RIVANNA

WATER & SEWER AUTHORITY

COMPREHENSIVE ANNUAL FINANCIAL REPORT
YEARS ENDED JUNE 30, 2019 AND 2018

SERVING

CHARLOTTESVILLE & ALBEMARLE COUNTY, VIRGINIA

Front Cover Photograph

Observatory Water Treatment Plant

RIVANNA WATER & SEWER AUTHORITY
CHARLOTTESVILLE, VIRGINIA

COMPREHENSIVE ANNUAL FINANCIAL REPORT

YEARS ENDED JUNE 30, 2019 AND 2018

Prepared By:

Department of Finance and Administration

RIVANNA WATER & SEWER AUTHORITY

Comprehensive Annual Financial Report
Fiscal Years Ended June 30, 2019 and 2018

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RIVANNA WATER & SEWER AUTHORITY

Comprehensive Annual Financial Report
Fiscal Years Ended June 30, 2019 and 2018

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BOARD MEMBERS

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Lauren Hildebrand

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William I. Mawyer, Jr., P.E.

DIRECTOR OF FINANCE/ADMINISTRATION

Lonzy E. Wood, III

GENERAL COUNSEL

McGuire Woods, LLP
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October 25, 2019

To the Board of Directors
Rivanna Water and Sewer Authority
Charlottesville, Virginia

The Comprehensive Annual Financial Report (CAFR) of the Rivanna Water and Sewer Authority (the Authority) for the fiscal year ended June 30, 2019 is submitted herewith. This report has been prepared in conformity with the reporting and accounting standards promulgated by the Government Accounting Standards Board and the Financial Accounting Standards Board and with the accounting and reporting standards for enterprise funds set out by the Government Finance Officers Association of the United States and Canada, with such modifications as apply to our status as an independently chartered corporation.

Based upon a comprehensive framework of internal control that it has established for this purpose, management assumes responsibility for the completeness and reliability of the information contained in this report. The objective of internal control is to provide reasonable, rather than absolute, assurance that the financial statements are free of material misstatements, because the cost of each internal control should not outweigh the potential benefit.

Management's discussion and analysis (MD&A) immediately follows the independent auditors' report and provides a narrative introduction, overview, and analysis of the basic financial statements. MD&A complements this letter of transmittal and should be read in conjunction with it.

ORGANIZATION AND SERVICES PROVIDED

The Rivanna Water and Sewer Authority is a regional non-profit public corporation and political subdivision of the Commonwealth of Virginia chartered in 1972 under the Virginia Water and Waste Authorities Act (1950, as amended), that supplies drinking water to and treats the wastewater of Charlottesville (City) and certain areas of Albemarle County (County). The Authority is a wholesale agency and bills monthly both Charlottesville and the Albemarle County Service Authority, which handle retail distribution of water and collection of sewage in their respective service areas.

The Authority is charged to acquire, finance, construct, operate and maintain facilities for the impoundment, production, storage, treatment and transmission of potable water and for the interception, treatment and discharge of wastewater. The Authority operates under the terms of a Service Agreement signed June 12, 1973 by the officers of the Charlottesville City Council, the Albemarle County Board of Supervisors, the Albemarle County Service Authority and the Rivanna Water and Sewer Authority. The Authority has determined that it is not part of the reporting entity of either the City of Charlottesville or the County of Albemarle and will not be included in the financial report of either (see Note 1 to the Financial Statements).

ORGANIZATION AND SERVICES PROVIDED: (CONTINUED)

The Authority is governed by a seven-member Board of Directors (Board). The Board appoints an Executive Director, who manages Authority operations under its direction. The Authority is now organized in administration, laboratory, engineering, maintenance, water, and wastewater departments. The Authority operates and maintains six water treatment plants and three wastewater treatment plants and the associated water storage facilities, pump stations, transmission mains and interceptor sewers. Retail distribution of water and collection of wastewater is performed by the Authority's two customers: the City of Charlottesville's Public Utilities Division and the Albemarle County Service Authority.

JOINT ADMINISTRATION

By mutual agreement of the respective Boards of Directors, the Authority currently shares administrative staff and office space with the Rivanna Solid Waste Authority, which is billed monthly for its portion of the costs. Administrative procedures were implemented to ensure proper segregation of funds, purchasing activity, personnel, and similar matters. The Authorities also agreed to administer joint Safety Regulations and a joint Safety Program.

ECONOMIC CONDITION AND PROSPECTS

The University of Virginia provides a significant buffer against large swings in the economy of our service area. In addition, the Charlottesville urban area is a major retail trade center for the surrounding region. Housing growth remains steady. Although most growth occurs in County developments, in-filling in Charlottesville continues. Both Charlottesville and Albemarle County enjoy low unemployment rates, steady economic growth and high bond ratings.

A ten-year compilation analysis report dated September 2018 by the Charlottesville Regional Chamber of Commerce examining employment in the Greater Charlottesville Region concluded that combined private and public-sector employment grew by 10%, or 11,551 jobs, from 2007 to 2017, compared to a 4.3% increase in Virginia outside of the region. In 2017, 76% of jobs within the Region were located in the City of Charlottesville and Albemarle County, and the other 24% are reported in the Counties of Fluvanna, Greene, Louisa, Nelson, and Orange. The unemployment rate for the Charlottesville Metropolitan Service Area for 2018 was 2.7%.

The Charlottesville-Albemarle area attracts many visitors to its historic sites, and the wine industry has been popular and has served to help benefit the tourism sector of the regional economy. The travel and tourism industry make a vital contribution to the local economy.

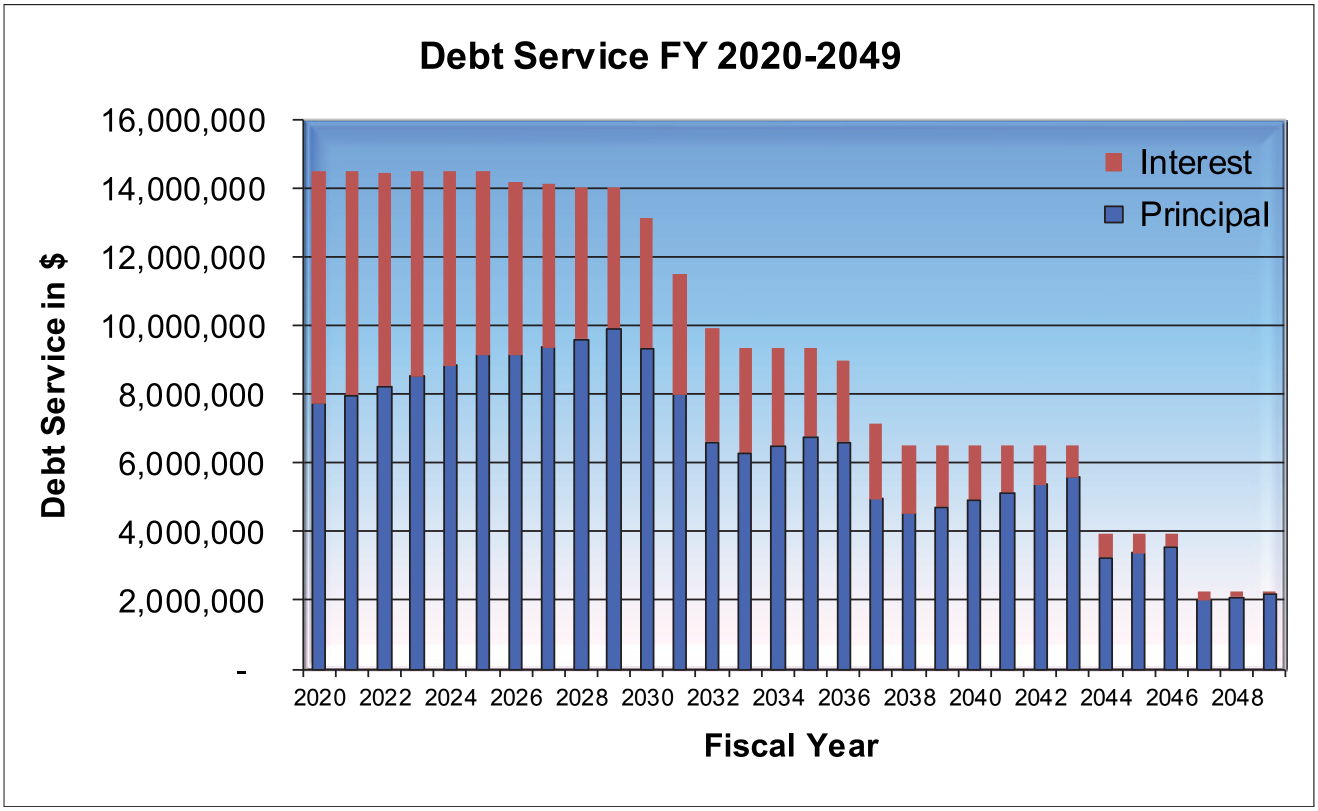
The University of Virginia’s capital projects will continue to be an impetus of growth for water and sewer services. Our current Capital Improvement Program, as discussed below, reflects the Authority's response to the current and projected service demands on our facilities and to the need to respond to regulatory requirements.

LONG-TERM FINANCIAL PLANNING

Despite the significant infrastructure needs identified in the CIP, the Authority is positioned to provide for these needs by using more cash up front for projects and having a debt and rate structure (and a system for increasing debt charges to our customers) that will accommodate more debt in the future. The Authority has slowly but consistently been implementing rate increases to pay for such infrastructure needs in 5-year increments. This practice encourages the creation of reserves for capital spending until a project is started and partially financed with debt proceeds.

LONG-TERM FINANCIAL PLANNING: (CONTINUED)

As shown in the following graph, which represents debt service payments on existing debt, the Authority has a consistent to a declining debt structure for the next 12 years with large declines thereafter. Additionally, the rates are currently programmed to generate $15.5 million annually in debt service revenues; however, the water and wastewater capital needs will require additional rate increases in the future to maintain solid cash positions and fund future debt service needs.



MAJOR INITIATIVES

There are several capital improvements slated for the next 5 to 10 years that will be significant in terms of planning and attention to details. Water plant construction is a critical but necessary initiative for the two main plants on the Urban system. The plants must stay on-line during the construction process which takes great efforts to plan out the improvements and coordinate with operating staff to meet our production and construction goals. Major planned upgrades to the South Rivanna Water Treatment Plant (WTP) and Observatory WTP are expected to cost a total of $40.5 million. The Crozet system will also go through several upgrades and increase capacity. The Beaver Creek Dam will have to be modified to meet current regulatory standards for dam safety, specifically to the spillway. These projects have an estimated budget of $30.6 million. See the MD&A for more information.

One non-capital project related major initiative continued during the year which was a strategic plan implementation. Staff implemented the first year of the strategic plan adopted more than a year ago by identifying specific tactics to address the strategies within the plan. Major initiatives accomplished were implementation of a compensation plan (which was a study and board approval), consolidation and updating of the Personnel Management Plan, increasing and cataloguing green initiatives, began development for asset management systems, completed an IT Master Plan study, completed an employee portal on our website, and enhanced the usability of the overall Authority website. The Board approved the Strategic Plan in November 2017 and it will be continuously worked on for the next several years because this effort is a continuous program of assessing our plan/mission and measuring our progress towards achieving identified goals.

BUDGETARY CONTROLS AND FINANCIAL POLICIES

The Authority is required by the Service Agreement to adopt an annual budget for setting wholesale rates as well as for fiscal guidance to staff. Separate fiscal year budgets are currently prepared for six rate centers to include direct costs and allocations of administrative, engineering, maintenance, lab and debt service expenses. Until the Service Agreement was amended in August 2015, projections of flows and expenses were used to calculate rates per thousand gallons for the two Urban rate centers and flat monthly charges for the other rate centers to cover both operating and debt service costs. Actual flows vary each year from the flows estimated when the rates were set, due to unpredictable weather conditions. Effective with the October 2015 billing, RWSA began charging a fixed monthly rate for the Urban rate center debt service costs while continuing to charge operations rates per thousand gallons. This was a very positive change, because RWSA is required to make fixed debt service payments each fiscal year, and it is important to have a fixed revenue source to pay those expenses.

A proposed budget for each fiscal year is prepared by the Authority Directors and the Executive Director and submitted to the Board of Directors, usually in February, with a public hearing held on the proposed rates in April or May. All budget items lapse at the end of the fiscal year except capital commitments. It should be noted that the budget is prepared for internal use and does not reflect the accrual basis of accounting. An example of this is that principal payments on debt are shown as an expense.

Budgetary compliance is monitored and reported to the Board by the Director of Finance & Administration and the Executive Director. Projections of both revenues and expenses are understood to reflect anticipated service levels and to incorporate a variety of economic, climatic, and demographic forecasts. Variances from budget line items are examined at least monthly to assure a reasonable relation between actual costs and actual service levels, emergencies, or economic conditions. The Authority Board of Directors adopted in August 2011 certain financial policies that help guide the capital and operating budgeting process by defining reserves, reserve goals, uses of discretionary funds, and setting financial targets on debt and capital funding.

The Authority's accounting records are maintained on the accrual basis of accounting. Under this method, revenues are recognized when earned and expenses are recorded when incurred, without regard to receipt or payment of cash. Current controls provide reasonable assurance that the Authority's assets are properly recorded and protected and that the financial data may be used with confidence in the preparation of historical reports and projections. Accounting control is maintained by segregation of duties and data security systems in all areas of record keeping, disbursements, and purchasing authority. These controls are reviewed regularly by staff and are evaluated as part of the annual financial audit (see Annual Audit section below).

The Authority implemented the financial reporting provisions of Governmental Accounting Standards Board (GASB) Statement No. 89, Accounting for Interest Cost Incurred Before the End of a Construction Period, at the beginning of fiscal year ended June 30, 2019. This Statement requires that interest cost incurred before the end of a construction period be recognized as an expense when incurred instead of being included in the historical cost of constructed capital assets.

ANNUAL AUDIT

The Code of Virginia, the June 12, 1973 Service Agreement, the Trust Agreement and its Supplements require an annual audit of the books and records of the Authority. The opinion of our independent certified public accountants is included in the Financial Section.

AWARDS

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to Rivanna Water and Sewer Authority for its comprehensive annual financial report for the fiscal year ended June 30, 2018. To be awarded a Certificate of Achievement, a governmental unit must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

ACKNOWLEDGEMENTS

The help of the Authority's staff and of our certified public accountants is gratefully acknowledged. Such help and the Board of Directors' support and commitment to financial reporting excellence are essential to the preparation of this report.

Respectfully submitted,

Lonzy E. Wood, III, CPA
Director of Finance and Administration

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Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Rivanna Water & Sewer Authority

Virginia

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

June 30, 2018

Christopher P. Morrill

Executive Director/CEO

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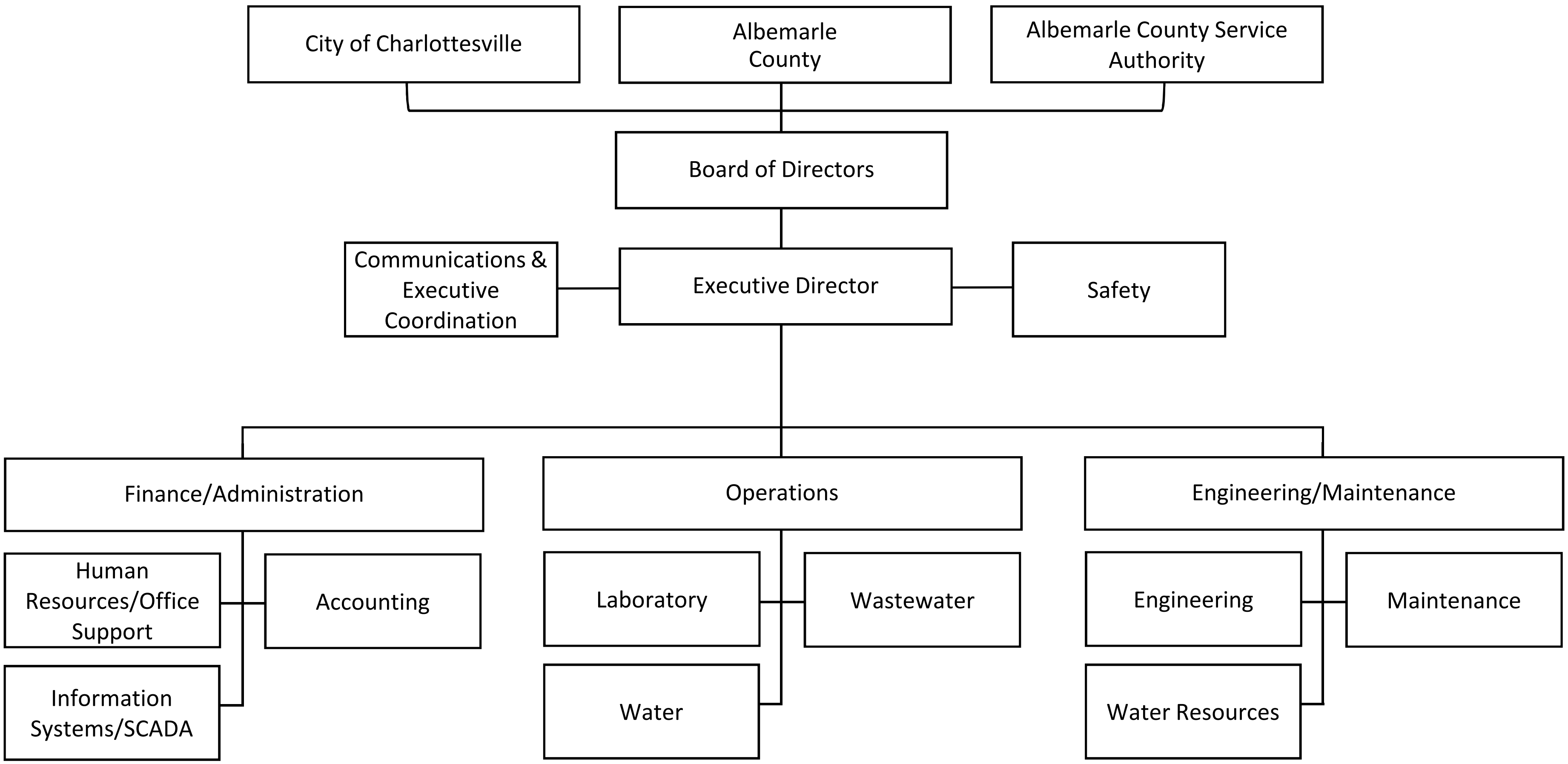
Rivanna Water & Sewer Authority

Organizational Chart



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Robinson, Farmer, Cox Associates, PLLC
Certified Public Accountants
CPAs | Consultants

Independent Auditors' Report

To the Board of Directors
Rivanna Water & Sewer Authority
Charlottesville, Virginia

Report on the Financial Statements

We have audited the accompanying financial statements of the business-type activities of Rivanna Water & Sewer Authority, as of and for the years ended June 30, 2019 and 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 financial position of the business-type activities of Rivanna Water & Sewer Authority, as of June 30, 2019 and 2018, and the 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 18 to the financial statements, in 2019, the Authority adopted new accounting guidance, GASB Statement No. 88 *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements and* early implemented GASB No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period*. 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 management's discussion and analysis and schedules related to pension and OPEB funding on pages 15-24 and 84-90 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.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise Rivanna Water & Sewer Authority 's basic financial statements. The introductory and statistical sections are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The introductory and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated October 25, 2019, on our consideration of Rivanna Water & 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 Rivanna Water & 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 Rivanna Water & Sewer Authority 's internal control over financial reporting and compliance.

