RIVANNA

WATER & SEWER AUTHORITY

COMPREHENSIVE ANNUAL FINANCIAL REPORT
YEARS ENDED JUNE 30, 2021 AND 2020

Serving Charlottesville & Albemarle County, Virginia

Rivanna Water & Sewer Authority
Charlottesville, Virginia

Comprehensive Annual Financial Report

Years Ended June 30, 2021 and 2020

Prepared By:

Department of Finance and Administration

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Years Ended June 30, 2021 and 2020

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BOARD MEMBERS

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Dr. Liz Palmer

Lloyd Snook

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

DIRECTOR OF FINANCE/ADMINISTRATION

Lonzy E. Wood, III

GENERAL COUNSEL

Williams, Mullen, Clark & Dobbins, P.C.
Richmond, Virginia

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October 25, 2021

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, 2021 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 four 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 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

Both Charlottesville and Albemarle County traditionally enjoys low unemployment rates, steady economic growth and high bond ratings. The local economy was dramatically affected by the COVID-19 pandemic like the rest of the state and nation. Pre-pandemic local area unemployment rates were in the 2.1% range. For July 2020, the area unemployment rate jumped to 8.7%. However, a year later in June 2021, the unemployment rate had dropped to 4.1%. The area economy was recovering to near normal levels.

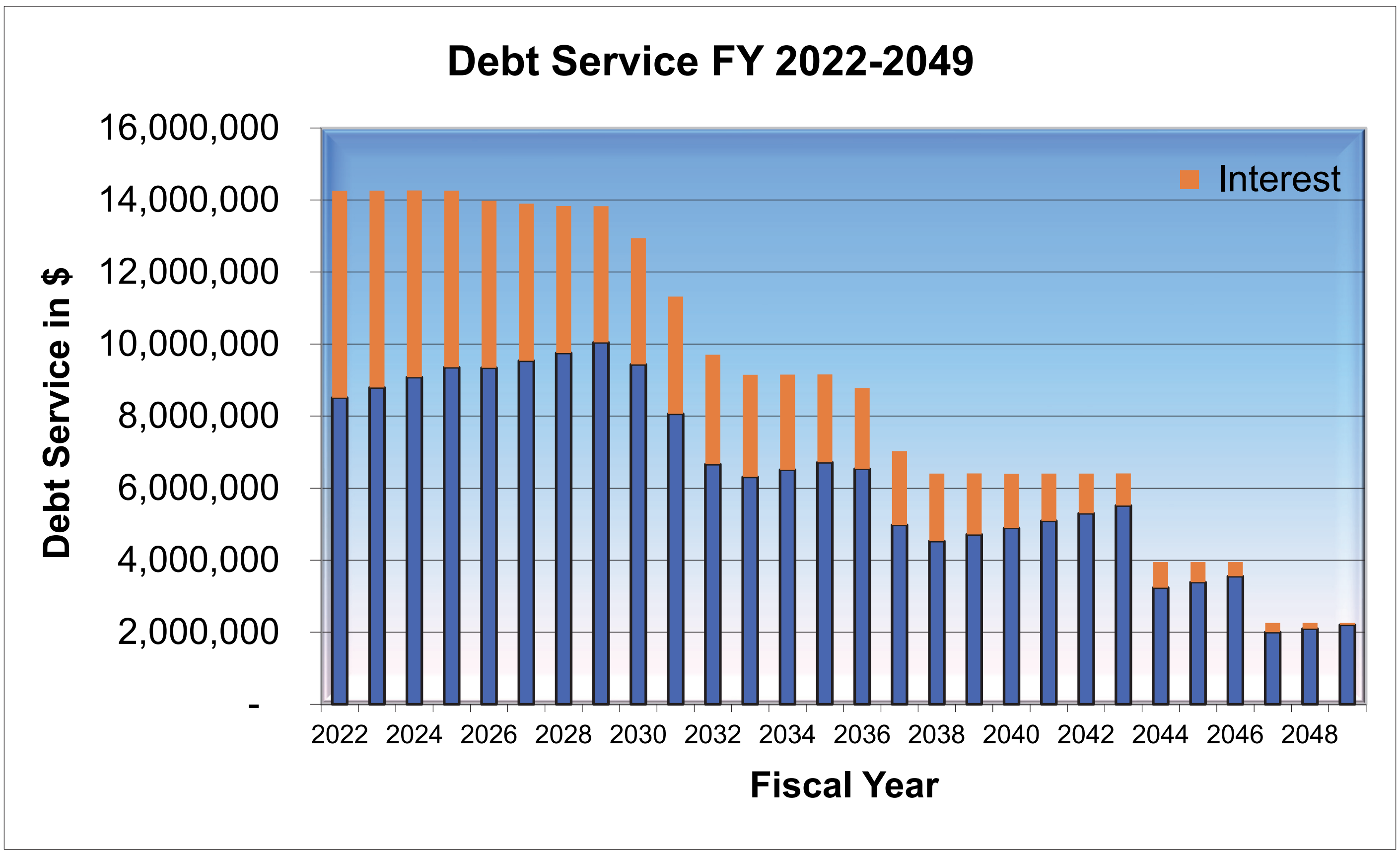
The water and wastewater services of the Authority are considered essential services, and none of our facilities were closed during the pandemic. The Administrative offices were closed to the public and are still closed, however, most staff were still working in the office as business continued for such things as deliveries, processing transactions, mail processing, bid openings, employee onboarding, etc. Some employees were on staggered schedules and others in a work-from-home status. The Authority did not have to furlough any of our employees. There were no impacts to our operations and budget. The Authority approved the FY 2021 budget with no rate increases; electing to use reserves for our revenue needs instead. Water production did not decline (annual flows were actually slightly higher than the previous year) and vendor supply lines were maintained.

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.

ECONOMIC CONDITION AND PROSPECTS (CONTINUED)

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. 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 10 years with large declines thereafter. Additionally, the rates are currently programmed to generate $18.4 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

The Authority uses our strategic plan developed several years ago to guide our budgeting, policy development and daily operational efforts. Our major initiatives stress the importance of resiliency, redundancy and reliability in our systems and projects and focus on enhancing our strategic goals as shown below:

Several efforts were being worked on during the year such as implementation of a document management system that will create a paperless invoicing system, publishing bi-monthly newsletters to employees, creating employee development plans along with a leadership program with the local community college (PVCC), continue supporting a secure work-from-home remote access capability in response to the COVID-19 pandemic, and a computer maintenance management system (CMMS) that is part of a larger new asset management system, which along with a project management cloud-based system, was procured this year. There is a significant Strategic Plan update planned in the next year where new goals and strategies will be formulated.

There are several capital improvements that were under way for construction this year with the Observatory, South Rivanna, and Crozet water treatment plant improvements projects. These three projects are estimated to cost $51.5 million. 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.

Future Projects:

Two of the largest projects in the next 5 years.

- Beaver Creek dam and raw water pump station projects. The current dam does not meet dam safety standards and will undergo spillway modifications which will impact the existing raw water pump station. Estimated costs of these projects is $26.9 million.

- The other large project is a pipeline and pump station replacement for the raw water line from the Ragged Mountain reservoir to the Observatory water treatment plant. The current pipeline is 110 years old in some places. The project is estimated to cost $24 million.

See the MD&A for more information.

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 financial policy was revised in October 2014 for continuing disclosure and post issuance compliance requirements, and again in August 2020 to better define reserves and change the way debt service charges are established.

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).

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, 2020. 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, especially Kathy Ware, Senior Accountant, 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,

William I. Mawyer, PE	Lonzy E. Wood, III, CPA
Executive Director	Director of Finance and Administration

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, 2020

Christopher P. Morrill

Executive Director/CEO

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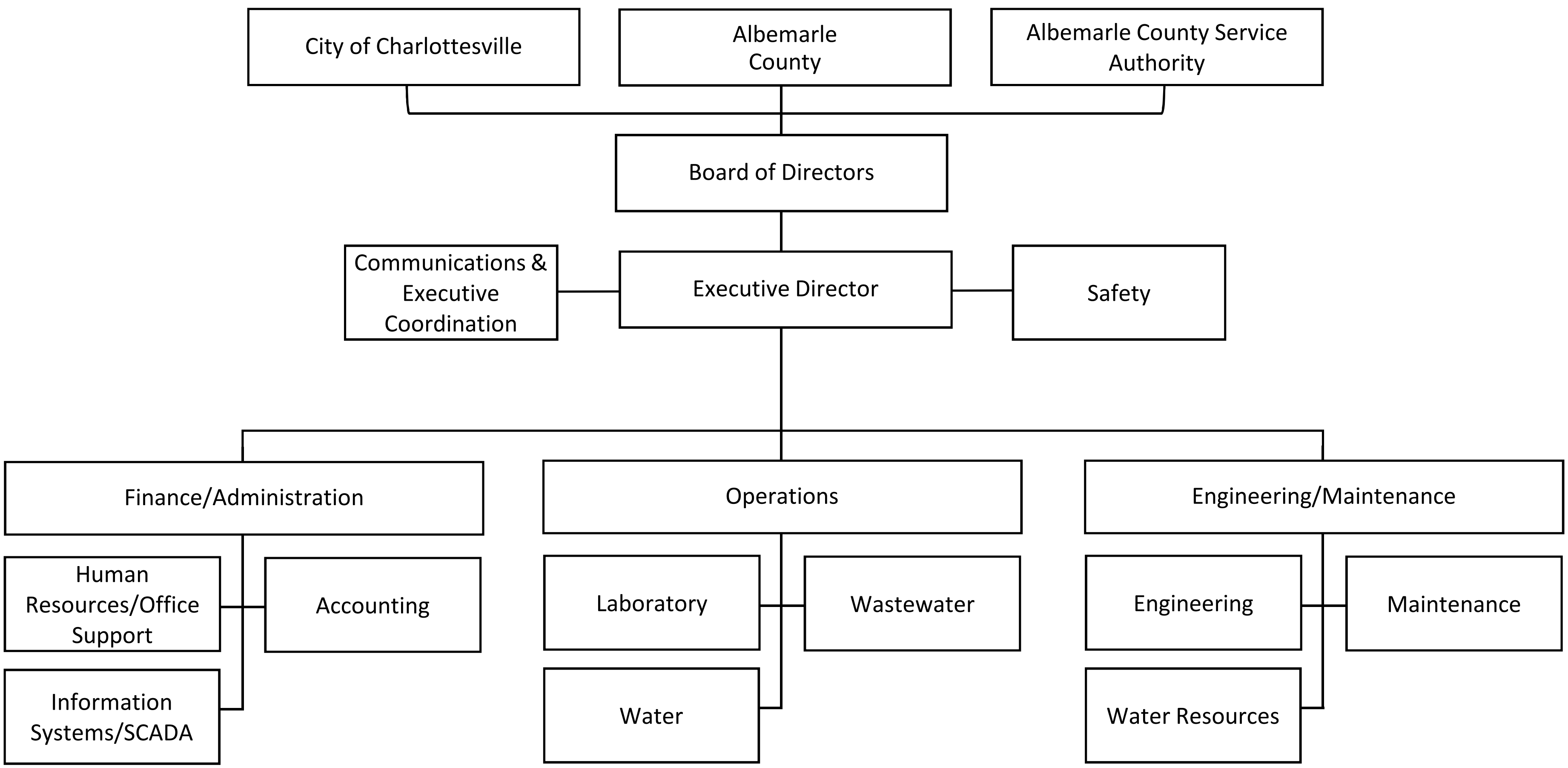
Rivanna Water & Sewer Authority

Organizational Chart



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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, 2021 and 2020, 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 audits. We conducted our audits 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, 2021 and 2020, 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.

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 15-25 and 78-84 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, 2021, 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, 2021

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, 2021. 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 28 through 31 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 33 through 76 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.

Financial Highlights:

- The Authority's total net position increased consistently the last two years by $3.5 million in FY 2021 and by $4.4 million in FY 2020.

- Construction in progress increased by $8.5 million this year with $20.9 million in construction costs incurred and $12.3 million in capital projects completed and capitalized.

- Noncurrent liabilities decreased by $7.8 million this year. Principal repayments on bonds of $8.1 million were made, and no new debt was issued.

- Operating revenues increased by $1.1 million mainly due to increased wastewater flows from heavy rainfall.

- Investment earnings decreased $1.1 million due to large declines in interest rates.

- Total operating expenses increased $1.5 million, primarily due to increased personnel costs and operations and maintenance expenses.

Financial Analysis:

The Authority's assets and deferred outflows exceeded its liabilities and deferred inflows (net position) by $160.2 million at fiscal year end June 30, 2021. Of this amount, $26.3 million (unrestricted net position) may be used to meet the Authority's normal ongoing operating obligations to customers and creditors while $4.7 million of net position is restricted for the bondholders. Total net position increased $3.5 million this year and $4.4 million in FY 2020, which is an indication that the Authority's overall financial position has improved. The net investment in capital assets increased by $9.7 million this year primarily due to construction spending. The largest portion of the Authority's net position (81%) 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		
	2021	**2020**	**2019**
Current and other assets	$ 57,470,866	$ 74,615,294	$ 82,727,243
Capital assets	295,218,671	281,866,981	278,086,565
Total assets	$ 352,689,537	$ 356,482,275	$ 360,813,808
Deferred outflows of resources	$ 1,953,105	$ 1,602,441	$ 1,140,986
Noncurrent liabilities	$ 179,197,893	$ 187,362,575	$ 195,819,731
Current liabilities	14,731,412	13,236,955	13,398,622
Total liabilities	$ 193,929,305	$ 200,599,530	$ 209,218,353
Deferred inflows of resources	$ 543,229	$ 787,351	$ 468,212
Net position:			
Net investment in capital assets	$ 129,188,502	$ 119,438,275	$ 113,396,071
Restricted for bond covenants	4,726,258	4,552,818	4,278,445
Unrestricted	26,255,348	32,706,742	34,593,713
Total net position	$ 160,170,108	$ 156,697,835	$ 152,268,229

Financial Analysis: (Continued)

Operating revenues increased by $1.1 million this year compared to only a $157,000 increase last year. Heavy precipitation this year boosted wastewater revenue by $888,000, and metered water sales were up by $199,000. Rates were not increased this year.

