GREENSVILLE COUNTY WATER AND SEWER AUTHORITY (A Component Unit of the County of Greensville, Virginia) FINANCIAL REPORT FOR THE YEAR ENDED SEPTEMBER 30, 2018

GREENSVILLE COUNTY WATER AND SEWER AUTHORITY

(A Component Unit of the County of Greensville, Virginia)

FINANCIAL REPORT

FOR THE YEAR ENDED SEPTEMBER 30, 2018

Members

Raymond L. Bryant, Jr., Chairman

Jacqueline T. Jordan, Vice-Chairman

Peggy R. Wiley

Michael W. Ferguson

K. David Whittington, Director

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ROBINSON, FARMER, COX ASSOCIATES

CERTIFIED PUBLIC ACCOUNTANTS

A PROFESSIONAL LIMITED LIABILITY COMPANY

Independent Auditors' Report

To the Board of Directors Greensville County Water and Sewer Authority Emporia, Virginia

Report on the Financial Statements

We have audited the accompanying financial statements of the business-type activities of Greensville County Water and Sewer Authority, a component unit of the County of Greensville, Virginia, as of and for the year ended September 30, 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.

Auditors' 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 require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities of Greensville County Water and Sewer Authority, as of September 30, 2018, and the respective changes in financial position, and, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As described in Note 13 to the financial statements, in 2018, the Authority adopted new accounting guidance, GASB Statement Nos. 75 *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* and GASB Statement Nos. 85 *Omnibus 2017.* Our opinion is not modified with respect to this matter.

Restatement of Beginning Balances

As described in Note 13 to the financial statements, in 2018, the Authority restated beginning balances to reflect the requirements of GASB Statement No. 75. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the schedules related to pension and OPEB funding on pages 65-74 be presented to supplement the basic 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 basic 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 basic financial statements, and other knowledge we obtained during our audit of the basic 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.

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

Supplementary and Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise Greensville County Water and Sewer Authority's basic financial statements. The schedule of expenditures of federal awards is presented for purposes of additional analysis as required by Title 2 U.S. Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, and is not a required part of the basic financial statements.

Other Matters: (Continued)

Supplementary and Other Information: (Continued)

The schedule of expenditures of federal awards is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion the schedule of expenditures of federal awards is fairly stated in all material respects in relation to the basic financial statements as a whole.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated March 11, 2019, on our consideration of Greensville County Water and Sewer 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 solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of Greensville County Water and Sewer Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Greensville County Water and Sewer Authority's internal control over financial reporting and compliance.

Hobinson, Farmer, Cox fessociates Charlottesville, Virginia

March 11, 2019



Statement of Net Position At September 30, 2018

ASSETS		Water	_	Sewer	_	Total
Current assets: Cash and cash equivalents Cash - restricted Accounts receivable Grant receivable Loans receivable, current portion	\$	6,351,961 408,485 239,750 405,460 19,662	\$	1,569,930 160,926 257,541 - 19,662	\$	7,921,891 569,411 497,291 405,460 39,324
Total current assets	\$	7,425,318	\$	2,008,059	\$_	9,433,377
Noncurrent assets: Capital assets: Land and land rights Buildings, plant and equipment, net of accumulated depreciation Construction in progress	\$	2,171,350 23,686,959 15,388,221	\$	681,402 15,209,676 71,162	\$	2,852,752 38,896,635 15,459,383
Total capital assets Loans receivable, long-term portion	\$	41,246,530 248,262	\$	15,962,240 248,262	\$	57,208,770 496,524
Total noncurrent assets	\$	41,494,792	\$_	16,210,502	\$_	57,705,294
Total assets	\$	48,920,110	\$_	18,218,561	\$_	67,138,671
DEFERRED OUTFLOWS OF RESOURCES Pension related items OPEB related items	\$	70,571 3,691	\$	95,483 4,878	\$	166,054 8,569
Total deferred outflows of resources	\$	74,262	\$_	100,361	\$_	174,623
LIABILITIES Current liabilities: Accounts payable and accrued expenses Current portion of long-term obligations	\$	1,947,318 445,805	\$	87,096 422,347	\$	2,034,414 868,152
Total current liabilities	\$	2,393,123	\$	509,443	\$	2,902,566
Noncurrent liabilities: Noncurrent portion of long-term obligations	\$	15,844,175	\$	3,050,954	\$	18,895,129
Total liabilities	\$_	18,237,298	\$_	3,560,397	\$_	21,797,695
DEFERRED INFLOWS OF RESOURCES Pension related items OPEB related items	\$	69,690 6,455	\$	94,290 8,535	\$	163,980 14,990
Total deferred inflows of resources	\$	76,145	\$_	102,825	\$_	178,970
NET POSITION Net investment in capital assets Restricted - debt service reserve Unrestricted net position	\$	25,207,993 408,485 5,064,451		12,792,143 160,926 1,702,631	_	38,000,136 569,411 6,767,082
Total net position	\$_	30,680,929	\$_	14,655,700	\$_	45,336,629

The accompanying notes to financial statements are an integral part of this statement.

Statement of Revenues, Expenses and Changes in Net Position For the Year Ended September 30, 2018

		Water	S	ewer	Total
Operating revenues: Metered saleswater User feessewer Penalties Other operating revenues	\$	2,052,900 - (5,232) 338,825		- \$,502,229 33,221 74,092	2,052,900 2,502,229 27,989 412,917
Total operating revenues	\$	2,386,493	\$ 2,	,609,542 \$	4,996,035
Operating expenses: Administration Authority Board Maintenance Water treatment-Northampton Water treatment-Jarratt Econo lodge well system Jackson Field water system Falling run sewage treatment plant Three creek sewage treatment plant Sewage treatment -Emporia/Northampton Sewage treatment-Jarratt Skippers sewage treatment plant Depreciation	\$	178,713 10,430 298,661 189,810 775,224 12,106 3,839	\$	237,809 \$ 15,645 656,424 72,817 713,966 48,797 92,123 76,474 520,647	416,522 26,075 955,085 189,810 775,224 12,106 3,839 72,817 713,966 48,797 92,123 76,474 1,188,064
Total operating expenses	\$_	2,136,200	\$ 2	,434,702 \$	4,570,902
Operating income	\$_	250,293	\$	174,840 \$	425,133
Nonoperating revenues (expenses): Interest income Transfers Interest expense	\$	(855) : 208,960 (312,569)	(15,883 \$ (208,960) (110,717)	15,028 - (423,286)
Total nonoperating revenues (expenses)	\$_	(104,464)	\$	(303,794) \$	(408,258)
Income (loss) before grants, capital contributions and connection charges	\$_	145,829	\$	(128,954) \$	16,875
Capital grants Federal water grants Connection charges	\$	5,589,263 2,894,040 (585)	\$	391,061 \$ - (1,298)	5,980,324 2,894,040 (1,883)
Total grants, capital contributions and connection charges	\$_	8,482,718	\$	389,763 \$	8,872,481
Change in net position Net position - beginning of year, as restated	\$	8,628,547 22,052,382		260,809 \$,394,891	8,889,356 36,447,273
Net position - end of year	\$_	30,680,929	\$ <u>14</u>	<u>,655,700</u> \$	45,336,629

The accompanying notes to financial statements are an integral part of this statement.

Statement of Cash Flows For the Year Ended September 30, 2018

		Water	Sewer	Total
Cash flows from operating activities: Receipts from customers and users Payments to suppliers of goods and services Payments to and on behalf of employees	\$	2,147,596 \$ 455,478 (686,627)	2,680,071 \$ (1,043,741) (915,269)	4,827,667 (588,263) (1,601,896)
Net cash provided by (used for) operating activities	\$_	1,916,447 \$	721,061 \$	2,637,508
Cash flows from noncapital financing activities: Transfers	\$_	208,960 \$	(208,960) \$	
Cash flows from capital and related financing activities: Interest paid on debt Connection charges Capital grants and federal water grants received Additions to capital assets and construction in progress Loan proceeds received Retirement of indebtedness	\$	(312,569) \$ (585) 8,483,303 (14,046,385) 19,332,539 (10,214,494)	(110,717) \$ (1,298) 391,061 (670,996) - (394,635)	(423,286) (1,883) 8,874,364 (14,717,381) 19,332,539 (10,609,129)
Net cash provided by (used for) capital and related financing activities	\$_	3,241,809 \$	(786,585) \$	2,455,224
Cash flows from investing activities: Interest earned Principal payments received on loans receivable	\$	(855) \$ 18,932	15,883 \$ 18,932	15,028 37,864
Net cash provided by (used for) investing activities	\$_	18,077 \$	34,815 \$	52,892
Increase (decrease) in cash and cash equivalents for the year	\$	5,385,293 \$	(239,669) \$	5,145,624
Cash and cash equivalents at beginning of year, including \$439,020 of cash in hands of trustee	_	1,375,153	1,970,525	3,345,678
Cash and cash equivalents at end of year, including \$569,411 of cash in hands of trustee	\$_	6,760,446 \$	1,730,856 \$	8,491,302
Reconciliation of operating income (loss) to net cash provided by (used for) operating activities: Operating income	\$	250,293 \$	174,840 \$	425,133
Adjustments to reconcile net income (loss) to net cash provided by (used for) operating activities: Depreciation		667,417	520,647	1,188,064
Changes in assets, deferred outflows of resources, liabilities and deferred inflows of resources:				
Decrease in accounts receivable (Increase) in grant receivable		40,595 (279,492)	70,529	111,124 (279,492)
Increase (decrease) in accounts payable and other accrued liabilities		1,236,818	(40,348)	1,196,470
Increase (decrease) in compensated absences		1,924	(3,152)	(1,228)
(Decrease) in net pension liability		(122,891)	(166,270)	(289,161)
Decrease in deferred outflows of resources - pension related		53,407	72,258	125,665
Decrease in deferred outflows of resources - OPEB related		50	68	118
Increase in deferred inflows of resources - pension related Increase in deferred inflows of resources - OPEB related		69,690 6,455	94,290 8,535	163,980 14,990
(Decrease) in net OPEB liabilities	_	(7,819)	(10,336)	(18,155)
Net cash provided by (used for) operating activities	\$_	1,916,447 \$	721,061 \$	2,637,508

The accompanying notes to financial statements are an integral part of this statement.

Notes to Financial Statements As of September 30, 2018

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

A. Organization and Purpose:

The Greensville County Water and Sewer Authority was created by the Greensville County Board of Supervisors on February 21, 1978, pursuant to the provisions of the Virginia Water and Sewer Authorities Act, Section 15.2-5100 through Section 15.2-5158 of the Code of Virginia, 1950, as amended. The County of Greensville, Virginia serves as the fiscal agent for the Authority.

The bylaws and rules for the business transactions of the Greensville County Water and Sewer Authority are made pursuant to the authority vested in this Authority by Section 15.2-5114(b), <u>Code of Virginia</u>, 1950, as amended and in accordance with the general provisions of the Virginia Water and Sewer Authorities Act.

B. Financial Reporting Entity:

The Greensville County Water and Sewer Authority is reported as a blended component unit of the County of Greensville, Virginia. The Authority is governed by a Board comprised of the County's elected supervisors.

The financial statements of the Authority are prepared as an "enterprise" commercial unit to conform to financial reporting practices as recommended in *Water Utility Accounting* published jointly by the Governmental Finance Officers Association and The American Water Works Association.

C. Basic Financial Statements:

For the Authority, the basic financial statements and required supplementary information consist of:

- Management's discussion and analysis (management has elected to omit this from report)
- Enterprise fund financial statements
 - Statement of Net Position
 - Statement of Revenues, Expenses and Changes in Net Position
 - Statement of Cash Flows
 - Notes to Financial Statements
- Required Supplementary Information
 - Schedule of Changes in Net Pension Liability (Asset) and Related Ratios
 - Schedule of Employer Contributions Pension
 - Notes to Required Supplementary Information Pension
 - Schedule of Changes in the Authority's Net OPEB Liability and Related Ratios
 - Health Insurance Credit Program
 - Schedule of Employer Contributions Health Insurance Credit Program
 - Notes to Required Supplementary Information Health Insurance Credit Program
 - Schedule of Authority's Share of Net OPEB Liability Group Life Insurance Program
 - Schedule of Employer Contributions Group Life Insurance Program
 - Notes to Required Supplementary Information Group Life Insurance Program

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

D. Basis of Accounting:

The accounts of the Authority are accounted for using the economic resources measurement focus and utilize the accrual basis of accounting. Under this method, revenues are recorded when earned and expenses are recorded at the time liabilities are incurred. The accompanying financial statements are prepared in accordance with pronouncements issued by the Governmental Accounting Standards Board. The principles prescribed by GASB represent generally accepted accounting principles applicable to governmental units.

