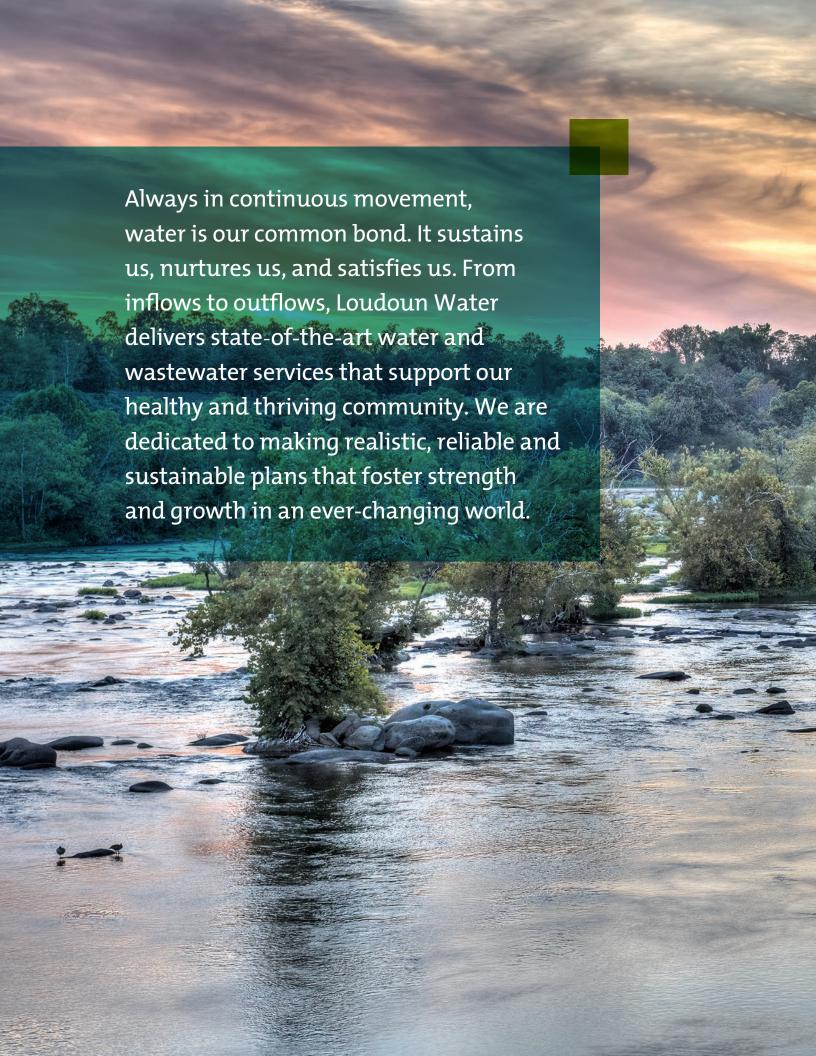


ANNUAL COMPREHENSIVE FINANCIAL REPORT

2621

For the Fiscal Years Ended December 31,

2021 AND DECEMBER 31, 2020

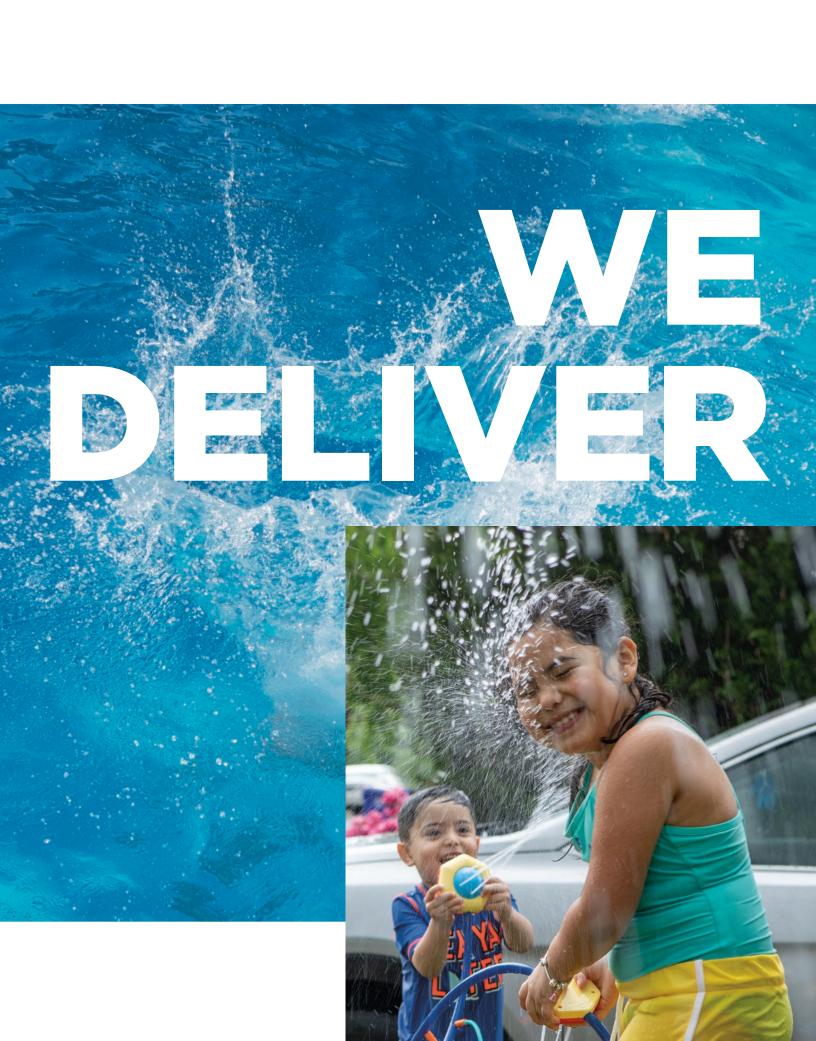








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May 11, 2022

To the Chairman and Members of the Board of Directors of the Loudoun County Sanitation Authority:

The Annual Comprehensive Financial Report for the Loudoun County Sanitation Authority (the Authority) for the fiscal year ended December 31, 2021 is submitted herewith. This report has been prepared in conformity with accounting principles generally accepted in the United States of America (GAAP) and audited in accordance with government auditing standards generally accepted in the United States of America (GAGAS) by a firm of licensed certified public accountants. This report has also been prepared in accordance with the requirements of the Government Finance Officers Association's Certificate of Achievement for Excellence in Financial Reporting program.

This report consists of management's representations concerning the finances of the Authority. Responsibility for both the accuracy of the presented data and the completeness and fairness of the presentation, including all disclosures, rests with management. To provide a reasonable basis for making these representations, the accounting system is dependent upon a strong foundation of internal accounting controls to ensure that financial information generated is both accurate and reliable. Recognizing that the cost of control should not exceed the benefits derived, the internal accounting controls are designed to provide reasonable assurance, but not absolute assurance, that the financial statements will be free from material misstatement. We believe that the data in this report presents fairly the financial position and results of operations and that all disclosures necessary to enable the reader to gain an understanding of financial activity have been included.

Virginia law requires an annual audit of the financial records and transactions of the Authority by independent certified public accountants, as selected by the Board.

The financial statements for the year ended December 31, 2021 have been audited by Yount, Hyde & Barbour, P.C., a firm of licensed certified public accountants.

The independent auditor concluded, based upon the audit, that there was a reasonable basis for rendering an unmodified opinion that the financial statements are fairly presented in conformity with GAAP. The independent auditor's report is presented in the financial section of this report.

Governmental standards require that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it.

The MD&A can be found immediately following the independent auditor's report.

Profile of the Authority

The Authority was created on May 27, 1959 by action of the Board of Supervisors of Loudoun County, Virginia, as a public body politic and corporate under the provisions of the Virginia Water and Waste Authorities Act. The Authority is chartered by the State Corporation Commission and is responsible for providing water and wastewater service to Loudoun County. The Authority is governed by a Board consisting of nine members appointed by the Board of Supervisors. The Board appoints the General Manager, who is responsible for the daily management of the Authority.

The annual operating and capital budgets serve as the foundation for financial planning and control.

Each division prepares budget requests that are reviewed and adjusted, if necessary, by the General Manager and Deputy General Managers. The proposed budgets are presented to the Board for approval. Each division has line-item control of the budget; however, any overruns must be approved by the General Manager. Only the Board has the authority to revise the budget in total. All annual appropriations lapse at year-end.

Factors Affecting Financial Condition

Local Economy. Loudoun County is located in Northern Virginia, 25 miles west of Washington, DC. The County has been one of the fastest growing counties in the U.S. since the late 1990s. According to the U.S. Census Bureau, Loudoun County was the fifth fastest growing county in the nation between 2000 and 2010. Between 2010 and 2017, Loudoun County was the nineteenth fastest growing county in the nation and fourth most populous in the Commonwealth of Virginia. The County is expected to experience one of the highest population growth rates, and is expected to have one of the highest growth rate for jobs, in the entire Washington region according to the Metropolitan Washington Council of Government Round 9.1 regional forecasts.

Long-term Financial Planning. The Authority maintains a 5-Year Plan of Finance (the Plan) which is a planning tool developed through the use of a model to ensure funding is available to meet operating and capital needs and ensure compliance with revenue bond covenants. The Plan is monitored and updated when significant changes occur with the various inputs such as the budget and actual system connections. The Plan is not intended to project future rate increases; a user rate model is used for that evaluation.

The Authority also maintains and updates a capital spending plan and Capital Improvements Program (CIP) on an annual basis which details capital projects that are necessary for system expansion and rehabilitation over a ten year period.

Further, the Authority refers to a Strategic Plan that was created, with the input from the Board of Directors, management and staff, to enhance the Authority's sound financial planning performance and safeguard the customers' investment. The Strategic Plan contains a set of goals, both financial and operational, that were developed and prioritized for future action.

During fiscal year 2021, the Authority's net position continued to exceed policy goals and were a key factor in reaffirming the existing AAA credit ratings from Moody's Investor Service, Standard & Poor's and Fitch rating agencies.

Major Initiatives. The Authority continued planning for the design and construction of the Milestone Reservoir and Raw Water Pumping Station project. This project, a part of the CIP, will convert a retired rock quarry to a water reservoir, enabling the Authority to serve its growing population of customers well into the future. This multi-year project is expected to be operational in 2025. Funding of all phases of the project is included in the 5-Year Pan of Finance.

