



FAIRFAX COUNTY WATER AUTHORITY

**Management's Discussion and Analysis, Basic Financial Statements,
Required Supplementary Information and Supplementary Information
December 31, 2018
(With Independent Auditor's Report Thereon)**



ASSURANCE, TAX & ADVISORY SERVICES

FAIRFAX COUNTY WATER AUTHORITY

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INDEPENDENT AUDITOR'S REPORT

To the Honorable Board Members
Fairfax County Water Authority

Report on the Financial Statements

We have audited the accompanying financial statements of the Fairfax County Water Authority (Authority), as of and for the year ended December 31, 2018, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the *Specifications for Audits of Authorities, Boards, and Commissions* issued by the Auditor of Public Accounts of the Commonwealth of Virginia. Those standards and specifications require 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 Authority'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 Authority'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 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 Authority, as of December 31, 2018, and the respective change in financial position and cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note 17 to the financial statements, the Authority restated beginning net position in order to record the liability for other postemployment benefits and related components in accordance with the implementation of GASB Statement No. 75.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require the Management's Discussion and Analysis and the required supplementary information on pages 4-9 and 55-61, respectively, be presented to supplement the financial statements. Such 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 financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the basic financial statements that collectively comprise the Authority's basic financial statements. The accompanying statement and schedule listed in the table of contents as supplementary information are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The Statement of Changes in Assets and Liabilities – Agency Funds and the Schedule of Bonds Payable are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information noted above is fairly stated, in all material respects, in relation to the financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated April 11, 2019 on our consideration of the Authority'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 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 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 Authority's internal control over financial reporting and compliance.

PBMares, LLP

Harrisonburg, Virginia
April 11, 2019

FAIRFAX COUNTY WATER AUTHORITY

Management's Discussion and Analysis

This section of the Fairfax County Water Authority (Fairfax Water) annual financial report presents management's analysis of Fairfax Water's financial performance during the fiscal year ended December 31, 2018. This analysis should be read in conjunction with the basic financial statements that follow this section.

Financial Highlights

- Fairfax Water maintained triple-A bond ratings from Moody's Investors Service, Standard & Poor's, and Fitch Ratings.
- Effective April 1, 2018, Fairfax Water increased the commodity charge by thirteen cents to \$2.94. Even with this 4.6% increase, Fairfax Water's rates are among the lowest in the area. Other fees and connection charges were also revised at that time.
- The revenue from retail customers for fiscal year 2018 increased by \$422,000, approximately 0.4% over fiscal year 2017.
- The increase in net position during the year of \$35.0 million included operating income of \$28.9 million, net nonoperating income of \$1.6 million and capital contributions of \$4.5 million.
- Operating expenses during 2018 increased by approximately \$1.1 million, which is 1.2% above 2017.
- Capital assets (water lines, water tanks, treatment plants, pumping stations, multi-purpose facilities, and other facilities), net of disposals and accumulated depreciation and amortization, increased by \$30.1 million, approximately 1.7% over 2017.

Overview of the Financial Statements

This annual financial report consists of three parts – management's discussion and analysis, the basic financial statements, and required supplementary information. The basic financial statements consist of:

- Statement of Net Position
- Statement of Revenues, Expenses and Change in Net Position
- Statement of Cash Flows
- Statement of Fiduciary Net Position
- Notes to Basic Financial Statements

The Statement of Net Position provides a snapshot of Fairfax Water's assets, deferred outflows of resources, liabilities, and deferred inflows of resources, providing information about the nature and amounts of investments in resources (assets and deferred outflows of resources) and obligations (liabilities and deferred inflows of resources). This statement may be used to evaluate the capital structure, liquidity, and financial flexibility of Fairfax Water. The Statement of Revenues, Expenses and Change in Net Position reflects revenue and expense activity for the fiscal year. This statement allows the user to measure the success of Fairfax Water's operations and can be used to determine whether Fairfax Water has successfully recovered its costs through user fees and other charges. The Statement of Cash Flows reports the cash provided and

used in operating activities as well as other cash sources, such as investment income and cash payments for repayment of bonds and capital additions. Cash provided by operating activities is reconciled to operating income. Fairfax Water uses the direct method for presenting the cash flow statement.

The Statement of Fiduciary Net Position (Agency Funds) reflects the amount collected and owed to Fairfax County and the Cities of Falls Church and Fairfax for sales of sewer services.

The Notes to Basic Financial Statements and the Required Supplementary Information provide necessary disclosures that are essential to a full understanding of the data provided in the statements.

Fairfax Water operates as an enterprise fund, which is one type of proprietary fund. Enterprise funds operate similarly to private businesses in that charges for services to customers are expected to cover expenses. Fairfax Water's basic financial statements are presented using the accrual basis of accounting and the economic resources measurement focus. Revenue is recognized when water or other services are delivered. Expenses are recognized when goods and services are received. All revenues and expenses are recognized regardless of when cash is received or paid.

Financial Analysis

During 2018, Fairfax Water maintained its sound financial position, as demonstrated by Fairfax Water's continued growth in net position and strong cash and investment portfolio, along with the strategic management of its debt borrowings, as outlined in the financial statements and schedules included in this report. While exercising prudent fiscal discipline, Fairfax Water continues to ensure it is able to provide safe and reliable water to its customers.

Net Position

The following table reflects Fairfax Water's net position at December 31, 2018 and 2017:

Summary of Net Position
(in millions)

	2018	2017 (as restated)	Increase (Decrease)	% Change
Current and other assets	\$ 293.1	\$ 308.0	\$ (14.9)	(4.8)
Capital assets, net of accumulated depreciation and amortization	1,786.7	1,756.6	30.1	1.7
Total assets	2,079.8	2,064.6	15.2	0.7
Deferred outflows of resources	60.1	56.7	3.4	6.0
Other liabilities	34.9	33.3	1.6	4.8
Long-term liabilities	651.4	688.9	(37.5)	(5.4)
Total liabilities	686.3	722.2	(35.9)	(5.0)
Deferred inflows of resources	28.6	9.1	19.5	214.3
Net position:				
Net investment in capital assets	1,305.5	1,273.4	32.1	2.5
Restricted for debt service	41.6	41.2	0.4	1.0
Unrestricted	77.9	75.4	2.5	3.3
Total net position	\$ 1,425.0	\$ 1,390.0	\$ 35.0	2.5

Restatement of beginning net position was necessary for the adoption of GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. A more detailed description can be found in Note 17 to the basic financial statements.

During 2018, Fairfax Water's net position increased 2.5% to \$1,425.0 million. Capital assets, net of accumulated depreciation and amortization, increased 1.7% to \$1,786.7 million. This increase is attributable to various projects to expand and improve Fairfax Water infrastructure. In addition, during 2018, developers constructed \$1.0 million of capital assets and donated them to Fairfax Water. Additional information is presented in the Capital Assets section of this discussion and Notes 4 and 5 of the basic financial statements.

Current and other assets decreased 4.8% due primarily to a \$5.2 million and \$21.4 million decrease in cash and cash equivalents and investments, respectively. The decrease in cash and cash equivalents and investments is the result of ongoing construction spending. The remaining \$11.7 million increase in current and other assets mainly relates to increased receivables from wholesale customers and capital contributions from Vulcan Land, Inc. for shared development costs associated with the transformation of the Graham Quarry to a future water supply reservoir to be used by Fairfax Water.

Deferred outflows of resources increased 6.0% to \$60.1 million due to the adoption of GASB Statement No. 75 and associated deferred costs for other postemployment benefits. This increase was offset by investment gains, and demographic gains driven by lower than assumed salary increases and retiree cost of living adjustments for the pension plan. A more detailed description of Fairfax Water's pension and other postemployment benefits plans can be found in Notes 8, 9, 10, and 11 of the basic financial statements.

Total long-term liabilities decreased 5.4% to \$651.4 million, mainly driven by scheduled debt payments and a decrease in the net pension liability, which was offset by an increase in the other postemployment benefits liability due to the adoption of GASB Statement No. 75. Other liabilities increased 4.8% to \$34.9 million primarily due to an increase in accounts payable and accrued expenses. A more detailed description of Fairfax Water's long-term liabilities can be found in the Bonds Payable section of this discussion and in Notes 6, 7, 8, 9, 10, and 11 of the basic financial statements.

Deferred inflows of resources increased 214.3% to \$28.6 million due to the adoption of GASB Statement No. 75 and deferred earnings on pension plan investments, resulting from the most recent actuarial valuation. A more detailed description of Fairfax Water's pension and other postemployment benefits plans can be found in Notes 8, 9, 10, and 11 of the basic financial statements.

Changes in Net Position

The following table reflects Fairfax Water's changes in net position for the years ended December 31, 2018 and 2017:

Summary of Changes in Net Position
(in millions)

	2018	2017	Increase (Decrease)	% Change
Operating revenues	\$ 173.5	\$ 180.9	\$ (7.4)	(4.1)
Operating expenses	(91.9)	(90.8)	1.1	1.2
Depreciation and amortization expense	(52.7)	(50.4)	2.3	4.6
Nonoperating revenues (expenses), net	1.6	6.2	(4.6)	(74.2)
Increase in net position before contributions	30.5	45.9	(15.4)	(33.6)
Capital contributions	4.5	2.3	2.2	95.7
Increase in net position	\$ 35.0	\$ 48.2	\$ (13.2)	(27.4)

The above table was not restated as a result of the implementation of GASB Statement No. 75.

Fairfax Water's operating revenues decreased 4.1% to \$173.5 million. Revenue from wholesale customers decreased \$8.5 million mainly due to a \$26.6 million purchased capacity payment received in 2017, netted against increased billing rates and a purchased capacity payment of \$6.1 million in 2018. Additionally, retail water sales revenue increased \$422,000 as a result of the thirteen-cent increase in the commodity charge, which was offset by a 2.6% decrease in water sales. Operating expenses increased 1.2% to \$91.9 million due to increased costs for supply, treatment, and distribution services and was offset by a reduction in administrative and general expenses driven by non-cash adjustments for pension and other postemployment benefits. Depreciation and amortization expense increased 4.6% to \$52.7 million. Net nonoperating revenues decreased 74.2% to \$1.6 million primarily as a result of decreased availability charge revenue driven by lower new customer connections.

Capital Assets and Debt Administration

Capital Assets

As of December 31, 2018, Fairfax Water had a net investment of \$1,786.7 million in a full range of capital assets used in the provision of water service including water lines, water tanks, treatment plants, pumping stations, multi-purpose facilities, and other facilities. This amount represents a net increase of \$30.1 million, or 1.7% over December 31, 2017. The following table reflects a breakdown of capital assets by category at December 31, 2018 and 2017:

Capital Assets
(net of depreciation and amortization, in millions)

	2018	2017	Increase (Decrease)	% Change
Land and rights of way	\$ 43.2	\$ 42.8	\$ 0.4	0.9
Easements	1.9	1.7	0.2	11.8
Construction in progress	51.6	22.9	28.7	125.3
Water supply	114.7	114.7	-	-
Water treatment	467.0	480.1	(13.1)	(2.7)
Transmission	290.6	285.8	4.8	1.7
Distribution	470.5	467.3	3.2	0.7
General plant	347.2	341.3	5.9	1.7
Total capital assets	\$ 1,786.7	\$ 1,756.6	\$ 30.1	1.7

The increase in capital assets in fiscal year 2018 is attributable to expenditures related to various projects to expand and improve Fairfax Water infrastructure as well as developer donated assets.

Bonds Payable

At the end of 2018, net bonds outstanding totaled \$510.9 million. This 4.4% decrease from the previous year is attributable to the normal retirement of bonds. The primary source of revenue utilized for repayment of debt is water consumption charges. In addition, Fairfax Water obtains funds from other sources to reduce the amount of bonds it needs to sell to construct water projects. These other sources include payments from applicants for new service and payments from other jurisdictions for projects that specifically benefit them. A more detailed description of Fairfax Water's bonds payable can be found in Note 7 to the basic financial statements. The following table reflects the composition of bonds payable at December 31, 2018 and 2017:

Bonds Payable
(in millions)

	2018	2017	Increase (Decrease)	% Change
Series 1997	\$ 16.0	\$ 20.9	\$ (4.9)	(23.4)
Series 2005	37.2	40.2	(3.0)	(7.5)
Series 2010	88.9	88.9	-	-
Series 2012	76.4	76.7	(0.3)	(0.4)
Series 2013	55.8	60.9	(5.1)	(8.4)
Series 2017	194.9	201.6	(6.7)	(3.3)
Subtotal	469.2	489.2	(20.0)	(4.1)
Plus:				
Unamortized bond premiums	41.7	45.1	(3.4)	(7.5)
Bonds payable, net	510.9	534.3	(23.4)	(4.4)
Current portion	24.5	23.3	1.2	5.2
Long-term portion	\$ 486.4	\$ 511.0	\$ (24.6)	(4.8)

Bond Ratings

During fiscal year 2018, Moody's Investors Service, Standard & Poor's, and Fitch Ratings maintained ratings of Aaa, AAA, and AAA, respectively, to Fairfax Water's outstanding revenue bonds.

