Makawao Elementary School
<b>Third Place</b>	Juliette Schullerts, Grade 1, Carden Academy of Maui
<b>Honorable Mention</b>	Kamalei Leynes-Santos, Grade 1, Makawao Elementary School
	Mason Kurokawa, Grade 2, Pu'u Kukui Elementary School
	Yaretzi A. Martinez, Grade 2, Sacred Hearts School

## DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT

### GRADES 3 & 4

<b>First Place</b>	Jaimie Mamuad, Grade 3, Kihei Elementary School
<b>Second Place</b>	Emily Kermode, Grade 3, Haiku Elementary School
<b>Third Place</b>	Kristen Rimorin, Grade 3, Waihe'e Elementary School
<b>Honorable Mention</b>	Waile'a Ward, Grade 3, Kilohana Elementary School Samantha Kate Ribao, Grade 3, Waihe'e Elementary School Matthew Villon, Grade 3, Waihe'e Elementary School

### GRADES 5 & 6

<b>First Place</b>	Bea Magaoay, Grade 6, Maui Waena Intermediate School
<b>Second Place</b>	Andrew Thomas Vito Chavez, Grade 5, Kahului Elementary School
<b>Third Place</b>	Karisa Bayudan, Grade 6, Sacred Hearts School
<b>Honorable Mention</b>	Gabryella Gagala Salmon, Grade 5, Princess Nahienaena School Rose-Marie Cockett, Grade 6, Kaunakakai Elementary School Micah Sijalbo, Grade 6, Maui Waena Intermediate School

### GRADES 7 & 8

<b>First Place</b>	Sequoia Crane, Grade 7, Haleakala Waldorf School
<b>Second Place</b>	Sophia Salvador, Grade 8, Kihei Charter School
<b>Third Place</b>	Lea Bartlett, Grade 7, Haleakala Waldorf School
<b>Honorable Mention</b>	Emily Coflin, Grade 7, Haleakala Waldorf School Manolo Ruiz, Grade 7, Maui Waena Intermediate School Dillon Gunderson, Grade 7, Maui Waena Intermediate School

### 3<sup>rd</sup> Annual Source Protection Video Contest

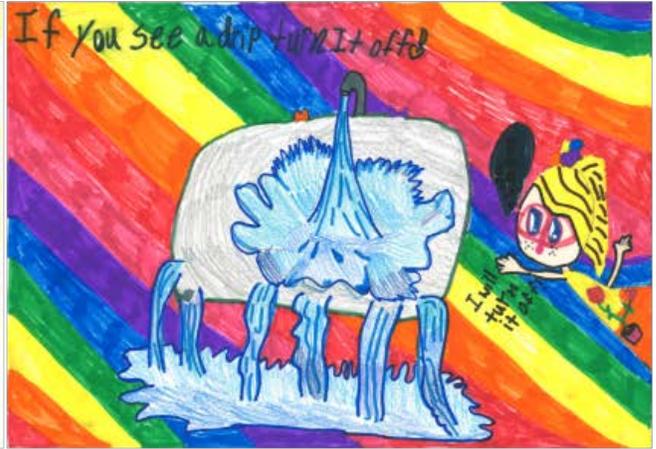
<b>First Place</b>	<b>Video Title: YES TO CLEAN WATER</b> Baldwin High School Team Members: Kimberly Navarro, Lynn Luu, Raymond Tanaka
<b>Second Place</b>	<b>Video Title: WATER, WE CARE ("WAI, MALAMA MAKOU")</b> Baldwin High School Team Members: Kazzandra Anton, Melissa Caliva, Czaresse Piano, Kendall Taomoto
<b>Third Place</b>	<b>Video Title: WAI MA'EMA'I</b> Kamehameha Schools Maui – Lilia Davis
<b>Runner-Up</b>	<b>Video Title: CLEAN WATER, IT'S IN YOUR HANDS</b> Moloka'i High School Team Members: Isaiah Sahagun, Kalei Cummings, Maria Angst

***MAHALO TO ALL OF THE TEACHERS, STUDENTS AND PARENTS  
FOR YOUR SUPPORT OF OUR  
WATER CONSERVATION and SOURCE WATER PROTECTION PROGRAMS***

DEPARTMENT OF WATER SUPPLY - FY 2019 ANNUAL REPORT



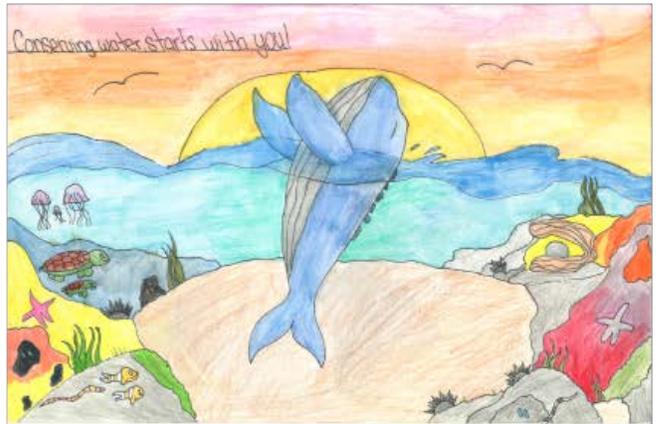
**KINDERGARTEN - First Place**  
Meiko Kurokawa  
Kamehameha Schools of Maui



**GRADES 1 & 2 - First Place**  
Sadie Ledesma, Grade 1  
Makawao Elementary School



**GRADES 3 & 4 - First Place**  
Jaimie Mamuad, Grade 3  
Kihei Elementary School



**GRADES 5 & 6 - First Place**  
Bea Magaoay, Grade 6  
Maui Waena Intermediate School



**GRADES 7 & 8 - First Place**  
Sequoia Crane, Grade 7  
Haleakala Waldorf School

**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 Years Ended June 30, 2019 and 2018



FY19 Audit

AMERICAN SAVINGS BANK TOWER | 1001 BISHOP STREET, SUITE 1700 | HONOLULU, HAWAII 96813-3696  
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**DEPARTMENT OF WATER SUPPLY  
COUNTY OF MAUI**

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**PART I**  
**FINANCIAL SECTION**

## INDEPENDENT AUDITOR'S REPORT

To the Honorable Kelly King, 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 years ended June 30, 2019 and 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 audits. We conducted our audits 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, 2019 and 2018, and the changes in its financial position and its cash flows for the fiscal years 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, 2019 and 2018, the changes in its financial position, or its cash flows for the fiscal years 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.

### **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 information that accounting principles generally accepted in the United States of America require to be presented to supplement the basic financial statements. Such missing information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. Our opinion on the basic 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 for the fiscal year ended June 30, 2019 and of long-term debt - general obligation bonds as of June 30, 2019 are presented for purposes of additional analysis and are not a required part of the basic 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 basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic 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 basic 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 20, 2019 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 20, 2019

**Department of Water Supply  
County of Maui  
STATEMENTS OF NET POSITION  
June 30, 2019 and 2018**

	<b>2019</b>	<b>2018</b>
<b>CURRENT ASSETS</b>		
Equity in pooled cash and investments held in County Treasury	\$ 70,510,717	\$ 62,131,066
Customer receivables		
Billed	4,416,275	4,401,711
Less: allowance for doubtful accounts	(61,346)	(72,649)
	4,354,929	4,329,062
Unbilled	3,063,164	2,908,443
Total customer receivables	7,418,093	7,237,505
Materials and supplies	1,673,652	1,698,198
Other current assets	213,583	202,425
Total current unrestricted assets	79,816,045	71,269,194
<b>RESTRICTED ASSETS</b>		
Equity in pooled cash and investments held in County Treasury	35,245,317	23,125,025
Total current assets	115,061,362	94,394,219
<b>CAPITAL ASSETS</b>		
Utility plant in service	634,482,747	602,043,460
Less accumulated depreciation	(318,692,910)	(302,840,984)
	315,789,837	299,202,476
Land	7,905,059	7,905,059
Construction work in progress	34,418,791	48,842,240
Total capital assets	358,113,687	355,949,775
<b>TOTAL ASSETS</b>	<b>473,175,049</b>	<b>450,343,994</b>
<b>DEFERRED OUTFLOWS OF RESOURCES</b>		
Deferred outflows of resources related to pensions	9,305,359	10,226,083
Deferred outflows of resources related to OPEB	3,451,852	2,528,321
Unamortized loss on advanced refunding	116,702	132,986
<b>TOTAL DEFERRED OUTFLOWS OF RESOURCES</b>	<b>12,873,913</b>	<b>12,887,390</b>
<b>TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES</b>	<b>\$ 486,048,962</b>	<b>\$ 463,231,384</b>

See accompanying notes to financial statements.