Awards and Acknowledgements

The Government Finance Officers Association (GFOA) awarded the Loudoun County Sanitation Authority a Certificate of Achievement for Excellence in Financial Reporting for the Annual Comprehensive Financial Report for the year ended December 31, 2020. This was the thirty fourth consecutive year that the Authority has received this prestigious award. The GFOA awards a Certificate of Achievement to financial reports that clearly convey the financial position and results of operations of the governmental entity. The report must be easy to read, thorough, and efficiently organized, in addition to satisfying GAAP and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current Annual Comprehensive Financial Report continues to meet the Certificate of Achievement Program requirements and standards.

This report has been accomplished with the dedicated services of the Division of Finance. We would like to express our appreciation to all employees that contributed to its preparation. We would also like to thank the Board that remains committed to fiscal integrity and financial leadership.

Brin Can

Respectfully submitted,

Carla F. Burleson

Carla P. Burleson

General Manager

Deputy General Manager, Finance



Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Loudoun Water Virginia

For its Comprehensive Annual Financial Report For the Fiscal Year Ended

December 31, 2020

Christopher P. Morrill

Executive Director/CEO

BOARD MEMBERS AND OFFICERS

Officers



Carla P. Burleson, General Manager/Treasurer

Board Members



Mark Koblos, Chairman



Terrence Allen, Vice Chairman



Shaun Kelley



Jewell R. Lilly, Executive Assistant/ **Board Secretary**



Keith Moody



Bill Byers



Anjiline Sirsikar



Martin Sultan

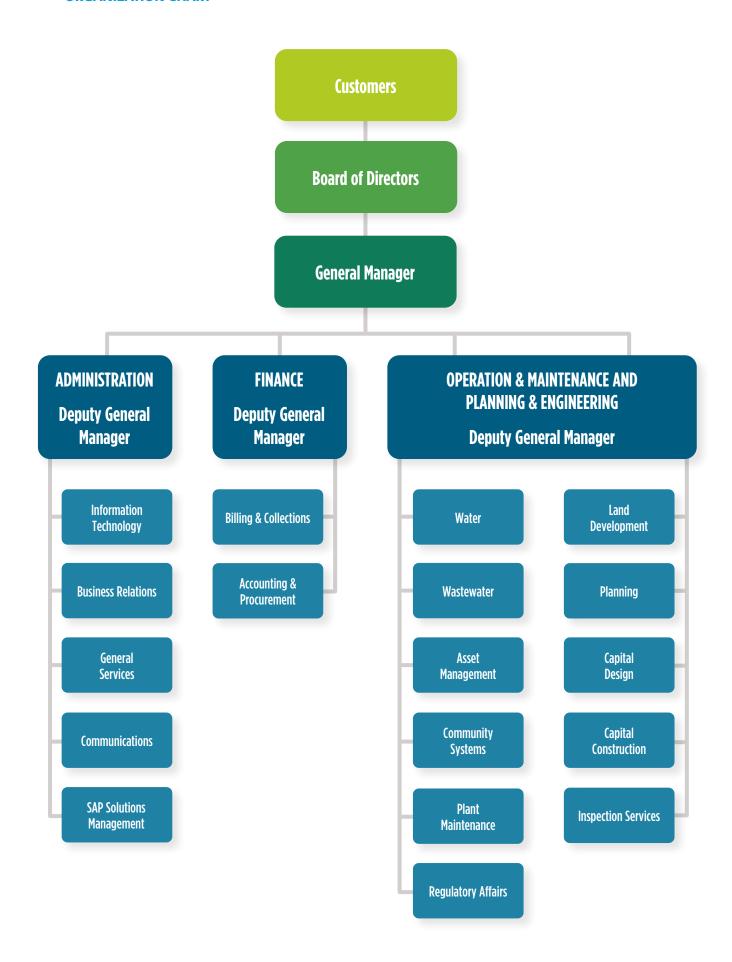


Jim Bonfils



Brent Campbell

ORGANIZATION CHART









INDEPENDENT AUDITOR'S REPORT

To the Board of Directors Loudoun County Sanitation Authority Ashburn, Virginia

Report on the Audit of the Financial Statements

Opinion

We have audited the accompanying financial statements of the business-type activity and the fiduciary fund of Loudoun County Sanitation Authority (Loudoun Water), as of and for the years ended December 31, 2021 and 2020, and related notes to the financial statements, which collectively comprise Loudoun Water's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activity and the fiduciary fund of Loudoun Water, as of December 31, 2021 and 2020, and the respective changes in financial position and, where applicable, its cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS), Specifications for Audits of Authorities, Boards and Commissions issued by the Auditor of Public Accounts of the Commonwealth of Virginia, and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of Loudoun Water, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management 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, and for 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.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about Loudoun Water's ability to continue as a going concern for 12 months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and Government Auditing Standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit 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 Loudoun Water's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about Loudoun Water's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and other Required Supplementary Information, as listed in the table of contents, be presented to supplement the basic financial statements. Such information is the responsibility of management and, 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.

To the Board of Directors Loudoun County Sanitation Authority Page 3

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the Introductory and Statistical Sections, as listed in the table of contents, but does not include the basic financial statements and our auditor's report thereon. Our opinion on the basic financial statements does not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected misstatement or the other information exists, we are required to describe it in our report.

Other Reporting Required by Government Auditing Standards

Yount, Hyde : Barbon, P.C.

In accordance with Government Auditing Standards, we have also issued our report dated May 11, 2022 on our consideration of Loudoun Water'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 Loudoun Water'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 Loudoun Water's internal control over financial reporting and compliance.

MANAGEMENT'S DISCUSSION AND ANALYSIS

The following discussion and analysis of the Loudoun County Sanitation Authority's financial performance provides a narrative overview of the financial activities of the Authority for the year ended December 31, 2021. We encourage readers to consider the information presented here in conjunction with the financial statements that follow this section.

FINANCIAL HIGHLIGHTS

- Assets and deferred outflows exceeded liabilities and deferred inflows at the close of the year by \$1.9 billion. Of this amount, \$206.9 million is unrestricted and may be used to fund the capital improvements program or meet on-going obligations to customers and creditors.
- The net position increased by \$40.6 million mainly due to the addition of water and wastewater lines and mains deeded to the Authority by developers.
- Operating revenues increased approximately 10.25% when compared to 2020. The customer base expanded by approximately 1,197 accounts (1.43%).
- Usage and base rates for water and wastewater were increased in January 2021.

OVERVIEW OF THE FINANCIAL STATEMENTS

This Annual Comprehensive Financial Report is presented in three main sections. The Introductory Section includes the letter of transmittal, the GFOA Certificate of Achievement, a list of Authority Board members and officers and an organization chart. The Financial Section includes the Independent Auditor's Report, this Management Discussion and Analysis, financial statements with related notes and required supplementary information. The Statistical Section includes selected financial and demographic information about the Authority and the surrounding area.

There are three types of financial statements included in the financial section of this report – Statements of Net Position, Statements of Revenues, Expenses and Changes in Net Position and Statements of Cash Flows. The Statements of Net Position include all of the Authority's assets and liabilities using the accrual basis of accounting. They provide the basis for evaluating the capital structure of the Authority and assessing the liquidity and flexibility of the Authority. All current and prior year's revenues and expenses are accounted for in the Statements of Revenues, Expenses and Changes in Net Position. These statements measure the success of the Authority's operations and can be used to determine whether the Authority has successfully recovered its costs through user fees and other charges. The Statements of Cash Flows report the cash provided and used in operating activities as well as other cash sources, such as investment income, cash payments for capital additions and repayment of bonds. The Statements of Fiduciary Net Position report assets held by the Authority acting as a trustee for the employees' Other Postemployment Benefits (OPEB). The Statement of Changes in Fiduciary Net Position presents the activity of the OPEB Trust fund during the year. The notes to the financial statements provide additional information that is essential to a full understanding of the data provided in the statements.

FINANCIAL ANALYSIS

The Statements of Net Position and the Statements of Revenues, Expenses and Changes in Net Position report information about the Authority's activities to determine if, overall, the financial position improved over the year. These two statements report the net position of the Authority and changes in them. Analyzing the Authority's net position is one way to measure financial health. Non-financial factors such as economic conditions, population growth and new or changed government legislation need to be considered as well. The Authority improved its financial position in 2021.

Net Position

The following table depicts the Authority's condensed summary of net position at December 31, 2021, 2020 and 2019

	2021	2020	2019
Assets			
Current and Other Assets	\$ 400,787,297	\$ 385,233,771	\$ 350,409,491
Capital Assets	1,759,911,904	1,745,526,610	1,742,762,313
Total Assets	2,160,699,201	2,130,760,381	2,093,171,804
Deferred Outflows of Resources	8,469,330	12,557,344	12,504,191
Liabilities			
Current and Other Liabilities	47,918,670	43,184,008	46,846,041
Long-term Liabilities	241,078,691	269,079,282	279,608,113
Total Liabilities	288,997,361	312,263,290	326,454,154
Deferred Inflows of Resources	9,918,882	1,423,565	2,016,050
Net Position			
Net Investments in Capital Assets	1,571,358,973	1,486,736,687	1,472,036,076
Restricted	91,995,673	27,712,690	27,527,317
Unrestricted	206,897,642	315,181,493	277,642,398
Total Net Position	\$1,870,252,288	\$1,829,630,870	\$ 1,777,205,791

Current Year. The Authority's net position increased by \$40.6 million, or 2.2%, between fiscal years 2021 and 2020. A significant portion of the Authority's net position (84.0%) at December 31, 2021 reflects the net investment in capital assets. These capital assets are used to provide services to customers and are not available for future spending. Restricted net position increased approximately 232.0% in 2021 primarily due to an increase in restricted bond funds to be used for payment of debt service. Unrestricted net position decreased by approximately 34.4% and may be used to fund the Authority's capital improvement program and meet on-going obligations to customers and creditors.

Prior Year. The Authority's net position increased by \$52.4 million, or 2.9%, between fiscal years 2020 and 2019. A significant portion of the Authority's net position (81.3%) at December 31, 2020 reflects the net investment in capital assets. These capital assets are used to provide services to customers and are not available for future spending. Restricted net position increased approximately 0.7% in 2020 primarily due to an increase in restricted bond funds to be used for payment of debt service. Unrestricted net position increased by approximately 13.5% and may be used to fund the Authority's capital improvement program and meet on-going obligations to customers and creditors.