Robinson, Farmer, Cox Associates

Charlottesville, Virginia
October 25, 2019

To the Board of Directors
Rivanna Water & Sewer Authority
Charlottesville, Virginia

As management of the Rivanna Water & Sewer Authority (the Authority), we offer readers of our financial statements this narrative overview and analysis of the financial activities of the Authority for the fiscal year ended June 30, 2019. We encourage readers to consider the information presented here in conjunction with additional information that we have furnished in our letter of transmittal, which can be found on pages 3 through 8 of this report.

Overview of the Financial Statements:

This discussion and analysis is intended to serve as an introduction to the Authority's basic financial statements. Since the Authority is engaged only in business-type activities, its basic financial statements are comprised of only two components: 1) enterprise fund financial statements and 2) notes to the financial statements. This report also contains required supplementary information in addition to the basic financial statements themselves.

Enterprise fund financial statements. The enterprise fund financial statements are designed to provide readers with a broad overview of the Authority's finances, in a manner similar to a private-sector business.

The statement of net position presents information on the Authority's assets, deferred outflows of resources, liabilities, and deferred inflow of resources with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Authority is improving or deteriorating.

The statement of revenues, expenses, and changes in net position presents information showing how the Authority's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of the cash flows. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods (e.g. earned but unused vacation leave).

The basic enterprise fund financial statements can be found on pages 26 through 29 of this report.

Notes to the financial statements. The notes provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes to the financial statements can be found on pages 31 through 82 of this report.

Required supplementary information. This report also includes required supplementary information concerning the Authority's progress in funding its obligation to provide pension and other postemployment benefits to its employees. It is located immediately following the notes to financial statements.

Required supplementary information.

In FY 2018, the Authority adopted new accounting guidance, GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, and restated beginning balances pursuant to the requirements of GASB Statement No. 75. See Notes 12 and 17 for more information.

Financial Highlights:

- The Authority's total net position increased consistently the last two years by $5.2 million in FY 2019 and by $5.3 million in FY 2018.

- Construction in progress decreased by $45.7 million this year and buildings and operating equipment net of depreciation increased by $46.5 million, due to the completion and capitalization of several capital projects.

- Noncurrent liabilities increased by $31.2 million this year due to the issuance of a new $36.8 million revenue bond to fund capital projects less $7 million bond principal repayments.

- Operating revenues increased by $5.1 million due to increased rates and significant wastewater flow resulting from record rainfall.

- Interest expense increased $3.3 million this year, because interest was no longer capitalized as of July 1, 2018 due to early adoption of GASB 89.

Financial Analysis:

The Authority's assets and deferred outflows exceeded its liabilities and deferred inflows (net position) by $152.3 million at fiscal year end June 30, 2019. Of this amount, $34.6 million (unrestricted net position) may be used to meet the Authority's normal ongoing operating obligations to customers and creditors while $4.3 million of net position is restricted for the bondholders. Total net position increased 4% in each of the past two years, which is an indication that the Authority's overall financial position has improved. The net investment in capital assets decreased by $0.7 million this year primarily due to the issuance of a new bond. The largest portion of the Authority's net position (74%) reflects its investment in capital assets, net of depreciation and related debt outstanding that was used to acquire those assets. The Authority uses these capital assets to provide services to its customers; consequently, these assets are not available for future spending. Although the Authority's investment in capital assets is reported net of related debt, the resources needed to repay this debt are derived from the revenue generating capability of these capital assets and not from the capital assets themselves.

	Net Position		
	2019	2018	2017
Current and other assets	$ 82,727,243	$ 47,155,939	$ 60,323,302
Capital assets	278,086,565	275,272,861	263,852,256
Total assets	$ 360,813,808	$ 322,428,800	$ 324,175,558
Deferred outflows of resources	$ 1,140,986	$ 1,315,467	$ 1,874,215
Noncurrent liabilities	$ 195,819,731	$ 164,657,769	$ 170,711,501
Current liabilities	13,398,622	11,447,549	13,574,665
Total liabilities	$ 209,218,353	$ 176,105,318	$ 184,286,166
Deferred inflows of resources	$ 468,212	$ 565,983	$ -
Net position:			
Net investment in capital assets	$ 113,396,071	$ 114,137,186	$ 105,412,275
Restricted for bond covenants	4,278,445	3,794,293	3,729,350
Unrestricted	34,593,713	29,141,487	32,621,982
Total net position	$ 152,268,229	$ 147,072,966	$ 141,763,607

Financial Analysis: (Continued)

Operating revenues increased by $5.15 million for FY 2019 compared to a $694,000 increase last year. Metered water sales increased 8% over last year's charges, or $1.2 million, which was on target with budget projections for FY 2019 increases. For FY 2018, there was a 2% increase in revenues over the previous year which was slightly less than budget targets. Wastewater service charge revenues increased 27% over FY 2018 revenues. The Authority targeted a budgeted revenue increase of $1.1 million for the FY 2019 compared to the actual charges of $4 million in additional revenues. This was a significant increase due to much higher than normal precipitation for the year. FY 2018 wastewater revenues decreased 3% from the previous year yet was slightly under budgeted targets.

Total operating expenses increased by $3.6 million or 17%, for FY 2019 primarily due to several costly water and sewer line maintenance items related to storm damage, granular activated carbon purchases, increased utility costs, maintenance/repairs and depreciation expense increases. There was a $650,000 increase in operating expenses in FY 2018, largely due to higher utility costs and depreciation. Key elements of these changes are explained further in the Review of Operations section.

	Changes in Net Position		
	2019	**2018**	**2017**
Revenues:			
Operating revenues			
Metered water sales	$ 15,216,180	$ 14,034,080	$ 13,753,977
Wastewater service charges	18,821,857	14,858,101	14,444,159
Nonoperating revenues			
Investment earnings	1,599,486	525,039	296,433
Buck Mountain revenue	111,700	125,900	115,700
Administrative reimbursement	474,246	436,329	328,000
Other revenues	380,737	302,920	305,763
Total revenues	$ 36,604,206	$ 30,282,369	$ 29,244,032
Expenses:			
Operating expenses			
Personnel costs	$ 7,728,340	$ 7,385,978	$ 7,483,807
Professional services	994,207	738,823	885,072
Other services and charges	3,770,051	3,341,421	2,764,905
Operations and maintenance	5,799,962	4,169,065	4,214,246
Depreciation expense	6,704,908	5,773,757	5,411,996
Nonoperating expenses			
Interest expense	5,947,988	2,643,801	2,248,229
Debt issuance costs	463,487	-	126,766
Total expenses	$ 31,408,943	$ 24,052,845	$ 23,135,021
Change in net position	$ 5,195,263	$ 6,229,524	$ 6,109,011
Net position, beginning of year, as restated	147,072,966	140,843,442	135,654,596
Net position, end of year	$ 152,268,229	$ 147,072,966	$ 141,763,607

Capital Asset and Debt Administration:

Capital Assets - The Authority's investment in capital assets net of accumulated depreciation increased 1% in the current year and 4% in the prior year because of costs incurred on construction projects noted below less depreciation on all assets of $6.7 million and $5.8 million respectively for FY 2019 and FY 2018. Construction costs incurred were $8.9 million for FY 2019 and $17.6 million for FY 2018. More detailed information on the Authority's capital assets is presented in Notes 4 and 5 of the notes to the financial statements and is addressed further Review of Operations section below.

The various categories of capital assets net of depreciation at the end of the past three fiscal years are as follows:

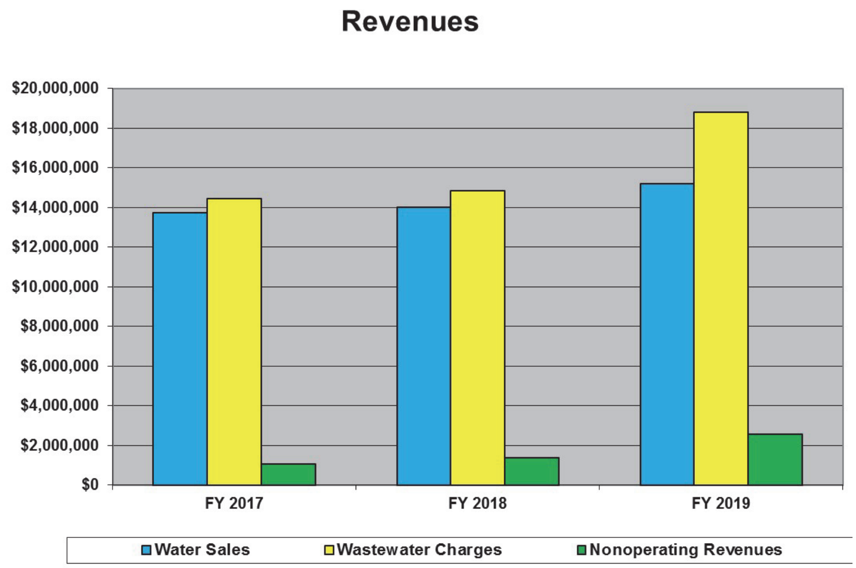
	2019	2018	2017
Land and improvements	$ 12,310,763	$ 10,604,850	$ 10,604,850
Buildings and operating equipment	256,781,051	210,317,886	180,753,567
Trucks and autos	519,291	200,137	148,252
Office equipment	11,665	1,001	3,003
Construction in progress	8,463,765	54,148,987	72,342,584
Total capital assets, net	$ 278,086,535	$ 275,272,861	$ 263,852,256

Major capital asset activity for the current fiscal year included:

Birdwood Golf Course Waterline	$ 2,714,728
Crozet WTP Expansion	728,340
Moores Creek AWRRF Odor Control-Phase 2	727,096
Route 29 Pumping Station Site Acquisition	663,745
South Rivanna WTP Improvements	572,140
Wholesale Water Master Metering-Urban	558,174
Observatory WTP Improvements	506,520
Sugar Hollow to Ragged Mtn Res Transfer Flow Meter	466,738
Crozet Interceptor PS Bypass Isolation Valves	415,760
Crozet WTP Finished Water Pump Station	203,814
Urban Water GAC/Water Treatment Plant Improvements	188,019
S. Rivanna Reservoir to Ragged Mtn. Reservoir Water Line R/W	177,272
Crozet Flow Equalization Tank	175,227
MCAWRRF Roof Replacements	166,796
Valve Repair-Replacement (Phase 2)	154,219
MCAWRRF Second Centrifuge	136,414
Asset Management	92,285
Interceptor Sewer & Manhole Repair	91,933
Beaver Creek Dam Alterations	87,417
Water Demand Projection and Safe Yield Study	79,106
Crozet Drinking Water Infrastructure Plan	52,041
Other	222,792
Retainage on Construction in Progress	(278,382)
Total Current Year Construction Costs and Adjustments	$ 8,902,194

Long-Term Debt - At the end of the current fiscal year, the Authority had $200 million in bonds outstanding, which is an increase of $32 million. This change is due to a new bond issued in November of 2018 at a premium for $39.8 million (par amount of $36.9 million). Normal principal payments on existing debt decreased total outstanding bonds by $7 million. More detailed information regarding the Authority's long-term debt is presented in Note 6 of the notes to the financial statements.

Review of Operations:

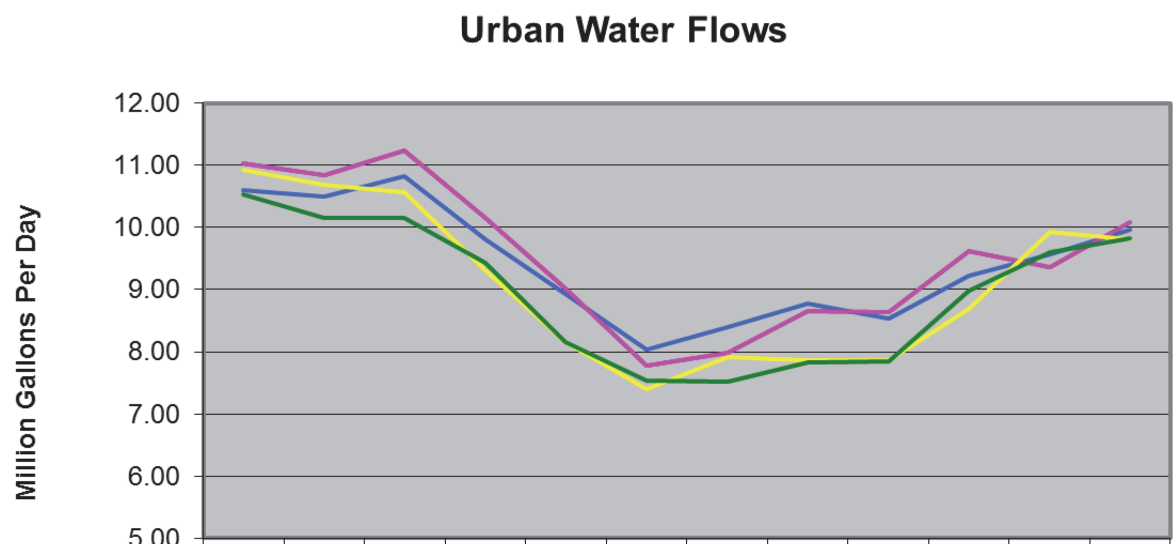


Total operating revenues increased 18% or $5.15 million in Fiscal Year 2019 compared to the previous year revenues. The budget for FY 2019 targeted a $2.3 million increase in operating revenue to fund projected operating expenses. There were several large rate increases approved by the Board of Directors last year. Crozet saw a 21.5% increase in the overall rates charged to anticipate the increased debt service on several large capital projects. Comparing budget to actual, this would mean the Authority generated roughly $2.85 million in excess revenues for FY 2019. The region experienced sudden significant rain during the last year and wastewater service charges were the main cause for the excess revenues. Urban wastewater operating rates and charges were expected to increase 10%, however, actual revenues charged were 27% higher than the previous year due to increased wastewater flows. This is in contrast to the year before when drought conditions later in the summer of 2017 prompted the Authority to call for voluntary and mandatory drought restriction on consumption in early October of 2017. This caused FY 2018 revenues to be less than budgeted targets. This is a prime example of the predictability issues related to wastewater and to some extent water charges.

The capital program has been the single largest driver to the Authority's revenue requirements, especially for wastewater rates for the past several years. Over the past three years, the Authority has invested over $58 million in capital infrastructure. Most of that investment was financed with long-term debt. Roughly $2.3 million of this spending was funded through cash reserves over that same time period. As shown in the chart below, FY 2019 Urban debt service rates increased across most rate centers as the capital program continues to grow. Roughly $55.3 million in new project costs were added to the 5-year capital plan over the last year. Operating rates were being affected by new systems coming on-line like the odor control and the GAC project which has significant yearly costs for the granular activated carbon used in the new treatment process at all 5 plants.

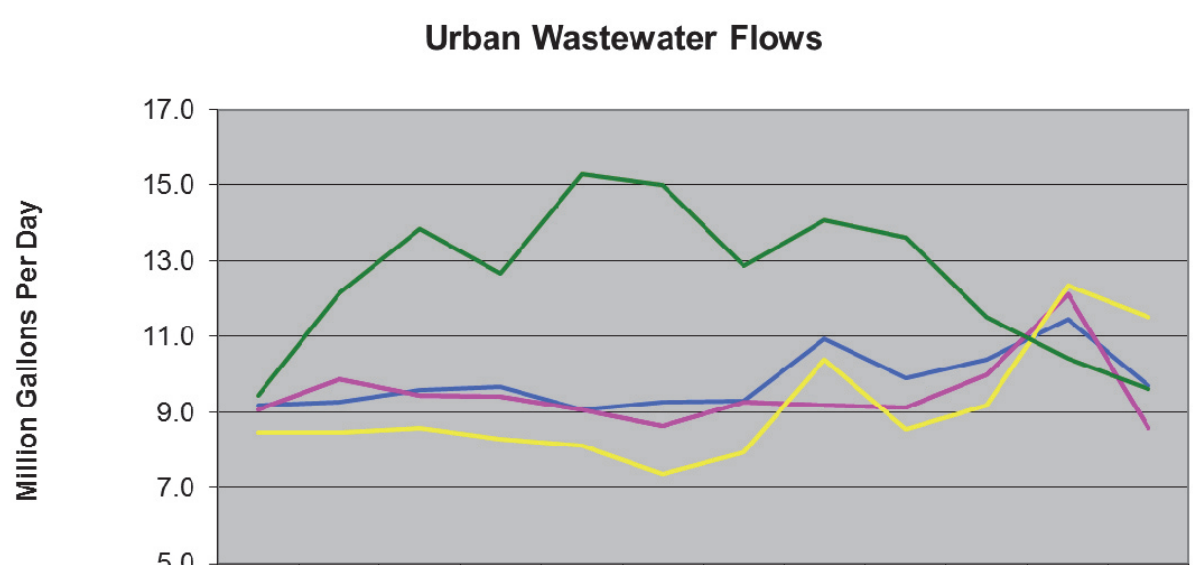
Urban Rates							
			Water			Wastewater	
Operations Rates - City & ACSA ($ per 1,000 gallons):							
	FY 2017	$	1.833	10.8%	$	1.835	-2.3%
	FY 2018	$	1.969	7.4%	$	1.951	6.3%
	FY 2019	$	2.070	5.1%	$	2.146	10.0%
Debt Service Rates ($ per month):							
City:	FY 2017	$	162,968	-23.2%	$	369,037	7.0%
	FY 2018	$	160,039	-1.8%	$	392,841	6.5%
	FY 2019	$	181,008	13.1%	$	408,260	3.9%
ACSA:	FY 2017	$	284,031	-10.9%	$	222,280	-6.0%
	FY 2018	$	285,439	0.5%	$	222,550	0.1%
	FY 2019	$	307,598	7.8%	$	246,308	10.7%

Flows in the two urban rate centers are the single largest determining factor in the revenues billed to our two customers. The graphs below show the flows for the year compared to the last two years and the five-year average.