**Department of Water Supply  
County of Maui  
STATEMENTS OF NET POSITION (Continued)  
June 30, 2019 and 2018**

	2019	2018
<b>CURRENT LIABILITIES</b>		
Payable from unrestricted current assets		
Bonds payable, current portion	\$ 2,950,708	\$ 2,578,899
Notes payable, current portion	2,349,064	1,602,385
Accounts payable	2,746,346	2,734,547
Accrued vacation, current portion	865,175	804,619
Accrued compensatory time off	114,265	125,292
Construction contracts payable, including retainages	2,528,146	302,701
Claims and judgments	512,940	844,093
Accrued interest payable	382,214	373,350
Customer advances for utility construction	305,091	179,886
	12,753,949	9,545,772
Payable from restricted assets		
Construction contracts payable, including retainages	788,574	2,283,651
Customer deposits	758,279	677,427
Refundable advances	1,000,000	1,000,000
	2,546,853	3,961,078
Total current liabilities	15,300,802	13,506,850
<b>NON-CURRENT LIABILITIES</b>		
Bonds payable, non-current portion	20,468,354	19,140,428
Notes payable, non-current portion	43,048,918	44,520,699
Net pension liability	41,040,357	39,254,115
Net OPEB liability	23,903,694	24,037,169
Accrued vacation, non-current portion	888,390	1,061,193
Total non-current liabilities	129,349,713	128,013,604
<b>TOTAL LIABILITIES</b>	144,650,515	141,520,454
<b>DEFERRED INFLOWS OF RESOURCES</b>		
Deferred inflows of resources related to pensions	671,167	986,678
Deferred inflows of resources related to OPEB	720,112	285,812
<b>TOTAL DEFERRED INFLOWS OF RESOURCES</b>	1,391,279	1,272,490
<b>NET POSITION</b>		
Net investment in capital assets	291,816,714	290,547,253
Restricted	32,155,789	20,211,812
Unrestricted	16,034,665	9,679,375
<b>TOTAL NET POSITION</b>	340,007,168	320,438,440
<b>TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION</b>	\$ 486,048,962	\$ 463,231,384

See accompanying notes to financial statements.

**Department of Water Supply  
County of Maui  
STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION  
Fiscal Years Ended June 30, 2019 and 2018**

	<u>2019</u>	<u>2018</u>
<b>OPERATING REVENUES</b>		
Water sales	\$ 63,672,230	\$ 63,352,395
Other revenues	<u>788,221</u>	<u>944,997</u>
Total operating revenues	<u>64,460,451</u>	<u>64,297,392</u>
<b>OPERATING EXPENSES</b>		
Administrative and general	17,203,664	19,763,706
Depreciation and amortization	15,867,467	15,043,935
Power and pumping	12,640,326	11,455,472
Transmission and distribution	7,635,342	7,063,206
Purification	6,724,199	6,540,239
Customers' accounting and collection	1,619,674	2,183,997
Source of supply	<u>621,098</u>	<u>484,003</u>
Total operating expenses	<u>62,311,770</u>	<u>62,534,558</u>
Operating income	<u>2,148,681</u>	<u>1,762,834</u>
<b>NONOPERATING INCOME (EXPENSES)</b>		
Interest expense, net of interest capitalized of \$-0- for 2019 and \$122,234 for 2018	(1,239,270)	(902,414)
Interest and investment income (losses)	3,908,681	(220,030)
Other income	<u>474,554</u>	<u>--</u>
Total nonoperating income (expenses)	<u>3,143,965</u>	<u>(1,122,444)</u>
Income before capital contributions	5,292,646	640,390
Capital contributions	<u>14,276,082</u>	<u>11,865,652</u>
Change in net position	19,568,728	12,506,042
<b>NET POSITION</b>		
Beginning of year	<u>320,438,440</u>	<u>307,932,398</u>
End of year	<u>\$ 340,007,168</u>	<u>\$ 320,438,440</u>

See accompanying notes to financial statements.

**Department of Water Supply  
County of Maui  
STATEMENTS OF CASH FLOWS  
Fiscal Years Ended June 30, 2019 and 2018**

	<u>2019</u>	<u>2018</u>
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
Cash received from customers and others	\$ 64,254,052	\$ 63,863,909
Payments to suppliers for goods and services	(25,310,594)	(26,655,016)
Payments to employees for services	(19,038,021)	(18,411,425)
Utility construction advances (refunds)	<u>206,057</u>	<u>(13,966)</u>
Net cash provided by operating activities	<u>20,111,494</u>	<u>18,783,502</u>
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
Interest and investment income (losses) received from investments	<u>3,908,681</u>	<u>(220,030)</u>
Net cash provided by (used in) investing activities	<u>3,908,681</u>	<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	(13,379,474)	(23,235,635)
Principal paid on bonds and notes payable	(8,512,692)	(3,845,158)
Proceeds from bonds and notes payable	9,830,336	18,352,460
Cash received from capital contributions and other	10,098,731	4,384,687
Interest paid on bonds and notes payable	<u>(1,557,133)</u>	<u>(1,472,906)</u>
Net cash used in capital and related financing activities	<u>(3,520,232)</u>	<u>(5,816,552)</u>
<b>NET INCREASE IN CASH AND CASH EQUIVALENTS</b>	<b>20,499,943</b>	<b>12,746,920</b>
<b>CASH AND CASH EQUIVALENTS AT BEGINNING OF FISCAL YEAR</b>	<u>85,256,091</u>	<u>72,509,171</u>
<b>CASH AND CASH EQUIVALENTS AT END OF FISCAL YEAR</b>	<b>\$ <u>105,756,034</u></b>	<b>\$ <u>85,256,091</u></b>
<b>RECONCILIATION OF CASH AND CASH EQUIVALENTS TO THE STATEMENT OF NET POSITION</b>		
Unrestricted	\$ 70,510,717	\$ 62,131,066
Restricted	<u>35,245,317</u>	<u>23,125,025</u>
	<b>\$ <u>105,756,034</u></b>	<b>\$ <u>85,256,091</u></b>

See accompanying notes to financial statements.

**Department of Water Supply  
County of Maui  
STATEMENTS OF CASH FLOWS (Continued)  
Fiscal Years Ended June 30, 2019 and 2018**

	2019	2018
<b>RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES</b>		
Operating income	\$ 2,148,681	\$ 1,762,834
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation and amortization	15,867,467	15,043,935
Provision for doubtful accounts	26,162	92,497
Loss on disposal	--	2,392
Changes in assets, deferred outflows, liabilities and deferred inflows:		
Customer receivables	(206,750)	(564,113)
Materials and supplies	24,546	(163,722)
Other current assets	(11,158)	1,353,581
Deferred outflows of resources related to pensions	920,724	2,744,247
Deferred outflows of resources related to OPEB	(923,531)	(114,543)
Accounts and construction contracts payable	802,767	(100,412)
Claims and judgments	(331,153)	(832,625)
Other liabilities and deposits	22,183	(312,936)
Net pension liability	1,786,242	119,756
Net OPEB liability	(133,475)	(230,009)
Deferred inflows of resources related to pensions	(315,511)	(303,192)
Deferred inflows of resources related to OPEB	434,300	285,812
	\$ 20,111,494	\$ 18,783,502
<b>SUPPLEMENTAL DISCLOSURE OF NONCASH CAPITAL AND RELATED FINANCING ACTIVITIES</b>		
Capital contributions	\$ 4,651,905	\$ 7,480,965
Amortization of deferred loss on refunding	\$ 16,284	\$ 25,309
Amortization of deferred gain on refunding	\$ --	\$ 180,272
Amortization of bond premium	\$ 343,011	\$ 364,292

See accompanying notes to financial statements.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2019 and 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, 2019 and 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. 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, 2019 and 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, 2019 and 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 statements 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, 2019 and 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. 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 determined that this statement does not have a material impact 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 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 adopted the applicable requirements of this new standard as presented in the Department's financial statements.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2019 and 2018**

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

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 has adopted the applicable requirements of this new standard as presented in the Department's financial statements.

The GASB issued Statement No. 90, *Majority Equity Interests - an amendment of GASB Statements No. 14 and No. 61*. The primary objectives of this Statement are to improve the consistency and comparability of reporting a government's majority equity interest in a legally separate organization and to improve the relevance of financial statement information for certain component units. It defines a majority equity interest and specifies that a majority equity interest in a legally separate organization should be reported as an investment if a government's holding of the equity interest meets the definition of an investment. 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. 91, *Conduit Debt Obligations*. The primary objectives of this Statement are to provide a single method of reporting conduit debt obligations by issuers and eliminate diversity in practice associated with (1) commitments extended by issuers, (2) arrangements associated with conduit debt obligations, and (3) related note disclosures. This Statement achieves those objectives by clarifying the existing definition of a conduit debt obligation; establishing that a conduit debt obligation is not a liability of the issuer; establishing standards for accounting and financial reporting of additional commitments and voluntary commitments extended by issuers and arrangements associated with conduit debt obligations; and improving required note disclosures. The requirements of this Statement are effective for reporting periods beginning after December 15, 2020. 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, 2019, and 2018, the amounts reported on the statements 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 \$105,756,034 and \$85,256,091, respectively.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2019 and 2018**

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

**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.

**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, 2019 and 2018 were as follows:

	2019	2018
AA+	\$ 238,841,727	\$ 171,781,995
AA	16,357,625	4,210,742
Not rated	30,123,065	33,212,686
	\$ 285,322,417	\$ 209,205,423

**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.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2019 and 2018**

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

**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, 2019 and 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.

The Department's share of the County's cash and investment pool, as summarized in the tables below was approximately 21.6% and 24.6% at June 30, 2019, and 2018, respectively.