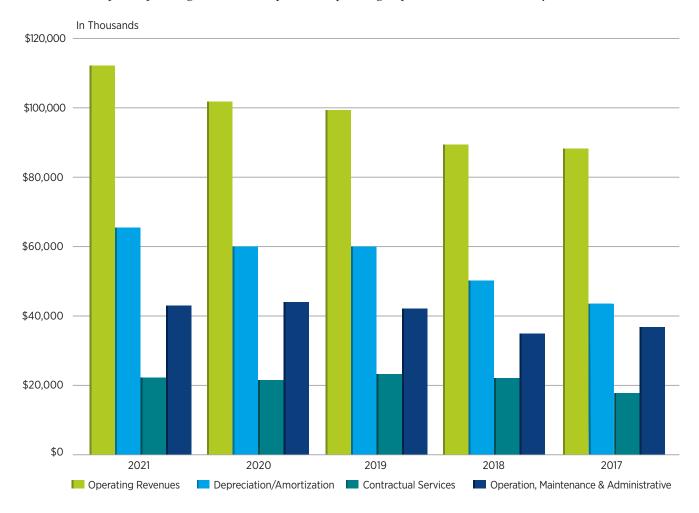
Changes in Net Position

The table below reflects the Authority's changes in net position for the years ended December 31, 2021, 2020 and 2019.

	2021	2020	2019
Operating Revenues			
Sale of Water	\$ 50,691,670	\$ 46,280,789	\$ \$45,633,147
Sewage Disposal Fees	55,927,713	51,590,873	49,239,167
Other Operating Revenues	5,151,674	3,731,512	4,354,215
Total Operating Revenues	111,771,057	101,603,174	99,226,529
Operating Expenses			
Personnel	31,851,149	32,326,145	29,674,102
Contractual Services	21,639,562	21,349,099	22,877,416
Other Operating Expenses	10,464,751	11,285,997	12,285,958
Total Operating Expenses	63,955,462	64,961,241	64,837,476
Operating Income Before			
Depreciation and Amortization	47,815,595	36,641,933	34,389,053
Depreciation/Amortization	65,149,468	59,591,159	59,588,417
Operating (Loss)	(17,333,873)	(22,949,226)	(25,199,364)
Non-operating Revenues/(Expenses)			
Availability Fees	4,055,805	5,495,167	7,330,607
Investment (Expense) Income	(1,594,623)	5,980,479	7,566,376
Interest Expense	(8,519,663)	(9,862,243)	(10,137,709)
Bond Issuance Costs	(294,232)	_	(139,969)
Gain (Loss) on Disposal	47,240	(23,274)	40,894
Non-Operating (Expense) Revenue	(6,305,473)	1,590,129	4,660,199
Net (Loss) before Capital Contributions	(23,639,346)	(21,359,097)	(20,539,165)
Capital Contributions	64,260,764	73,784,176	100,362,124
Change in Net Position	40,621,418	52,425,079	79,822,959
Net Position, Beginning of Year	1,829,630,870	1,777,205,791	1,697,382,832
Net Position, End of Year	\$1,870,252,288	\$1,829,630,870	\$1,777,205,791

Operating Income

Current Year. Operating revenues totaled \$111.8 million in fiscal year 2021, an increase of \$10.2 million from 2020. This increase can be attributed to the usage rate increase that became effective on January 1, 2021 as well an increase in water usage. Operating expenses were \$64.0 million in 2021, a decrease of \$1.0 million from 2020 primarily due to the combination of modest decreases and increases in all categories of operating expenses. The chart below depicts operating revenues compared to operating expenses over the last five years.



Prior Year. Operating revenues totaled \$101.6 million in fiscal year 2020, an increase of \$2.4 million from 2019. This increase can be attributed to the usage rate increase that became effective on January 1, 2020 Operating expenses were \$65.0 million in 2020, an increase of \$0.1 million from 2019 primarily due to the combination of modest increases and decreases in all categories of operating expenses.

Income Before Capital Contributions

Current Year. Net loss before capital contributions increased \$2.3 million in 2021 mainly due to an increase depreciation/amortization. The Authority credits a portion of availability fees to capital contributions and the remainder to non-operating revenues. Investment income is also recorded as non-operating revenue. Non-operating expenses include interest paid on debt.

Prior Year. Net loss before capital contributions increased \$0.8 million in 2020 mainly due to the decrease in nonoperating revenue. The Authority credits a portion of availability fees to capital contributions and the remainder to non-operating revenues. Investment income is also recorded as non-operating revenue. Non-operating expenses include interest paid on debt.

Capital Contributions

Current Year. Water and wastewater lines and mains that are deeded to the Authority by developers are reported as capital contributions. Approximately \$12.9 million of capital assets were deeded to the Authority in 2021 compared to \$21.9 million in 2020. The portion of availability charges credited to contributed capital totaled \$49.8 million in 2021 compared to \$51.1 million in 2020. In 2021, the Authority received approximately \$1.2 million from the County of Loudoun for certain projects.

Prior Year. Water and wastewater lines and mains that are deeded to the Authority by developers are reported as capital contributions. Approximately \$21.9 million of capital assets were deeded to the Authority in 2020 compared to \$34.7 million in 2019. The portion of availability charges credited to contributed capital totaled \$51.1 million in 2020 compared to \$64.3 million in 2019. In 2021, the Authority received approximately \$0.5 million from the County of Loudoun for certain projects.

CAPITAL ASSETS AND DEBT ADMINISTRATION

The following table depicts the Authority's condensed summary of capital assets at December 31, 2021, 2020, and 2019.

Capital Assets

•	2021		2020		21 2020		 2019
Capacity Rights, net	\$	275,208,972	\$	278,851,484	\$ 283,616,599		
Water Facilities		734,779,969		722,377,886	685,185,904		
Wastewater Facilities		681,433,281		630,649,862	619,876,540		
Reclaimed Water Facilities		3,015,420		3,015,420	3,015,420		
Building and Improvements		304,027,961		300,182,914	292,509,273		
Machinery and Equipment		188,869,923		181,739,817	174,578,800		
Land		67,234,172		67,234,172	67,232,472		
Construction in Process		87,155,471		90,879,278	 95,500,722		
Total Capital Assets	2	2,341,725,169		2,274,930,833	2,221,515,730		
Less: Accumulated Depreciation		581,813,265		529,404,223	 478,753,417		
Net Capital Assets	\$	1,759,911,904	\$	1,745,526,610	\$ 1,742,762,313		

Current Year. At the end of 2021, the Authority had invested \$2.3 billion in a broad range of capital assets including capacity rights, water and sewer lines, land, buildings, vehicles and equipment. This amount represents an increase of \$66.8 million, or 2.9% over last year.

Major capital asset additions for 2021 included:

- Water distribution mains constructed and contributed by developers - \$6.8 million
 - \$998,427 Clark Assemblage
 - \$987,796 Willowsford
 - \$822,916 Mcintosh Farms
 - \$634,359 Project Viper
 - \$625,399 Stonewall Energy Park
 - \$520,449 Loudoun Valley Estates
 - \$443,528 Ashbrook Residential
 - \$341,076 Cyrusone Kincora
 - \$231,580 Brambleton Active **Adult Community**
 - \$210,212 Dulles Town Center Townhomes
 - \$209,959 Corpus Christi
 - \$208,008 East Gate Marketplace King Spa
 - \$160,669 LCPS ES-29
 - \$154,435 Janelia Research Campus
 - \$140,441 Ashburn Chase
 - \$115,060 Glascock Field

- Sewer lines constructed and contributed by developers - \$5.9
 - \$977,652 Willowsford
 - \$822,247 Mcintosh Farms
 - \$785,388 Clark Assemblage
 - \$524,458 Project Viper
 - \$486,286 Ashburn Overlook
 - \$408,008 East Gate Marketplace King Spa
 - \$340,312 Stonewall Energy Park
 - \$273,523 Dulls Town Center Townhomes
 - \$210,964 Loudoun Valley Estates
 - \$194,728 Ashbrook Residential
 - \$109,543 Cyrusone Kincora

- Horsepen Run Parallel Interceptor Sewer - \$31.8 million
- Brambleton Permanent SPS -\$7.1 million
- DC Water Capital Improvements -\$6.3 million
- Courtland Permanent Pump Station - \$4.6 million
- O&M Building Renovation -\$2.7 million
- Beacon Hill WTP Upgrades -\$2.3 million
- Cedar Crest SPS Upgrade -\$2.2 million
- DCH Admin Building Renovation -\$1.1 million

The Authority's fiscal 2021 Capital Budget projects spending \$96.2 million for capital projects including:

- Various water main initiatives
- Various wastewater initiatives
- Milestone Reservoir Construction
- Information Technology Projects
- Broad Run Water Reclamation Facility Treatment Expansion
- Community Systems Projects
- Capital payments to the District of Columbia Water and Sewer Authority for improvements at the Blue Plains Wastewater Treatment plant

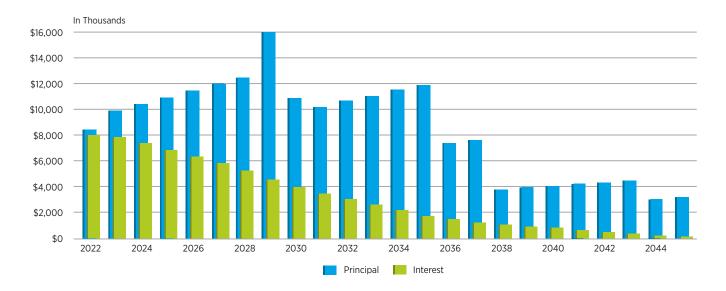
More detailed information regarding the Authority's capital assets is presented in Note 4 to the financial statements.

Prior Year. At the end of 2020, the Authority had invested \$2.3 billion in a broad range of capital assets including capacity rights, water and sewer lines, land, buildings, vehicles and equipment. This amount represents an increase of \$53.4 million, or 2.4% over last year.

Long-term Debt

Current Year. The Authority's outstanding debt as of December 31, 2021 includes \$110,940,000 in Water and Sewer System Revenue Bonds that bear interest from 3.25% to 5.0% and \$93,375,000 in Water and Sewer System Refunding Bonds that bear interest from 2.0% to 5.0%. In addition, the Authority has outstanding debt of \$11,840,000 in variable rate bonds.

The graph below provides an indication of how much principal and interest are due each year until the revenue bonds mature in 2045.



Outstanding revenue bonds carry an Aaa rating from Moody's Investors Service, an AAA rating from Fitch and AAA from Standard and Poor's (S&P). This is the highest rating available from each of the rating agencies.

The Authority's outstanding debt to the Fairfax County Water Authority (FCWA) relates to 20 MGD (million gallons per day) of storage capacity.

More detailed information regarding the Authority's long-term debt is presented in Note 6 to the financial statements.

Prior Year. The Authority's outstanding debt as of December 31, 2020 includes \$95,960,000 in Water and Sewer System Revenue Bonds that bear interest from 3.25% to 5.0% and \$134,530,000 in Water and Sewer System Refunding Bonds that bear interest from 2.0% to 5.0%. In addition, the Authority has outstanding debt of \$12,945,000 in variable rate bonds.