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG.	10.60	10.50	10.83	9.82	8.94	8.04	8.39	8.78	8.54	9.23	9.57	9.97
FY 2017	11.02	10.84	11.23	10.16	9.02	7.78	7.98	8.66	8.64	9.62	9.36	10.07
FY 2018	10.92	10.69	10.57	9.31	8.16	7.40	7.91	7.87	7.86	8.70	9.92	9.80
FY 2019	10.53	10.16	10.15	9.43	8.16	7.53	7.51	7.82	7.84	8.98	9.60	9.82

Urban Water flows were consistently lower than the five-year trending average and are generally more predictable to estimate than wastewater flows. Urban Wastewater flows (below) were affected by the high precipitation received earlier in the fiscal year which was mentioned above about excess revenues being generated. This chart clearly demonstrates how erratic wastewater flow can be compared to the trend due to weather patterns that can significantly affect metered flows and revenues.



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG	9.17	9.26	9.59	9.66	9.07	9.27	9.29	10.93	9.89	10.39	11.47	9.68
FY 2017	9.07	9.87	9.45	9.41	9.06	8.62	9.26	9.19	9.12	9.97	12.12	8.59
FY 2018	8.45	8.45	8.59	8.29	8.10	7.38	7.94	10.38	8.54	9.18	12.36	11.50
FY 2019	9.45	12.14	13.83	12.68	15.28	15.00	12.86	14.09	13.62	11.52	10.42	9.62

Total operating expenses increased by $3.6 million for FY 2019. Non-operating costs for a bond issue of $463,000 and interest expense increased $3.3 million for a total of a $7.3 million increase in all expenses over FY 2018 levels. In the previous two years, nearly half of the interest payments were capitalized as part of the cost of capital projects during the construction period (i.e. considered cost of construction). For example, the Authority paid $5.6 million for interest on outstanding debt but, of that amount, $2.9 million was capitalized and not expensed in FY 2018. For FY 2019, new accounting guidance under GASB 89 does not allow for this capitalization effective for reporting periods beginning after December 15, 2019, with earlier application encouraged. The Authority implemented the standard as of July 1, 2018. Additionally, there were several large projects that were completed, and most interest would have been classified as expense for FY 2019 regardless of the accounting change. Essentially, the interest payments didn't increase as much as the interest expense would indicate.

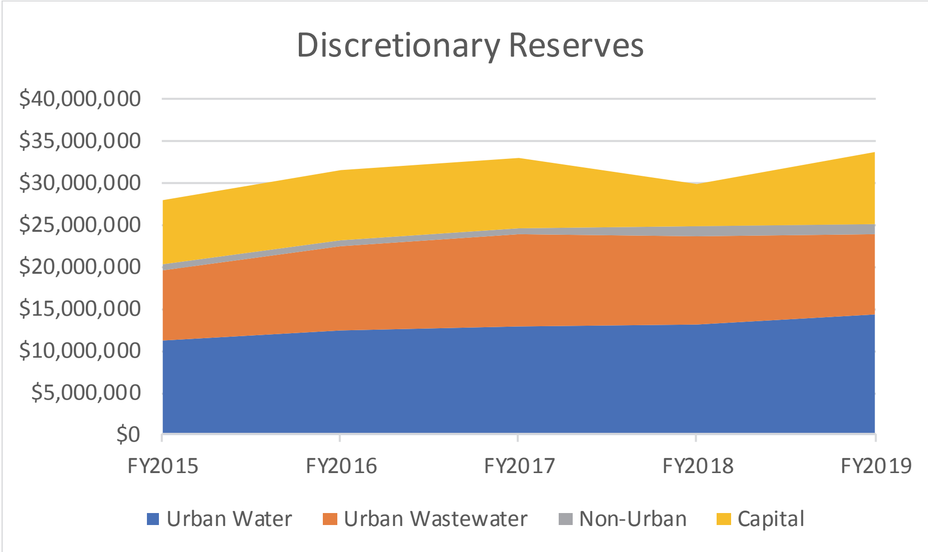
Direct operating costs in certain categories experienced increases in FY 2019. Utility costs increased $336,000 driven by the high flows in wastewater mentioned before. There were also several sewer and water line repairs this year that cost roughly $378,000 more in FY 2019 compared to the previous year. Granular activated carbon (GAC) is used in the new filtration system installed at each of the water plants in FY 2018 and need to be changed out 1 to 2 times per year at each plant. This cost roughly $765,000 for FY 2019. Three new full-time positions were added in FY 2019 costing $220,000 and the use of professional service consultants increased about $240,000 for various treatment support, master plan studies and bathometric surveys at several reservoirs. The remaining costs increases of $718,000 were related to maintenance, repair and operations.

Change in Expenses FY 2019 vs. FY 2018:

	FY 2019	FY 2018	Change	
Direct Operating*	$ 18,292,560	$ 15,635,287	$ 2,657,273	17%
Depreciation	6,704,908	5,805,362	899,546	15%
Interest	5,947,988	2,643,801	3,304,187	125%
Debt issuance costs	463,487	-	463,487	
	$ 31,408,943	$ 24,084,450	$ 7,324,493	30%

* - Personnel, Chemicals, Operations & Maintenance, Utilities

Cash balances have been stable for the past few years, maintaining a strong debt service coverage ratio the past several years. (See Table 8 in the Statistical Section.) Unrestricted cash and investments, which represents total discretionary reserves balances, for FY 2019 were at $39 million. This was roughly $6 million more than the previous year's balance because we issued a bond in November 2018 that reimbursed some cash funds on certain projects and the previously mentioned excess revenues generated this year. Rate stabilization reserves totaled $2 million at June 30, 2019, which is part of the unrestricted cash. For the past decade, the Authority slowly built cash reserves for rate stabilization, unforeseen maintenance issues and support for an aggressive capital replacement program through its rate setting policies. The Board of Directors supports the need for a strong cash position to mitigate unforeseen costs in an aging infrastructure and to better handle wide fluctuations in flow. The aggressive capital construction activities over the past decade will continue into the future and will further necessitate a strong liquidity position as the Authority has over $200 million in outstanding debt. Recognizing the increase in debt service obligations over the years, the executive management wisely continues to emphasize the need to maintain adequate reserves to provide financial flexibility and maintain an excellent bond rating of AA+ from Standards & Poor. Below is a chart showing discretionary reserves, which have remained steady for the past five years.



Over the last several years, financial policies have been adopted and revised as needed to formally support this philosophy. The Authority generally targets to have 60 days of working capital on hand for daily operations, which is roughly $5.6 million. The Authority has a financial policy goal of funding 10% of our total capital program costs with cash reserves. Over the last ten years, the Authority has used capital cash to fund roughly $25 million in projects. Capital spending over that same 10-year period was roughly $225 million, which means our actual cash reserve funding target is a little better than the policy targets.

Capital Improvements & Long-Term Trends -

The Authority generally updates the five-year projection of our Capital Improvement Plan (CIP) annually. The following table shows the changes in the CIP adopted in May 2019 (for FY 2020–2024) compared to the previously adopted capital plan:

Changes in Capital Improvement Plan (CIP)			
FY 2019-2023	$	153,902,026	Previously adopted CIP
		(51,051,644)	Budgets for completed or closed projects
		(13,821,515)	Adjustments on existing projects
		8,175,000	New project budgets added
FY 2020-2024	$	97,203,867	Total 5-year CIP

The total 5-year CIP is estimated at $97.2 million in capital spending needs through the year 2024. Of this amount, roughly $8.5 million is work-in-progress (nearly 9%) and has already been expended and funded at year end. There is $31.4 million in available bond proceeds from the recent Series 2018 bond to fund future capital work and $7.8 million in the capital fund to fund the CIP. The future funding needs will be roughly $44.6 million in additional debt (revenue bonds) to be issued and $7.5 million in future reserves to be placed in the capital fund.

Over the last two years, the Authority completed $88.3 million in projects ($51 million in FY 2019 and $37.3 million in FY 2018). The majority of those projects were related to a comprehensive plan to improve the wastewater collection and treatment infrastructure to address issues with inflow and infiltration. These improvements were related to a system-wide DEQ Consent Order to address inflow and infiltration and ultimately sanitary sewer overflows. The Consent Order has been released as the plan has been effectively completed. The next 10 years, the Authority will be shifting its attention to water infrastructure.

The Authority had an opportunity this past year to construct a portion of a raw water line that will connect the two main reservoirs (Ragged Mountain and South Fork Rivanna) which is part of the Community Water Supply Plan approved a decade ago. This project, known as the Birdwood Golf Course Waterline, ran through UVa Foundation property in conjunction with the reconstruction project of the golf course that the Foundation was implementing. This project installed 6,100 linear feet of 36-inch raw water main to be used at a time into the future as the remainder of the water main is constructed.

Birdwood Waterline Construction

The Crozet growth area of the County has placed demand needs on the entire system (which is separate from the Urban System) requiring several projects into the future. The Crozet plant has not seen a major upgrade since its original construction in 1966. A Drinking Water Infrastructure Plan conducted in FY 2018 for the Crozet system identified several projects to address capacity needs and treatment improvements to the Crozet system. The plant capacity will increase from 1 mgd to 1.5 mgd. These projects in addition to the Beaver Creek Dam Alteration to address spillway issues are going to be major future projects for this system.

Estimated Capital Costs:

- Beaver Creek Dam – $15 Million
- New Raw Water Pump Station - $7.1 Million
- Crozet Water Treatment Plant Expansion - $8.5 Million

With the plant capacity increase anticipated, the Authority will likely have to seek a new withdrawal permit that will impose new minimum instream flow releases from the reservoir.

Crozet WTP Improvements

There are several major improvements planned for the Urban water systems. The South Rivanna Water Treatment Plant (WTP) had recently gone through upgrades for the granular activated carbon systems, but most of the core treatment facilities were not upgraded. This plant will now go through major upgrades to coagulant storage, new filters to meet firm capacity, changing or adding more variable frequency drives among many other upgrades. The Observatory WTP has seen very few upgrades since its construction in the mid-1950s. This plant will go through a system-by-system upgrade and an increase in production capacity from 7.7 million to 10 million gallons per day. This will provide reliability, resiliency and redundancy improvements for the entire Urban system. These two projects are estimated to have a total cost of $40.5 million.

Requests for Information:

This financial report is designed to provide a general overview of the Authority's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the Finance Department at 695 Moores Creek Lane, Charlottesville, Virginia 22902-9016.

Basic Financial Statements

Statement of Net Position
At June 30, 2019 and 2018

		At June 30,		
		2019		2018
ASSETS				
Current assets:				
Cash and cash equivalents (Note 1)	$	38,988,804	$	32,704,452
Investments (Note 3)		-		1,267
Restricted cash and cash equivalents		36,903,973		7,607,261
Accounts receivable		2,759,152		2,674,276
Unbilled accounts receivable		45,400		44,000
Prepaid expenses		-		94,739
Total current assets	$	78,697,329	$	43,125,995
Noncurrent assets:				
Restricted assets:				
Cash and cash equivalents	$	2,032,250	$	2,101,015
Investments (Note 3)		1,997,694		1,928,929
Total restricted assets	$	4,029,944	$	4,029,944
Capital assets: (Note 4)				
Land and improvements	$	12,310,763	$	10,604,850
Buildings and operating equipment		348,680,424		297,335,818
Trucks and autos		1,605,502		1,281,934
Office equipment		106,760		93,659
Less accumulated depreciation		(93,080,679)		(88,192,387)
Subtotal net capital assets	$	269,622,770	$	221,123,874
Construction in progress (Note 5)		8,463,765		54,148,987
Total net capital assets	$	278,086,535	$	275,272,861
Total noncurrent assets	$	282,116,479	$	279,302,805
Total assets	$	360,813,808	$	322,428,800
DEFERRED OUTFLOWS OF RESOURCES				
Deferred charge on refunding	$	654,937	$	701,491
Deferred outflows - pension (Note 8)		424,975		580,464
Deferred outflows - OPEB - group life insurance (Note 12)		61,074		33,512
Total deferred outflows of resources	$	1,140,986	$	1,315,467

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

Statement of Net Position (Continued)
At June 30, 2018 and 2017

	At June 30,	
	2019	**2018**
LIABILITIES		
Current liabilities:		
Accounts payable and other accrued expenses	$ 3,244,636	$ 2,199,504
Compensated absences - current portion (Note 7)	377,000	323,000
Other long-term obligation (Note 9)	174,093	123,637
Revenue bonds - current portion (Note 6)	3,947,065	3,723,236
Subtotal current liabilities	$ 7,742,794	$ 6,369,377
Current liabilities (payable from restricted assets):		
Retainage payable	$ 164,434	$ 442,816
Accrued interest payable	1,712,949	1,341,064
Revenue bond principal - current portion (Note 6)	3,778,445	3,294,292
Subtotal current liabilities (payable from restricted assets)	$ 5,655,828	$ 5,078,172
Total current liabilities	$ 13,398,622	$ 11,447,549
Noncurrent liabilities:		
Compensated absences (net of current portion) (Note 7)	$ 52,107	$ 115,227
Net OPEB liability (Note 12)	389,000	376,000
Other long-term obligation (Note 9)	409,829	364,289
Net pension liability (Note 8)	2,570,815	2,923,583
Revenue bonds (net of current portion) (Note 6)	192,397,980	160,878,670
Total noncurrent liabilities	$ 195,819,731	$ 164,657,769
Total liabilities	$ 209,218,353	$ 176,105,318
DEFERRED INFLOWS OF RESOURCES		
Deferred inflows - pension (Note 8)	$ 432,212	$ 523,983
Deferred inflows - OPEB - group life insurance (Note 12)	36,000	42,000
Total deferred inflows of resources	$ 468,212	$ 565,983
NET POSITION		
Net Position:		
Net investment in capital assets	$ 113,396,071	$ 114,137,186
Restricted for bond covenants	4,278,445	3,794,293
Unrestricted	34,593,713	29,141,487
Total net position	$ 152,268,229	$ 147,072,966

Statement of Revenues, Expenses, and Changes in Net Position
Years Ended June 30, 2019 and 2018

	Year Ended June 30, 2019	Year Ended June 30, 2018
Operating revenues:		
Metered water sales	$ 15,216,180	$ 14,034,080
Wastewater service charges	18,821,857	14,858,101
Total operating revenues	$ 34,038,037	$ 28,892,181
Operating expenses:		
Personnel costs	$ 7,728,340	$ 7,385,978
Professional services	994,207	738,823
Other services and charges	3,770,051	3,341,421
Operations and maintenance	5,799,962	4,169,065
Depreciation	6,704,908	5,773,757
Total operating expenses	$ 24,997,468	$ 21,409,044
Operating income	$ 9,040,569	$ 7,483,137
Nonoperating revenues (expenses):		
Investment earnings	$ 1,599,486	$ 525,039
Buck Mountain revenue	111,700	125,900
Administrative reimbursement	474,246	436,329
Other revenues	380,737	302,920
Interest expense	(5,947,988)	(2,643,801)
Debt issuance costs	(463,487)	-
Total nonoperating revenues (expenses)	$ (3,845,306)	$ (1,253,613)
Change in net position	$ 5,195,263	$ 6,229,524
Net position, beginning of year, as restated	147,072,966	140,843,442
Net position, end of year	$ 152,268,229	$ 147,072,966

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

Statement of Cash Flows
Years Ended June 30, 2019 and 2018

	Year Ended June 30, 2019	Year Ended June 30, 2018
Cash flows from operating activities:		
Receipts from customers and users	$ 34,918,444	$ 29,541,972
Payments to suppliers of goods and services	(10,247,250)	(7,949,169)
Payments to and on behalf of employees for services	(7,842,006)	(7,487,933)
Net cash provided by (used for) operating activities	$ 16,829,188	$ 14,104,870
Cash flows from capital and related financing activities:		
Additions to capital assets	$ (9,083,133)	$ (17,941,791)
Principal payments on bonds	(7,017,528)	(6,904,880)
Proceeds of bonds, net of issue costs, premiums	36,855,000	2,340,222
Premium on bonds issued	2,930,097	-
Debt issuance costs	(463,487)	-
Interest payments	(6,069,825)	(5,465,317)
Net cash provided by (used for) capital and related financing activities	$ 17,151,124	$ (27,971,766)
Cash flows from investing activities:		
(Purchase) of investments	$ (1)	$ (66,927)
Sale of investments	1,266	10,044,022
Maturity of investments	638	3,986
Interest and dividends received	1,530,084	649,239
Net cash provided by (used for) investing activities	$ 1,531,987	$ 10,630,320
Increase (decrease) in cash and cash equivalents	$ 35,512,299	$ (3,236,576)
Cash and cash equivalents at beginning of year (including $9,708,276 and $19,237,445, respectively reported in restricted accounts)	42,412,728	45,649,304
Cash and cash equivalents at end of year (including $38,936,223 and $9,708,276, respectively reported in restricted accounts)	$ 77,925,027	$ 42,412,728
Reconciliation of operating income (loss) to net cash provided by (used for) operating activities:		
Operating income	$ 9,040,569	$ 7,483,137
Adjustments to reconcile operating income (loss) to net cash provided by (used for) operating activities:		
Depreciation	6,704,908	5,773,757
Buck Mountain revenue	111,700	125,900
Other nonoperating revenues	854,983	739,249
Changes in operating assets and liabilities:		
(Increase) decrease in receivables	(86,276)	(215,358)
Increase (decrease) in net OPEB liability	13,000	(53,000)
Increase (decrease) in compensated absences	(9,120)	39,754
Increase (decrease) in other long-term obligation	95,996	4,858
Increase (decrease) in net pension liability	(352,768)	(1,245,209)
(Increase) decrease in deferred outflows of resources - pension	155,489	544,406
Increase (decrease) in deferred inflows of resources - pension	(91,771)	523,983
(Increase) decrease in deferred outflows of resources - OPEB	(27,562)	(9,512)
Increase (decrease) in deferred inflows of resources - OPEB	(6,000)	42,000
(Increase) decrease in prepaid expenses	94,739	40,865
Increase (decrease) in operating payables and accrued expenses	331,301	310,040
Net cash provided by (used for) operating activities	$ 16,829,188	$ 14,104,870
Noncash investing, capital and financing activities:		
Increase (decrease) in fair value of investments	$ 69,402	$ (124,200)
(Increase) decrease in retainage payable for capital projects	(278,382)	1,823,351

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

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Note 1−Summary of Significant Accounting Policies:

In the interest of efficient water quality management for the upper Rivanna River Basin, the Rivanna Water and Sewer Authority was formed on June 7, 1972 as a joint venture of the City of Charlottesville, the Albemarle County Service Authority, and the County of Albemarle, pursuant to the Virginia Water and Waste Authorities Act (1950 as amended). The Authority is responsible for acquiring, financing, constructing and maintaining facilities for the improvement, treatment, storage and transmission of potable water, and for the interception, treatment and discharge of wastewater for the City and County. The Authority operates under the terms of a Service Agreement among the Authority, the Albemarle County Service Authority, the City of Charlottesville, and the County of Albemarle which was signed June 12, 1973.

A. Financial Reporting Entity

The Rivanna Water & Sewer Authority was established according to the Agreement mentioned above for the purposes stated. The participating entities are City of Charlottesville, County of Albemarle, and Albemarle County Service Authority. The City of Charlottesville and the Albemarle County Service Authority have an ongoing financial responsibility to the Authority because a covenant to pay the Authority's rates and charges is included in the operating agreement.