As of June 30, 2019, 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	\$ --	\$ 7,595,000	\$ 4,000,000	\$ 14,970,000	\$ (102,252)	\$ 26,462,748
Federal Home Loan Bank Bank Notes	1.40 - 3.30	--	2,000,000	11,500,000	70,500,000	492,040	84,492,040
Federal Farm Credit Bank Notes	1.88 - 3.05	--	--	--	76,223,000	1,828,090	78,051,090
Federal Agricultural Mortgage Corporation Notes	2.40 - 2.55	--	--	--	7,000,000	112,140	7,112,140
Federal Home Loan Mortgage Corporation Notes	1.08 - 2.55	2,000,000	2,000,000	--	39,030,000	178,775	43,208,775
Tennessee Valley Authority Notes	2.33 - 2.72	--	--	1,000,000	5,000,000	159,800	6,159,800
U.S. Treasury Strips	1.94	--	--	--	2,000,000	(99,460)	1,900,540
U.S. Treasury Notes	1.78 - 3.04	--	3,500,000	5,000,000	6,000,000	(42,915)	14,457,085
Municipal Securities	1.25 - 3.26	570,000	8,325,000	--	14,430,000	153,199	23,478,199
Negotiable certificates of deposit	0.10 - 3.50	1,000,000	6,750,000	13,450,000	43,190,000	152,553	64,542,553
Total investments		\$ 3,570,000	\$ 30,170,000	\$ 34,950,000	\$ 278,343,000	\$ 2,831,970	349,864,970
						Cash on hand and deposits	138,908,976
						Total equity in pooled cash and investments	\$ 488,773,946

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2019 and 2018**

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

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, 2019 and 2018 include funds for the following purposes:

	<u>2019</u>	<u>2018</u>
Board-designated		
Capital improvements	\$ 25,003,684	\$ 22,660,639
Debt service	<u>2,512,154</u>	<u>1,824,158</u>
Total board-designated	27,515,838	24,484,797
Undesignated	<u>42,994,879</u>	<u>37,646,269</u>
Total	\$ <u>70,510,717</u>	\$ <u>62,131,066</u>

At June 30, 2019 and 2018, construction contract payables, including retentions, to be paid with board-designated funds were approximately \$1.1 million and \$200,000, respectively. Construction contract commitments as of June 30, 2019 and 2018, to be paid with board-designated funds, aggregated approximately \$10.4 million and 4.6 million, respectively. There are no amounts included in the construction contract commitment amounts for 2019 and 2018 for maintenance of compliance-order projects and no amounts included for management's estimates needed in anticipation of future regulations for compliance.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2019 and 2018**

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

Restricted equity in pooled cash and investments held in County Treasury consisted of the following at June 30, 2019 and 2018:

	2019	2018
Water system development fee	\$ 20,433,487	\$ 13,231,669
State funds	11,183,829	6,440,718
Bond funds	2,403,368	2,306,902
Customer deposits	758,279	677,428
Special assessment fund for storage	273,829	273,829
Source development fund assessments	192,525	192,525
Federal funds	--	1,954
Total	\$ 35,245,317	\$ 23,125,025

At June 30, 2019, and 2018 construction voucher and contract payables, including retentions, to be paid with restricted assets were approximately \$500,000 and \$1.8 million, respectively. Construction contract commitments as of June 30, 2019 and 2018, to be paid with restricted assets, aggregated approximately \$7.4 million and 11.2 million, respectively.

**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.

**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.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2019 and 2018**

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

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

Following is a description of the valuation techniques used by the County 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, 2019 and 2018:

	Assets at Fair Value at June 30, 2019			
	Total	Level 1	Level 2	Level 3
U. S. Treasury obligations	\$ 16,357,625	\$ 16,357,625	\$ --	\$ --
U. S. government agency obligations	245,486,593	--	245,486,593	--
Municipal securities	23,478,199	--	23,478,199	--
Negotiable certificates of deposit	<u>64,542,553</u>	<u>--</u>	<u>64,542,553</u>	<u>--</u>
	<u>\$ 349,864,970</u>	<u>\$ 16,357,625</u>	<u>\$ 333,507,345</u>	<u>\$ --</u>

	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>

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2019 and 2018**

**NOTE 4 - RESTRICTED NET POSITION**

At June 30, 2019 and 2018, restricted net position consisted of the following:

	<u>2019</u>	<u>2018</u>
Water system development fee	\$ 20,433,487	\$ 13,231,669
Special assessment fund for storage	273,829	273,829
Source development fund assessments	192,525	192,525
Other restricted funds	<u>11,255,948</u>	<u>6,513,789</u>
Total	\$ <u>32,155,789</u>	\$ <u>20,211,812</u>

**NOTE 5 - CAPITAL CONTRIBUTIONS**

Capital contributions during the fiscal years ended June 30, 2019, and 2018 were as follows:

	<u>2019</u>	<u>2018</u>
Dedication of infrastructure assets	\$ 4,651,905	\$ 7,480,965
Source development fund assessments	8,429,220	3,956,336
Other	<u>1,194,957</u>	<u>428,351</u>
Total	\$ <u>14,276,082</u>	\$ <u>11,865,652</u>

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2019 and 2018**

**NOTE 6 - CAPITAL ASSETS**

Capital assets activity during the fiscal year ended June 30, 2019, was as follows:

	Balance July 1, 2018	Additions	Reductions/ Retirements	Balance June 30, 2019
Non-depreciable assets				
Land	\$ 7,905,059	\$ --	\$ --	\$ 7,905,059
Construction in progress	<u>48,842,240</u>	<u>11,878,768</u>	<u>(26,302,217)</u>	<u>34,418,791</u>
	<u>56,747,299</u>	<u>11,878,768</u>	<u>(26,302,217)</u>	<u>42,323,850</u>
Depreciable assets				
Buildings and systems	165,974,212	11,580,688	--	177,554,900
Machinery and equipment	424,277,276	20,738,890	(15,541)	445,000,625
Infrastructure	<u>11,791,972</u>	<u>135,250</u>	<u>--</u>	<u>11,927,222</u>
	<u>602,043,460</u>	<u>32,454,828</u>	<u>(15,541)</u>	<u>634,482,747</u>
Accumulated depreciation				
Buildings and systems	75,767,687	3,933,686	--	79,701,373
Machinery and equipment	222,271,454	11,699,828	(15,541)	233,955,741
Infrastructure	<u>4,801,843</u>	<u>233,953</u>	<u>--</u>	<u>5,035,796</u>
	<u>302,840,984</u>	<u>15,867,467</u>	<u>(15,541)</u>	<u>318,692,910</u>
Total Capital Assets	\$ <u>355,949,775</u>	\$ <u>28,466,129</u>	\$ <u>(26,302,217)</u>	\$ <u>358,113,687</u>

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	<u>34,854,382</u>	<u>22,003,449</u>	<u>(8,015,591)</u>	<u>48,842,240</u>
	<u>42,759,441</u>	<u>22,003,449</u>	<u>(8,015,591)</u>	<u>56,747,299</u>
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	<u>11,430,692</u>	<u>361,280</u>	<u>--</u>	<u>11,791,972</u>
	<u>585,318,879</u>	<u>16,890,216</u>	<u>(165,635)</u>	<u>602,043,460</u>
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	<u>4,573,279</u>	<u>228,564</u>	<u>--</u>	<u>4,801,843</u>
	<u>287,921,052</u>	<u>15,043,935</u>	<u>(124,003)</u>	<u>302,840,984</u>
Total Capital Assets	\$ <u>340,157,268</u>	\$ <u>23,849,730</u>	\$ <u>(8,057,223)</u>	\$ <u>355,949,775</u>

**Department of Water Supply  
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NOTES TO FINANCIAL STATEMENTS  
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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, 2019, are as follows:

	Balance July 1, 2018	Additions	Reductions	Balance June 30, 2019	Due Within One Year
Bonds payable	\$ 21,719,327	\$ 4,621,644	\$ 2,921,909	\$ 23,419,062	\$ 2,950,708
Notes payable from direct borrowings	46,123,084	5,208,692	5,933,794	45,397,982	2,349,064
Accrued vacation payable	1,865,812	808,309	920,556	1,753,565	865,175
Accrued compensatory time off	125,292	101,377	112,404	114,265	114,265
Claims and judgments	844,093	322,946	654,099	512,940	512,940
Total	<u>\$ 70,677,608</u>	<u>\$ 11,062,968</u>	<u>\$ 10,542,762</u>	<u>\$ 71,197,814</u>	<u>\$ 6,792,152</u>

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 from direct borrowings	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
Claims and judgments	1,676,718	195,664	1,028,289	844,093	844,093
Total	<u>\$ 57,727,893</u>	<u>\$ 19,265,549</u>	<u>\$ 6,315,834</u>	<u>\$ 70,677,608</u>	<u>\$ 5,955,288</u>

**NOTE 8 - BONDS PAYABLE**

At June 30, 2019 and 2018, bonds payable consisted of the following:

	<u>2019</u>	<u>2018</u>
General Obligation Refunding Bonds, 2010 Series B, due in annual installments through 2021, interest payable semi-annually from 4.0% to 5.0%.	\$ 851,614	\$ 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%.	3,073,430	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%.	<u>4,050,000</u>	<u>4,945,000</u>
Balance forward	\$ 7,975,044	\$ 9,449,487

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

	<u>2019</u>	<u>2018</u>
Balance carried forward	\$ 7,975,044	\$ 9,449,487
General Obligation Refunding Bonds, 2014 Series C, due in annual installments through 2034, interest payable semi-annually from 3.0% to 5.0%.	5,570,000	5,830,000
General Obligation Refunding Bonds, 2015 Series B, due in annual installments through 2020, interest payable semi-annually at 5.0%.	575,469	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%.	2,972,616	3,269,112
General Obligation Refunding Bonds, 2018 Series C, due in annual installments through 2032, interest payable semi-annually from 3.0% to 5.0%.	<u>4,040,000</u>	<u>--</u>
	21,133,129	19,672,027
Less current portion	<u>(2,950,708)</u>	<u>(2,578,899)</u>
	18,182,421	17,093,128
Unamortized premium	<u>2,285,933</u>	<u>2,047,300</u>
Noncurrent portion	\$ <u><u>20,468,354</u></u>	\$ <u><u>19,140,428</u></u>

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>
2020	\$ 2,950,708	\$ 873,353	\$ 3,824,061
2021	2,472,697	744,104	3,216,801
2022	2,139,184	624,161	2,763,345
2023	2,251,742	516,392	2,768,134
2024	1,213,544	416,165	1,629,709
2025 - 2029	5,936,996	1,317,193	7,254,189
2030 - 2034	<u>4,168,258</u>	<u>343,899</u>	<u>4,512,157</u>
Total	\$ <u><u>21,133,129</u></u>	\$ <u><u>4,835,267</u></u>	\$ <u><u>25,968,396</u></u>

The County issues general obligation bonds for the construction of major capital facilities. The County's general obligation bonds are direct obligations of the County for which its full faith and credit are pledged. A portion of the County's general obligation bonds are designated as reimbursable bonds to be repaid from the net revenues of the Department.

**Department of Water Supply  
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**NOTE 9 - NOTES PAYABLE**

At June 30, 2019 and 2018, notes payable from direct borrowings consisted of the following:

	2019	2018
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%. This note was fully paid off in 2019.	\$ --	\$ 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%. This note was fully paid off in 2019.	--	449,606
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%. This note was fully paid off in 2019.	--	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%. This note was fully paid off in 2019.	--	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.	164,473	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.	<u>1,583,611</u>	<u>1,696,779</u>
Balance forward	\$ 1,748,084	\$ 6,561,895

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

	2019	2018
Notes payable to State of Hawaii, Department of Health		
Balance carried forward	\$ 1,748,084	\$ 6,561,895
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.	624,190	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.	5,774,670	6,187,147
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.	3,242,756	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.	1,581,035	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.	571,708	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.	623,072	658,813
Balance forward	\$ 14,165,515	\$ 19,813,977

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

	2019	2018
Notes payable to State of Hawaii, Department of Health		
Balance carried forward	\$ 14,165,515	\$ 19,813,977
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.	119,568	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.	1,711,713	1,693,916
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.	2,084,482	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.	1,125,538	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.	468,979	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 0.00%, and loan fee rate of 1.00%, maturing in 2039.	<u>20,937,537</u>	<u>17,662,004</u>
Balance forward	\$ 40,613,332	\$ 43,134,341

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June 30, 2019 and 2018**

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

	2019	2018
Notes payable to State of Hawaii, Department of Health		
Balance carried forward	\$ 40,613,332	\$ 43,134,341
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.	3,251,807	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 0.75%, and loan fee rate of 1.00%, maturing in 2041.	1,532,843	--
	45,397,982	46,123,084
Less current portion	(2,349,064)	(1,602,385)
	\$ 43,048,918	\$ 44,520,699

As of June 30, 2019, future principal and interest payments for notes payable from direct borrowings are as follows:

Fiscal Year Ending June 30,	Principal	Interest	Total
2020	\$ 2,349,064	\$ 576,633	\$ 2,925,697
2021	2,369,345	548,340	2,917,685
2022	2,456,621	517,599	2,974,220
2023	2,478,810	485,610	2,964,420
2024	2,501,212	453,368	2,954,580
2025 - 2029	12,853,209	1,770,658	14,623,867
2030 - 2034	12,667,499	916,634	13,584,133
Thereafter	7,722,222	233,488	7,955,710
Total	\$ 45,397,982	\$ 5,502,330	\$ 50,900,312

The Department's notes payable from direct borrowings are direct obligations of the County for which its full faith and credit, including a pledge of the County's general taxing power, as security for the notes payable. Repayments of principal and interest shall be a first charge on the County's General Fund.

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County of Maui  
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**NOTE 10 - RETIREMENT BENEFITS**

**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://www.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% to 2.25%) 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.

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.

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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

*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 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.

Police 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.

*Disability Benefits* - Members are eligible for service-related disability benefits regardless of length of service and receive a one-time payment of the member's contributions and accrued interest plus a lifetime pension of 50% of their average final compensation. Ten years of credited service is required for ordinary disability. Ordinary disability benefits are determined as 1.75% of average final compensation multiplied by the years of credited service but are payable immediately, without an actuarial reduction, and at a minimum of 30% 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

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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

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.

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.

For police officers and firefighters, ordinary disability benefits are 1.75% of average final compensation for each year of service 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.

*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.

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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

*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, plus a percentage multiplied by 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.

**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

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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

the normal cost plus amounts required to pay for the unfunded actuarial accrued liabilities. The contribution rates for fiscal year 2018 were 31.00% for police officers and firefighters and 19.00% for all other employees. Contributions to the pension plan from the Department were \$2,459,961 and \$2,237,373 for the fiscal years ended June 30, 2019 and 2018, respectively.

Per Act 17 (SLH 2017), employer contributions from the State and counties are expected to increase over four years beginning July 1, 2017. The rate for police officers and firefighters increases to 31.00% on July 1, 2018; and increases to 36.00% on July 1, 2019; and 41.00% on July 1, 2020 and the rate for all other employees' increased to 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 and police officers and firefighters 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 Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions*** - At June 30, 2019 and 2018, the Department reported a liability of \$41,040,357 and \$39,254,115, for its proportionate share of net pension liability of the County. The net pension liability was measured as of June 30, 2018 and 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of those dates. 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 the project contributions of the County. At June 30, 2018, the Department's proportion of the County's proportion was 6.8667% which was an increase of 0.3075% from its proportion measured as of June 30, 2017. 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 as of June 30, 2016.

There were no other changes between the measurement dates, June 30, 2018 and 2017, and the reporting dates, June 30, 2019 and 2018 that are expected to have a significant effect on the proportionate share of the net pension liability.

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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

For the fiscal years ended June 30, 2019 and 2018, the Department recognized pension expense of \$1,648,171 and \$5,528,608. At June 30, 2019 and 2018, the Department reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	June 30, 2019	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 741,443	\$ 301,719
Net difference between projected and actual earnings on pension plan investments	16,877	--
Changes in proportion and difference between Department contributions and proportionate share of contributions	1,411,571	369,448
Changes of assumptions	4,675,507	--
Department contributions subsequent to the measurement date	2,459,961	--
	\$ 9,305,359	\$ 671,167
	June 30, 2018	
	Deferred Outflows of Resources	Deferred Inflows of Resources
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	2,237,373	--
	\$ 10,226,083	\$ 986,678

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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

At June 30, 2019, the \$2,459,961 reported as deferred outflows of resources related to pensions resulted from contributions made subsequent to the measurement date that will be recognized as a reduction of the net pension liability in the fiscal year ending June 30, 2020.

Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions as of June 30, 2019 will be recognized in pension expense as follows:

<u>Fiscal Year Ending June 30,</u>	<u>Amount</u>
2020	\$ 2,882,185
2021	2,416,188
2022	912,927
2023	2,530
2024	<u>(39,599)</u>
Total	\$ <u>6,174,231</u>

**Actuarial Assumptions** - The total pension liability in the June 30, 2018 and 2017 actuarial valuations were determined using the following actuarial assumptions adopted by the ERS's Board of Trustees on December 12, 2016, based on the 2015 Experience Study for the five-year period from July 1, 2010 through June 30, 2015:

Inflation rate	2.50%	
Payroll growth	3.50%	
Investment rate of return	7.00% per year, compounded annually including inflation	

There were no changes to ad hoc postemployment benefits including cost of living allowances.

Post-retirement mortality rates are based on the 2016 Public Retirees of Hawaii mortality table with adjustments based on generational projections of the BB projection table for 2016 and full generational projections in future years. Pre-retirement mortality rates are based on multiples of RP-2014 mortality table based on the occupation of the member.