ECONOMIC FACTORS AND NEXT YEAR'S BUDGETS AND RATES

The long term outlook for the region's economic conditions and the prospect of these conditions is positive. The Authority continues to evaluate its resources as well as operational and capital requirements to ensure that water and wastewater service will be available to meet expected demand.

During 2021, the Authority continued to improve its financial position. The Authority was able to prepare a budget for 2022 that continues to preserve its financial integrity as well as provide high-quality water and wastewater service to all customers as economically as possible.

The Authority's rate structure is designed to collect sufficient revenues to pay debt service and recover operating and maintenance expenses. The Authority successfully accomplished this objective in 2021.

During 2021, the Authority's Board of Directors passed a Resolution to adopt revised rates, fees and charges as a combined rate for both central service and developer initiated community system customers. These rates will be effective January 1, of 2022, 2023, and 2024. The average residential customer will realize an increase of approximately 3.0% with each rate increase. The existing rates for the two categories of community systems, the Goose Creek Wastewater Treatment Plant System and the County sponsored systems remain in effect.

The Board of Directors also adopted availability charges for all central system connections. These rates will be effective January 1, of 2022, 2023, and 2024. An increase of approximately 3.0% will be realized by customers with each rate increase.

REQUESTS FOR INFORMATION

This report is intended to provide our customers, bondholders and creditors with a general overview of the Authority's financial position and to demonstrate accountability for revenues received. Questions concerning information provided in this report or requests for additional financial information should be directed to the Deputy General Manager, Finance of the Authority at 571.291.7700 or to our office located at 44865 Loudoun Water Way, PO Box 4000, Ashburn, VA 20146.

STATEMENTS OF NET POSITION

DECEMBER 31, 2021 AND 2020

Assets

	2021		2021		2020	
Current Assets						
Cash and Temporary Investments:						
Unrestricted	\$	38,650,211	\$	149,802,047		
Restricted		102,888,870		36,867,422		
Investments:						
Unrestricted		72,253,391		8,672,133		
Restricted		_		3,032,820		
Receivables:						
Water and Wastewater Service		24,056,149		20,858,506		
Interest:						
Unrestricted		823,569		726,477		
Restricted		478		12,319		
Other		528,544		793,689		
Inventory		4,158,631		4,295,627		
Prepaid Expenses		1,583,372		1,805,444		
Total Current Assets		244,943,215		226,866,484		
Non-Current Assets						
Investments:						
Unrestricted		155,835,176		158,367,287		
Capital Assets:		, ,		, ,		
Capacity Rights, net of amortization		275,208,972		278,851,484		
Water Facilities		734,779,969		722,377,886		
Wastewater Facilities		681,433,281		630,649,862		
Reclaimed Water Facilities		3,015,420		3,015,420		
Buildings and Improvements		304,027,961		300,182,914		
Machinery and Equipment		188,869,923		181,739,817		
Less: Accumulated Depreciation		(581,813,265)		(529,404,223)		
Land		67,234,172		67,234,172		
Construction in Process		87,155,471		90,879,278		
Capital Assets, net	1	,759,911,904		1,745,526,610		
Net Pension Asset		8,906				
Total Non-Current Assets	1	,915,755,986		1,903,893,897		
Total Assets	2	2,160,699,201		2,130,760,381		
Deferred Outflows of Resources						
Deferred Amounts on Refunding Debt		3,573,124		7,588,064		
Deferred Amounts Related to OPEB		718,364		654,887		
Deferred Amounts Related to GLI OPEB		424,759		456,843		
Deferred Amounts Related to Pensions		3,753,083		3,857,550		
Total Deferred Outflows of Resources		8,469,330		12,557,344		
Total Assets and Deferred Outflows of Resources	\$ 2	2,169,168,531	\$	2,143,317,725		

LIABILITIES AND NET POSITION

	2021	2020
Current Liabilities		
Accounts Payable	\$ 11,288,242	\$ 6,813,705
Retainages Payable	3,828,722	2,467,970
Oversizing Reimbursements	9,110,220	7,798,750
Customer Advance Payment Fees	2,244,020	2,236,303
Developers' Advances	25,000	25,000
Performance Bonds	4,535,524	4,848,728
Maintenance Bonds	229,494	253,167
Bond Interest Payable	3,859,637	4,836,673
Compensated Absences	1,478,095	1,315,037
Fairfax Water Agreement	58,240	56,330
Bonds Payable - VRLF	357,723	351,719
Bonds Payable - VRA	5,379	5,225
Revenue Bonds Payable	10,898,374	12,175,401
Total Current Liabilities	47,918,670	43,184,008
Long-term Liabilities		
Compensated Absences	3,448,888	3,068,419
Other Post Employment Benefits	615,082	950,979
GLI Other Post Employment Benefits	1,433,335	1,962,718
Net Pension Liability	-	9,307,854
Fairfax Water Agreement	480,109	538,349
Bonds Payable - VRLF	4,792,519	5,150,241
Bonds Payable - VRA	47,990	53,369
Revenue Bonds Payable, net of unamortized amounts	230,260,768	248,047,353
Total Long-term Liabilities	241,078,691	269,079,282
Total Liabilities	288,997,361	312,263,290
Deferred Inflows of Resources		
Deferred Amounts on Refunding Debt	528,248	603,712
Deferred Amounts Related OPEB Health	863,816	819,853
Deferred Amounts Related GLI OPEB	550,480	_
Deferred Amounts Related to Pensions	7,976,338	_
Total Deferred Inflows of Resources	9,918,882	1,423,565
Not Design		
Net Position	1 571 250 072	1 406 726 607
Net Investment in Capital Assets	1,571,358,973	1,486,736,687
Debt Service	91,995,673	27,712,690
Unrestricted Net Position	206,897,642	315,181,493
Total Net Position	1,870,252,288	1,829,630,870
Total Liabilities, Deferred Inflows of Resources and Net Position	\$ 2,169,168,531	\$ 2,143,317,725

STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2021 AND 2020

	2021	2020
Operating Revenues		
Sale of Water	\$ 50,691,670	\$ 46,280,789
Sewage Disposal Fees	55,927,713	51,590,873
Other Water/Wastewater Charges	654,828	435,349
Other Operating Revenues	4,496,846	3,296,163
Total Operating Revenues	111,771,057	101,603,174
Operating Expenses		
Personnel	31,851,149	32,326,145
Contractual Services	21,639,562	21,349,099
Materials, Supplies, and Minor Equipment	5,871,279	5,723,917
Other Services	4,593,472	5,562,080
Total Operating Expenses	63,955,462	64,961,241
Operating Income Before Depreciation and Amortization	47,815,595	36,641,933
Depreciation	52,618,785	50,669,635
Amortization	12,530,683	8,921,524
Operating (Loss)	(17,333,873)	(22,949,226)
Non-Operating Revenues/(Expenses)		
Availability Charges	4,055,805	5,495,167
Investment (Loss) Income	(1,594,623)	5,980,479
Interest Expense	(8,519,663)	(9,862,243)
Bond Issuance Costs	(294,232)	_
Gain (Loss) on Disposal	47,240	(23,274)
Non-Operating (Expense) Revenue	(6,305,473)	1,590,129
Net (Loss) before Capital Contributions	(23,639,346)	(21,359,097)
Capital Contributions	64,260,764	73,784,176
Change in Net Position	40,621,418	52,425,079
Total Net Position, Beginning of Year	1,829,630,870	1,777,205,791
Total Net Position, End of Year	\$ 1,870,252,288	\$ 1,829,630,870

STATEMENTS OF CASH FLOWS

YEARS ENDED DECEMBER 31, 2021 AND 2020

	2021	2020
Cash Flows from Operating Activities		
Cash Received from Customers	\$ 108,581,131	\$ 100,546,149
Payments to Suppliers for Goods and Services	(31,605,911)	(34,314,784)
Payments to Employees for Services	(32,845,807)	(31,075,639)
Net Cash Provided by Operating Activities	44,129,413	35,155,726
Cash Flows from Capital and Related Financing Activities		
Proceeds from Sale of Capital Assets	48,286	7,260
Contributions from Developers	393,717	340,786
Contributions from Governments	1,781,771	465,050
Acquisition/Construction of Capital Assets	(55,497,178)	(46,493,267)
Proceeds from Developer Advances	_	(20,696)
Availability Fees - Other	4,320,950	5,495,167
Availability Fees - Capital Contributions	49,153,058	51,117,356
Principal Payments on Fairfax Water Agreement	(56,330)	(54,483)
Interest Payments on Fairfax Water Agreement	(20,062)	(21,909)
Principal Payments - VRA	(356,943)	(350,890)
Interest Payments - VRA	(122,976)	(122,976)
Principal Payments on Revenue Bonds	(75,570,000)	(10,450,000)
Interest Payments on Revenue Bonds	(9,353,661)	(9,533,715)
Proceeds from Debt Issuance	56,010,000	_
Bond Issuance Costs	(294,232)	
Net Cash (Used in) Capital and Related Financing Activities	(29,563,600)	(9,622,317)
Cash Flows from Investing Activities		
Proceeds from Sale of Investments	53,625,000	247,260,000
Purchase of Investments	(116,063,186)	(218,920,092)
Interest Received on Investments	2,741,985	3,457,607
Net Cash (Used in) Provided by Investing Activities	(59,696,201)	31,797,515
Net (Decrease) Increase in Cash and Cash Equivalents	(45,130,388)	57,330,924
Cash and Cash Equivalents, Beginning of Year	186,669,469	129,338,545
Cash and Cash Equivalents, End of Year	\$ 141,539,081	\$ 186,669,469

STATEMENTS OF CASH FLOWS (CONTINUED)

YEARS ENDED DECEMBER 31, 2021 AND 2020

	2021		021 2020	
Reconciliation of Operating (Loss) to				
Net Cash Provided by Operating Activities				
Operating (Loss)	\$	(17,333,873)	\$	(22,949,226)
Adjustments to Reconcile Operating (Loss) to				
Net Cash Provided by Operating Activities:				
Depreciation and Amortization		65,149,468		59,591,159
Changes in Assets and Liabilities:				
(Increase) in Water/Wastewater Receivables		(3,197,643)		(439,937)
Decrease (Increase) in Availability Receivable		265,145		(632,253)
Decrease (Increase) in Inventory		136,996		(611,975)
Decrease (Increase) in Prepaid Expenses		222,072		(1,626,227)
Increase in Accounts Payable		139,334		558,514
(Decrease) Increase in Other Liabilities		(994,658)		1,250,506
Increase in Liabilities Payable from Restricted Assets		7,717		15,165
Net Cash Provided by Operating Activities	\$	44,394,558	\$	35,155,726
Noncash Investing, Capital and Financing Activities				
Estimated Acquisition Value of Contributed Capital Assets	\$	12,932,218	\$	21,860,984
(Decrease) Increase in Fair Value of Investments		(3,452,258)		2,115,186
Reconciliation of Cash				
Cash and Temporary Investments:				
Unrestricted	\$	38,650,211	\$	149,802,047
Restricted	\$	102,888,870	\$	36,867,422
	\$	141,539,081	\$	186,669,469