Total operating expenses increased by $1.5 million or 6% in FY 2021 primarily due to increases in personnel costs, repairs and maintenance, and chemical costs. Key elements of these changes are explained further in the Review of Operations section.

	Changes in Net Position		
	2021	**2020**	**2019**
Revenues:			
Operating revenues:			
Metered water sales	$ 16,395,335	$ 16,196,450	$ 15,216,180
Wastewater service charges	18,887,091	17,999,007	18,821,857
Nonoperating revenues:			
Investment earnings	125,631	1,243,884	1,599,486
Buck Mountain revenue	-	57,100	111,700
Administrative reimbursement	561,473	471,937	474,246
Other revenues	647,021	588,146	380,737
Total revenues	$ 36,616,551	$ 36,556,524	$ 36,604,206
Expenses:			
Operating expenses:			
Personnel costs	$ 9,315,313	$ 8,693,477	$ 7,728,340
Professional services	1,062,473	1,048,839	994,207
Other services and charges	3,812,208	3,676,790	3,770,051
Operations and maintenance	5,825,420	5,423,447	5,799,962
Depreciation expense	7,620,209	7,330,242	6,704,908
Nonoperating expenses:			
Interest expense	5,495,857	5,733,428	5,947,988
Debt issuance costs	90,298	220,695	463,487
Total expenses	$ 33,221,778	$ 32,126,918	$ 31,408,943
Income before capital grants	$ 3,394,773	$ 4,429,606	$ 5,195,263
Capital grants	77,500	-	-
Change in net position	$ 3,472,273	$ 4,429,606	$ 5,195,263
Net position, beginning of year	156,697,835	152,268,229	147,072,966
Net position, end of year	$ 160,170,108	$ 156,697,835	$ 152,268,229

Capital Asset and Debt Administration:

Capital Assets - The Authority's investment in capital assets net of accumulated depreciation increased 5% in the current year and 1% in the prior year because of costs incurred on construction projects noted below less depreciation on capital assets of $7.6 million and $7.3 million respectively for FY 2021 and FY 2020. Construction costs incurred were $20.9 million for FY 2021 and $11.1 million for FY 2020. $16.5 million of capital projects were completed and capitalized in the past two years. 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 in the Review of Operations section below.

Capital Asset and Debt Administration: (Continued)

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

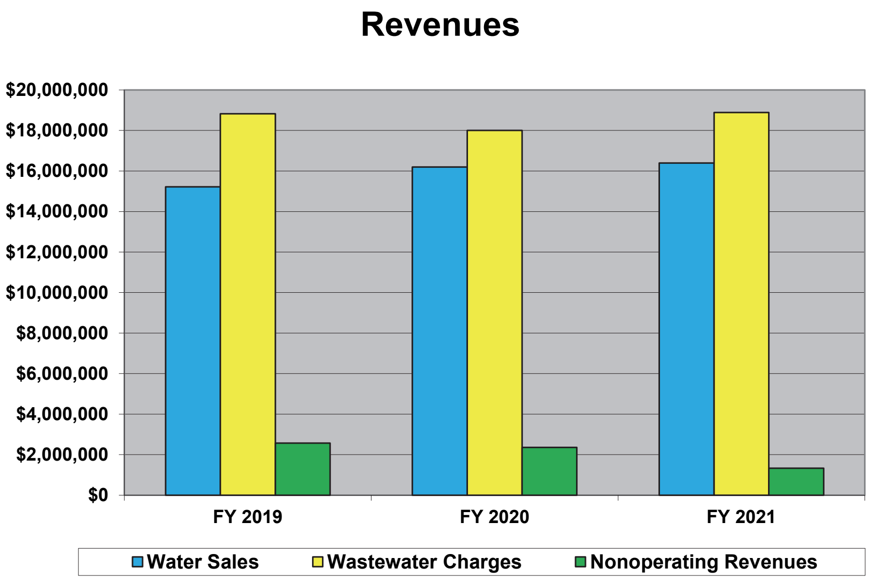
	2021	2020	2019
Land and improvements	$ 12,310,763	$ 12,310,763	$ 12,310,763
Buildings and operating equipment	258,418,648	253,645,028	256,781,051
Trucks and autos	537,535	500,348	519,291
Office equipment	5,920	8,793	11,665
Construction in progress	23,945,805	15,402,049	8,463,765
Total capital assets, net	$ 295,218,671	$ 281,866,981	$ 278,086,535

Major capital asset activity for the current fiscal year included:

S. Rivanna WTP Improvements	$ 8,119,731
Crozet WTP Expansion	2,533,787
Observatory WTP Improvements	1,828,786
Crozet Flow Equalization Tank	1,811,088
SH Dam-Rubber Crest Gate Replacement	1,315,904
Moores Creek AWRRF Odor Control-Phase 2	694,869
S. Rivanna Reservoir to Ragged Mtn. Reservoir Water Line R/W	615,283
Security Enhancements	523,531
South Rivanna Dam-Gate Repair	269,525
MCAWRRF Aluminum Slide Gate Replacement	259,065
Asset Management	258,035
Interceptor Sewer & Manhole Repair-Phase 1	191,433
Albemarle Berkley PS-Basin Demolition	168,424
Beaver Creek Dam Alteration	166,400
IT Master Plan-Software	151,587
Scottsville Water LT2 Improvements	151,059
Radio Upgrades	149,865
MCAWRRF Master Plan	142,383
Airport Rd. Pump Stn. & N. Rivanna Transmission Main	130,748
MCAWRRF 5kV Electrical System Upgrade	122,141
Scottsville Air Control Improvements	119,275
New Raw Water Pump Station & Intake (BCR)	109,726
Finished Water System Master Plan	107,529
MCAWRRF Lighting Upgrade	106,275
North Rivanna WTP-Upgrade	54,497
Central Water Line	53,917
Other	249,359
Retainage on Construction in Progress	459,335
Total Current Year Construction Costs and Adjustments	$ 20,863,557

Long-Term Debt - At the end of the current fiscal year, the Authority had $182.7 million in bonds outstanding, which is a decrease of $8.7 million. That is the result of regular principal payments of $8.1 million on existing debt and amortization of bond premiums. No new bonds were issued in FY 2021. In the previous fiscal year, the Authority advance refunded the majority of the Series 2012A Bond. The Series 2019 Bond was issued for a par amount of $17.6 million to refund $15.9 million of the 2012A Bond and the related $2 million of unamortized original issue premium. Roughly $2 million of the 2012A Bond remained outstanding, because that portion of the bond was not eligible for refunding before the November 2022 call date. 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:



For FY 2021, total operating revenues increased $1.09 million or 3% after increasing only $157,000 in FY 2020 but were well within budget targets. The increase was mainly due to an 8% increase in flows for wastewater treatment and a 2.8% increase in drinking water demand. This was surprising, because the Authority proposed and approved a zero-rate increase for FY 2021 and anticipated revenues to be flat. COVID-19 did not impact demand for water or wastewater services. Nonoperating income was affected by the drop-in interest rates. Interest earning decreased $1.1 million for FY 2021. This loss in nonoperating revenues offset the gains in operating revenue previously mentioned. Overall, total revenues for the year were stagnant with only a $60,000 increase.

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 five years, the Authority has invested over $89.2 million in capital infrastructure. The majority of that investment was financed with long-term debt. Roughly $12.1 million of this spending was funded through cash reserves over that same time period. Capital and reserves will be discussed later in this narrative.

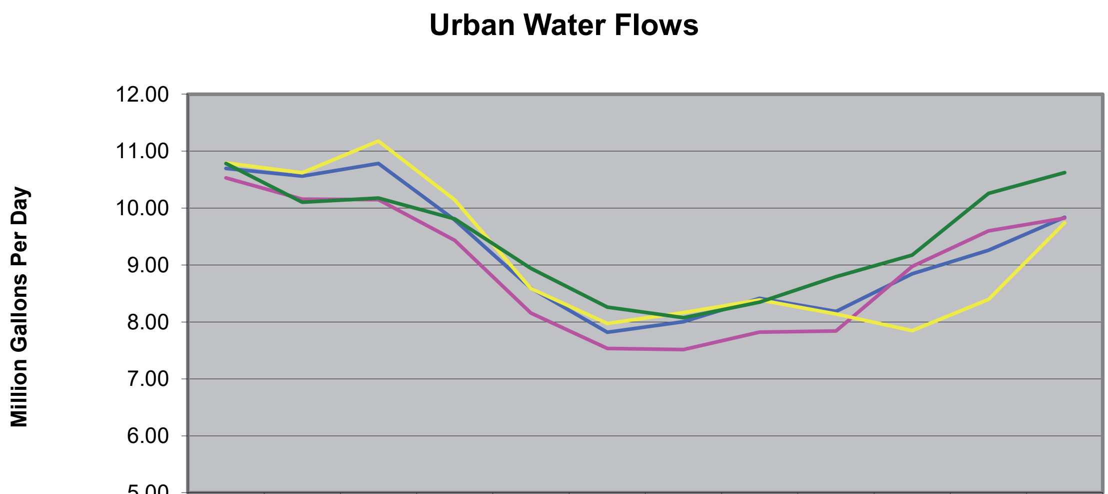
As shown in the chart below, FY 2021 Urban operations and debt service rates were kept at FY 2020 levels. The budget for FY 2021 was initially developed to have a 7.5% rate increase to accommodate the needed increases in debt service and operating costs related to the expending capital program. However, as the COVID-19 pandemic became a major issue with the statewide shutdown, management and the Board became aware of the need to reduce the rate increase to a 0% rate impact effort during the budget preparation period for FY 2021. There was uncertainty on the predictability of our retail customer's revenue impacts, and this was a way to support a "zero rate increase" policy during the pandemic emergency. This rate policy was achieved by reducing costs such as no new staffing and using reserves to fund gaps in revenue needs. Nearly $1.7 million in reserves were used to balance the budget for FY 2021.

Urban Rates								
			Water			Wastewater		
Operations Rates - City & ACSA ($ per 1,000 gallons):								
	FY 2019	$	2.070	5.1%	$	2.146	10.0%
	FY 2020	$	2.095	1.2%	$	2.369	10.4%
	FY 2021	$	2.095	0.0%	$	2.369	0.0%
Debt Service Rates ($ per month):							
City:	FY 2019	$	181,008	13.1%	$	408,260	3.9%
	FY 2020	$	193,580	6.9%	$	407,588	-0.2%
	FY 2021	$	193,580	0.0%	$	407,588	0.0%
ACSA:	FY 2019	$	307,598	7.8%	$	246,308	10.7%
	FY 2020	$	321,303	4.5%	$	278,174	12.9%
	FY 2021	$	321,303	0.0%	$	278,174	0.0%

Review of Operations: (Continued)

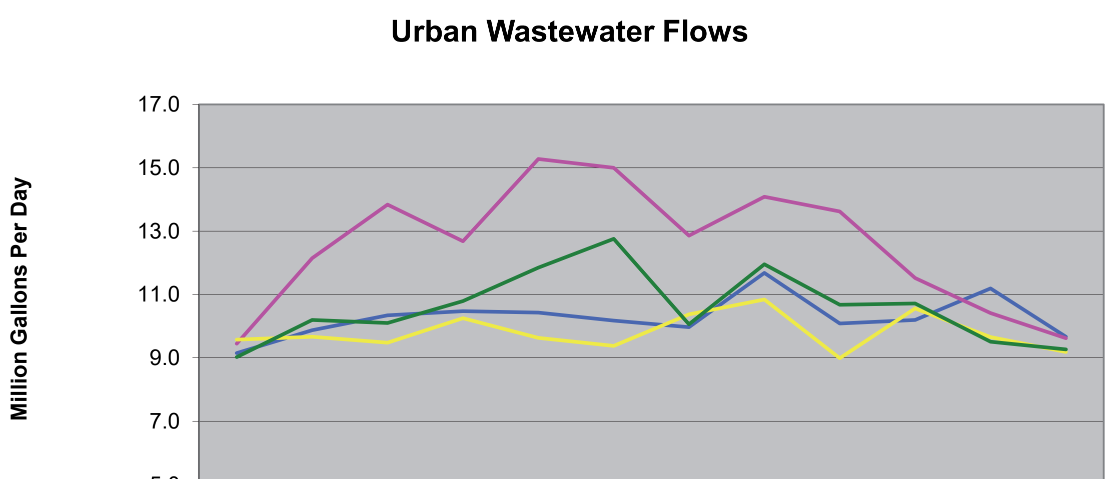
Flows in the two urban rate centers are the single largest determining factor in the revenues billed to our two customers. The graphs below show the flows for the year compared to the last two years and the five-year average.

Urban Water flows were generally consistent within the 5-year trend with March through June flows being higher than average and much higher compared to the same time period for 2020.



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG.	10.70	10.56	10.78	9.79	8.59	7.82	8.00	8.41	8.18	8.84	9.26	9.84
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
FY 2020	10.79	10.62	11.18	10.14	8.59	7.98	8.16	8.39	8.14	7.85	8.39	9.74
FY 2021	10.78	10.10	10.17	9.81	8.94	8.26	8.07	8.35	8.79	9.17	10.26	10.62

Urban Wastewater flows (below) were, for the most part, within the 5-year trend this year. As you can see in the graph and as mentioned above, November and December were high flow months causing the yearly average to be roughly 7 to 8 percent higher than average. 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	9.15	9.87	10.35	10.47	10.43	10.18	9.97	11.68	10.08	10.20	11.19	9.67
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
FY 2020	9.58	9.66	9.48	10.26	9.63	9.38	10.37	10.84	8.99	10.56	9.66	9.19
FY 2021	9.03	10.20	10.10	10.79	11.85	12.75	10.06	11.95	10.67	10.72	9.51	9.27

Review of Operations: (Continued)

Total operating expenses increased by $1.5 million for FY 2021, and nonoperating costs, including debt issuance costs and interest expense, decreased by $368,000. Several bonds were either refinanced (refunded) or were eligible for a “rate reset modification” in FY 2020 and FY 2021, and the benefits were realized in FY 2021. The interest savings will amount to roughly $240,000 annually.