Request for Information

This financial report is designed to provide an overview of Fairfax Water's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to:

Fairfax Water
Attention: Director, Finance Division
8570 Executive Park Avenue
Fairfax, Virginia 22031-2218
www.FairfaxWater.org

FAIRFAX COUNTY WATER AUTHORITY

Statement of Net Position December 31, 2018

ASSETS AND DEFERRED OUTFLOWS OF RESOURCES

Current assets:	
Cash and cash equivalents	
Unrestricted	\$ 22,292,032
Restricted	15,915,505
Investments	
Unrestricted	20,077,644
Restricted	39,625,679
Accrued interest receivable	864,521
Customer receivables, net of allowance for doubtful accounts of \$222,000	13,216,804
Unbilled revenue	12,780,982
Notes receivable	63,794
Inventory	5,240,703
Other current assets	4,264,229
Total current assets	134,341,893
Noncurrent assets:	
Investments	
Unrestricted	151,395,415
Restricted	6,152,671
Notes receivable	1,193,609
Capital assets, net of accumulated depreciation and amortization	1,786,694,374
Total noncurrent assets	1,945,436,069
Total assets	2,079,777,962
Deferred outflows of resources:	
Deferred charge on refunding	18,219,291
Pension plan	27,353,966
Other postemployment benefits	14,561,798
Total deferred outflows of resources	60,135,055
Total assets and deferred outflows of resources	\$ 2,139,913,017

FAIRFAX COUNTY WATER AUTHORITY

Statement of Net Position (continued) December 31, 2018

LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION

Current liabilities:	
Accounts payable and accrued expenses	\$ 23,321,511
Compensated absences	2,622,110
Bonds payable, current maturities	24,548,494
Accrued interest on bonds payable	5,408,971
Unearned revenue	4,224,629
Construction contract retainage	1,933,745
Total current liabilities	62,059,460
Noncurrent liabilities:	
Compensated absences	2,226,582
Refundable construction advances	2,149,813
Bonds payable, net of current portion	486,399,971
Net pension liability	98,851,373
Other postemployment benefits liability	34,577,161
Total noncurrent liabilities	624,204,900
Total liabilities	686,264,360
Deferred inflows of resources:	
Pension plan	24,256,124
Other postemployment benefits	4,376,624
Total deferred inflows of resources	28,632,748
Total liabilities and deferred inflows of resources	714,897,108
Net position:	
Net investment in capital assets	1,305,505,693
Restricted for debt service	41,596,089
Unrestricted	77,914,127
Total net position	1,425,015,909
Total liabilities, deferred inflows of resources and net position	\$ 2,139,913,017

The accompanying notes are an integral part of these basic financial statements.

FAIRFAX COUNTY WATER AUTHORITY

Statement of Revenues, Expenses and Change in Net Position For the year ended December 31, 2018

Operating revenues:	
Sales to retail customers	\$ 110,567,324
Sales to wholesale customers	52,039,026
Sewer service billing charges	6,603,767
Other	4,242,541
Total operating revenues	173,452,658
Operating expenses:	
Supply facilities	12,317,155
Treatment facilities	25,044,734
Transmission system	6,264,801
Distribution system	22,642,067
Administrative and general	25,662,585
Total operating expenses before depreciation and amortization	91,931,342
Operating income before depreciation and amortization	81,521,316
Depreciation and amortization	(52,649,783)
Operating income	28,871,533
Nonoperating revenues (expenses):	
Availability fees and other connection charges	15,292,929
Investment income	3,804,502
Bond subsidy	1,061,272
Lease revenue	1,354,331
Gain on sale of property	237,549
Interest expense	(20,191,193)
Total nonoperating revenues, net	1,559,390
Income before capital contributions	30,430,923
Capital contributions	4,591,230
Increase in net position	35,022,153
Net position, beginning of year, as restated	1,389,993,756
Net position, end of year	\$ 1,425,015,909

The accompanying notes are an integral part of these basic financial statements.

FAIRFAX COUNTY WATER AUTHORITY

Statement of Cash Flows

For the year ended December 31, 2018

Cash flows from operating activities:	
Cash received from customers	\$ 161,620,974
Cash paid to employees	(56,923,617)
Cash paid to suppliers	(33,112,013)
Net cash provided by operating activities	71,585,344
Cash flows from capital and related financing activities:	
Principal paid on bonds	(20,000,000)
Interest paid on bonds	(21,640,183)
Construction of capital assets	(81,746,953)
Proceeds from disposition of capital assets	637,162
Availability fees and other connection charges	14,451,629
Lease revenue	1,355,738
Bond subsidy	1,061,272
Capital contributions received from developers	3,636,331
Net cash used in capital and related financing activities	(102,245,004)
Cash flows from investing activities:	
Gross purchases of investments	(130,836,705)
Gross sales and maturities of investments	151,845,940
Interest received	4,378,732
Collection of note receivable	60,278
Net cash provided by investing activities	25,448,245
Net decrease in cash and cash equivalents	(5,211,415)
Cash and cash equivalents, beginning of year	43,418,952
Cash and cash equivalents, end of year	\$ 38,207,537

FAIRFAX COUNTY WATER AUTHORITY

Statement of Cash Flows (continued) For the year ended December 31, 2018

Reconciliation of operating income to net cash provided by operating activities:

Operating income	\$ 28,871,533
Adjustments to reconcile operating income to net cash provided by operating activities:	
Depreciation and amortization expense	52,649,783
Other postemployment benefits	567,334
Pension expense	(1,058,277)
Change in operating assets and liabilities:	
Customer receivables, net	(9,011,382)
Unbilled revenue	(42,699)
Inventory	(120,015)
Other assets	(2,795,425)
Accounts payable and accrued expenses	2,486,386
Compensated absences	38,106
Total adjustments	42,713,811
Net cash provided by operating activities	\$ 71,585,344

Supplemental schedule of noncash investing, capital and financing activities:

Capital contributions -	
Estimated fair value of capital assets received from developers and others	\$ 954,899
Capital assets -	
Capital assets acquired through incurrence of year-end accounts payable	\$ 6,943,292
Investments -	
Change in the fair value of investments	\$ (387,379)

The accompanying notes are an integral part of these basic financial statements.

FAIRFAX COUNTY WATER AUTHORITY

Statement of Fiduciary Net Position December 31, 2018

AGENCY FUNDS

Assets:	
Cash	\$ 5,013,705
Total assets	\$ 5,013,705
Liabilities:	
Accounts payable	\$ 5,013,705
Total liabilities	\$ 5,013,705

The accompanying notes are an integral part of these basic financial statements.

FAIRFAX COUNTY WATER AUTHORITY

Notes to Basic Financial Statements December 31, 2018

1. Fairfax Water

The Fairfax County Water Authority (Fairfax Water) is a public body, corporate and politic, exercising public and essential governmental functions in the Commonwealth of Virginia. Fairfax Water was created by the Board of Supervisors of Fairfax County, Virginia, and chartered by the State Corporation Commission in 1957 for the purpose of establishing and operating a comprehensive county-wide water system. The management is vested in a Board of ten members appointed by the Fairfax County Board of Supervisors.

2. Summary of Significant Accounting Policies

A. Reporting Entity

The accompanying financial statements present Fairfax Water and its blended component unit, the Fairfax County Water Authority Welfare Benefit Trust (the Trust). The purpose of the Trust is to receive and hold assets to provide medical benefits for Fairfax Water employees and retirees. A blended component unit, although a legally separate entity, is in substance part of the primary government's operations. The Trust meets the criteria to be reported as a blended component unit because Fairfax Water has the ability to impose its will on the Trust, the members of its governing board are substantially the same as Fairfax Water, it provides services solely to Fairfax Water, Fairfax Water has a financial benefit or burden relationship with the Trust, and management (below the level of appointed officials) of Fairfax Water have operational responsibility. The Trust is blended with Fairfax Water by consolidating its financial statement data with Fairfax Water's financial statements and presenting condensed combining information in Note 15 to the Basic Financial Statements. Separate financial statements are not issued for the Trust.

Fairfax Water is not considered a component unit of Fairfax County, Virginia (the County) and all governmental entities operating within the County are excluded from Fairfax Water's financial statements. Although the Fairfax County Board of Supervisors appoints the members of Fairfax Water's Board of Directors, the County is not financially accountable for Fairfax Water. In addition, there is no potential for Fairfax Water to provide specific financial benefit to, or impose specific financial burdens on the County, and Fairfax Water is not fiscally dependent on the County.

Fairfax Water also reports agency funds (fiduciary fund type) in its statements for Fairfax County and the Cities of Falls Church and Fairfax (the Cities). The funds account for the collection and remittance of sewer and utility tax payments on the behalf of the County and the Cities. The funds are custodial in nature (assets equal liabilities) and do not involve measurement of results of operations.

B. Basis of Accounting

Basis of accounting refers to when revenues, expenses, assets, deferred outflows of resources, liabilities, and deferred inflows of resources are recognized. The accompanying financial statements have been prepared using the economic resources measurement focus and accrual

basis of accounting. Under the accrual basis of accounting, revenues are generally recognized when earned and expenses are recognized when incurred.

Fairfax Water has elected to apply all applicable Governmental Accounting Standards Board (GASB) pronouncements as GASB is the accepted standard-setting body for establishing governmental accounting and financial reporting principles. During the current year, Fairfax Water adopted GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, GASB Statement No. 85, *Omnibus 2017*, and GASB Statement No. 86, *Certain Debt Extinguishment Issues*.

C. Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows of resources, liabilities, and deferred inflows of resources and the disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

D. Revenue Recognition

Rates, fees, and other charges for services to wholesale and retail customers are established to provide sufficient funds to cover the cost of operations, debt service, and essential repairs and improvements to capital assets. Metered sales are recognized as revenue as customers use water. At year-end, the amount of revenue generated for which customers have not been billed is recorded as unbilled revenue. Retail customers pay availability, local facility, and service connection charges for each new service connection and meter installation. These charges are recognized as revenue as service connections are made and meters are installed. Wholesale customers pay a charge to reserve capacity of purification and transmission based on a multi-year contract. Such revenues are recognized at the time Fairfax Water has an enforceable claim to these charges. Sewer service billing charges represent an administrative fee charged to the County and the Cities of Falls Church and Fairfax (the Cities) to cover the cost of billing and collecting sewer service charges by Fairfax Water on behalf of the County and Cities. The administrative fees are recognized as revenue by Fairfax Water as earned.

Fairfax Water's receivables are recorded net of an allowance for doubtful accounts, where considered necessary. As of December 31, 2018, the only receivables that management determined required an allowance relates to retail customers accounts receivable. Fairfax Water calculates the allowance as a percentage of retail sales, based on past bad debt experience. No allowance is calculated for wholesale customer accounts receivable, as Fairfax Water has not historically experienced any collectability issues with its wholesale customers.

E. Operating and Nonoperating Revenues and Expenses

Fairfax Water's Statement of Revenues, Expenses and Change in Net Position distinguishes operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with Fairfax Water's principal ongoing operations. The principal operating revenues of Fairfax Water

are from metered sales to customers and other customer related charges. Operating expenses include the cost of water supply, treatment, transmission and distribution; depreciation and amortization of capital assets; and general and administrative costs. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses. Customer availability fees and connection charges are reported as nonoperating revenues as such revenues are primarily used to fund capital improvements and expansion.

F. Nonoperating Lease Revenue

Fairfax Water has entered into water tower lease agreements with various cellular phone providers. The leases allow for the placement of cellular antennas on Fairfax Water's water towers. The contracts are generally for five years, with five-year renewal options. The total nonoperating revenue received in 2018 for the water tower leases was \$654,310.

On October 31, 2016 Fairfax Water entered into an agreement with Vulcan Lands, Inc. (Vulcan) to transfer ownership of a portion of Vulcan's Graham Quarry, located between Fairfax Water's Occoquan River supply and the Frederick P. Griffith, Jr. Water Treatment Plant. Vulcan will quarry the land pursuant to a lease agreement until 2035, at which time such land will become available for Fairfax Water's use as a water supply reservoir with storage capacity of 1.7 billion gallons of water. Subsequent to such land becoming available for Fairfax Water's use as a water supply reservoir, Vulcan will continue to quarry adjacent property. Ownership of such adjacent property will transfer to Fairfax Water at no additional cost no later than 2085. When completed, such quarry reservoirs are expected to store up to 17 billion gallons of water. The total nonoperating revenue received in 2018 for the lease agreement was \$514,828.

On March 29, 2017 Fairfax Water entered into an agreement with Penske Truck Leasing Co., LP (Penske) to lease the building and property located at 8515 Lee Highway in Fairfax, Virginia. Penske will utilize the leased property for truck rental and leasing services. The lease term began on April 1, 2017 with an initial expiration of December 31, 2017. On July 27, 2018, Fairfax Water and Penske agreed to a second extension of one year expiring on December 31, 2019. The total nonoperating revenue received in 2018 for the lease agreement was \$185,193.

G. Cash and Cash Equivalents

Cash equivalents consist of short-term, highly liquid investments with original maturities of three months or less. At December 31, 2018, such investments were primarily comprised of money market funds and commercial paper. Restricted cash equivalents represent funds held by the Trustee for debt service in accordance with applicable bond covenants. Restricted cash includes cash in escrow for purchased water and construction contract retainage.

H. Notes Receivable

Fairfax Water entered into an agreement with the Fairfax County Board of Supervisors in July, 2001 to extend Fairfax Water's transmission and distribution system to serve Lewis Park, Colchester Acres and Vannoy Park Subdivision. Under the agreement, Fairfax County agreed to pay Fairfax Water in semi-annual payments on October 1 and March 1 of each year commencing October 1, 2002 and ending March 1, 2032. The total project cost and amount financed was \$1,896,874. The note receivable at December 31, 2018, totaled \$1,257,403.

I. Investments

Investments are stated at fair value, with any related gain or loss reported in investment income on the accompanying Statement of Revenues, Expenses and Change in Net Position. Investment fair values are based on quoted market prices, except for bankers' acceptances, which are based on accreted value. Investments in mutual funds, which are Securities and Exchange Commission 2a-7 investment pools, are stated at share price which is substantially the same as fair value. Restricted investments represent investments held by the Trustee for debt service.

J. Inventory

Inventories of materials and supplies are accounted for using the consumption method and are carried at average costs. Under this method, inventories are expensed as they are consumed.

K. Capital Assets

Capital assets are carried at cost, which, for assets constructed by Fairfax Water, includes associated payroll, fringe benefits, administrative costs, and interest charges capitalized on all projects. Fairfax Water capitalizes all assets that individually cost \$2,500 or more, with useful lives greater than one year. Expenses for repairs and upgrading which materially add to the value or life of an asset are capitalized. Contributed assets consist principally of water mains constructed by developers and subsequently donated to Fairfax Water. Such assets are recorded at acquisition cost on the date of the donation. The acquisition cost is based on Fairfax Water's estimated cost to construct or purchase similar assets. Recurring normal maintenance and repair costs are charged to operations, whereas major repairs, improvements, and replacements are capitalized. In 2018, the capital assets were depreciated or amortized on the straight-line basis over the following estimated useful lives:

Capital Assets	Useful Lives
Pipes	75 – 100 years
Treatment Plants	40 – 60 years
Buildings	30 – 40 years
Equipment/Software	10 – 25 years
Vehicles	5 – 10 years

L. Construction in Progress

Construction in progress includes design and construction costs that accumulate until completion of the respective project, at which time the total cost is transferred to depreciable capital assets. When applicable, interest and other carrying costs are capitalized to construction in progress.