STATEMENTS OF FIDUCIARY NET POSITION - OPEB TRUST FUND

DECEMBER 31, 2021 AND 2020

Assets

		2021		2020	
Assets Held in Trust, Investments at Fair Value	\$	3,936,529	\$	3,257,499	
Total Assets		3,936,529		3,257,499	
NET POSITION					
Net Position Restricted for OPEB		3,936,529		3,257,499	
Total Net Position	\$	3,936,529	\$	3,257,499	

STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION - OPEB TRUST FUND

YEARS ENDED DECEMBER 31, 2021 AND 2020

ADDITIONS

	2021		2021	
Contributions				
Employer	\$	472,309	\$	559,698
Total Contributions		472,309		559,698
Investments				
Net Increase in Fair Value of Investments		490,085		385,525
Total Investment Income		490,085		385,525
Total Additions		962,394	=====	945,223
DEDUCTIONS				
Benefit Payments		279,289		275,047
Administrative Expenses		4,075		3,130
Total Deductions		283,364		278,177
Change in Net Position		679,030		667,046
Net Position, Beginning of Year		3,257,499		2,590,453
Net Position, End of Year	\$	3,936,529	\$	3,257,499

NOTES TO FINANCIAL STATEMENTS

YEARS ENDED DECEMBER 31, 2021 AND 2020

1. Summary of Significant Accounting Policies

The Loudoun County Sanitation Authority d/b/a Loudoun Water, hereinafter referred to as the "Authority," was created on May 27, 1959 as a public body politic and corporate under the provisions of the Virginia Water and Waste Authorities Act (Chapter 28, Title 15.1, Section 1239 et. seq., Code of Virginia, 1950, as amended), for the purpose of acquiring, constructing, operating and maintaining for Loudoun County (County) (a) an integrated water supply and distribution system, and (b) an integrated sewerage and sewage disposal system; and for the purpose of exercising the powers conferred by said Water and Waste Authorities Act.

The accounting policies conform to accounting principles generally accepted in the United States of America as applicable to Authorities. The following is a summary of the more significant policies:

A. Reporting Entity

To determine the appropriate reporting entity for the Authority, its relationship with the County was considered. Although the members of the Board are appointed by the County Board of Supervisors, the County is not financially accountable for the Authority and does not have the ability to impose its will on the Authority. In addition, there is no potential for the Authority to provide specific financial benefit to, or impose specific financial burdens on, the County and the Authority is not fiscally dependent on the County. Based on the application of these criteria, the Authority is not a component unit of the County.

B. Basis of Presentation

The accounting policies conform to accounting principles generally accepted in the United States of America as applicable to enterprise funds of governmental units. Operations are accounted for in a manner similar to those often found in the private sector. The measurement focus is based upon the determination of net income. The costs (including depreciation) of providing goods and services to customers on a continuing basis are recovered primarily through user charges. Periodic determination of revenues earned, expenses incurred and/or net income is appropriate for capital maintenance, public policy, management control and accountability. Fiduciary OPEB Trust Fund is used to account for the assets held in trust for other postemployment benefits.

C. Basis of Accounting and Use of Estimates

Basis of accounting refers to when revenues and expenses are recognized in the accounts and reported in the financial statements. Basis of accounting relates to the timing of the measurements made, regardless of the measurement focus applied. Revenues and expenses are accounted for within one fund: an enterprise fund. The Authority uses the accrual basis of accounting for its enterprise fund, under which revenues are recognized when they are earned and expenses are recognized when they are incurred.

Operating revenues and expenses consist of those revenues and expenses that result from the ongoing principal operations. Operating revenues consist primarily of charges for services. Non-operating revenues and expenses consist of those revenues and expenses that are related to financing and investing types of activities and result from non-exchange transactions or ancillary activities.

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

D. Cash and Investments

Cash and temporary investments include amounts in demand deposits as well as short-term investments with an original maturity of three months or less.

Restricted cash and temporary investments include amounts held in money market funds as well as short-term investments with an original maturity of three months or less.

Investments include United States government and agency obligations and obligations of the Commonwealth of Virginia and its subdivisions. Those investments with maturities of three months to a year are considered current and are stated at fair value. Investments with maturities greater than one year are considered long-term and are stated at fair value.

Investments held by the Trustee are stated at fair value and include all United States obligations with a maturity in excess of three months. Interest on investments is recorded in the year earned.

E. Accounts Receivable

All continuing service receivables are recognized when earned with no allowance for uncollectibles, as delinquent accounts attach as an enforceable lien on property if not collected within a certain period of time once notification has been given to the owner.

An estimated amount has been recorded for services rendered but not yet billed as of the close of the respective years presented. At December 31, 2021 and 2020, the Authority recorded \$15,975,841 and \$13,611,867, respectively, as unbilled water and wastewater service receivables

F. Inventory

Inventory is valued at average cost. Inventories are recorded as an operating expense when consumed rather than when purchased.

G. Restricted Assets

Restricted assets represent resources designated for specific purposes and include developers' advances, advance payment fees, maintenance bonds and performance bonds. Restricted assets also include bond proceeds and funds set aside for repayment since their use is limited by applicable bond covenants.

H. Capital Assets

Capital assets include property, plant and equipment as well as intangible assets such as purchased capacity rights. Intangible assets are amortized over the maximum allowable period of 40 years and are shown on the financial statements net of accumulated amortization.

The Authority capitalizes all assets with a purchase price greater than \$10,000.

Capital assets are stated at historical cost. Donated assets are recorded at acquisition value at the time received. Expenses for repairs and upgrading which materially add to the value or life of an asset are capitalized. Other maintenance and repair costs are expensed as incurred.

Depreciation of all exhaustible capital assets is charged as an expense against operations using the straight-line method over the following estimated useful lives:

Water and Wastewater Facilities	40-50 years
Buildings and Improvements	20-40 years
Machinery and Equipment	3-15 years

I. Construction in Process

Construction in process includes design and construction costs that accumulate until completion of the respective project, at which time the total cost is transferred to depreciable capital assets.

J. Deferred Outflow and Inflow of Resources

A deferred outflow of resources represents a consumption of net position applicable to a future reporting period and will not be recognized as an expense until then. Deferred outflows from the refundings of debt will be recognized as interest expense in the appropriate reporting period. Deferred outflows related to pensions and GLI OPEB resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the

net pension liability and net GLI OPEB liability, respectively, in the next fiscal year. A deferred inflow of resources represents an acquisition of net position applicable to a future reporting period. Deferred inflows related to pensions and GLI OPEB will be recognized as pension expense in the appropriate reporting period.

K. Compensated Absences

Authority employees are granted annual leave in varying amounts based on years of service and sick leave at a rate of 3 1/2 hours per pay period. In the event of termination, an employee is reimbursed for accumulated annual leave in full, and for sick leave in varying amounts based on years of service. Compensated absences that are expected to be liquidated within one year are reflected on the financial statements as a current liability.

L. Bond Premiums and Discounts

Bond premiums and discounts are amortized over the life of the bonds using a method which approximates the effective interest method. Bond premiums, net of amortization, of \$25,004,142 and \$16,787,754 for 2021 and 2020, respectively, are presented as an increase to the face amount of bonds payable.

M. Capital Contributions

Capital contributions are recorded for the receipt of capital grants, contributions of funds, property, lines and improvements by developers, customers or other governments. Availability fees in excess of related costs are also recorded as capital contributions.

N. Comparative Data

Comparative data for the prior year is presented in the accompanying financial statements in order to provide an understanding of the changes in the Authority's financial position and operations.

O. New Accounting Pronouncements Adopted

The Authority has adopted the following GASB Pronouncements in fiscal year 2021:

GASB Statement No. 91, *Conduit Debt Obligations* (Statement 91), provides a single method of reporting conduit debt obligations by issuers and eliminates diversity in practice associated with commitments extended by issuers, arrangements associated with conduit debt obligations and related note disclosures.

GASB Statement No. 98, *Annual Comprehensive Financial Report* (Statement, 98), establishes the term annual comprehensive financial report and its acronym ACFR. The new term and acronym replace instances of comprehensive annual financial report and its acronym in GAAP for state and local governments.

Implementation Guide No. 2019-1, *Implementation Guidance Update-2019*, provides guidance that clarifies, explains, or elaborates on previously issued GASB Statements.

P. New Accounting Pronouncements

GASB Statement No. 87, *Leases* (Statement 87), establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. This statement enhances the relevance and consistency of information about governments' leasing activities. Statement 87 will become effective for the Authority beginning with its year ending December 31, 2022.

GASB Statement No. 92, Omnibus 2020, enhances comparability in accounting and financial reporting and improve consistency by addressing a variety of topics including issues related to leases, intra-entity transfers of assets, assets accumulated for postemployment benefits, postemployment benefit arrangements, asset retirement obligations (AROs), reinsurance recoveries, nonrecurring fair value measurements of assets or liabilities and derivative instruments. Statement 92 will become effective for the Authority beginning with its year ending December 31, 2022.

GASB Statement No. 93, Replacement of Interbank Offered Rates (IBOR), enhances consistency and comparability of reporting hedging derivative instruments and leases by replacing IBOR with other reference rates. Statement 93 will become effective for the Authority beginning with its year ending December 31, 2023 for the removal of LIBOR as an appropriate benchmark interest rate and December 31, 2022 for all other requirements.

GASB Statement No. 94, *Public-Private and Public-Public Partnerships (PPPs) and Availability Payment Arrangements (APAs)*, establishes the definitions of PPPs and APAs and providing uniform guidance on accounting and financial reporting for transactions that meet those definitions. Statement 94 will become effective for the Authority beginning with its year ending December 31, 2023.

GASB Statement No. 96, Subscription-Based Information Technology Arrangements (SBITA) (Statement 96), improves financial reporting by establishing a definition for SBITAs and providing uniform guidance for accounting and financial reporting for transactions that meet that definition, which will result in greater consistency and enhance the relevance and reliability of the financial statements. Statement 96 will become effective for the Authority beginning with its year ending December 31, 2023.