Direct operating costs in certain categories experienced overall increases in FY 2021. Personnel costs increased due to adjustments for increased pension liability valuations, unbudgeted merit increases, and unbudgeted bonuses of roughly $621,000. Operations and maintenance costs for items like chemicals, line break repairs and equipment repairs or replacement increased roughly $402,000. Depreciation expense increased as more capital projects were completed and capitalized.

Change in Expenses FY 2021 vs. FY 2020:

	FY 2021	FY 2020	Change	
Direct Operating*	$ 20,015,414	$ 18,842,553	$ 1,172,861	6%
Depreciation	7,620,209	7,330,242	289,967	4%
Interest	5,495,857	5,733,428	(237,571)	-4%
Debt issuance costs	90,298	220,695	(130,397)	-59%
	$ 33,221,778	$ 32,126,918	$ 1,094,860	3%

* - Personnel, Chemicals, Operations & Maintenance, Utilities

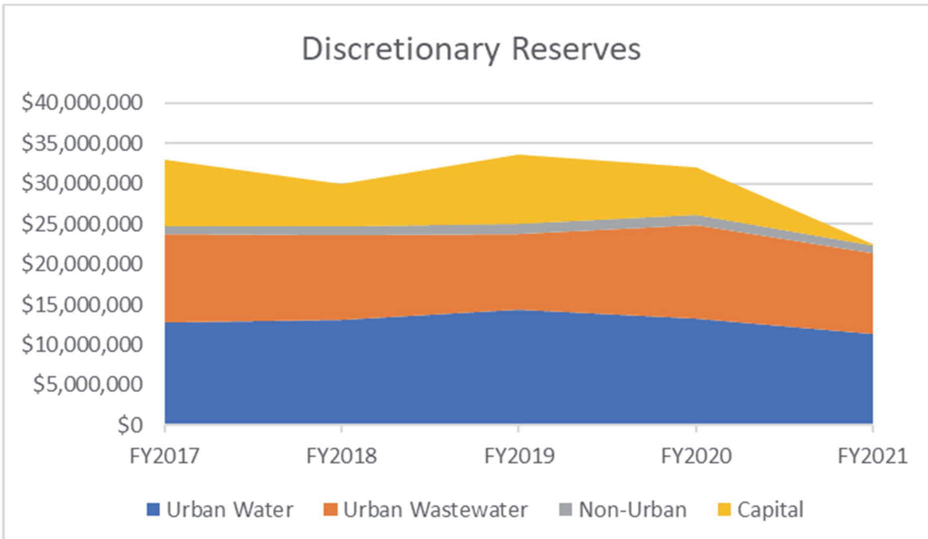
The current year has been a year of challenges related to the COVID-19 pandemic. There were periods of time that the administrative and engineering staff worked from home (telecommuted) with no interruptions in work product or services. Some staff with children had needs to telecommute more so than others. For the majority of the year, non-essential staff were working in their offices on-site. Capital project executions from bidding to construction continued without significant delays. There were some supply chain issues, but they have been managed appropriately. All business processes were maintained.

Essential operations and maintenance staff are not able to take advantage of telecommuting capabilities and had to continue to report to the various sites where they are normally assigned to operate the plants. Again, there were no interruptions of services and all plants were operated normally, some 24 hours a day - 7 days per week. Administration policies were developed, and managers executed them well in dealing specifically with COVID or potential COVID-19 cases as they occurred. Other policies were developed for social distancing, PPE, vehicle use, and vaccination provisions to promote continuity of business and safety for employees. Overall, 9-12 employees contracted COVID-19, and all have since recovered.

Cash balances have been declining the past few years as capital projects have been executed. Restricted cash, which is made up of mostly bond proceeds from the 2018 Series Bond in the construction fund, declined $11.7 million to fund project spending. This is the sole purpose of the construction fund. The construction fund still had a $13.8 million FY 2021 year-end balance for future capital spending needs. Unrestricted cash and cash equivalent investments, which represents total discretionary reserves balances, were at $30.6 million at the end of FY 2021. This was roughly a $5.7 million reduction compared to the previous year’s balance. The reduction was related to nearly $1.7 in reserves being used during the year as a planned use to keep rate increases at zero as previously mentioned. The Authority has rate stabilization and other discretionary reserves specifically for the purpose of managing its rates to the retail systems during situations like the COVID-19 pandemic. Rate stabilization reserves totaled $1.8 million at June 30, 2021, which is part of the unrestricted cash. The policy goal is to maintain a $2 million balance for emergencies. Despite relying on reserves and establishing a zero-rate increase budget for FY 2021, the Authority still maintained a fairly strong debt coverage ratio of 1.2. (See Table 8 in the Statistical Section.)

Review of Operations: (Continued)

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, to better handle wide fluctuations in flow, and to manage our rate structure during times of emergency. 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 $182 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 Standard & Poor's. 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 $6.4 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 $25.1 million in projects. Capital spending using cash and debt financing sources over that same 10-year period was roughly $192.2 million, which means our actual cash reserve funding at 13% is a little better than the policy targets.

Capital Improvements & Future 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 June 2021 (for FY 2022–2026) compared to the previously adopted capital plan:

Changes in Capital Improvement Plan (CIP)			
FY 2020-2024	$	97,203,867	Previously adopted CIP
		(5,096,000)	Budgets for completed or closed projects
		35,793,000	Adjustments on existing projects
		4,608,000	New project budgets added
FY 2021-2025	$	132,508,867	Total 5-year CIP

Review of Operations: (Continued)

The total 5-year CIP is estimated at $170.2 million in capital spending needs through the year 2026. Of this amount, roughly $6.9 million is work-in-progress (nearly 4%) and has already been expended and funded at year end. There is $13.8 million in available bond proceeds from the Series 2018 bond to fund future capital work. The future funding needs will be roughly $129.1 million in additional debt (revenue bonds) to be issued and $14.4 million in future reserves to be placed in the capital fund.

Most of the Authority's capital spending investment over the last decade was to bring the wastewater systems into compliance with a DEQ Consent Order and meet nutrient reduction goals for the Chesapeake Bay clean-up programs.

The focus of the Authority's current and future capital efforts will be on our water infrastructure. The water infrastructure needs treatment improvements, capacity increases and general renewal for resiliency purposes. The South Rivanna Water Treatment Plant (SR WTP) is going through a major upgrade to improve the electrical systems, increase facilities to meet firm capacity of 12 million gallon per day (mgd) output, adding service pumps and variable frequency drives all to improve treatment performance at high demand times.

South Rivanna Water Treatment Plant Before Construction

The Observatory WTP has seen very few upgrades since its construction in the mid-1950s. This plant is going through a system-by-system upgrade and an increase in production capacity from 7.7 million to 10 mgd. A contract for these two major plant upgrade projects was awarded at the end of FY 2020. The total project costs for both of these are estimated to be $43 million combined. Both are still currently under construction. This will provide reliability, resiliency and redundancy improvements for the entire Urban system.

Observatory Water Treatment Plan Construction

The Crozet growth area of the County has placed demand needs on the entire Crozet water 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 2 mgd. This project was nearly completed by the end of FY 2021 for $8.5 million.

Review of Operations: (Continued)

In addition to the treatment process improvements, the raw water supply infrastructure for the Crozet growth area will need major improvements in the coming years. The Beaver Creek Dam spillway does not meet current dam safety regulations and is classified as a Significant Hazard Dam. A labyrinth spillway (see example below) and chute through the existing dam with a bridge to allow a state roadway, Browns Gap Turnpike, to cross over top will be constructed to correct this deficiency. A new raw water intake will have to be constructed as well. These two projects are estimated to costs $26.9 million over the next 5 years.

Labyrinth Spillway

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.

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Basic Financial Statements

Statement of Net Position
At June 30, 2021 and 2020

		At June 30,		
		2021		2020
ASSETS				
Current assets:				
Cash and cash equivalents (Note 1)	$	30,588,790	$	36,250,097
Restricted cash and cash equivalents		19,518,718		31,251,824
Accounts receivable		3,217,837		2,898,131
Prepaid expenses		123,078		185,299
Total current assets	$	53,448,423	$	70,585,351
Noncurrent assets:				
Restricted assets:				
Cash and cash equivalents	$	1,999,741	$	1,978,408
Investments (Note 3)		2,022,702		2,051,535
Total restricted assets	$	4,022,443	$	4,029,943
Capital assets: (Note 4)				
Land and improvements	$	12,310,763	$	12,310,763
Buildings and operating equipment		365,127,553		352,807,752
Trucks and autos		1,527,340		1,532,771
Office equipment		101,330		101,330
Less accumulated depreciation		(107,794,120)		(100,287,684)
Subtotal	$	271,272,866	$	266,464,932
Construction in progress (Note 5)		23,945,805		15,402,049
Net capital assets	$	295,218,671	$	281,866,981
Total noncurrent assets	$	299,241,114	$	285,896,924
Total assets	$	352,689,537	$	356,482,275
DEFERRED OUTFLOWS OF RESOURCES				
Deferred charge on refunding	$	563,858	$	610,521
Deferred outflows - pension (Note 8)		1,267,120		885,162
Deferred outflows - OPEB - group life insurance (Note 12)		122,127		106,758
Total deferred outflows of resources	$	1,953,105	$	1,602,441

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

Statement of Net Position (Continued)
At June 30, 2021 and 2020

	At June 30, 2021	At June 30, 2020
LIABILITIES		
Current liabilities:		
Accounts payable and other accrued expenses	$ 3,377,174	$ 2,604,078
Compensated absences - current portion (Note 7)	409,000	377,000
Other long-term obligation (net of current portion) (Note 9)	170,467	178,972
Revenue bonds - current portion (Note 6)	4,284,637	4,102,759
Subtotal current liabilities	$ 8,241,278	$ 7,262,809
Current liabilities (payable from restricted assets):		
Retainage payable	$ 799,125	$ 339,790
Accrued interest payable	1,464,751	1,581,538
Revenue bond principal - current portion (Note 6)	4,226,258	4,052,818
Subtotal current liabilities (payable from restricted assets)	$ 6,490,134	$ 5,974,146
Total current liabilities	$ 14,731,412	$ 13,236,955
Noncurrent liabilities:		
Compensated absences (net of current portion) (Note 7)	$ 146,245	$ 114,718
Net OPEB liability (Note 12)	451,754	428,948
Other long-term obligation (net of current portion) (Note 9)	190,781	311,822
Net pension liability (Note 8)	4,259,150	3,325,528
Revenue bonds (net of current portion) (Note 6)	174,149,963	183,181,559
Total noncurrent liabilities	$ 179,197,893	$ 187,362,575
Total liabilities	$ 193,929,305	$ 200,599,530
DEFERRED INFLOWS OF RESOURCES		
Deferred inflows - pension (Note 8)	$ 38,041	$ 250,328
Deferred gain on partial bond refunding	491,698	509,713
Deferred inflows - OPEB - group life insurance (Note 12)	13,490	27,310
Total deferred inflows of resources	$ 543,229	$ 787,351
NET POSITION		
Net Position:		
Net investment in capital assets	$ 129,188,502	$ 119,438,275
Restricted for bond covenants	4,726,258	4,552,818
Unrestricted	26,255,348	32,706,742
Total net position	$ 160,170,108	$ 156,697,835

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

Statement of Revenues, Expenses, and Changes in Net Position
Years Ended June 30, 2021 and 2020

	Year Ended June 30, 2021	Year Ended June 30, 2020
Operating revenues:		
Metered water sales	$ 16,395,335	$ 16,196,450
Wastewater service charges	18,887,091	17,999,007
Total operating revenues	$ 35,282,426	$ 34,195,457
Operating expenses:		
Personnel costs	$ 9,315,313	$ 8,693,477
Professional services	1,062,473	1,048,839
Other services and charges	3,812,208	3,676,790
Operations and maintenance	5,825,420	5,423,447
Depreciation	7,620,209	7,330,242
Total operating expenses	$ 27,635,623	$ 26,172,795
Operating income	$ 7,646,803	$ 8,022,662
Nonoperating revenues (expenses):		
Investment earnings	$ 125,631	$ 1,243,884
Buck Mountain revenue	-	57,100
Administrative reimbursement	561,473	471,937
Other revenues	647,021	588,146
Interest expense	(5,495,857)	(5,733,428)
Debt issuance costs	(90,298)	(220,695)
Total nonoperating revenues (expenses)	$ (4,252,030)	$ (3,593,056)
Income before capital grants	$ 3,394,773	$ 4,429,606
Capital grants	77,500	-
Change in net position	$ 3,472,273	$ 4,429,606
Net position, beginning of year	156,697,835	152,268,229
Net position, end of year	$ 160,170,108	$ 156,697,835

