City and County of Honolulu
Board of Water Supply
Continuing Disclosure Annual Report
for the Fiscal Year Ended June 30, 2018

THE WATER SYSTEM

Selected Statistics: Services by Class

The following tables list historical information regarding the number of services of the Water System by customer class during Fiscal Years 2014 through 2018. As shown, the majority of the customers of the City and County's water services were residential.

Table 3
Number of Services by Customer Class
Fiscal Years 2014-2018

	2014	2015	2016	2017	2018
Customer Class:					
Residential	155,871	156,554	156,802	157,128	157,591
Commercial/ Industrial	11,149	11,192	11,290	11,340	11,365
Agricultural	911	925	924	925	930
Total	167,931	168,671	169,016	169,393	169,886

Table 4
Estimated Billed Water Sales and Revenues by Customer Class
Fiscal Years 2014-2018

	2014	2015	2016	2017	2018
Water sales (thousand gallons):					
Residential	28,495,629	26,744,739	27,194,012	26,562,451	26,568,411
Commercial	18,874,745	17,245,835	17,745,779	17,029,710	16,922,454
Industrial	3,162,587	3,239,628	3,317,485	3,117,211	2,948,688
Agricultural	1,261,099	1,117,051	1,139,663	1,138,214	1,054,659
Total	51,794,060	48,347,253	49,396,939	47,847,586	47,494,212
Water revenues (rounded to thousands):					
Residential	$115,859	$128,553	$141,977	$139,436	$139,811
Commercial	68,695	77,072	84,012	81,856	81,913
Industrial	5,406	5,616	5,808	5,893	5,650
Agricultural	1,771	2,118	2,357	2.349	2,141
Total	$191,731	$213,359	$234,154	$229,534	$229,515

Listed below is certain selected statistical information concerning the Water System.

Table 6
Selected Statistics of the Water System
Fiscal Years 2014-2018

	2014	2015	2016	2017	2018
Annual Pumpage (Gallons)	49,683,637,000	52,321,540,000	50,310,590,000	49,821,169,000	50,938,838,576
Peak Day Pumpage (Gallons)(Single Day)	161,400,000	159,149,000	169,520,000	154,680,000	165,288,308
Total Capacity of Well Pumping (Gallons Per Day)	399,153,600	386,446,200	386,446,200	386,446,200	384,559,200
Storage Capacity (Gallons)	190,530,000	196,526,000	196,526,000	196,526,000	196,526,000

FINANCIAL INFORMATION

Major Users

The ten largest users served by the Water System, in terms of water sales for the Fiscal Year ended June 30, 2018, are set forth in the table below.

Table 9
Ten Largest Users
(as of June 30, 2018)

Name	Annual Water Sales (1,000s Gals.)	Estimated Revenues	Percentage of Total Water Sales
City and County of Honolulu	3,346,682	$12,469,209	5.43%
State of Hawaii	2,915,861	14,174,588	6.18%
United States Government	1,233,935	6,126,161	2.67%
Island Energy Services LLC	395,998	1,964,706	0.86%
Hilton Hotels Corp.	335,249	1,662,809	0.72%
Hawaii Prince Golf Inc.	273,052	153,751	0.07%
Marriott Resorts & Spas	191,479	899,113	0.39%
Coral Creek Golf Inc.	170,975	100,536	0.04%
Sheraton Waikiki	160,120	794,610	0.35%
GGP Ala Moana LLC	156,433	899,736	0.39%
Total	9,179,784	$39,245,219	17.10%

Rates and Charges

The Department is budgeted as a self-sustaining enterprise fund for the purpose of determining costs associated with providing water services. Through the adoption of the annual operating budget process, the revenue requirements and water rates are reviewed to determine the adequacy of revenues. The Board has the power to fix and adjust reasonable rates and charges for the furnishing of water and for water services so that the revenues derived therefrom are sufficient to make the Water System self-supporting. Rates and charges are determined on the basis of a recommendation by the Manager, subject to approval by the Board.

Such rates are not subject to regulation by any governmental body or authority, including the City and County.

On May 15, 2006, after 11 years of no rate increases, the Board approved a schedule of rate increases of 13%, 12%, 10%, 8% and 5% for Fiscal Years 2007 through 2011, respectively. The initial rate increase was implemented on October 1, 2006 and subsequent rate increases were implemented on July 1 of Fiscal Years 2007 through 2011. The rate increases are applied uniformly to all charges and rates for all customer classes.

On November 28, 2011, the Board approved further increases of 9.65% annually for Fiscal Years 2012 through 2016. The initial 9.65% rate increase took effect on January 1, 2012, the subsequent increases of 9.65% took effect on July 1, 2012, July 1, 2013, July 1, 2014, and the last of the five increases took effect on July 1, 2015. The rate increases apply uniformly to all charges and rates for all customer classes. The Board has discretion to defer the amount of any rate increase before it is implemented.

The Department completed a Cost of Service Study in July 2017 and a Long Range Financial Plan in February 2018. Twenty-seven meetings of the Stakeholder Advisory Group were held to solicit feedback and gather input on the proposed changes to the water rates and charges. Five public hearing were held and testimony presented at the hearings and received in writing on the proposed revisions were given due consideration. These served as the basis for the Revision to the Schedule of Rates and Charges for the Furnishing of Water and Water Service approved by the Board on August 27, 2018. This schedule is effective from September 10, 2018 through June 30, 2023. This schedule adjusted the water rates to better align revenue with the costs to serve different customer classes, to incentivize efficient use of water, to provide affordable water to meet essential household needs, to support local agriculture, and to encourage the use of recycled and non-potable water resources.

In addition, when total electricity costs to the Board exceed the amount used in calculating the annual schedule of rates and charges, then the quantity charge may be increased $0.01 per 1,000 gallons for every $500,000 incremental overage, or any fraction thereof, in the following fiscal year rate. The quantity charge also may be increased $0.01 per 1,000 gallons for each $500,000 or fraction thereof of additional costs that the Board is required to incur in order to comply with any federal or state environmental law or regulation. These adjustment factors are included in the Board's schedule of rates and charges for Fiscal Years 2019 through 2023.

Current Rate Schedules

The following table describes the base rates in effect as of July 1, 2015. See "Rates and Charges" above for a discussion of the rate increases adopted by the Board for Fiscal Years 2019-2023.

Table 10
Rate Schedule

	Effective July 1, 2015
Billing Charge	
Billing charge each time a bill is rendered:	$9.26
Quantity Charge	
Charge for all water drawn for each 1,000 gallons effective as follows:	
Single Family Residential	
Monthly Charge Per Unit	
Block 1 (Gallons) First 13,000 or any part thereof	$4.42
Block 2 (Gallons) 13,001 to 30,000 or any part thereof	5.33
Block 3 (Gallons) Over 30,000	7.94
Multi-Family Residential	
Monthly Charge per Unit	
Block 1 (Gallons) First 9,000 or any part thereof	$4.42
Block 2 (Gallons) 9,001 to 22,000 or any part thereof	5.33
Block 3 (Gallons) Over 22,000	7.94
Non-Residential All usage	4.96
Agricultural	
Monthly Charge Per Account	
Block 1 (Gallons) First 13,000 or any part thereof	$4.42
Block 2 (Gallons) Over 13,000	1.89
Non-Potable All usage	2.47

Billing and Collection Practices

Customers pay a fixed billing charge each time a bill is rendered as well as quantity charges for the Board's water services. Under the current rate schedule, residential customers are billed under an inverted block rate structure in which the quantity charge per 1,000 gallons increases as consumption moves through each of three usage blocks. Non-residential and non-potable customers are billed under a uniform rate structure. Agricultural customers are billed under a declining block rate structure.