The Authority 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 the Authority's principal ongoing operations. The principal operating revenues of the Authority are charges to customers for sales and services. The Authority also recognizes as operating revenue the portion of availability charges intended to recover the cost of connecting new customers to the system. Operating expenses include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

E. Cash and Cash Equivalents:

For purposes of the statement of cash flows, the Authority considers all highly liquid investments (including restricted assets) with an original maturity of three months or less from the date of purchase to be cash equivalents.

F. Allowance for Uncollectible Accounts:

The Authority calculates its allowance for specific accounts using historical collection data and, in certain cases, specific account analysis. Historical collection data indicates that any uncollectible amounts would be negligible. Accordingly, no allowance for uncollectible accounts has been established.

G. Capital Assets and Depreciation:

The Authority's capital assets consist of office and computer equipment, transportation equipment and utility plant in service. Capital assets are defined by the Authority as assets with an initial individual cost of more than \$5,000 and an estimated useful life in excess of one year. All additions to utility lines are capitalized. Depreciation expense is computed by the straight—line method using the following estimated useful lives as a basis:

Items	Years
Source of supply structures	50
Water pumping equipment	20
Transmission mains and accessories	50 to 66-2/3
Meters	66-2/3
Hydrant and accessories	5
Other general equipment	3
Motor vehicles	5

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

G. Capital Assets and Depreciation: (Continued)

No depreciation is taken on assets until the first year following the date placed in service.

Major outlays for capital assets and improvements are capitalized as projects are constructed. Interest incurred during the construction phase of capital assets of business-type activities is included as part of the capitalized value of the assets constructed. Interest attributable to capitalized assets as of September 30, 2018 was \$35,543.

H. Use of Estimates:

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

I. Compensated Absences:

The Authority has a policy which allows for the accumulation and vesting of limited amounts of vacation leave until termination or retirement.

J. Deferred Outflows/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 a future period(s) and so will not be recognized as an outflow of resources (expense) until then. The Authority has one item that qualifies for reporting in this category. It is comprised of certain items related to the measurement of the net pension liability and net OPEB liabilities and contributions to the net pension and OPEB plans made during the current year and subsequent to the net pension liability and net OPEB liability measurement date. For more detailed information on these items, reference the related notes.

In addition to liabilities, the statement of financial 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 a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. Certain items related to the measurement of the net pension liability and net OPEB liability(ies) are reported as deferred inflows of resources. For more detailed information on these items, reference the related notes.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

K. Net Position:

Net Position is the difference between a) assets and deferred outflows of resources and b) liabilities and deferred inflows of resources. Net investment in capital assets represents capital assets, less accumulated depreciation, less any outstanding debt related to the acquisition, construction or improvement of those assets. Deferred outflows of resources and deferred inflows of resources that are attributable to the acquisition, construction, or improvement of those assets or related debt are also included in this component of net position.

L. Net Position Flow Assumption:

Sometimes the Authority will fund outlays for a particular purpose from both restricted (e.g., restricted bond) and unrestricted resources. In order to calculate the amounts to report as restricted - net position and unrestricted - net position, a flow assumption must be made about the order in which the resources are considered to be applied. It is the Authority's policy to consider restricted - net position to have been depleted before unrestricted - net position is applied.

M. Pensions

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Authority's Retirement Plan and the additions to/deductions from the Authority's Retirement Plan's net fiduciary position have been determined on the same basis as they were reported by the Virginia Retirement System (VRS). For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms. Investments are reported at fair value.

N. Other Postemployment Benefits (OPEB):

Group Life Insurance

The Virginia Retirement System (VRS) Group Life Insurance Program provides coverage to state employees, teachers, and employees of participating political subdivisions. The Group Life Insurance Program was established pursuant to §51.1-500 et seq. of the Code of Virginia, as amended, and which provides the authority under which benefit terms are established or may be amended. The Group Life Insurance Program is a defined benefit plan that provides a basic group life insurance benefit for employees of participating employers. For purposes of measuring the net Group Life Insurance Program OPEB liability, deferred outflows of resources and deferred inflows of resources related to the Group Life Insurance Program OPEB, and Group Life Insurance Program OPEB expense, information about the fiduciary net position of the Virginia Retirement System (VRS) Group Life Insurance program OPEB and the additions to/deductions from the VRS Group Life Insurance Program OPEB's net fiduciary position have been determined on the same basis as they were reported by VRS. In addition, benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (CONTINUED)

N. Other Postemployment Benefits (OPEB): (Continued)

Health Insurance Credit Program

The Authority Health Insurance Credit (HIC) Program was established pursuant to §51.1-1400 et seq. of the <u>Code of Virginia</u>, as amended, and which provides the authority under which benefit terms are established or may be amended. For purposes of measuring the net HIC OPEB liability, deferred outflows of resources and deferred inflows of resources related to the HIC OPEB, and the related HIC OPEB expense, information about the fiduciary net position of the Virginia Retirement System (VRS) Political Subdivision HIC Program, and the additions to/deductions from the VRS Political Subdivision HIC Program's net fiduciary position have been determined on the same basis as they were reported by VRS. For this purpose, benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

NOTE 2 - DEPOSITS AND INVESTMENTS:

Deposits:

Deposits with banks are covered by the Federal Deposit Insurance Corporation (FDIC) and collateralized in accordance with the Virginia Security for Public Deposits Act (the "Act") Section 2.2-4400 et. seq. of the Code of Virginia. Under the Act, banks and savings institutions holding public deposits in excess of the amount insured by the FDIC must pledge collateral to the Commonwealth of Virginia Treasury Board. Financial Institutions may choose between two collateralization methodologies and depending upon that choice, will pledge collateral that ranges in the amounts from 50% to 130% of excess deposits. Accordingly, all deposits are considered fully collateralized.

Investments:

Statutes authorize the Authority to invest in obligations of the United States or agencies thereof, obligations of the Commonwealth of Virginia or political subdivisions thereof, obligations of the International Bank for Reconstruction and Development (World Bank), the Asian Development Bank, the African Development Bank, "prime quality" commercial paper and certain corporate notes, banker's acceptances, repurchase agreements and the State Treasurer's Local Government Investment Pool (LGIP).

The Authority has not adopted a formal investment policy as of September 30, 2018.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 2 - DEPOSITS AND INVESTMENTS: (CONTINUED)

Credit Risk of Debt Securities

The Authority's rated debt investments as of September 30, 2018 were rated by <u>Standard & Poor's</u> and the ratings are presented below using <u>Standard & Poor's</u> rating scale.

Authority's Rated Debt Investment Value										
Rated Debt Investments		Fair Quality Ratings								
		AAAm								
Local Government Investment Pool Virginia State Non-Arbitrage Pool	\$	122,212 12,456								
	\$									
Total	\$	134,668								

Interest Rate Risk

Investment Maturities (in years)

Investment Type	Fair Value	Less Than 1 Year
Local Government Investment Pool Virginia State Non-Arbitrage Pool	\$ 122,212 12,456	\$ 122,212 12,456
Total	\$ 134,668	\$ 134,668

External Investment Pools

The fair value of the positions in the external investment pools (Local Government Investment Pool and State Non-Arbitrage Pool) is the same as the value of the pool shares. As LGIP and SNAP are not SEC registered, regulatory oversight of the pool rests with the Virginia State Treasury. LGIP and SNAP are amortized cost basis portfolios under the provisions of GASB Statement No. 79. There are no withdrawal limitations or restrictions imposed on participants.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 3 - CAPITAL ASSETS:

A summary of changes in capital assets for the year is presented as follows:

		Balance October 1, 2017	Additions	Deletions	Balance September 30, 2018
Capital assets not being depreciated:	_				
Land and land rights Construction in progress	\$	2,505,900 \$ 13,900,887	346,852 \$ 14,370,527	- \$ 12,812,031	2,852,752 15,459,383
Total capital assets not being depreciated	\$_	16,406,787_\$	14,717,379 \$	12,812,031 \$	18,312,135
Capital assets being depreciated:					
Buildings and plant Equipment	\$	44,502,507 \$ 1,046,198	12,812,033 \$ 	- \$ 	57,314,540 1,046,198
Total capital assets being depreciated	\$_	45,548,705 \$	12,812,033 \$	\$	58,360,738
Accumulated depreciation:					
Buildings, plant, and equipment	\$_	(18,276,039) \$	(1,188,064) \$	\$	(19,464,103)
Total capital assets being depreciated, net	\$_	27,272,666 \$	11,623,969 \$	\$	38,896,635
Capital assets, net	\$_	43,679,453 \$	26,341,348 \$	12,812,031 \$	57,208,770

Depreciation expense for the year totaled \$1,188,064.

NOTE 4 - CONSTRUCTION IN PROGRESS:

Details of construction work in progress for the fiscal year ended September 30, 2018 are as follows:

Project	 Balance October 1, 2017	 Additions	Deletions	Balance September 30, 2018
Exit 4 Potable Well Integration	\$ 180,765	\$ - \$	- \$	180,765
Skippers Waste Water Treatment	-	71,162	-	71,162
High Hills Sewer PS replace	113,243	9,604	122,847	-
Dominion VA Power Water	10,104,326	14,007,106	8,903,976	15,207,456
Dominion VA Power Sewer	2,868,226	243,375	3,111,601	-
Jarratt WTP Sludge Handling	 634,327	 39,280	673,607	
Total	\$ 13,900,887	\$ 14,370,527 \$	12,812,031 \$	15,459,383

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 5 - COMPENSATED ABSENCES:

The Authority has accrued the liability arising from outstanding compensated absences. Authority employees earn vacation and sick leave at the rate of one day for each per month. All accumulated vacation is paid upon termination. 25% of sick leave up to \$5,000 is paid upon termination if employed by the Authority for at least five years. The Authority has outstanding accrued vacation and sick pay totaling \$230,691.

NOTE 6 - LONG-TERM OBLIGATIONS:

The following is a summary of long-term obligation transactions of the Authority for the fiscal year ended September 30, 2018:

		Restated Balance Beginning	Issuances/	Retirements/	Balance End of	Current
	_	of Year	Increases	Decreases	Year	Portion
Loan payable	\$	90,036 \$	- \$,	76,770 \$	14,220
Interim Financing		267,461	9,532,539	9,800,000	-	-
Rural development Ioan		-	9,800,000	-	9,800,000	-
2014 Revenue Refunding Bonds		1,815,000	-	70,000	1,745,000	75,000
2013 Revenue Refunding Bonds		740,000	-	365,000	375,000	375,000
2010 Revenue Refunding Bonds		3,155,000	-	180,000	2,975,000	190,000
2011 Revenue Bonds		1,295,000	-	65,000	1,230,000	70,000
2012 Revenue Bonds		215,000	-	5,000	210,000	5,000
2016 Revenue Bonds		1,990,000	-	35,000	1,955,000	40,000
Premiums on bonds payable		917,728	-	75,863	841,865	75,863
Net OPEB liabilities		132,156	9,095	27,250	114,001	-
Net Pension Liability		499,115	389,253	678,414	209,954	-
Compensated absences	_	231,919	-	1,228	230,691	23,069
Total	\$_	11,348,415 \$	19,730,887 \$	11,316,021	19,763,281 \$	868,152

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 6 - LONG-TERM OBLIGATIONS: (CONTINUED)

Annual requirements to amortize long-term obligations and related interest are as follows:

	Water and Sewer Revenue Bonds															
Year Ended		2016	В	2013 Refu	ınding	2014				2012B				2011B		
September 30,	_	Principal	Interest	Principal	Interest	Principal		Interest		Principal		Interest	_	Principal	_	Interest
	\$	40,000 \$	75,181 \$	375,000 \$	15,469 \$	75,000	\$	82,881	\$	5,000	\$	8,450	\$	70,000	\$	60,588
2020		40,000	73,731	-	-	80,000		79,038		5,000		8,194		70,000		57,450
2021		40,000	71,931	-	-	80,000		75,388		10,000		7,938		75,000		54,363
2022		45,000	70,131	-	-	85,000		71,288		10,000		7,425		80,000		50,519
2023		45,000	67,825	-	-	95,000		66,931		10,000		6,913		85,000		46,419
2024		50,000	65,519	-	-	100,000		62,063		10,000		6,400		90,000		42,063
2025		50,000	63,156	-	-	100,000		56,938		10,000		5,938		95,000		37,450
2026		50,000	61,094	-	-	105,000		51,813		10,000		5,475		95,000		32,581
2027		55,000	59,031	-	-	110,000		46,781		10,000		5,038		100,000		27,713
2028		55,000	56,363	-	-	110,000		41,494		10,000		4,650		110,000		22,588
2029		60,000	53,994	-	-	115,000		36,156		10,000		4,263		115,000		17,300
2030		60,000	51,369	-	-	125,000		32,213		10,000		3,875		120,000		11,756
2031		65,000	49,156	-	-	130,000		26,206		10,000		3,550		125,000		6,006
2032		65,000	46,825	-	-	140,000		19,944		15,000		3,225		-		-
2033		70,000	44,469	-	-	145,000		13,169		15,000		2,719		-		-
2034		70,000	41,956	-	-	150,000		6,188		15,000		2,175		-		-
2035		75,000	39,369	-	-	-		-		15,000		1,631		-		-
2036		75,000	37,338	-	-	-		-		15,000		1,088		-		-
2037		80,000	35,231	-	-	-		-		15,000		544		-		-
2038		80,000	31,806	-	-	-		-		-		-		-		-
2039		85,000	28,269	-	-	-		-		-		-		-		-
2040		90,000	24,475	-	-	-		-		-		-		-		-
2041		95,000	20,363	-	-	-		-		-		-		-		-
2042		95,000	16,094	-	-	-		-		-		-		-		-
2043		100,000	13,125	-	-	-		-		-		-		-		-
2044		105,000	10,000	-	-	-		-		-		-		-		-
2045		105,000	6,719	-	-	-		-		-		-		-		-
2046	_	110,000	3,438			-		-		-			_		_	
Total	\$	1,955,000 \$	1,217,958 \$	375,000 \$	15,469 \$	1,745,000	\$	768,491	\$	210,000	\$	89,491	\$	1,230,000	\$	466,796