GASB Statement No. 97, Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans (Statement 97), improves consistency and comparability related to the reporting of fiduciary component units, mitigate costs associated with the reporting of certain defined contribution pension plans, defined contribution other postemployment benefit (OPEB) plans, and employee benefit plans other than pension plans or OPEB plans and enhance the relevance, consistency and comparability of the accounting and financial reporting for Internal Revenue Code (IRC) Section 457. Statement 97 will become effective for the Authority beginning with its year ending December 31, 2022.

GASB Statement No. 99, *Omnibus* 2022 (Statement 99), enhances comparability in accounting and financial reporting and to improve the consistency of authoritative literature by addressing (1) practice issues that have been identified during the implementation and application of certain GASB Statements and (2) accounting and financial reporting for financial guarantees. Statement 99 will become effective for the Authority beginning with its year ending December 31, 2022 and beyond.

Implementation Guide No. 2019-3, *Leases*, provides guidance that clarifies, explains, or elaborates on the requirements of Statement No. 87, Leases. The requirements of this implementation guide are effective for the Authority beginning with its year ending December 31, 2022.

Implementation Guide No. 2020-1, *Implementation Guidance Update-2020*, provides guidance that clarifies, explains, or elaborates on previously issued GASB Statements. The requirements of this implementation guide are effective for the Authority beginning with its year ending December 31, 2022.

Implementation Guide No. 2021-1, *Implementation Guidance Update-2021*, provides guidance that clarifies, explains, or elaborates on previously issued GASB Statements. The requirements of this implementation guide are effective for the Authority beginning with its year ending December 31, 2022 and beyond.

Management has not yet determined the effect that these Statements will have on its financial statements.

2. Deposits and Investments

A. Deposits

All cash is maintained in accounts collateralized in accordance with the Virginia Security for Public Deposits Act, Section 2.2-4400 et. seq. of the *Code of Virginia* or covered by federal depository insurance.

B. Investments

The Code of Virginia authorizes the Authority to invest in obligations of the United States or agencies thereof, obligations of the Commonwealth of Virginia and its subdivisions, commercial paper rated A-1 by Standard and Poor's Corporation or P-1 by Moody's Commercial Paper Record, bankers' acceptances, repurchase agreements and the State Treasurer's Local Government Investment Pool (LGIP).

Custodial Credit Risk:

The Authority's investment policy specifies that investments shall be held in safekeeping by a third party and evidenced by safekeeping receipts. In addition, the *Code of Virginia* requires that all security holdings with maturities over thirty days may not be held in safekeeping with the "counterparty" (the issuer or seller of the security and any repurchase agreement provider) to the investment transaction.

At December 31, 2021, all securities purchased by the Authority were held in safekeeping by a third-party custodial bank or institution in the Authority's name.

Investment Policy:

In November 2019, the Authority updated the formal investment policy that was adopted in March 2000. It is the policy that the investment and administration of its funds be made in accordance with the Code of Virginia

Investment in Public Funds Act, the applicable provisions of any outstanding bond indebtedness and the investment policy. It is the intent to be in complete compliance with all federal, state and local laws; and other regulations and statutes governing the investment of public funds.

The investment policy establishes the maximum percentages of the portfolio permitted in each of the following instruments:

Treasuries and obligations collateralized with Treasuries	No portfolio limitation
Obligations of the Commonwealth or Virginia Local Governments	10% of total portfolio
Certificates of Deposit (fully collateralized only)	25% of total portfolio; 5% from any one institution
Liquidity Investments	No portfolio limitation
Federal Agency Securities	No portfolio limitation; 40% from any one agency
Commercial Paper	25% of total portfolio
Corporate Notes	25% of total portfolio

Credit Risk:

As required by state statute, the investment policy requires that commercial paper have a short-term debt rating of no less than "A-1" (or its equivalent) from at least two of the following: Moody's Investor Service, Standard & Poor's and Fitch Investor Service. Corporate notes, negotiable Certificates of Deposit and bank deposit notes maturing in less than one year must have a short-term debt rating of at least "A-1" by Standard & Poor's and "P-1" by Moody's Investor Service. Notes having a maturity of greater than one year must be rated "AA" by Standard & Poor's and "Aa" by Moody's Investor Service.

As of December 31, 2021, the Authority held 54% in U.S. Government Agency Securities, 24% in corporate bonds, 1% in Local Government Investment Pool, 5% in obligations of the Commonwealth of Virginia and its subdivisions and 16% in money market funds.

Concentration of Credit Risk:

Concentration of credit risk is defined as the risk of loss attributed to the magnitude of a government's investment in a single issuer. If certain investments in any one issuer represent 5% of the total investments, there must be a disclosure for the amount and issuer.

At December 31, 2021, the portion of the portfolio, excluding U.S. Government guaranteed obligations, and money market funds that exceed 5% of the total portfolio are as follows:

Investment Type	Credit Quality (Rating)	Credit Exposure as a Percentage of Total Investments
Federal Home Loan Bank	AA+/Aaa	14%
Federal Home Loan Mortgage Corp	AAA/Aaa	8%
Federal National Mortgage Association	AAA/Aaa	5%

Interest Rate Risk:

Interest rate risk is defined as the risk that changes in interest rates will adversely affect the fair value of an investment.

Although the Authority has no formal policy relating to specific investment-related risk, the Authority contains interest-rate risk by avoiding asset-backed securities and by restricting the use of callable U.S. Agency securities. The risk of loss of fair value from rising interest rates is greater for those types of securities because the average maturity of such securities increases as interest rates rise, compounding the impact on fair value. By comparison,

the average maturity of U.S. Treasury notes, non-callable Agency securities and the LGIP are not affected by changes in interest rates. The following table depicts the investment maturities, in years, at December 31, 2021:

]	Invest	ment Maturities	5	
	 Fair Value	 Less than 1 year	1-2 years			2-4 years
U.S. Treasuries	\$ 72,100,150	\$ 65,225,100	\$	_	\$	6,875,050
U.S. Agencies	74,541,260	_		32,601,430		41,939,830
Municipal Bonds	15,112,457	7,028,291		8,084,166		_
Corporate Obligations	 66,334,700	 	_	15,463,400	_	50,871,300
	\$ 228,088,567	\$ 72,253,391	\$	56,148,996	\$	99,686,180

The investment maturities, in years, at December 31, 2020:

The investment maturities, in year	 Investment Maturities							
	Fair Value		 Less than 1 year		1-2 years		2-4 years	
U.S. Treasuries	\$	3,032,820	\$ 3,032,820	\$	_	\$	_	
U.S. Agencies		84,887,200			20,002,300		64,884,900	
Municipal Bonds		19,247,870	3,672,233		13,438,298		2,137,339	
Commercial Paper		4,999,900	4,999,900		_		_	
Corporate Obligations		57,904,450	 _		5,053,150	_	52,851,300	
	\$	170,072,240	\$ 11,704,953	\$	38,493,748	\$	119,873,539	

Fair Value Measurements:

Accounting standards establish a framework for measuring fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1) and the lowest priority to unobservable inputs (level 3). Level 1 valuation inputs are quoted prices in active exchange markets. Level 2 inputs are less active markets, but still significant other observable inputs. Level 3 inputs include other valuation methodologies and are not based on market, exchange or traded transactions. The asset or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs. For the year ended December 31, 2021 and 2020, all investments were valued using Level 1 and 2 inputs and the application of valuation techniques applied has been consistent. The following table depicts the fair value investments at December 2021:

		Value Investmen		% of 7	otal Investr	nents		
	Level 1		Level 2		Total	Level 1	Level 2	Total
U.S. Treasuries	\$ 72,100,150	\$	_	\$	72,100,150	31.6%	0.0%	31.6%
FHLB	_		32,303,930		32,303,930	_	14.2	14.2
FFCB	_		9,753,700		9,753,700	_	4.3	4.3
FHLMC	_		19,779,900		19,779,900	_	8.7	8.7
FNMA	_		12,703,730		12,703,730	_	5.6	5.6
Municipal Bonds	_		15,112,457		15,112,457	_	6.6	6.6
Corporate Obligations	 30,705,600	_	35,629,100		66,334,700	13.5	15.5	29.0
Total investments	\$ 102,805,750	\$	125,282,817	\$	228,088,567	45.1%	54.9%	100.0%

The fair value investments at December 31, 2020:

		Value Investmen		% of T	otal Investr	nents		
	Level 1	_	Level 2		Total	Level 1	Level 2	_Total_
U.S. Treasuries	\$ 3,032,820	\$	_	\$	3,032,820	1.8%	0.0%	1.8%
FHLB	_		25,009,300		25,009,300	_	14.7%	14.7
FFCB	_		20,001,800		20,001,800	_	11.8%	11.8
FHLMC	_		19,965,100		19,965,100	_	11.7%	11.7
FNMA	_		19,911,000		19,911,000	_	11.7%	11.7
Municipal Bonds	_		19,247,870		19,247,870	_	11.3%	11.3
Commercial Paper	_		4,999,900		4,999,900	_	2.9%	2.9
Corporate Obligations	 31,762,000		26,142,450		57,904,450	18.7	15.4%	34.1
Total investments	\$ 34,794,820	\$	135,277,420	\$	170,072,240	20.5%	79.5%	100.0%

The carrying amounts of the Authority's financial instruments not described above arise in the ordinary course of business and approximate fair value.

3. Restricted Assets Held by Trustee

Restricted assets held by the Trustee represent the portion of resources held by the Trustee on behalf of the Authority in accordance with the applicable bond covenants. These assets include: cash, investments (at fair value) and accrued interest receivable of \$478 and \$12,319 at December 31, 2021 and 2020, respectively. The restricted assets held by the Trustee at December 31, 2021 and 2020 in each account established under the indenture of trust are shown below.