Charges are billed to the consumer and are the responsibility of the consumer. The Board performs all meter reading services in connection with the Water System. Meters are read and bills rendered monthly. Payment is delinquent if not made within 30 days after presentation of the bill to the consumer. Water service may be discontinued on delinquent accounts upon at least five business days' written notice to the consumer.

The Board has a memorandum of understanding with the Department of Environmental Services to provide non-water based billing services.

Collections

The Department's uncollectible accounts from operating revenues for the past five fiscal years, together with such accounts' percentage of total operating revenues, are reflected in the following table:

Table 11
Aggregate Dollar Amount of Uncollectible Accounts
Fiscal Years 2014-2018

Fiscal Year	Aggregate Dollar Amount of Uncollectible Accounts	Percentage of Total Operating Revenues
2014	590,325	0.30
2015	369,657	0.17
2016	486,856	0.20
2017	505,113	0.22
2018	463,343	0.20

Water Rates in the Four Counties

The following table shows the average monthly residential water bills in the four counties in the State based on rates in effect as of December 1, 2018. No conclusions regarding operations in a particular community or comparisons between communities should be drawn from such table.

Table 12
Average Residential Monthly Water Bills
in the Four Counties of the State

Kauai County	$84.55
Hawaii County	$63.79
Maui County	$59.65
City and County of Honolulu	$66.72

Note: Assumes monthly consumption of 13,000 gallons.

Other Charges

Water system facilities charges are levied against all new developments requiring water supplies from the Water System or additional water supplies from existing water services except those where the developer installs, at its own cost, a complete water system including source, transmission and daily storage facilities. Developers pay the water system facilities charges before water services are made available to the developments. Such water system facilities charges are deposited in the Special Expendable Fund and do not constitute Revenues subject to the pledge of the Resolution.

The following table sets forth a breakdown of water system facilities charges levied against all new developments, for the last five Fiscal Years**.**

Table 13
Breakdown of Water System Facilities Charges
Fiscal Years 2014-2018

Fiscal Year	Resource	Transmission	Storage	Total
2014	3,463,000	1,710,000	2,184,000	7,357,000
2015	5,308,000	2,043,000	3,320,000	10,671,000
2016	5,527,000	2,620,000	4,489,000	12,636,000
2017	5,649,000	2,666,000	4,759,000	13,074,000
2018	4,206,000	1,967,000	3,015,000	9,188,000

Water system facilities charges are levied for the following:

a. All additional fixture units. Credit is given for the fixture units removed based upon applicable use categories.

b. Additional buildings and/or units to be connected to existing services where additional demands or supplies are indicated. The charges are based upon all additional fixture units required and upon the established schedule of charges for the respective categories.

c. Changes in service categories such as from residential to commercial or industrial activities. Water system facilities charge credits may be given to new applicants for installation of ordered-off meters based on categories for which these meters were formerly used, provided that the water services were ordered-off (terminated) less than five years previously.

d. All services ordered-off for more than five years.

e. All irrigation services.

Water system facilities charges are not levied for the following:

a. Temporary construction meter service for contractors.

b. Services used exclusively for fire protection purposes.

c. Transfer of services.

d. Order-ons (commencement) of services where use categories and water demands remain the same, provided that the water services were ordered-off less than five years previously.

e. Segregation of services. Segregation means the installation of separate meters with no increase in water demand.

The Board may negotiate water system facilities charge agreements other than those above, if the Board determines that the schedule of charges is inappropriate.

A Standby Charge will be negotiated by the Manager and Chief Engineer with private water systems contracting for inter-connection service. Such service shall be provided only for emergency or unscheduled service outages or supply reductions with the intent to protect against interrupted water service supporting normal private system requirements. Water drawn shall be charged at the applicable quantity rate for each thousand gallons or portion thereof.

Consumers may be assessed an On-Site Distribution Tariff for Department maintenance of property piping if they elect to have the Board provide such service. Maintenance shall be limited to repair and renewal of “after the meter” service appurtenances eligible for coverage.

When total electricity costs to the Board exceed the amount used in calculating the annual Schedule of Rates and Charges, a Power Cost Adjustment is added to the Quantity Charge at $0.01 per 1,000 gallons for every $500,000 incremental overage, or any fraction thereof, in the following fiscal year.

When environmental regulations compliance costs to the Board exceed the amount used in calculating the annual Schedule of Rates and Charges, an Environmental Regulations Compliance Fee Cost Adjustment is added to the Quantity Charge at $0.01 per 1,000 gallons for every $500,000 incremental overage, or any fraction thereof, in the following fiscal year.

Outstanding Debt

As of December 31, 2018 the Outstanding Bonds under the Resolution consisted of $85,195,000 of Series 2012A Bonds issued March 29, 2012, of which $74,870,000 remain outstanding, and $144,985,000 of

Series 2014A Bonds and Series 2014B Bonds issued December 9, 2014, of which $131,420,000 remain outstanding. The aggregate outstanding amount of Bonds issued under the Resolution as of December 31, 2018 was $206,290,000.

All previously issued general obligation bonds of the City and County which were reimbursable from revenues of the Water System have been paid or defeased, and all previously issued revenue bonds of the Board, other than the Bonds currently outstanding under the Resolution, have been refunded and defeased. Except for approximately $70,831,000 of outstanding State revolving fund loans as of December 31, 2018, incurred as Subordinate Obligations, and approximately $1,052,000 of outstanding notes payable to other lenders, no other outstanding debt has been issued for purposes of the Water System. Interest rates are fixed for all of the Board's outstanding debt and the Board has no exposure to any auction rate, derivative or structured investments. The Board currently has no outstanding private placements or bank debt secured by revenues of the Water System.

The Resolution provides, as a condition to the incurrence of Subordinate Obligations (including State revolving fund loans), that the resolution, indenture or governing instrument for such Subordinate Obligations must contain a provision to the effect that, in the absence of bankruptcy, insolvency or other similar proceedings with respect to the Board or its property, if such Subordinate Obligations are declared due and payable prior to maturity as a result of an event of default or otherwise, the holders of Outstanding Bonds issued under the Resolution would be entitled to receive payment in full of all principal and interest on their Bonds before the holders of the Subordinate Obligations would be entitled to receive any accelerated payment of principal or interest on such Subordinate Obligations from the Net Revenues or any funds held under the Resolution. Resolution 741, 2004 of the Board, which provides for the incurrence of State revolving fund loans as Subordinate Obligations, contains such a provision. The approximately $70,831,000 of outstanding State revolving fund loans referenced above are the only Subordinate Obligations currently outstanding.

Lease Obligations

The Board has entered into a Space Lease dated as of September 16, 2005 with the University of Hawaii to operate and maintain a seawater cooling system for the provision of chilled water service to the University's John A. Burns School of Medicine and other customers. The term of the lease is 20 years, with the option to extend the lease for two additional periods of five years each. The Board's annual rent obligation under the lease is $158,556.

Employee Benefits

Set forth below is certain information regarding health care benefits, pension benefits and other post-employment benefits for which Department employees are eligible.

Health Care Benefits. All regular employees of the Department are eligible for coverage under health plans provided through the State of Hawaii Public Employer-Union Health Benefit Trust Fund (the "Trust Fund"), which was established in 2003 to design, provide and administer health and other benefit plans for State and county employees, retirees and their dependents. The Trust Fund is administered by a ten-member Board of Trustees (the "Trust Fund Board") appointed by the Governor comprised of five union representatives and five management representatives. The Trust Fund Board is responsible for determining the nature and scope of health plans offered by the Trust Fund, negotiating and entering into contracts with insurance carriers, ruling on eligibility and establishing management policies for the Trust Fund and overseeing Trust Fund activities. The Trust Fund currently provides medical, prescription drug, dental, vision, chiropractic and group life benefits. Benefits with respect to regular employees are funded by a combination of employer contributions set by collective bargaining agreement or by executive order (with respect to non-union employees) and employee contributions through payroll deductions. Benefits for retirees are funded by a statutory formula.