M. Deferred Outflows and Inflows of Resources

In addition to assets, the Statement of Net Position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *deferred outflows of resources*, represents a consumption of net position that applies to future periods and so will not be recognized as an outflow of resources (expense/expenditure) until then. Fairfax Water has several items that qualify for reporting in this category. One item is a deferred charge on refunding

which results from the difference in the carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt. The remaining items relate to the pension and other postemployment benefits plans. A more detailed description of Fairfax Water's pension and other postemployment benefits plans can be found in Notes 8, 9, 10, and 11 of the basic financial statements.

In addition to liabilities, the Statement of Net Position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *deferred inflows of resources*, represents an acquisition of net position that applies to future periods and so will not be recognized as an inflow of resources (revenue) until that time. Several items that qualify for reporting in this category relate to the pension and other postemployment benefits plans. A more detailed description of Fairfax Water's pension and other postemployment benefits plans can be found in Notes 8, 9, 10, and 11 of the basic financial statements.

N. Pensions and Other Postemployment Benefits

For purposes of measuring all financial statement elements related to Fairfax Water's pension and other postemployment benefits plans, information about the fiduciary net position of the Fairfax County Water Authority Retirement Plan (the Plan) as well as additions to/deductions from the Plan's fiduciary net position have been determined on the same basis as they were reported by the Plan, which are prepared using the accrual basis of accounting. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

The Plan document assigns all responsibilities of maintaining the Plan to the Fairfax Water Board of Directors. Additionally, Fairfax Water has established a Benefits Trust Committee to be responsible for the administration of the pension and other postemployment benefits plans. Information about the fiduciary net position and additions to/deductions from the Plan's net fiduciary position have been determined by Fairfax Water's actuary.

O. Unamortized Debt Discounts (Premiums)

Debt discounts (premiums) are amortized over the life of the related bond issuance using the effective interest rate method. The current year amortization is included in interest expense. The debt discount (premium) is netted against the related debt on the accompanying Statement of Net Position. Prior to January 1, 2018 Fairfax Water periodically issued water refunding revenue bonds to advance refund previously issued bonds.

P. Compensated Absences

Employees earn vacation and sick pay based on a prescribed formula that allows employees to accumulate a maximum of 40 days in vacation pay and an unlimited amount of sick pay. Fairfax Water's liability for vacation and vested sick pay earned but not used by its employees is computed using pay rates in effect at year-end. The liability for sick pay vests for employees after three years of service.

Q. Net Position

Net position of Fairfax Water is classified in three components: (1) Net investment in capital assets consists of capital assets net of accumulated depreciation, reduced by the balances of any outstanding borrowings used to finance the purchase or construction of those assets and deferred charges on capital related refundings and retainage payable; (2) Restricted for debt service is amounts deposited with the Trustee as required by the 1992 General Trust Indenture discussed in Note 7 and the portion of debt attributable to the amount of unspent bond proceeds less any interest accrued at year end; and (3) Unrestricted is remaining net resources that do not meet the definition of investment in capital assets nor restricted.

It is Fairfax Water's policy to first apply restricted resources when an expense is incurred for purposes for which both restricted and unrestricted resources are available.

R. Refundable Construction Advances

Refundable construction advances represent assets and cash in aid of construction received by Fairfax Water from developers under Fairfax Water's offsite water main program. These advances are refundable over a ten-year period based on the number of applicable connections made to the offsite water mains. At the end of ten years, the portion not refunded is considered a capital contribution and is reflected in the table in Note 6 as "refundable construction advances".

S. New Accounting Pronouncements

GASB Statement No. 83, *Certain Asset Retirement Obligations*, establishes uniform criteria for governments to recognize and measure certain asset retirement obligations (AROs). Statement 83 will be effective for Fairfax Water beginning with its year ending December 31, 2019.

GASB Statement No. 84, *Fiduciary Activities*, establishes specific criteria for identifying fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. Statement 84 will be effective for Fairfax Water beginning with its year ending December 31, 2019.

GASB Statement No. 87, *Leases*, requires 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. This Statement establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Statement 87 will be effective for Fairfax Water beginning with its year ending December 31, 2020.

GASB Statement No. 88, *Certain Disclosures Related to Debt, including Direct Borrowings and Direct Placements*, will improve the information that is disclosed in notes related to debt. It also clarifies which liabilities governments should include when disclosing information related to debt. Statement 88 will be effective for Fairfax Water beginning with its year ending December 31, 2019.

GASB Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period*, 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. Statement 89 will be effective for Fairfax Water beginning with its year ending December 31, 2020.

GASB Statement No. 90, *Majority Equity Interests- an amendment of GASB Statements No. 14 and No. 61*, determines if a majority equity interest in a legally separate organization should be reported as an investment or component unit. Statement 90 will be effective for Fairfax Water beginning with its year ending December 31, 2019.

Fairfax Water has not yet determined the effect these GASB Statements will have on its financial statements.

T. Subsequent Events

Fairfax Water has evaluated and determined there were no subsequent events through April 11, 2019, which was the date the financial statements were available to be issued.

3. Cash and Investments

- A. Cash and Cash Equivalents** - Cash in bank accounts is insured by the Federal Deposit Insurance Corporation and/or collateralized in accordance with the Virginia Security for Public Deposits Act, Section 2.2-4400 et. Seq. of the *Code of Virginia*. Under the Act, banks holding public deposits in excess of the amounts insured by the Federal Deposit Insurance Corporation (FDIC) must pledge collateral to the State Treasury Board. Savings and loan institutions are required to collateralize 100% of deposits in excess of FDIC limits. Financial institutions may choose between two collateralization methodologies and depending upon that choice, will pledge collateral that ranges from 50% to 130% of excess deposits. Accordingly, all deposits are considered fully collateralized.

As of December 31, 2018, the carrying value of Fairfax Water's deposits with banks was \$11,558,137, with a bank balance of \$12,268,449. In addition, Fairfax Water held a deposit of \$1,324,684 with the U.S. Army Corps of Engineers, a deposit of \$623,043 for construction retainage, \$22,712,393 of cash equivalents in the PFM Funds and First American Treasury Obligation Fund, which are money market funds, and \$1,989,280 of cash equivalents in commercial paper as of December 31, 2018.

- B. Investments** - Virginia state statutes authorize Fairfax Water to invest in obligations of the United States or agencies thereof; obligations of the Commonwealth of Virginia or political subdivisions thereof; qualifying obligations of other states and their political subdivisions; repurchase agreements; commercial paper, rated A or better by at least two of the rating agencies; bankers' acceptances rated A-1 by Standard & Poor's and P-1 by Moody's Investors Service; corporate notes with a maturity no greater than five years and a minimum long-term debt rating of Aa by Moody's Investors Service and AA by Standard & Poor's; negotiable certificates of deposit or bank notes; Virginia Local Government Investment pool; Virginia State Non-Arbitrage Program; Supranational Bonds; registered money market mutual funds; savings accounts; time deposits; and certificates of deposit.

Interest Rate Risk – Fairfax Water's policy is to minimize the risk that the market value of securities in its portfolio will fall due to changes in market interest rates. To achieve this minimization of risk, Fairfax Water structures the investment portfolio so that sufficient securities mature to meet cash

requirements for ongoing operations, thereby avoiding the need to sell securities on the open market prior to maturity. Further, Fairfax Water may not directly invest in securities maturing in more than five years from the date of purchase. The following table reflects the fair value and the weighted average maturity (WAM) of Fairfax Water's investments as of December 31, 2018. WAM expresses investment time horizons, the time when investments become due and payable, in years, weighted to reflect the dollar size of the individual investments within an investment type. The portfolio's WAM is derived by dollar-weighting the WAM for each investment type. For purposes of the WAM calculation, Fairfax Water assumes that all of its investments will be held to maturity.

Investment Type	Fair Value	Weighted Average Maturity (Years)
U. S. Government Treasury Notes and Bonds	\$ 101,427,404	1.677
U. S. Government Agency Notes	81,864,798	2.620
Certificates of Deposit	5,820,551	1.398
Supranational Bonds	4,674,989	2.325
Corporate Notes	23,463,667	2.586
Total Portfolio	\$ 217,251,409	2.137

Credit Risk – Fairfax Water's policy is to minimize the risk of loss due to the failure of an issuer or other counterparty to an investment to fulfill its obligations. Fairfax Water and its investment advisor pre-qualify financial institutions and broker-dealers with which they do business. In addition, Fairfax Water limits its investments to the safest types of securities and diversifies its investment portfolio so that potential losses on individual securities will be minimized. The table below reflects the allocation of credit quality rating of Fairfax Water's investments by Standard & Poor's Rating Services as of December 31, 2018.

Investment Type	Credit Quality Rating				
	AAA	AA+	AA	AA-	A-1+
U.S. Government Treasury Notes and Bonds	-	46.6%	-	-	-
U.S. Government Agency Notes	-	37.7%	-	-	-
Certificates of Deposit	-	-	-	2.3%	0.4%
Supranational Bonds	2.2%	-	-	-	-
Corporate Notes	1.2%	1.9%	3.5%	3.5%	0.7%
Total Portfolio	3.4%	86.2%	3.5%	5.8%	1.1%

Concentration of Credit Risk – To minimize credit risk, Fairfax Water's investment policy seeks to diversify its portfolio by limiting the percentage of the portfolio that may be invested in any one type of instrument as follows:

Instrument Type	Maximum
U.S. Government Obligations	100%
Repurchase Agreements	50%
Commercial Paper	35%
Bankers' Acceptances	40%
Corporate Notes	35%
Municipal Obligations	20%
Negotiable Certificates of Deposit/Bank Notes	35%
Supranational Bonds	10%
Virginia Local Government Investment Pool	50%
Virginia State Non-Arbitrage Program	50%
Registered Money Market Mutual Funds	50%
Savings Accounts, Time Deposits, Certificates of Deposit	20%

In addition, not more than five percent of total funds available for investment (based on book value on the date of acquisition) can be invested in any single issuing corporation or bank for corporate notes, commercial paper, or bankers' acceptances. As of December 31, 2018, there are no concentrations of credit risk beyond the stated policy.

Custodial Credit Risk – Custodial risk is the risk that in the event of the failure of the counterparty, Fairfax Water will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. However, Fairfax Water's investment policy requires that all securities purchased by Fairfax Water be properly and clearly labeled as an asset of Fairfax Water and held in safekeeping by a third party custodial bank or institution in compliance with Section 2.2-4515 of the *Code of Virginia*. Therefore, Fairfax Water has no custodial risk.

All investments are held by agents of Fairfax Water in Fairfax Water's name and consist of U.S. Treasury and U.S. agency securities, certificates of deposit, corporate notes, municipal bonds, and Resolution Funding Corporation stripped securities (REFCO Strips). Accrued interest at December 31, 2018 of \$13,484,282 on the REFCO Strips is classified with the REFCO Strips in unrestricted investments. Maturity dates of the investments determine the Statement of Net Position classification.

Fair Value Measurement – Fairfax Water categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable data for substantially the full term of the assets and liabilities (REFCO Strips); and Level 3 inputs are significant unobservable inputs.

The table below details the fair value measurements as of December 31, 2018:

Investment Type	Level 1 Inputs	Level 2 Inputs
U. S. Government Treasury Notes and Bonds	\$ 101,427,404	\$ -
U. S. Government Agency Notes	62,398,652	19,466,146
Certificates of Deposit	5,820,551	-
Supranational Bonds	4,674,989	-
Corporate Notes	23,463,667	-
Total Portfolio	\$ 197,785,263	\$ 19,466,146

4. Capital Assets

The changes in Fairfax Water's capital assets for the year ended December 31, 2018 follow (in thousands):

	Beginning Balance	Increases	Decreases/ Transfers	Ending Balance
Capital assets not being depreciated or amortized:				
Land and rights of way	\$ 42,756	\$ 494	\$ (57)	\$ 43,193
Easements	1,734	-	181	1,915
Construction in progress	22,952	40,032	(11,420)	51,564
Total capital assets not being depreciated or amortized	67,442	40,526	(11,296)	96,672
Capital assets being depreciated or amortized:				
Water supply	162,182	2,655	919	165,756
Water treatment	712,550	1,075	-	713,625
Transmission	385,602	4,329	5,128	395,059
Distribution	613,593	8,827	1,353	623,773
General plant	519,045	25,690	(376)	544,359
Total capital assets being depreciated or amortized	2,392,972	42,576	7,024	2,442,572
Less accumulated depreciation or amortization for:				
Water supply	47,400	3,640	-	51,040
Water treatment	232,443	14,154	-	246,597
Transmission	99,803	6,182	(1,512)	104,473
Distribution	146,331	9,020	(2,086)	153,265
General plant	177,795	19,654	(274)	197,175
Total accumulated depreciation or amortization	703,772	52,650	(3,872)	752,550
Capital assets being depreciated or amortized, net	1,689,200	(10,074)	10,896	1,690,022
Total capital assets, net	\$ 1,756,642	\$ 30,452	\$ (400)	\$ 1,786,694

The amount shown in the Statement of Revenues, Expenses and Change in Net Position for interest expense is net of \$411,911 capitalized in 2018.

5. Capital Contributions

Capital contributions for the year ended December 31, 2018, are as follows:

Donated capital assets	\$ 954,899
Contributions from developers	542,127
Expired construction advances	162,635
Vulcan quarry contributions	2,931,569
Total	<u>\$ 4,591,230</u>

Contributed assets consist principally of water mains constructed by developers and subsequently donated to Fairfax Water as well as mains constructed by Fairfax Water and paid for by the developers.