The Authority's governing body is comprised of three members appointed by the County, three members appointed by the City, and one member who is jointly appointed by the City and County. Therefore, none of the participants appoints a voting majority of board members.

The Authority is perpetual. No participating government has access to its resources or surpluses, nor is any participant liable for the Authority's debts or deficits. The Authority also has the ability to finance its capital projects through user charges or the sale of revenue bonds.

Based on the above representations, the Rivanna Water & Sewer Authority has been determined to be a joint venture of the City of Charlottesville, County of Albemarle and Albemarle County Service Authority. The Authority is not a component unit of any of the participating governments. There are no component units to be included within the Authority's financial statements.

For purposes of reporting entity disclosure, it should be noted that a separate entity, the Rivanna Solid Waste Authority, provides garbage and refuse transfer and disposal services to the City of Charlottesville and Albemarle County. Although certain administrative employees provide services to both Authorities, each Authority is operationally and legally independent.

B. Basis of Accounting

Rivanna Water & Sewer Authority operates as an enterprise fund, uses the flow of economic resources measurement focus and its accounts are maintained on the accrual basis of accounting. Under this method, revenues are recognized when earned, and expenses are recorded as liabilities when incurred, without regard to receipt or payment of cash. The Authority accrues revenue for services rendered but not yet billed at the end of the fiscal year. The Authority accounts have been audited by an independent firm annually since its founding in accordance with the requirements of the Service Agreement, dated June 12, 1973, among the Authority, the City of Charlottesville, Albemarle County, and Albemarle County Service Authority.

Note 1−Summary of Significant Accounting Policies: (Continued)

B. Basis of Accounting (Continued)

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. 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.

C. Accounts Receivable

Accounts receivable are stated at book value utilizing the direct write-off method for immaterial uncollectible accounts.

D. Basic Financial Statements

Since the Authority is only engaged in business-type activities, it is required to present only the financial statements required for enterprise funds. For the Authority, the basic financial statements and required supplementary information consist of:

- Management's discussion and analysis
- Enterprise fund financial statements
  - Statement of Net Position
  - Statement of Revenues, Expenses, and Changes in Net Position
  - Statement of Cash Flows
  - Notes to the Financial Statements
- Required Supplementary Information
  - Schedule of Changes in Net Pension Liability and Related Ratios
  - Schedule of Employer Contributions-Pension Plan
  - Notes to Required Supplementary Information-Pension Plan
  - 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

Note 1−Summary of Significant Accounting Policies: (Continued)

E. Capital Assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, and similar items), are reported in the financial statements. Capital assets are defined by the Authority as assets with an initial, individual cost of more than $5,000 (amount not rounded) and an estimated useful life in excess of one year. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at acquisition value at the date of donation.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend its useful life are not capitalized.

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 until the implemented the financial reporting provisions of Governmental Accounting Standards Board (GASB) Statement No. 89, Accounting for Interest Cost Incurred Before the End of a Construction Period, on July 1, 2018. This Statement requires that interest cost incurred before the end of a construction period be recognized as an expense when incurred instead of being included in the historical cost of constructed capital assets. The Authority capitalized interest in the amount of $2,271,708 for the year ended June 30, 2018.

Property, plant, equipment and infrastructure are depreciated using the straight-line method over the following estimated useful lives:

Assets	Years
Buildings & operating equipment	5 to 50
Trucks & autos	5 to 10
Office equipment	5 to 10
Data processing equipment	5

F. Cash and Cash Equivalents

The Authority's cash and cash equivalents consist of demand deposits, certificates of deposit, short-term U.S. Governmental obligations, and other investments with an original maturity of three months or less from the date of acquisition, all of which are readily convertible to known amounts of cash.

G. Investments

Money market investments, participating interest-earning investment contracts (repurchase agreements) that have a remaining maturity at time of purchase of one year or less, nonparticipating interest-earning investment contracts (nonnegotiable certificates of deposit (CDs) and external investment pools) are measured at amortized cost. All other investments are reported at fair value.

Note 1−Summary of Significant Accounting Policies: (Continued)

H. Budgets and Budgetary Accounting

A budget is prepared for information, fiscal planning purposes, and to provide the basis for setting wholesale rates, in accordance with the requirements of the Service Agreement, dated June 12, 1973, among the Authority, the City of Charlottesville, Albemarle County, and the Albemarle County Service Authority. Rates charged by the six rate centers are not subjected to regulatory scrutiny but may be changed at any time by the Authority's Board of Directors, if necessary, in order to adjust revenues. None of the participating entities are required to approve the budget. The budget is adopted as a planning document and is not a legal control on expenses.

I. Inventory

Consumption of materials and supplies is recorded as an expense when used. No inventory amounts are recorded as an asset, as available inventories are not significant.

J. 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.

K. Net Position

Net position is the difference between assets and deferred outflows of resources and liabilities and deferred inflows of resources. Net investment in capital assets represents capital assets, reduced by accumulated depreciation and by any outstanding debt, deferred outflows of resources and increased by deferred inflows of resources related to the acquisition, construction or improvement of those assets. Restricted net position represents restricted assets reduced by liabilities and deferred inflows of resources related to those assets. The balance in the replacement reserve is presented as restricted net position.

L. Restricted Assets

Certain proceeds of the Authority’s revenue bonds and certain resources set aside for their repayment are classified as restricted assets on the statement of net position, because they are maintained in separate bank accounts, and their use is limited by applicable bond covenants. The “revenue bond general operating reserve” is used to report resources set aside to subsidize potential deficiencies from the Authority’s operation that could adversely affect debt service payments. The “revenue bond payment account” is used to segregate resources accumulated for debt service payments over the next twelve months. The “debt service reserve” is used to report resources set aside to make up potential future deficiencies in the revenue bond payment account. The “repair and replacement reserve” is used to report resources set aside to meet unexpected contingencies or to fund asset renewals and replacements.

Note 1−Summary of Significant Accounting Policies: (Continued)

M. Long-Term Obligations

Bond premiums and discounts are amortized over the life of the bonds. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are expensed as incurred.

N. Reclassification

Certain amounts in previously issued financial statements have been restated to conform to the current year's classifications.

O. Deferred Inflows and Outflows 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 three types of items that qualify for reporting in this category. One type is the deferred charge on refunding reported in the statement of net position. A deferred charge on refunding results from the difference in the carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt. Another type of deferred outflow is comprised of certain items related to the measurement of the net pension liability. It is comprised of contributions to the pension plan made during the current year and subsequent to the net pension liability measurement date, which will be recognized as a reduction of the net pension liability next fiscal year, differences between expected and actual experience, and net difference between projected and actual pension plan earnings. A third type of deferred outflow is related to the Group Life Insurance Program (GLI OPEB Plan). It consists of employer contributions to the OPEB plan in the current year and subsequent to the OPEB liability measurement date, which will be recognized as a reduction of the net GLI OPEB liability next fiscal year, differences between expected and actual experience, and changes in proportionate share between measurement dates.

In addition to liabilities, the statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The Authority has two types of items that qualify for reporting in this category. Items related to the measurement of the net pension liability that are reported as deferred inflows of resources include differences between expected and actual experience, changes in assumptions, and the net difference between projected and actual earnings on pension plan investments. Deferred inflows of resources related to the measurement of the net GLI OPEB liability include differences between expected and actual experience, the net difference between projected and actual earnings on GLI OPEB plan investments, and changes in assumptions.

For more detailed information regarding deferred outflows and inflows of resources related to the pension plan, refer to Note 8. For more information on those related to the GLI OPEB Plan, refer to Note 12.

Note 1−Summary of Significant Accounting Policies: (Continued)

P. Net Position Flow Assumption

Sometimes the Authority will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted net position and unrestricted net position in the financial statements, 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.

Q. 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 the benefit terms. Investments are reported at fair value.

R. Other Postemployment Benefits (OPEB)

Group Life Insurance

The Virginia Retirement System (VRS) Group Life Insurance (GLI) Program is a multiple employer cost sharing plan. It provides coverage to state employees, teachers, and employees of participating political subdivisions. The GLI 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 GLI 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 GLI Program OPEB liability, deferred outflows of resources and deferred inflows of resources related to the GLI OPEB, and GLI OPEB expense, information about the fiduciary net position of the VRS GLI Program OPEB and the additions to/deductions from the VRS GLI 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.

Note 2−Acquisition of Water and Wastewater Facilities:

Under the terms of the Service Agreement (See Note 1), the Authority agreed to purchase certain water production, transmission and storage facilities and wastewater interception and treatment facilities from the City and the Albemarle County Service Authority. The agreement provides that the sale be consummated ten years from the date of the agreement or at such later time as the debts, if any, attributed to each such facility have been paid or provision is made for their payment, and that the Authority will lease the facility until such time as the sale is consummated. The purchase price is the fair value of the facilities as of June 12, 1973, as determined by all payments paid by the Authority during the term of lease applicable to the principal retired on the debt of such facilities. In accordance with generally accepted accounting principles, the aforementioned agreement has been treated as an installment purchase of the facilities, with the purchase price being discounted at an annual rate of 6% for ten years.

Note 2−Acquisition of Water and Wastewater Facilities: (Continued)

The following tabulation reflects the agreed upon purchase price and accounting thereof:

Fair value as of June 12, 1973:		
Facilities acquired from City of Charlottesville	$	6,128,124
Facilities acquired from Albemarle County Service Authority		3,604,384
Total purchase price	$	9,732,508
Add: Interest portion of rental payments not applied to principal reduction		1,154,074
Total contracts payable	$	10,886,582
Less: Interest included in contract price computed at annual rate of 6% for 10 years		4,940,705
Asset carrying value	$	5,945,877

The contracts payable have been reduced by the amount of the annual rental payments on the facilities as outlined in the following tabulation:

	City of Charlottesville	Albemarle County Service Authority
Contracts payable, June 12, 1973	$ 6,354,634	$ 4,531,948
Rental payments and contract adjustments in prior fiscal years	$ 1,760,676	$ 3,680,395
Total rental payments	$ 1,760,676	$ 3,680,395
Final payment on facilities with no outstanding debt as of June 30, 1983	4,593,958	851,553
Total payments	$ 6,354,634	$ 4,531,948
Contracts payable, June 30, 2019	$ -	$ -

The total annual rental payments over the initial ten-year agreement were not sufficient to retire the contracts payable to the Albemarle County Service Authority. The deferred interest was amortized over the initial ten-year period of the agreement and was fully amortized as of June 30, 1983.

Depreciation has been based upon the engineer's estimates of useful lives remaining as of the valuation date (June 12, 1973). Depreciation expense on these facilities amounted to $52,658 and $53,080 for the years ended June 30, 2019 and 2018, respectively.

Note 3−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 does not have a formal investment policy that addresses credit risk or interest rate risk.

Credit Risk of Debt Securities

The Authority's rated debt investments as of June 30, 2019 and 2018 were rated by Standard & Poor's and the ratings are presented below using Standard & Poor's rating scale.

Authority's Rated Debt Investments' Values - 2019

	Fair Quality Ratings		
Rated Debt Investments	**AAAm**	**AA+**	**AA+f**
U.S. Agencies Securities	$ 2,454	$ -	$ -
Local Government Investment Pool	19,759,341	-	-
VML/VACo Virginia Investment Pool	10,368,384	-	-
Virginia State Non-Arbitrage Pool	31,412,579	-	-
U.S. Treasury Notes & Bonds	-	1,995,240	-
U.S. Treasury & Agency Money Market Funds	7,118,324	-	-
Total	$ 68,661,082	$ 1,995,240	$ -

Authority's Rated Debt Investments' Values - 2018

	Fair Quality Ratings		
Rated Debt Investments	**AAAm**	**AA+**	**AA+f**
U.S. Agencies Securities	$ 3,148	$ -	$ -
Local Government Investment Pool	15,293,860	-	-
VML/VACo Virginia Investment Pool	10,120,432	-	1,267
Virginia State Non-Arbitrage Pool	2,971,904	-	-
U.S. Treasury Notes & Bonds	-	1,925,780	-
U.S. Treasury & Agency Money Market Funds	6,215,861	-	-
Total	$ 34,605,205	$ 1,925,780	$ 1,267

Note 3−Deposits and Investments: (Continued)

Interest Rate Risk

Investment Maturities (in years) - 2019

Investment Type	Fair Value	Less Than 1 Year	1-5 Years	6-10 Years
U.S. Agencies Securities	$ 2,454	$ -	$ 2,454	$
Local Government Investment Pool	19,759,341	19,759,341	-	-
VML/VACo Virginia Investment Pool	10,368,384	10,368,384	-	-
Virginia State Non-Arbitrage Pool	31,412,579	31,412,579	-	-
U.S. Treasury & Agency Money Market Funds	7,118,324	7,118,324	-	-
U.S. Treasury Notes & Bonds	1,995,240	-	1,995,240	-
Total	$ 70,656,322	$ 68,658,628	$ 1,997,694	$ -

Investment Maturities (in years) - 2018

Investment Type	Fair Value	Less Than 1 Year	1-5 Years	6-10 Years
U.S. Agencies Securities	$ 3,148	$ -	$ -	$ 3,148
Local Government Investment Pool	15,293,860	15,293,860	-	-
VML/VACo Virginia Investment Pool	10,121,699	10,121,699	-	-
Virginia State Non-Arbitrage Pool	2,971,904	2,971,904	-	-
U.S. Treasury & Agency Money Market Funds	6,215,861	6,215,861	-	-
U.S. Treasury Notes & Bonds	1,925,780	-	1,925,780	-
Total	$ 36,532,252	$ 34,603,324	$ 1,925,780	$ 3,148

External Investment Pools

The Authority invests in the Virginia Investment Pool ("VIP") which is sponsored by VML/VACo Finance and is professionally managed under the governance of the VIP Board of Trustees. The VIP investment strategy is to preserve capital, and it only invests in instruments allowable by the Code of Virginia. The Authority owns shares of the VIP and not the underlying instruments held by the VIP.

The fair value of the positions in the external investment pools (Local Government Investment Pool, State Non-Arbitrage Pool and VML/VACo Virginia Investment Pool) is the same as the value of the pool shares. As LGIP and SNAP are not SEC registered, regulatory oversight of the pools rest 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 in LGIP and SNAP. The VML/VACo Virginia Investment Pool has a limit of two withdrawals per month.

Note 4−Capital Assets:

Details of changes in capital assets for the year ended June 30, 2019 are as follows:

	Balance July 1, 2018	Increases	Decreases	Balance June 30, 2019
Capital assets not being depreciated:				
Land and improvements	$ 10,604,850	$ 1,705,913	$ -	$ 12,310,763
Construction in progress	54,148,987	8,902,194	54,587,416	8,463,765
Total capital assets not being depreciated	$ 64,753,837	$ 10,608,107	$ 54,587,416	$ 20,774,528
Other capital assets:				
Buildings & operating equipment:				
Water system	$ 95,641,806	$ 40,933,202	$ 1,751,478	$ 134,823,530
Wastewater system	201,227,899	12,173,703	65,179	213,336,423
Support departments	466,113	96,534	42,176	520,471
Subtotal	$ 297,335,818	$ 53,203,439	$ 1,858,833	$ 348,680,424
Accumulated depreciation	(87,017,932)	(6,719,629)	(1,838,188)	(91,899,373)
Total	$ 210,317,886	$ 46,483,810	$ 20,645	$ 256,781,051
Trucks and autos:				
Water system	$ 174,075	$ 90,450	$ 23,525	$ 241,000
Wastewater system	197,570	23,073	-	220,643
Support departments	910,289	289,770	56,200	1,143,859
Subtotal	$ 1,281,934	$ 403,293	$ 79,725	$ 1,605,502
Accumulated depreciation	(1,081,797)	(84,139)	(79,725)	(1,086,211)
Total	$ 200,137	$ 319,154	$ -	$ 519,291
Office equipment:				
Water system	$ 2,715	$ -	$ -	$ 2,715
Wastewater system	2,714	-	-	2,714
Support departments	88,230	13,101	-	101,331
Subtotal	$ 93,659	$ 13,101	$ -	$ 106,760
Accumulated depreciation	(92,658)	(2,437)	-	(95,095)
Total	$ 1,001	$ 10,664	$ -	$ 11,665
Capital assets, net	$ 275,272,861	$ 57,421,735	$ 54,608,061	$ 278,086,535

Note 4−Capital Assets: (Continued)

Details of changes in capital assets for the year ended June 30, 2018 are as follows:

		Balance July 1, 2017	Increases	Decreases	Balance June 30, 2018
Capital assets not being depreciated:					
Land and improvements		$ 10,604,850	$ -	$ -	$ 10,604,850
Construction in progress		72,342,584	17,618,579	35,812,176	54,148,987
Total capital assets not being depreciated		$ 82,947,434	$ 17,618,579	$ 35,812,176	$ 64,753,837
Other capital assets:					
Buildings & operating equipment:					
Water system		$ 93,050,994	$ 2,590,812	$ -	$ 95,641,806
Wastewater system	***	167,995,402	33,232,497	-	201,227,899
Support departments		460,458	16,787	11,132	466,113
Subtotal	***	$ 261,506,854	$ 35,840,096	$ 11,132	$ 297,335,818
Accumulated depreciation	***	(81,268,452)	(5,752,263)	(2,783)	(87,017,932)
Total	***	$ 180,238,402	$ 30,087,833	$ 8,349	$ 210,317,886
Trucks and autos:					
Water system		$ 174,725	$ -	$ 650	$ 174,075
Wastewater system		201,875	-	4,305	197,570
Support departments		836,129	74,160	-	910,289
Subtotal		$ 1,212,729	$ 74,160	$ 4,955	$ 1,281,934
Accumulated depreciation		(1,064,477)	(22,275)	(4,955)	(1,081,797)
Total		$ 148,252	$ 51,885	$ -	$ 200,137
Office equipment:					
Water system		$ 2,715	$ -	$ -	$ 2,715
Wastewater system		2,714	-	-	2,714
Support departments		88,230	-	-	88,230
Subtotal		$ 93,659	$ -	$ -	$ 93,659
Accumulated depreciation		(90,656)	(2,002)	-	(92,658)
Total		$ 3,003	$ (2,002)	$ -	$ 1,001
Capital assets, net	***	$ 263,337,091	$ 47,756,295	$ 35,820,525	$ 275,272,861

***Note: Restated amounts to reflect prior period adjustment. See Note 17.

Note 5−Construction in Progress:

Details of construction in progress for the year ended June 30, 2019 are as follows:

	Balance July 1, 2018	Cost of Construction	Expense/ Transfer to Capital Assets	Balance June 30, 2019
S. Rivanna Reservoir to Ragged Mtn. Reservoir Water Line R/W	$ 123,782	$ 177,272	$	$ 301,054
Birdwood Golf Course Waterline	-	2,714,728	-	2,714,728
Observatory WTP Improvements	1,154,558	506,520	1,042,198	618,880
Interconnect Lower SH and RM Raw Water Mains	8,076	-	8,076	-
Sugar Hollow to Ragged Mtn Res Transfer Flow Meter	15,311	466,738	482,049	-
Route 29 Pumping Station Site Acquisition	1,042,168	663,745	1,705,913	-
Valve Repair-Replacement (Phase 2)	-	154,219	-	154,219
Urban Water GAC/Water Treatment Plant Improvements	24,089,122	188,019	24,277,141	-
Wholesale Water Master Metering-Urban	2,679,816	558,174	3,237,990	-
Piney Mountain Tank Rehabilitation	51,185	37,400	-	88,585
Avon to Pantops Water Main	126,861	10,888	-	137,749
Water Demand Projection and Safe Yield Study	-	79,106	-	79,106
Finished Water System Master Plan	-	20,307	-	20,307
South Rivanna Hydropower Plant Decommisioning	98,625	28,456	-	127,081
South Rivanna WTP Improvements	46,891	572,140	-	619,031
Beaver Creek Dam Alterations	191,871	87,417	-	279,288
Crozet Water GAC/Water Treatment Plant Improvements	3,250,630	16,505	3,267,135	-
Buck's Elbow & Crozet Waterball Tank Painting	-	6,643	-	6,643
Crozet WTP Expansion	510,377	728,340	-	1,238,717
Crozet WTP Finished Water Pump Station	2,067,760	203,814	2,271,574	-
Crozet Drinking Water Infrastructure Plan	245,223	52,041	297,264	-
New Raw Water PS & Intake, Oxygenation (BCR)	-	8,846	-	8,846
Scottsville Water Granular Activated Carbon	1,569,384	8,130	1,577,514	-
Scottsville WTP Finished Water Flow Meter	-	12,128	-	12,128
Schenks Branch Interceptor	11,187	-	-	11,187
Interceptor Sewer & Manhole Repair	176,434	91,933	-	268,367
Crozet Interceptor	181,725	250	-	181,975
Crozet Flow Equalization Tank	80,092	175,227	-	255,319
Crozet Interceptor PS Bypass Isolation Valves	18,334	415,760	434,094	-
Moores Creek Bridge Repairs	261,198	18,270	279,468	-
Moores Creek AWRRF Odor Control-Phase 2	9,151,666	727,096	8,878,232	1,000,530
MCAWRRF Roof Replacements	809,424	166,796	976,220	-
MCAWRRF Second Centrifuge	1,154,719	136,414	1,291,133	-
Aluminum Slide Gate Replacement	-	6,854	-	6,854
Glenmore Secondary Clarifier Coating	-	1,100	-	1,100
Radio Upgrades	28,337	47,015	-	75,352
Asset Management	-	92,285	-	92,285
Capitalized Interest	4,561,415	-	4,561,415	-
Retainage on Construction in Progress	442,816	(278,382)	-	164,434
Total	$ 54,148,987	$ 8,902,194	$ 54,587,416	$ 8,463,765

Cost of construction includes interest capitalized during the fiscal year, where applicable. For the year ended June 30, 2018, capitalized interest was $2,271,708.

Note 5−Construction in Progress: (Continued)

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

	Balance July 1, 2017	Cost of Construction	Expense/ Transfer to Capital Assets	Balance June 30, 2018
S. Rivanna Reservoir to Ragged Mtn. Reservoir Water Line R/W	$ 25,249	$ 98,533	$ -	$ 123,782
Observatory WTP Improvements	1,042,198	112,360	-	1,154,558
Interconnect Lower SH and RM Raw Water Mains	-	8,076	-	8,076
Sugar Hollow to Ragged Mtn Res Transfer Flow Meter	6,953	8,358	-	15,311
Route 29 Pumping Station Site Acquisition	832,187	209,981	-	1,042,168
Urban Water GAC/Water Treatment Plant Improvements	18,292,018	5,797,104	-	24,089,122
Wholesale Water Master Metering-Urban	2,270,371	409,445	-	2,679,816
Piney Mountain Tank Rehabilitation	-	51,185	-	51,185
Rt. 29 Pipeline-VDOT Betterment	1,714,749	876,063	2,590,812	-
Avon to Pantops Water Main	-	126,861	-	126,861
South Rivanna Hydropower Plant Decommisioning	82,332	16,293	-	98,625
South Rivanna WTP Improvements	-	46,891	-	46,891
Beaver Creek Dam Alterations	133,886	57,985	-	191,871
Crozet Water GAC/Water Treatment Plant Improvements	2,665,401	585,229	-	3,250,630
Crozet WTP Expansion	90,419	419,958	-	510,377
Crozet WTP Finished Water Pump Station	395,663	1,672,097	-	2,067,760
Crozet Drinking Water Infrastructure Plan	-	245,223	-	245,223
Scottsville Water Granular Activated Carbon	1,216,510	352,874	-	1,569,384
Schenks Branch Interceptor	-	11,187	-	11,187
Rivanna Pump Station and Tunnel	30,040,496	1,423,901	31,464,397	-
Interceptor Sewer & Manhole Repair	124,330	52,104	-	176,434
Crozet Interceptor	180,715	1,010	-	181,725
Crozet Flow Equalization Tank	37,356	42,736	-	80,092
Crozet Pump Station Two Automatic Bar Screens	-	65,575	65,575	-
Crozet Interceptor PS Bypass Isolation Valves	-	18,334	-	18,334
Moores Creek Bridge Repairs	37,391	223,807	-	261,198
Moores Creek AWRRF Odor Control-Phase 2	6,669,061	2,482,605	-	9,151,666
MCAWRRF Roof Replacements	61,492	747,932	-	809,424
MCAWRRF Second Centrifuge	172,974	981,745	-	1,154,719
Radio Upgrades	3,567	24,770	-	28,337
Capitalized Interest	3,981,099	2,271,708	1,691,392	4,561,415
Retainage on Construction in Progress	2,266,167	(1,823,351)	-	442,816
Total	$ 72,342,584	$ 17,618,579	$ 35,812,176	$ 54,148,987

Note 6−Long-Term Obligations:

A. Changes in Long-Term Obligations

The following is a summary of long-term obligation transactions for the year ended June 30, 2019:

	Balance July 1, 2018	Issuances	Retirements	Balance June 30, 2019	Due Within One Year
Revenue bonds payable					
Public offerings	$ 23,345,000	$ -	$ (630,000)	$ 22,715,000	$ 650,000
Direct borrowings and direct placements	137,108,980	36,855,000	(6,387,528)	167,576,452	7,075,510
Subtotal	$ 160,453,980	$ 36,855,000	$ (7,017,528)	$ 190,291,452	$ 7,725,510
Add (less) amounts:					
For issuance premiums	7,442,218	2,930,097	(540,277)	9,832,038	-
Total revenue bonds	$ 167,896,198	$ 39,785,097	$ (7,557,805)	$ 200,123,490	$ 7,725,510
VERIP liability	487,926	219,748	(123,752)	583,922	174,093
Compensated absences	438,227	340,860	(349,980)	429,107	377,000
Net OPEB liablity	376,000	82,000	(69,000)	389,000	-
Net pension liability	2,923,583	1,929,171	(2,281,939)	2,570,815	-
Totals	$ 172,121,934	$ 42,356,876	$ (10,382,476)	$ 204,096,334	$ 8,276,603

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

	Balance July 1, 2017	Issuances	Retirements	Balance June 30, 2018	Due Within One Year
Revenue bonds payable	$ 165,018,638	$ 2,340,222	$ (6,904,880)	$ 160,453,980	$ 7,017,528
Add (less) amounts:					
For issuance premiums	8,001,815	-	(559,597)	7,442,218	-
Total revenue bonds	$ 173,020,453	$ 2,340,222	$ (7,464,477)	$ 167,896,198	$ 7,017,528
VERIP liability	483,068	79,850	(74,992)	487,926	123,637
Compensated absences	398,473	380,221	(340,467)	438,227	323,000
Net OPEB liablity*	429,000	13,000	(66,000)	376,000	-
Net pension liability	4,168,792	1,878,258	(3,123,467)	2,923,583	-
Totals	$ 178,499,786	$ 4,691,551	$ (11,069,403)	$ 172,121,934	$ 7,464,165

* Balance as of July 1, 2017 restated resulting from implementation of GASB 75, refer to Note 17.

Note 6−Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations

All of the Authority's bond issues are direct placements with Virginia Resources Authority or with private banks with the exception of Series 2012B, which is a public offering. All bonds are issued in parity with one another under the 1979 Master Trust Agreement. The trust agreement does not specifically identify fixed amounts to be paid in the event of default. The Authority has no unused lines of credit, and none of its assets are pledged as collateral for any of its debt. There are no terms specified in any of the Authority's debt agreements related to significant (a) events of default with finance-related consequences, (b) termination events with finance-related consequences, or (c) subjective acceleration clauses.

	Total Amount	Amount Due Within One Year
Revenue Bonds		
Public Offerings		
$26,240,000 Water and Sewer System Revenue and Refunding Bonds, Series 2012B - On October 30, 2012, the Authority issued $26,240,000 in Revenue and Refunding Bonds for purposes of financing various water and sewer capital projects including the design, development and construction of a new dam; the implementation of wetlands and streambank mitigation plans and costs of issuance. The bonds were issued at a premium in the amount of $646,250. The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from April 1, 2013 through October 1, 2042. The bonds bear interest at an annual rate ranging from 2.125% to 4.0%. Total payments due each year range from $1,337,000 to $1,342,000. The bonds are subject to federal arbitrage regulations.	$ 22,715,000	$ 650,000
Direct Borrowings and Direct Placements		
Water and Sewer System Revenue Bonds - Series of 2005A - On November 10, 2005, the Authority issued $2,340,929 in bonds for purposes of financing the Moores Creek wastewater pre-treatment project. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that these obligations will be repaid from revenue generated by the Authority and are backed by a restricted cash account. The bond resolution provides a redemption schedule with an interest only payment due in April 2007 and semi-annual payments of principal and interest of $79,670 from October 2007 through October 2026. The bonds bear interest at 3%.	$ 1,063,050	$ 128,403

Note 6−Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	Total Amount	Amount Due Within One Year
Revenue Bonds (Continued)		
Direct Borrowings and Direct Placements (Continued)		
$24,000,000 Regional Water and Sewer System Revenue Bond - Series 2009A - On August 1, 2009 the Authority issued $24,000,000 in bonds for purposes of financing the Moores Creek Wastewater Treatment Plant upgrades, including the Enhanced Nutrient Removal project. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account.		
The bond resolution provided a redemption schedule with an interest only payment due in April 2011 and semi-annual payments of principal and 3.35% interest of $843,077 from October 2011 through October 2030. The interest rate was reduced to 2.65% on October 1, 2014, which reduced the semi-annual payments to $802,099.	$ 15,812,877	$ 1,193,009
$15,179,718 Regional Water and Sewer System Revenue Bond - Series 2010A - On June 29, 2010 the Authority issued $15,179,718 in bonds for purposes of financing the acquisition, construction and equipping of improvements to the Authority's water and sewer system, including the replacement of the Meadow Creek Sanitary Sewer Interceptor together with related expenses. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account.		
The bond resolution provided a redemption schedule with an interest only payment due in April 2012 and semi-annual payments of principal and 2.93% interest of $513,715 from October 2012 through October 2030. Effective October 1, 2016, the interest rate was reduced to 2.05%, reducing semi-annual payments to $481,261.	9,816,467	765,186

Note 6−Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	Total Amount	Amount Due Within One Year
Revenue Bonds (Continued)		
Direct Borrowings and Direct Placements: (Continued)		
$6,982,662 Regional Water and Sewer System Revenue Bond - Series 2011A - On March 17, 2011 the Authority issued $6,982,662 in bonds for purposes of financing the acquisition, construction and equipping of improvements to the Authority's sewer system including improvements necessary to address the wet weather flows at the Moores Creek Wastewater Treatment Plant. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account.		
The bond resolution provides a redemption schedule with an interest only payment due in April 2012 and semi-annual payments of principal and 2.93% interest of $236,308 from October 2012 through October 2031. Effective October 1, 2016, the interest rate was reduced to 2.05%, reducing semi-annual payments to $221,804.	$ 4,869,766	$ 345,540
$1,017,338 Regional Water and Sewer System Revenue Bond - Series 2011B - On March 17, 2011 the Authority issued $1,017,338 in bonds for purposes of financing the acquisition, construction and equipping of improvements to the Authority's sewer system including improvements necessary to address the wet weather flows at the Moores Creek Wastewater Treatment Plant. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account.		
The bond resolution provided a redemption schedule with an interest only payment due in April 2012 and semi-annual payments of principal and 2.93% interest of $34,429 from October 2012 through October 2031. The interest rate was reduced to 2.05% as of October 1, 2016, reducing semi-annual payments to $31,666.	695,230	49,331

Note 6−Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	Total Amount	Amount Due Within One Year
Revenue Bonds (Continued)		
Direct Borrowings and Direct Placements: (Continued)		
$4,241,488 Regional Water and Sewer System Revenue Bond - Series 2011D - On September 9, 2011 the Authority issued $4,241,488 in bonds for purposes of financing the acquisition, construction and equipping of improvements to the Authority's water and sewer system. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account.		
The bond resolution provided a redemption schedule with an interest only payment due in October 2012 and semi-annual payments of principal and 2.93% interest of $143,541 from April 2013 through April 2032. The interest rate was reduced to 2.05% effective October 1, 2016, and the semi-annual payments were reduced to $134,475.	$ 3,055,588	$ 207,368
$443,937 Regional Water and Sewer System Revenue Bond - Series 2011E - On September 9, 2011 the Authority issued $443,937 in bonds for purposes of financing the acquisition, construction and equipping of improvements to the Authority's water and sewer system. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account.		
The bond resolution provided a redemption schedule with an interest only payment due in October 2012 and semi-annual payments of principal and interest of $15,024 from April 2013 through April 2032. The interest rate was reduced to 2.05% effective October 1, 2016, and the semi-annual payments were reduced to $13,997.	318,052	21,585

Note 6−Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	Total Amount	Amount Due Within One Year
Revenue Bonds (Continued)		
Direct Borrowings and Direct Placements: (Continued)		
$25,100,000 Water and Sewer System Revenue and Refunding Bonds, Series 2012A - On June 13, 2012, the Authority issued $25,100,000 in Revenue and Refunding Bonds for purposes of financing various water and sewer capital projects and to refund Series 2001 bond with an outstanding amount of $5,490,000 and Series 2003 bond with an outstanding amount of $4,827,000. The bonds were issued at a premium in the amount of $3,706,939.		
The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from October 1, 2012 through October 1, 2042. The bonds bear interest at an annual rate ranging from 2.125% to 5.125%. The Authority refunded the 2001 and 2003 Series bonds to reduce its total debt service payments over the next 13 years by $4.93 million and to obtain a net economic gain (difference between the present values of the debt service payments on the old and new debt) of $1,079,384 after applying existing reserve funds of $3.55 million.	$ 18,425,000	$ 600,000
$29,043,290 Water and Sewer Revenue Bonds, Series 2014A - On March 28, 2014, the Authority issued $29,043,290 in revenue bonds for purposes of financing capital improvements and capacity upgrades of the Rivanna Interceptor and pump station at Moores Creek Wastewater Treatment Plant.		
The bond resolution provides a redemption schedule with interest and principal of $941,168 due semi-annually from April 1, 2017 through April 1, 2036. An interest only payment is due on October 1, 2016. The bonds bear interest at an annual rate of 2.45%.	25,954,584	1,254,083

Note 6−Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	Total Amount	Amount Due Within One Year
Revenue Bonds (Continued)		
Direct Borrowings and Direct Placements: (Continued)		
$1,189,672 Water and Sewer Revenue Bonds, Series 2015A - On June 17, 2015, the Authority issued $1,189,672 in revenue bonds for purposes of financing capital improvements including replacing the final phase of the Schenks Branch Interceptor.		
The bond resolution provides a redemption schedule with an interest payment due October 1, 2016 and interest and principal payments of $35,296 due semi-annually from April 1, 2017 through April 1, 2036. The bonds bear interest at an annual rate of 1.5%.	$ 1,052,840	$ 55,005
$44,495,000 Taxable Water and Sewer System Revenue and Refunding Bonds, Series 2015B - On November 18, 2015, the Authority issued $44,495,000 in Revenue and Refunding Bonds for purposes of financing various water capital projects and to refund Series 2005B bond with an outstanding amount of $20,455,000. The bonds were issued at a premium in the amount of $5,329,294.		
The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from April 1, 2016 through October 1, 2045 for total payments of $1.7 to $3.3 million per year. The bonds bear interest at an annual rate ranging from 3.094% to 5.125%. The Authority refunded the 2005B Series bonds to reduce its total debt service payments over the next 20 years by $4.45 million and to obtain a net economic gain (difference between the present values of the debt service payments on the old and new debt) of $3.51 million.	40,460,000	1,480,000

Note 6−Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	Total Amount	Amount Due Within One Year
Revenue Bonds (Continued)		
Direct Borrowings and Direct Placements: (Continued)		
$10,000,000 Tax Regional Water and Sewer Revenue Bonds, Series 2016 - On December 8, 2016, the Authority issued $10,000,000 in revenue bonds for purposes of financing various capital improvements.		
The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from April 1, 2017 through October 1, 2036. The bonds bear interest at an annual rate of 2.35%. Total debt service payments are approximately $627,000 per year.	$ 9,198,000	$ 416,000
$36,855,000 Taxable Regional Water and Sewer Revenue Bonds, Series 2018 - On November 14, 2018 the Authority issued $36,855,000 in revenue bonds for purposes of financing various capital improvements.		
The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from April 1, 2019 through October 1, 2048. The bonds bear interest at a variable annual rate pf 4.125% to 5.125%. Total debt service payments are approximately $2.26 million per year. The bonds were issued at a premium in the amount of $2,389,821.	36,855,000	560,000
Total Revenue Bonds	$ 190,291,452	$ 7,725,510
Issuance premiums (discounts)	9,832,038	-
VERIP liability	583,922	174,093
Compensated absences	429,107	377,000
Net OPEB liability	389,000	-
Net pension liability	2,570,815	-
Total	$ 204,096,334	$ 8,276,603

Note 6−Long-Term Obligations: (Continued)

C. Annual Amortization of Long-Term Debt

The annual requirements to amortize all long-term debt outstanding as of June 30, 2019 are as follows:

	Revenue Bonds			
	Direct Borrowings and Direct Placements		Public Offerings	
Year Ending June 30,	Interest	Principal	Interest	Principal
2020	$ 6,059,271	$ 7,075,510	$ 688,456	$ 650,000
2021	5,827,219	7,305,577	668,656	670,000
2022	5,587,182	7,538,974	644,706	695,000
2023	5,327,886	7,805,760	616,306	725,000
2024	5,054,899	8,078,992	586,706	755,000
2025-2029	21,023,216	43,121,885	2,625,278	4,075,000
2030-2034	14,534,079	32,041,242	2,017,888	4,680,000
2035-2039	9,632,094	22,123,512	1,257,106	5,440,000
2040-2044	5,334,269	19,235,000	333,369	5,025,000
2045-2049	1,413,000	13,250,000	-	-
Total	$ 79,793,115	$ 167,576,452	$ 9,438,471	$ 22,715,000

D. Prior Year Defeasance of Debt

In prior years, the Authority defeased certain revenue bonds by placing the proceeds of new bonds in an irrevocable trust to provide for all future debt service payments on the old bonds. Accordingly, the trust account assets and the liability for the defeased bonds are not included in the Authority's financial statements.