In recent years, public and private health plan providers nationwide and in Hawaii, including the Trust Fund, have experienced substantial increases in health care costs. In the case of the Trust Fund, the current fiscal situation faced by the State and county employers has made it extremely difficult for the employers to increase employer contributions for health benefits in order to maintain the historical employer-employee contribution ratio. In the past, the Trust Fund Board has attempted to mitigate health plan rate increases by modifying benefits, and employees have been required to bear a larger share of the increased rates. The Department cannot predict what actions will be taken (including changes to future plan benefits or employer-employee contribution rates) to address the impact of rising health care costs on the Trust Fund or what financial effects such changes may have on the Department.

The information included under the following two captions "Pensions" and "Other Post-Employment Benefits" relies on information produced by the State Retirement System (as defined below) and the Trust Fund, respectively. Actuarial assessments are "forward-looking" and reflect the respective judgments of the fiduciaries of the State Retirement System and the Trust Fund. Such actuarial assessments are based upon a variety of different assumptions, one or more of which may prove to be inaccurate or be changed in the future, and will change with the future experiences of the State Retirement System and the Trust Fund.

Pensions. All eligible employees of the Department are covered under the Employees' Retirement System of the State (the "State Retirement System" or "System"), a cost-sharing, multiple employer defined benefit pension plan that provides retirement, disability and death benefits funded by employee contributions and by employer contributions. As further described below, employer contributions are set by State statute as a percentage of covered payroll.

This section contains certain information relating to the System. The information contained in this section is primarily derived from information produced by the System, its independent accountant and its actuary. The Department has not independently verified the information provided by the system, its independent accountant and its actuary, and makes no representations nor expresses any opinion as to the accuracy of such information. The comprehensive annual financial report of the System and most recent valuation report of the System may be obtained by contacting the System. The comprehensive annual financial reports of the System are also available on the State's website at http://portal.ehawaii.gov/, and other information about the System are available on the System's website at http://ers.ehawaii.gov/. Such documents and other information are not incorporated herein by reference.

The System used a variety of assumptions to calculate the total pension liability, net pension liability, annual pension expense and other actuarial calculations and valuations of the System. Then it attributes a share of its liabilities and costs to participating employers, including the Department. No assurance can be given that any of the assumptions underlying such calculations and valuations (including, but not limited to, the current actuarial assumptions adopted by the System's Board of Trustees, the System's benefit structure or the actuarial method used by the System) will reflect the actual results experienced by the System. Variances between the assumptions and actual results may cause an increase or decrease in, among other things, the System's actuarial value of assets, actuarial accrued liability, unfunded actuarial accrued liability or funded ratio. Actuarial assessments are 'forward-looking" information that reflect the judgment of the fiduciaries of the pension plans, and are based upon a variety of assumptions (including, but not limited to, the current actuarial assumptions, benefit structure or actuarial method used by the System), one or more of which may prove to be inaccurate or be changed in the future. Actuarial assessments will change with the future experience of the pension plans. See "*General Information*" and "*Actuarial Valuation*" herein for more information on the actuarial assumptions used by the System.

General Information

The System began operation on January 1, 1926. The statutory provisions of HRS Chapter 88 govern the operation of the System. Responsibility for the general administration of the System is vested in a Board of Trustees, with certain areas of administrative control being vested in the Department of Budget and Finance. The Board of Trustees consists of eight members: the Director of Finance of the State, ex officio; four members of the System (two general employees, one teacher, and one retiree) who are elected by the members and retirees of the System; and three citizens of the State (one of whom shall be an officer of a bank authorized to do business in the State, or a person of similar experience) who are appointed by the Governor and may not be employees of the State or any county. All contributions, benefits and eligibility requirements are established by statute, under HRS Chapter 88, and may only be amended by legislative action.

The System provides retirement, disability and death benefits that are covered by the provisions of the noncontributory, contributory and hybrid retirement plans. The three plans provide a monthly retirement allowance equal to the benefit multiplier (generally 1.25% or 2%) multiplied by the average final compensation (AFC) multiplied by years of credited service. The benefit multiplier decreased by 0.25% for new hybrid and contributory plan members hired after June 30, 2012. For members hired before January 1, 1971, AFC is the higher of the average salary earned during the five highest paid years of service, including the payment of salary in lieu of vacation, or the three highest paid years of service, excluding the payment of salary in lieu of vacation. For members hired on or after January 1, 1971 and before July 1, 2012, AFC is based on the three highest paid years of service, excluding the payment of salary in lieu of vacation. For members hired after June 30, 2012, AFC is based on the five highest paid years of service, excluding the payment of salary in lieu of vacation.

For members hired before July 1, 2012, the original retirement allowance is increased by 2.5% each July 1 following the calendar year of retirement. This cumulative benefit is not compounded and increases each year by 2.5% of the original retirement allowance without a ceiling (2.5% of the original retirement allowance the first year, 5.0% the second year, 7.5% the third year, etc.). For members hired after June 30, 2012, the post-retirement annuity increase was decreased to 1.5% per year.

Retirement benefits for certain groups, such as police officers, firefighters, some investigators, sewer workers, judges, and elected officials, vary from general employees. Further details of the benefits provisions of the pension plans may be found in the Department's financial report and in the financial and actuarial reports of the System. The System is funded from contributions by employers and, for the contributory and hybrid plans, by employees as well. Employer contribution rates are set by statute.

As of Fiscal Year 2015, the Department's financial reporting for pensions conforms to GASB Statement No. 68 (GASB 68), Accounting and Financial Reporting for Pensions. GASB 68 requires government employers participating in cost sharing multi-employer plans such as ERS to report a proportionate share of the net pension liability and pension expense of the plan. These measurements were provided by the System's consulting actuary, based on the actuarial valuation of the System.

At June 30, 2018, the Department reported a liability of $113.3 million for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The System's net pension liability as of June 30, 2016 was $12.950 billion. The Department's proportion of the net pension liability was based on the actual employer contributions to the pension plan relative to the contributions of all participating employers. At June 30, 2017, the Department's proportion was 0.88%, which was an increase of 0.01% from its proportion measured as of June 30, 2017.

For the year ended June 30, 2018, the Department recognized pension expense of $16.9 million.

Contributions are established by HRS Chapter 88 and may be amended through legislation. The employer rate is set by statute based on the recommendation of the ERS actuary resulting from an experience study conducted every five years. Since July 1, 2005, the employer contribution rate is a fixed percentage of compensation, including the normal cost plus amounts required to pay for the unfunded actuarial accrued liabilities. The contribution rates for Fiscal Year 2018 was 20.5%. Contributions to the System from the Department for June 30, 2018, 2017, and 2016 were $7.6 million; $6.9 million, and $6.6 million, respectively.

Table 14
Schedule of Employer Pension Contributions

Fiscal Year Ended	Statutorily Required Contribution	Contributions in Relation to Statutorily Required Contributions	Contribution Deficiency (Excess)	Covered – Payroll	Contributions as a %age of Covered Payroll
6/30/18	$7,561,614	$7,561,614	$ --	$36,816,067	20.5%
6/30/17	6,885,401	6,885,401	$ --	35,912,898	19.2
6/30/16	6,647,884	6,647,884	$ --	34,536,085	19.2
6/30/15	6,686,641	6,686,641	$ --	33,412,761	20.0

The following table presents the sensitivity of the Department's proportionate share of the net pension liability, recorded at June 30, 2018 based on the 2017 actuarial valuation report, calculated using the discount rate of 7.00%, as well as the Department's proportionate share of the net pension liability if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%):

Table 15

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Department's share of net pension liability ($000)	$146,891	$113,350	$85,695

The total pension liability as of June 30, 2017 was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.50%
Investment rate of return	7.00% per annum

The same rates were applied to all periods. There were no changes to ad hoc postemployment benefits including COLA. Post-retirement mortality rates were based on either the Client Specific Tables, for general employees, or the 1994 US Group Annuity Mortality Static Table, for police and firefighters. Pre-retirement mortality rates were based on the RP-2000 Mortality Tables.