6. Other Long-Term Liabilities

Other long-term liabilities activity for the year ended December 31, 2018 was as follows (in thousands):

	Beginning Balance	Increases	Decreases	Ending Balance	Current Portion
Compensated absences	\$ 4,811	\$ 4,849	\$ (4,811)	\$ 4,849	\$ 2,622
Refundable construction advances	1,927	401	(178)	2,150	-
Total other long-term liabilities	<u>\$ 6,738</u>	<u>\$ 5,250</u>	<u>\$ (4,989)</u>	<u>\$ 6,999</u>	<u>\$ 2,622</u>

7. Bonds Payable

Bonds payable activity for the year ended December 31, 2018 was as follows (in thousands):

	Beginning Balance	Increases	Decreases	Ending Balance	Current Maturities
Bonds payable:					
Series 1997 Bonds	\$ 20,860	\$ -	\$ (4,840)	\$ 16,020	\$ 5,080
Series 2005 Bonds	40,185	-	(2,975)	37,210	2,835
Series 2010 Bonds	88,860	-	-	88,860	-
Series 2012 Bonds	76,750	-	(360)	76,390	370
Series 2013 Bonds	60,910	-	(5,115)	55,795	5,500
Series 2017 Bonds	201,590	-	(6,710)	194,880	7,560
	<u>489,155</u>	<u>-</u>	<u>(20,000)</u>	<u>469,155</u>	<u>21,345</u>
Plus unamortized premiums (net)	45,118	-	(3,325)	41,793	3,203
Total bonds payable, net	<u>\$ 534,273</u>	<u>\$ -</u>	<u>\$ (23,325)</u>	<u>\$ 510,948</u>	<u>\$ 24,548</u>

On August 19, 1997, Fairfax Water issued water refunding revenue bonds dated July 15, 1997 in the aggregate principal amount of \$102,210,000 (the Series 1997 Bonds), pursuant to the 1992 General Trust Indenture. The outstanding Series 1997 Bonds bear interest rates at 5.00 percent per annum.

On March 30, 2005, Fairfax Water issued water refunding revenue bonds dated March 30, 2005 in the aggregate principal amount of \$113,440,000 (the Series 2005 Bonds). Interest on the Series 2005 Bonds is payable semiannually on each April 1 and October 1. The outstanding Series 2005 Bonds bear

interest rates at 5.25 percent per annum. No amount of the refunded bonds is outstanding at December 31, 2018.

On November 10, 2010, Fairfax Water issued water revenue and refunding revenue bonds dated November 10, 2010 in the aggregate principal amount of \$88,860,000 (the Series 2010 Bonds). Interest on the Series 2010 Bonds is payable semiannually on each April 1 and October 1. The outstanding Series 2010 Bonds bear interest at rates ranging from 3.00 to 5.00 percent per annum. The Series 2010 Bonds with stated maturities on or before April 2022 are not subject to call and redemption prior to maturity. No amount of the refunded bonds is outstanding at December 31, 2018.

On January 24, 2012, Fairfax Water issued water refunding revenue bonds dated January 24, 2012 in the aggregate principal amount of \$81,225,000 (the Series 2012 Bonds). Interest on the Series 2012 Bonds is payable semiannually on each April 1 and October 1. The outstanding Series 2012 Bonds bear interest at rates ranging from 3.00 to 5.00 percent per annum. The Series 2012 Bonds with stated maturities on or before April 2022 are not subject to call and redemption prior to maturity. No amount of the refunded bonds is outstanding at December 31, 2018.

On February 25, 2013, Fairfax Water issued water refunding revenue bonds dated February 25, 2013 in the aggregate principal amount of \$93,870,000 (the Series 2013 Bonds). Interest on the Series 2013 Bonds is payable semiannually on each April 1 and October 1. The outstanding Series 2013 Bonds bear interest at rates ranging from 1.576 to 5.00 percent per annum. The Series 2013 Bonds with stated maturities on or before April 2023 are not subject to call and redemption prior to maturity. No amount of the refunded bonds is outstanding at December 31, 2018.

On March 1, 2017, Fairfax Water issued water revenue and refunding revenue bonds dated March 1, 2017 in the aggregate principal amount of \$201,590,000 (the Series 2017 Bonds). Interest on the Series 2017 Bonds is payable semiannually on each April 1 and October 1. The outstanding Series 2017 Bonds bear interest at rates ranging from 3.00 to 5.00 percent per annum. The Series 2017 Bonds with stated maturities on or before April 2027 are not subject to call and redemption prior to maturity. No amount of the refunded bonds is outstanding at December 31, 2018.

At December 31, Fairfax Water is required to have an account balance with the Trustee sufficient to pay principal and interest due on the outstanding bonds issued under the 1992 General Trust Indenture on the following April 1. At December 31, 2018, this amount consisted of cash equivalents of \$139,774 and investments in U.S. Government securities of \$32,096,051 with a market value of approximately \$32,285,591 meeting the requirements of the 1992 General Trust Indenture. In addition, Fairfax Water is required to maintain with the Trustee an amount equal to the maximum amount of interest accruing on all outstanding bonds in the current or any future bond year. At December 31, 2018, this amount consisted of cash equivalents of \$110,837 and investments in U.S. Government securities of \$13,591,938 with a market value of approximately \$13,492,759.

Under the terms of the 1992 General Trust Indenture, before the commencement of each fiscal year, Fairfax Water is required to fix, establish, or maintain or cause to be fixed, established, and maintained such rates, fees, and charges for the provision of water service, and revise or cause to be revised the same prior to the commencement of each fiscal year, as necessary, as will produce net revenues, in the opinion of the Consulting Engineer, at least equal in such fiscal year to the total of 110 percent of the principal and interest requirements during that fiscal year. For 2018, Fairfax Water was in compliance with the terms of the 1992 General Trust Indenture.

Future debt payments under all debt agreements as of December 31, 2018 are as follows:

Year	Principal	Interest	Total
2019	\$ 21,345,000	\$ 21,635,884	\$ 42,980,884
2020	22,260,000	20,727,573	42,987,573
2021	23,235,000	19,765,000	43,000,000
2022	24,370,000	18,727,562	43,097,562
2023	24,275,000	17,605,304	41,880,304
2024 – 2028	140,245,000	69,455,881	209,700,881
2029 – 2033	74,585,000	40,547,644	115,132,644
2034 – 2038	50,060,000	29,593,975	79,653,975
2039 – 2043	49,365,000	16,719,500	66,084,500
2044 – 2047	39,415,000	5,046,750	44,461,750
Total	\$ 469,155,000	\$ 259,825,073	\$ 728,980,073

The 1986 Federal Tax Reform Act requires local jurisdictions to report any rebate arbitrage earnings on debt issues to the Federal Government every five years. As of December 31, 2018, Fairfax Water had no arbitrage obligation.

8. Pension Plan

A. Plan Description and Provisions

Fairfax Water sponsors the Fairfax County Water Authority Retirement Plan (the Plan), a single-employer public employee defined benefit pension plan. The Plan provides retirement benefits for all regular full-time employees as well as Board members of Fairfax Water who elected to participate prior to July 1, 2002. The Plan document assigns all responsibilities of maintaining the Plan to the Fairfax Water Board of Directors, including the approval of Plan changes, setting benefit and contribution levels under the Plan, and ensuring the Plan is funded sufficiently to meet its benefit obligations. Fairfax Water has established a Benefits Trust Committee to be responsible for the administration of the Plan. On an ongoing basis, Fairfax Water reviews the established Retirement Plan and makes adjustments accordingly.

The Plan administers six different benefit structures for members, five of which are closed to new entrants (Plan A, Plan B, Plan C, Modified Plan D, and Plan E). Newly hired employees currently earn benefits under Plan D. All regular full-time employees of Fairfax Water are eligible to participate in the Plan immediately upon commencement of employment. The specific provisions and eligibility for each benefit structure are set out below:

Plan A

The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula.

Eligible Members – Employees are in Plan A, if chosen at time of employment, if their membership date is before July 1, 1988.

Plan B Opt-In Option – Effective June 1, 1988 (for a 30-day period), Plan A members were given the option to join Plan B. Each Plan A member who elected to join Plan B was required to pay into the Plan. The payment requirement equaled the member's difference between the Plan A and Plan B contributions for the period January 1, 1982 through June 30, 1988, including interest at 10%. Such contributions and interest were credited to the member's contribution amount. The election was irrevocable.

Retirement Contributions – Employees contribute 4.0% of annual creditable compensation up to the Social Security taxable wage base, plus 5.0% of annual creditable compensation in excess of the Social Security taxable wage base to their member contribution account on a bi-weekly basis. Member contributions are tax-deferred until they are withdrawn as part of a retirement benefit or as a refund. Fairfax Water makes a separate actuarially determined contribution to the Plan for all covered employees. The Plan invests both member and employer contributions to provide funding for the future benefit payment.

Creditable Service – The sum of a participant's membership service credit, accrued annual leave credit, accrued sick leave service credit, and any additional purchased service. A year of creditable service shall consist of 365 calendar days. Periods less than 365 days shall be prorated to the nearest tenth of a year. A member's total creditable service is one of the factors used to determine eligibility for retirement and to calculate the retirement benefit.

Vesting – Vesting is the minimum length of service a member needs to qualify for a future retirement benefit. Members become vested when they have at least five years of membership service. Vesting means members are eligible to qualify for retirement if they meet the age and service requirements for their plan. Members are always 100% vested in the contributions they make.

Calculating the Benefit – The basic benefit is calculated based on a formula using the member's average final compensation, a retirement multiplier and total creditable service at retirement. An early retirement reduction factor of 0.5% is applied to the basic benefit, and supplemental benefit if applicable, for each month that retirement precedes what would have been the normal retirement date.

Average Final Compensation – A member's average final compensation is the average of the three consecutive years of creditable service which will produce the highest average annual compensation.

Service Retirement Multiplier – The retirement multiplier is a factor used in the formula to determine a final retirement benefit. The retirement multiplier is 1.9% of average final compensation up to the Social Security Breakpoint, plus 2.1% of the excess.

Supplemental Benefit – In addition to the basic benefit, members who retire prior to the earliest date of eligibility for Social Security benefits shall receive a supplemental benefit of 1.0% of average final compensation up to the Social Security Breakpoint multiplied by years of creditable service. Payments cease upon first eligibility for Social Security benefits, whether or not application for Social Security benefits has been made or awarded.

Normal Retirement Age – First of the month following attainment of a combination of age and creditable service equal to 80 years, provided the member is not less than 50 years old and has completed at least five years of creditable service, or at age 65 with five years of creditable service, if earlier.

Earliest Unreduced Retirement Eligibility – At age 65 with five years of creditable service or at age 50 with at least 30 years of creditable service.

Earliest Reduced Retirement Eligibility – First of the month following attainment of a combination of age and creditable service equal to 75 years, with at least ten years of creditable service.

Cost-of-Living Adjustment (COLA) in Retirement – Retirement benefits are increased on May 1 of each year by the change in the Consumer Price Index (CPI) for Washington-Arlington-Alexandria, DC-VA-MD-WV for the preceding twelve months ended December 1. If the period of retirement is less than one year, the increase is 25% of the CPI for each completed quarter. If the increase in the CPI is greater than 4%, the Plan actuary determines the increase that is supportable.

Disability Coverage – Participants who become disabled while employed and enter Fairfax Water's long-term disability program, continue to accrue service under the Plan as if they were still working. Upon reaching the normal retirement date, disabled participants begin receiving benefits from the Plan. The basic benefit is calculated using average final compensation at the time of disability.

Plan B

Plan B is the same as Plan A except for the following:

Eligible Members – Employees are in Plan B if they chose Plan B at time of employment between January 1, 1982 and June 30, 1988, or were Plan A members who chose the Plan B Opt-In Option between June 1, 1988 and June 30, 1988, or if their membership date is between July 1, 1988 and December 31, 1996.

Retirement Contributions – Employees contribute 5.0% of their annual creditable compensation to their member contribution account on a bi-weekly basis.

Service Retirement Multiplier – The retirement multiplier is 2.1% of average final compensation.

Plan C

Plan C is the same as Plan A except for the following:

Eligible Members – Employees are in Plan C if their membership date is between January 1, 1997 and December 31, 2006.

Retirement Contributions – Employees contribute 5.0% of their annual creditable compensation to their member contribution account on a bi-weekly basis.

Average Final Compensation – A member's average final compensation is the average of the five consecutive years of creditable service which will produce the highest average annual compensation.

Service Retirement Multiplier – The retirement multiplier is 2.1% of average final compensation to a maximum of twenty five years of creditable service, plus 1.0% of average final compensation for years of creditable service in excess of twenty five up to a maximum of ten years.

Normal Retirement Age – First of the month following attainment of a combination of age and creditable service equal to 80 years, provided the member is not less than 55 years old and has completed at least five years of creditable service, or at age 65 with five years of creditable service, if earlier.

Earliest Unreduced Retirement Eligibility – At age 65 with five years of creditable service or at age 55 with at least 25 years of creditable service.

Plan D

Plan D is the same as Plan A except for the following:

Eligible Members – Employees are in Plan D if their membership date is on or after January 1, 2007.

Retirement Contributions – There is no employee contribution for Plan D.

Creditable Service – The sum of a participant's membership service credit, accrued sick leave service credit, and any additional purchased service.

Average Final Compensation – A member's average final compensation is the average of the five consecutive years of creditable service which will produce the highest average annual compensation.

Service Retirement Multiplier – The retirement multiplier is 1.7% of average final compensation to a maximum of twenty five years of creditable service, plus 1.0% of average final compensation for years of creditable service in excess of twenty five up to a maximum of ten years.

Supplemental Benefit – There is no supplemental benefit in Plan D.

Normal Retirement Age – First of the month following attainment of a combination of age and creditable service equal to 80 years, provided the member is not less than 60 years old and has completed at least five years of creditable service, or at age 65 with five years of creditable service, if earlier.

Earliest Unreduced Retirement Eligibility – At age 65 with five years of creditable service or at age 60 with at least 20 years of creditable service.

Modified Plan D

Modified Plan D is the same as Plan D except for the following:

Eligible Members – Modified Plan D only applies to vested employees that transferred to Fairfax Water as part of the Asset Purchase Agreement between Fairfax Water and the City of Fairfax dated January 3, 2014 (the transfer date). Effective as of the transfer date, all benefit liabilities for the employees to whom the Asset Purchase Agreement applied and corresponding assets under the City of Fairfax Retirement Plan (the Fairfax City Plan) were transferred to the Plan. Modified Plan D is a closed plan.

Creditable Service – The sum of a participant's membership service credit, accrued sick leave service credit, and any additional purchased service. For purposes of the Modified Plan D retirement benefit, creditable service shall include the member's prior credited service with the Fairfax City Plan as of the transfer date.

Vesting – Members become vested when they have at least five years of creditable service. For purposes of the Modified Plan D, the member's prior credited service with the Fairfax City Plan shall be counted for purposes of vesting as of the transfer date.