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 6 - LONG-TERM OBLIGATIONS: (CONTINUED)

Annual requirements to amortize long-term obligations and related interest are as follows: (continued)

Year Ended		Rural De	vel	opment	_	2010 Ref		Loan Pa	
September 30,		Principal	_	Interest		Principal	Interest	Principal	Interest
2019	\$	-	\$	222,788	\$	190,000 \$	143,056	14,220 \$	2,547
2020		-		222,788		200,000	133,726	14,722	2,045
2021		165,090		222,788		205,000	126,226	15,242	1,525
2022		168,843		219,035		220,000	117,854	15,780	987
2023		172,682		215,197		230,000	107,633	16,806	372
2024		176,607		211,271		235,000	96,898	-	-
2025		180,622		207,256		250,000	85,815	-	_
2026		184,729		203,150		265,000	73,940	_	-
2027		188,928		198,950		275,000	61,360	_	-
2028		193,223		194,655		285,000	47,060	-	_
2029		197,616		190,263		300,000	32,240	-	_
2030		202,108		185,770		320,000	16,640	_	_
2031		206,703		181,176		, -		-	_
2032		211,402		176,477		_	_	-	_
2033		216,208		171,671		-	_	-	_
2034		221,123		166,756		_	_	-	_
2035		226,150		161,729		_	_	-	_
2036		231,291		156,587		_	_	-	_
2037		236,549		151,329		_	_	-	_
2038		241,927		145,952		-	_	_	_
2039		247,426		140,452		-	_	_	_
2040		253,051		134,827		-	_	-	_
2041		258,804		129,074		_	_	-	_
2042		264,688		123,191		-	_	-	_
2043		270,705		117,174		_	_	-	_
2044		276,859		111,020		-	_	-	_
2045		283,153		104,726		-	_	-	_
2046		289,590		98,289		-	_	-	_
2047		296,173		91,705		-	_	-	_
2048		302,906		84,972		-	_	-	_
2049		309,793		78,086		-	-	-	_
2050		316,835		71,043		-	_	-	-
2051		324,038		63,841		-	-	-	_
2052		331,404		56,474		-	_	-	-
2053		338,938		48,940		-	-	-	-
2054		346,644		41,235		-	-	-	-
2055		354,524		33,354		-	-	-	-
2056		362,584		25,295		-	-	-	-
2057		370,826		17,052		-	-	-	-
2058	_	379,258	. <u>-</u>	8,622					
Total	\$_	9,800,000	\$_	5,384,960	\$	2,975,000 \$	1,042,448	76,770 \$	7,476

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 6 - LONG-TERM OBLIGATIONS: (CONTINUED)

<u>Details of Long-term Obligations:</u>

Compensated absences	\$ 230,691	
Net OPEB liabilities	\$ 114,001	
Net Pension Liability	\$ 209,954	
Loan Payable:		
\$235,629 Water & Sewer Ioan payable issued May 30, 2003, due in semi-annual payments of principal and interest of \$8,387, through September 1, 2023, interest at 3.50%.	\$ 76,770	
Revenue Bonds:		
\$2,105,000 Water & Sewer Refunding Revenue Bonds series 2013C issued November 6, 2013, due in various semi-annual payments of principal and interest through October 1, 2019, interest payable semi-annually at 1.74%.	\$ 375,000	
Premiums on bonds payable	841,865	
\$2,175,000 Water & Sewer Refunding Revenue Bonds series 2014C issued November 5, 2014, due in various semi-annual payments of principal and interest through October 1, 2034, interest payable semi-annually at 3.26%.	1,440,000	
\$365,000 Water & Sewer Refunding Revenue Bonds series 2014C issued November 5, 2014, due in various semi-annual payments of principal and interest through October 1, 2034, interest payable semi-annually at 3.50%.	305,000	
\$240,000 Water & Sewer Refunding Revenue Bonds series 2012B issued July 12, 2012, due in various semi-annual payments of principal and interest through October 1, 2037, interest payable semi-annually at 3.83%.	210,000	

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 6 - LONG-TERM OBLIGATIONS: (CONTINUED)

<u>Details of Long-term Obligations: (continued)</u>

Revenue Bonds: (continued)		
\$1,640,000 Water & Sewer Refunding Revenue Bonds series 2011B issued October 15, 2011, due in various semi-annual payments of principal and interest through October 1, 2031, interest payable semi-annually at 5.5%.	\$	1,230,000
\$2,025,000 Water & Sewer Revenue Bonds series 2016B issued July 27, 2016, due in various semi-annual payments of principal and interest through October 1, 2046, interest payable semi-annually at 3.17%.		1,955,000
\$4,435,000 Water & Sewer Refunding Revenue Bonds series 2010 issued June 16, 2010, due in various semi-annual payments of principal and interest through October 1, 2030, interest payable semi-annually at 3.98%.	_	2,975,000
Total revenue bonds	\$_	9,331,865
\$9,800,000 Rural development loan series 2018A issued September 20, 2018, due in annual payments of principal and interest through September 20, 2058, interest		
payable at 2.25%.	\$_	9,800,000
Total long-term obligations	\$	19,763,281
Less current portion	_	868,152
Total noncurrent obligations	\$	18,895,129

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN:

Plan Description

All full-time, salaried permanent employees of the Authority are automatically covered by a VRS Retirement Plan upon employment. This is an agent multiple-employer plan administered by the Virginia Retirement System (the System) along with plans for other employer groups in the Commonwealth of Virginia. Members earn one month of service credit for each month they are employed and for which they and their employer pay contributions to VRS. Members are eligible to purchase prior service, based on specific criteria as defined in the <u>Code of Virginia</u>, as amended. Eligible prior service that may be purchased includes prior public service, active military service, certain periods of leave, and previously refunded service.

The System administers three different benefit structures for covered employees - Plan 1, Plan 2, and Hybrid. Each of these benefit structures has different eligibility criteria. The specific information for each plan and the eligibility for covered groups within each plan are set out in the table below:

RETIREMENT PLAN PROVISIONS		
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN
About Plan 1 Plan 1 is a defined benefit plan. The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula.	About Plan 2 Plan 2 is a defined benefit plan. The retirement benefit is based on a member's age, creditable service and average final compensation at retirement using a formula.	About the Hybrid Retirement Plan The Hybrid Retirement Plan combines the features of a defined benefit plan and a defined contribution plan. • The defined benefit is based on a member's age, creditable service and average final compensation at retirement using a formula. • The benefit from the defined contribution component of the plan depends on the member and employer contributions made to the plan and the investment performance of those contributions.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

	RETIREMENT PLAN PROVISIONS (CONTINUED)				
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN			
About Plan 1 (Cont.)	About Plan 2 (Cont.)	About the Hybrid Retirement Plan (Cont.) In addition to the monthly benefit payment payable from the defined benefit plan at retirement, a member may start receiving distributions from the balance in the defined contribution account, reflecting the contributions, investment gains or losses, and any required fees.			
Eligible Members Employees are in Plan 1 if their membership date is before July 1, 2010, and they were vested as of January 1, 2013 and they have not taken a refund. Hybrid Opt-In Election VRS non-hazardous duty covered Plan 1 members were allowed to make an irrevocable decision to opt into the Hybrid Retirement Plan during a special election window held January 1 through April 30, 2014. The Hybrid Retirement Plan's effective date for eligible Plan 1 members who opted in was July 1, 2014. If eligible deferred members returned to work during the election window, they were also eligible to opt into the Hybrid Retirement Plan.	Eligible Members Employees are in Plan 2 if their membership date is on or after July 1, 2010, or their membership date is before July 1, 2010, and they were not vested as of January 1, 2013. Hybrid Opt-In Election Eligible Plan 2 members were allowed to make an irrevocable decision to opt into the Hybrid Retirement Plan during a special election window held January 1 through April 30, 2014. The Hybrid Retirement Plan's effective date for eligible Plan 2 members who opted in was July 1, 2014. If eligible deferred members returned to work during the election window, they were also eligible to opt into the Hybrid Retirement Plan.	Eligible Members Employees are in the Hybrid Retirement Plan if their membership date is on or after January 1, 2014. This includes: • Political subdivision employees* • Members in Plan 1 or Plan 2 who elected to opt into the plan during the election window held January 1-April 30, 2014; the plan's effective date for opt-in members was July 1, 2014.			

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

RETIREMENT PLAN PROVISIONS (CONTINUED)		
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN
Hybrid Opt-In Election (Cont.) Members who were eligible for an optional retirement plan (ORP) and had prior service under Plan 1 were not eligible to elect the Hybrid Retirement Plan and remain as Plan 1 or ORP.	Hybrid Opt-In Election (Cont.) Members who were eligible for an optional retirement plan (ORP) and have prior service under Plan 2 were not eligible to elect the Hybrid Retirement Plan and remain as Plan 2 or ORP.	*Non-Eligible Members Some employees are not eligible to participate in the Hybrid Retirement Plan. They include: • Political subdivision employees who are covered by enhanced benefits for hazardous duty employees.
		Those employees eligible for an optional retirement plan (ORP) must elect the ORP plan or the Hybrid Retirement Plan. If these members have prior service under Plan 1 or Plan 2, they are not eligible to elect the Hybrid Retirement Plan and must select Plan 1 or Plan 2 (as applicable) or ORP.
Retirement Contributions Employees contribute 5% of their compensation each month to their member contribution account through a pre-tax salary reduction. Member contributions are tax-deferred until they are withdrawn as part of a retirement benefit or as a refund. The employer makes a separate actuarially determined contribution to VRS for all covered employees. VRS invests both member and employer contributions to provide funding for the future benefit payment.	Retirement Contributions Employees contribute 5% of their compensation each month to their member contribution account through a pre-tax salary reduction.	Retirement Contributions A member's retirement benefit is funded through mandatory and voluntary contributions made by the member and the employer to both the defined benefit and the defined contribution component of the plan. Mandatory contributions are based on a percentage of the employee's creditable compensation and are required from both the member and the employer. Additionally, members may choose to make voluntary contributions to the defined contribution component of the plan, and the employer is required to match those voluntary contributions according to specified percentages.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

RETIREMENT PLAN PROVISIONS (CONTINUED)		
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN
Creditable Service Creditable service includes active service. Members earn creditable service for each month they are employed in a covered position. It also may include credit for prior service the member has purchased or additional creditable service the member was granted. A member's total creditable service is one of the factors used to determine their eligibility for retirement and to calculate their retirement benefit. It also may count toward eligibility for the health insurance credit in retirement, if the employer offers the health insurance credit.	Creditable Service Same as Plan 1.	Creditable Service Defined Benefit Component: Under the defined benefit component of the plan, creditable service includes active service. Members earn creditable service for each month they are employed in a covered position. It also may include credit for prior service the member has purchased or additional creditable service the member was granted. A member's total creditable service is one of the factors used to determine their eligibility for retirement and to calculate their retirement benefit. It also may count toward eligibility for the health insurance credit in retirement, if the employer offers the health insurance credit. Defined Contribution Component: Under the defined contribution component, creditable service is used to determine vesting for the employer contribution portion of the plan.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

RETIREMENT PLAN PROVISIONS (CONTINUED)			
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN	
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 (60 months) of creditable service. Vesting means members are eligible to qualify for retirement if they meet the age and service requirements for their plan. Members also must be vested to receive a full refund of their member contribution account balance if they leave employment and request a refund. Members are always 100% vested in the contributions that they make.	Vesting Same as Plan 1.	Vesting Defined Benefit Component: Defined benefit vesting is the minimum length of service a member needs to qualify for a future retirement benefit. Members are vested under the defined benefit component of the Hybrid Retirement Plan when they reach five years (60 months) of creditable service. Plan 1 or Plan 2 members with at least five years (60 months) of creditable service who opted into the Hybrid Retirement Plan remain vested in the defined benefit component. Defined Contribution Component: Defined contribution vesting refers to the minimum length of service a member needs to be eligible to withdraw the employer contributions from the defined contribution component of the plan. Members are always 100% vested in the contributions that they make.	