The actuarial assumptions used in the actuarial valuations as of June 30, 2017 were based on the results of an actuarial experience study for the five-year period ending June 30, 2015. ERS updates the experience study every five years.

The long-term expected rate of return on pension 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 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 expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The discount rate used for the 2017 Valuation Report to measure the net pension liability 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 Department 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. The discount rate decreased by 0.65% since the prior measurement date (July 1, 2015).

Hawaii Employees' Retirement System

The Department's pension expense and liability is directly dependent on the overall performance and condition of the ERS. This section provides additional information on the System. While the ERS has adopted GASB 67, and all of its participating employers, including the Department, have adopted GASB 68, the System's actuary continues to provide an annual actuarial valuation report that is based on the provisions of Chapter 88 of the Hawaii Revised Statutes, as amended, and the actuarial assumptions adopted by the ERS Board of Trustees. This actuarial valuation report determines whether current employer contribution rates are adequate to ensure that the unfunded actuarial accrued liability (the "UAAL") can be funded over a period not exceeding 30 years, describes the financial condition of the ERS and analyzes changes in the ERS's condition. The information presented in this section is derived from the 2018 actuarial valuation report (the 2018 "Valuation Report"), presenting the actuarial condition of the ERS as of June 30, 2018.

The demographic data for each annual June 30 valuation is collected as of the March 31 preceding the valuation date. As of March 31, 2018, the contributory plan covered 5,647 active employees or 9% of all active members of the System, the noncontributory plan covered approximately 12,841 active employees or 19%, and the Hybrid Plan covered 47,783 active members or 72%. The Hybrid Plan membership will continue to increase in the future as most new employees will be required to join this plan.

As of March 31, 2018, the System's membership comprised approximately 66,271 active employees, 9,249 inactive vested members and 48,569 pensioners and beneficiaries. The following table shows the number of active members, inactive vested members and retirees and beneficiaries of the System as of March 31, 2016, 2017 and 2018:

Table 16
System Membership

Category	March 31, 2016	March 31, 2017	March 31, 2018
Active	67,377	65,911	66,271
Inactive, vested	7,741	9,241	9,249
Retirees and beneficiaries	45,506	46,927	48,569
Total	**120,624**	**122,079**	**124,089**

Much of the disclosure set forth in this "State Employees' Retirement System" section is based on the Report to the Board of Trustees on the 93rd Annual Actuarial Valuation for the Year Ended June 30, 2018 (the "2018 Valuation Report"), which is the most recent valuation report of the System.

The information presented in the 2018 Valuation Report was based on actuarial assumptions adopted by the System's Board of Trustees in December 2016 effective with the June 30, 2016 valuation. Since the June 30, 2016 valuation, there have been no changes in the benefit structure, but future employer contribution rates were enacted through statute. This is the sixth valuation with new members under the new tier of benefits and member contribution rates. However, the liability for this group of employees represents just a small fraction of the total liabilities of the system. Included in the 2018 Valuation Report are projections showing the long term impact of both the increased employer contributions and the change in benefits for employees first hired after June 30, 2012. In June 2012, the Governmental Accounting Standards Board ("GASB") voted to approve two new statements relating to the accounting and financial reporting for public employee pension plans by state and local governments. Statement No. 67, Financial Reporting for Pension

Plans ("GASB 67"), was effective for reporting periods beginning after June 15, 2013. GASB 67 requires enhanced pension disclosures in notes and required supplementary information for financial reports of pension plans. Statement No. 68, Accounting and Financial Reporting for Pensions ("GASB 68"), was effective for fiscal years beginning after June 15, 2014. GASB 68 requires governments providing defined benefit pension plans to recognize pension obligations as balance sheet liabilities (as opposed to footnote disclosures), require more immediate recognition of certain changes in liabilities, require use of the entry age normal actuarial cost method (currently employed by the System) for reporting purposes, and limit the smoothing of differences between actual and expected investment returns on pension assets. In certain cases, a lower discount rate will be required by valuing pension liabilities. In addition, employers participating in cost-sharing, multiple employer defined benefit plans will be required to report their proportionate shares of the collective net pension liability and expense for such plans.

The State implemented GASB 68 beginning with the fiscal year ending June 30, 2015. Like most public employers, the State reflected pension liabilities directly on its Statement of Net Position, which resulted in a reduction in the State's reported net position. As allowed under GASB 68 the State is reporting its GASB 68 disclosure items one year in arrears (information measured as of June 30, 2017 is reported as of June 30, 2018).

Funded Status

Based on the actuarial valuation as of June 30, 2018, the System's underfunded status has increased, compared to the prior year. The UAAL as of June 30, 2018 was $13.405 billion. The statutory employee and employer contribution rates are intended to provide for the normal cost plus the amortization of the UAAL over a period not in excess of 30 years. Based on the current contribution rates of 28.0% for police and fire employees and 18.0% for all other employees, the future contribution rates established in statute (see "*Funding Policy*" below), and the new benefit tier for employees hired after June 30, 2012 the actuary has determined that the remaining amortization period is 25 years. Since the aggregate funding period based on the contributions rates less 30 years, the rates are adequate to meet the requirements of Hawaii Revised Statutes Section 88-122(e)(1). The State statute provides that the employer contribution rates are subject to adjustment when the funding period is in excess of 30 years. See "*Funding Policy*" below for information on increases in the employer contribution rates and benefits changes.

Funding Policy

Act 163, SLH 2011, which became effective July 1, 2012, established the employer contribution rates set forth in the following table.

Table 17
Employer Contribution Requirements

Employer Contribution effective starting	Police Officers and Firefighters (% of total payroll)	Other Employees (% of total payroll)
July 1, 2012	22.0	15.5
July 1, 2013	23.0	16.0
July 1, 2014	24.0	16.5
July 1, 2015	25.0	17.0

Act 17, SLH 2017, which became effective July 1, 2017, was adopted to bring the System's funding period within 30 years by increasing employer contribution requirements as follows:

Employer Contribution effective starting	**Police Officers and Firefighters (% of total payroll)**	**Other Employees (% of total payroll)**
July 1, 2017	28.0	18.0
July 1, 2018	31.0	19.0
July 1, 2019	36.0	22.0
July 1, 2020	41.0	24.0

The Legislature also included $34.6 million in fiscal year 2017-2018 and $70.7 million in fiscal year 2018-2019 in the Executive Budget Bill (H.B. 100, H.D. 1, S.D. 1, C.D. 1 ("H.B. 100"), which was approved by the Legislature on May 2, 2017.

Under the contributory plan, police officers, firefighters, and corrections officers are required to contribute 12.2% of their salary to the plan and most other covered employees are required to contribute 7.8% of their salary. Under the Hybrid Plan, covered employees are generally required to contribute 6.0% of their salary to the plan, with sewer workers in specified classifications, water safety officers and emergency medical technicians required to contribute 9.75% of their salary. Effective July 1, 2012, contribution rates for newly hired employees covered under the contributory and Hybrid Plan increased by 2% pursuant to Act 163, SLH 2011, such that the corresponding contribution rates for new employees as discussed in this paragraph will be 14.2%, 9.8%, 8.0% and 11.75%, respectively. Employees covered under the noncontributory plan do not make contributions.

Actuarial Methods

The System's actuary uses the entry age normal cost method. The most recent valuation was performed for the year ended June 30, 2018.

Since the State statutes governing the System establish the current employee and employer contribution rates, the actuarial valuation determines the number of years required to amortize (or fund) the UAAL. For the June 30, 2018 valuation, this determination was made using an open group projection to reflect both the increasing contribution rates and the changes in benefits for members hired after June 30, 2012.