 2021		2020
\$ 81,163,087	\$	15,744,664
 14,692,223		16,804,699
\$ 95,855,310	\$	32,549,363
\$	\$ 81,163,087 14,692,223	\$ 81,163,087 \$ 14,692,223

4. Capital Assets

Changes in capital assets as of December 31, 2021 are as follows:

	Balance January 1, 2021		Additions	_	Retirements/ Deletions	_	Transfers]	Balance December 31, 2021
Capital Assets not being depreciated:	:								
Land	\$ 67,234,172	\$	_	\$	_	\$	_	\$	67,234,172
Construction in Process	90,879,278		49,437,954	_			(53,161,761)	_	87,155,471
Total Capital Assets not being depreciated	158,113,450		49,437,954	_		_	(53,161,761)	_	154,389,643
Capital Assets being amortized:									
Capacity Rights, net of amortization	278,851,484		(3,642,512)	_			<u></u>		275,208,972
Other Capital Assets:									
Water Facilities	722,377,886		8,969,830		_		3,432,253		734,779,969
Wastewater Facilities	630,649,862		6,086,701		_		44,696,718		681,433,281
Reclaimed Water Facilities	3,015,420		_		_		_		3,015,420
Building and Improvements	300,182,914		744,471		_		3,100,576		304,027,961
Machinery and Equipment	181,739,817		5,408,680	_	(210,788)		1,932,214	_	188,869,923
Total Other Capital Assets	1,837,965,899		21,209,682	_	(210,788)		53,161,761	_	1,912,126,554
Total Capital Assets	2,274,930,833		67,005,124	_	(210,788)		_	_	2,341,725,169
Less Accumulated Depreciation for	:								
Water Facilities	(153,291,764)		(15,859,155)		_		_		(169,150,919)
Wastewater Facilities	(213,091,262)		(15,954,539)		_		_		(229,045,801)
Reclaimed Water Facilities	(283,169)		(82,996)		_		_		(366,165)
Building and Improvements	(55,999,108)		(7,216,408)		_		_		(63,215,516)
Machinery and Equipment	(106,738,920)	_	(13,505,687)	_	209,743			_	(120,034,864)
Total Accumulated Depreciation	(529,404,223)		(52,618,785)	_	209,743	_		_	(581,813,265)
Total Capital Assets, net	\$1,745,526,610	\$	14,386,339	\$	(1,045)	\$		\$	1,759,911,904

Changes in capital assets as of December 31, 2020 are as follows:

	Balance January 1, 2020	_	Additions	_	Retirements/ Deletions		Transfers		Balance December 31, 2020
Capital Assets not being depreciated	:								
Land	\$ 67,232,472	\$	1,700	\$	_	\$	_	\$	67,234,172
Construction in Process	95,500,722	_	30,682,839				(35,304,283)	_	90,879,278
Total Capital Assets not being depreciated	162,733,194		30,684,539	_			(35,304,283)	_	158,113,450
Capital Assets being amortized:									
Capacity Rights, net of amortization	283,616,599	_	(4,765,115)					_	278,851,484
Other Capital Assets:									
Water Facilities	685,185,904		13,069,574		_		24,122,408		722,377,886
Wastewater Facilities	619,876,540		10,108,916		_		664,406		630,649,862
Reclaimed Water Facilities	3,015,420		_		_		_		3,015,420
Building and Improvements	292,509,273		620,968		_		7,052,673		300,182,914
Machinery and Equipment	174,578,800	_	3,745,584	_	(49,363)		3,464,796	_	181,739,817
Total Other Capital Assets	1,775,165,937	_	27,545,042	_	(49,363)		35,304,283	_	1,837,965,899
Total Capital Assets	2,221,515,730	_	53,464,466	_	(49,363)			_	2,274,930,833
Less Accumulated Depreciation for	:								
Water Facilities	(138,243,384)		(15,048,380)		_		_		(153,291,764)
Wastewater Facilities	(197,494,609)		(15,596,653)		_		_		(213,091,262)
Reclaimed Water Facilities	(200,174)		(82,995)		_		_		(283,169)
Building and Improvements	(49,179,883)		(6,819,225)		_		_		(55,999,108)
Machinery and Equipment	(93,635,367)	_	(13,122,382)		18,829	_		_	(106,738,920)
Total Accumulated Depreciation	(478,753,417)		(50,669,635)	_	18,829			_	(529,404,223)
Total Capital Assets, net	\$1,742,762,313	\$	2,794,831	\$	(30,534)	\$		\$	1,745,526,610

5. Oversizing Reimbursements

Oversizing reimbursements represent the current payable to developers who constructed oversized facilities and entered into an agreement to be reimbursed as availability charges to that particular portion of the system are received. The Authority provides reimbursements annually for oversized facilities. Amounts payable for oversizing reimbursements are recorded only when availability and/or local facility fees are received. The amount of unrecorded but potential reimbursements if all requirements are met is \$15,962,837 and \$13,830,212 for 2021 and 2020, respectively.

6. Long-term Obligations

A. Revenue Bonds Payable

The Authority issues revenue bonds to provide funds for the acquisition and construction of major capital facilities and for refunding of higher-interest revenue bonds. The payment of principal and interest on all revenue bonds is collateralized by a security interest in and pledge of the "Net Revenues" derived from the ownership and operation of the system. "Net Revenues" of the system are defined as all revenues, receipts and other income derived from the ownership or operation of the system, including availability charges and any investment earnings, after deducting operating expenses (exclusive of depreciation and amortization).

Per the bond agreements, upon the occurrence of any event of default, the Trustee may, and if requested by the Owner of not less than twenty-five percent in aggregate principal amount of the bonds then outstanding will, by notice to the Authority, invoke the acceleration clause declaring the entire unpaid principal of and interest on the bonds due and payable. Upon the occurrence of an event of default the Trustee may pursue any available remedy, at law or in equity, to enforce the payment of the principal and interest of the bonds.

The bond covenants contain certain provisions that require the maintenance of revenues of at least 1.2 times annual senior debt service requirements. During 2021 and 2020, the Authority continued to be in compliance with all covenants associated with the bond indentures.

At December 31, 2021, \$17,050,000, \$21,605,000, \$31,875,000, \$4,670,000, \$22,770,000, \$17,872,000, \$65,045,000, \$60,290,000, \$30,075,000, \$27,765,000, and \$64,700,000 respectively, of series 1996, 1996A, 1998, 1999, 2000, 2009, 2004, 2007, 2010, 2012, and 2013 bonds outstanding are considered defeased.

The Authority is required to adhere to the rebate and reporting requirements of the federal tax code pertaining to arbitrage. The Authority has contracted with an outside consultant to perform annual arbitrage rebate calculations on all outstanding revenue bond issues. At December 31, 2021, the Authority had \$0 arbitrage rebate payable to the federal government. At December 31, 2020, the Authority had \$2,550 arbitrage rebate payable to the federal government.

Outstanding long-term debt at December 31, 2021 and 2020 includes the following bond issues:

	2021	2020
\$25,000,000 Water and Sewer System Revenue Bonds, Variable Rate Series 2005 (Parity Indebtedness); due in annual installments of \$785,000 to \$1,505,000 through January 2030, plus interest payable semi-annually of 0.03% at December 31, 2015; interest rates will vary weekly based on comparable bonds and the short term interest rate.	\$ 11,840,000	\$ 12,945,000
\$15,520,000 Water and Sewer System Revenue Bonds, Refunding Series 2010A; due in annual installments of \$915,000 to \$3,290,000 beginning January 2015 through 2021; plus interest payable semi-annually ranging from 3.0% to 5.0%	_	2,460,000
\$40,710,000 Water and Sewer System Revenue Bonds, Refunding Series 2012; due in annual installments of \$85,000 to \$4,255,000 beginning January 2013 through 2032; plus interest payable semi-annually ranging from 2.0% to 5.0%	_	30,535,000
\$75,310,000 Water and Sewer System Revenue and Refunding Bonds, Series 2013; due in annual installments of \$870,000 to \$5,440,000 beginning January 2014 through 2043; plus interest payable semi-annually ranging from 2.0% to 5.0%	2,525,000	68,400,000
\$117,235,000 Water and Sewer System Revenue and Refunding Bonds, Series 2015; due in annual installments of \$750,000 to \$6,590,000 beginning January 2016 through 2045; plus interest payable semi-annually ranging From 2.0% to 5.0%	102,640,000	106,000,000
\$23,095,000 Water and Sewer System Revenue Refunding Bonds, Series 2019; due in annual installment of \$2,120,000 to \$6,015,000 beginning January 2022 through 2029; plus interest payable semi-annually of 5.0%	23,095,000	23,095,000
\$76,055,000 Water and Sewer System Revenue and Refunding Bonds, Series 2021; due in annual installments of \$965,000 to \$6,545,000 beginning January 2022 through 2043; plus interest payable semi-annually ranging from 1.75% to 5.0%	76,055,000	_
Total Outstanding Long-term Debt	216,155,000	243,435,000
Unamortized Premiums, net	25,004,142	16,787,754
Total Bonded Debt	\$ 241,159,142	\$ 260,222,754
	,	

The combined revenue bond debt service requirements to maturity for all issues are as follows:

Ending December 31,	_	Principal		Interest	_	Total
2022	\$	8,975,000	\$	8,423,922	\$	5 17,398,922
2023		10,545,000		8,336,807		18,881,807
2024		11,070,000		7,802,444		18,872,444
2025		11,615,000		7,241,544		18,856,544
2026		12,190,000		6,695,707		18,885,707
2027-2031		65,275,000		24,331,860		89,606,860
2032-2036		55,695,000		11,541,913		67,236,913
2037-2041		24,970,000		4,662,866		29,632,866
2042-2045	_	15,820,000	_	1,094,750	_	16,914,750
Total	\$	216,155,000	\$	80,131,813	\$	296,286,813

Refunding:

In 2021, the Authority issued \$76,055,000 Water and Sewer System Revenue and Refunding Bonds, Series 2021, with interest rates ranging from 1.75% to 5.0%. The proceeds were used to pay for the cost of various projects identified in the Authority's Capital Improvement Program and to refund \$27,765,000 of outstanding Water and Sewer System Revenue Bonds, Refunding Series 2012, which had interest rates ranging from 2.0% to 5.0%. Net proceeds for the refunding of \$27,998,406 were deposited in an irrevocable trust with an escrow agent and used to extinguish the refunded debt. As a result, the outstanding Series 2012 Bonds is considered defeased and the liability has been removed from the statement of net position.

The reacquisition price of the refunded bonds exceeded the net carrying amount of the old debt by \$1,327,524. This amount is being netted against the new debt and amortized over the remaining life of the refunding debt. The Authority refunded the Series 2012 Water and Sewer System Revenue Bonds to reduce its total debt service payments by \$6,310,991 and obtain an economic gain (difference between the present values of the debt service payments on the old and new debt) of \$4,174,925.

B. Fairfax Water Agreement

In June 1989, the Authority entered into Water Service Agreement #2 with Fairfax Water to pay for the reservation of 10 MGD of water capacity which became available in February 1993, when construction of the project was completed. In February 1993, the Authority began amortizing the Purchased Capacity Rights over its useful life of 40 years.

In addition, the Water Service Agreement requires the Authority to make 480 equal monthly payments of \$2,760 with respect to additional storage capacity.

In December 1993, the Authority entered into a Second Amendment Agreement to Water Service Agreement #2 for the purchase of an additional 5 MGD of water capacity with the option to acquire further capacity of 5 MGD as well as storage capacity at the Randolph Reservoir. The Agreement obligates the Authority to make 420 equal monthly payments of \$95,565 and \$1,695 for the additional 5 MGD of capacity and storage capacity, respectively. The Authority continues to make equal monthly payments of \$1,695 for the storage capacity at the Randolph Reservoir.