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 of Trustees) 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 are combined to produce the long-term expected rate of return by weighting the

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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

expected future real rates of return (real returns and inflation) 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*	
		2018	2017	2018	2017
Broad growth	63.00%	7.10%	8.05%	4.85%	5.80%
Principal protection	7.00%	2.50%	2.45%	0.25%	0.20%
Real return	10.00%	4.10%	5.80%	1.85%	3.55%
Crisis risk offset	20.00%	4.60%	5.35%	2.35%	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, 2019 and 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 as of June 30, 2019 and 2018, calculated using the discount rate of 7.00%, 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 (6.00%) or 1-percentage point higher (8.00%) than the current rate:

	June 30, 2019		
	1% Decrease (6.00%)	Discount Rate (7.00%)	1% Increase (8.00%)
Department's proportionate share of the net pension liability	\$ <u>45,554,079</u>	\$ <u>41,040,357</u>	\$ <u>26,575,815</u>
	June 30, 2018		
	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>

**Department of Water Supply  
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NOTES TO FINANCIAL STATEMENTS  
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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

***Pension Plan Fiduciary Net Position***

The pension plan's fiduciary net position is determined on the same basis used by the pension plan. The ERS's financial statements are prepared using the accrual basis of accounting under which expenses are recorded in the accounting period in which they are earned and become measurable. Employer and member contributions are recognized in the period in which the contributions are due. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan. Investment purchases and sales are recorded as of their trade date. Administrative expenses are financed exclusively with investment income.

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 the employer pension contributions.

***Payables to the Pension Plan***

As of June 30, 2019 and 2018, the Department had \$487,502 and \$556,191, respectively, payable to the pension plan.

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

***Plan description*** - The State provides certain health care and life insurance benefits to all qualified employees. Pursuant to Act 88, SLH 2001, the State contributes to the EUTF, an agent multiple-employer defined benefit plan that replaced the Hawaii Public Employees Health Fund effective July 1, 2003. The EUTF was established to provide a single delivery system of health benefits for state and county workers, retirees and their dependents. The EUTF issues an annual financial report that is available to the public. The report may be obtained by writing to the EUTF at P.O. Box 2121, Honolulu, Hawaii 96805-2121.

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 10 years of service, the County makes no contributions. For those retiring with at least 10 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 retiring with at least 25 years of service, the County pays 100% of the base monthly contribution. A retiree can elect a family plan to cover dependents.

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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

For employees hired after on or after July 1, 2001, and who retire with fewer than 10 years of service, the County makes no contributions. For those retiring with at least 10 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 those retiring with at least 25 years of service, the County pays 100% of the base monthly contribution. Only single plan coverage is provided for retirees in this category. Retirees can elect family coverage, but must pay the difference.

**Employees Covered by Benefit Terms** - At July 1, 2018 and 2017, the following number of plan members were covered by the benefit terms:

	2018	2017
Inactive employees or their beneficiaries currently receiving benefits	1,534	1,470
Inactive employees entitled to but not yet receiving benefits	269	248
Active members	2,463	2,494
Total	4,266	4,212

**Contributions** - Measurement of the actuarial valuation and the annual required contributions (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. Contributions are governed by HRS Chapter 87A and may be amended through legislation.

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 years ended June 30, 2019 and 2018 were \$1,097,832 and \$1,121,088, which equaled the Department's allocated ARC for postemployment health care and life insurance benefits.

**OPEB Liabilities, OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB** - At June 30, 2019 and 2018, the Department's share of the net OPEB liability was \$23,903,694 and 24,037,169, respectively. The net OPEB liability was measured as of July 1, 2018 and 2017, and the total OPEB liability to calculate the net OPEB liability was determined by an actuarial valuation as of those dates.

There were no changes between the measurement date, July 1, 2018, and the reporting date, June 30, 2019, that are expected to have a significant effect on the net OPEB liability.

**Department of Water Supply  
County of Maui  
NOTES TO FINANCIAL STATEMENTS  
June 30, 2019 and 2018**

**NOTE 10 - RETIREMENT BENEFITS (Continued)**

For the fiscal years ended June 30, 2019 and 2018, the Department recognized OPEB expense of \$622,706 and \$2,469,581, respectively. At June 30, 2019 and 2018, the Department reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	June 30, 2019	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ --	\$ 461,685
Net difference between projected and actual earnings on OPEB plan investments	--	258,427
Changes of assumptions	407,417	--
Department contributions subsequent to the measurement date	<u>3,044,435</u>	<u>--</u>
	<u>\$ 3,451,852</u>	<u>\$ 720,112</u>
	June 30, 2018	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Net difference between projected and actual earnings on OPEB plan investments	\$ --	\$ 285,812
Department contributions subsequent to the measurement date	<u>2,528,321</u>	<u>--</u>
	<u>\$ 2,528,321</u>	<u>\$ 285,812</u>

At June 30, 2019, the \$3,044,435 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, 2020.

Other amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB as of June 30, 2019 will be recognized in OPEB expense as follows:

Fiscal Year Ending June 30,	Net Deferred Outflows (Inflows)
2020	\$ (99,402)
2021	(99,402)
2022	(99,402)
2023	(12,411)
2024	<u>(2,078)</u>
	<u>\$ (312,695)</u>

**Department of Water Supply  
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NOTES TO FINANCIAL STATEMENTS  
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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

**Actuarial assumptions** - The total OPEB liability in the July 1, 2018 actuarial valuation was determined using the following actuarial assumptions adopted by the EUTF's Board of Trustees on January 8, 2018, based on the experience study covering the five-year period ended June 30, 2015 as conducted for the ERS:

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 10.00%, declining to a rate of 4.86% after 13 years
HMO*	Initial rates of 10.00%; declining to a rate of 4.86% after 13 years
Contribution	Initial rates of 4.00% and 5.00%; declining to a rate of 4.70% after 12 years
Dental	Initial rates of 5.00% for the first three years; followed by 4.00%
Vision	Initial rates of 0.00% for the first three years, followed by 2.50%
Life insurance	0.00%

\* Blended rates for medical and prescription drug

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
Contribution	Initial rates of 2.00% and 5.00%; declining to a rate of 4.86% after 14 years
Dental	3.50%
Vision	2.50%
Life insurance	0.00%

Mortality rates are based on system-specific mortality tables utilizing scale BB to project generational mortality improvement.

**Department of Water Supply  
County of Maui  
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**NOTE 10 - RETIREMENT BENEFITS (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, 2018 and 2017 are summarized in the following table:

Asset Class	2018		2017	
	Target Allocation	Long-Term Expected Real Rate of Return	Target Allocation	Long-Term Expected Real Rate of Return
International equity	17.00%	6.50%	19.00%	7.00%
U.S. equity	15.00%	5.05%	19.00%	5.50%
Private equity	10.00%	8.65%	10.00%	9.25%
Core real estate	10.00%	4.10%	10.00%	3.80%
Trend following	9.00%	3.00%	7.00%	1.75%
U.S. microcap	7.00%	7.00%	7.00%	7.00%
Global options	7.00%	4.50%	7.00%	5.50%
Private credit	6.00%	5.25%	0.00%	0.00%
Long treasuries	6.00%	1.90%	7.00%	1.90%
Alternate risk premium	5.00%	2.45%	0.00%	0.00%
TIPS	5.00%	0.75%	5.00%	0.50%
Core bonds	3.00%	1.30%	3.00%	0.55%
REITs	0.00%	0.00%	6.00%	5.85%
	<u>100.00%</u>		<u>100.00%</u>	

**Single Discount rate** - The discount rate used to measure the total OPEB liability at June 30, 2019 and 2018 was 7.00%, based on the expected rate of return on OPEB plan investments of 7.00% and the municipal bond rate of 3.62% (based on the daily rate closest to but not later than the measurement date of the Fidelity “20-year Municipal GO AA Index”). Beginning with the fiscal year 2019 contribution, the County’s funding policy is to pay the recommended actuarially determined contribution, which is based on layered, closed amortization periods. Based on those assumptions, the OPEB plan’s fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive plan members. 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.

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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

**OPEB Plan Fiduciary Net Position** - The OPEB plan's fiduciary net position has been determined on the same basis used by the OPEB plan. The EUTF's financial statements are prepared using the accrual basis of accounting under which revenues are recorded when earned and expenses are recorded at the time liabilities are incurred, regardless of the timing of the cash flows. Employer contributions are recognized in the period in which the contributions are due. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan. Investment purchases and sales are recorded on a trade-date basis. Administrative expenses are financed exclusively with investment income.

There were no significant changes after the report measurement date. Detailed information about the OPEB plan's fiduciary net position is available in the separately issued EUTF financial report. The EUTF's complete financial statements are available at <http://eutf.hawaii.gov>.

**Changes in the Net OPEB Liability**

The following schedule presents the changes in the net OPEB liability for the fiscal year ended June 30, 2019 and 2018. The ending balances are as of the measurement dates, July 1, 2018 and 2017.

	Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a) - (b)
<b>Balance at June 30, 2018</b>	\$ <u>39,568,747</u>	\$ <u>15,531,578</u>	\$ <u>24,037,169</u>
<b>Changes for the fiscal year:</b>			
Service cost	910,032	--	910,032
Interest on the total OPEB liability	2,711,292	--	2,711,292
Contributions - employer	--	2,528,321	(2,528,321)
Net investment income	--	1,166,847	(1,166,847)
Difference between expected and actual experience	(537,699)		(537,699)
Changes in assumptions	474,496		474,496
Benefit payments	(1,262,979)	(1,262,979)	--
Administrative expense	--	(3,572)	3,572
<b>Net changes</b>	<u>2,295,142</u>	<u>2,428,617</u>	<u>(133,475)</u>
<b>Balance at June 30, 2019</b>	\$ <u>41,863,889</u>	\$ <u>17,960,195</u>	\$ <u>23,903,694</u>

**Department of Water Supply  
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**NOTE 10 - RETIREMENT BENEFITS (Continued)**

	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:

	June 30, 2019		
	1% Decrease (6.00%)	Discount Rate (7.00%)	1% Increase (8.00%)
Department's proportionate share of the net OPEB liability	\$ <u>30,470,113</u>	\$ <u>23,903,694</u>	\$ <u>18,054,176</u>
	June 30, 2018		
	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  
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**NOTE 10 - RETIREMENT BENEFITS (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:

	June 30, 2019		
	Current Healthcare Cost Trend		
	1% Decrease	Rates	1% Increase
Department's proportionate share of the net OPEB liability	\$ <u>17,758,150</u>	\$ <u>23,903,694</u>	\$ <u>30,973,725</u>
	June 30, 2018		
	Current Healthcare Cost Trend		
	1% Decrease	Rates	1% Increase
Department's proportionate share of the net OPEB liability	\$ <u>18,397,447</u>	\$ <u>24,037,169</u>	\$ <u>31,204,024</u>

**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 by contributing to a fund managed by a plan administrator. 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. Therefore, in accordance with GASB Statement No.32, *Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans*, deferred compensation plan assets are not reported in the accompanying basic financial statements.

**Department of Water Supply  
County of Maui  
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**NOTE 11 - SICK LEAVE**

Accrued sick leave aggregated to approximately \$5.0 million and \$5.5 million as of June 30, 2019 and 2018, respectively. 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.

**SUPPLEMENTARY INFORMATION**

**Department of Water Supply  
County of Maui  
SCHEDULE I - SCHEDULE OF CAPITAL ASSETS  
Fiscal Year Ended June 30, 2019**

Description	Balance July 1, 2018	Additions and Transfers	Retirements	Balance June 30, 2019	Accumulated Depreciation July 1, 2018	Additions	Retirements	Accumulated Depreciation June 30, 2019
Land	\$ 7,905,059	\$ --	\$ --	\$ 7,905,059	\$ --	\$ --	\$ --	\$ --
Source of Supply Structures	1,843,362	10,462,920	--	12,306,282	458,019	140,460	--	598,479
Collecting and Impounding Reservoirs	4,251,683	--	--	4,251,683	3,661,331	53,716	--	3,715,047
Wells & Springs	20,831,410	--	--	20,831,410	4,350,022	412,767	--	4,762,789
Power & Pumping Structures	20,714,841	--	--	20,714,841	2,258,917	466,238	--	2,725,155
Purification Buildings	34,656,213	--	--	34,656,213	31,106,058	708,722	--	31,814,780
Distribution Reservoirs	80,340,001	841,061	--	81,181,062	31,278,907	2,088,584	--	33,367,491
Office Building	1,672,930	--	--	1,672,930	1,200,049	32,702	--	1,232,751
Field Operation Building	1,072,693	276,707	--	1,349,400	867,820	26,476	--	894,296
Utility Plant - Unclassified	591,079	--	--	591,079	586,564	4,021	--	590,585
Electric Pumping Equipment	36,789,562	1,456,155	--	38,245,717	25,076,359	1,995,326	--	27,071,685
Other Power Pumping Equipment	2,708,773	--	--	2,708,773	2,250,464	134,321	--	2,384,785
Purification System - Chlorinators	3,136,099	3,441,962	--	6,578,061	2,684,746	416,112	--	3,100,858
Purification System - Filter Plants	54,918,359	1,774,283	--	56,692,642	44,167,867	1,321,420	--	45,489,287
Transmission & Distribution Mains	302,182,459	12,403,539	--	314,585,998	131,329,532	6,698,583	--	138,028,115
Service Laterals	4,257,244	153,032	--	4,410,276	2,501,663	141,824	--	2,643,487
Meters	8,901,738	21,608	--	8,923,346	5,479,001	400,105	--	5,879,106
Office Furniture & Equipment	54,155	--	--	54,155	33,126	2,221	--	35,347
Stores Equipment	198,385	--	--	198,385	109,978	5,276	--	115,254
Shop Equipment	72,674	--	--	72,674	65,711	1,316	--	67,027
Laboratory Equipment	535,995	--	--	535,995	331,483	22,555	--	354,038
Work Equipment	2,729,380	1,412,128	--	4,141,508	1,582,714	151,595	--	1,734,309
Communication Equipment	1,682,737	--	--	1,682,737	1,227,288	82,287	--	1,309,575
Meter Boxes	291,058	--	--	291,058	291,058	--	--	291,058
Hydrants	11,181,241	135,250	--	11,316,491	4,379,802	221,043	--	4,600,845
Standpipes	246,277	--	--	246,277	213,226	4,097	--	217,323
	<u>603,765,407</u>	<u>32,378,645</u>	--	<u>636,144,052</u>	<u>297,491,705</u>	<u>15,531,767</u>	--	<u>313,023,472</u>
Office Machines	644,566	37,045	(15,541)	666,070	583,803	27,070	(15,541)	595,332
Transportation Equipment	5,538,546	39,138	--	5,577,684	4,765,476	308,630	--	5,074,106
Total Capital Assets (1)	<u>\$ 609,948,519</u>	<u>\$ 32,454,828</u>	<u>\$ (15,541)</u>	<u>\$ 642,387,806</u>	<u>\$ 302,840,984</u>	<u>\$ 15,867,467</u>	<u>\$ (15,541)</u>	<u>\$ 318,692,910</u>
Construction in Aid		\$ 5,156,121						
Capital Replacement Fund		3,323,425						
State Revolving Fund		21,496,925						
Construction in Aid - Direct		1,242,227						
Revenue Fund		343,571						
Water System Development Fund		892,559						
		<u>\$ 32,454,828</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, 2019**

<b>County of Maui General Obligation Bonds</b>	<b>Fiscal Year</b>	<b>Coupon Interest Rate</b>	<b>Bond Dated</b>	<b>Maturing Serially From</b>	<b>Call Dates</b>	<b>Authorized and Issued</b>	<b>Outstanding June 30, 2019</b>	<b>Payable Within One Year</b>
G.O. Refunding Bonds, 2010 Series B (a)								
	2020	4.000	12/1/2010	6/1/2020	Noncallable	\$ 417,419	\$ 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>851,614</u>	<u>851,614</u>	<u>417,419</u>
G.O. Refunding Bonds, 2012 Series B (b)								
	2020	5.000	11/1/2012	6/1/2020	Noncallable	186,708	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>3,073,430</u>	<u>3,073,430</u>	<u>186,708</u>
G.O. Refunding Bonds, 2012 Series C (c)								
	2020	5.000	11/1/2012	6/1/2020	Noncallable	940,000	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>\$ 4,050,000</u>	<u>\$ 4,050,000</u>	<u>\$ 940,000</u>

**Department of Water Supply  
County of Maui  
SCHEDULE II - SCHEDULE OF LONG-TERM DEBT - GENERAL OBLIGATION BONDS (Continued)  
June 30, 2019**

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, 2014 Series C (d)								
	2020	5.000	12/1/2014	6/1/2020	Noncallable	\$ 275,000	\$ 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	<u>465,000</u>	<u>465,000</u>	<u>--</u>
Total 2014 Series C Issue						<u>5,570,000</u>	<u>5,570,000</u>	<u>275,000</u>
G.O. Refunding Bonds, 2015 Series B (e)								
	2020	5.000	3/1/2016	9/1/2020	Noncallable	<u>575,469</u>	<u>575,469</u>	<u>575,469</u>
Total 2015 Series B Issue						<u>575,469</u>	<u>575,469</u>	<u>575,469</u>
G.O. Refunding Bonds, 2015 Series D (f)								
	2020	5.000	3/1/2016	9/1/2020	Noncallable	311,112	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	<u>437,784</u>	<u>437,784</u>	<u>--</u>
Total 2015 Series D Issue						<u>\$ 2,972,616</u>	<u>\$ 2,972,616</u>	<u>\$ 311,112</u>

**Department of Water Supply  
County of Maui  
SCHEDULE II - SCHEDULE OF LONG-TERM DEBT - GENERAL OBLIGATION BONDS (Continued)  
June 30, 2019**