Because of this amortization procedure, any change in the unfunded actuarial accrued liability due to (i) actuarial gains and losses, (ii) changes in actuarial assumptions or (iii) amendments, affects the funding period.

On an aggregate basis with regards to the contributory, the Hybrid, and the noncontributory plans, the total normal cost for benefits provided by the System for the fiscal year beginning July 1, 2017 was 13.90% of payroll, which was 11.20% of payroll less than the total contributions required by law (19.16% from employers plus 5.94% in the aggregate from employees). Since only 8.02% of the employers' 19.16% contribution is required to meet the normal cost (5.75% comes from the employee contribution), it is intended that the remaining 11.20% of payroll will be used to amortize any unfunded actuarial accrued liabilities over a period of years in the future, assuming that total payroll increases by 3.50% per year.

Actuarial Valuation

The actuarial value of assets is based on the market value of assets with a four-year phase-in of actual investment return in excess of or below expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continue to be recognized on their original timeframe. The expected actuarial value of assets is calculated net of investment expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's actuarial value of assets, adjusted for contributions, benefits paid, and refunds.

The System's actuary uses certain assumptions (including rates of salary increase, probabilities of retirement, termination, death and disability, and an investment yield rate assumption) to determine the amount that an employer must contribute in a given year to provide sufficient funds to the System to pay benefits when due. The Board of Trustees periodically evaluates and revises the assumptions used by the System for actuarial valuations, including by commissioning experience studies to evaluate the actuarial assumptions to be used by the System. The current assumptions, including the 7.00% investment yield rate, were adopted by the System's Board of Trustees based on the recommendations of the System's actuary in the most recent experience study, the 2015 Experience Study. These assumptions, funding changes and benefit structure are reflected in the 2018 Valuation Report.

The actual investment returns of the System for Fiscal Years 2007 through 2018 shown below are market returns, net of investment and administrative expenses.

Table 18
Schedule of Investment Returns

Fiscal Year	Percentage
2007	17.81
2008	-3.51
2009	-17.54
2010	11.96
2011	21.25
2012	-0.14
2013	12.57
2014	17.77
2015	4.23
2016	-0.78
2017	13.90
2018	7.89

Source: Report on Investment Activity for the ERS prepared by Callan Associates, Inc. (2006), Pension Consulting Alliance, Inc. (2007), The Northern Trust Company (2008-2013), and The Bank of New York Mellon (2014-2016), and reported in the System's Comprehensive Annual Financial Reports; and 2017 and 2018 Valuation Reports (2017-2018).

Due to the significant changes in the future contribution rates and benefits for employees hired after June 30, 2012, the ERS funding policy uses an open group projection for determining how many years it will take to eliminate the unfunded liabilities of the System. The System is expected to be fully funded in 2043 which is 25 years from now. Therefore, the funding period is equal to 25 years. The open group projection assumes that the number of active members will remain constant and that there will be no actuarial gains or losses on liabilities or investments.

Table 19 shows the System's funding progress for the ten most recent actuarial valuation dates. Table 20 shows the System's projected funding progress through the Fiscal Year ending June 30, 2047, when the System is projected to be fully funded.

<u>Table 19</u>
Schedule of Funding Progress
(Dollar amounts in millions)

June 30,	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b)-(a)	Funded Ratio (a)/(b)	Payroll (c)	UAAL as a Percentage of Payroll ((b)-(a))/(c)
2008	11,381.0	16,549.1	5,168.1	68.8	3,782.1	136.6
2009	11,400.1	17,636.4	6,236.3	64.6	4,030.1	154.7
2010	11,345.6	18,483.7	7,138.1	61.4	3,895.7	183.2
2011*	11,942.8	20,096.9	8,154.2	59.4	3,916.0	208.2
2012	12,242.5	20,683.4	8,440.9	59.2	3,890.0	217.0
2013	12,748.8	21,243.7	8,494.9	60.0	3,906.7	217.4
2014	13,641.8	22,220.1	8,578.3	61.4	3,991.6	214.9
2015*	14,463.7	23,238.4	8,774.7	62.2	4,171.4	210.4
2016*	14,998.7	27,439.2	12,440.5	54.7	4,258.9	292.1
2017	15,720.6	28,648.6	12,928.0	54.9	4,265.0	303.1
2018	16,512.7	29,917.4	13,404.7	55.2	4,383.7	305.8

New assumption effective on valuation date.

Source: The 2018 Valuation Report.

Table 20
Projected Funding Progress*
(Dollar amounts in millions)

Fiscal Year (ending June 30)	Employer Contributions	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio
2018	$ 893	$29,917	$16,513	$13,405	55.2%
2019	1,060	30,983	17,208	13,774	55.5
2020	1,197	32,152	18,157	13,995	56.5
2021	1,231	33,325	19,238	14,088	57.7
2022	1,266	34,502	20,349	14,153	59.0
2023	1,302	35,681	21,494	14,187	60.2
2024	1,339	36,861	22,675	14,185	61.5
2025	1,379	38,040	23,894	14,146	62.8
2026	1,420	39,216	25,153	14,063	64.1
2027	1,463	40,391	26,458	13,933	65.5
2028	1,509	41,566	27,816	13,749	66.9
2029	1,556	42,740	29,233	13,508	68.4
2030	1,606	43,918	30,716	13,202	69.9
2031	1,657	45,098	32,273	12,825	71.6
2032	1,711	46,283	33,912	12,371	73.3
2033	1,767	47,473	35,641	11,833	75.1
2034	1,825	48,670	37,468	11,201	77.0
2035	1,885	49,876	39,407	10,469	79.0
2036	1,948	51,093	41,467	9,626	81.2
2037	2,013	52,325	43,662	8,664	83.4
2038	2,082	53,577	46,006	7,571	85.9
2039	2,153	54,853	48,517	6,336	88.4
2040	2,227	56,159	51,212	4,947	91.2
2041	2,304	57,501	54,111	3,390	94.1
2042	2,385	58,886	57,233	1,653	97.2
2043	412	60,321	60,602	(281)	100.5
2044	422	61,813	62,114	(301)	100.5
2045	433	63,369	63,691	(322)	100.5
2046	444	64,993	65,338	(344)	100.5
2047	458	66,694	67,062	(368)	100.6

Source: The 2018 Valuation Report

**Assumes all actuarial assumptions exactly met, including a 7.00% annual return on the current actuarial value of assets. No assurance can be given that any of such assumptions will reflect the actual results experienced by the System. Actuarial assessments are "forward-looking" information that reflect the judgment of the fiduciaries of the System, and variances between the assumptions and actual results may cause an increase or decrease in, among other things, the System's actuarial accrued liability, actuarial value of assets or funded ratio.*

The total assets of the System on a market value basis amounted to approximately $14.5 billion as of June 30, 2015, $14.1 billion as of June 30, 2016, $15.7 billion as of June 30, 2017, and $16.6 billion as of June 30, 2018. Actuarial certification of assets as of June 30, 2017 was $15.7 billion. The June 30, 2018 actuarial certification of assets was $16.5 billion, and its unfunded actuarial accrued liability was $13.4 billion. Since the System is a cost-sharing, multiple employer public retirement system, the unfunded actuarial accrued liability is not allocated to the State and the counties. The following table shows the normal cost as a percentage of payroll, employee contribution rate and effective employer normal cost rate for the two groups of covered employees for fiscal years 2017 and 2018:

Table 21
Normal Cost

	June 30					
	2017			2018		
	Police and Firefighters	Other Employees	All Employees	Police and Firefighters	Other Employees	All Employees
Normal cost as % of payroll	25.56%	12.39%	13.96%	25.46%	12.38%	13.90%
Employee contribution rate	12.43	5.06	5.94	12.49	5.24	6.08
Effective employer normal cost rate	13.13	7.33	8.02	12.97	7.14	7.82

Source: The 2018 Valuation Report.