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

RETIREMENT PLAN PROVISIONS (CONTINUED)			
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN	
Vesting (Cont.)	Vesting (Cont.)	Vesting (Cont.) Defined Contribution Component: (Cont.) Upon retirement or leaving covered employment, a member is eligible to withdraw a percentage of employer contributions to the defined contribution component of the plan, based on service. • After two years, a member is 50% vested and may withdraw 50% of employer contributions. • After three years, a member is 75% vested and may withdraw 75% of employer contributions. • After four or more years, a member is 100% vested and may withdraw 100% of employer contributions. Distribution is not required by law until age 70½.	
Calculating the Benefit The Basic Benefit is calculated based on a formula using the member's average final compensation, a retirement multiplier and total service credit at retirement. It is one of the benefit payout options available to a member at retirement.	Calculating the Benefit See definition under Plan 1.	Calculating the Benefit Defined Benefit Component: See definition under Plan 1.	

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

RETIREMENT PLAN PROVISIONS (CONTINUED)			
PLAN 2	HYBRID RETIREMENT PLAN		
Calculating the Benefit (Cont.)	Calculating the Benefit (Cont.) Defined Contribution Component: The benefit is based on contributions made by the member and any matching contributions made by the employer, plus net investment earnings on those contributions.		
Average Final Compensation A member's average final compensation is the average of their 60 consecutive months of highest compensation as a covered employee.	Average Final Compensation Same as Plan 2. It is used in the retirement formula for the defined benefit component of the plan.		
Service Retirement Multiplier VRS: Same as Plan 1 for service earned, purchased or granted prior to January 1, 2013. For non-hazardous duty members the retirement multiplier is 1.65% for creditable service earned, purchased or granted on or after January 1, 2013. Sheriffs and regional jail superintendents: Same as Plan 1. Political subdivision hazardous duty employees: Same as Plan 1.	Service Retirement Multiplier Defined Benefit Component: VRS: The retirement multiplier for the defined benefit component is 1.00%. For members who opted into the Hybrid Retirement Plan from Plan 1 or Plan 2, the applicable multipliers for those plans will be used to calculate the retirement benefit for service credited in those plans. Sheriffs and regional jail superintendents: Not applicable. Political subdivision hazardous duty employees: Not applicable. Defined Contribution		
	Average Final Compensation A member's average final compensation is the average of their 60 consecutive months of highest compensation as a covered employee. Service Retirement Multiplier VRS: Same as Plan 1 for service earned, purchased or granted prior to January 1, 2013. For non-hazardous duty members the retirement multiplier is 1.65% for creditable service earned, purchased or granted on or after January 1, 2013. Sheriffs and regional jail superintendents: Same as Plan 1. Political subdivision hazardous duty employees: Same as Plan		

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

RETIREMENT PLAN PROVISIONS (CONTINUED)			
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN	
Normal Retirement Age VRS: Age 65. Political subdivisions hazardous duty employees: Age 60.	Normal Retirement Age VRS: Normal Social Security retirement age. Political subdivisions hazardous duty employees: Same as Plan 1.	Normal Retirement Age <u>Defined Benefit Component:</u> VRS: Same as Plan 2. Political subdivisions hazardous duty employees: Not applicable.	
		Defined Contribution Component: Members are eligible to receive distributions upon leaving employment, subject to restrictions.	
Earliest Unreduced Retirement Eligibility VRS: Age 65 with at least five years (60 months) of creditable service or at age 50 with at least 30 years of creditable service. Political subdivisions hazardous duty employees: Age 60 with at least five years of creditable service or age 50 with at least 25 years of creditable service.	Earliest Unreduced Retirement Eligibility VRS: Normal Social Security retirement age with at least five years (60 months) of creditable service or when their age and service equal 90. Political subdivisions hazardous duty employees: Same as Plan 1.	Earliest Unreduced Retirement Eligibility Defined Benefit Component: VRS: Normal Social Security retirement age and have at least five years (60 months) of creditable service or when their age and service equal 90. Political subdivisions hazardous duty employees: Not applicable. Defined Contribution Component: Members are eligible to receive distributions upon leaving employment, subject to restrictions.	
Earliest Reduced Retirement Eligibility VRS: Age 55 with at least five years (60 months) of creditable service or age 50 with at least 10 years of creditable service.	Earliest Reduced Retirement Eligibility VRS: Age 60 with at least five years (60 months) of creditable service.	Earliest Reduced Retirement Eligibility Defined Benefit Component: VRS: Age 60 with at least five years (60 months) of creditable service.	

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

RETIREMENT PLAN PROVISIONS (CONTINUED)			
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN	
Earliest Reduced Retirement Eligibility (Cont.)	Earliest Reduced Retirement Eligibility (Cont.)	Earliest Reduced Retirement Eligibility (Cont.)	
Political subdivisions hazardous duty employees: 50 with at least five years of creditable service.	Political subdivisions hazardous duty employees: Same as Plan 1.	Political subdivisions hazardous duty employees: Not applicable. Defined Contribution Component: Members are eligible to receive distributions upon leaving employment, subject to restrictions.	
Cost-of-Living Adjustment (COLA) in Retirement The Cost-of-Living Adjustment (COLA) matches the first 3% increase in the Consumer Price Index for all Urban Consumers (CPI-U) and half of any additional increase (up to 4%) up to a maximum COLA of 5%. Eligibility: For members who retire with an unreduced benefit or with a reduced benefit with at least 20 years of creditable service, the COLA will go into effect on July 1 after one full calendar year from the retirement date. For members who retire with a reduced benefit and who have less than 20 years of creditable service, the COLA will go into effect on July 1 after one calendar year following the unreduced retirement eligibility date.	Cost-of-Living Adjustment (COLA) in Retirement The Cost-of-Living Adjustment (COLA) matches the first 2% increase in the CPI-U and half of any additional increase (up to 2%), for a maximum COLA of 3%. Eligibility: Same as Plan 1.	Cost-of-Living Adjustment (COLA) in Retirement Defined Benefit Component: Same as Plan 2. Defined Contribution Component: Not applicable. Eligibility: Same as Plan 1 and Plan 2.	

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

RETIREMENT PLAN PROVISIONS (CONTINUED)			
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN	
Cost-of-Living Adjustment (COLA) in Retirement (Cont.)	Cost-of-Living Adjustment (COLA) in Retirement (Cont.)	Cost-of-Living Adjustment (COLA) in Retirement (Cont.)	
Exceptions to COLA Effective Dates: The COLA is effective July 1 following one full calendar year (January 1 to December 31) under any of the following circumstances: • The member is within five years of qualifying for an unreduced retirement benefit as of January 1, 2013. • The member retires on disability. • The member retires directly from short-term or long-term disability under the Virginia Sickness and Disability Program (VSDP). • The member is involuntarily separated from employment for causes other than job performance or misconduct and is eligible to retire under the Workforce Transition Act or the Transitional Benefits Program. • The member dies in service and the member's survivor or beneficiary is eligible for a monthly death-in-service benefit. The COLA will go into effect on July 1 following one full calendar year (January 1 to December 31) from the date the monthly benefit begins.	Exceptions to COLA Effective Dates: Same as Plan 1.	Exceptions to COLA Effective Dates: Same as Plan 1 and Plan 2.	

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

RETIREMENT PLAN PROVISIONS (CONTINUED)			
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN	
Disability Coverage Members who are eligible to be considered for disability retirement and retire on disability, the retirement multiplier is 1.7% on all service, regardless of when it was earned, purchased or granted.	Disability Coverage Members who are eligible to be considered for disability retirement and retire on disability, the retirement multiplier is 1.65% on all service, regardless of when it was earned, purchased or granted.	Disability Coverage Employees of political subdivisions (including Plan 1 and Plan 2 opt-ins) participate in the Virginia Local Disability Program (VLDP) unless their local governing body provides an employer-paid comparable program for its members.	
		Hybrid members (including Plan 1 and Plan 2 opt-ins) covered under VLDP are subject to a one-year waiting period before becoming eligible for non-work-related disability benefits.	
Purchase of Prior Service Members may be eligible to purchase service from previous public employment, active duty military service, an eligible period of leave or VRS refunded service as creditable service in their plan. Prior creditable service counts toward vesting, eligibility for retirement and the health insurance credit. Only active members are eligible to purchase prior service. Members also may be eligible to purchase periods of leave without pay.	Purchase of Prior Service Same as Plan 1.	Purchase of Prior Service Defined Benefit Component: Same as Plan 1, with the following exceptions: • Hybrid Retirement Plan members are ineligible for ported service. Defined Contribution Component: Not applicable.	

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

Pension Plan Data

Information about the VRS Political Subdivision Retirement Plan is also available in the separately issued VRS 2017 Comprehensive Annual Financial Report (CAFR). A copy of the 2017 VRS CAFR may be downloaded from the VRS website at http://www.varetire.org/Pdf/Publications/2017-annual-report.pdf, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA 23218-2500.

Employees Covered by Benefit Terms

As of the June 30, 2016 actuarial valuation, the following employees were covered by the benefit terms of the pension plan:

	Number
Inactive members or their beneficiaries currently receiving benefits	7
Inactive members:	
Vested inactive members	3
Non-vested inactive members	1
Inactive members active elsewhere in VRS	7
Total inactive members	11
Active members	23
Total covered employees	41

Contributions

The contribution requirement for active employees is governed by §51.1-145 of the <u>Code of Virginia</u>, as amended, but may be impacted as a result of funding options provided to political subdivisions by the Virginia General Assembly. Employees are required to contribute 5.00% of their compensation toward their retirement. Prior to July 1, 2012, all or part of the 5.00% member contribution may have been assumed by the employer. Beginning July 1, 2012 new employees were required to pay the 5% member contribution. In addition, for existing employees, employers were required to begin making the employee pay the 5.00% member contribution. This could be phased in over a period of up to 5 years and the employer is required to provide a salary increase equal to the amount of the increase in the employee-paid member contribution.

The Authority's contractually required employer contribution rate for the year ended June 30, 2018 was 7.05% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2015.

This rate, when combined with employee contributions, was expected to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. Contributions to the pension plan from the Authority were \$78,019 and \$82,375 for the years ended June 30, 2018 and June 30, 2017, respectively.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

Net Pension Liability

The Authority's net pension liability was measured as of June 30, 2017. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2016, using updated actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2017.

Actuarial Assumptions - General Employees

The total pension liability for General Employees in the Authority's Retirement Plan was based on an actuarial valuation as of June 30, 2016, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2017.

Inflation 2.5%

Salary increases, including inflation 3.5% - 5.35%

Investment rate of return 7.0%, net of pension plan investment

expense, including inflation*

Mortality rates:

Largest 10 - Non-Hazardous Duty: 20% of deaths are assumed to be service related Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates at ages 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

^{*} Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 7.0%. However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 7.0% to simplify preparation of pension liabilities.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

Actuarial Assumptions - General Employees (Continued)

All Others (Non 10 Largest) - Non-Hazardous Duty: 15% of deaths are assumed to be service related Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates at ages 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Largest 10 - Non-Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Lowered rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 20%

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

Actuarial Assumptions - General Employees (Continued)

All Others (Non 10 Largest) - Non-Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Lowered rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 15%

Actuarial Assumptions - Public Safety Employees with Hazardous Duty Benefits

The total pension liability for Public Safety employees with Hazardous Duty Benefits in the Authority's Retirement Plan was based on an actuarial valuation as of June 30, 2016, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2017.

Inflation 2.5%

Salary increases, including inflation 3.5% - 4.75%

Investment rate of return 7.0%, net of pension plan investment

expense, including inflation*

^{*} Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 7.0%. However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 7.0% to simplify preparation of pension liabilities.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

Actuarial Assumptions - Public Safety Employees with Hazardous Duty Benefits: (Continued)

Mortality rates:

Largest 10 - Hazardous Duty: 70% of deaths are assumed to be service related Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates at ages 81 and older projected with scale BB to 2020; males 90% of rates; females set forward 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year, 1.0% increase compounded from ages 70 to 90; females set forward 3 years.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years; unisex using 100% male.