Note 7−Compensated Absences:

Authority employees earn vacation leave each month at a scheduled rate in accordance with the years of service and sick leave at the rate of eight hours per month. Accumulated unpaid vacation leave amounts are accrued when incurred. At June 30, 2019 and 2018, the liability for accrued vacation leave was $429,107 and $438,227, respectively.

Note 8−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 Code of Virginia, as amended. Eligible prior service that may be purchased includes prior public service, active military service, certain periods of leave, and previously refunded service.

Benefit Structures

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, as detailed below.

a. Employees hired before July 1, 2010, vested as of January 1, 2013, and have not taken a refund, are covered under Plan 1, a defined benefit plan. Non-hazardous duty employees are eligible for an unreduced retirement benefit beginning at age 65 with at least 5 years of creditable service or age 50 with at least 30 years of creditable service. Non-hazardous duty employees may retire with a reduced benefit as early as age 55 with at least 5 years of creditable service or age 50 with at least 10 years of creditable service. Hazardous duty employees (law enforcement officers, firefighters, and sheriffs) are eligible for an unreduced benefit beginning at age 60 with at least 5 years of creditable service or age 50 with at least 25 years of creditable service. Hazardous duty employees may retire with a reduced benefit as early as age 50 with at least 5 years of creditable service.

b. Employees hired 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 are covered under Plan 2, a defined benefit plan. Non-hazardous duty employees are eligible for an unreduced benefit beginning at their normal social security retirement age with at least 5 years of creditable service or when the sum of their age and service equals 90. Non-hazardous duty employees may retire with a reduced benefit as early as age 60 with at least 5 years of creditable service. Hazardous duty employees are eligible for an unreduced benefit beginning at age 60 with at least 5 years of creditable service or age 50 with at least 25 years of creditable service. Hazardous duty employees may retire with a reduced benefit as early as age 50 with at least 5 years of creditable service.

c. Non-hazardous duty employees hired on or after January 1, 2014 are covered by the Hybrid Plan combining the features of a defined benefit plan and a defined contribution plan. Plan 1 and Plan 2 members also had the option of opting into this plan during the election window held January 1 – April 30, 2014 with an effective date of July 1, 2014. Employees covered by this plan are eligible for an unreduced benefit beginning at their normal social security retirement age with at least 5 years of creditable service, or when the sum of their age and service equal 90. Employees may retire with a reduced benefit as early as age 60 with at least 5 years of creditable service. For the defined contribution component, members are eligible to receive distributions upon leaving employment, subject to restrictions.

Note 8−Pension Plan: (Continued)

Average Final Compensation and Service Retirement Multiplier

The VRS defined benefit is a lifetime monthly benefit based on a retirement multiplier as a percentage of the employee's average final compensation multiplied by the employee's total creditable service. Under Plan 1, average final compensation is the average of the employee's 36 consecutive months of highest compensation and the multiplier is 1.7% for non-hazardous duty employees, 1.85% for sheriffs and regional jail superintendents, and 1.7% or 1.85% for hazardous duty employees as elected by the employer. Under Plan 2, average final compensation is the average of the employee's 60 consecutive months of highest compensation and the retirement multiplier is 1.65% for non-hazardous duty employees, 1.85% for sheriffs and regional jail superintendents, and 1.7% or 1.85% for hazardous duty employees as elected by the employer. Under the Hybrid Plan, average final compensation is the average of the employee's 60 consecutive months of highest compensation and the multiplier is 1.00%. For members who opted into the Hyrbrid 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.

Cost-of-Living Adjustment (COLA) in Retirement and Death and Disability Benefits

Retirees with an unreduced benefit or with a reduced benefit with at least 20 years of creditable service are eligible for an annual COLA beginning July 1 after one full calendar year from the retirement date. Retirees with a reduced benefit and who have less than 20 years of creditable service are eligible for an annual COLA beginning on July 1 after one calendar year following the unreduced retirement eligibility date. Under Plan 1, the COLA cannot exceed 5.00%. Under Plan 2 and the Hybrid Plan, the COLA cannot exceed 3.00%. The VRS also provides death and disability benefits. Title 51.1 of the Code of Virginia, as amended, assigns the authority to establish and amend benefit provisions to the General Assembly of Virginia.

Employees Covered by Benefit Terms

As of the June 30, 2017 actuarial valuation, the following employees were covered by the benefit terms of the pension plan:

	2019	2018
Inactive members or their beneficiaries currently receiving benefits	56	52
Inactive members:		
Vested inactive members	17	16
Non-vested inactive members	18	20
Long-term disability (LTD)	0	0
Inactive members active elsewhere in VRS	39	36
Total inactive members	74	72
Active members	83	75
Total covered employees	213	199

Note 8−Pension Plan: (Continued)

Contributions

The contribution requirement for active employees is governed by §51.1-145 of the Code of Virginia, 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.

The Authority's contractually required employer contribution rate for the year ended June 30, 2019 was 8.14% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2017. The Authority's contractually required employer contribution rate for the year ended June 30, 2018 was 9.62% 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 $389,097 and $438,760 for the years ended June 30, 2019 and June 30, 2018, respectively.

Net Pension Liability

The net pension liability (NPL) is calculated separately for each employer and represents that particular employer's total pension liability determined in accordance with GASB Statement No. 68, less that employer's fiduciary net position. For Authority, the net pension liability was measured as of June 30, 2018. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2017 rolled forward to the measurement date of June 30, 2018.

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, 2017, 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, 2018.

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*

* 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.

Note 8−Pension Plan: (Continued)

Actuarial Assumptions – General Employees: (Continued)

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.

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.

Note 8−Pension Plan: (Continued)

Actuarial Assumptions – General Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 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%

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%

Note 8−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%
		*Expected arithmetic 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. Consistent with the phased-in funding provided by the General Assembly for state and teacher employer contributions; the Authority was also provided with an opportunity to use an alternative employer contribution rate. For the year ended June 30, 2018, the alternate rate was the employer contribution rate used in FY 2012 or 90% of the actuarially determined employer contribution rate from the June 30, 2015 actuarial valuations, whichever was greater. From July 1, 2018 on, participating employers are assumed to continue 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.

Note 8−Pension Plan: (Continued)

Changes in Net Pension Liability

	Increase (Decrease)		
	Total Pension Liability (a)	**Plan Fiduciary Net Position (b)**	**Net Pension Liability (a) - (b)**
Balances at June 30, 2017	$ 21,977,526	$ 19,053,943	$ 2,923,583
Changes for the year:			
Service cost	$ 414,140	$ -	$ 414,140
Interest	1,501,555	-	1,501,555
Differences between expected and actual experience	(211,755)	-	(211,755)
Assumption changes	-		-
Contributions - employer	-	438,811	(438,811)
Contributions - employee	-	227,140	(227,140)
Net investment income	-	1,404,233	(1,404,233)
Benefit payments, including refunds of employee contributions	(1,053,473)	(1,053,473)	-
Administrative expenses	-	(12,231)	12,231
Other changes	-	(1,245)	1,245
Net changes	$ 650,467	$ 1,003,235	$ (352,768)
Balances at June 30, 2018	$ 22,627,993	$ 20,057,178	$ 2,570,815

Note 8−Pension Plan: (Continued)

Changes in Net Pension Liability: (Continued)

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2016	$ 21,391,101	$ 17,222,309	$ 4,168,792
Changes for the year:			
Service cost	$ 398,833	$ -	$ 398,833
Interest	1,465,426	-	1,465,426
Differences between expected and actual experience	(123,760)	-	(123,760)
Assumption changes	(241,172)		(241,172)
Contributions - employer	-	423,473	(423,473)
Contributions - employee	-	237,015	(237,015)
Net investment income	-	2,098,047	(2,098,047)
Benefit payments, including refunds of employee contributions	(912,902)	(912,902)	-
Administrative expenses	-	(12,137)	12,137
Other changes	-	(1,862)	1,862
Net changes	$ 586,425	$ 1,831,634	$ (1,245,209)
Balances at June 30, 2017	$ 21,977,526	$ 19,053,943	$ 2,923,583

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		
Rivanna Water & Sewer Authority's Net Pension Liability	1% Decrease (6.00%)	Current Discount (7.00%)	1% Increase (8.00%)
2019	$ 5,341,787	$ 2,570,815	$ 248,162

	Rate		
	(6.00%)	(7.00%)	(8.00%)
2018	$ 5,648,515	$ 2,923,583	$ 642,315

Note 8−Pension Plan: (Continued)

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

For the year ended June 30, 2019, the Authority recognized pension expense of $100,098. At June 30, 2019, 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	$ 35,878	$ 179,904
Changes in assumptions	-	78,766
Net difference between projected and actual earnings on pension plan investments	-	173,542
Employer contributions subsequent to the measurement date	389,097	-
Total	$ 424,975	$ 432,212

For the year ended June 30, 2018, the Authority recognized pension expense of $261,936. 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	$ 141,704	$ 82,090
Changes in assumptions	-	159,969
Net difference between projected and actual earnings on pension plan investments	-	281,924
Employer contributions subsequent to the measurement date	438,760	-
Total	$ 580,464	$ 523,983

Note 8−Pension Plan: (Continued)

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions (Continued)

$389,097 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 ending June 30, 2020. 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		
2020	$	(96,137)
2021		(86,038)
2022		(197,259)
2023		(16,900)
2024		-
Thereafter		-

$438,760 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 ending June 30, 2019. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense in future reporting periods as follows:

Year ended June 30		
2019	$	(193,023)
2020		(6,968)
2021		(1,927)
2022		(180,361)
2023		-
Thereafter		-

Pension Plan Data

Information about the VRS Political Subdivision Retirement Plan is also available in the separately issued VRS 2018 Comprehensive Annual Financial Report (CAFR). A copy of the 2018 VRS CAFR may be downloaded from the VRS website at http://www.varetire.org/Pdf/Publications/2018-annual-report.pdf, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA 23218-2500.

Note 9−Voluntary Early Retirement Incentive Program:

Rivanna Water and Sewer Authority has a Voluntary Early Retirement Incentive Program (VERIP) which provides for monthly payments to eligible employees for a period of up to five years after early retirement or until age 65, whichever comes first. Participants in the VERIP must be regular full-time employees eligible for early or full retirement under the provisions of the Virginia Retirement System (VRS) who have been employed by the Authority for 10 of the last 13 years prior to retirement. Employees retiring under the disability provisions of VRS and/or Social Security are not eligible for the VERIP. VERIP participants receive a stipend equal to the difference between (1) the annual VRS retirement benefit amount as reduced for early VRS retirement if appropriate and (2) the recomputed annual VRS benefit with the addition of the lesser of five more years of service or the number of additional years needed to reach age 65. The stipend is paid on a monthly basis. The participant may also receive a monthly payment equal to the amount of the Board's contribution toward an employee's health insurance, for as long as the employee is covered by VERIP benefits. Applications for the VERIP must be submitted to the Executive Director for approval. The Authority's estimated VERIP liability as of June 30, 2019 and 2018 was $583,922 and $487,926, respectively. The amount payable within the next year is $174,093.

Note 10−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 Commonwealth to form the Virginia Association of Counties Group Self-Insurance Risk Pool, 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, property and liability insurance. The Agreement for Formation of the association provides that the association will be self-sustaining through member premiums. Settled claims have not exceeded pool coverage in any of the past three fiscal years.

Note 11−Other Postemployment Benefits−Health Insurance:

The Authority previously provided post-retirement healthcare benefits for employees who were eligible under a single-employer defined benefit plan. The Plan and benefits have been terminated. Therefore, the Authority has no assets or liabilities to report as of June 30, 2017 or subsequent years.

Note 12−Group Life Insurance (GLI) Program (OPEB Plan):

Plan Description

The Group Life Insurance (GLI) 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. All full-time, salaried permanent employees of the state agencies, teachers, and employees of participating political subdivisions are automatically covered by the VRS GLI 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 GLI benefit, members are also eligible to elect additional coverage for themselves as well as a spouse or dependent children through the Optional GLI 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 GLI Program OPEB.

The specific information for GLI OPEB, including eligibility, coverage and benefits is described below:

Eligible Employees

The GLI Program was established July 1, 1960, for state employees, teachers, and employees of political subdivisions that elect the program. Basic GLI coverage is automatic upon employment. Coverage ends for employees who leave their position before retirement eligibility or who take a refund of their accumulated retirement member contributions and accrued interest.

Benefit Amounts

The GLI Program is a defined benefit plan with several components. The natural death benefit is equal to the employee's covered compensation rounded to the next highest thousand and then doubled. The accidental death benefit is double the natural death benefit. In addition to basic natural and accidental death benefits, the program provides additional benefits provided under specific circumstances that include the following: accidental dismemberment benefit, safety belt benefit, repatriation benefit, felonious assault benefit, and accelerated death benefit option. The benefit amounts 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. For covered members with at least 30 years of creditable service, the minimum benefit payable was set at $8,000 by statute. This amount is increased annually based on the VRS Plan 2 cost-of-living adjustment and was increased to $8,279 effective July 1, 2018.

Note 12−Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Contributions

The contribution requirements for the GLI 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 GLI 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, 2019 was 0.52% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2017. 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 GLI Program from the entity were $27,074 and $25,512 for the years ended June 30, 2019 and June 30, 2018, respectively.

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

At June 30, 2019, the entity reported a liability of $389,000 for its proportionate share of the Net GLI OPEB Liability. The Net GLI OPEB Liability was measured as of June 30, 2018 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 GLI Program for the year ended June 30, 2018 relative to the total of the actuarially determined employer contributions for all participating employers. At June 30, 2018, the participating employer's proportion was 0.02561% as compared to 0.02503% at June 30, 2017.

At June 30, 2018, the entity reported a liability of $376,000 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 .02503% as compared to .02450% at June 30, 2016.

For the year ended June 30, 2019, the participating employer recognized GLI OPEB expense of $6,000. For the year ended June 30, 2018, the participating employer recognized GLI OPEB expense of $5,000. 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.

Note 12−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 GLI Program OPEB: (Continued)

At June 30, 2019, 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	$ 19,000	$ 7,000
Net difference between projected and actual earnings on GLI OPEB program investments	-	13,000
Change in assumptions	-	16,000
Changes in proportion	15,000	-
Employer contributions subsequent to the measurement date	27,074	-
Total	$ 61,074	$ 36,000

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	$ -	$ 9,000
Net difference between projected and actual earnings on GLI OPEB program investments	-	14,000
Change in assumptions	-	19,000
Changes in proportion	8,000	-
Employer contributions subsequent to the measurement date	25,512	-
Total	$ 33,512	$ 42,000

Note 12−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 GLI Program OPEB: (Continued)

$27,074 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, 2020. 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		
2020	$	(3,000)
2021		(3,000)
2022		(3,000)
2023		1,000
2024		4,000
Thereafter		2,000

$25,512 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	$	(8,820)
2020		(8,820)
2021		(8,820)
2022		(5,200)
2023		(2,340)
Thereafter		-

Note 12−Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions

The total GLI OPEB liability was based on an actuarial valuation as of June 30, 2017, 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, 2018.

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.

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.

Note 12−Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates – General State Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 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 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%

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.

Note 12−Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates – Teachers: (Continued)

The actuarial assumptions used in the June 30, 2017 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 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

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.

Note 12−Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates – SPORS Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 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 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%

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.

Note 12−Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates – VaLORS Employees: (Continued)

The actuarial assumptions used in the June 30, 2017 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 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%

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, 2017 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

Note 12−Group Life Insurance (GLI) Program (OPEB Plan): (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 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, 2017 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.

Note 12−Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

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

The actuarial assumptions used in the June 30, 2017 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.

Note 12−Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

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

The actuarial assumptions used in the June 30, 2017 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.

The actuarial assumptions used in the June 30, 2017 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%

Note 12−Group Life Insurance (GLI) Program (OPEB Plan): (Continued)

NET GLI OPEB Liability

The net OPEB liability (NOL) for the GLI Program represents the program's total OPEB liability determined in accordance with GASB Statement No. 74, less the associated fiduciary net position. As of the measurement date of June 30, 2018, NOL amounts for the GLI Program are as follows (amounts expressed in thousands):

		GLI OPEB Program
Total GLI OPEB Liability	$	3,113,508
Plan Fiduciary Net Position		1,594,773
Employers' Net GLI OPEB Liability (Asset)	$	1,518,735
Plan Fiduciary Net Position as a Percentage of the Total GLI OPEB Liability		51.22%

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):

		GLI 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.

Note 12−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 arithmetic 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 ended June 30, 2018, 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 which was 100% of the actuarially determined contribution rate. From July 1, 2018 on, employers are assumed to continue 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.

Note 12−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:

Authority's proportionate share of the GLI Program Net OPEB Liability		1% Decrease (6.00%)		Rate Current Discount (7.00%)		1% Increase (8.00%)
2019	$	509,000	$	389,000	$	292,000

		1% Decrease (6.00%)		Rate Current Discount (7.00%)		1% Increase (8.00%)
2018	$	487,000	$	376,000	$	287,000

GLI Program Fiduciary Net Position

Detailed information about the GLI Program's Fiduciary Net Position is available in the separately issued VRS 2018 Comprehensive Annual Financial Report (CAFR). A copy of the 2018 VRS CAFR may be downloaded from the VRS website at http://www.varetire.org/Pdf/Publications/2018-annual-report.pdf, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA, 23218-2500.

Note 13−Related Parties:

Rivanna Solid Waste Authority (RSWA) and Rivanna Water and Sewer Authority (RWSA) share office space and administrative staff. Procedures are in place to ensure proper segregation of funds, purchasing activity, personnel and similar matters. RSWA pays RWSA monthly for its share of joint administrative expenses, which totaled $460,000 in FY 2019 and $409,000 in FY 2018 and for leachate acceptance and treatment of $4,285 in FY 2019 and $1,563 in FY 2018. Rivanna Solid Waste Authority billed Rivanna Water & Sewer Authority $40,547 for hauling and tipping fees in FY 2019 and $51,889 in the previous year. RSWA owed RWSA $49,683 and $36,867 at June 30, 2019 and 2018, respectively.

Note 14−Construction Commitments:

Rivanna Water and Sewer Authority had the following significant construction contract commitments for capital projects as of June 30, 2019:

Project		Remaining Commitment
South Rivanna WTP Improvements	$	979,717
Observatory WTP Improvements		1,172,845
Crozet WTP Expansion		6,488,676
Interceptor Sewer & Manhole Repair and Crozet Interceptor		921,762
Valve Repair-Replacement (Phase 2)		637,113
Beaver Creek Dam Alterations		712,760

The Authority had the following significant construction contract commitments for capital projects as of June 30, 2018:

Project		Remaining Commitment
Interceptor Sewer & Manhole Repair	$	1,264,575
S. Rivanna Reservoir to Ragged Mtn. Reservoir Water Line R/W		542,870

These contracts give the Authority the right to terminate the contract for any reason.