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

Statement of Cash Flows
Years Ended June 30, 2021 and 2020

	Year Ended June 30, 2021	Year Ended June 30, 2020
Cash flows from operating activities:		
Receipts from customers and users	$ 36,171,214	$ 35,219,061
Payments to suppliers of goods and services	(10,807,203)	(10,710,633)
Payments to and on behalf of employees for services	(8,948,161)	(8,766,101)
Net cash provided by (used for) operating activities	$ 16,415,850	$ 15,742,327
Cash flows from capital and related financing activities:		
Additions to capital assets	$ (19,670,322)	$ (11,059,309)
Principal payments on bonds	(8,146,583)	(7,725,510)
Capital grants	77,500	-
Refunding of bond principal	-	(15,855,000)
(Premium) discount on refunded bonds	-	(1,507,547)
Proceeds of bonds	-	17,610,000
Premium (discount) on bonds issued	-	(33,492)
Debt issuance costs	(90,298)	(220,695)
Interest payments	(6,113,691)	(6,585,515)
Net cash provided by (used for) capital and related financing activities	$ (33,943,394)	$ (25,377,068)
Cash flows from investing activities:		
Maturity of investments	$ 1,061	$ 653
Interest and dividends received	153,403	1,189,390
Net cash provided by (used for) investing activities	$ 154,464	$ 1,190,043
Increase (decrease) in cash and cash equivalents	$ (17,373,080)	$ (8,444,698)
Cash and cash equivalents at beginning of year (including $33,230,232 and $19,237,445, respectively reported in restricted accounts)	69,480,329	77,925,027
Cash and cash equivalents at end of year (including $23,541,161 and $33,230,232, respectively reported in restricted accounts)	$ 52,107,249	$ 69,480,329
Reconciliation of operating income (loss) to net cash provided by (used for) operating activities:		
Operating income	$ 7,646,803	$ 8,022,662
Adjustments to reconcile operating income (loss) to net cash provided by (used for) operating activities:		
Depreciation	7,620,209	7,330,242
Buck Mountain revenue	-	57,100
Other nonoperating revenues	1,208,494	1,060,083
Changes in operating assets, deferred outflows of resources, liabilities and deferred inflows of resources:		
(Increase) decrease in receivables	(319,706)	(93,579)
Increase (decrease) in net OPEB liability	22,806	39,948
Increase (decrease) in compensated absences	63,527	62,611
Increase (decrease) in other long-term obligation	(129,546)	(93,128)
Increase (decrease) in net pension liability	933,622	754,713
(Increase) decrease in deferred outflows of resources - pension	(381,958)	(460,187)
Increase (decrease) in deferred inflows of resources - pension	(212,287)	(181,884)
(Increase) decrease in deferred outflows of resources - OPEB	(15,369)	(45,684)
Increase (decrease) in deferred inflows of resources - OPEB	(13,820)	(8,690)
(Increase) decrease in prepaid expenses	62,221	(185,299)
Increase (decrease) in operating payables and accrued expenses	(69,146)	(516,581)
Net cash provided by (used for) operating activities	$ 16,415,850	$ 15,742,327
Noncash investing, capital and financing activities:		
Increase (decrease) in fair value of investments	$ (27,772)	$ 54,494
(Increase) decrease in retainage payable for capital projects	459,335	175,356

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

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 Plan
  - Schedule of Employer Contributions-Group Life Insurance Plan
  - Notes to Required Supplementary Information-Group Life Insurance Plan

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 $10,000 (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.

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

E. Capital Assets (Continued)

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 recognized as an expense when incurred instead of being included in the historical cost of constructed capital assets.

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 include cash on hand, amounts in demand deposits as well as short-term investments with a maturity date within three months of the date acquired by the government. For purposes of the statement of cash flows, the Authority considers their demand deposits and all highly liquid investments with an original maturity of three months or less when purchased to be cash equivalents.

G. Investments

Investments with a maturity of less than one year when purchased, non-negotiable certificates of deposit, other nonparticipating investments, and external investment pools are stated at cost or amortized cost. Investments with a maturity greater than one year when purchased are stated at fair value. Fair value is the price that would be received to sell an investment in an orderly transaction at year end.

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.

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

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

The difference between assets and deferred outflows of resources less liabilities and deferred inflows of resources is called net position. Net position is comprised of three components: net investment in capital assets, restricted, and unrestricted.

- Net investment in capital assets consists of capital assets, net of accumulated depreciation and reduced by outstanding balances of bonds, notes, and other debt that are attributable to the acquisition, construction, or improvement of those assets. Deferred outflows of resources and deferred inflows of resources that are attributable to the acquisition, construction, or improvement of those assets or related debt are included in this component of net position.

- Restricted net position consists of restricted assets reduced by liabilities and deferred inflows of resources related to those assets. Assets are reported as restricted when constraints are placed on asset use either by external parties or by law through constitutional provision or enabling legislation.

- Unrestricted net position is the net amount of the assets, deferred outflows of resources, liabilities, and deferred inflows of resources that does not meet the definition of the two preceding categories.

L. 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.

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

M. 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.

N. 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.

O. Reclassification

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

P. 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 two types of items that qualify for reporting in this category. The first reporting item is comprised of certain items related to the measurement of the net pension liability and net OPEB liability and contributions to the pension and OPEB plans made during the current year and subsequent to the net pension liability and net OPEB liability measurement date. The second reporting item is a deferred charge on refunding resulting 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. For more detailed information on these items reference the related notes.

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. First, certain items related to the measurement of the net pension liability and net OPEB liability are reported as deferred inflows of resources. The second reporting items is a deferred gain on partial bond refunding resulting 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. For more detailed information on these items reference the related notes.

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

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 fiduciary net 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

For purposes of measuring the net GLI Plan 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 Plan OPEB and the additions to/deductions from the VRS GLI OPEB's fiduciary net 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, 2021	$ -	$ -

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 $51,137 and $52,211 for the years ended June 30, 2021 and 2020, 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 local governments and other public bodies 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 that has received at least two of the following ratings: P-1 by Moody's Investors Service, Inc.; A-1 by Standard and Poor's; or F1 by Fitch Ratings, Inc. (Section 2.2-4502), 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, 2021 and 2020 were rated by Standard & Poor's and the ratings are presented below using Standard & Poor's rating scale.

Authority's Rated Debt Investments' Values - 2021

	Fair Quality Ratings		
Rated Debt Investments	**AAAm**	**AA+**	**AA+f**
U.S. Agencies Securities	$ 592	$ -	$ -
Local Government Investment Pool	11,663,660	-	-
VML/VACo Virginia Investment Pool	10,557,199	-	-
Virginia State Non-Arbitrage Pool	13,827,710	-	-
U.S. Treasury Notes & Bonds	-	2,022,110	-
U.S. Treasury & Agency Money Market Funds	7,480,383	-	-
Total	$ 43,529,544	$ 2,022,110	$ -

Authority's Rated Debt Investments' Values - 2020

	Fair Quality Ratings		
Rated Debt Investments	**AAAm**	**AA+**	**AA+f**
U.S. Agencies Securities	$ 1,765	$ -	$ -
Local Government Investment Pool	18,137,485	-	-
VML/VACo Virginia Investment Pool	10,540,185	-	-
Virginia State Non-Arbitrage Pool	25,617,468	-	-
U.S. Treasury Notes & Bonds	-	2,049,770	-
U.S. Treasury & Agency Money Market Funds	7,386,976	-	-
Total	$ 61,683,879	$ 2,049,770	$ -

Note 3−Deposits and Investments: (Continued)

Interest Rate Risk

Investment Maturities (in years) - 2021

Investment Type	Fair Value	Less Than 1 Year	1-5 Years	6-10 Years
U.S. Agencies Securities	$ 592	$ -	$ 592	$ -
Local Government Investment Pool	11,663,660	11,663,660	-	-
VML/VACo Virginia Investment Pool	10,557,199	10,557,199	-	-
Virginia State Non-Arbitrage Pool	13,827,710	13,827,710	-	-
U.S. Treasury & Agency Money Market Funds	7,480,383	7,480,383	-	-
U.S. Treasury Notes & Bonds	2,022,110	2,022,110	-	-
Total	$ 45,551,654	$ 45,551,062	$ 592	$ -

Investment Maturities (in years) - 2020

Investment Type	Fair Value	Less Than 1 Year	1-5 Years	6-10 Years
U.S. Agencies Securities	$ 1,765	$ -	$ 1,765	$ -
Local Government Investment Pool	18,137,485	18,137,485	-	-
VML/VACo Virginia Investment Pool	10,540,185	10,540,185	-	-
Virginia State Non-Arbitrage Pool	25,617,468	25,617,468	-	-
U.S. Treasury & Agency Money Market Funds	7,386,976	7,386,976	-	-
U.S. Treasury Notes & Bonds	2,049,770	-	2,049,770	-
Total	$ 63,733,649	$ 61,682,114	$ 2,051,535	$ -

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 and State Non-Arbitrage Pool) is the same as the value of the pool shares. As LGIP and SNAP are not SEC registered, regulatory oversight of the pools rest with the Virginia State Treasury. LGIP and SNAP are amortized cost basis portfolios. 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, 2021 are as follows:

	Balance July 1, 2020	Increases	Decreases	Balance June 30, 2021
Capital assets not being depreciated:				
Land and improvements	$ 12,310,763	$ -	$ -	$ 12,310,763
Construction in progress	15,402,049	20,863,558	12,319,802	23,945,805
Total capital assets not being depreciated	$ 27,712,812	$ 20,863,558	$ 12,319,802	$ 36,256,568
Other capital assets:				
Buildings and operating equipment	$ 352,807,752	$ 12,319,801	$ -	$ 365,127,553
Accumulated depreciation	(99,162,723)	(7,546,182)	-	(106,708,905)
Buildings and operating equipment, net	$ 253,645,029	$ 4,773,619	$ -	$ 258,418,648
Trucks and autos	$ 1,532,771	$ 117,000	$ 122,431	$ 1,527,340
Accumulated depreciation	(1,032,423)	(71,155)	(113,773)	(989,805)
Trucks and autos, net	$ 500,348	$ 45,845	$ 8,658	$ 537,535
Office equipment	$ 101,330	$ -	$ -	$ 101,330
Accumulated depreciation	(92,538)	(2,872)	-	(95,410)
Office equipment, net	$ 8,792	$ (2,872)	$ -	$ 5,920
Total other capital assets, net	$ 254,154,169	$ 4,816,592	$ 8,658	$ 258,962,103
Total capital assets, net	$ 281,866,981	$ 25,680,150	$ 12,328,460	$ 295,218,671

Note 4−Capital Assets: (Continued)

Details of changes in capital assets for the year ended June 30, 2020 are as follows:

	Balance July 1, 2019	Increases	Decreases	Balance June 30, 2020
Capital assets not being depreciated:				
Land and improvements	$ 12,310,763	$ -	$ -	$ 12,310,763
Construction in progress	8,463,765	11,130,249	4,191,965	15,402,049
Total capital assets not being depreciated	$ 20,774,528	$ 11,130,249	$ 4,191,965	$ 27,712,812
Other capital assets:				
Buildings and operating equipment	$ 348,680,425	$ 4,127,327	$ -	$ 352,807,752
Accumulated depreciation	(91,899,373)	(7,263,350)	-	(99,162,723)
Buildings and operating equipment, net	$ 256,781,052	$ (3,136,023)	$ -	$ 253,645,029
Trucks and autos	$ 1,605,502	$ 47,333	$ 120,064	$ 1,532,771
Accumulated depreciation	(1,086,211)	(64,020)	(117,808)	(1,032,423)
Trucks and autos, net	$ 519,291	$ (16,687)	$ 2,256	$ 500,348
Office equipment	$ 106,759	$ -	$ 5,429	$ 101,330
Accumulated depreciation	(95,095)	(2,872)	(5,429)	(92,538)
Office equipment, net	$ 11,664	$ (2,872)	$ -	$ 8,792
Total other capital assets, net	$ 257,312,007	$ (3,155,582)	$ 2,256	$ 254,154,169
Total capital assets, net	$ 278,086,535	$ 7,974,667	$ 4,194,221	$ 281,866,981

Note 5−Construction in Progress:

Details of construction in progress for the year ended June 30, 2021 are as follows:

	Balance July 1, 2020	Cost of Construction	Expense/ Transfer to Capital Assets	Balance June 30, 2021
S. Rivanna Reservoir to Ragged Mtn. Reservoir Water Line R/W	$ 951,513	$ 615,283	$ -	$ 1,566,796
Observatory WTP Improvements	1,487,586	1,828,786	-	3,316,372
SH Dam-Rubber Crest Gate Replacement	66,360	1,315,904	-	1,382,264
Valve Repair-Replacement (Phase 2)	914,463	42,384	956,847	-
Central Water Line	137,749	53,917	-	191,666
S. Fork Rivanna River Crossing	-	30,896	-	30,896
Airport Rd. Pump Stn. & N. Rivanna Transmission Main	108,099	130,748	-	238,847
Finished Water System Master Plan	139,204	107,529	246,733	-
South Fork Rivanna Hydropower Plant Decommisioning	136,067	42,618	-	178,685
S. Rivanna WTP Improvements	1,847,327	8,119,731	-	9,967,058
South Rivanna Dam-Gate Repair	49,981	269,525	319,506	-
North Rivanna WTP-Upgrade	2,130	54,497	-	56,627
Beaver Creek Dam Alteration	293,315	166,400	-	459,715
Crozet WTP Expansion	5,566,078	2,533,787	8,041,278	58,587
New Raw Water Pump Station & Intake (BCR)	129,782	109,726	-	239,508
Scottsville Water LT2 Improvements	21,582	151,059	172,641	-
Schenks Branch Interceptor	50,787	-	-	50,787
Interceptor Sewer & Manhole Repair-Phase 1	468,537	191,433	-	659,970
Crozet Interceptor	250,223	4,967	-	255,190
Crozet Flow Equalization Tank	354,156	1,811,088	-	2,165,244
Albemarle Berkley PS-Basin Demolition	30,128	168,424	198,552	-
Crozet PS 1,2,3 Rehabilitation	15,582	26,685	-	42,267
Moores Creek AWRRF Odor Control-Phase 2	1,258,890	694,869	1,953,759	-
Moores Creek Digester Sludge Storage Improvements	15,450	-	-	15,450
MCAWRRF Aluminum Slide Gate Replacement	25,272	259,065	-	284,337
MCAWRRF Master Plan	157,177	142,383	299,560	-
MCAWRRF In-plant Clarifier & Lime Silo Demolition	-	48,139	-	48,139
MCAWRRF Generator Fuel Storage Expansion	-	15,445	-	15,445
MCAWRRF Meter and Valve Replacements	-	7,549	-	7,549
MCAWRRF Lighting Upgrade	-	106,275	-	106,275
MCAWRRF 5kV Electrical System Upgrade	-	122,141	-	122,141
Scottsville Air Control Improvements	11,650	119,275	130,925	-
Glenmore Influent Pump & VFD Addition	-	30,676	-	30,676
Radio Upgrades	130,742	149,865	-	280,607
Asset Management	183,069	258,035	-	441,104
Security Enhancements	203,489	523,531	-	727,020
IT Master Plan-Software	55,871	151,587	-	207,458
Retainage on Construction in Progress	339,790	459,335	-	799,125
Total	$ 15,402,049	$ 20,863,557	$ 12,319,801	$ 23,945,805