The following table shows a comparison of the actuarial value of assets ("AVA") to the market values, the ratio of the AVA to market value and the funded ratio based on AVA compared to funded ratio based on market value of assets:

Table 22
Actuarial Value of Assets

Fiscal Year (ending June 30)	Actuarial Value of Assets (in millions)	Market Value of Assets (in millions)	Market Value as Percentage of AVA	Funded Ratio (AVA)	Funded Ratio (Market Value)
2006	$ 9,529.4	$ 9,932.4	104.2%	65.0%	67.7%
2007	10,589.8	11,434.3	108.0	67.5	72.8
2008	11,381.0	10,846.8	95.3	68.8	65.5
2009	11,400.1	8,818.0	77.4	64.6	50.0
2010	11,345.6	9,821.6	86.6	61.4	53.1
2011	11,942.8	11,642.3	97.5	59.4	57.9
2012	12,242.5	11,285.9	92.2	59.2	54.6
2013	12,748.8	12,357.8	96.9	60.0	58.2
2014	13,641.8	14,203.0	104.1	61.4	63.9
2015	14,463.7	14,505.5	100.3	62.2	62.4
2016	14,998.7	14,070.0	93.8	54.7	51.3
2017	15,720.6	15,698.3	99.9	54.9	54.8
2018	16,512.7	16,598.4	100.5	55.2	55.5

Source: The 2018 Valuation Report.

Asset Allocation

The following table shows the target and actual asset allocation of the System as of June 30, 2018:

Table 23
Asset Allocation
(as of June 30, 2018)

	Actual		Target		Allocation
	Allocation ($mm)	**Percentage**	**Allocation ($mm)**	**Percentage**	**Difference**
Broad Growth	$12,313.2	74.7%	$11,870.7	72.0%	2.7%
Principal Protection	1,363.5	8.3	1,319.0	8.0	0.3
Crisis Risk Offset	2,120.3	12.9	2,143.3	13.0	-0.1
Real Return	514.8	3.1	1,154.1	7.0	-3.9
Opportunities	28.6	0.2	0.0	0.0	0.2
Other	146.7	0.9	0.0	0.0	0.9
Total	**$16,487.1**	**100.0%**	**$16,487.1**	**100.0%**	

Source: Valuations provided by BNY Mellon.

Employer Contribution Rate

The schedule which follows shows the total actuarially determined employer contribution rate for all employees based on the last six annual actuarial valuations.

Table 24
Employer Contribution Rates

Actuarial Valuation as of June 30	Total Calculated Employer Contribution Rate for All Employees (% of total payroll)*	Funding Period (Years)
2013	16.76	28.0
2014	17.28	26.0
2015	17.89	26.0
2016	17.91	66.0
2017	19.16	26.0
2018	20.36	25.0

* *Reflects Act 181, SLH 2004, which amended Sections 88-105, 88-122, 88-123, 88-124, 88-125, 88-126, Hawaii Revised Statutes, and Act 163, SLH 2011* and Act 17, SLH 2017.

The increase in funding period 2016 is primarily due to the decrease in the investment return assumption from 7.65% to 7.00%. The large decrease in funding period in 2017 is primarily due to investment gains and a mandated increase in employer contributions under Act 17, SLH 2017.

Summary of Actuarial Certification Statement

The summary of the actuarial certification of the Employees' Retirement System as of June 30, 2017 and 2018 is set forth below:

Table 25
Employees' Retirement System of the State of Hawaii
Summary of Actuarial Certification as of June 30, 2017 and 2018
(Includes all counties)

ASSETS	2017	2018
Total current assets	$15,720,627,120	$16,512,744,474
Present value of future employee contributions	2,283,117,878	2,425,178,684
Present value of future employer normal cost contributions	2,675,729,127	2,664,690,218
Unfunded actuarial accrued liability	12,928,003,413	13,404,656,909
Present value of future employer Early Incentive Retirement Program contribution	N/A	N/A
TOTAL ASSETS	$33,607,477,538	$35,007,270,285
LIABILITIES		
Present value of benefits to current pensioners and beneficiaries	$15,020,603,612	$16,008,847,800
Present value of future benefits to active employees and inactive members	18,586,873,926	18,998,422,485
TOTAL LIABILITIES	$33,607,477,538	$35,007,270,285

Source: Gabriel, Roeder, Smith & Company.

As of June 30, 2017, the unfunded actuarial accrued liability (under the entry age normal actuarial cost method) of the System amounted to approximately $12.928 billion. The System's funded ratios – assets divided by the actuarial accrued liability – increased during Fiscal Year 2017.

Other Post-Employment Benefits. In addition to pension benefits, beginning with the Fiscal Year ending June 30, 2008, state and local governments are required to account for and report other post-employment benefits ("OPEBs") under Statement No. 45 ("GASB 45") issued by the Governmental Accounting Standards Board. OPEBs consist of certain health and life insurance benefits provided through the Trust Fund to retired State and county employees and their dependents, including retired Department employees and their dependents. The Trust Fund operates as an agent multiple employer defined benefit plan; liabilities and contribution requirements are measured for each participating government employer and the assets of each employer are held in separate accounts, although pooled for investment purposes. Beginning in Fiscal Year 2015, employer contributions to the Trust Fund for these benefits are determined by the Trust Fund based on an actuarial analysis of the amounts required to prefund the retiree benefits. The following table describes the number of retired and active Department employees receiving OPEBs at July 1, 2017 and July 1, 2018:

Table 26
Retiree Health Care Plan Membership

Category	July 1, 2017	July 1, 2018
Retirees	580	592
Deferred Inactives	53	52
Actives	570	568

This section contains certain information relating to the Trust, derived primarily from information produced by the Trust, its independent accountant and its actuary. The Department has not independently verified the information provided by the Trust, its independent accountant and its actuary, and makes no representations nor expresses any opinion as to the accuracy of such information. The comprehensive annual financial report of the System and most recent valuation report of the System may be obtained by contacting the System. The comprehensive annual financial reports of the System are also available on the State's website at http://portal.ehawaii.gov, and other information about the System are available on the System's website at http://eutf.ehawaii.gov. Such documents and other information are not incorporated herein by reference.

In January 2019, the State's independent actuarial consultant estimated the actuarial accrued liabilities and annual OPEB costs under GASB 74 and 75 for the State and the counties for the Fiscal Year ending June 30, 2018. These estimates were based on the actuarial valuation as of July 1, 2018. Assuming full prefunding of obligations, the actuarial accrued liability for Trust Fund OPEBs for the Department was estimated to be approximately $153,015,000 with full prefunding for such period. The corresponding annual required contribution is estimated to be approximately $7,945,000 million for Fiscal Year 2019 with full prefunding, as compared to $8,467,000 million for Fiscal Year 2018. The annual OPEB cost is estimated at $7,315,971 for Fiscal Year 2018, as compared to $8,152,000 for Fiscal Year 2017.

Contributions to the Trust Fund to prefund the Department's OPEB obligations are determined on a year-by-year basis. For Fiscal Years 2014 through 2018, the Department has contributed to the Trust Fund in the amounts of $16,482,667, $10,750,399, $11,728,539, $11,724,728, and $16,183,152, respectively. The Department intends to fully prefund its estimated OPEB obligations for the fiscal year ending June 30, 2019.

Act 268, Session Laws of Hawaii 2013, established a separate trust fund for public employer contributions to prefund OPEB costs. The Act requires all public employers within the State, including the Department, to contribute annually to the trust fund the full amount of their actuarily-determined required contributions beginning in Fiscal Year 2019, and obligates the State finance director to use the transient accommodations tax and other revenues collected by the State on behalf of a public employer to supplement deficient employer contributions. As noted above, the Department has fully prefunded its OPEB obligations consistently for several years.