Calculating the Benefit – Modified Plan D members are entitled to a basic benefit that is equal to the greater of:

- 1) 1.7% of the member's average final compensation multiplied by years of creditable service to a maximum of 25 years, plus 1.0% of average final compensation multiplied by years of creditable service in excess of twenty five years up to a maximum of ten years; or
- 2) The basic benefit to which the member was entitled under the Fairfax City Plan in effect as of the transfer date.

An early retirement reduction factor of 0.5% is applied to the basic benefit for each month that retirement precedes what would have been the normal retirement date.

Average Final Compensation – A member's average final compensation is the average of the five consecutive years of creditable service which will produce the highest average annual compensation. For purposes of the Modified Plan D retirement benefit, average final compensation shall include the member's prior annual compensation with the Fairfax City Plan as of the transfer date.

Plan E

Eligible Members – Plan E only applies to employees that transferred to Fairfax Water as part of the Asset Purchase Agreement between Fairfax Water and the City of Falls Church dated January 3, 2014 (the transfer date). Effective as of the transfer date, all benefit liabilities for the employees to whom the Asset Purchase Agreement applied and corresponding assets under the City of Falls Church Basic Pension Plan (the Falls Church City Plan) were transferred to the Plan. Plan E is a closed plan.

Retirement Contributions – Employees contribute 5.0% of their annual creditable compensation to their member contribution account on a bi-weekly basis.

Creditable Service – The sum of a participant’s membership service credit and accrued sick leave service credit. For purposes of the Plan E retirement benefit, creditable service shall include the member’s prior credited service with the Falls Church City Plan as of the transfer date.

Vesting – Members become vested when they have at least five years of creditable service. For purposes of Plan E, the member’s prior credited service with the Falls Church City Plan shall be counted for purposes of vesting as of the transfer date.

Calculating the Benefit – The basic benefit for Plan E members is based on their membership date. If hired before January 1, 2012, 2.0% of the member’s average creditable compensation multiplied by years of creditable service. An early retirement reduction factor of 0.33% is applied to the basic retirement benefit for each month that retirement precedes what would have been the normal retirement date. If hired on or after January 1, 2012, 1.8% of the member’s average creditable compensation multiplied by years of creditable service. An early retirement reduction factor of 0.63% is applied to the basic retirement benefit for each month that retirement precedes what would have been the normal retirement date.

Average Final Compensation – If hired before January 1, 2012, the member’s average final compensation is the average of the 36 consecutive months of creditable service which will produce the highest average annual compensation. If hired on or after January 1, 2012, the member’s average final compensation is the average of the 60 consecutive months of creditable service which will produce the highest average annual compensation.

Service Retirement Multiplier – If hired before January 1, 2012, the retirement multiplier is 2.0%. If hired on or after January 1, 2012, the retirement multiplier is 1.8%.

Supplemental Benefit – In addition to the basic retirement allowance, members who retire prior to their normal retirement date shall receive a supplemental benefit of \$200 per month. Payments cease at age 62.

Normal Retirement Age – If hired before January 1, 2012, the normal retirement age is 62. If hired on or after January 1, 2012, the normal retirement age is the member’s Social Security Normal Retirement Age.

Earliest Unreduced Retirement Eligibility – If hired before January 1, 2012, at age 62 with five years of creditable service. If hired on or after January 1, 2012, at the member’s Social Security Normal Retirement Age with five years of creditable service.

Earliest Reduced Retirement Eligibility – If hired before January 1, 2012, the earlier of age 50 and a combined age and creditable service of 80 years or age 52 with ten years of creditable service. If hired on or after January 1, 2012, the earlier of age 50 and a combined age and creditable service of 90 years or age 52 with ten years of creditable service.

Cost-of-Living Adjustment (COLA) in Retirement – Retirement benefits are increased on January 1 of each year by one half of the percentage increase in the Consumer Price Index, U.S. City Average, limited to a maximum of 4.0%.

Plan Membership

As of the January 1, 2018 actuarial valuation, pension plan membership consisted of the following:

	Number
Retired members or beneficiaries currently receiving benefits	332
Vested terminated members entitled to but not yet receiving benefits	36
Active employees	444
Total plan membership	812

Contributions

Fairfax Water's actuarially determined contribution rate for the year ended December 31, 2018 was 43.2% of covered employee compensation, based on the actuarial valuation dated January 1, 2017. Fairfax Water's current practice is to contribute the greater of the actuarially determined rate or 48% of covered employee compensation. This rate, when combined with employee contributions, was expected to finance the costs of benefits earned by an employee during the year, with an additional amount to finance any unfunded accrued liability. Contributions to the pension plan from Fairfax Water for 2018 and 2017 exceeded the actuarially determined requirements and amounted to \$15,351,906 and \$14,500,637, respectively. Employee contributions to the Plan for 2018 and 2017 amounted to \$978,931 and \$1,023,739, respectively.

B. Net Pension Liability

Fairfax Water's net pension liability of \$98,851,373 was measured as of December 31, 2017. The total pension liability was determined by an actuarial valuation performed as of January 1, 2018.

Actuarial Methods and Assumptions

The total pension liability as of January 1, 2018 was based on the following assumptions:

Actuarial cost method	Entry age normal
Amortization method	Level percent of payroll over a 30 year period
Investment rate of return	7.50%, net of pension plan investment expense, including inflation
Inflation	3.00%
Individual salary increases	8.00% for participants under age 45 and 5.00% for participants age 45 and over
Aggregate payroll increases	4.00%
Cost of living adjustments	3.00% for Plans A, B, C, and D and 1.375% for Plan E

Healthy mortality rates were based on the RP-2000 Combined Healthy Mortality Table for males and females, with adjustments for mortality improvements based on Scale AA.

Disabled mortality rates were based on the RPA Post-1994 Disabled Mortality Table for males and females with no provision for future mortality improvement.

There have been no assumptions or plan changes since the last valuation on January 1, 2017.

Long-Term Expected Rate of Return

The long-term expected rate of return on the 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. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of January 1, 2018 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	30% - 70%	6.71%
International equity	0% - 10%	7.71%
Fixed income	20% - 70%	2.06%
Real estate	0% - 10%	5.41%
Cash	0% - 50%	1.41%
Other	0% - 10%	N/A

Discount Rate

The discount rate used to measure the total pension liability was 7.50%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that Fairfax Water contributions will be made at rates equal to the actuarially determined contribution rates. 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 plan members. 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.

C. Changes in the Net Pension Liability

	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
Balance at December 31, 2016	\$ 315,329,683	\$ 194,662,937	\$ 120,666,746
Changes for the year:			
Service cost	6,176,821	-	6,176,821
Interest	23,501,922	-	23,501,922
Differences between expected and actual experience	(3,448,611)	-	(3,448,611)
Contributions - employer	-	14,500,637	(14,500,637)
Contributions - employee	-	1,023,739	(1,023,739)
Net investment income	-	32,630,497	(32,630,497)
Benefit payments, including refunds of employee contributions	(16,295,082)	(16,295,082)	-
Administrative expense	-	(109,368)	109,368
Net changes	9,935,050	31,750,423	(21,815,373)
Balance at December 31, 2017	\$ 325,264,733	\$ 226,413,360	\$ 98,851,373

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of Fairfax Water using the discount rate of 7.50%, as well as what the net pension liability would be if calculated using a discount rate that is one percentage point lower (6.50%) or one percentage point higher (8.50%) than the current rate:

	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Net pension liability	\$ 137,864,032	\$ 98,851,373	\$ 66,311,069

D. Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended December 31, 2018, Fairfax Water recognized pension expense of \$14,293,629. Fairfax Water also reported deferred outflows of resources and deferred inflows of resources from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual demographic experience	\$ 3,269,738	\$ 9,805,101
Changes of assumptions	25,737	-
Net difference between projected and actual earnings on plan investments	8,706,585	14,451,023
Employer contributions subsequent to the measurement date	15,351,906	-
Total	\$ 27,353,966	\$ 24,256,124

Deferred outflows of resources of \$15,351,906 relates to employer contributions subsequent to the measurement date of the pension plan, and will be recognized as a reduction of the net pension liability in the year ending December 31, 2019. Other amounts reported as deferred outflows and (inflows) of resources related to pensions will be recognized in pension expense as follows:

Year Ending December 31	Amount
2019	\$ 95,975
2020	(1,423,251)
2021	(5,554,914)
2022	(5,013,418)
2023	(358,456)
Total	\$ 12,254,064

The Plan issues a publicly available financial report that includes the applicable financial statements and supplementary information. That report may be obtained by contacting the Treasurer of the Benefits Trust Committee at 8570 Executive Park Avenue, Fairfax, Virginia 22031.

9. Other Postemployment Benefits – Health Benefits

A. Plan Description and Provisions

Fairfax Water administers a single-employer other postemployment benefit (OPEB) plan under the Plan for retiree health insurance benefits. Health insurance includes medical, vision, dental, and prescription drug benefits for retirees and their dependents. The Plan document assigns all responsibilities of maintaining the OPEB plan to the Fairfax Water Board of Directors, including the approval of OPEB plan changes, setting benefit and contribution levels, and ensuring the OPEB plan is funded sufficiently to meet its benefit obligations. Fairfax Water has established a Benefits Trust Committee to be responsible for the administration of the OPEB plan.

Each member is part of one of six subplans (Plan A, Plan B, Plan C, Plan D, Modified Plan D, and Plan E) for the entirety of their employment with Fairfax Water based on when the employee was hired. Newly hired employees currently earn benefits under Plan D. To be eligible for retiree health insurance benefits, an employee must retire directly from active employment with an early or normal retirement pension benefit under the Plan and must have been enrolled in Fairfax Water's health insurance program at the time of retirement. Plan D and Modified Plan D Members are not eligible for this benefit until the age of fifty-five. Plan E Members hired on or after April 1, 2008 must have at least 10 years of service at retirement to be eligible for benefits.

The monthly benefit payable is a percentage of the designated premium and varies by subplan.

- Plan A, B, and C – 3.0% multiplied by years of creditable service, limited to a maximum of 25 years of creditable service.
- Plan D – 3.0% multiplied by years of creditable service, limited to a maximum of 25 years of creditable service, reduced by 0.25% for each month that retirement precedes age 60.
- Plan E (hired before April 1, 2008) – 50% of the designated premium.
- Plan E (hired on or after April 1, 2008) – 2.0% multiplied by years of creditable service, limited to a maximum of 25 years of creditable service.

The monthly benefit paid to any participant may not exceed the adjusted cap. The adjusted cap varies by coverage tier and is 116% of the designated premium for that coverage tier as of January 1, 1992, increased by 4% per year from that date.

Plan Membership

As of the January 1, 2018 actuarial valuation, OPEB plan membership consisted of the following:

	Number
Retired members or beneficiaries currently receiving benefits	282
Active employees	444
Total plan membership	726

Contributions

Plan members do not contribute to the OPEB plan while in active employment. In retirement, plan members must pay the remainder of the designated health benefits premium that is not subsidized by the plan in order to maintain coverage.

Fairfax Water's actuarially determined contribution rate for the year ended December 31, 2018 was 43.2% of covered employee compensation, based on the actuarial valuation dated January 1, 2017. Fairfax Water's current practice is to contribute the greater of the actuarially determined

rate or 48% of covered employee compensation. This rate was expected to finance the costs of benefits earned by an employee during the year, with an additional amount to finance any unfunded accrued liability. Contributions to the OPEB plan from Fairfax Water for 2018 and 2017 exceeded the actuarially determined requirements and amounted to \$3,144,366 and \$3,372,698, respectively.

B. Net OPEB Liability

Fairfax Water's net OPEB liability of \$19,812,841 was measured as of December 31, 2017. The total OPEB liability was determined by an actuarial valuation performed as of January 1, 2018.

Actuarial Methods and Assumptions

The total OPEB liability as of January 1, 2018 was based on the following assumptions:

Actuarial cost method	Entry age normal
Amortization method	Level percent of payroll over a 30 year period
Investment rate of return	7.50%, net of pension plan investment expense, including inflation
Inflation	3.00%
Individual salary increases	8.00% for participants under age 45 and 5.00% for participants age 45 and over
Aggregate payroll increases	4.00%
Cost-of-living adjustments	3.00% for Plans A, B, C, and D and 1.375% for Plan E
Healthcare cost trend rates:	
Medical and vision (under 65)	7.00%
Medical and vision (over 65)	5.75%
Prescription drug	9.00%
Dental	4.00%
Administrative expenses	2.50%

Healthy mortality rates were based on the RP-2000 Combined Healthy Mortality Table for males and females, with adjustments for mortality improvements based on Scale AA.

The following assumptions were changed since the last valuation dated January 1, 2017:

- The assumed per-capita retiree health costs were updated to reflect more recent experience and premium rates for insured Medicare-eligible participants.

- The assumed trends on medical, prescription drug, dental, vision, and administrative expense costs were modified.

There were no changes in plan provisions since the prior valuation. However, the delay in the effective date of the excise tax on high-cost health plans from 2020 to 2022 was recognized and treated as a plan change in the determination of the recommended contribution.

Long-Term Expected Rate of Return

The long-term expected rate of return on the 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 investment expense and inflation) are developed for each major asset class. These returns 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 and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table.

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	30% - 70%	6.71%
International equity	0% - 10%	7.71%
Fixed income	20% - 70%	2.06%
Real estate	0% - 10%	5.41%
Cash	0% - 50%	1.41%
Other	0% - 10%	N/A

Discount Rate

The discount rate used to measure the total OPEB liability was 7.50%. The projection of cash flows used to determine the discount rate assumed that Fairfax Water contributions would be made at rates equal to the actuarially determined contribution rates. Based on the assumptions, the OPEB plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members.