All Others (Non 10 Largest) - Hazardous Duty: 45% of deaths are assumed to be service related Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates at ages 81 and older projected with scale BB to 2020; males 90% of rates; females set forward 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year, 1.0% increase compounded from ages 70 to 90; females set forward 3 years.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years; unisex using 100% male.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

Actuarial Assumptions - Public Safety Employees with Hazardous Duty Benefits: (Continued)

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Largest 10 - Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience
Disability Rates	Increased rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 60% to 70%

All Others (Non 10 Largest) - Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Increased age 50 rates, and lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better fit experience
Salary Scale	No change
Line of Duty Disability	Decreased rate from 60% to 45%

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

Long-Term Expected Rate of Return

The long-term expected rate of return on pension System investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension System investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class (Strategy)	Target Allocation	Arithmetic Long-Term Expected Rate of Return	Weighted Average Long-Term Expected Rate of Return
Public Equity	40.00%	4.54%	1.82%
Fixed Income	15.00%	0.69%	0.10%
Credit Strategies	15.00%	3.96%	0.59%
Real Assets	15.00%	5.76%	0.86%
Private Equity	15.00%	9.53%	1.43%
Total	100.00%		4.80%
		Inflation	2.50%
*Ex	spected arithme	tic nominal return	7.30%

^{*} The above allocation provides a one-year return of 7.30%. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 6.83%, including expected inflation of 2.50%.

Discount Rate

The discount rate used to measure the total pension liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that System member contributions will be made per the VRS Statutes and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Through the fiscal year ending June 30, 2019, the rate contributed by the employer for the Authority Retirement Plan will be subject to the portion of the VRS Board-certified rates that are funded by the Virginia General Assembly. From July 1, 2019 on, participating employers are assumed to contribute 100% of 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 active and inactive employees. Therefore the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total pension liability.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

Changes in Net Pension Liability

	_	Increase (Decrease)				
		Total Plan				Net
		Pension		Fiduciary		Pension
		Liability		Net Position		Liability
	_	(a)		(b)		(a) - (b)
Balances at June 30, 2016	\$_	4,106,683	\$	3,607,568	\$_	499,115
Changes for the year:						
Service cost	\$	104,118	\$	-	\$	104,118
Interest		284,667		-		284,667
Changes in assumptions		(131,732)		-		(131,732)
Differences between expected						
and actual experience		36,682		-		36,682
Contributions - employer		-		81,262		(81,262)
Contributions - employee		-		57,533		(57,533)
Net investment income		-		446,980		(446,980)
Benefit payments, including refunds						
of employee contributions		(80,026)		(80,026)		-
Administrative expenses		-		(2,477)		2,477
Other changes	_	-		(402)		402
Net changes	\$ _	213,709	\$	502,870	. \$ _	(289,161)
Balances at June 30, 2017	\$_	4,320,392	\$	4,110,438	\$	209,954

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

The following presents the net pension liability of the Authority using the discount rate of 7.00%, as well as what the Authority's net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.00%) or one percentage point higher (8.00%) than the current rate:

	 Rate				
	1% Decrease Current Discount			1% Increase	
	(6.00%)		(7.00%)		(8.00%)
Greensville County Water and Sewer Authority's Net Pension Liability (Asset)	\$ 843,219	\$	209,954	\$	(310,919)

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 7 - PENSION PLAN: (CONTINUED)

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

For the year ended June 30, 2018, the Authority recognized pension expense of \$58,466. At June 30, 2018, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 88,035 \$	-
Change in assumptions	-	101,518
Net difference between projected and actual earnings on pension plan investments	-	62,462
Employer contributions subsequent to the measurement date	78,019	-
Total	\$ 166,054 \$	163,980

\$78,019 reported as deferred outflows of resources related to pensions resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the Net Pension Liability in the fiscal year ended June 30, 2019. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense in future reporting periods as follows:

Year ended June 30	_	
2019	\$	(21,181)
2020		14,298
2021		(22,718)
2022		(46,344)
2023		-
Thereafter		-

NOTE 8 - RISK MANAGEMENT:

The Authority 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. The Authority joined together with other local governments in the State to form the Virginia Municipal Group Self Insurance Association, a public entity risk pool currently operating as a common risk management and insurance program for member governments. The Authority pays an annual premium to the pool for its workers' compensation coverage. The Agreement for Formation of the association provides that the association will be self—sustaining through member premiums.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 8 - RISK MANAGEMENT: (CONTINUED)

The Authority continues to carry commercial insurance for all other risks of loss, including general liability and employee health and accident insurance. Settled claims resulting from these risks have not exceeded commercial insurance coverage in any of the past three fiscal years.

NOTE 9 - ECONOMIC DEPENDENCY:

For the fiscal year ended September 30, 2018, the Commonwealth of Virginia-Department of Corrections was billed \$1,962,432 for services, which constitutes approximately 39% of total operating revenues. Boar's Head Provisions Company, Inc. was billed \$738,249 for services, which constitutes approximately 15% of total operating revenues.

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS:

Health Insurance Credit (HIC) Program:

Plan Description

All full-time, salaried permanent employees of participating political subdivisions are automatically covered by the VRS Political Subdivision Health Insurance Credit Program upon employment. This is an agent multiple-employer plan administered by the Virginia Retirement System (the System), along with pension and other OPEB plans, for public employer groups in the Commonwealth of Virginia. Members earn one month of service credit toward the benefit for each month they are employed and for which their employer pays contributions to VRS. The health insurance credit is a tax-free reimbursement in an amount set by the General Assembly for each year of service credit against qualified health insurance premiums retirees pay for single coverage, excluding any portion covering the spouse or dependents. The credit cannot exceed the amount of the premiums and ends upon the retiree's death.

The specific information about the Political Subdivision Health Insurance Credit Program OPEB, including eligibility, coverage and benefits is set out in the table below:

POLITICAL SUBDIVISION HEALTH INSURANCE CREDIT PROGRAM PLAN PROVISIONS

Eligible Employees

The Political Subdivision Retiree Health Insurance Credit Program was established July 1, 1993 for retired political subdivision employees of employers who elect the benefit and who retire with at least 15 years of service credit.

Eligible employees of participating employers are enrolled automatically upon employment. They include:

• Full-time permanent salaried employees of the participating political subdivision who are covered under the VRS pension plan.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

<u>Health Insurance Credit (HIC) Program: (Continued)</u>

Plan Description: (Continued)

POLITICAL SUBDIVISION HEALTH INSURANCE CREDIT PROGRAM PLAN PROVISIONS (CONTINUED)

Benefit Amounts

The political subdivision's Retiree Health Insurance Credit Program provides the following benefits for eligible employees:

- <u>At Retirement</u> For employees who retire, the monthly benefit is \$1.50 per year of service per month with a maximum benefit of \$45.00 per month.
- <u>Disability Retirement</u>- For employees who retire on disability or go on long-term disability under the Virginia Local Disability Program (VLDP), the monthly benefit is \$45.00 per month.

Health Insurance Credit Program Notes:

- The monthly Health Insurance Credit benefit cannot exceed the individual premium amount.
- No health insurance credit for premiums paid and qualified under LODA; however, the employee may receive the credit for premiums paid for other qualified health plans.
- Employees who retire after being on long-term disability under VLDP must have at least 15 years of service credit to qualify for the health insurance credit as a retiree.

Employees Covered by Benefit Terms

As of the June 30, 2016 actuarial valuation, the following employees were covered by the benefit terms of the HIC OPEB plan:

	Number
Inactive members or their beneficiaries currently receiving benefits	3
Inactive members: Vested inactive members	3
Total inactive members	6
Active members	23
Total covered employees	29

Contributions

The contribution requirements for active employees is governed by §51.1-1402(E) of the <u>Code of Virginia</u>, as amended, but may be impacted as a result of funding options provided to political subdivisions by the Virginia General Assembly. The Authority's contractually required employer contribution rate for the year ended June 30, 2018 was .19% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2015. The actuarially determined rate was expected to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. Contributions from the Authority to the Health Insurance Credit Program were \$2,628 and \$2,687 for the years ended June 30, 2018 and June 30, 2017.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

<u>Health Insurance Credit (HIC) Program: (Continued)</u>

Net HIC OPEB Liability

The Authority's net Health Insurance Credit OPEB liability was measured as of June 30, 2017. The total Health Insurance Credit OPEB liability was determined by an actuarial valuation performed as of June 30, 2016, using updated actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2017.

Actuarial Assumptions

The total HIC OPEB liability was based on an actuarial valuation as of June 30, 2016, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2017.

Inflation 2.5%

Salary increases, including inflation:

Locality - General employees 3.5%-5.35% Locality - Hazardous Duty employees 3.5%-4.75%

Investment rate of return 7.0%, net of investment expenses,

including inflation*

*Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 7.0%. However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 7.0% to simplify preparation of the OPEB liabilities.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Health Insurance Credit (HIC) Program: (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates - Largest Ten Locality Employers - General Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Life Mortality Table projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020		
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75		
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year		
Disability Rates	Lowered disability rates		
Salary Scale	No change		
Line of Duty Disability	Increased rate from 14% to 20%		

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Health Insurance Credit (HIC) Program: (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates - Non-Largest Ten Locality Employers - General Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Life Mortality Table projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

Mortality Rates (pre-retirement, post- retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020			
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75			
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year			
Disability Rates	Lowered disability rates			
Salary Scale	No change			
Line of Duty Disability	Increased rate from 14% to 15%			

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Health Insurance Credit (HIC) Program: (Continued)

Long-Term Expected Rate of Return

The long-term expected rate of return on the System's investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of System's investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class (Strategy)	Target Allocation	Arithmetic Long-term Expected Rate of Return	Weighted Average Long-term Expected Rate of Return
Public Equity	40.00%	4.54%	1.82%
Fixed Income	15.00%	0.69%	0.10%
Credit Strategies	15.00%	3.96%	0.59%
Real Assets	15.00%	5.76%	0.86%
Private Equity	15.00%	9.53%	1.43%
Total	100.00%		4.80%
		Inflation	2.50%
*E	xpected arithme	tic nominal return	7.30%

^{*}The above allocation provides a one-year return of 7.30%. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 6.83%, including expected inflation of 2.50%.

Discount Rate

The discount rate used to measure the total HIC OPEB liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Through the fiscal year ending June 30, 2019, the rate contributed by the entity for the HIC OPEB will be subject to the portion of the VRS Board-certified rates that are funded by the Virginia General Assembly. From July 1, 2019 on, employers are assumed to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the HIC OPEB's fiduciary net position was projected to be available to make all projected future benefit payments of eligible employees. Therefore the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total HIC OPEB liability.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Health Insurance Credit (HIC) Program: (Continued)

Changes in Net HIC OPEB Liability

		Increase (Decrease)			
	_	Total HIC OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net HIC OPEB Liability (Asset) (a) - (b)	
Balances at June 30, 2016	\$_	58,840 \$	34,684 \$	24,156	
Changes for the year:					
Service cost	\$	906 \$	- \$	906	
Interest		4,117	-	4,117	
Assumption changes		(3,160)	-	(3,160)	
Contributions - employer		-	2,687	(2,687)	
Net investment income		-	4,201	(4,201)	
Benefit payments		(65)	(65)	-	
Administrative expenses		-	(72)	72	
Other changes			202	(202)	
Net changes	\$	1,798 \$	6,953 \$	(5,155)	
Balances at June 30, 2017	\$_	60,638 \$	41,637 \$	19,001	

Sensitivity of the Authority's Health Insurance Credit Net OPEB Liability to Changes in the Discount Rate

The following presents the Authority's Health Insurance Credit Program net HIC OPEB liability using the discount rate of 7.00%, as well as what the Authority's net HIC OPEB liability would be if it were calculated using a discount rate that is one percentage point lower (6.00%) or one percentage point higher (8.00%) than the current rate:

				Rate		
	•	Current				
		1% Decrease		Discount		1% Increase
	•	(6.00%)	_	(7.00%)		(8.00%)
Net HIC OPEB Liability	\$	25,726	\$	19,001	\$	13,310

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Health Insurance Credit (HIC) Program: (Continued)

Health Insurance Credit Program OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Health Insurance Credit Program OPEB

For the year ended June 30, 2018, the Authority recognized Health Insurance Credit Program OPEB expense of \$1,522. At June 30, 2018, the Authority reported deferred outflows of resources and deferred inflows of resources related to the Authority's Health Insurance Credit Program from the following sources:

	erred Outflows of Resources	 Deferred Inflows of Resources
Net difference between projected and actual earnings on HIC OPEB plan investments	\$ -	\$ 1,342
Change in assumptions	-	2,648
Employer contributions subsequent to the measurement date	 2,628	
Total	\$ 2,628	\$ 3,990

\$2,628 reported as deferred outflows of resources related to the HIC OPEB resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the Net HIC OPEB Liability in the fiscal year ending June 30, 2019. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to the HIC OPEB will be recognized in the HIC OPEB expense in future reporting periods as follows:

Year Ended June 30		
2010	¢	0.47
2019	\$	847
2020		847
2021		847
2022		849
2023		512
Thereafter		88

Health Insurance Credit Program Plan Data

Information about the VRS Political Subdivision Health Insurance Credit Program is available in the separately issued VRS 2017 Comprehensive Annual Financial Report (CAFR). A copy of the 2017 VRS CAFR may be downloaded from the VRS website at http://www.varetire.org/Pdf/Publications/2017-annual-report.pdf, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA, 23218-2500.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan):

Plan Description

All full-time, salaried permanent employees of the state agencies, teachers, and employees of participating political subdivisions are automatically covered by the VRS Group Life Insurance Program upon employment. This is a cost-sharing multiple-employer plan administered by the Virginia Retirement System (the System), along with pensions and other OPEB plans, for public employer groups in the Commonwealth of Virginia.