Note 5−Construction in Progress: (Continued)

Details of construction in progress for the year ended June 30, 2020 are as follows:

	Balance July 1, 2019	Cost of Construction	Expense/ Transfer to Capital Assets	Balance June 30, 2020
S. Rivanna Reservoir to Ragged Mtn. Reservoir Water Line R/W	$ 301,054	$ 650,459	$ -	$ 951,513
Birdwood Golf Course Waterline	2,714,728	334,679	3,049,407	-
Observatory WTP Improvements	618,880	868,706	-	1,487,586
SH Dam-Rubber Crest Gate Replacement	-	66,360	-	66,360
Valve Repair-Replacement (Phase 2)	154,219	760,244	-	914,463
Piney Mountain Tank Rehabilitation	88,585	397,927	486,512	-
Central Water Line	137,749	-	-	137,749
Water Demand Projection and Safe Yield Study	79,106	85,933	165,039	-
Airport Rd. Pump Stn. & N. Rivanna Transmission Main	-	108,099	-	108,099
Finished Water System Master Plan	20,307	118,897	-	139,204
South Fork Rivanna Hydropower Plant Decommisioning	127,081	8,986	-	136,067
S. Rivanna WTP Improvements	619,031	1,228,296	-	1,847,327
South Rivanna Dam-Gate Repair	-	49,981	-	49,981
North Rivanna WTP-Upgrade	-	2,130	-	2,130
Beaver Creek Dam Alteration	279,288	14,027	-	293,315
Buck's Elbow Ground Storage Tank Chlorination System	6,643	212,978	219,621	-
Crozet WTP Expansion	1,238,717	4,327,361	-	5,566,078
New Raw Water Pump Station & Intake (BCR)	8,846	120,936	-	129,782
Scottsville WTP Finished Water Flow Meter	12,128	119,851	131,979	-
Scottsville Water LT2 Improvements	-	21,582	-	21,582
Schenks Branch Interceptor	11,187	39,600	-	50,787
Interceptor Sewer & Manhole Repair-Phase 1	268,367	200,170	-	468,537
Crozet Interceptor	181,975	68,248	-	250,223
Crozet Flow Equalization Tank	255,319	98,837	-	354,156
Albemarle Berkley PS-Basin Demolition	-	30,128	-	30,128
Crozet PS 1,2,3 Rehabilitation	-	15,582	-	15,582
Moores Creek AWRRF Odor Control-Phase 2	1,000,530	258,360	-	1,258,890
Moores Creek Digester Sludge Storage Improvements	-	15,450	-	15,450
Aluminum Slide Gate Replacement	6,854	18,418	-	25,272
MCAWRRF Master Plan	-	157,177	-	157,177
Scottsville Air Control Improvements	-	11,650	-	11,650
Glenmore Secondary Clarifier Coating	1,100	138,307	139,407	-
Radio Upgrades	75,352	55,390	-	130,742
Asset Management	92,285	90,784	-	183,069
Security Enhancements	-	203,489	-	203,489
IT Master Plan-Software	-	55,871	-	55,871
Retainage on Construction in Progress	164,434	175,356	-	339,790
Total	$ 8,463,765	$ 11,130,249	$ 4,191,965	$ 15,402,049

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, 2021:

	Balance July 1, 2020	Issuances	Retirements	Balance June 30, 2021	Due Within One Year
Revenue bonds payable					
Public offerings	$ 22,065,000	$ -	$ (670,000)	$ 21,395,000	$ 695,000
Direct borrowings and direct placements	162,255,942	-	(7,476,583)	154,779,359	7,815,895
Subtotal	$ 184,320,942	$ -	$ (8,146,583)	$ 176,174,359	$ 8,510,895
Add (less) amounts:					
For issuance premiums (discounts)	7,016,194	-	(529,695)	6,486,499	-
Total revenue bonds	$ 191,337,136	$ -	$ (8,676,278)	$ 182,660,858	$ 8,510,895
VERIP liability	490,794	49,426	(178,972)	361,248	170,467
Compensated absences	491,718	470,824	(407,297)	555,245	409,000
Net OPEB liablity	428,948	142,886	(120,080)	451,754	-
Net pension liability	3,325,528	2,051,946	(1,118,324)	4,259,150	-
Totals	$ 196,074,124	$ 2,715,082	$ (10,500,951)	$ 188,288,255	$ 9,090,362

The following is a summary of long-term obligation transactions for the year ended June 30, 2020:

	Balance July 1, 2019	Issuances	Retirements	Balance June 30, 2020	Due Within One Year
Revenue bonds payable					
Public offerings	$ 22,715,000	$ -	$ (650,000)	$ 22,065,000	$ 670,000
Direct borrowings and direct placements	167,576,452	17,610,000	(22,930,510)	162,255,942	7,485,577
Subtotal	$ 190,291,452	$ 17,610,000	$ (23,580,510)	$ 184,320,942	$ 8,155,577
Add (less) amounts:					
For issuance premiums (discounts)	9,832,038	(33,492)	(2,782,352)	7,016,194	-
Total revenue bonds	$ 200,123,490	$ 17,576,508	$ (26,362,862)	$ 191,337,136	$ 8,155,577
VERIP liability	583,922	80,965	(174,093)	490,794	178,972
Compensated absences	429,107	419,435	(356,824)	491,718	377,000
Net OPEB liablity	389,000	128,424	(88,476)	428,948	-
Net pension liability	2,570,815	2,703,740	(1,949,027)	3,325,528	-
Totals	$ 204,096,334	$ 20,909,072	$ (28,931,282)	$ 196,074,124	$ 8,711,549

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.	$ 21,395,000	$ 695,000
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 provided 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 with interest at 3%. Effective October 1, 2020, the interest rate was reduced to 1%, which resulted in lower semi-annual payments of principal and interest ranging from $71,307 to $75,675 through October 2026.	$ 802,035	$ 143,314

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.	$ 13,395,034	$ 1,257,507
$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.	8,270,329	797,044

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.	$ 4,171,566	$ 359,926
$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.	595,552	51,385

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.	$ 2,636,578	$ 216,001
$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.	274,438	22,483

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.		
On November 20, 2019, the Authority issued Bond Series 2019 to refund $15,855,000 of Bond Series 2012A. Annual principal payments of $630,000 to $685,000 and semiannual interest payments are due through October 1, 2022.	$ 1,340,000	$ 655,000
$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 provided a redemption schedule with interest and principal of $941,168 due semi-annually from April 1, 2017 through April 1, 2036 with interest at 2.45%. An interest only payment was due on October 1, 2016. Effective October 1, 2020, the interest rate was reduced to 1.60%, which resulted in lower semi-annual payments of principal and interest ranging from $814,690 to $888,179 through April 1, 2036.	23,424,826	1,401,561

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%.	$	942,001	$	56,674
\$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.		37,435,000		1,615,000
\$10,000,000 Taxable 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.		8,357,000		435,000

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)		
$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 of 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.	$ 35,705,000	$ 620,000
$17,610,000 Taxable Water and Sewer System Revenue and Refunding Bonds, Series 2019 - On November 20, 2019, the Authority issued $17,610,000 in Revenue and Refunding Bonds for purpose of partially refunding Series 2012A. The bonds were issued at a discount in the amount of $33,492. The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from April 1, 2020 through October 1, 2042 for total payments of $0.7 to $1.4 million per year. The bonds bear interest at an annual rate ranging from 1.952% to 3.424%. The Authority refunded $15,855,000 of the 2012A Series bonds to reduce its total debt service payments over the next 20 years by $2.28 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 $1.64 million.	17,430,000	185,000
Total Revenue Bonds	$ 176,174,359	$ 8,510,895
Issuance premiums (discounts)	6,486,499	-
VERIP liability	361,248	170,467
Compensated absences	555,245	409,000
Net OPEB liability	451,754	-
Net pension liability	4,259,150	-
Total	$ 188,288,255	$ 9,090,362

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, 2021 are as follows:

	Revenue Bonds			
	Direct Borrowings and Direct Placements		Public Offerings	
Year Ending June 30,	Interest	Principal	Interest	Principal
2022	$ 5,100,471	$ 7,815,895	$ 644,706	$ 695,000
2023	4,850,038	8,070,057	616,306	725,000
2024	4,597,231	8,325,117	586,706	755,000
2025	4,343,875	8,578,118	563,372	775,000
2026	4,090,057	8,548,103	546,194	795,000
2027-2031	16,577,288	42,540,055	2,405,300	4,295,000
2032-2036	11,456,030	27,773,014	1,730,750	4,970,000
2037-2041	7,522,255	18,424,000	902,956	5,790,000
2042-2046	3,568,719	18,400,000	85,069	2,595,000
2047-2049	466,128	6,305,000	-	-
Total	$ 62,572,092	$ 154,779,359	$ 8,081,359	$ 21,395,000

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, 2021 and 2020, the liability for accrued vacation leave was $555,245 and $491,718, 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 with a membership date 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 service credit or age 50 with at least 30 years of service credit. Non-hazardous duty employees may retire with a reduced benefit as early as age 55 with at least 5 years of service credit or age 50 with at least 10 years of service credit.

b. Employees with a membership date from July 1, 2010 to December 31, 2013, that have not taken a refund or employees with a membership date prior to July 1, 2010 and not vested before 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 service credit or when the sum of their age plus service credit equals 90. Non-hazardous duty employees may retire with a reduced benefit as early as age 60 with at least 5 years of service credit.

c. Non-hazardous duty employees with a membership date 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 service credit, or when the sum of their age plus service credit equals 90. Employees may retire with a reduced benefit as early as age 60 with at least 5 years of service credit. 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 service credit. Under Plan 1, average final compensation is the average of the employee's 36 consecutive months of highest compensation and the multiplier is 1.70% for non-hazardous duty employees. 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. 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 Hybrid Retirement Plan from Plan 1 or Plan 2, the applicable multipliers for those plans will be used to calculate the retirement benefit for service credited in those plans.

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 service credit 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 service credit 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, 2019 and June 30, 2018 actuarial valuation, the following employees were covered by the benefit terms of the pension plan:

	2021	**2020**
Inactive members or their beneficiaries currently receiving benefits	71	62
Inactive members:		
Vested inactive members	21	23
Non-vested inactive members	20	21
Long-term disability (LTD)	0	0
Inactive members active elsewhere in VRS	39	34
Total inactive members	80	78
Active members	89	87
Total covered employees	240	227

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, 2021 was 8.30% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2019.

The Authority's contractually required employer contribution rate for the year ended June 30, 2020 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.

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 $419,777 and $403,941 for the years ended June 30, 2021 and June 30, 2020, 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 the Authority, the net pension liability was measured as of June 30, 2020. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2019 rolled forward to the measurement date of June 30, 2020.

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, 2019, 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, 2020.

Inflation	2.5%
Salary increases, including inflation	3.5% – 5.35%
Investment rate of return	6.75%, net of pension plan investment expense, including inflation*

* Administrative expenses as a percent of the fair 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 6.75%. However, since the difference was minimal, and a more conservative 6.75% 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 6.75% to simplify preparation of pension liabilities.

Note 8−Pension Plan: (Continued)

Actuarial Assumptions – General Employees: (Continued)

Mortality 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.

The actuarial assumptions used in the June 30, 2019 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016, except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

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 14.00% to 15.00%
Discount Rate	Decreased rate from 7.00% to 6.75%

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)	Long-Term Target Asset Allocation	Arithmetic Long-Term Expected Rate of Return	Weighted Average Long-Term Expected Rate of Return*
Public Equity	34.00%	4.65%	1.58%
Fixed Income	15.00%	0.46%	0.07%
Credit Strategies	14.00%	5.38%	0.75%
Real Assets	14.00%	5.01%	0.70%
Private Equity	14.00%	8.34%	1.17%
MAPS - Multi-Asset Public Strategies	6.00%	3.04%	0.18%
PIP - Private Investment Partnership	3.00%	6.49%	0.19%
Total	100.00%		4.64%
		Inflation	2.50%
		*Expected arithmetic nominal return	7.14%

* The above allocation provides a one-year return of 7.14%. 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 7.11%, including expected inflation of 2.50%. On October 10, 2019, the VRS Board elected a long-term rate of 6.75% which is roughly at the 40th percentile of expected long-term results of the VRS fund asset allocation. More recent capital market assumptions compiled for the FY2020 actuarial valuations provide a median return of 6.81%.

Discount Rate

The discount rate used to measure the total pension liability was 6.75%. 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

Note 8−Pension Plan: (Continued)

Discount Rate (Continued)

contribution rate. For the year ended June 30, 2020, the alternate rate was the employer contribution rate used in FY 2012 or 100% of the actuarially determined employer contribution rate from the June 30, 2017 actuarial valuations, whichever was greater. From July 1, 2020 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.