C. Changes in the Net OPEB Liability

	Total OPEB Liability		Plan Fiduciary Net Position		Net OPEB Liability
Balance at December 31, 2016	\$	65,385,408	\$	40,364,471	\$ 25,020,937
Changes for the year:					
Service cost		1,856,476		-	1,856,476
Interest		4,794,979		-	4,794,979
Change of benefit terms		(270,209)		-	(270,209)
Differences between expected and actual experience		22,661		-	22,661
Changes of assumptions		(3,647,763)		-	(3,647,763)
Contributions - employer		-		3,372,698	(3,372,698)
Net investment income		-		4,622,120	(4,622,120)
Benefit payments, including refunds of employee contributions		(2,904,683)		(2,904,683)	-
Administrative expense		-		(30,578)	30,578
Net changes		(148,539)		5,059,557	(5,208,096)
Balance at December 31, 2017	\$	65,236,869	\$	45,424,028	\$ 19,812,841

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate

The following presents the net OPEB liability of Fairfax Water, calculated using the discount rate of 7.50%, as well as what the net OPEB liability would be if calculated using a discount rate that is one percentage point lower (6.50%) or one percentage point higher (8.50%) than the current rate:

	1% Decrease (6.50%)		Current Discount Rate (7.50%)		1% Increase (8.50%)
Net OPEB liability	\$	27,691,017	\$	19,812,841	\$ 13,257,276

Sensitivity of the Net OPEB Liability to Changes in the Trend Rates

The following presents the net OPEB liability of Fairfax Water, calculated using current healthcare cost trend rates, as well as what the net OPEB liability would be if calculated using healthcare cost trend rates that are one percentage point lower or one percentage point higher than the current rates:

	1% Decrease in Trend Rates		Current Trend Rates		1% Increase in Trend Rates	
Net OPEB liability	\$	14,296,763	\$	19,812,841	\$	25,243,244

D. OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB

For the year ended December 31, 2018, Fairfax Water recognized OPEB expense of \$2,473,319. Fairfax Water also reported deferred outflows of resources and deferred inflows of resources from the following sources:

	Deferred Outflows of Resources		Deferred Inflows of Resources	
Differences between expected and actual demographic experience	\$	19,041	\$	-
Changes of assumptions		-		3,065,053
Net difference between projected and actual earnings on plan investments		-		1,262,705
Employer contributions subsequent to the measurement date		3,144,366		-
Total	\$	3,163,407	\$	4,327,758

Deferred outflows of resources of \$3,144,366 relates to employer contributions subsequent to the measurement date of the OPEB plan, and will be recognized as a reduction of the net OPEB liability in the year ending December 31, 2019. Other amounts reported as deferred outflows and (inflows) of resources related to OPEB will be recognized in OPEB expense as follows:

Year Ending December 31	Amount
2019	\$ (894,766)
2020	(894,766)
2021	(894,766)
2022	(894,767)
2023	(579,090)
2024	(150,562)
Total	\$ (4,308,717)

10. Other Postemployment Benefits – Implicit Subsidy

A. Plan Description and Provisions

The implicit subsidy liability of Fairfax Water is a result of the current premium structure for pre-Medicare retirees receiving benefits through the Fairfax County Water Authority Retirement Plan, a single-employer OPEB plan that is used to provide postemployment benefits for all regular full-time employees. No assets are accumulated in a trust.

The Plan sets forth an explicit healthcare benefit stated as a percentage of the designated premium. However, for pre-Medicare retirees, the true cost of providing healthcare benefits exceeds the current designated premium, because the designated premium is set based on the blended claims experience of both active employees and pre-Medicare retirees. The difference between the premiums that would be set for pre-Medicare retirees if their claims experiences was analyzed separately from active employees and the current designated premiums is the implicit subsidy.

Plan Membership

As of the January 1, 2018 actuarial valuation, OPEB plan membership consisted of the following:

	Number
Retired members or beneficiaries currently receiving benefits	282
Active employees	444
Total plan membership	726

Contributions

Plan members do not contribute toward the implicit subsidy. Fairfax Water funds the implicit subsidy entirely on a pay-as-you-go basis. Fairfax Water will continue to evaluate the impact of this liability when making OPEB plan changes and during the Plan's actuarial valuation.

B. Total OPEB Liability

Fairfax Water's total OPEB liability of \$12,707,224 was measured as of December 31, 2017. The total OPEB liability was determined by an actuarial valuation performed as of January 1, 2018.

Actuarial Methods and Assumptions

The total OPEB liability as of January 1, 2018 was based on the following assumptions:

Individual salary increases	8.00% for participants under age 45 and 5.00% for participants age 45 and over
Discount rate	3.44%

Healthcare cost trend rates:

Medical and vision (under 65)	7.00%
Medical and vision (over 65)	5.75%
Prescription drug	9.00%
Dental	4.00%
Administrative expenses	2.50%

Healthy mortality rates were based on the RP-2000 Combined Healthy Mortality Table for males and females, with adjustments for mortality improvements based on Scale AA.

The actuarial assumptions used in the December 31, 2017 valuation were based on the results of the most recent experience study performed by the prior actuary.

Discount Rate

The discount rate for OPEB benefits funded entirely on a pay-as-you-go basis is the yield or index rate for 20 year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale). For this purpose, the index used is the Bond Buyer 20-Bond General Obligation Municipal Bond index. The index value of the current December 31, 2017 measurement date is 3.44%.

C. Changes in the Total OPEB Liability

	Total OPEB Liability
Balance at December 31, 2016	\$ -
Changes for the year:	
Change of benefit terms	(102,199)
Changes of assumptions	<u>12,809,423</u>
Net changes	<u>12,707,224</u>
Balance at December 31, 2017	<u>\$ 12,707,224</u>

Sensitivity of the Total OPEB Liability to Changes in the Discount Rate

The following presents the total OPEB liability of Fairfax Water, calculated using the discount rate of 3.44%, as well as what the total OPEB liability would be if calculated using a discount rate that is one percentage point lower (2.44%) or one percentage point higher (4.44%) than the current rate:

		1% Decrease (2.44%)		Current Discount Rate (3.44%)		1% Increase (4.44%)
Total OPEB liability	\$	13,695,509	\$	12,707,224	\$	11,805,960

Sensitivity of the Total OPEB Liability to Changes in the Trend Rates

The following presents the total OPEB liability of Fairfax Water, calculated using current healthcare cost trend rates, as well as what the total OPEB liability would be if calculated using healthcare cost trend rates that are one percentage point lower or one percentage point higher than the current rates:

		1% Decrease in Trend Rates		Current Trend Rates		1% Increase in Trend Rates
Total OPEB liability	\$	11,572,541	\$	12,707,224	\$	14,018,862

D. OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB

For the year ended December 31, 2018, Fairfax Water recognized OPEB expense of \$1,944,035. Fairfax Water also reported deferred outflows of resources and deferred inflows of resources from the following sources:

	Deferred Outflows of Resources
Changes of assumptions	\$ 10,763,189
Total	\$ 10,763,189

Amounts reported as deferred outflows and (inflows) of resources related to OPEB will be recognized in OPEB expense as follows:

Year Ending December 31	Amount
2019	\$ 2,046,234
2020	2,046,234
2021	2,046,234
2022	2,046,234
2023	2,046,234
2024	532,019
Total	\$ 10,763,189

11. Other Postemployment Benefits – Life Insurance

A. Plan Description and Provisions

The life insurance benefits provided to retired employees of Fairfax Water are considered a single employer OPEB plan. Benefits are provided to all regular full-time employees. No assets are accumulated in a trust.

A life insurance policy with a death benefit of \$25,000 is provided to each eligible retiree upon retirement. To be eligible for life insurance benefits, the Member must retire directly from active employment with an early or normal retirement pension benefit under the Plan.

Plan Membership

As of the January 1, 2018 actuarial valuation, OPEB Plan membership consisted of the following:

	Number
Retired members or beneficiaries currently receiving benefits	-
Active employees	444
Total plan membership	444

Contributions

Plan members do not contribute toward the life insurance benefit. Fairfax Water funds the full cost of the life insurance policy on a pay-as-you-go basis as employees retire. Contributions to the OPEB plan from Fairfax Water for 2018 and 2017 amounted to \$512,248 and \$412,730, respectively.

B. Total OPEB Liability

Fairfax Water's total OPEB liability of \$2,057,096 was measured as of December 31, 2017. The total OPEB liability was determined by an actuarial valuation performed as of January 1, 2018.

Actuarial Methods and Assumptions

The total OPEB liability as of January 1, 2018 was based on the following assumptions:

Individual salary increases	8.00% for participants under age 45 and 5.00% for participants age 45 and over
Discount rate	3.44%
Administrative expense load	10.00%

Healthy mortality rates were based on the RP-2000 Combined Healthy Mortality Table for males and females, with adjustments for mortality improvements based on Scale AA.

The actuarial assumptions used in the December 31, 2017 valuation were based on the results of the most recent experience study performed by the prior actuary.

The following assumption was changed since the last valuation dated January 1, 2017:

The discount rate was decreased from 3.78% to 3.44%.

Discount Rate

The discount rate for OPEB benefits funded entirely on a pay-as-you-go basis is the yield or index rate for 20 year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale). For this purpose, the index used is the Bond Buyer 20-Bond General Obligation Municipal Bond index. The index value of the current December 31, 2017 measurement date is 3.44%.

C. Changes in the Total OPEB Liability

	Total OPEB Liability
Balance at December 31, 2016	\$ 2,176,414
Changes for the year:	
Service cost	136,829
Interest	74,468
Differences between expected and actual experience	(54,160)
Changes of assumptions	136,275
Benefit payments, including refunds of employee contributions	(412,730)
Net changes	(119,318)
Balance at December 31, 2017	\$ 2,057,096

Sensitivity of the Total OPEB Liability to Changes in the Discount Rate

The following presents the total OPEB liability of Fairfax Water, calculated using the discount rate of 3.44%, as well as what the total OPEB liability would be if calculated using a discount rate that is one percentage point lower (2.44%) or one percentage point higher (4.44%) than the current rate:

		1% Decrease (2.44%)		Current Discount Rate (3.44%)		1% Increase (4.44%)
Total OPEB liability	\$	2,545,916	\$	2,057,096	\$	1,691,113

Sensitivity of the Total OPEB Liability to Changes in the Trend Rates

The following presents the total OPEB liability of Fairfax Water, calculated using current healthcare cost trend rates, as well as what the total OPEB liability would be if calculated using healthcare cost trend rates that are one percentage point lower or one percentage point higher than the current rates:

		1% Decrease in Trend Rates		Current Trend Rates		1% Increase in Trend Rates
Total OPEB liability	\$	2,057,096	\$	2,057,096	\$	2,057,096

D. OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB

For the year ended December 31, 2018, Fairfax Water recognized OPEB expense of \$219,324. Fairfax Water also reported deferred outflows of resources and deferred inflows of resources from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual demographic experience	\$ -	\$ 48,866
Changes of assumptions	122,954	-
Employer contributions subsequent to the measurement date	512,248	-
Total	\$ 635,202	\$ 48,866

Deferred outflows of resources of \$512,248 relates to employer contributions subsequent to the measurement date of the OPEB plan, and will be recognized as a reduction of the net pension liability in the year ending December 31, 2019. Other amounts reported as deferred outflows and (inflows) of resources related to OPEB will be recognized in OPEB expense as follows:

Year Ending December 31	Amount
2019	\$ 8,027
2020	8,027
2021	8,027
2022	8,027
2023	8,027
Thereafter	33,953
Total	\$ 74,088

12. Commitments and Contingencies

In connection with its ongoing capital improvement program, Fairfax Water has entered into various construction contracts. As of December 31, 2018, the uncompleted cost of these and other contracts is approximately \$19.6 million.

Fairfax Water has also agreed, in principle, to pay certain portions of the capital and annual operation and maintenance costs relating to various water supply augmentation facilities constructed and proposed to be constructed by other parties for the use and benefit of Fairfax Water and other water supply agencies in the Washington, D.C., metropolitan area. Fairfax Water's share of the capital costs is presently estimated at \$7.6 million which is to be paid with interest over the next 22 years. Fairfax Water's share of annual operation and maintenance costs associated with these facilities for 2019 is estimated to be \$150,000.

On January 3, 2014 Fairfax Water entered into an agreement with the U.S. Army Corps of Engineers (the Army) to purchase water for customers. Fairfax Water also shares the costs of capital improvements to the Washington Aqueduct in accordance with the Approved Capital Improvement Plan. During 2018 Fairfax Water's costs for water and capital improvements was \$5.7 million and \$1.9 million, respectively. These costs were recorded as an expense on Fairfax Water's financial statements. An escrow account has been established for the payments made from which the Army makes draws. The account is interest bearing and all earnings accrue to Fairfax Water. In addition to payments made to the Army, Fairfax Water maintains a balance of approximately three months of the cost of water purchased. The agreement will remain in effect until terminated by either the Army or Fairfax Water, and requires a five year notice. Fairfax Water's cost for water and capital improvements for 2019 is estimated to be \$7.1 million.

In addition, Fairfax Water is contingently liable for claims that arose in the ordinary course of operations and in connection with its capital improvement program. It is the opinion of Fairfax Water and its legal counsel that any losses that may ultimately be incurred as a result of any claims will not be material to the financial statements.

13. Deferred Compensation Plan

Fairfax Water offers its employees a deferred compensation plan created in accordance with Internal Revenue Code (the Code) Section 457. The deferred compensation plan, available to all employees, permits them to defer a portion of their salaries to future years. All of the assets of the deferred compensation plan are held in a trust for the exclusive benefit of participants and beneficiaries and the assets and liabilities are not reported on the accompanying Statement of Net Position. Participants' rights under the plan are equal to the fair market value of the deferred account for each participant.

14. Risk Management

Fairfax Water is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters. With the exception of medical coverage for employees, these risks are covered by commercial insurance purchased from independent third parties. Section 6.11 of the 1992 General Trust Indenture states that Fairfax Water "will carry or cause to be carried such insurance with a reputable insurance carrier or carriers, such as is maintained or carried by similar utilities as the Water System." There have been no significant reductions in insurance coverage from the prior year and settled claims have not exceeded insurance coverage in any of the past three years.

Fairfax Water is self-insured for health benefits coverage for employees up to \$200,000 per individual per year and is protected from catastrophic losses through a stop-loss insurance policy for losses in excess of such levels.

The changes in Fairfax Water's health benefits claims liability in 2018 and 2017 are as follows:

	2018	2017
Balance, January 1	\$ 647,404	\$ 673,641
Claims incurred	7,331,642	7,637,687
Claims paid	<u>(7,363,001)</u>	<u>(7,663,924)</u>
Balance, December 31	<u>\$ 616,045</u>	<u>\$ 647,404</u>

This liability, which includes an estimate of incurred but not reported claims, is included in accounts payable and accrued expenses in the accompanying Statement of Net Position.