In addition to the Basic Group Life Insurance benefit, members are also eligible to elect additional coverage for themselves as well as a spouse or dependent children through the Optional Group Life Insurance Program. For members who elect the optional group life insurance coverage, the insurer bills employers directly for the premiums. Employers deduct these premiums from members' paychecks and pay the premiums to the insurer. Since this is a separate and fully insured program, it is not included as part of the Group Life Insurance Program OPEB.

The specific information for Group Life Insurance Program OPEB, including eligibility, coverage and benefits is set out in the table below:

GROUP LIFE INSURANCE PROGRAM PLAN PROVISIONS

Eligible Employees

The Group Life Insurance Program was established July 1, 1960, for state employees, teachers and employees of political subdivisions that elect the program, including the following employers that do not participate in VRS for retirement:

- City of Richmond
- City of Portsmouth
- City of Roanoke
- City of Norfolk
- Roanoke City School Board

Basic group life insurance coverage is automatic upon employment. Coverage ends for employees who leave their position before retirement eligibility or who take a refund of their member contributions and accrued interest.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan):

Plan Description: (Continued)

GROUP LIFE INSURANCE PROGRAM PLAN PROVISIONS (CONTINUED)

Benefit Amounts

The benefits payable under the Group Life Insurance Program have several components.

- <u>Natural Death Benefit</u> The natural death benefit is equal to the employee's covered compensation rounded to the next highest thousand and then doubled.
- Accidental Death Benefit The accidental death benefit is double the natural death benefit.
- Other Benefit Provisions In addition to the basic natural and accidental death benefits, the program provides additional benefits provided under specific circumstances. These include:
 - Accidental dismemberment benefit
 - Safety belt benefit
 - o Repatriation benefit
 - o Felonious assault benefit
 - o Accelerated death benefit option

Reduction in Benefit Amounts

The benefit amounts provided to members covered under the Group Life Insurance Program are subject to a reduction factor. The benefit amount reduces by 25% on January 1 following one calendar year of separation. The benefit amount reduces by an additional 25% on each subsequent January 1 until it reaches 25% of its original value.

Minimum Benefit Amount and Cost-of-Living Adjustment (COLA)

For covered members with at least 30 years of creditable service, there is a minimum benefit payable under the Group Life Insurance Program. The minimum benefit was set at \$8,000 by statute. The amount is increased annually based on the VRS Plan 2 cost-of-living adjustment and is currently \$8,111.

Contributions

The contribution requirements for the Group Life Insurance Program are governed by §51.1-506 and §51.1-508 of the Code of Virginia, as amended, but may be impacted as a result of funding provided to state agencies and school divisions by the Virginia General Assembly. The total rate for the Group Life Insurance Program was 1.31% of covered employee compensation. This was allocated into an employee and an employer component using a 60/40 split. The employee component was 0.79% (1.31% x 60%) and the employer component was 0.52% (1.31% x 40%). Employers may elect to pay all or part of the employee contribution; however, the employer must pay all of the employer contribution. Each employer's contractually required employer contribution rate for the year ended June 30, 2018 was 0.52% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2015. The actuarially determined rate, when combined with employee contributions, was expected to finance the costs of benefits payable during the year, with an additional amount to finance any unfunded accrued liability. Contributions to the Group Life Insurance Program from the entity were \$5,941 and \$6,076 for the years ended June 30, 2018 and June 30, 2017, respectively.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the Group Life Insurance Program OPEB

At June 30, 2018, the entity reported a liability of \$95,000 for its proportionate share of the Net GLI OPEB Liability. The Net GLI OPEB Liability was measured as of June 30, 2017 and the total GLI OPEB liability used to calculate the Net GLI OPEB Liability was determined by an actuarial valuation as of that date. The covered employer's proportion of the Net GLI OPEB Liability was based on the covered employer's actuarially determined employer contributions to the Group Life Insurance Program for the year ended June 30, 2017 relative to the total of the actuarially determined employer contributions for all participating employers. At June 30, 2017, the participating employer's proportion was .00633% as compared to .00616% at June 30, 2016.

For the year ended June 30, 2018, the participating employer recognized GLI OPEB expense of \$4,000. Since there was a change in proportionate share between measurement dates, a portion of the GLI OPEB expense was related to deferred amounts from changes in proportion.

At June 30, 2018, the employer reported deferred outflows of resources and deferred inflows of resources related to the GLI OPEB from the following sources:

	_	Deferred Outflows of Resources	 Deferred Inflows of Resources
Differences between expected and actual experience	\$	-	\$ 2,000
Net difference between projected and actual earnings on GLI OPEB program investments		-	4,000
Change in assumptions		-	5,000
Employer contributions subsequent to the measurement date	_	5,941	
Total	\$_	5,941	\$ 11,000

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the Group Life Insurance Program OPEB (Continued)

\$5,941 reported as deferred outflows of resources related to the GLI OPEB resulting from the employer's contributions subsequent to the measurement date will be recognized as a reduction of the Net GLI OPEB Liability in the fiscal year ending June 30, 2019. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to the GLI OPEB will be recognized in the GLI OPEB expense in future reporting periods as follows:

Year Ended June 30	
2019	\$ 2,000
2020	2,000
2021	2,000
2022	2,000
2023	1,000
Thereafter	2,000

Actuarial Assumptions

The total GLI OPEB liability was based on an actuarial valuation as of June 30, 2016, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2017.

Inflation	2.5%
Salary increases, including inflation:	
General state employees	3.5% - 5.35%
Teachers	3.5%-5.95%
SPORS employees	3.5%-4.75%
VaLORS employees	3.5%-4.75%
JRS employees	4.5%
Locality - General employees	3.5%-5.35%
Locality - Hazardous Duty employees	3.5%-4.75%
Investment rate of return	7.0%, net of investment expenses, including inflation*

*Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 7.0%. However, since the difference was minimal, and a more conservative 7.0% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 7.0% to simplify preparation of OPEB liabilities.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates - General State Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males set back 1 year, 85% of rates; females set back 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year; females set back 1 year with 1.5% increase compounded from ages 70 to 85.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males 115% of rates; females 130% of rates.

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 25%

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates - Teachers

Pre-Retirement:

RP-2014 White Collar Employee Rates to age 80, White Collar Healthy Annuitant Rates at ages 81 and older projected with scale BB to 2020.

Post-Retirement:

RP-2014 White Collar Employee Rates to age 49, White Collar Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males 1% increase compounded from ages 70 to 90; females set back 3 years with 1.5% increase compounded from ages 65 to 70 and 2.0% increase compounded from ages 75 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; 115% of rates for males and females.

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates - SPORS Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 90% of rates; females set forward 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year with 1.0% increase compounded from ages 70 to 90; females set forward 3 years.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years; unisex using 100% male.

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020 and reduced margin for future improvement in accordance with experience
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Increased rate from 60% to 85%

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates - VaLORS Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 90% of rates; females set forward 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year with 1.0% increase compounded from ages 70 to 90; females set forward 3 years.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years; unisex using 100% male.

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020 and reduced margin for future improvement in accordance with experience
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Decreased rate from 50% to 35%

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates - JRS Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males set back 1 year, 85% of rates; females set back 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year; females set back 1 year with 1.5% compounding increase from ages 70 to 85.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males 115% of rates; females 130% of rates.

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Decreased rates at first retirement eligibility
Withdrawal Rates	No change
Disability Rates	Removed disability rates
Salary Scale	No change

Mortality Rates - Largest Ten Locality Employers - General Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates - Largest Ten Locality Employers - General Employees: (Continued)

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 20%

Mortality Rates - Non-Largest Ten Locality Employers - General Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 15%

Mortality Rates - Largest Ten Locality Employers - Hazardous Duty Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 90% of rates; females set forward 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year with 1.0% increase compounded from ages 70 to 90; females set forward 3 years.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years; unisex using 100% male.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Mortality Rates - Largest Ten Locality Employers - Hazardous Duty Employees: (Continued)

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020					
Retirement Rates	Lowered retirement rates at older ages					
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year					
Disability Rates	Increased disability rates					
Salary Scale	No change					
Line of Duty Disability	Increased rate from 60% to 70%					

Mortality Rates - Non-Largest Ten Locality Employers - Hazardous Duty Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 90% of rates; females set forward 1 year.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 1 year with 1.0% increase compounded from ages 70 to 90; females set forward 3 years.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years; unisex using 100% male.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates - Non-Largest Ten Locality Employers - Hazardous Duty Employees: (Continued)

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016. Changes to the actuarial assumptions as a result of the experience study are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Decreased rate from 60% to 45%

NET GLI OPEB Liability

The net OPEB liability (NOL) for the Group Life Insurance Program represents the program's total OPEB liability determined in accordance with GASB Statement No. 74, less the associated fiduciary net position. As of June 30, 2017, NOL amounts for the Group Life Insurance Program is as follows (amounts expressed in thousands):

		Group Life Insurance OPEB Program
Total GLI OPEB Liability	\$	2,942,426
Plan Fiduciary Net Position		1,437,586
Employers' Net GLI OPEB Liability (Asset)	\$	1,504,840
Plan Fiduciary Net Position as a Percentage	_	
of the Total GLI OPEB Liability		48.86%

The total GLI OPEB liability is calculated by the System's actuary, and each plan's fiduciary net position is reported in the System's financial statements. The net GLI OPEB liability is disclosed in accordance with the requirements of GASB Statement No. 74 in the System's notes to the financial statements and required supplementary information.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Long-Term Expected Rate of Return

The long-term expected rate of return on the System's investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of System's investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class (Strategy)	Target Allocation	Arithmetic Long-term Expected Rate of Return	Weighted Average Long-term Expected Rate of Return
Public Equity	40.00%	4.54%	1.82%
Fixed Income	15.00%	0.69%	0.10%
Credit Strategies	15.00%	3.96%	0.59%
Real Assets	15.00%	5.76%	0.86%
Private Equity	15.00%	9.53%	1.43%
Total	100.00%		4.80%
		Inflation	2.50%
	*Expected arithme	tic nominal return	7.30%

^{*}The above allocation provides a one-year return of 7.30%. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 6.83%, including expected inflation of 2.50%.

Discount Rate

The discount rate used to measure the total GLI OPEB liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that member contributions will be made per the VRS guidance and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Through the fiscal year ending June 30, 2019, the rate contributed by the entity for the GLI OPEB will be subject to the portion of the VRS Board-certified rates that are funded by the Virginia General Assembly. From July 1, 2019 on, employers are assumed to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the GLI OPEB's fiduciary net position was projected to be available to make all projected future benefit payments of eligible employees. Therefore the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total GLI OPEB liability.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 10 - OTHER POSTEMPLOYMENT BENEFITS: (CONTINUED)

Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Sensitivity of the Employer's Proportionate Share of the Net GLI OPEB Liability to Changes in the Discount Rate

The following presents the employer's proportionate share of the net GLI OPEB liability using the discount rate of 7.00%, as well as what the employer's proportionate share of the net GLI OPEB liability would be if it were calculated using a discount rate that is one percentage point lower (6.00%) or one percentage point higher (8.00%) than the current rate:

	Rate						
	1% Decrease	(Current Discount		1% Increase		
	(6.00%)		(7.00%)		(8.00%)		
Authority's proportionate							
share of the Group Life							
Insurance Program							
Net OPEB Liability	\$ 123,000	\$	95,000	\$	73,000		

Group Life Insurance Program Fiduciary Net Position

Detailed information about the Group Life Insurance Program's Fiduciary Net Position is available in the separately issued VRS 2017 Comprehensive Annual Financial Report (CAFR). A copy of the 2017 VRS CAFR may be downloaded from the VRS website at http://www.varetire.org/Pdf/Publications/2017-annual-report.pdf, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA, 23218-2500.