<u>County of Maui General Obligation Bonds</u>	<u>Fiscal Year</u>	<u>Coupon Interest Rate</u>	<u>Bond Dated</u>	<u>Maturing Serially From</u>	<u>Call Dates</u>	<u>Authorized and Issued</u>	<u>Outstanding June 30, 2018</u>	<u>Payable Within One Year</u>
G.O. Refunding Bonds, 2018 Series C (g)								
	2020	5.000	9/1/2018	9/1/2020	Noncallable	\$ 245,000	\$ 245,000	\$ 245,000
	2021	5.000	9/1/2018	9/1/2021	Noncallable	240,000	240,000	--
	2022	5.000	9/1/2018	9/1/2022	Noncallable	250,000	250,000	--
	2023	5.000	9/1/2018	9/1/2023	Noncallable	265,000	265,000	--
	2024	5.000	9/1/2018	9/1/2024	Noncallable	275,000	275,000	--
	2025	5.000	9/1/2018	9/1/2025	Noncallable	290,000	290,000	--
	2026	5.000	9/1/2018	9/1/2026	Noncallable	305,000	305,000	--
	2027	5.000	9/1/2018	9/1/2027	Noncallable	320,000	320,000	--
	2028	5.000	9/1/2018	9/1/2028	Noncallable	335,000	335,000	--
	2029	5.000	9/1/2018	9/1/2029	9/1/2028	350,000	350,000	--
	2030	5.000	9/1/2018	9/1/2030	9/1/2028	370,000	370,000	--
	2031	4.000	9/1/2018	9/1/2031	9/1/2028	390,000	390,000	--
	2032	3.000	9/1/2018	9/1/2032	9/1/2028	405,000	405,000	--
Total 2018 Series C Issue						<u>4,040,000</u>	<u>4,040,000</u>	<u>245,000</u>
Total General Obligation Bonds						<u>\$ 21,133,129</u>	<u>\$ 21,133,129</u>	<u>\$ 2,950,708</u>

**Department of Water Supply**  
**County of Maui**  
**SCHEDULE II - SCHEDULE OF LONG-TERM DEBT -**  
**GENERAL OBLIGATION BONDS (Continued)**  
**June 30, 2019**

**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.
- (g) The General Obligation Refunding Bonds, 2018, Series C, maturing on or before September 1, 2028 are not subject to redemption prior to maturity. The bonds maturing on or after September 1, 2019 are subject to redemption at the option of the County on or after September 1, 2028, in whole or in part at any time, from any maturities selected by the County, at a redemption price equal to 100% of the principal amount of the Bonds or portions thereof to be redeemed plus accrued interest to the date of redemption.

**PART II**

**REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING  
AND ON COMPLIANCE AND OTHER MATTERS**

**INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER  
FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS  
BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN  
ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS**

To the Council Chair,  
and Members of the Council  
County of Maui  
Wailuku, Maui, Hawai'i

We have audited, in accordance with the 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, the 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, 2019, and the related notes to the financial statements, and have issued our report thereon dated December 20, 2019.

**Internal Control Over Financial Reporting**

In planning and performing our audit of the financial statements, we considered the Department's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Department's internal control. Accordingly, we do not express an opinion on the effectiveness of the Department's internal control.

*A deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses.

### **Compliance and Other Matters**

As part of obtaining reasonable assurance about whether the Department's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

### **Purpose of this Report**

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

*N&K CPAs, Inc.*

Honolulu, Hawai'i  
December 20, 2019

**FISCAL YEAR 2019**  
**Water Service Charges**

*Effective July 01,2018*

**Schedule A**

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

	<u>Montly</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
-----------	---------

**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 2019**  
**System Expansion Rates**

*Effective July 01,2018*

**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, 2019

DISTRICT	5/8"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	
REGULAR SERVICE METERS										
										<b>Totals</b>
Wailuku	17,450	1,775	568	441	426	59	35	5	1	20,760
Makawao	9,051	365	184	83	32	9	1	1	0	9,726
Lahaina	2,710	299	131	128	124	27	10	2	0	3,431
Molokai	1,573	44	33	15	17	2	0	1	0	1,685
Hana	462	42	9	6	4	1	0	0	0	524
Subtotal	31,246	2,525	925	673	603	98	46	9	1	36,126
AGRICULTURAL SERVICE METERS										
Wailuku	17	14	2	2	1	2	1	0	0	39
Makawao	270	49	69	82	34	0	0	1	0	505
Lahaina	4	3	5	0	1	0	1	0	0	14
Molokai	3	1	2	0	0	0	0	0	0	6
Hana	27	0	2	0	0	0	0	0	0	29
Subtotal	321	67	80	84	36	2	2	1	0	593
TOTAL	31,567	2,592	1,005	757	639	100	48	10	1	36,719
COMBINED TOTAL										
Wailuku	17,467	1,789	570	443	427	61	36	5	1	20,799
Makawao	9,321	414	253	165	66	9	1	2	0	10,231
Lahaina	2,714	302	136	128	125	27	11	2	0	3,445
Molokai	1,576	45	35	15	17	2	0	1	0	1,691
Hana	489	42	11	6	4	1	0	0	0	553
TOTAL	31,567	2,592	1,005	757	639	100	48	10	1	36,719

## OUTSIDE WATER DELIVERIES

### YTD FY2019

<b>PURCHASE FROM</b>	1,000 Gallons	\$ YTD Amount	Cost Per 1,000 Gallons
East Maui Irrigation	2,289,958	\$ 138,085	0.060
Wailuku Water Co.	512,826	\$ 269,289	0.525
Maui Land & Pine	584,061	\$ 164,381	0.281
Hawaiian Home Lands (Billed Bi-Monthly)	6,094	\$ 50,171	8.233
<b>TOTAL</b>	<b>3,392,939</b>	<b>\$ 621,926</b>	<b>0.183</b>

<b>DISTRICT</b>	1,000 Gallons	\$ Amount	Cost Per 1,000 Gallons
Wailuku	512,826	\$ 269,289	0.525
Kula	185,964	\$ 11,214	0.060
Makawao	2,096,585	\$ 126,424	0.060
Lahaina	584,061	\$ 164,381	0.281
Hana	7,409	\$ 447	0.060
Molokai	6,094	\$ 50,171	8.233
<b>TOTAL</b>	<b>3,392,939</b>	<b>\$ 621,926</b>	<b>0.183</b>

### OTHER WATER

Wailuku - Wlku. Water Co.	393,048
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, 2019**

<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>	977,741.0	651,309.0	79,797.0	53,410.0	164,849.0	23,983.0	4,393.0
<b>August</b>	973,902.0	649,639.0	74,050.0	51,311.0	169,827.0	24,075.0	5,000.0
<b>September</b>	919,495.0	624,431.0	76,433.0	37,871.0	163,366.0	14,159.0	3,235.0
<b>October</b>	811,235.0	555,407.0	63,460.0	37,142.0	128,181.0	21,419.0	5,626.0
<b>November</b>	931,753.0	640,271.0	72,586.0	46,861.0	151,424.0	16,686.0	3,925.0
<b>December</b>	847,588.0	570,580.0	64,035.0	45,114.0	143,713.0	20,259.0	3,887.0
<b>Subtotal</b>	<u>5,461,714.0</u>	<u>3,691,637.0</u>	<u>430,361.0</u>	<u>271,709.0</u>	<u>921,360.0</u>	<u>120,581.0</u>	<u>26,066.0</u>
<b>January</b>	892,494.0	602,725.0	65,199.0	47,495.0	149,106.0	23,340.0	4,629.0
<b>February</b>	798,188.0	539,905.0	64,259.0	35,609.0	144,274.0	10,962.0	3,179.0
<b>March</b>	705,037.0	472,272.0	54,803.0	36,696.0	119,909.0	17,308.0	4,049.0
<b>April</b>	882,001.0	597,200.0	63,814.0	48,163.0	139,916.0	28,166.0	4,742.0
<b>May</b>	930,742.0	639,704.0	67,939.0	43,040.0	155,199.0	19,952.0	4,908.0
<b>June</b>	1,024,122.0	712,170.0	82,031.0	58,426.0	167,603.0	316.0	3,576.0
<b>Subtotal</b>	<u>5,232,584.0</u>	<u>3,563,976.0</u>	<u>398,045.0</u>	<u>269,429.0</u>	<u>876,007.0</u>	<u>100,044.0</u>	<u>25,083.0</u>
<b>Total General</b>	<u>#####</u>	<u>7,255,613.0</u>	<u>828,406.0</u>	<u>541,138.0</u>	<u>1,797,367.0</u>	<u>220,625.0</u>	<u>51,149.0</u>
<b>AGRICULTURAL</b>							
<b>July</b>	104,722.0	23,894.0	4,921.0	72,596.0	1,969.0	693.0	649.0
<b>August</b>	93,995.0	20,530.0	4,186.0	66,381.0	1,724.0	439.0	735.0
<b>September</b>	74,363.0	15,054.0	3,861.0	53,460.0	1,692.0	176.0	120.0
<b>October</b>	71,980.0	15,243.0	3,235.0	50,510.0	1,527.0	471.0	994.0
<b>November</b>	81,256.0	23,043.0	3,580.0	51,655.0	1,997.0	241.0	740.0
<b>December</b>	75,486.0	18,272.0	2,943.0	51,641.0	1,685.0	203.0	742.0
<b>Subtotal</b>	<u>501,802.0</u>	<u>116,036.0</u>	<u>22,726.0</u>	<u>346,243.0</u>	<u>10,594.0</u>	<u>2,223.0</u>	<u>3,980.0</u>
<b>January</b>	84,355.0	20,662.0	3,393.0	57,806.0	1,617.0	273.0	604.0
<b>February</b>	51,976.0	15,265.0	3,235.0	31,621.0	1,571.0	38.0	246.0
<b>March</b>	61,517.0	13,373.0	2,351.0	43,892.0	1,125.0	340.0	436.0
<b>April</b>	93,293.0	22,504.0	3,043.0	65,212.0	1,609.0	384.0	541.0
<b>May</b>	81,000.0	22,537.0	3,477.0	52,031.0	1,938.0	669.0	348.0
<b>June</b>	106,296.0	22,873.0	4,652.0	76,461.0	2,039.0	-	271.0
<b>Subtotal</b>	<u>478,437.0</u>	<u>117,214.0</u>	<u>20,151.0</u>	<u>327,023.0</u>	<u>9,899.0</u>	<u>1,704.0</u>	<u>2,446.0</u>
<b>Total Agricultural</b>	<u>980,239.0</u>	<u>233,250.0</u>	<u>42,877.0</u>	<u>673,266.0</u>	<u>20,493.0</u>	<u>3,927.0</u>	<u>6,426.0</u>
<b>Grand Total</b>	<u>11,674,537.0</u>	<u>7,488,863.0</u>	<u>871,283.0</u>	<u>1,214,404.0</u>	<u>1,817,860.0</u>	<u>224,552.0</u>	<u>57,575.0</u>