15. Component Unit

The Fairfax County Water Authority Welfare Benefit Trust (the Trust) is a component unit of Fairfax Water. The assets, liabilities and net position of the Trust amounted to approximately \$16,085,745, \$616,045, and \$15,469,700, respectively, at December 31, 2018. Such amounts have been included in the accompanying financial statements. All transactions between the Trust and Fairfax Water have been eliminated in the preparation of the accompanying financial statements. The Fairfax County

Water Authority Welfare Benefit Plan provides certain medical, dental, and prescription drug benefits to participating employees, retirees, and their dependents. Amounts deposited into the Trust are based on projected benefit levels determined on an annual basis less projected employee contributions. The purpose of the Trust is to receive and hold assets to provide medical benefits for Fairfax Water employees and retirees. Fairfax Water and the Retirement Plan contributed \$7,757,325 to the Trust in 2018. Employees and retirees contributed \$2,112,059 in 2018.

Notes to Basic Financial Statements

Statement of Net Position	Fairfax Water	Welfare Benefit Trust	Total
Current assets:			
Cash and cash equivalents	\$ 37,636,117	\$ 571,420	\$ 38,207,537
Investments	49,626,927	10,076,396	59,703,323
Interest receivable	808,692	55,829	864,521
Other assets	35,475,907	90,605	35,566,512
Noncurrent assets:			
Investments	152,256,591	5,291,495	157,548,086
Capital assets, net of accumulated depreciation and amortization	1,786,694,374	-	1,786,694,374
Other assets	1,193,609	-	1,193,609
Total assets	2,063,692,217	16,085,745	2,079,777,962
Deferred outflows of resources	60,135,055	-	60,135,055
Total assets and deferred outflows of resources	2,123,827,272	16,085,745	2,139,913,017
Current liabilities	61,443,415	616,045	62,059,460
Noncurrent liabilities	624,204,900	-	624,204,900
Total liabilities	685,648,315	616,045	686,264,360
Deferred inflows of resources	28,632,748	-	28,632,748
Total net position	1,409,546,209	15,469,700	1,425,015,909
Total liabilities, deferred inflows of resources and net position	\$ 2,123,827,272	\$ 16,085,745	\$ 2,139,913,017

Statement of Revenues, Expenses and Change in Net Position	Fairfax Water	Welfare Benefit Trust	Total
Operating revenues	\$ 173,452,658	\$ -	\$ 173,452,658
Operating expenses	(93,911,692)	1,980,350	(91,931,342)
Depreciation and amortization expense	(52,649,783)	-	(52,649,783)
Nonoperating revenues (expenses), net	1,300,206	259,184	1,559,390
Capital contributions	4,591,230	-	4,591,230
Increase in net position	32,782,619	2,239,534	35,022,153
Net position, beginning of year, as restated	1,376,763,590	13,230,166	1,389,993,756
Net position, end of year	\$ 1,409,546,209	\$ 15,469,700	\$ 1,425,015,909

Statement of Cash Flows	Fairfax Water	Welfare Benefit Trust	Total
Operating activities	\$ 69,654,175	\$ 1,931,169	\$ 71,585,344
Capital and related financing activities	(102,245,004)	-	(102,245,004)
Investing activities	27,810,865	(2,362,620)	25,448,245
Net decrease in cash and cash equivalents	(4,779,964)	(431,451)	(5,211,415)
Cash and cash equivalents, beginning of year	42,416,081	1,002,871	43,418,952
Cash and cash equivalents, end of year	\$ 37,636,117	\$ 571,420	\$ 38,207,537

16. Related Organizations

Based on an agreement dated January 1, 1989 (original agreement dated July 1, 1978) between the County and Fairfax Water, Fairfax Water bills and collects for the sales of sewer services on behalf of the County's sewer system. During 2018, Fairfax Water collected approximately \$189.4 million on behalf of the County. As of December 31, 2018, approximately \$4.2 million was owed to the County. The County has paid a fee of \$6.2 million for this service in 2018.

Based on an agreement dated January 3, 2014 between the City of Fairfax and Fairfax Water, Fairfax Water bills and collects for the sales of sewer services on behalf of the City's sewer system. During 2018, Fairfax Water collected approximately \$7.6 million on behalf of the City. As of December 31, 2018, approximately \$601,000 was owed to the City. The billing service also includes a utility tax for customers inside the City limits. The City has paid a fee of \$248,000 for this service in 2018.

Based on an agreement dated January 3, 2014 between the City of Falls Church and Fairfax Water, Fairfax Water bills and collects for the sales of sewer services on behalf of the City's sewer system. During 2018, Fairfax Water collected approximately \$4.5 million on behalf of the City. As of December 31, 2018, approximately \$169,000 was owed to the City. The billing service also includes a utility tax for customers inside the City limits. The City has paid a fee of \$99,000 for this service in 2018.

17. Restatement

In accordance with the adoption of GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, the beginning net position balance has been restated to reflect the prior year long-term obligation for health and life insurance benefits.

The following table is a summary of the restatement to net position as of January 1, 2018 as a result of the implementation of GASB Statement No. 75:

Net Position

Balance at December 31, 2017, as previously reported	\$ 1,418,555,597
Change in accounting principle for the implementation of GASB Statement No. 75 – to record the other postemployment benefits liability	(28,561,841)
Balance at January 1, 2018, as restated	<u>\$ 1,389,993,756</u>

REQUIRED SUPPLEMENTARY INFORMATION

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Changes in the Net Pension Liability and Related Ratios

Information presented is based on the actuarial information for the plan year ended:

Reporting as of December 31,	2017	2016	2015	2014
Total pension liability				
Service cost	\$ 6,176,821	\$ 6,290,917	\$ 6,138,436	\$ 6,154,281
Interest	23,501,922	23,037,301	22,410,595	20,645,855
Differences between expected and actual experience	(3,448,611)	(7,094,162)	(5,057,514)	11,343,166
Changes of assumptions	-	-	54,126	-
Benefit payments, including refunds of employee contributions	(16,295,082)	(15,554,940)	(15,129,156)	(14,066,004)
Net change in total pension liability	9,935,050	6,679,116	8,416,487	24,077,298
Total pension liability – beginning	315,329,683	308,650,567	300,234,080	276,156,782
Total pension liability – ending (a)	\$ 325,264,733	\$ 315,329,683	\$ 308,650,567	\$ 300,234,080
Plan fiduciary net position				
Contributions – employer	\$ 14,500,637	\$ 14,140,723	\$ 14,362,903	\$ 14,197,131
Contributions – employee	1,023,739	1,076,246	1,128,898	1,192,841
Net investment income	32,630,497	10,955,546	(1,694,011)	9,411,421
Benefit payments, including refunds of employee contributions	(16,295,082)	(15,554,940)	(15,129,156)	(14,066,004)
Administrative expense	(109,368)	(125,641)	(152,439)	(108,171)
Net change in plan fiduciary net position	31,750,423	10,491,934	(1,483,805)	10,627,218
Plan fiduciary net position – beginning	194,662,937	184,171,003	185,654,808	175,027,590
Plan fiduciary net position – ending (b)	\$ 226,413,360	\$ 194,662,937	\$ 184,171,003	\$ 185,654,808
Net pension liability – ending (a) – (b)	\$ 98,851,373	\$ 120,666,746	\$ 124,479,564	\$ 114,579,272
Plan fiduciary net position as a percentage of the total pension liability	69.61%	61.73%	59.67%	61.84%
Covered-employee payroll	\$ 37,236,115	\$ 36,387,442	\$ 36,374,344	\$ 35,701,952
Net pension liability as a percentage of covered employee payroll	265.47%	331.62%	342.22%	320.93%

Notes:

This schedule is presented to show information for ten years. However, until a full ten-year trend is compiled, Fairfax Water will present information for those years which information is available.

Covered-employee payroll figures have been determined by dividing actual employer contributions by the actuarially determined rate or 48%, whichever is greater, given Fairfax Water's funding practice.

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Employer Contributions – Pension Plan (in thousands)

Year Ended December 31	Actuarially Determined Contribution	Contribution in Relation to the Actuarially Determined Contribution	Contribution Deficiency (Excess)	Covered- Employee Payroll	Contributions as a Percentage of Covered- Employee Payroll
2014	\$ 12,925	\$ 14,197	\$ (1,272)	\$ 35,702	39.77%
2015	12,657	14,363	(1,706)	36,374	39.49%
2016	13,065	14,141	(1,075)	36,387	38.86%
2017	13,295	14,501	(1,205)	37,236	38.94%
2018	13,817	15,352	(1,535)	38,534	39.84%

Notes:

This schedule is presented to show information for ten years. However, until a full ten-year trend is compiled, Fairfax Water will present information for those years which information is available.

Covered-employee payroll figures have been determined by dividing actual employer contributions by the actuarially determined rate or 48%, whichever is greater, given Fairfax Water's funding practice.

Employer contributions are prorated between the pension and health benefits of the Plan based on applicable liability measures for each portion. The total employer contributions to the Plan from Fairfax Water for 2018, 2017, 2016, 2015, and 2014 was 48% of covered-employee payroll, exceeding the actuarially determined contribution rate, and amounted to \$18,496,272, \$17,873,355, \$17,465,972, \$17,459,685, and \$17,136,937, respectively.

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Changes in the Net OPEB Liability and Related Ratios – Health Benefits

Information presented is based on the actuarial information for the plan year ended:

Reporting as of December 31,		2017
Total OPEB liability		
Service cost	\$	1,856,476
Interest		4,794,979
Change of benefit terms		(270,209)
Differences between expected and actual experience		22,661
Changes of assumptions		(3,647,763)
Benefit payments, including refunds of employee contributions		(2,904,683)
Net change in total OPEB liability		(148,539)
Total OPEB liability – beginning		65,385,408
Total OPEB liability – ending (a)	\$	65,236,869
Plan fiduciary net position		
Contributions – employer	\$	3,372,698
Net investment income		4,622,120
Benefit payments, including refunds of employee contributions		(2,904,683)
Administrative expense		(30,578)
Net change in plan fiduciary net position		5,059,557
Plan fiduciary net position – beginning		40,364,471
Plan fiduciary net position – ending (b)	\$	45,424,028
Net OPEB liability – ending (a) – (b)	\$	19,812,841
Plan fiduciary net position as a percentage of the total OPEB liability		69.63%
Covered-employee payroll	\$	37,236,115
Net OPEB liability as a percentage of covered employee payroll		53.21%

Notes:

This schedule is presented to show information for ten years. However, until a full ten-year trend is compiled, Fairfax Water will present information for those years which information is available.

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Employer Contributions – OPEB Health Benefits (in thousands)

Year Ended December 31	Actuarially Determined Contribution	Contribution in Relation to the Actuarially Determined Contribution	Contribution Deficiency (Excess)	Covered- Employee Payroll	Contributions as a Percentage of Covered- Employee Payroll
2017	\$ 3,092	\$ 3,373	\$ (280)	\$ 37,236	9.06%
2018	2,830	3,144	(314)	38,534	8.16%

Notes:

This schedule is presented to show information for ten years. However, until a full ten-year trend is compiled, Fairfax Water will present information for those years which information is available.

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Changes in the Total OPEB Liability and Related Ratios – Implicit Subsidy

Information presented is based on the actuarial information for the plan year ended:

Reporting as of December 31,	2017
Total OPEB liability	
Change of benefit terms	\$ (102,199)
Changes of assumptions	<u>12,809,423</u>
Net change in total OPEB liability	12,707,224
Total OPEB liability – beginning	<u>-</u>
Total OPEB liability – ending	<u><u>\$ 12,707,224</u></u>
Covered-employee payroll	\$ 37,236,115
Total OPEB liability as a percentage of covered employee payroll	34.13%

Notes:

This schedule is presented to show information for ten years. However, until a full ten-year trend is compiled, Fairfax Water will present information for those years which information is available.

The OPEB plan does not have assets in trusts or equivalent arrangements and is funded on a pay-as-you-go basis.

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Changes in the Total OPEB Liability and Related Ratios – Life Insurance

Information presented is based on the actuarial information for the plan year ended:

Reporting as of December 31,		2017
Total OPEB liability		
Service cost	\$	136,829
Interest		74,468
Differences between expected and actual experience		(54,160)
Changes of assumptions		136,275
Benefit payments, including refunds of employee contributions		(412,730)
Net change in total OPEB liability		(119,318)
Total OPEB liability – beginning		2,176,414
Total OPEB liability – ending	\$	2,057,096
Covered-employee payroll	\$	37,236,115
Total OPEB liability as a percentage of covered employee payroll		5.52%

Notes:

This schedule is presented to show information for ten years. However, until a full ten-year trend is compiled, Fairfax Water will present information for those years which information is available.

The OPEB plan does not have assets in trusts or equivalent arrangements and is funded on a pay-as-you-go basis.

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Employer Contributions – OPEB Life Insurance (in thousands)

Year Ended December 31	Employer Contributions	Covered-Employee Payroll	Contributions as a Percentage of Covered-Employee Payroll
2017	\$ 413	\$ 37,236	1.11%
2018	512	38,534	1.33%

Notes:

This schedule is presented to show information for ten years. However, until a full ten-year trend is compiled, Fairfax Water will present information for those years which information is available.