The following table sets forth the OPEB funding progress for the Department since FY 2007.

Table 27
OPEB Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b)-(a)	Funded Ratio (a)/(b)	Covered Payroll (c)	Unfunded AAL as a % of Covered Payroll (b-a)/(c)
7/1/07	$ 0	$ 94,188,000	$ 94,188,000	0.0%	$29,115,000	323.5%
7/1/09	5,244,000	143,333,000	138,089,000	3.7	33,104,000	417.1
7/1/11	14,557,000	127,154,000	112,597,000	11.4	29,900,000	376.6
7/1/13	25,638,000	122,886,000	97,248,000	20.9	31,677,000	307.0
7/1/15	50,689,000	137,018,000	86,329,000	37.0	34,218,000	252.3
7/1/17	71,668,000	146,390,000	74,722,000	49.0	37,138,000	201.2
7/1/18	79,800,000	153,015,000	73,215,000	52.2	37,500,000	194.8

The OPEB ARC, actuarial accrued liability, and unfunded actuarial accrued liability are provided by the Trust Fund's actuary, measured in the most recent actuarial valuation report as of July 1, 2018. Significant actuarial methods and assumptions utilized in the Trust Fund's 2018 Actuarial Valuation Report are as follows:

Amortization method	Level percentage, closed
Equivalent single amortization period	17.9 years
Asset valuation method	Smoothed
Actuarial assumptions	
Investment rate of return	7.00%
Payroll growth	3.50%
Healthcare inflation rates	
PPO	Initial rate of 10.0%; declining to a rate of 4.86% after 13 years
HMO	Initial rate of 10.0%; declining to a rate of 4.86% after 13 years
Dental	5.0% for the first 3 years; then 4.0% for all future years
Vision	0.00% for the first 3 years; then 2.5% for all future years
Medicare Part B	Initial rate of 4.00% and 5.00%; declining to a rate of 4.70% after 12 years
Life Insurance	0.00%

In June 2015, GASB approved new accounting and financial reporting standards for state and local government OPEB. Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans,* (GASB 74) applies to OPEB plans. Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions,* (GASB 75) applies to state and local employers that sponsor OPEB. Generally, the new OPEB standards parallel those applied to defined-benefit pension plans and participating employers by GASB 67 and 68, respectively. The new standards introduce new procedures for measuring OPEB liabilities and costs, require employers to report a net OPEB liability on their financial statements, and require more extensive disclosure in plan and employer financial statements. GASB 74 was effective for plans with fiscal years beginning after June 15, 2016. GASB 75 was effective for employers for fiscal years beginning after June 15, 2017. The Department has implemented the new standards.

Historical and Projected Revenues, Expenses and Debt Service Coverage

The following table presents the Board's revenues, expenses and debt service coverage ratios for the Fiscal Years ended June 30, 2014 through 2018. The information presented in the table is based on the Board's audited financial statements for Fiscal Years 2014-2018.

Attached as Appendix B hereto are the Board's audited financial statements for the Fiscal Year ended June 30, 2018. Reference is made to such Appendix for further information regarding the Board's financial condition as of June 30, 2018 and its results of operations for the Fiscal Year then ended.

Table 28
Historical Revenues, Expenses and Debt Service Coverage
Fiscal Years 2014-2018

	2014	Restated 2015	Restated 2016	2017	2018
Operating revenues:					
Water sales	$191,593,726	$212,486,218	$234,725,808	$229,083,940	$229,526,599
Other operating revenues	3,776,974	4,721,506	4,277,747	2,629,361	3,303,197
Total operating revenues:	$195,370,700	$217,207,724	$239,003,555	$231,713,301	$232,829.796
Operating expenses (excluding depreciation):					
Administrative and general	$ 48,589,194	$ 58,384,569	$ 61,722,651	$ 63,860,738	$ 70,493,764
Maintenance	14,307,033	12,338,299	12,440,083	12,033,589	12,663,811
Power and pumping	35,577,725	35,478,158	30,189,514	29,899,130	32,064,982
CASE fees	3,300,000	3,300,000	3,300,000	3,300,000	3,300,000
Transmission and distribution	14,589,465	15,402,498	19,160,599	20,341,122	21,106,882
Customer accounting and collection*	9,790,050	6,566,458	5,249,768	4,686,863	4,022,619
Water reclamation	5,846,107	5,203,162	4,553,447	3,975,033	5,164,896
Water treatment	--	--	--	--	--
Source of supply	64,064	33,468	27,037	50,032	4,418
Total operating expenses:	$132,063,638	$136,706,612	$136,643,099	$138,146,507	$148,821,372
Operating income:	$ 63,307,062	$ 80,501,112	$102,360,456	93,566,794	$ 84,008,424
Nonoperating revenues:					
Interest income	$ 2,148,814	$ 3,088,165	$ 4,150,911	$ 4,616,741	$ 6,097,077
Total nonoperating revenues:	$ 2,148,814	$ 3,088,165	$ 4,150,911	$ 4,616,741	$ 6,097,077
Net revenues:	$ 65,455,876	$ 83,589,277	$106,511,367	$98,183,535	$ 90,105,501
Annual debt service:					
Senior debt (revenue bonds)**	$ 20,513,303	$ 15,399,941	$ 17,890,708	$ 17,787,071	$ 17,844,248
Junior debt (SRF loans)***	1,722,537	2,814,432	4,182,716	18,992,332	13,803,000
Debt service coverage:					
Senior debt coverage	3.19	5.43	5.95	5.52	5.05
All-in coverage	2.94	4.59	4.83	2.67	2.85

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* *The Board began billing residential customers on a monthly basis effective January 22, 2013. Consequently, water sales revenues and customer accounting and collection costs are projected to increase at that time.*

** *The Board's Fiscal Year begins on July 1 and ends on June 30. Debt service payments are due on January 1 and July 1 each year and it is the Board's practice to set aside and reserve amounts due monthly in advance. Accordingly, annual debt service totals shown in the table above include amounts reserved for payment in the Fiscal Year indicated but not actually paid until July 1 of the following Fiscal Year, and similarly exclude amounts reserved for payment in the prior Fiscal Year but not actually paid until July 1 of the indicated Fiscal Year.*

*** *The debt service for SRF loans in 2017 and 2018 includes an early retirement payment of principal and interest of $15,654,000 and $9,756,000, respectively.*

The following table sets forth the Board's projected revenues, expenses and debt service coverage ratios for the Fiscal Years ended June 30, 2019 through 2023.

Table 29
Projected Revenues, Expenses and Debt Service Coverage
Fiscal Years 2019-2023