COMPARISON OF WATER SALES TO GENERAL & AGRICULTURAL CONSUMERS  
BY DISTRICT & SYSTEMS  
TWELVE MONTHS ENDED JUNE 30, 2019 OVER 2018

BY DISTRICT	Services			Consumption (1,000 Gallons)			Revenues		
	2018	2019	Increase (Decrease)	2018	2019	Increase (Decrease)	2018	2019	Increase (Decrease)
<b>Wailuku District</b>									
Wailuku	6,370	6,403	33	1,305,111	1,312,504	7,393	7,616,832	7,720,713	103,881
Waihee	196	201	5	25,226	25,868	642	131,166	132,071	905
Waikapu	970	972	2	124,417	121,485	(2,932)	666,830	654,341	(12,489)
Wailuku Heights	497	498	1	68,386	68,804	418	377,483	404,232	26,749
Kahului	5,336	5,314	(22)	1,503,536	1,495,568	(7,968)	8,512,076	8,475,487	(36,589)
Puunene	11	11	0	16,378	18,508	2,130	30,828	77,794	46,966
Kihei	6,017	6,034	17	3,908,780	3,918,195	9,415	21,335,156	21,413,297	78,141
Maalaea	45	45	0	107,242	111,020	3,778	631,491	652,865	21,374
Makena	203	203	0	212,718	216,232	3,514	1,228,004	1,249,762	21,758
Paia-Kuau	912	912	0	151,581	138,647	(12,934)	844,528	782,659	(61,869)
Spreckelsville	206	206	0	60,138	62,032	1,894	342,897	350,165	7,268
<b>Subtotal</b>	<b>20,763</b>	<b>20,799</b>	<b>36</b>	<b>7,483,513</b>	<b>7,488,863</b>	<b>5,350</b>	<b>41,717,291</b>	<b>41,913,384</b>	<b>196,093</b>
<b>Makawao District</b>									
Kokomo-Kaupakalua	1,147	1,157	10	148,680	142,257	(6,423)	817,013	786,587	(30,426)
Kuiaha	302	303	1	43,626	42,900	(726)	221,547	220,439	(1,108)
Haiku-Pauwela	853	849	(4)	119,911	109,361	(10,550)	646,426	604,260	(42,166)
Makawao	2,016	2,018	2	268,910	255,242	(13,668)	1,484,017	1,412,739	(71,278)
Pukalani	2,122	2,129	7	310,006	292,253	(17,753)	1,702,382	1,602,400	(99,982)
Haliimaile	200	199	(1)	34,753	29,270	(5,483)	177,381	160,329	(17,052)
Upper Kula	2,312	2,335	23	420,368	432,765	12,397	1,977,302	2,035,452	58,150
Lower Kula	1,112	1,122	10	611,233	605,542	(5,691)	1,858,943	1,901,680	42,737
Ulupalakua-Kanaio	81	81	0	45,746	49,390	3,644	110,766	128,835	18,069
Kula Ag Park	39	38	(1)	140,512	126,707	(13,805)	181,439	167,774	(13,665)
<b>Subtotal</b>	<b>10,184</b>	<b>10,231</b>	<b>47</b>	<b>2,143,745</b>	<b>2,085,687</b>	<b>(58,058)</b>	<b>9,177,216</b>	<b>9,020,495</b>	<b>(156,721)</b>
<b>Lahaina District</b>									
Lahaina	2,166	2,178	12	800,722	815,899	15,177	4,543,759	4,620,287	76,528
Honokowai	450	450	0	507,708	500,554	(7,154)	2,951,714	2,911,629	(40,085)
Alaeloa	803	804	1	513,282	500,362	(12,920)	2,948,151	2,878,598	(69,553)
Honokohau	13	13	0	1,048	1,045	(3)	6,586	6,715	129
<b>Subtotal</b>	<b>3,432</b>	<b>3,445</b>	<b>13</b>	<b>1,822,760</b>	<b>1,817,860</b>	<b>(4,900)</b>	<b>10,450,210</b>	<b>10,417,229</b>	<b>(32,981)</b>
<b>Molokai District</b>									
Kawela-Kaunakakai	1,169	1,176	7	178,135	169,165	(8,970)	1,034,636	986,970	(47,666)
Ualapue/Kamalo	396	396	0	55,254	48,688	(6,566)	325,959	291,627	(34,332)
Kalae	113	113	0	7,264	6,699	(565)	47,337	44,344	(2,993)
Halawa	6	6	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>1,684</b>	<b>1,691</b>	<b>7</b>	<b>240,653</b>	<b>224,552</b>	<b>(16,101)</b>	<b>1,407,932</b>	<b>1,322,940</b>	<b>(84,992)</b>
<b>Hana District</b>									
Hana	407	408	1	48,172	46,187	(1,985)	286,716	274,116	(12,600)
Nahiku	38	38	0	3,046	3,296	250	18,968	21,304	2,336
Keanae	86	86	0	6,179	6,362	183	42,342	41,841	(501)
Kaupo	21	21	0	1,516	1,730	214	6,367	6,486	119
<b>Subtotal</b>	<b>552</b>	<b>553</b>	<b>1</b>	<b>58,913</b>	<b>57,575</b>	<b>(1,338)</b>	<b>354,393</b>	<b>343,747</b>	<b>(10,646)</b>
<b>Total ALL DISTRICTS</b>	<b>36,615</b>	<b>36,719</b>	<b>104</b>	<b>11,749,584</b>	<b>11,674,537</b>	<b>(75,047)</b>	<b>63,107,042</b>	<b>63,017,796</b>	<b>(89,246)</b>

## FIVE - YEAR SUMMARY

	2018-19	2017-18	2016-17	2015-16	2014-15
<b>Customer and Sales</b>					
Number of Customers	36,719	36,615	36,365	36,211	36,104
Water Sales (M Gals.)	11,674,537	11,749,584	11,624,710	11,785,494	11,684,317
<b>Income and Expenses</b>					
Revenue from Sale of Water *	63,672,230	63,352,395	62,814,311	59,917,910	59,015,627
Total Operating Revenues	64,460,451	64,297,392	63,633,235	60,867,664	59,286,522
Operating Expense	62,311,770	62,534,558	61,818,557	42,493,570	63,767,954
Depreciation	15,867,467	15,043,935	14,406,243	15,248,728	14,431,573
Net Income or (Loss)	2,148,681	1,762,834	1,814,678	1,483,566	4,481,432
<b>Utility Plant</b>					
Net Plant Add. During Year	34,418,791	48,842,240	34,854,383	40,902,839	45,327,372
Total Plant Investment	676,806,594	658,790,761	628,078,322	564,620,815	583,532,811
Reserve for Depreciation	318,692,910	302,840,984	287,921,052	272,526,994	257,901,850
<b>Current Positions</b>					
Revenue Funds	42,994,879	37,646,269	42,416,273	28,433,036	30,631,574
Total Current Assets **	79,816,045	71,269,194	62,372,099	56,513,213	57,810,001
Total Current Liabilities	15,300,802	13,506,850	14,035,294	10,979,990	16,297,595
Net Current Assets	64,515,243	57,762,344	48,336,805	45,533,223	41,512,406
Current Ratio	5.3 to 1	5.2 to 1	4.4 to 1	3.2 to 1	3.5 to 1
<b>Capitalization</b>					
Municipal Equity & Surplus	183,351,169	170,580,820	166,100,997	159,033,530	152,205,067
Non-Current Liabilities	129,349,713	128,013,604	90,360,201	73,796,025	71,792,211
Contri. in Aid of Constr.	203,049,868	196,251,495	188,225,271	182,747,402	183,005,539

\* Includes Fire Protection

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

\*\*\* Information gathered via FY2019 Balance Sheet and FY2019 Auditor's Report