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, 2019	$ 24,132,968	$ 20,807,440	$ 3,325,528
Changes for the year:			
Service cost	$ 449,134	$ -	$ 449,134
Interest	1,588,668	-	1,588,668
Differences between expected and actual experience	(56,781)	-	(56,781)
Contributions - employer	-	405,038	(405,038)
Contributions - employee	-	260,592	(260,592)
Net investment income	-	395,913	(395,913)
Benefit payments, including refunds	(1,189,825)	(1,194,287)	4,462
Refunds of employee contributions	(4,462)	-	(4,462)
Administrative expenses	-	(13,678)	13,678
Other changes	-	(466)	466
Net changes	$ 786,734	$ (146,888)	$ 933,622
Balances at June 30, 2020	$ 24,919,702	$ 20,660,552	$ 4,259,150

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, 2018	$ 22,627,993	$ 20,057,178	$ 2,570,815
Changes for the year:			
Service cost	$ 416,525	$ -	$ 416,525
Interest	1,542,498	-	1,542,498
Differences between expected and actual experience	75,270	-	75,270
Assumption changes	655,287		655,287
Contributions - employer	-	388,000	(388,000)
Contributions - employee	-	239,360	(239,360)
Net investment income	-	1,321,667	(1,321,667)
Benefit payments, including refunds	(1,157,681)	(1,157,681)	-
Refunds of employee contributions	(26,924)	(26,924)	-
Administrative expenses	-	(13,329)	13,329
Other changes	-	(831)	831
Net changes	$ 1,504,975	$ 750,262	$ 754,713
Balances at June 30, 2019	$ 24,132,968	$ 20,807,440	$ 3,325,528

Sensitivity of the Net Pension Liability to Changes in the Discount Rate as of June 30, 2021

The following presents the net pension liability of the Authority using the discount rate of 6.75%, 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 (5.75%) or one percentage point higher (7.75%) than the current rate:

	Rate		
Rivanna Water & Sewer Authority's Net Pension Liability	1% Decrease (5.75%)	Current Discount (6.75%)	1% Increase (7.75%)
2021	$ 7,211,651	$ 4,259,150	$ 1,786,655

Note 8−Pension Plan: (Continued)

Sensitivity of the Net Pension Liability to Changes in the Discount Rate as of June 30, 2020

The following presents the net pension liability of the Authority using the discount rate of 6.75%, 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 (5.75%) or one percentage point higher (7.75%) than the current rate:

Rivanna Water & Sewer Authority's Net Pension Liability	Rate (5.75%)	Rate (6.75%)	Rate (7.75%)
2020	$ 6,278,943	$ 3,325,528	$ 957,760

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

For the year ended June 30, 2021, the Authority recognized pension expense of $760,251. At June 30, 2021, 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	$ 23,892	$ 38,041
Changes in assumptions	207,993	-
Net difference between projected and actual earnings on pension plan investments	615,458	-
Employer contributions subsequent to the measurement date	419,777	-
Total	$ 1,267,120	$ 38,041

Note 8−Pension Plan: (Continued)

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

For the year ended June 30, 2020, the Authority recognized pension expense of $516,583. At June 30, 2020, 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	$ 49,581	$ 67,213
Changes in assumptions	431,640	-
Net difference between projected and actual earnings on pension plan investments	-	183,115
Employer contributions subsequent to the measurement date	403,941	-
Total	$ 885,162	$ 250,328

$419,777 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, 2022. 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	
2022	$ 226,407
2023	174,881
2024	209,961
2025	198,053
2026	-
Thereafter	-

Note 8−Pension Plan: (Continued)

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

$403,941 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, 2021. 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		
2021	$	175,765
2022		47,093
2023		(4,433)
2024		12,468
2025		-
Thereafter		-

Pension Plan Data

Information about the VRS Political Subdivision Retirement Plan is also available in the separately issued VRS 2020 Comprehensive Annual Financial Report (Annual Report). A copy of the 2020 VRS Annual Report may be downloaded from the VRS website at http://www.varetire.org/pdf/publications/2020-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, 2021 and 2020 was $361,248 and $490,794, respectively. The amount payable within the next year is $170,467.

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 Risk Sharing Association, a public entity risk pool currently operating as a common risk management and insurance program for member governments. The Authority pays an annual premium to the pool for its workers compensation coverage, 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) Plan (OPEB Plan):

Plan Description

The Group Life Insurance (GLI) Plan 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 Plan 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 Plan. 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 plan, it is not included as part of the GLI Plan OPEB.

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

Eligible Employees

The GLI Plan was established July 1, 1960, for state employees, teachers, and employees of political subdivisions that elect the Plan. 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.

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

Benefit Amounts

The GLI Plan 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 plan 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 service credit, the minimum benefit payable was set at $8,000 by statute in 2015. This will be increased annually based on the VRS Plan 2 cost-of-living adjustment calculation. The minimum benefit adjusted for the COLA was $8,616 as of June 30, 2021.

Contributions

The contribution requirements for the GLI Plan 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 Plan was 1.34% of covered employee compensation. This was allocated into an employee and an employer component using a 60/40 split. The employee component was 0.80% (1.34% x 60%) and the employer component was 0.54% (1.34% 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, 2021 was 0.54% of covered employee compensation, based on an actuarially determined rate from an actuarial valuation as of June 30, 2019. Each employer's contractually required employer contribution rate for the year ended June 30, 2020 was 0.52% of covered employee compensation, 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 Plan from the entity were $30,919 and $29,023 for the years ended June 30, 2021 and June 30, 2020, respectively.

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

At June 30, 2021, the entity reported a liability of $451,754 for its proportionate share of the Net GLI OPEB Liability. The Net GLI OPEB Liability was measured as of June 30, 2020 and the total GLI OPEB liability used to calculate the Net GLI OPEB Liability was determined by an actuarial valuation performed as of June 30, 2019 and rolled forward to the measurement date of June 30, 2020. 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 Plan for the year ended June 30, 2020 relative to the total of the actuarially determined employer contributions for all participating employers. At June 30, 2020, the participating employer's proportion was 0.02707% as compared to 0.02636% at June 30, 2019.

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

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the GLI Plan OPEB: (Continued)

At June 30, 2020, the entity reported a liability of $428,948 for its proportionate share of the Net GLI OPEB Liability. The Net GLI OPEB Liability was measured as of June 30, 2019 and the total GLI OPEB liability used to calculate the Net GLI OPEB Liability was determined by an actuarial valuation performed as of June 30, 2018, and rolled forward to the measurement date of June 30, 2019. 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 Plan for the year ended June 30, 2019 relative to the total of the actuarially determined employer contributions for all participating employers. At June 30, 2019, the participating employer's proportion was 0.02636% as compared to 0.02561% at June 30, 2018.

For the years ended June 30, 2021 and 2020, the participating employer recognized GLI OPEB expense of $24,368 and $14,869, respectively. Since there was a change in proportionate share between measurement dates, a portion of the GLI OPEB expense was related to deferred amounts from changes in proportion.

At June 30, 2021, 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	$ 28,976	$ 4,057
Net difference between projected and actual earnings on GLI OPEB plan investments	13,570	-
Change in assumptions	22,593	9,433
Changes in proportion	26,069	-
Employer contributions subsequent to the measurement date	30,919	-
Total	$ 122,127	$ 13,490

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

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the GLI Plan OPEB: (Continued)

At June 30, 2020, 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	$ 28,528	$ 5,564
Net difference between projected and actual earnings on GLI OPEB plan investments	-	8,811
Change in assumptions	27,081	12,935
Changes in proportion	21,946	-
Employer contributions subsequent to the measurement date	29,203	-
Total	$ 106,758	$ 27,310

$30,919 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, 2022. 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	
2022	$ 13,945
2023	17,777
2024	20,410
2025	18,936
2026	5,993
Thereafter	657

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

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the GLI Plan OPEB: (Continued)

$29,203 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, 2021. 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		
2021	$	6,474
2022		6,474
2023		10,206
2024		12,747
2025		11,268
Thereafter		3,076

Actuarial Assumptions

The total GLI OPEB liability was based on an actuarial valuation as of June 30, 2019, 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, 2020. The assumptions include several employer groups. Salary increases and mortality rates included herein are for relevant employer groups. Information for other groups can be referenced in the VRS Annual Report.

Inflation	2.5%
Salary increases, including inflation	3.5%–5.35%
Investment rate of return	6.75%, net of investment expenses, including inflation*

*Administrative expenses as a percent of the fair 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 6.75%. However, since the difference was minimal, and a more conservative 6.75% 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 6.75% to simplify preparation of OPEB liabilities.

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

Actuarial Assumptions: (Continued)

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

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

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

Post-Disablement:
RP-2014 Disability 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, 2019 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016 , except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action 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 14.00% to 15.00%
Discount Rate	Decreased rate from 7.00% to 6.75%

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

Net GLI OPEB Liability

The net OPEB liability (NOL) for the GLI Plan represents the plan'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, 2020, NOL amounts for the GLI Plan are as follows (amounts expressed in thousands):

		GLI OPEB Plan
Total GLI OPEB Liability	$	3,523,937
Plan Fiduciary Net Position		1,855,102
GLI Net OPEB Liability (Asset)	$	1,668,835
Plan Fiduciary Net Position as a Percentage of the Total GLI OPEB Liability		52.64%

The net OPEB liability (NOL) for the GLI Plan represents the plan'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, 2019, NOL amounts for the GLI Plan are as follows (amounts expressed in thousands):

		GLI OPEB Plan
Total GLI OPEB Liability	$	3,390,238
Plan Fiduciary Net Position		1,762,972
Employers' Net GLI OPEB Liability (Asset)	$	1,627,266
Plan Fiduciary Net Position as a Percentage of the Total GLI OPEB Liability		52.00%

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) Plan (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)	Long-Term Target Asset Allocation	Arithmetic Long-term Expected Rate of Return	Weighted Average Long-term Expected Rate of Return
Public Equity	34.00%	4.65%	1.58%
Fixed Income	15.00%	0.46%	0.07%
Credit Strategies	14.00%	5.38%	0.75%
Real Assets	14.00%	5.01%	0.70%
Private Equity	14.00%	8.34%	1.17%
MAPS - Multi-Asset Public Strategies	6.00%	3.04%	0.18%
PIP - Private Investment Partnership	3.00%	6.49%	0.19%
Total	100.00%		4.64%
		Inflation	2.50%
		*Expected arithmetic nominal return	7.14%

*The above allocation provides a one-year return of 7.14%. 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 7.11%, including expected inflation of 2.50%. On October 10, 2019, the VRS Board elected a long-term rate of 6.75% which is roughly at the 40th percentile of expected long-term results of the VRS fund asset allocation. More recent capital market assumptions compiled for the FY2020 actuarial valuations provide a median return of 6.81%.

Discount Rate

The discount rate used to measure the total GLI OPEB liability was 6.75%. 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, 2020, 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, 2020 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) Plan (OPEB Plan): (Continued)

Sensitivity of the Employer's Proportionate Share of the Net GLI OPEB Liability to Changes in the Discount Rate as of June 30, 2021

The following presents the employer's proportionate share of the net GLI OPEB liability using the discount rate of 6.75%, 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 (5.75%) or one percentage point higher (7.75%) than the current rate:

Authority's proportionate share of the GLI Plan Net OPEB Liability	Rate 1% Decrease (5.75%)	Rate Current Discount (6.75%)	Rate 1% Increase (7.75%)
2021	$ 593,865	$ 451,754	$ 336,346

Sensitivity of the Employer's Proportionate Share of the Net GLI OPEB Liability to Changes in the Discount Rate as of June 30, 2020

The following presents the employer's proportionate share of the net GLI OPEB liability using the discount rate of 6.75%, 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 (5.75%) or one percentage point higher (7.75%) than the current rate:

Authority's proportionate share of the GLI Plan Net OPEB Liability	Rate 1% Decrease (5.75%)	Rate Current Discount (6.75%)	Rate 1% Increase (7.75%)
2020	$ 563,519	$ 428,948	$ 319,815

GLI Plan Fiduciary Net Position

Detailed information about the GLI Plan's Fiduciary Net Position is available in the separately issued VRS 2020 Comprehensive Annual Financial Report (Annual Report). A copy of the 2020 VRS Annual Report may be downloaded from the VRS website at http://www.varetire.org/pdf/publications/2020-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 $543,000 in FY 2021 and $466,000 in FY 2020 as well as for leachate acceptance and treatment of $2,370 in FY 2021 and $3,082 in FY 2020. Rivanna Solid Waste Authority billed Rivanna Water & Sewer Authority $28,027 for hauling and tipping fees in FY 2021 and $16,639 in the previous year. RSWA owed RWSA $70,642 and $60,766 at June 30, 2021 and 2020, respectively.

Note 14−Construction Commitments:

Rivanna Water and Sewer Authority had the following significant construction contract commitments for capital projects as of June 30, 2021:

Project		Remaining Commitment
South Rivanna WTP Improvements	$	10,030,412
Observatory WTP Improvements		18,628,801
Beaver Creek Dam Alterations		627,322
Crozet Flow Equalization Tank		3,591,641
MCAWRRF 5kV Electrical System Upgrade		521,905

The Authority had the following significant construction contract commitments for capital projects as of June 30, 2020:

Project		Remaining Commitment
South Rivanna WTP Improvements	$	17,508,403
Observatory WTP Improvements		20,121,101
Crozet WTP Expansion		2,263,943
Interceptor Sewer & Manhole Repair-Phase 1		690,648
Beaver Creek Dam Alterations		677,028
Security Enhancements		514,939

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 (unadjusted) 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.

Note 15−Fair Value Measures: (Continued)

- 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.

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

		Fair Value Measurements at Reporting Date Using		
	Total June 30, 2021	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	$ 592	$ 592	$ -	$ -
U.S. Treasury & Agency Money Market Funds	7,480,383	7,480,383	-	-
U.S. Treasury Notes & Bonds	2,022,110	2,022,110	-	-
Total by fair value level	$ 9,503,085	$ 9,503,085	$ -	$ -
Investments measured at the net asset value (NAV)				
VML/VACo Virginia Investment Pool	$ 10,557,199			
Total measured at the NAV	$ 10,557,199			

		Fair Value Measurements at Reporting Date Using		
	Total June 30, 2020	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	$ 1,765	$ 1,765	$ -	$ -
U.S. Treasury & Agency Money Market Funds	7,386,976	7,386,976	-	-
U.S. Treasury Notes & Bonds	2,049,770	2,049,770	-	-
Total by fair value level	$ 9,438,511	$ 9,438,511	$ -	$ -
Investments measured at the net asset value (NAV)				
VML/VACo Virginia Investment Pool	$ 10,540,185			
Total measured at the NAV	$ 10,540,185			

Note 16−COVID-19 Pandemic:

On March 11, 2020, the World Health Organization declared COVID-19 a pandemic, which has caused an economic downturn on a global scale, disrupted global supply chains, and created significant uncertainty, volatility, and disruption across economies and financial markets. The full impact of the COVID-19 outbreak continues to evolve as of the release date of this report. Management is monitoring the situation and impact that it may have on its financial condition, liquidity, operations, suppliers, industry, and workforce. Given the daily evolution of the COVID-19 outbreak and global responses to curb its spread, the Authority is not able to estimate the effects of the COVID-19 outbreak on its results of operations, financial condition, or liquidity for fiscal year 2022.