	2019*	**2020***	**2021***	**2022***	**2023***
Operating revenues:					
Water sales	$232,839,186	$236,616,994	$240,456,094	$249.010,138	$257,872,383
Other operating revenues	2,586,592	2,613,124	2,640,186	2,667,790	2,695,946
Total operating revenues:	$235,425,778	$239,230,118	$243,096,280	$251,677,928	$260,568,329
Operating expenses (excluding depreciation):					
Administrative and general	$ 60,911,363	$ 62,967,188	$ 65,310,682	$ 68,440,645	$ 71,456,238
Maintenance	12,860,952	13,295,024	13,789,834	14,450,701	15,087,419
Power and pumping	32,903,995	34,014,541	35,280,484	36,971,273	38,600,280
CASE fees	3,326,588	3,438,864	3,566,851	3,737,789	3,902,482
Transmission and distribution	19,768,843	20,436,063	21,196,646	22,212,478	23,191,192
Customer accounting and collection	6,166,019	6,374,129	6,611,360	6,928,204	7,233,470
Water reclamation	4,982,923	5,151,102	5,342,814	5,598,865	5,845,559
Water treatment	--	--	--	--	--
Source of supply	41,756	43,166	44,772	46,918	48,985
Depreciation:	46,711,424	48,287,986	50,085,154	52,485,445	54,798,029
Total operating expenses	187,673,863	194,008,063	201,228,597	210,872,318	220,163,654
Less: Depreciation expense	(46,711,424)	(48,287,986)	(50,085,154)	(52,485,445)	(54,798,029)
Less: Allocated depreciation charges	(1,558,903)	(1,611,518)	(1,671,495)	(1,751,600)	(1,828,778)
Total operating expenses:	$139,403,536	$144,108,559	$149,471,948	$156,635,273	$163,536,847
Operating income:	$ 96,022,242	$ 95,121,559	$ 93,624,332	$ 95,042,655	$ 97,031,482
Nonoperating revenues:					
Interest income	$ 3,198,920	$ 3,374,640	$ 3,387,339	$ 3,517,134	$ 3,502,837
Total nonoperating revenues:	$ 3,198,920	$ 3,374,640	$ 3,387,339	$ 3,517,134	$ 3,502,837
Net revenues:	$ 99,221,162	$ 98,496,199	$ 97,011,671	$ 98,559,789	$ 100,534,319
Annual debt service:					
Senior debt (revenue bonds)	$ 17,725,023	$ 17,722,128	$ 17,723,242	$ 25,532,910	$ 25,717,846
Junior debt (SRF loans)	4,567,762	5,546,353	6,063,421	6,328,289	6,627,443
Debt service coverage:					
Senior debt coverage	5.60	5.56	5.47	3.86	3.91
All-in coverage	4.45	4.23	4.08	3.09	3.11

* *2019-2023 revenues, expenses and debt service is based on the Financial Plan and Rate model for FY2019-FY2023.*

** *Following the completion of a Cost of Service study in July 2017 and a Long Range Financial Plan in February 2018, the Board approved a Revision to the Schedule of Rates and Charges for the Furnishing of Water and Water Service on August 27, 2018. This schedule will implement a new rate structure and increase rates beginning on July 1, 2019.*

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Management's Discussion of Financial Performance

The increase in net position for the year ended June 30, 2018 was $46.2 million, compared to an increase of $60.4 million for the year ended June 30, 2017.

Operating revenues for the year ended June 30, 2018 totaled $232.4 million, a slight increase of $0.9 million or 0.4% from the year ended June 30, 2017. This was the result of overall water consumption that was relatively consistent year-over-year with no significant changes to the water rates in effect.

Total operating expenses increased by $10.0 million in Fiscal Year 2018. Factors contributing to this change are explained below:

- Administrative and general expenses increased by $6.6 million in Fiscal Year 2018. This is primarily due to an increase in pension expense of $1.5 million, an increase in the estimated ultimate cost of settling workers' compensation claims of $1.8 million, and an increase in professional services expense of $1.9 million that was largely the result of costs related to the BWS continuous efforts in monitoring the impact of the jet fuel leak at the Red Hill Fuel Storage Facilities.

- Power and pumping expenses increased by $2.2 million in Fiscal Year 2018 mainly due to increases in electricity costs.

- Other operating expenses increased by $2.0 million during Fiscal Year 2018 mainly due to the increase in water reclamation and transmission and distribution costs.

The Department's current assets were 3.1 and 3.7 times its related current liabilities as of June 30, 2018 and 2017, respectively. The ratio decrease at June 30, 2018 was due to a decrease in cash and cash equivalents. The decrease in cash can be attributed to transfers to investment accounts.

Recent Legislation

Act 35, Session Laws of Hawaii (SLH) (2018) authorizes the issuance of Special Purpose Revenue Bonds for Nuuanu Reservoir #1 for the Nuuanu Hydroelectricity Project not to exceed $4,800,000 to generate renewable hydroelectric energy, provide energy storage of off-peak solar or wind energy supplies, and supplement usable groundwater supplies through the increase of groundwater recharge of captured stormwater.

Act 36, Sessions Laws of Hawaii (SLH)(2018) authorizes the issuance of Special Purpose Revenue Bonds for Nuuanu Reservoir #4 for the Nuuanu Hydroelectricity Project not to exceed $6,400,00 to generate renewable hydroelectric energy, provide energy storage of off-peak solar or wind energy supplies, and supplement usable groundwater supplies through the increase of groundwater recharge of captured stormwater.

Act 121, Sessions Laws of Hawaii (SLH) (2018) relating to the Hawaii Green Infrastructure Financing creates a sub-fund within the special fund program that allows all state agencies and departments the opportunity to obtain low-cost financing at an interest rate of 3.5 percent a year from the Green Energy Market Securitization Program to reduce energy costs and consumption by installing energy-efficiency measures.

Senate Resolution No. 133 urges the formation of a Critical Infrastructure and Resiliency Council "to establish strategies, goals, priorities and recommendations to enhance security and resiliency of the electric grid, and other critical infrastructure sectors in the state" and submit a report.

House Concurrent Resolution No. 86 (companion to SR No. 74, as adopted) requests the Department of Health to convene a task force to identify barriers and solutions to expanded water reuse and report its findings and recommendations to the Legislature.

INVESTMENTS

Cash deposited with the City is maintained by the Department of Budget and Fiscal Services of the City. The City maintains a cash and investment pool that is used by all of the City's Funds and the BWS. The Hawaii Revised Statutes ("HRS") provide for the City's Director of Budget and Fiscal Services to deposit the cash with any national or state bank or federally-insured financial institution authorized to do business in the State of Hawaii, provided that all deposits are fully insured or collateralized. The City's demand deposits are fully insured or collateralized with securities held by the City or its agents in the City's name.

Statutes authorize the Board to invest, with certain restrictions, in bonds or interest-bearing notes or obligations of the county, State of Hawaii, United States, or of agencies of the United States for which the full faith and credit of the United States are pledged for the payment of principal and interest; federal land bank bonds; joint stock farm loan bonds; Federal Home Loan Bank notes and bonds; Federal Home Loan Mortgage Corporation bonds; Federal National Mortgage Association notes and bonds; securities of a mutual fund whose portfolio is limited to bonds or securities issued or guaranteed by the United States or an agency thereof, repurchase agreements fully collateralized by any such bonds or securities; bank savings accounts; time certificates of deposit; certificates of deposit open account; bonds of any improvement district of any county of the State; bank, savings and loan association, and financial services loan company repurchase agreements; and student loan resource securities.

The Board has formulated a written investment policy to manage its investments which emphasizes: first, Safety, to preserve public funds; second, Liquidity, so that funds are available when needed; and third, Yield, but only after the first two considerations are met. Board funds may only be deposited in federal banks or Hawaii financial institutions. Investment managers of Board funds must comply with investment restrictions in the Resolution and the restrictions imposed by federal law and regulations resulting from the issuance of tax-exempt bonds. In 2015 the Board entered into investment agreements with First Hawaiian Bank and Bank of Hawaii to hold Board investments. Such investments are monitored by the Investment Committee and managed by two independent investment managers as of June 30, 2017. The aggregate fair value of such investments as of June 30, 2018, was $409,373,000.

PENDING LITIGATION

In the normal course of business, claims and lawsuits are filed against the City and County and the Board and their respective officers and employees. The Board is insured for $15,000,000 (aggregate) which is in excess of their $750,000 self-insured retention. Claims against the City and County which are related to the Water System are chargeable against the Board. In the Fiscal Year ending June 30, 2018, the Board paid claims in the amount of $884,000. As of October 31, 2018, pending claims and lawsuits that have been filed against the Board have the potential to surpass the amount paid for claims in the Fiscal Year ending June 30, 2018. In the opinion of the Waterworks Controller of the Board, based on an analysis of the known claims and litigation, the expected liability arising out of pending litigation would not constitute a material impairment of the financial position of the Board.