SUPPLEMENTARY INFORMATION

FAIRFAX COUNTY WATER AUTHORITY

Statement of Changes in Assets and Liabilities – Agency Funds For the year ended December 31, 2018

FAIRFAX COUNTY SEWER

	Balance January 1, 2018	Additions	Reductions	Balance December 31, 2018
Assets				
Cash	\$ 2,814,198	\$ 189,434,525	\$ 188,005,832	\$ 4,242,891
Liabilities				
Accounts payable	\$ 2,814,198	\$ 189,434,525	\$ 188,005,832	\$ 4,242,891

CITY OF FAIRFAX SEWER AND UTILITY TAX

	Balance January 1, 2018	Additions	Reductions	Balance December 31, 2018
Assets				
Cash	\$ 524,766	\$ 7,582,054	\$ 7,505,432	\$ 601,388
Liabilities				
Accounts payable	\$ 524,766	\$ 7,582,054	\$ 7,505,432	\$ 601,388

CITY OF FALLS CHURCH SEWER AND UTILITY TAX

	Balance January 1, 2018	Additions	Reductions	Balance December 31, 2018
Assets				
Cash	\$ 213,357	\$ 4,452,987	\$ 4,496,918	\$ 169,426
Liabilities				
Accounts payable	\$ 213,357	\$ 4,452,987	\$ 4,496,918	\$ 169,426

TOTAL – ALL AGENCY FUNDS

	Balance January 1, 2018	Additions	Reductions	Balance December 31, 2018
Assets				
Cash	\$ 3,552,321	\$ 201,469,566	\$ 200,008,182	\$ 5,013,705
Liabilities				
Accounts payable	\$ 3,552,321	\$ 201,469,566	\$ 200,008,182	\$ 5,013,705

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Bonds Payable December 31, 2018

Description	Date of Issue	Maturity Dates	Interest		Amount Issued	Outstanding January 1, 2018	Retired During 2018	Outstanding December 31, 2018
			Rate	Dates				
Water Refunding Revenue Bonds, Series 1997	7/15/1997	4/1/2018	5.000	4/1 – 10/1	\$ 4,840,000	\$ 4,840,000	\$ 4,840,000	\$ -
	7/15/1997	4/1/2019	5.000	4/1 – 10/1	5,080,000	5,080,000	-	5,080,000
	7/15/1997	4/1/2020	5.000	4/1 – 10/1	5,335,000	5,335,000	-	5,335,000
	7/15/1997	4/1/2021	5.000	4/1 – 10/1	5,605,000	5,605,000	-	5,605,000
						20,860,000	4,840,000	16,020,000
Water Refunding Revenue Bonds, Series 2005	3/30/2005	4/1/2018	5.250	4/1 – 10/1	2,975,000	2,975,000	2,975,000	-
	3/30/2005	4/1/2019	5.250	4/1 – 10/1	2,835,000	2,835,000	-	2,835,000
	3/30/2005	4/1/2020	5.250	4/1 – 10/1	2,910,000	2,910,000	-	2,910,000
	3/30/2005	4/1/2021	5.250	4/1 – 10/1	3,475,000	3,475,000	-	3,475,000
	3/30/2005	4/1/2022	5.250	4/1 – 10/1	4,000,000	4,000,000	-	4,000,000
	3/30/2005	4/1/2023	5.250	4/1 – 10/1	5,865,000	5,865,000	-	5,865,000
	3/30/2005	4/1/2024	5.250	4/1 – 10/1	6,175,000	6,175,000	-	6,175,000
	3/30/2005	4/1/2025	5.250	4/1 – 10/1	6,500,000	6,500,000	-	6,500,000
	3/30/2005	4/1/2026	5.250	4/1 – 10/1	2,655,000	2,655,000	-	2,655,000
	3/30/2005	4/1/2027	5.250	4/1 – 10/1	2,795,000	2,795,000	-	2,795,000
						40,185,000	2,975,000	37,210,000

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Bonds Payable (continued) December 31, 2018

Description	Date of Issue	Maturity Dates	Interest		Amount Issued	Outstanding January 1, 2018	Retired During 2018	Outstanding December 31, 2018
			Rate	Dates				
Water Revenue and Refunding Revenue Bonds, Series 2010	11/10/2010	4/1/2022	3.000	4/1 – 10/1	150,000	150,000	-	150,000
	11/10/2010	4/1/2023	3.000	4/1 – 10/1	155,000	155,000	-	155,000
	11/10/2010	4/1/2024	3.000	4/1 – 10/1	155,000	155,000	-	155,000
	11/10/2010	4/1/2025	3.125	4/1 – 10/1	160,000	160,000	-	160,000
	11/10/2010	4/1/2026	3.200	4/1 – 10/1	165,000	165,000	-	165,000
	11/10/2010	4/1/2027	3.250	4/1 – 10/1	170,000	170,000	-	170,000
	11/10/2010	4/1/2028	4.000	4/1 – 10/1	3,380,000	3,380,000	-	3,380,000
	11/10/2010	4/1/2029	4.000	4/1 – 10/1	8,350,000	8,350,000	-	8,350,000
	11/10/2010	4/1/2030	4.250	4/1 – 10/1	3,620,000	3,620,000	-	3,620,000
	11/10/2010	4/1/2031	4.000	4/1 – 10/1	3,770,000	3,770,000	-	3,770,000
	11/10/2010	4/1/2032	4.000	4/1 – 10/1	3,925,000	3,925,000	-	3,925,000
	11/10/2010	4/1/2033	5.000	4/1 – 10/1	2,230,000	2,230,000	-	2,230,000
	11/10/2010	4/1/2034	5.000	4/1 – 10/1	2,305,000	2,305,000	-	2,305,000
	11/10/2010	4/1/2035	5.000	4/1 – 10/1	7,815,000	7,815,000	-	7,815,000
	11/10/2010	4/1/2036	5.000	4/1 – 10/1	8,065,000	8,065,000	-	8,065,000
	11/10/2010	4/1/2037	5.000	4/1 – 10/1	8,330,000	8,330,000	-	8,330,000
	11/10/2010	4/1/2038	5.000	4/1 – 10/1	11,655,000	11,655,000	-	11,655,000
	11/10/2010	4/1/2039	5.000	4/1 – 10/1	12,035,000	12,035,000	-	12,035,000
	11/10/2010	4/1/2040	5.000	4/1 – 10/1	12,425,000	12,425,000	-	12,425,000
						88,860,000	-	88,860,000
Water Refunding Revenue Bonds, Series 2012	1/24/2012	4/1/2018	3.000	4/1 – 10/1	360,000	360,000	360,000	-
	1/24/2012	4/1/2019	3.000	4/1 – 10/1	370,000	370,000	-	370,000
	1/24/2012	4/1/2020	3.000	4/1 – 10/1	380,000	380,000	-	380,000
	1/24/2012	4/1/2021	4.250	4/1 – 10/1	395,000	395,000	-	395,000

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Bonds Payable (continued) December 31, 2018

Description	Date of Issue	Maturity Dates	Interest		Amount Issued	Outstanding January 1, 2018	Retired During 2018	Outstanding December 31, 2018
			Rate	Dates				
Water Refunding Revenue Bonds, Series 2012 (continued)	1/24/2012	4/1/2022	4.250	4/1 – 10/1	410,000	410,000	-	410,000
	1/24/2012	4/1/2023	4.250	4/1 – 10/1	2,905,000	2,905,000	-	2,905,000
	1/24/2012	4/1/2023	5.000	4/1 – 10/1	6,315,000	6,315,000	-	6,315,000
	1/24/2012	4/1/2024	5.000	4/1 – 10/1	9,660,000	9,660,000	-	9,660,000
	1/24/2012	4/1/2025	5.000	4/1 – 10/1	10,140,000	10,140,000	-	10,140,000
	1/24/2012	4/1/2026	5.000	4/1 – 10/1	10,635,000	10,635,000	-	10,635,000
	1/24/2012	4/1/2027	5.000	4/1 – 10/1	11,160,000	11,160,000	-	11,160,000
	1/24/2012	4/1/2028	5.000	4/1 – 10/1	11,720,000	11,720,000	-	11,720,000
	1/24/2012	4/1/2029	5.000	4/1 – 10/1	12,300,000	12,300,000	-	12,300,000
						76,750,000	360,000	76,390,000
Water Refunding Revenue Bonds, Series 2013A	2/25/2013	4/1/2018	3.000	4/1 – 10/1	1,180,000	1,180,000	1,180,000	-
	2/25/2013	4/1/2019	4.000	4/1 – 10/1	1,225,000	1,225,000	-	1,225,000
	2/25/2013	4/1/2020	4.000	4/1 – 10/1	1,275,000	1,275,000	-	1,275,000
	2/25/2013	4/1/2021	4.000	4/1 – 10/1	1,325,000	1,325,000	-	1,325,000
	2/25/2013	4/1/2022	5.000	4/1 – 10/1	1,385,000	1,385,000	-	1,385,000
	2/25/2013	4/1/2023	4.000	4/1 – 10/1	1,450,000	1,450,000	-	1,450,000
	2/25/2013	4/1/2024	5.000	4/1 – 10/1	1,520,000	1,520,000	-	1,520,000
	2/25/2013	4/1/2025	5.000	4/1 – 10/1	1,595,000	1,595,000	-	1,595,000
	2/25/2013	4/1/2026	5.000	4/1 – 10/1	1,680,000	1,680,000	-	1,680,000
	2/25/2013	4/1/2027	5.000	4/1 – 10/1	1,765,000	1,765,000	-	1,765,000
	2/25/2013	4/1/2032	4.000	4/1 – 10/1	5,395,000	5,395,000	-	5,395,000
						19,795,000	1,180,000	18,615,000

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Bonds Payable (continued) December 31, 2018

Description	Date of Issue	Maturity Dates	Interest		Amount Issued	Outstanding January 1, 2018	Retired During 2018	Outstanding December 31, 2018
			Rate	Dates				
Water Refunding Revenue Bonds, Series 2013B	2/25/2013	4/1/2018	1.335	4/1 – 10/1	3,935,000	3,935,000	3,935,000	-
	2/25/2013	4/1/2019	1.576	4/1 – 10/1	4,275,000	4,275,000	-	4,275,000
	2/25/2013	4/1/2020	1.896	4/1 – 10/1	4,425,000	4,425,000	-	4,425,000
	2/25/2013	4/1/2021	2.155	4/1 – 10/1	4,105,000	4,105,000	-	4,105,000
	2/25/2013	4/1/2022	2.405	4/1 – 10/1	3,860,000	3,860,000	-	3,860,000
	2/25/2013	4/1/2023	2.555	4/1 – 10/1	2,325,000	2,325,000	-	2,325,000
	2/25/2013	4/2/2024	2.705	4/1 – 10/1	2,380,000	2,380,000	-	2,380,000
	2/25/2013	4/2/2025	2.875	4/1 – 10/1	2,445,000	2,445,000	-	2,445,000
	2/25/2013	4/2/2026	3.005	4/1 – 10/1	2,515,000	2,515,000	-	2,515,000
	2/25/2013	4/2/2027	3.085	4/1 – 10/1	2,585,000	2,585,000	-	2,585,000
	2/25/2013	4/2/2028	3.185	4/1 – 10/1	2,670,000	2,670,000	-	2,670,000
	2/25/2013	4/2/2029	3.305	4/1 – 10/1	2,750,000	2,750,000	-	2,750,000
	2/25/2013	4/2/2030	3.405	4/1 – 10/1	2,845,000	2,845,000	-	2,845,000
						41,115,000	3,935,000	37,180,000
						60,910,000	5,115,000	55,795,000
Water Revenue and Refunding Revenue Bonds, Series 2017	3/1/2017	4/1/2018	5.000	4/1 – 10/1	6,710,000	6,710,000	6,710,000	-
	3/1/2017	4/1/2019	5.000	4/1 – 10/1	7,560,000	7,560,000	-	7,560,000
	3/1/2017	4/1/2020	5.000	4/1 – 10/1	7,935,000	7,935,000	-	7,935,000
	3/1/2017	4/1/2021	5.000	4/1 – 10/1	8,330,000	8,330,000	-	8,330,000
	3/1/2017	4/1/2022	5.000	4/1 – 10/1	14,565,000	14,565,000	-	14,565,000
	3/1/2017	4/1/2023	5.000	4/1 – 10/1	5,260,000	5,260,000	-	5,260,000
	3/1/2017	4/1/2024	5.000	4/1 – 10/1	5,530,000	5,530,000	-	5,530,000
	3/1/2017	4/1/2025	5.000	4/1 – 10/1	5,795,000	5,795,000	-	5,795,000
	3/1/2017	4/1/2026	5.000	4/1 – 10/1	10,265,000	10,265,000	-	10,265,000

FAIRFAX COUNTY WATER AUTHORITY

Schedule of Bonds Payable (continued) December 31, 2018

Description	Date of Issue	Maturity Dates	Interest		Amount Issued	Outstanding January 1, 2018	Retired During 2018	Outstanding December 31, 2018
			Rate	Dates				
Water Revenue	3/1/2017	4/1/2027	5.000	4/1 – 10/1	10,780,000	10,780,000	-	10,780,000
and Refunding Revenue	3/1/2017	4/1/2028	4.000	4/1 – 10/1	13,250,000	13,250,000	-	13,250,000
Bonds, Series 2017	3/1/2017	4/1/2029	5.000	4/1 – 10/1	9,030,000	9,030,000	-	9,030,000
(continued)	3/1/2017	4/1/2030	5.000	4/1 – 10/1	5,900,000	5,900,000	-	5,900,000
	3/1/2017	4/1/2031	3.000	4/1 – 10/1	6,185,000	6,185,000	-	6,185,000
	3/1/2017	4/1/2032	3.000	4/1 – 10/1	1,575,000	1,575,000	-	1,575,000
	3/1/2017	4/1/2033	3.125	4/1 – 10/1	6,710,000	6,710,000	-	6,710,000
	3/1/2017	4/1/2034	3.250	4/1 – 10/1	6,925,000	6,925,000	-	6,925,000
	3/1/2017	4/1/2035	3.250	4/1 – 10/1	1,600,000	1,600,000	-	1,600,000
	3/1/2017	4/1/2036	3.250	4/1 – 10/1	1,655,000	1,655,000	-	1,655,000
	3/1/2017	4/1/2037	3.250	4/1 – 10/1	1,710,000	1,710,000	-	1,710,000
	3/1/2017	4/1/2041	5.000	4/1 – 10/1	7,900,000	7,900,000	-	7,900,000
	3/1/2017	4/1/2042	5.000	4/1 – 10/1	8,295,000	8,295,000	-	8,295,000
	3/1/2017	4/1/2043	5.000	4/1 – 10/1	8,710,000	8,710,000	-	8,710,000
	3/1/2017	4/1/2044	5.000	4/1 – 10/1	9,145,000	9,145,000	-	9,145,000
	3/1/2017	4/1/2045	5.000	4/1 – 10/1	9,605,000	9,605,000	-	9,605,000
	3/1/2017	4/1/2046	5.000	4/1 – 10/1	10,080,000	10,080,000	-	10,080,000
	3/1/2017	4/1/2047	5.000	4/1 – 10/1	10,585,000	10,585,000	-	10,585,000
						201,590,000	6,710,000	194,880,000
Total Bonds – All Series						\$ 489,155,000	\$ 20,000,000	\$ 469,155,000