NOTE 11 - LOAN TO IDA OF GREENSVILLE, VIRGINIA:

The Authority has made the following loan to the Greensville County Industrial Development Authority:

On July 19, 2010, the Authority entered into a note receivable agreement in the amount of \$825,000 with the Greensville County IDA. The proceeds were used to refinance the note payable agreement dated February 11, 2005 with an outstanding balance of \$820,594. Payments are due monthly in the amount of \$4,913 through November 15, 2029, interest at 3.80%. The outstanding balance of this note at September 30, 2018 was \$535,848.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 11 - LOAN TO IDA AND COUNTY OF GREENSVILLE, VIRGINIA: (CONTINUED)

Annual repayments of principal and interest are as follows:

	_	IDA Refinance					
	_	Principal		Interest			
2019	\$	39,324	\$	19,630			
2020		40,840		18,114			
2021		42,415		16,539			
2022		44,051		14,903			
2023		45,750		13,204			
2024		47,514		11,440			
2025		49,347		9,607			
2026		51,250		7,704			
2027		53,226		5,728			
2028		53,279		3,675			
2029		59,411		1,543			
2030	_	9,441		44			
Total	\$	535,848	\$	122,131			

NOTE 12 - UPCOMING PRONOUNCEMENTS:

Statement No. 83, Certain Asset Retirement Obligations, addresses accounting and financial reporting for certain asset retirement obligations (AROs). An ARO is a legally enforceable liability associated with the retirement of a tangible capital asset. A government that has legal obligations to perform future asset retirement activities related to its tangible capital assets should recognize a liability based on the guidance in this Statement. This Statement establishes criteria for determining the timing and pattern of recognition of a liability and a corresponding deferred outflow of resources for AROs. The requirements of this Statement are effective for reporting periods beginning after June 15, 2018.

Statement No. 84, *Fiduciary Activities*, establishes criteria for identifying fiduciary activities of all state and local governments. The focus of the criteria generally is on (1) whether a government is controlling the assets of the fiduciary activity and (2) the beneficiaries with whom a fiduciary relationship exists. Separate criteria are included to identify fiduciary component units and postemployment benefit arrangements that are fiduciary activities. This Statement describes four fiduciary funds that should be reported, if applicable: (1) pension (and other employee benefit) trust funds, (2) investment trust funds, (3) private-purpose trust funds, and (4) custodial funds. This Statement also provides for recognition of a liability to the beneficiaries in a fiduciary fund when an event has occurred that compels the government to disburse fiduciary resources. The requirements of this Statement are effective for reporting periods beginning after December 15, 2018.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 12 - UPCOMING PRONOUNCEMENTS: (CONTINUED)

Statement No. 87, *Leases*, increases the usefulness of governments' financial statements by requiring recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this Statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources, thereby enhancing the relevance and consistency of information about governments' leasing activities. The requirements of this Statement are effective for reporting periods beginning after December 15, 2019.

Statement No. 88, Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements, clarifies which liabilities governments should include when disclosing information related to debt. It defines debt for purposes of disclosure in notes to financial statements as a liability that arises from a contractual obligation to pay cash (or other assets that may be used in lieu of cash) in one or more payments to settle an amount that is fixed at the date the contractual obligation is established. The Statement requires that additional essential information related to debt be disclosed in notes to financial statements, including unused lines of credit; assets pledged as collateral for the debt; and terms specified in debt agreements related to significant events of default with finance-related consequences, significant termination events with finance-related consequences, and significant subjective acceleration clauses. For notes to financial statements related to debt, it requires that existing and additional information be provided for direct borrowings and direct placements of debt separately from other debt. The requirements of this Statement are effective for reporting periods beginning after June 15, 2018.

Statement No. 89, Accounting for Interest Cost Incurred Before the End of a Construction Period, enhances the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and simplifies accounting for interest cost incurred before the end of a construction period. Such interest cost includes all interest that previously was accounted for in accordance with the requirements of paragraphs 5-22 of Statement No. 62, Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements, which are superseded by this Statement. This Statement requires that interest cost incurred before the end of a construction period be recognized as an expense in the period in which the cost is incurred for financial statements prepared using the economic resources measurement focus. As a result, interest cost incurred before the end of a construction period will not be included in the historical cost of a capital asset reported in a business-type activity or enterprise fund. This Statement also reiterates that in financial statements prepared using the current financial resources measurement focus, interest cost incurred before the end of a construction period should be recognized as an expenditure on a basis consistent with governmental fund accounting principles. The requirements of this Statement are effective for reporting periods beginning after December 15, 2019.

Management is currently evaluating the impact these standards will have on the financial statements when adopted.

Notes to Financial Statements As of September 30, 2018 (Continued)

NOTE 13 - ADOPTION OF ACCOUNTING PRINCIPLES: (CONTINUED)

The Authority implemented the financial reporting provisions of Governmental Accounting Standards Board Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions during the fiscal year ended September 30, 2018. This Statement establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources, expense/expenditures related to postemployment benefits other than pensions (other postemployment benefits or OPEB). Note disclosure and required supplementary information requirements about OPEB are also addressed. The requirements of this Statement will improve accounting and financial reporting by state and local governments for OPEB. In addition, the Authority implemented Governmental Accounting Standards Board Statement No. 85, Omnibus 2017 during the fiscal year ended September 30, 2018. This Statement addresses practice issues identified during implementation and application of certain GASB statements for a variety of topics including issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (pensions and other postemployment benefits (OPEB)). The implementation of these Statements resulted in the following restatement of net position:

	_	Water	Sewer	Total
Net Position as of October 1, 2017, previously reported	\$	22,097,003 \$	14,453,839 \$	36,550,842
To remove OPEB health insurance obligation as reported under GASB 45 OPEB liability restated as of October 1, 2017 - health insurance credit - VRS		8,558 (9,247)	11,342 (12,222)	19,900 (21,469)
OPEB liability restated as of October 1, 2017 - group life insurance	-	(43,932)	(58,068)	(102,000)
Net Position as of October 1, 2017, as restated	\$	22,052,382 \$	14,394,891 \$	36,447,273



Schedule of Changes in Net Pension Liability (Asset) and Related Ratios For the Years Ended June 30, 2015 through June 30, 2018

		2017	2016	2015	2014
Total pension liability					
Service cost	\$	104,118 \$	103,433 \$	103,615 \$	115,718
Interest		284,667	264,821	235,966	217,736
Differences between expected and actual experience		36,682	6,359	162,821	-
Changes in assumptions		(131,732)	-	-	-
Benefit payments, including refunds of employee contributions		(80,026)	(102,185)	(78,182)	(67,871)
Net change in total pension liability	\$	213,709 \$	272,428 \$	424,220 \$	265,583
Total pension liability - beginning		4,106,683	3,834,255	3,410,035	3,144,452
Total pension liability - ending (a)	\$	4,320,392 \$	4,106,683 \$	3,834,255 \$	3,410,035
Plan fiduciary net position					
Contributions - employer	\$	81,262 \$	78,575 \$	75,055 \$	80,168
Contributions - employee		57,533	54,998	52,633	51,522
Net investment income		446,980	63,327	154,360	450,281
Benefit payments, including refunds of employee contributions		(80,026)	(102,185)	(78,182)	(67,871)
Administrative expense		(2,477)	(2,155)	(2,033)	(2,348)
Other	_	(402)	(26)	(33)	24
Net change in plan fiduciary net position	\$	502,870 \$	92,534 \$	201,800 \$	511,776
Plan fiduciary net position - beginning	_	3,607,568	3,515,034	3,313,234	2,801,458
Plan fiduciary net position - ending (b)	\$	4,110,438 \$	3,607,568 \$	3,515,034 \$	3,313,234
Authority's net pension liability - ending (a) - (b)	\$	209,954 \$	499,115 \$	319,221 \$	96,801
Plan fiduciary net position as a percentage of the total					
pension liability		95.14%	87.85%	91.67%	97.16%
Covered payroll	\$	1,168,444 \$	1,106,867 \$	1,052,653 \$	1,030,441
Authority's net pension liability as a percentage of covered payroll		17.97%	45.09%	30.33%	9.39%

This schedule is intended to report information for 10 years. Information prior to the 2014 valuation is not available. Additional years will be included when available.

Schedule of Employer Contributions - Pension For the Years Ended June 30, 2009 through June 30, 2018

Fiscal Year	 Contractually Required Contribution (1)	 Contributions in Relation to Contractually Required Contribution (2)	 Contribution Deficiency (Excess) (3)	 Employer's Covered Payroll (4)	Contributions as a % of Covered Payroll (5)
2018	\$ 78,019	\$ 78,019	\$ -	\$ 1,142,430	6.83%
2017	82,375	82,375	-	1,168,444	7.05%
2016	78,920	78,920	-	1,106,867	7.13%
2015	75,054	75,054	-	1,052,653	7.13%
2014	80,168	80,168	-	1,030,441	7.78%
2013	80,556	80,556	-	1,035,420	7.78%
2012	52,825	52,825	-	963,954	5.48%
2011	50,841	50,841	-	927,764	5.48%
2010	53,009	53,009	-	939,870	5.64%
2009	52,751	52,751	-	935,298	5.64%

Notes to Required Supplementary Information - Pension For the Year Ended June 30, 2018

Changes of benefit terms - There have been no actuarially material changes to the System benefit provisions since the prior actuarial valuation. The 2014 valuation includes Hybrid Retirement Plan members for the first time. The hybrid plan applies to most new employees hired on or after January 1, 2014 and not covered by enhanced hazardous duty benefits. Because this is a fairly new benefit and the number of participants was relatively small, the impact on the liabilities as of the measurement date of June 30, 2017 is not material.

Changes of assumptions - The following changes in actuarial assumptions were made effective June 30, 2016 based on the most recent experience study of the System for the four-year period ending June 30, 2016:

Largest 10 - Non-Hazardous Duty:

Mortality Rates (pre-retirement, post-	Updated to a more current mortality table - RP-2014 projected to 2020
retirement healthy, and disabled)	
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9
	years of service
Disability Rates	Lowered rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 20%

Largest 10 - Hazardous Duty:

3	
Mortality Rates (pre-retirement, post-	Updated to a more current mortality table - RP-2014 projected to 2020
retirement healthy, and disabled)	
Retirement Rates	Lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience
Disability Rates	Increased rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 60% to 70%

All Others (Non 10 Largest) - Non-Hazardous Duty:

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Mortality Rates (pre-retirement, post-	Updated to a more current mortality table - RP-2014 projected to 2020	
retirement healthy, and disabled)		
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75	
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service	
Disability Rates	Lowered rates	
Salary Scale	No change	
Line of Duty Disability	Increased rate from 14% to 15%	

All Others (Non 10 Largest) - Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Increased age 50 rates, and lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better fit experience
Salary Scale	No change
Line of Duty Disability	Decreased rate from 60% to 45%

Schedule of Changes in the Authority's Net OPEB Liability and Related Ratios Health Insurance Credit Program (HIC)
For the Year Ended June 30, 2018

	2017
Total HIC OPEB Liability	
Service cost	\$ 906
Interest	4,117
Changes in assumptions	(3,160)
Benefit payments	(65)
Net change in total HIC OPEB liability	\$ 1,798
Total HIC OPEB Liability - beginning	58,840
Total HIC OPEB Liability - ending (a)	\$ 60,638
Plan fiduciary net position	
Contributions - employer	\$ 2,687
Net investment income	4,201
Benefit payments	(65)
Administrative expense	(72)
Other	202
Net change in plan fiduciary net position	\$ 6,953
Plan fiduciary net position - beginning	34,684
Plan fiduciary net position - ending (b)	\$ 41,637
Authority's net HIC OPEB liability - ending (a) - (b)	\$ 19,001
Plan fiduciary net position as a percentage of the total HIC OPEB liability	68.66%
Covered payroll	\$ 1,168,444
Authority's net HIC OPEB liability as a percentage of covered payroll	1.63%

Schedule is intended to show information for 10 years. Information prior to the 2018 valuation is not available. However, additional years will be included as they become available.

Schedule of Employer Contributions
Health Insurance Credit Program (HIC)
For the Years Ended June 30, 2009 through June 30, 2018

Date	Contractually Required Contribution (1)	 Contributions in Relation to Contractually Required Contribution (2)	n 	Contribution Deficiency (Excess) (3)	Employer's Covered Payroll (4)	Contributions as a % of Covered Payroll (5)
2018	\$ 2,628	\$ 2,628	\$	-	\$ 1,142,430	0.23%
2017	2,687	2,687		-	1,168,444	0.23%
2016	2,656	2,656		-	1,106,867	0.24%
2015	2,526	2,526		-	1,052,653	0.24%
2014	3,297	3,297		-	1,030,441	0.32%
2013	3,313	3,313		-	1,035,420	0.32%
2012	2,988	2,988		-	963,954	0.31%
2011	2,876	2,876		-	927,764	0.31%
2010	2,820	2,820		-	939,870	0.30%
2009	2,806	2,806		-	935,298	0.30%

GREENSVILLE COUNTY WATER AND SEWER AUTHORITY

(A Component Unit of the County of Greensville, Virginia)

Notes to Required Supplementary Information Health Insurance Credit Program (HIC) For the Year Ended June 30, 2018

Changes of benefit terms - There have been no actuarially material changes to the System benefit provisions since the prior actuarial valuation.