Note 17−Upcoming Pronouncements:

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 June 15, 2021.

Statement No. 92, *Omnibus 2020*, addresses practice issues that have been identified during implementation and application of certain GASB Statements. This Statement addresses a variety of topics such as leases, assets related to pension and postemployment benefits, and reference to nonrecurring fair value measurements of assets or liabilities in authoritative literature. The effective dates differ by topic, ranging from January 2020 to periods beginning after June 15, 2021.

Statement No. 93, *Replacement of Interbank Offered Rates*, establishes accounting and financial reporting requirements related to the replacement of Interbank Offered Rates (IBORs) in hedging derivative instruments and leases. It also identifies appropriate benchmark interest rates for hedging derivative instruments. The requirements of this Statement, except for removal of London Interbank Offered Rate (LIBOR) as an appropriate benchmark interest rate and the requirements related to lease modifications, are effective for reporting periods beginning after June 15, 2020. The removal of LIBOR as an appropriate benchmark interest rate is effective for reporting periods ending after December 31, 2021. All requirements related to lease modifications in this Statement are effective for reporting periods beginning after June 15, 2021.

Statement No. 96, Subscription-Based Information Technology Arrangements (SBITAs), (1) defines a SBITA; (2) establishes that a SBITA results in a right-to-use subscription asset—an intangible asset—and a corresponding subscription liability; (3) provides the capitalization criteria for outlays other than subscription payments, including implementation costs of a SBITA; and (4) requires note disclosures regarding a SBITA. The requirements of this Statement are effective for reporting periods beginning after June 15, 2022.

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

Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios
Pension Plan
For the Measurement Dates of June 30, 2014 through June 30, 2020

	2020	2019	2018	2017
Total pension liability				
Service cost	$ 449,134	$ 416,525	$ 414,140	$ 398,833
Interest	1,588,668	1,542,498	1,501,555	1,465,426
Changes in benefit terms	-	-	-	-
Differences between expected and actual experience	(56,781)	75,270	(211,755)	(123,760)
Changes of assumptions	-	655,287	-	(241,172)
Benefit payments	(1,194,287)	(1,184,605)	(1,053,473)	(912,902)
Net change in total pension liability	$ 786,734	$ 1,504,975	$ 650,467	$ 586,425
Total pension liability - beginning	24,132,968	22,627,993	21,977,526	21,391,101
Total pension liability - ending (a)	$ 24,919,702	$ 24,132,968	$ 22,627,993	$ 21,977,526
Plan fiduciary net position				
Contributions - employer	$ 405,038	$ 388,000	$ 438,811	$ 423,473
Contributions - employee	260,592	239,360	227,140	237,015
Net investment income	395,913	1,321,667	1,404,233	2,098,047
Benefit payments	(1,194,287)	(1,184,605)	(1,053,473)	(912,902)
Administrator charges	(13,678)	(13,329)	(12,231)	(12,137)
Other	(466)	(831)	(1,245)	(1,862)
Net change in plan fiduciary net position	$ (146,888)	$ 750,262	$ 1,003,235	$ 1,831,634
Plan fiduciary net position - beginning	20,807,440	20,057,178	19,053,943	17,222,309
Plan fiduciary net position - ending (b)	$ 20,660,552	$ 20,807,440	$ 20,057,178	$ 19,053,943
Authority's net pension liability - ending (a) - (b)	$ 4,259,150	$ 3,325,528	$ 2,570,815	$ 2,923,583
Plan fiduciary net position as a percentage of the total pension liability	82.91%	86.22%	88.64%	86.70%
Covered payroll	$ 5,571,372	$ 5,175,437	$ 4,868,672	$ 4,613,774
Authority's net pension liability as a percentage of covered payroll	76.45%	64.26%	52.80%	63.37%

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.

Schedule of Changes in Net Pension Liability and Related Ratios
Pension Plan
For the Measurement Dates of June 30, 2014 through June 30, 2020

	2016	2015	2014
Total pension liability			
Service cost	$ 420,980	$ 397,302	$ 408,618
Interest	1,376,398	1,308,253	1,243,939
Changes in benefit terms	-	-	-
Differences between expected and actual experience	343,405	43,130	-
Changes of assumptions	-	-	-
Benefit payments	(825,031)	(725,341)	(742,220)
Net change in total pension liability	$ 1,315,752	$ 1,023,344	$ 910,337
Total pension liability - beginning	20,075,349	19,052,005	18,141,668
Total pension liability - ending (a)	$ 21,391,101	$ 20,075,349	$ 19,052,005
Plan fiduciary net position			
Contributions - employer	$ 448,728	$ 434,762	$ 428,309
Contributions - employee	216,819	230,505	204,334
Net investment income	298,454	754,877	2,256,556
Benefit payments	(825,031)	(725,341)	(742,220)
Administrator charges	(10,631)	(10,246)	(12,143)
Other	(126)	(160)	119
Net change in plan fiduciary net position	$ 128,213	$ 684,397	$ 2,134,955
Plan fiduciary net position - beginning	17,094,096	16,409,699	14,274,744
Plan fiduciary net position - ending (b)	$ 17,222,309	$ 17,094,096	$ 16,409,699
Authority's net pension liability - ending (a) - (b)	$ 4,168,792	$ 2,981,253	$ 2,642,306
Plan fiduciary net position as a percentage of the total pension liability	80.51%	85.15%	86.13%
Covered payroll	$ 4,403,235	$ 4,232,146	$ 4,087,133
Authority's net pension liability as a percentage of covered payroll	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, 2012 through June 30, 2021

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)
2021	$ 419,777	$ 419,777	$ -	$ 5,768,536	7.28%
2020	403,941	403,941	-	5,571,372	7.25%
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%

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 actuarial assumptions used in the June 30, 2019 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016, except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

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 14.00% to 15.00%
Discount Rate	Decreased rate from 7.00% to 6.75%

RIVANNA WATER & SEWER AUTHORITY

Schedule of Authority's Share of Net OPEB Liability
Group Life Insurance (GLI) Plan
For the Measurement Dates of June 30, 2017 through June 30, 2020

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)
2020	0.02707%	$ 451,754	$ 5,571,372	8.11%	52.64%
2019	0.02636%	428,948	5,175,437	8.29%	52.00%
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 (GLI) Plan
For the Years Ended June 30, 2017 through June 30, 2021

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)
2021	$ 30,919	$ 30,919	$ -	$ 5,768,536	0.54%
2020	29,203	29,203	-	5,571,372	0.52%
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.

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 actuarial assumptions used in the June 30, 2019 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016, except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

Non-Largest Ten Locality Employers - General Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14.00% to 15.00%
Discount Rate	Decreased rate from 7.00% to 6.75%

Statistical Section

Contents	Tables
Financial Trends	
This table contains trend information to help the reader understand how the the Authority's financial performance has changed over time.	1
Revenues, Rates and Usage Information	
These tables contain information to help the reader assess the factors affecting the Authority's change in revenues and it's ability to generate revenues.	2-5
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This table contains comparative information about the Authority's expenses	6
Debt Capacity	
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Demographic and Economic Information	
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These tables contain miscellaneous data from related organizations, Albemarle County Service Authoriy and the City of Charlottesville.	13-14

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

RIVANNA WATER & SEWER AUTHORITY **Table 1**

Net Position by Component
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2021	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**
Net investment in capital assets	$ 129,188,502	$ 119,438,275	$ 113,396,071	$ 114,137,186	$ 105,412,275	$ 101,129,762	$ 99,020,753	$ 93,538,673	$ 87,302,949	$ 86,135,840
Restricted	4,726,258	4,552,818	4,278,445	3,794,293	3,729,350	3,335,539	2,940,314	2,870,788	2,782,090	3,173,804
Unrestricted	26,255,348	32,706,742	34,593,713	29,141,487	32,621,982	31,189,295	28,812,875	32,388,908	31,510,133	24,483,936
Total net position	$ 160,170,108	$ 156,697,835	$ 152,268,229	$ 147,072,966	$ 141,763,607	$ 135,654,596	$ 130,773,942	$ 128,798,369	$ 121,595,172	$ 113,793,580

RIVANNA WATER & SEWER AUTHORITY **Table 2**

Changes in Net Position
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2021	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**
Operating revenues:										
Metered water sales	$ 16,395,335	$ 16,196,450	$ 15,216,180	$ 14,034,080	$ 13,753,977	$ 13,014,328	$ 12,555,666	$ 11,353,630	$ 11,728,840	$ 11,058,083
Wastewater service charges	18,887,091	17,999,007	18,821,857	14,858,101	14,444,159	14,799,741	13,625,855	14,620,353	13,889,105	12,807,628
Total operating revenues	$ 35,282,426	$ 34,195,457	$ 34,038,037	$ 28,892,181	$ 28,198,136	$ 27,814,069	$ 26,181,521	$ 25,973,983	$ 25,617,945	$ 23,865,711
Operating expenses:										
Personnel costs	$ 9,315,313	$ 8,693,477	$ 7,728,340	$ 7,385,978	$ 7,483,807	$ 6,155,243	$ 5,878,175	$ 5,756,273	$ 5,928,994	$ 5,879,080
Professional services	1,062,473	1,048,839	994,207	738,823	885,072	602,891	473,193	418,858	282,427	336,166
Other services and charges	3,812,208	3,676,790	3,770,051	3,341,421	2,764,905	2,607,118	2,532,408	2,683,136	2,430,718	2,463,176
Operations and maintenance	5,825,420	5,423,447	5,799,962	4,169,065	4,214,246	4,710,701	3,991,590	3,543,311	3,383,574	3,201,971
Depreciation	7,620,209	7,330,242	6,704,908	5,773,757	5,411,996	5,396,029	4,983,753	4,662,094	3,601,730	2,965,612
Total operating expenses	$ 27,635,623	$ 26,172,795	$ 24,997,468	$ 21,409,044	$ 20,760,026	$ 19,471,982	$ 17,859,119	$ 17,063,672	$ 15,627,443	$ 14,846,005
Operating income	$ 7,646,803	$ 8,022,662	$ 9,040,569	$ 7,483,137	$ 7,438,110	$ 8,342,087	$ 8,322,402	$ 8,910,311	$ 9,990,502	$ 9,019,706
Nonoperating revenues (expenses):										
Investment earnings	$ 125,631	$ 1,243,884	$ 1,599,486	$ 525,039	$ 296,433	$ 369,675	$ 82,083	$ 92,839	$ 157,526	$ 124,832
Buck Mountain revenue	-	57,100	111,700	125,900	115,700	84,000	74,900	89,000	78,000	68,200
Administrative reimbursement	561,473	471,937	474,246	436,329	328,000	299,000	265,000	257,000	257,000	276,000
Other revenues	647,021	588,146	380,737	302,920	305,763	370,173	337,148	251,373	225,034	214,908
Interest expense	(5,495,857)	(5,733,428)	(5,947,988)	(2,643,801)	(2,248,229)	(4,027,843)	(3,608,072)	(2,336,245)	(2,552,331)	(1,830,696)
Debt issuance costs	(90,298)	(220,695)	(463,487)	-	(126,766)	(556,438)	(59,273)	(61,081)	(580,404)	-
Total nonoperating revenues (expenses)	$ (4,252,030)	$ (3,593,056)	$ (3,845,306)	$ (1,253,613)	$ (1,329,099)	$ (3,461,433)	$ (2,908,214)	$ (1,707,114)	$ (2,415,175)	$ (1,146,756)
Income before capital grants	$ 3,394,773	$ 4,429,606	$ 5,195,263	$ 6,229,524	$ 6,109,011	$ 4,880,654	$ 5,414,188	$ 7,203,197	$ 7,575,327	$ 7,872,950
Capital grants	77,500	-	-	-	-	-	-	-	226,265	3,003,552
Change in net position	$ 3,472,273	$ 4,429,606	$ 5,195,263	$ 6,229,524	$ 6,109,011	$ 4,880,654	$ 5,414,188	$ 7,203,197	$ 7,801,592	$ 10,876,502

RIVANNA WATER & SEWER AUTHORITY **Table 3**

Revenues by Source
Last Ten Fiscal Years

Fiscal Years Ended June 30,	Operating Revenues: Water Sales	Operating Revenues: Wastewater Service Charges	Operating Revenues: Total Operating Revenues	Nonoperating Revenues: Investment Earnings	Nonoperating Revenues: Buck Mountain Revenue	Nonoperating Revenues: Administrative Reimbursement	Nonoperating Revenues: Other Revenue	Nonoperating Revenues: Total Nonoperating Revenues	Other Capital Grants and Contributions	Total Revenues
2012	$ 11,058,083	$ 12,807,628	$ 23,865,711	$ 124,832	$ 68,200	$ 276,000	$ 214,908	$ 683,940	$ 3,003,552	$ 27,553,203
2013	11,728,840	13,889,105	25,617,945	157,526	78,000	257,000	225,034	717,560	226,265	26,561,770
2014	11,353,630	14,620,353	25,973,983	92,839	89,000	257,000	251,373	690,212	-	26,664,195
2015	12,555,666	13,625,855	26,181,521	82,083	74,900	265,000	337,148	759,131	-	26,940,652
2016	13,014,328	14,799,741	27,814,069	369,675	84,000	299,000	370,173	1,122,848	-	28,936,917
2017	13,753,977	14,444,159	28,198,136	296,433	115,700	328,000	305,763	1,045,896	-	29,244,032
2018	14,034,080	14,858,101	28,892,181	525,039	125,900	436,329	302,920	1,390,188	-	30,282,369
2019	15,216,180	18,821,857	34,038,037	1,599,486	111,700	474,246	380,737	2,566,169	-	36,604,206
2020	16,196,450	17,999,007	34,195,457	1,243,884	57,100	471,937	588,146	2,361,067	-	36,556,524
2021	16,395,335	18,887,091	35,282,426	125,631	-	561,473	647,021	1,334,125	77,500	36,694,051