Note 15−Fair Value Measures:

Fair value for investments is determined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants at the measurement date. The three-level fair value hierarchy prioritizes the inputs used to measure fair value. This hierarchy requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs. The three levels of inputs used to measure fair value are as follows:

- Level 1 — Quoted prices in active markets for identical assets or liabilities.

- Level 2 — Significant observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.

- Level 3 — Significant unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This includes certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs.

Note 15−Fair Value Measures: (Continued)

The Authority is providing the following information related to its investments:

	Total June 30, 2019	Fair Value Measurements at Reporting Date Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
U.S. Agencies Securities	$ 2,454	$ 2,454	$ -	$ -
U.S. Treasury & Agency Money Market Funds	7,118,324	7,118,324	-	-
U.S. Treasury Notes & Bonds	1,995,240	1,995,240	-	-
Total by fair value level	$ 9,116,018	$ 9,116,018	$ -	$ -

Investments measured at the net asset value (NAV)

VML/VACo Virginia Investment Pool	$ 10,368,384
Total measured at the NAV	$ 10,368,384

	Total June 30, 2018	Fair Value Measurements at Reporting Date Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
U.S. Agencies Securities	$ 3,148	$ 3,148	$ -	$ -
U.S. Treasury & Agency Money Market Funds	6,215,861	6,215,861	-	-
U.S. Treasury Notes & Bonds	1,925,780	1,925,780	-	-
Total by fair value level	$ 8,144,789	$ 8,144,789	$ -	$ -

Investments measured at the net asset value (NAV)

VML/VACo Virginia Investment Pool	$ 10,121,699
Total measured at the NAV	$ 10,121,699

Note 16−Upcoming Pronouncements:

Statement No. 84, *Fiduciary Activities*, establishes criteria for identifying fiduciary activities of all state and local governments for accounting and financial reporting purposes and how those activities should be reported. The requirements of this Statement are effective for reporting periods beginning after December 15, 2018.

Note 16−Upcoming Pronouncements: (Continued)

Statement No. 87, *Leases*, requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. 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. The requirements of this Statement are effective for reporting periods beginning after December 15, 2019.

Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period*, provides guidance for reporting 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. The requirements of this Statement are effective for reporting periods beginning after December 15, 2019.

Statement No. 90, *Majority Equity Interests – An Amendment of GASB Statements No. 14 and No. 61*, provides guidance for reporting a government's majority equity interest in a legally separate organization and for reporting financial statement information for certain component units. The requirements of this Statement are effective for reporting periods beginning after December 15, 2018.

Statement No. 91, *Conduit Debt Obligations*, provides a single method of reporting conduit debt obligations by issuers and eliminates diversity in practice associated with (1) commitments extended by issuers, (2) arrangements associated with conduit debt obligations, and (3) related note disclosures. The requirements of this Statement are effective for reporting periods beginning after December 15, 2020.

Management is currently evaluating the relevance of these standards to the Authority and the impact they will have on the financial statements if adopted.

Note 17−Restatement of Beginning Net Position−Fiscal Year Ending June 30, 2018:

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 June 30, 2018. This Statement establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources, and 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 June 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)).

Note 17−Restatement of Beginning Net Position−Fiscal Year Ending June 30, 2018: (Continued)

Beginning net position was restated as follows due to the implementation of GASB Statement No. 75. Information for the total OPEB liabilities under GASB Statement No. 75 were unavailable for periods prior to fiscal year 2018 and accordingly the comparative year presented for fiscal year ending June 30, 2017 has not been restated. Beginning net position was also restated to reflect a prior year loss on disposal of the Camelot Wastewater Treatment Plant, which was decommissioned and transferred back to Albemarle County Service Authority in 2013.

	Amount
Net Position as of July 1, 2017, previously reported	$ 141,763,607
OPEB liability restated as of July 1, 2017 - group life insurance	(405,000)
Net capital assets restated as of July 1, 2017 - prior year disposal	(515,165)
Net Position as of July 1, 2017, as restated	$ 140,843,442

Note 18−Adoption of Accounting Principles:

The Authority implemented the financial reporting provisions of Governmental Accounting Standards Board Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*, during the fiscal year ended June 30, 2019. This Statement clarifies which liabilities governments should include when disclosing information related to debt. It also requires that additional essential information related to debt be disclosed in notes to financial statements. No restatement was required as a result of this implementation.

The Authority early implemented provisions of Governmental Accounting Standards Board Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period*, during the fiscal year ended June 30, 2019. This Statement simplifies accounting for interest cost incurred before the end of a construction period. Interest cost incurred during construction is expensed and no longer capitalized as part of project costs. No restatement was required as a result of this implementation.

Required Supplementary Information

RIVANNA WATER & SEWER AUTHORITY

Schedule of Changes in Net Pension Liability and Related Ratios
For Plan Years Ended June 30, 2014 through June 30, 2018

	2018	2017	2016	2015	2014
Total pension liability					
Service cost	$ 414,140	$ 398,833	$ 420,980	$ 397,302	$ 408,618
Interest	1,501,555	1,465,426	1,376,398	1,308,253	1,243,939
Differences between expected and actual experience	(211,755)	(123,760)	343,405	43,130	-
Changes in assumptions	-	(241,172)	-	-	-
Benefit payments, including refunds of employee contributions	(1,053,473)	(912,902)	(825,031)	(725,341)	(742,220)
Net change in total pension liability	$ 650,467	$ 586,425	$ 1,315,752	$ 1,023,344	$ 910,337
Total pension liability - beginning	21,977,526	21,391,101	20,075,349	19,052,005	18,141,668
Total pension liability - ending (a)	$ 22,627,993	$ 21,977,526	$ 21,391,101	$ 20,075,349	$ 19,052,005
Plan fiduciary net position					
Contributions - employer	$ 438,811	$ 423,473	$ 448,728	$ 434,762	$ 428,309
Contributions - employee	227,140	237,015	216,819	230,505	204,334
Net investment income	1,404,233	2,098,047	298,454	754,877	2,256,556
Benefit payments, including refunds of employee contributions	(1,053,473)	(912,902)	(825,031)	(725,341)	(742,220)
Administrative expense	(12,231)	(12,137)	(10,631)	(10,246)	(12,143)
Other	(1,245)	(1,862)	(126)	(160)	119
Net change in plan fiduciary net position	$ 1,003,235	$ 1,831,634	$ 128,213	$ 684,397	$ 2,134,955
Plan fiduciary net position - beginning	19,053,943	17,222,309	17,094,096	16,409,699	14,274,744
Plan fiduciary net position - ending (b)	$ 20,057,178	$ 19,053,943	$ 17,222,309	$ 17,094,096	$ 16,409,699
Authority's net pension liability - ending (a) - (b)	$ 2,570,815	$ 2,923,583	$ 4,168,792	$ 2,981,253	$ 2,642,306
Plan fiduciary net position as a percentage of the total pension liability	88.64%	86.70%	80.51%	85.15%	86.13%
Covered payroll	$ 4,868,672	$ 4,613,774	$ 4,403,235	$ 4,232,146	$ 4,087,133
Authority's net pension liability as a percentage of covered payroll	52.80%	63.37%	94.68%	70.44%	64.65%

This schedule is intended to report information for 10 years. Information prior to the 2014 valuation is not available. However, additional years will be included as they become available.

RIVANNA WATER & SEWER AUTHORITY

Schedule of Employer Contributions - Pension Plan
For the Years Ended June 30, 2010 through June 30, 2019

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)
2019	$ 389,097	$ 389,097	$ -	$ 5,175,437	7.52%
2018	438,760	438,760	-	4,868,672	9.01%
2017	423,477	423,477	-	4,613,774	9.18%
2016	451,771	451,771	-	4,403,235	10.26%
2015	435,295	435,295	-	4,232,146	10.29%
2014	428,317	428,317	-	4,087,133	10.48%
2013	426,490	426,490	-	4,078,576	10.46%
2012	308,088	308,088	-	3,885,089	7.93%
2011	297,182	297,182	-	3,747,565	7.93%
2010	237,625	237,625	-	3,765,849	6.31%

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 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%

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%

RIVANNA WATER & SEWER AUTHORITY

Schedule of Authority's Share of Net OPEB Liability
Group Life Insurance Program
For the Measurement Dates of June 30, 2018 and 2017

Date (1)	Employer's Proportion of the Net GLI OPEB Liability (Asset) (2)	Employer's Proportionate Share of the Net GLI OPEB Liability (Asset) (3)	Employer's Covered Payroll (4)	Employer's Proportionate Share of the Net GLI OPEB Liability (Asset) as a Percentage of Covered Payroll (3)/(4) (5)	Plan Fiduciary Net Position as a Percentage of Total GLI OPEB Liability (6)
2018	0.02561%	$ 389,000	$ 4,868,672	7.99%	51.22%
2017	0.02503%	376,000	4,613,774	8.15%	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.

RIVANNA WATER & SEWER AUTHORITY

Schedule of Employer Contributions
Group Life Insurance Program
For the Years Ended June 30, 2017 through June 30, 2019

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)
2019	$ 27,074	$ 27,074	$ -	$ 5,175,437	0.52%
2018	25,512	25,512	-	4,868,672	0.52%
2017	24,197	24,197	-	4,613,774	0.52%

Schedule is intended to show information for 10 years. Information prior to 2017 is unavailable. However, additional years will be included as they become available.

Notes to Required Supplementary Information
Group Life Insurance Program
For the Year Ended June 30, 2019

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	Updated to a more current mortality table - RP-2014 projected
Retirement Rates	Lowered rates at older ages and changed final retirement
Withdrawal Rates	Adjusted rates to better fit experience at each year age and
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-retirement	Updated to a more current mortality table - RP-2014 projected
Retirement Rates	Lowered rates at older ages and changed final retirement
Withdrawal Rates	Adjusted rates to better fit experience at each year age and
Disability Rates	Adjusted rates to better match experience
Salary Scale	No change

SPORS Employees

Mortality Rates (pre-retirement, post-retirement	Updated to a more current mortality table - RP-2014 projected
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	Updated to a more current mortality table - RP-2014 projected
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
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, 2019 (Continued)

JRS Employees

Mortality Rates (pre-retirement, post-retirement	Updated to a more current mortality table - RP-2014 projected
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

Mortality Rates (pre-retirement, post-retirement	Updated to a more current mortality table - RP-2014 projected
Retirement Rates	Lowered retirement rates at older ages and extended final
Withdrawal Rates	Adjusted termination rates to better fit experience at each age
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

Mortality Rates (pre-retirement, post-retirement	Updated to a more current mortality table - RP-2014 projected
Retirement Rates	Lowered retirement rates at older ages and extended final
Withdrawal Rates	Adjusted termination rates to better fit experience at each age
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

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

Statistical Section

Sources:

Unless otherwise noted, the information in these tables is derived from the comprehensive annual financial reports for the relevant year.

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RIVANNA WATER & SEWER AUTHORITY **Table 1**

Net Position by Component
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Net investment in capital assets	$ 113,396,071	$ 114,137,186	$ 105,412,275	$ 101,129,762	$ 99,020,753	$ 93,538,673	$ 87,302,949	$ 86,135,840	$ 77,662,172	$ 62,172,653
Restricted	4,278,445	3,794,293	3,729,350	3,335,539	2,940,314	2,870,788	2,782,090	3,173,804	3,048,111	2,522,530
Unrestricted	34,593,713	29,141,487	32,621,982	31,189,295	28,812,875	32,388,908	31,510,133	24,483,936	23,156,625	26,697,587
Total net position	$ 152,268,229	$ 147,072,966	$ 141,763,607	$ 135,654,596	$ 130,773,942	$ 128,798,369	$ 121,595,172	$ 113,793,580	$ 103,866,908	$ 91,392,770

RIVANNA WATER & SEWER AUTHORITY **Table 2**

Changes in Net Position
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
Operating revenues:										
Metered water sales	$ 15,216,180	$ 14,034,080	$ 13,753,977	$ 13,014,328	$ 12,555,666	$ 11,353,630	$ 11,728,840	$ 11,058,083	$ 10,895,551	$ 10,746,260
Wastewater service charges	18,821,857	14,858,101	14,444,159	14,799,741	13,625,855	14,620,353	13,889,105	12,807,628	11,069,488	12,701,859
Total operating revenues	$ 34,038,037	$ 28,892,181	$ 28,198,136	$ 27,814,069	$ 26,181,521	$ 25,973,983	$ 25,617,945	$ 23,865,711	$ 21,965,039	$ 23,448,119
Operating expenses:										
Personnel costs	$ 7,728,340	$ 7,385,978	$ 7,483,807	$ 6,155,243	$ 5,878,175	$ 5,756,273	$ 5,928,994	$ 5,879,080	$ 5,525,332	$ 5,428,691
Professional services	994,207	738,823	885,072	602,891	473,193	418,858	282,427	336,166	338,814	238,975
Other services and charges	3,770,051	3,341,421	2,764,905	2,607,118	2,532,408	2,683,136	2,430,718	2,463,176	2,341,123	2,137,741
Operations and maintenance	5,799,962	4,169,065	4,214,246	4,710,701	3,991,590	3,543,311	3,383,574	3,201,971	2,415,211	2,412,752
Depreciation	6,704,908	5,773,757	5,411,996	5,396,029	4,983,753	4,662,094	3,601,730	2,965,612	2,962,912	2,966,823
Total operating expenses	$ 24,997,468	$ 21,409,044	$ 20,760,026	$ 19,471,982	$ 17,859,119	$ 17,063,672	$ 15,627,443	$ 14,846,005	$ 13,583,392	$ 13,184,982
Operating income	$ 9,040,569	$ 7,483,137	$ 7,438,110	$ 8,342,087	$ 8,322,402	$ 8,910,311	$ 9,990,502	$ 9,019,706	$ 8,381,647	$ 10,263,137
Nonoperating revenues (expenses):										
Investment earnings	$ 1,599,486	$ 525,039	$ 296,433	$ 369,675	$ 82,083	$ 92,839	$ 157,526	$ 124,832	$ 120,623	$ 149,587
Buck Mountain revenue	111,700	125,900	115,700	84,000	74,900	89,000	78,000	68,200	52,400	93,300
Administrative reimbursement	474,246	436,329	328,000	299,000	265,000	257,000	257,000	276,000	277,000	418,000
Other revenues	380,737	302,920	305,763	370,173	337,148	251,373	225,034	214,908	256,541	110,396
Interest expense	(5,947,988)	(2,643,801)	(2,248,229)	(4,027,843)	(3,608,072)	(2,336,245)	(2,552,331)	(1,830,696)	(2,607,502)	(2,107,381)
Debt issuance costs	(463,487)	-	(126,766)	(556,438)	(59,273)	(61,081)	(580,404)	-	-	-
Amortization expense	-	-	-	-	-	-	-	-	(86,827)	(39,525)
Total nonoperating revenues (expenses)	$ (3,845,306)	$ (1,253,613)	$ (1,329,099)	$ (3,461,433)	$ (2,908,214)	$ (1,707,114)	$ (2,415,175)	$ (1,146,756)	$ (1,987,765)	$ (1,375,623)
Income before capital grants and contributions	$ 5,195,263	$ 6,229,524	$ 6,109,011	$ 4,880,654	$ 5,414,188	$ 7,203,197	$ 7,575,327	$ 7,872,950	$ 6,393,882	$ 8,887,514
Capital grants	-	-	-	-	-	-	226,265	3,003,552	6,080,256	11,531,027
Change in net position	$ 5,195,263	$ 6,229,524	$ 6,109,011	$ 4,880,654	$ 5,414,188	$ 7,203,197	$ 7,801,592	$ 10,876,502	$ 12,474,138	$ 20,418,541

RIVANNA WATER & SEWER AUTHORITY **Table 3**

Revenues by Source
Last Ten Fiscal Years

Fiscal Years Ended June 30,	Operating Revenues			Nonoperating Revenues				Other	
	Water Sales	Wastewater Service Charges	Total Operating Revenues	Investment Earnings	Buck Mountain Revenue	Other Revenue	Total Nonoperating Revenues	Capital Grants and Contributions	Total Revenues
2010	$ 10,746,260	$ 12,701,859	$ 23,448,119	$ 149,587	$ 93,300	$ 528,396	$ 771,283	$ 11,531,027	$ 35,750,429
2011	10,895,551	11,069,488	21,965,039	120,623	52,400	533,541	706,564	6,080,256	28,751,859
2012	11,058,083	12,807,628	23,865,711	124,832	68,200	490,908	683,940	3,003,552	27,553,203
2013	11,728,840	13,889,105	25,617,945	157,526	78,000	482,034	717,560	226,265	26,561,770
2014	11,353,630	14,620,353	25,973,983	92,839	89,000	508,373	690,212	-	26,664,195
2015	12,555,666	13,625,855	26,181,521	82,083	74,900	602,148	759,131	-	26,940,652
2016	13,014,328	14,799,741	27,814,069	369,675	84,000	669,173	1,122,848	-	28,936,917
2017	13,753,977	14,444,159	28,198,136	296,433	115,700	633,763	1,045,896	-	29,244,032
2018	14,034,080	14,858,101	28,892,181	525,039	125,900	739,249	1,390,188	-	30,282,369
2019	15,216,180	18,821,857	34,038,037	1,599,486	111,700	854,983	2,566,169	-	36,604,206

RIVANNA WATER & SEWER AUTHORITY **Table 4**

Water and Wastewater Rates and Flows
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
Rates:				***Note 1** **(7/1-10/31/15)**						
Urban Water - City (per 1,000 gallons)	***	***	***	$ 2.756	$ 2.663	$ 2.341	$ 2.443	$ 2.403	$ 2.438	$ 2.461
Urban Water - ACSA (per 1,000 gallons)	***	***	***	$ 3.795	$ 3.687	$ 3.333	$ 3.465	$ 3.439	$ 3.305	$ 3.320
Crozet Water (per month)	$ 162,746	$ 133,901	$ 124,149	$ 111,330	$ 91,942	$ 84,630	$ 82,916	$ 60,853	$ 50,712	$ 52,315
Scottsville Water (per month)	$ 47,717	$ 45,140	$ 43,382	$ 49,012	$ 41,343	$ 41,047	$ 36,280	$ 31,665	$ 32,834	$ 32,089
Urban Wastewater - City (per 1,000 gallons)	***	***	***	$ 3.954	$ 3.822	$ 3.593	$ 3.565	$ 3.179	$ 2.878	$ 2.784
Urban Wastewater - ACSA (per 1,000 gallons)	***	***	***	$ 3.560	$ 3.435	$ 3.463	$ 3.732	$ 3.348	$ 3.048	$ 3.063
Glenmore Wastewater (per month)	$ 31,192	$ 29,494	$ 26,694	$ 25,211	$ 24,451	$ 24,189	$ 23,436	$ 23,246	$ 21,806	$ 22,968
Scottsville Wastewater (per month)	$ 25,823	$ 24,410	$ 21,941	$ 21,425	$ 28,879	$ 28,295	$ 27,619	$ 26,579	$ 25,603	$ 25,216

*Note 1:
The Fiscal Year 2016 Urban Water and Urban Wastewater rates were revised from the above stated rates to the following rates, effective 11/1/15-6/30/16:
In FY 2016, the Board of Directors amended the Service Agreement to go from a rate per 1,000 gallons to a fixed monthly charge for all debt service costs.
Urban rates are stated below along with prior years' rates restated below as fixed monthly charges for comparison purposes based on estimated flows.