Changes of assumptions - The following changes in actuarial assumptions were made effective June 30, 2016 based on the most recent experience study of the System for the four-year period ending June 30, 2016:

Largest Ten Locality Employers - General Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 20%

Non-Largest Ten Locality Employers - General Employees

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Mortality Rates (pre-retirement, post-	Updated to a more current mortality table - RP-2014
retirement healthy, and disabled)	projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final
	retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each
	age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 15%

Schedule of Authority's Share of Net OPEB Liability Group Life Insurance Program For the Year Ended June 30, 2018

		Employer's		Employer's Proportionate Share of the Net GLI OPEB	
	Employer's	Proportionate		Liability	Plan Fiduciary
	Proportion of the	Share of the	Employer's	as a Percentage of	Net Position as a
	Net GLI OPEB	Net GLI OPEB	Covered	Covered Payroll	Percentage of Total
Date	Liability	Liability	Payroll	(3)/(4)	GLI OPEB Liability
(1)	(2)	(3)	(4)	(5)	(6)
2017	0.00633% \$	95,000	\$ 1,168,444	8.13%	48.86%

Schedule is intended to show information for 10 years. Information prior to the 2017 valuation is not available. However, additional years will be included as they become available.

Schedule of Employer Contributions Group Life Insurance Program For the Years Ended June 30, 2009 through June 30, 2018

Date	 Contractually Required Contribution (1)	 Contributions in Relation to Contractually Required Contribution (2)	 Contribution Deficiency (Excess) (3)	 Employer's Covered Payroll (4)	Contributions as a % of Covered Payroll (5)
2018	\$ 5,941	\$ 5,941	\$ -	\$ 1,142,430	0.52%
2017	6,076	6,076	-	1,168,444	0.52%
2016	5,313	5,313	-	1,106,867	0.48%
2015	5,053	5,053	-	1,052,653	0.48%
2014	4,946	4,946	-	1,030,441	0.48%
2013	4,970	4,970	-	1,035,420	0.48%
2012	2,699	2,699	-	963,954	0.28%
2011	2,598	2,598	-	927,764	0.28%
2010	1,896	1,896	-	702,249	0.27%
2009	2,525	2,525	-	935,298	0.27%

Notes to Required Supplementary Information Group Life Insurance Program For the Year Ended June 30, 2018

Changes of benefit terms - There have been no actuarially material changes to the System benefit provisions since the prior actuarial valuation.

Changes of assumptions - The following changes in actuarial assumptions were made effective June 30, 2016 based on the most recent experience study of the System for the four-year period ending June 30, 2016:

General State Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 25%

Teachers

Mortality Rates (pre-retirement, post-	Updated to a more current mortality table - RP-2014 projected
retirement healthy, and disabled)	to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change

SPORS Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020 and reduced margin for future improvement in
	accordance with experience
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Increased rate from 60% to 85%

VaLORS Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020 and reduced margin for future improvement in accordance with experience
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Adjusted rates to better fit experience
Salary Scale	No change
Line of Duty Disability	Decreased rate from 50% to 35%

Notes to Required Supplementary Information Group Life Insurance Program For the Year Ended June 30, 2018 (Continued)

JRS Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Decreased rates at first retirement eligibility
Withdrawal Rates	No change
Disability Rates	Removed disability rates
Salary Scale	No change

Largest Ten Locality Employers - General Employees

Updated to a more current mortality table - RP-2014 projected
to 2020
Lowered retirement rates at older ages and extended final
retirement age from 70 to 75
Adjusted termination rates to better fit experience at each age
and service year
Lowered disability rates
No change
Increased rate from 14% to 20%

Non-Largest Ten Locality Employers - General Employees

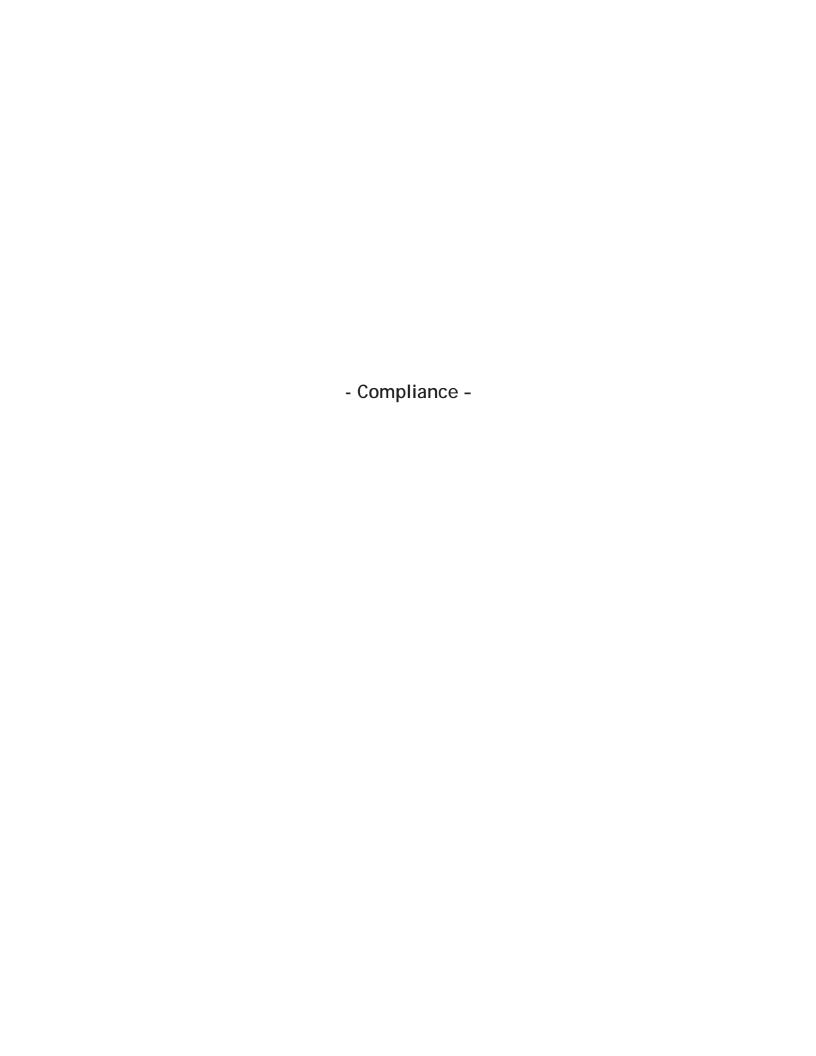
Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14% to 15%

Largest Ten Locality Employers - Hazardous Duty Employees

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Mortality Rates (pre-retirement, post-	Updated to a more current mortality table - RP-2014 projected
retirement healthy, and disabled)	to 2020
Retirement Rates	Lowered retirement rates at older ages
Withdrawal Rates	Adjusted termination rates to better fit experience at each age
	and service year
Disability Rates	Increased disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 60% to 70%

Non-Largest Ten Locality Employers - Hazardous Duty Employees

Mortality Rates (pre-retirement, post-	Updated to a more current mortality table - RP-2014 projected
retirement healthy, and disabled)	to 2020
Retirement Rates	Increased age 50 rates and lowered rates at older ages
Withdrawal Rates	Adjusted termination rates to better fit experience at each age
	and service year
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change
Line of Duty Disability	Decreased rate from 60% to 45%



ROBINSON, FARMER, COX ASSOCIATES

CERTIFIED PUBLIC ACCOUNTANTS

A PROFESSIONAL LIMITED LIABILITY COMPANY

Independent Auditors' Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

To the Board of Directors Greensville County Water and Sewer Authority Emporia, Virginia

We have audited, in accordance with the 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, the financial statements of the business-type activities of Greensville County Water and Sewer Authority as of and for the year ended September 30, 2018, and the related notes to the financial statements, which collectively comprise the Greensville County Water and Sewer Authority's basic financial statements and have issued our report thereon dated March 11, 2019.

Internal Control over Financial Reporting

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

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

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

Compliance and Other Matters

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

Purpose of this Report

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

Mobinson, farmer, Cox fasociates Charlottesville, Virginia

March 11, 2019

ROBINSON, FARMER, COX ASSOCIATES

A PROFESSIONAL LIMITED LIABILITY COMPANY

CERTIFIED PUBLIC ACCOUNTANTS

Independent Auditors' Report on Compliance for Each Major Program and on Internal Control over Compliance Required by the Uniform Guidance

To the Board of Directors Greensville County Water and Sewer Authority Emporia, Virginia

Report on Compliance for Each Major Federal Program

We have audited the Greensville County Water and Sewer Authority's compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on each of the Greensville County Water and Sewer Authority's major federal programs for the year ended September 30, 2018. Greensville County Water and Sewer Authority's major federal programs are identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

Management is responsible for compliance with federal statutes, regulations, and the terms and conditions of its federal awards applicable to its federal programs.

Auditors' Responsibility

Our responsibility is to express an opinion on compliance for each of the Greensville County Water and Sewer Authority's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance 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 audit requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Greensville County Water and Sewer Authority's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program. However, our audit does not provide a legal determination of the Greensville County Water and Sewer Authority's compliance.

Opinion on Each Major Federal Program

In our opinion, the Greensville County Water and Sewer Authority complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended September 30, 2018.

Report on Internal Control over Compliance

Management of the Greensville County Water and Sewer Authority is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Greensville County Water and Sewer Authority's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Greensville County Water and Sewer Authority's internal control over compliance.

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

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

Mobinson, Farmer, Cox Associates Charlottesville, Virginia

March 11, 2019

Schedule of Expenditures of Federal Awards Year Ended September 30, 2018

Federal Grantor/Pass-Through Grantor/Program or Cluster Title	Federal CFDA Number	Pass-Through Entity Identifying Number	Federal Expenditures
Department of Agriculture Direct payments:			
Water and Waste Disposal Systems for Rural Communities	10.760	N/A	\$ 11,980,000
Economic Development Administration Direct payments: Department of Commerce Investments for Public Works and Economic			
Development Facilities	11.300	N/A	714,040
Total expenditures of federal awards			\$12,694,040_

GREENSVILLE COUNTY WATER AND SEWER AUTHORITY

(A Component Unit of the County of Greensville, Virginia)

Notes to Schedule of Expenditures of Federal Awards Year Ended September 30, 2018

Note 1- Basis of Presentation

The accompanying schedule of expenditures of federal awards (the Schedule) includes the federal award activity of Greensville County Water & Sewer Authority under programs of the federal government for the year ended September 30, 2018. The information in this Schedule is presented in accordance with reporting requirements of Title 2 U.S. Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance). Because the Schedule presents only a selected portion of operations of Greensville County Water & Sewer Authority, it is not intended to and does not present the financial position, changes in net position, or cash flows of Greensville County Water & Sewer Authority.

Note 2 - Basis of Accounting

- (1) Expenditures reported on the Schedule are reported on the accrual basis of accounting. Such expenditures are recognized following the cost principles contained in the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement.
- (2) Pass-through entity identifying numbers were not applicable for presentation.

Note 3 - De Minimis Cost Rate

The Authority did not elect to use the ten percent de minimis indirect cost rate allowed under Uniform Guidance.

Note 4 - Subrecipients

No awards were passed through to subrecipients.

Note 5 - Relationship to Financial Statements

Federal expenditures, revenues and capital contributions are reported in the Authority's financial statements as follows:

Federal capital grants Loan proceeds	\$ 2,894,040 9,800,000
Total federal expenditures per the Schedule of Expenditures of Federal Awards	\$ 12,694,040

GREENSVILLE COUNTY WATER AND SEWER AUTHORITY

(A Component Unit of the County of Greensville, Virginia)

Schedule of Findings and Questioned Costs Year Ended September 30, 2018

Section I - Summary of Auditors' Results

Financial Statements

Type of auditors' report issued:

Unmodified

Internal control over financial reporting:

Material weakness(es) identified?

Significant deficiency(ies) identified?

None reported

Noncompliance material to financial statements noted?

No

Federal Awards

Internal control over major programs:

Material weakness(es) identified?

Significant deficiency(ies) identified?

None Reported

Type for major programs: Unmodified

Any audit findings disclosed that are required to be reported

in accordance with 2 CFR section 200.516(a)?

Identification of major programs:

CFDA #	Name of Federal Program
10.760	Water and Waste Disposal Systems
	for Rural Communities

Dollar threshold used to distinguish between Type A and Type B programs \$750,000

Auditee qualified as low-risk auditee?

Section II - Financial Statement Findings

There are no financial statement findings to report.

Section III - Federal Award Findings and Questioned Costs

There are no federal award findings and questioned costs to report.

Section IV - Prior Year Audit Findings

There were no prior year audit findings.