RIVANNA WATER & SEWER AUTHORITY **Table 4**

Water and Wastewater Rates and Flows
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2021	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**
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
Urban Water - ACSA (per 1,000 gallons)	***	***	***	***	***	$ 3.795	$ 3.687	$ 3.333	$ 3.465	$ 3.439
Crozet Water (per month)	$ 195,010	$ 195,010	$ 162,746	$ 133,901	$ 124,149	$ 111,330	$ 91,942	$ 84,630	$ 82,916	$ 60,853
Scottsville Water (per month)	$ 54,130	$ 54,130	$ 47,717	$ 45,140	$ 43,382	$ 49,012	$ 41,343	$ 41,047	$ 36,280	$ 31,665
Urban Wastewater - City (per 1,000 gallons)	***	***	***	***	***	$ 3.954	$ 3.822	$ 3.593	$ 3.565	$ 3.179
Urban Wastewater - ACSA (per 1,000 gallons)	***	***	***	***	***	$ 3.560	$ 3.435	$ 3.463	$ 3.732	$ 3.348
Glenmore Wastewater (per month)	$ 31,192	$ 31,192	$ 31,192	$ 29,494	$ 26,694	$ 25,211	$ 24,451	$ 24,189	$ 23,436	$ 23,246
Scottsville Wastewater (per month)	$ 26,536	$ 26,536	$ 25,823	$ 24,410	$ 21,941	$ 21,425	$ 28,879	$ 28,295	$ 27,619	$ 26,579

***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:

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Urban Water:										
Operations - City & ACSA (per 1,000 gallons)	$ 2.095	$ 2.095	$ 2.070	$ 1.969	$ 1.833	$ 1.713	$ 1.683	$ 1.462	$ 1.320	$ 1.315
Debt Service - City (per month)	$ 193,580	$ 193,580	$ 181,008	$ 160,039	$ 162,968	$ 158,099	$ 148,549	$ 133,156	$ 173,354	$ 177,435
Debt Service - ACSA (per month)	$ 321,303	$ 321,303	$ 307,598	$ 285,439	$ 284,031	$ 279,864	$ 269,379	$ 251,418	$ 282,114	$ 267,054
Urban Wastewater:										
Operations - City & ACSA (per 1,000 gallons)	$ 2.369	$ 2.369	$ 2.146	$ 1.951	$ 1.835	$ 1.789	$ 1.768	$ 1.827	$ 1.869	$ 1.734
Debt Service - City (per month)	$ 407,588	$ 407,588	$ 408,260	$ 392,841	$ 369,037	$ 333,645	$ 310,678	$ 272,220	$ 254,371	$ 224,549
Debt Service - ACSA (per month)	$ 278,174	$ 278,174	$ 246,308	$ 222,550	$ 222,280	$ 232,493	$ 223,598	$ 214,771	$ 228,557	$ 189,209

	Fiscal Years Ended June 30,									
	2021	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**
Flows (in million gallons per day):										
Urban Water	9.451	9.191	8.967	9.100	9.535	9.359	9.540	9.618	9.647	9.454
Crozet Water	0.641	0.599	0.563	0.532	0.544	0.541	0.546	0.566	0.503	0.450
Scottsville Water	0.055	0.049	0.043	0.045	0.050	0.048	0.049	0.056	0.053	0.049
	10.147	9.839	9.573	9.677	10.129	9.948	10.135	10.240	10.203	9.953
Urban Wastewater	10.566	9.822	12.530	9.083	9.483	10.352	9.481	10.566	9.719	10.014
Glenmore Wastewater	0.117	0.098	0.138	0.120	0.107	0.107	0.101	0.114	0.121	0.122
Scottsville Wastewater	0.080	0.057	0.086	0.056	0.053	0.071	0.050	0.066	0.050	0.054
	10.762	9.977	12.754	9.259	9.643	10.530	9.632	10.746	9.890	10.190

RIVANNA WATER & SEWER AUTHORITY **Table 5**

Ten Largest Customers
Current Year and Nine Years Ago

	Fiscal Year 2021 (Current Year)			
	Water Revenue		Wastewater Revenue	
	Amount	%	Amount	%
Albemarle County Service Authority	$ 10,633,954	64.86%	$ 9,220,243	48.82%
City of Charlottesville	5,761,381	35.14%	9,071,981	48.03%
Others	-	0.00%	594,867	3.15%
	$ 16,395,335	100.00%	$ 18,887,091	100.00%

	Fiscal Year 2012 (Nine Years Ago)			
	Water Revenue		Wastewater Revenue	
	Amount	%	Amount	%
Albemarle County Service Authority	$ 6,573,498	59.45%	$ 6,252,239	48.82%
City of Charlottesville	4,484,585	40.55%	6,249,752	48.80%
Others	-	0.00%	305,637	2.39%
	$ 11,058,083	100.00%	$ 12,807,628	100.00%

Note: The Authority's two wholesale customers, which are both governmental entities, provided 100% of water revenue and 97.9% of wastewater revenue in FY 2021 and 97.6% in FY 2012. 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
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	5,773,757	2,643,801	-	24,052,845
2019	18,292,560	6,704,908	5,947,988	463,487	31,408,943
2020	18,842,553	7,330,242	5,733,428	220,695	32,126,918
2021	20,015,414	7,620,209	5,495,857	90,298	33,221,778

RIVANNA WATER & SEWER AUTHORITY **Table 7**

Outstanding Debt by Type
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Revenue bonds payable	$ 182,660,858	$ 191,337,136	$ 200,123,490	$ 167,896,198	$ 173,020,453	$ 160,512,250	$ 124,670,205	$ 125,680,526	$ 127,548,686	$ 103,834,145
Total outstanding debt	$ 182,660,858	$ 191,337,136	$ 200,123,490	$ 167,896,198	$ 173,020,453	$ 160,512,250	$ 124,670,205	$ 125,680,526	$ 127,548,686	$ 103,834,145
Debt per capita	$ 1,166	$ 1,222	$ 1,284	$ 1,082	$ 1,128	$ 1,060	$ 835	$ 853	$ 873	$ 721
Debt as a percentage of personal income	1.5%	1.6%	1.7%	1.5%	1.7%	1.7%	1.4%	1.5%	1.5%	1.4%

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
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
2020	36,556,524	18,842,553	17,713,971	14,311,024	1.2X
2021	36,616,551	20,015,414	16,601,137	14,260,273	1.2X

(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)
2011	143,974	7,657,164	53,184	5.9%
2012	146,044	8,457,472	57,910	5.4%
2013	147,282	8,329,280	56,553	4.9%
2014	149,250	8,936,944	59,879	4.5%
2015	151,418	9,518,529	62,863	3.9%
2016	153,374	10,184,984	66,406	3.5%
2017	155,231	11,143,225	71,785	3.3%
2018	155,883	11,900,382	76,342	2.7%
2019	156,596	12,160,701	77,657	2.4%
2020	not available	not available	not available	5.7%

Sources:
(1) Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages - for Charlottesville Metropolitan Service Area (MSA)
(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

	First Quarter of 2021		Fourth Quarter of 2011	
Employer	Number of Employees	Rank	Number of Employees	Rank
University of Virginia/ Blue Ridge Hospital	1,000 & over	1	1,000 & over	1
University of Virginia Medical Center			1,000 & over	2
County of Albemarle	1,000 & over	2	1,000 & over	3
Sentara Health Care	1,000 & over	3		
Martha Jefferson Hospital			1,000 & over	4
UVA Health Services Foundation	1,000 & over	4	1,000 & over	6
City of Charlottesville	1,000 & over	5	1,000 & over	5
State Farm Mutual Automobile Insurance			1,000 & over	7
Charlottesville City School Board	1,000 & over	6	500-999	8
Northrop Grumman Corporation			500-999	9
U.S. Department of Defense	500-999	7	500-999	10
Servicelink Management Com Inc	500-999	8		
Food Lion	250-499	9		
Wal Mart	250-499	10		

Source: Virginia Employment Commission, Economic Information & Analytics, 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,									
	2021	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**
Number of budgeted full-time equivalent positions:										
Water (2)	26	26	26	25	23	23	23	22	23	23
Wastewater	16	16	16	16	17	17	17	17	18	18
Operations Management (2)	1	1	1	1	2	2	2	2	2	2
Administration & IT (3)	17	17	17	16	15	13	12	12	12	12
Laboratory	4	4	3	3	3	3	3	3	3	3
Director of Engineering & Maintenance	1	1	1							
Engineering	12	11	10	11	9	9	9	9	9	9
Maintenance (1)	16	17	17	16	16	17	17	17	16	16
Total	93	93	91	88	85	84	83	82	83	83

(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.

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

Source: The above information is summarized from annual budgets.

RIVANNA WATER & SEWER AUTHORITY **Table 12**

Operating and Capital Indicators
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2021	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**
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	18.8	18.8	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	67.0	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	5	5	5	5	5	5	5	5	5	5
Number of finished water storage tanks	11	11	11	11	11	11	11	11	11	11
Maximum treatment capacity (mgd)	22.956	22.750	22.750	22.750	22.750	22.750	22.750	22.750	22.750	22.750
Water treated (mgd)	10.147	9.839	9.573	9.677	10.129	9.948	10.135	10.240	10.203	9.953
Unused capacity (mgd)	12.809	12.911	13.177	13.073	12.621	12.802	12.615	12.510	12.547	12.797
Percentage of capacity utilized	44.20%	43.25%	42.08%	42.54%	44.52%	43.73%	44.55%	45.01%	44.85%	43.75%
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	4	4	5
Number of pumping stations	7	7	7	7	7	7	7	7	7	7
Maximum treatment capacity (mgd)	15.486	15.945	15.945	15.945	15.945	15.945	15.945	15.945	15.945	15.945
Wastewater treated (mgd)	10.762	9.977	12.754	9.259	9.643	10.561	9.632	10.746	9.890	10.190
Unused capacity (mgd)	4.724	5.968	3.191	6.686	6.302	5.384	6.313	5.199	6.055	5.755
Percentage of capacity utilized	69.50%	62.57%	79.99%	58.07%	60.48%	66.23%	60.41%	67.39%	62.03%	63.91%

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

Source: Internal reports and records

RIVANNA WATER & SEWER AUTHORITY **Table 13**

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	21,238
Number of sewer connections	18,257
Miles of water lines	364
Miles of sewer lines	316
Number of fire hydrants	3,023

Rates (effective FY 2021) per 1,000 gallons metered consumption

Water

Residential Water Rates and all irrigation usage:	
Level 1 (0-3,000 gallons per month)	$4.48
Level 2 (3,001-6,000 gallons per month)	$8.98
Level 3 (6,001-9,000 gallons per month)	$13.46
Level 4 (over 9,000 gallons per month)	$17.96
Non-Residential and Multi-Family Residential Water Rate (except irrigation water)	$8.66
Wastewater	$9.47

Ten Largest Customers in FY 2021

	Water			Wastewater		
	Billed (in gallons)	Rank	Percentage of Total	Billed (in gallons)	Rank	Percentage of Total
SEMF Charleston	25,370,000	1	1.49%	25,370,000	1	1.72%
University of Virginia	24,154,124	2	1.42%	23,589,900	3	1.60%
Abbington Crossing	23,461,700	3	1.38%	23,461,700	4	1.59%
Southwood Mobile Homes	23,024,000	4	1.35%	24,128,002	2	1.63%
Turtle Creek Apts.	19,478,600	5	1.14%	19,465,000	5	1.32%
Martha Jefferson Hospital	19,186,588	6	1.13%	-	-	-
Old Salem Apts	18,885,900	7	1.11%	18,885,900	6	1.28%
Four Seasons Apts.	18,828,000	8	1.10%	18,828,000	7	1.27%
ACRJ	18,768,680	9	1.10%	17,719,680	8	1.20%
Westminster Canterbury	16,368,290	10	0.96%	15,814,705	9	1.07%
Westgate Apts.				14,466,800	10	0.98%
	207,525,882		12.18%	201,729,687		13.64%

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	14,888
Number of sewer customers	14,791
Miles of water lines	184
Miles of sanitary sewer lines	172
Number of fire hydrants	1125
Bond Rating	AAA/Aaa

Rates FY 2021 per 1,000 cubic feet:

Water	
May - Sept.	$ 65.31
Oct. - Apr.	$ 50.24
Wastewater	$ 80.14

Ten Largest Customers in Fiscal Year 2021:

	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	49,609,748	$ 2,923,875	22.79%	31,166,405	$ 2,530,923	17.49%
Pepsi Cola	4,462,070	267,728	2.09%	1,583,370	128,391	0.89%
Charlottesville Redevelopment and Housing	3,308,813	192,473	1.50%	3,308,812	271,018	1.87%
Community Housing/Greenstone	1,778,835	118,078	0.92%	1,778,835	148,526	1.03%
Woodard Properties	1,763,339	119,406	0.93%	1,763,339	150,164	1.04%
Pavilion UVA	1,537,110	93,879	0.73%	1,537,110	124,144	0.86%
Cannon Hearthwood	1,371,205	88,311	0.69%	1,371,205	112,288	0.78%
City of Charlottesville	1,311,128	92,439	0.72%	1,103,493	100,059	0.69%
Neighborhood Properties	1,221,753	79,785	0.62%	1,221,753	102,381	0.71%
Management Services Corp	1,157,319	76,944	0.60%	1,117,088	93,378	0.65%
	67,521,320	$ 4,052,917	31.59%	45,951,410	$ 3,761,274	26.00%

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, 2021, 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, 2021.

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) as a basis for designing 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 financial statements. 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, 2021