***Urban Rates:	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Urban Water:										
Operations - City & ACSA (per 1,000 gallons)	$ 2.070	$ 1.969	$ 1.833	$ 1.713	$ 1.683	$ 1.462	$ 1.320	$ 1.315	$ 1.288	$ 1.230
Debt Service - City (per month)	$ 181,008	$ 160,039	$ 162,968	$ 158,099	$ 148,549	$ 133,156	$ 173,354	$ 177,435	$ 177,607	$ 190,117
Debt Service - ACSA (per month)	$ 307,598	$ 285,439	$ 284,031	$ 279,864	$ 269,379	$ 251,418	$ 282,114	$ 267,054	$ 265,358	$ 274,962
Urban Wastewater:										
Operations - City & ACSA (per 1,000 gallons)	$ 2.146	$ 1.951	$ 1.835	$ 1.789	$ 1.768	$ 1.827	$ 1.869	$ 1.734	$ 1.637	$ 1.583
Debt Service - City (per month)	$ 408,260	$ 392,841	$ 369,037	$ 333,645	$ 310,678	$ 272,220	$ 254,371	$ 224,549	$ 192,848	$ 180,084
Debt Service - ACSA (per month)	$ 246,308	$ 222,550	$ 222,280	$ 232,493	$ 223,598	$ 214,771	$ 228,557	$ 189,209	$ 165,411	$ 181,570

	Fiscal Years Ended June 30,									
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
Flows (in million gallons per day):										
Urban Water	8.967	9.100	9.535	9.359	9.540	9.618	9.647	9.454	9.569	9.352
Crozet Water	0.563	0.532	0.544	0.541	0.546	0.566	0.503	0.450	0.436	0.420
Scottsville Water	0.043	0.045	0.050	0.048	0.049	0.056	0.053	0.049	0.056	0.077
	9.573	9.677	10.129	9.948	10.135	10.240	10.203	9.953	10.061	9.849
Urban Wastewater	12.530	9.083	9.483	10.352	9.481	10.566	9.719	10.014	9.442	11.158
Glenmore Wastewater	0.138	0.120	0.107	0.107	0.101	0.114	0.121	0.122	0.137	0.125
Scottsville Wastewater	0.086	0.056	0.053	0.071	0.050	0.066	0.050	0.054	0.054	0.083
	12.754	9.259	9.643	10.530	9.632	10.746	9.890	10.190	9.633	11.366

RIVANNA WATER & SEWER AUTHORITY **Table 5**

Ten Largest Customers
Current Year and Nine Years Ago

	Fiscal Year 2019 (Current Year)			
	Water Revenue		Wastewater Revenue	
	Amount	%	Amount	%
Albemarle County Service Authority	$ 9,577,368	62.94%	$ 8,630,511	45.85%
City of Charlottesville	$ 5,638,812	37.06%	$ 9,745,389	51.78%
Others	$ -	0.00%	$ 445,957	2.37%
	$ 15,216,180	100.00%	$ 18,821,857	100.00%

	Fiscal Year 2010 (Nine Years Ago)			
	Water Revenue		Wastewater Revenue	
	Amount	%	Amount	%
Albemarle County Service Authority	$ 6,165,571	57.37%	$ 5,974,752	47.04%
City of Charlottesville	$ 4,580,689	42.63%	$ 6,477,064	50.99%
Others	$ -	0.00%	$ 250,043	1.97%
	$ 10,746,260	100.00%	$ 12,701,859	100.00%

Note: The Authority's two wholesale customers, which are both governmental entities, provided 100% of water revenue and 97% of wastewater revenue in FY 2018 and FY 2009. The remaining wastewater revenue came from septage acceptance customers. Due to lack of materiality, the number of customers by type that provide that revenue is not presented here.

RIVANNA WATER & SEWER AUTHORITY **Table 6**

Expenses by Type
Last Ten Fiscal Years

Fiscal Years Ended June 30,	Operations	Depreciation	Interest and Amortization	Bond Issuance Costs	Total
2010	$ 10,218,159	$ 2,966,823	$ 2,146,906	$ -	$ 15,331,888
2011	10,620,480	2,962,912	2,694,329	-	16,277,721
2012	11,880,393	2,965,612	1,830,696	-	16,676,701
2013	12,025,713	3,601,730	2,552,331	580,404	18,760,178
2014	12,401,578	4,662,094	2,336,245	61,081	19,460,998
2015	12,875,366	4,983,753	3,608,072	59,273	21,526,464
2016	14,075,953	5,396,029	4,027,843	556,438	24,056,263
2017	15,348,030	5,411,996	2,248,229	126,766	23,135,021
2018	15,635,287	5,805,362	2,643,801	-	24,084,450
2019	18,292,560	6,704,908	5,947,988	463,487	31,408,943

RIVANNA WATER & SEWER AUTHORITY **Table 7**

Outstanding Debt by Type
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
Revenue bonds payable	$ 200,123,490	$ 167,896,198	$ 173,020,453	$ 160,512,250	$ 124,670,205	$ 125,680,526	$ 127,548,686	$ 103,834,145	$ 73,831,274	$ 57,250,353
Total outstanding debt	$ 200,123,490	$ 167,896,198	$ 173,020,453	$ 160,512,250	$ 124,670,205	$ 125,680,526	$ 127,548,686	$ 103,834,145	$ 73,831,274	$ 57,250,353
Debt per capita	$ 1,285	$ 1,078	$ 1,126	$ 1,058	$ 834	$ 852	$ 873	$ 721	$ 517	$ 406
Debt as a percentage of personal income	1.9%	1.6%	1.7%	1.7%	1.4%	1.5%	1.5%	1.4%	1.0%	0.8%

Notes:
Debt per capita was calculated based on population figures for the calendar year (CY) ending within the fiscal year (FY) obtained from U.S. Department of Commerce - Bureau of Economic Analysis for the City of Charlottesville and County of Albemarle. See Table 9.

Debt as a percentage of personal income was calculated based on personal income for the CY ending within the FY obtained from U.S. Department of Commerce - Bureau of Economic Analysis for the City of Charlottesville and County of Albemarle. See Table 9.

RIVANNA WATER & SEWER AUTHORITY **Table 8**

Revenue Bond Debt Service Coverage
Last Ten Fiscal Years

Fiscal Years Ended June 30,	Gross Revenue (1)	Direct Operating Expense (2)	Net Available	Required Debt Service Payments (3)	Coverage
2010	$ 24,219,402	$ 10,218,159	$ 14,001,243	$ 5,592,641	2.5X
2011	22,671,603	10,620,480	12,051,123	6,962,703	1.7X
2012	24,549,651	11,880,393	12,669,258	6,724,261	1.9X
2013	26,335,505	12,025,713	14,309,792	8,234,169	1.7X
2014	26,664,195	12,401,578	14,262,617	9,089,702	1.6X
2015	26,940,652	12,875,366	14,065,286	9,094,732	1.5X
2016	28,936,917	14,075,953	14,860,964	9,567,370	1.6X
2017	29,244,032	15,348,030	13,896,002	11,912,673	1.2X
2018	30,282,369	15,635,287	14,647,082	12,370,197	1.2X
2019	36,604,206	18,292,560	18,311,646	13,087,353	1.4X

(1) Excluding grant revenue
(2) Excluding depreciation expense
(3) Including payments on revenue bonds and excluding any refunding since the payments were not required to be made in that year

RIVANNA WATER AND SEWER AUTHORITY **Table 9**

Demographic Data for the Service Area
City of Charlottesville & Albemarle County, Virginia
Last Ten Calendar Years

Calendar Year	Population (2)	Personal Income (thousands of $) (2)	Per Capita Personal Income ($) (2)	Unemployment Rate (1)
2009	141,125	6,825,990	48,368	5.8%
2010	142,703	7,209,179	50,519	6.5%
2011	144,094	7,623,402	52,906	5.9%
2012	146,077	8,402,062	57,518	5.5%
2013	147,430	8,270,217	56,096	5.0%
2014	149,410	8,881,388	59,443	4.6%
2015	151,694	9,494,461	62,590	3.9%
2016	153,705	9,981,222	64,938	3.6%
2017	155,721	10,531,351	67,630	3.3%
2018	not available	not available	not available	2.7%

(1) Virginia Employment Commission - Virginia Workforce Connection - for Charlottesville Metropolitan Service Area
(2) U.S. Department of Commerce - Bureau of Economic Analysis - for City of Charlottesville and Albemarle County

RIVANNA WATER & SEWER AUTHORITY **Table 10**

Principal Employers in the Charlottesville Area
Current Year and Nine Years Ago

Employer	Fourth Quarter of 2018 Number of Employees	Fourth Quarter of 2018 Rank	Fourth Quarter of 2009 Number of Employees	Fourth Quarter of 2009 Rank
University of Virginia/ Blue Ridge Hospital	1,000 & over	1	1,000 & over	1
University of Virginia Medical Center	1,000 & over	2	1,000 & over	2
County of Albemarle	1,000 & over	3	1,000 & over	3
Sentara Health Care	1,000 & over	5		
Martha Jefferson Hospital			1,000 & over	4
UVA Health Services Foundation	1,000 & over	4	1,000 & over	7
City of Charlottesville	1,000 & over	6	1,000 & over	5
Charlottesville City School Board	500-999	7	500-999	8
State Farm Mutual Automobile Insurance	500-999	8	1,000 & over	6
U.S. Department of Defense	500-999	9		
Servicelink Management Com Inc	500-999	10		
Northrop Grumman Corporation			500-999	10
Aramark Campus LLC			500-999	9

Source: Virginia Employment Commission, Quarterly Census of Employment and Wages
- for Charlottesville Metropolitan Service Area (MSA)

Each employer's percentage of total employment is not available.

RIVANNA WATER & SEWER AUTHORITY **Table 11**

Number of Employees by Indentifiable Activity
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Number of budgeted full-time equivalent positions:										
Water (2)	26	25	23	23	23	22	23	23	23	23
Wastewater	16	16	17	17	17	17	18	18	15	16
Operations Management (2)	1	1	2	2	2	2	2	2	2	2
Administration & IT (3)	17	16	15	13	12	12	12	12	12	13
Laboratory	3	3	3	3	3	3	3	3	3	3
Director of Engineering & Maintenance	1									
Engineering	10	11	9	9	9	9	9	9	9	11
Maintenance (1)	17	16	16	17	17	17	16	16	15	14
Total	91	88	85	84	83	82	83	83	79	82

(1) Maintenance includes mechanics and maintenance workers for Water and Wastewater.

(2) The Water Resources Manager was reclassified from Operations Management to Engineering effective in fiscal year ended June 30, 2018.
Beginning in FY 2010, grounds crew maintenance positions are included in Maintenance.

(3) Administration staff is shared with Rivanna Solid Waste Authority.

RIVANNA WATER & SEWER AUTHORITY **Table 12**

Operating and Capital Indicators
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
Water										
Size of watershed (square miles)	766	766	766	766	766	766	766	766	766	766
Raw water safe yield (mgd)										
Urban system	18.8	18.8	18.8	18.8	12.8	12.8	12.8	12.8	12.8	12.8
Rural system	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Miles of pipelines	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
Number of treatment plants	5	5	5	5	5	5	5	5	5	5
Number of pumping stations	7	7	7	7	7	7	7	7	7	7
Number of reservoirs	4	4	4	4	4	4	4	4	4	4
Number of finished water storage tanks	11	11	11	11	11	11	11	11	11	11
Maximum treatment capacity (mgd)	22.750	22.750	22.750	22.750	22.750	22.750	22.750	22.750	22.750	22.750
Water treated (mgd)	9.573	9.677	10.129	9.948	10.135	10.240	10.203	9.953	10.061	9.849
Unused capacity (mgd)	13.177	13.073	12.621	12.802	12.615	12.510	12.547	12.797	12.689	12.901
Percentage of capacity utilized	42.08%	42.54%	44.52%	43.73%	44.55%	45.01%	44.85%	43.75%	44.22%	43.29%
Wastewater										
Miles of pipelines	37	37	37	37	37	37	37	37	37	37
Number of treatment plants	4	4	4	4	4	4	4	5	5	5
Number of pumping stations	7	7	7	7	7	7	7	7	7	7
Maximum treatment capacity (mgd)	15.945	15.945	15.945	15.945	15.945	15.945	15.945	15.945	15.945	15.945
Wastewater treated (mgd)	12.754	9.259	9.643	10.561	9.632	10.746	9.890	10.190	9.633	11.366
Unused capacity (mgd)	3.191	6.686	6.302	5.384	6.313	5.199	6.055	5.755	6.312	4.579
Percentage of capacity utilized	79.99%	58.07%	60.48%	66.23%	60.41%	67.39%	62.03%	63.91%	60.41%	71.28%

Notes: mgd = millions of gallons per day
Safe yield is a measure of raw water resources during a drought of record.

RIVANNA WATER & SEWER AUTHORITY **Table 13**

Schedule of Insurance in Force
June 30, 2019

Type Coverage/Company Name	Coverage		Annual Premium
Commercial Property			
Virginia Association of Counties 07/01/18-07/01/19	$ 201,545,980	Property Value and Business Income/ Extra Expense	$ 82,645
Worker's Compensation			
Virginia Association of Counties 07/01/18-07/01/19	$ 1,000,000	Each Occurrence	$ 72,463
Comprehensive Automobile			
Virginia Association of Counties 07/01/18-07/01/19	$ 10,000,000		$ 18,481
General Liability			
Virginia Association of Counties 07/01/18-07/01/19	$ 10,000,000	Each Occurrence	$ 12,603
Public Officials Liability			
Virginia Association of Counties 07/01/18-07/01/19	$ 10,000,000		$ 5,936
Crime Coverage			
Virginia Association of Counties 07/01/18-07/01/19	$ 500,000		$ 1,075

Miscellaneous Statistical Data
Albemarle County Service Authority

Year of Incorporation: 1964

Type of Entity:
Independent authority created pursuant to the "Virginia Water & Waste Authorities Act", Section 15.1-1239, Code of Virginia (1950), as amended

Number of water connections	20,252
Number of sewer connections	17,273
Miles of water lines	353
Miles of sewer lines	298
Number of fire hydrants	2,747

Rates (effective FY 2019) per 1,000 gallons metered consumption

Water	
Residential Water Rates and all irrigation usage:	
Level 1 (0-3,000 gallons per month)	$4.27
Level 2 (3,001-6,000 gallons per month)	$8.55
Level 3 (6,001-9,000 gallons per month)	$12.82
Level 4 (over 9,000 gallons per month)	$17.10
Non-Residential and Multi-Family Residential Water Rate (except irrigation water)	$8.25
Wastewater	$8.93

Ten Largest Customers in FY 2019

	Water			**Wastewater**		
	Billed (in gallons)	**Rank**	**Percentage of Total**	**Billed (in gallons)**	**Rank**	**Percentage of Total**
Old Salem Apartments	22,503,100	1	1.37%	22,503,100	1	1.60%
University of Virginia	21,786,500	2	1.33%	21,382,100	2	1.52%
Southwood Mobile Homes	21,523,000	3	1.31%	15,839,279	10	1.13%
ACRJ	21,176,000	4	1.29%	20,035,000	4	1.42%
Martha Jefferson Hospital	20,358,700	5	1.24%			
SEMF Charleston	20,057,375	6	1.22%	20,057,375	3	1.43%
Abbington Crossing	19,564,200	7	1.19%	19,564,200	5	1.39%
Westminster Canterbury	18,359,000	8	1.12%	17,359,000	6	1.23%
Four Seasons Apts.	16,308,000	9	0.99%	16,308,000	7	1.16%
Westgate Apartments	16,168,000	10	0.99%	16,156,900	8	1.15%
Turtle Creek Apts				15,967,000	9	1.13%
	197,803,875		12.07%	185,171,954		13.16%

RIVANNA WATER & SEWER AUTHORITY **Table 15**

Miscellaneous Statistical Data
City of Charlottesville, Virginia

Date of incorporation	1888
Date present charter adopted	1976
Form of government	Council Manager
Area	10.4 square miles
Miles of streets	159.91
Number of water customers	14,661
Number of sewer customers	14,564
Miles of water lines	183
Miles of sanitary sewer lines	171
Number of fire hydrants	1088
Bond Rating	AAA/Aaa

Rates FY 2019 per 1,000 cubic feet:

Water	
May - Sept.	$ 64.66
Oct. - Apr.	$ 49.74
Wastewater	$ 78.57

Ten Largest Customers in Fiscal Year 2019:

	Water			Wastewater		
	Water Consumption (in cubic feet)	**Billed Revenue**	**Percentage of Total Revenue**	**Wastewater Treated (in cubic feet)**	**Billed Revenue**	**Percentage of Total Revenue**
University of Virginia	59,570,327	$ 2,114,942	18.88%	60,091,373	$ 2,720,317	18.78%
Pepsi Cola	3,707,350	219,587	1.96%			
Charlottesville Redevelopment and Housing	2,842,938	163,424	1.46%	2,842,921	221,045	1.53%
City of Charlottesville	2,110,181	137,889	1.23%	1,592,845	133,433	0.92%
Woodard Properties	1,934,207	129,384	1.15%	1,934,207	161,216	1.11%
Omni Charlottesville Hotel	1,433,600	88,044	0.79%	1,209,103	95,976	0.66%
City Schools	1,340,150	79,726	0.71%	1,221,846	98,136	0.68%
Pavilion UVA	1,330,055	83,424	0.74%	1,340,150	105,856	0.73%
Madison Loft	1,139,780	69,150	0.62%	1,007,040	80,316	0.55%
EDR				1,139,780	90,616	0.63%
Neighborhood Properties	1,107,079	71,585	0.64%	1,107,079	90,557	0.63%
	76,515,667	$ 3,157,155	28.18%	73,486,344	$ 3,797,466	26.21%

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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
Rivanna Water & Sewer Authority
Charlottesville, 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 Rivanna Water & Sewer Authority as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise Rivanna Water & Sewer Authority's basic financial statements and have issued our report thereon dated October 25, 2019.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered Rivanna Water & 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 Rivanna Water & Sewer Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of Rivanna Water & 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 Rivanna Water & 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.

Robinson, Farmer, Cox Associates

Charlottesville, Virginia
October 25, 2019