In July 1996, the Authority exercised its option to purchase additional storage capacity at the Randolph Reservoir for which it now makes equal monthly payments of \$1,911.

In June 2004, the Authority entered into Water Service Agreement No. 5 regarding the allocated cost for the expansion of the Corbalis Water Treatment Plant, which will allow for an additional 30 MGD of water treatment capacity. The Authority has made payments to Fairfax Water for estimated projected costs of approximately \$116.5 million as of December 31, 2019. Expansion of the Corbalis Plant is now substantially complete.

In February 2015, the Authority entered into Water Service Agreement No. 6 for the purchase of an additional 10 MGD transmission capacity from the Fox Mill Pumping Station to the Route 50/Route 28 interchange and 10 MGD of transmission capacity from the Route 50/Route 28 interchange to the Loudoun County line. The Authority made payments of \$3,816,870 and \$6,756,711, respectively, for the purchase of these capacities.

These Agreements shall continue as long as Fairfax Water's system remains in existence and operation. In the event of default, the Authority is obligated in continue making all payments and Fairfax Water is obligated to continue service otherwise due under the agreement.

The remaining payment obligations for the agreements with Fairfax Water are as follows:

Fiscal Year Ending December 31,	 Principal]	Interest	 Total
2022	\$ 58,240	\$	18,148	\$ 76,388
2023	60,214		16,173	76,387
2024	62,255		14,132	76,387
2025	64,365		12,022	76,387
2026	66,547		9,840	76,387
2027-2031	 226,728		17,574	 244,302
Total	\$ \$538,349	\$	87,889	\$ 626,238

C. Bonds Payable/Virginia Resources Authority (VRA)

Green Reserve Initiative

In April 2011, the Virginia State Water Control Board authorized funding from the Virginia Clean Water Revolving Loan Fund to Loudoun Water to finance energy improvements (Green Reserve project), including the installation and modification of heat reclamation equipment, installation of solar panel and wind turbines, and construction of permanent reclaimed water dispensing station together with related expenses. The funding consists of 50 percent principal forgiveness loan of \$102,000 and principal repayment loan of \$102,000 for a total funding package of \$204,000. The principal repayment loan has an interest rate of 2.93% which includes a fee of 0.20% for administrative and management services attributable to the loan. Payments began approximately six months after project completion for a term of 20 years. The loan may be prepaid in whole or in part any time, after final payment to the contractor, without penalty. In the event of default, outstanding amounts become immediately due and payable without further notice or demand.

The loan will be secured by a pledge of revenues and will be issued on a parity basis with all outstanding bonds secured by Loudoun Water's system revenues. The loan is being administered through the Virginia Resources Authority (VRA).

The remaining payment obligations for the agreement with VRA are as follows:

Fiscal Year Ending December 31,	F	Principal	I	nterest	 Total
2022	\$	5,379	\$	1,524	\$ 6,903
2023		5,538		1,366	6,904
2024		5,701		1,202	6,903
2025		5,870		1,034	6,904
2026		6,043		861	6,904
2027-2030		24,838		1,607	 26,445
Total	\$	53,369	\$	7,594	\$ 60,963

D. Bonds Payable/Virginia Resources Authority (VRA), Administrator of Virginia Water Facilities Revolving Loan Fund

In April 2013, the State Water Control Board authorized funding into the amount of \$7,339,000 from the Virginia Water Facilities Revolving Loan Fund to Loudoun Water to finance the construction of a reclaimed water pump station and two storage tanks together with related expenses. The principal repayment loan has an interest rate of 1.70% which includes a fee of 0.20% for administrative and management services attributed to the loan. Payments began approximately six months after project completion for a term of 20 years. The loan may be repaid in whole or in part any time, after final payment to the contractor, without penalty. In the event of default, outstanding amounts become immediately due and payable without further notice or demand.

The loan will be secured by a pledge of revenues and will be issued on a parity basis with all outstanding bonds secured by Loudoun Water's system revenues. The loan is being administered by the Virginia Resources Authority (VRA).

Fiscal Year Ending December 31,	 Principal	 Interest	 Total
2022	\$ 357,723	\$ 86,040	\$ 443,763
2023	363,831	79,933	443,764
2024	370,042	73,722	443,764
2025	376,359	67,404	443,763
2026	382,785	60,979	443,764
2027-2031	2,014,208	204,610	2,218,818
2032-2034	 1,285,294	 38,346	 1,323,640
Total	\$ 5,150,242	\$ 611,034	\$ 5,761,276

E. Summary of Long-term Liabilities

Long-term liability activity for the year ended December 31, 2021 was as follows:

	Balance January 1, 2021	Additions	Reductions	Balance December 31, 2021	Amounts Due within One Year
Bonds Payable:					
Revenue Bonds	\$ 243,435,000	\$ 76,055,000	\$(103,335,000)	\$216,155,000	\$ 8,975,000
VRA Loan Fund	5,560,554	_	(356,943)	5,203,611	363,102
Deferred Amounts:					
Issuance Premiums	16,787,754	13,939,925	(5,723,537)	25,004,142	1,923,374
Total Bonds Payable	265,783,308	89,994,925	(109,415,480)	246,362,753	11,261,476
Other Liabilities:					
FCWA Agreement	594,679	_	(56,330)	538,349	58,240
Compensated Absences	4,383,456	1,276,637	(733,110)	4,926,983	1,478,095
Other Post Employment Benefits	950,979	626,497	(962,394)	615,082	_
GLI Other Post Employment Benefits	1,962,718	(392,127)	(137,256)	1,433,335	_
Net Pension Liability	9,307,854	9,125,188	(18,441,948)	(8,906)	
Total Long-term Liabilities	\$ 282,982,994	\$ 100,631,120	(129,746,518)	\$ 253,867,596	\$ 12,797,811

Long-term liability activity for the year ended December 31, 2020 was as follows:

	Balance January 1, 2020	 Additions	Reductions	Balance December 31, 2020		Amounts Due within One Year
Bonds Payable:						
Revenue Bonds	\$ 253,885,000	\$ _	\$ (10,450,000)	\$ 243,435,000	\$	10,870,000
VRA Loan Fund	5,911,444	_	(350,890)	5,560,554		356,944
Deferred Amounts:						
Issuance Premiums	18,323,352	 	1,535,598)	16,787,754		1,305,401
Total Bonds Payable	278,119,796	_	(12,336,488)	265,783,308		12,532,345
Other Liabilities:						
FCWA Agreement	649,162	_	(54,483)	594,679		56,330
Compensated Absences	3,665,143	1,492,369	(774,056)	4,383,456		1,315,037
Other Post Employment Benefits	1,529,798	(19,121)	(559,698)	950,979		_
GLI Other Post Employment Benefits	1,916,000	166,736	(120,018)	1,962,718		_
Net Pension Liability	7,218,728	 6,207,115	(4,117,989)	9,307,854	_	_
Total Long-term Liabilities	\$ 293,098,627	\$ 7,847,099	<u>\$ (17,962,732)</u>	\$ 282,982,994	\$	13,903,712

7. Defined Benefit Pension Plan

Plan Description

The Virginia Retirement System (VRS) Retirement Plan is a multi-employer, agent plan. 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 net fiduciary position have been determined on the same basis as they were reported by the Virginia Retirement System (VRS). For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

All full-time, salaried permanent employees of the Authority are automatically covered by a VRS Retirement Plan upon employment. Employees earn one month of service credit for each month they are employed and for which they and the Authority pay contributions to VRS. Employees 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.

VRS administers three different benefit structures for covered employees – Plan 1, Plan 2, and Hybrid. The specific information for each plan and the eligibility for covered groups within each plan are set out on the following pages:

		RETIREMENT PLAN PROVISIONS			
PLAN 1		PLAN 2	HYBRID RETIREMENT PLAN		
	About VRS Plan 1 Plan 1 is a defined benefit plan. The retirement benefit is based on a member's age, service credit and average final compensation at retirement using a formula.	About VRS Plan 2 Plan 2 is a defined benefit plan. The retirement benefit is based on a member's age, service credit and average final compensation at retirement using a formula.	 About the Hybrid Retirement Plan combines the features of a defined benefit plan and a defined contribution plan. The defined benefit is based on a member's age, service credit and average final compensation at retirement using a formula. The benefit from the defined contribution component of the plan depends on the member and employer contributions made to the plan and the investment performance of those contributions. In addition to the monthly benefit payment payable from the defined benefit plan at retirement, a member may start receiving distributions from the balance in the defined contributions, investment gains or losses, and any required fees. 		
	Eligible Members Employees are in Plan 1 if their membership date is before July 1, 2010, and they were vested as of January 1, 2013, and they have not taken a refund. Hybrid Opt-In Election VRS Plan 1 members were allowed to make an irrevocable decision to opt into the Hybrid Retirement Plan during a special election window held January 1 through April 30, 2014.	Eligible Members Employees are in Plan 2 if their membership date is on or after July 1, 2010, or their membership date is before July 1, 2010, and they were not vested as of January 1, 2013. Hybrid Opt-In Election VRS Plan 2 members were allowed to make an irrevocable decision to opt into the Hybrid Retirement Plan during a special election window held January 1 through April 30, 2014.	Eligible Members Employees are in the Hybrid Retirement Plan if their membership date is on or after January 1, 2014. This includes: • Political subdivision employees* • Members in Plan 1 or Plan 2 who elected to opt into the plan during the election window held January 1-April 30, 2014; the plan's effective date for opt-in members was July 1, 2014		

The Hybrid Retirement Plan's effective date for eligible VRS Plan 1 members who opted in was July 1, 2014.

If eligible deferred members returned to work during the election window, they were also eligible to opt into the Hybrid Retirement Plan.

Members who were eligible for an optional retirement plan (ORP) and had prior service under Plan 1 were not eligible to elect the Hybrid Retirement Plan and remain as Plan 1 or ORP.

The Hybrid Retirement Plan's effective date for eligible VRS Plan 2 members who opted in was July 1, 2014.

If eligible deferred members returned to work during the election window, they were also eligible to opt into the Hybrid Retirement Plan.

Members who were eligible for an optional retirement plan (ORP) and have prior service under Plan 2 were not eligible to elect the Hybrid Retirement Plan and remain as Plan 2 or ORP.

*Non-Eligible Members

Some employees are not eligible to participate in the Hybrid Retirement Plan. They include:

• Political subdivision employees who are covered by enhanced benefits for hazardous duty employees

Those employees eligible for an optional retirement plan (ORP) must elect the ORP plan or the Hybrid Retirement Plan. If these members have prior service under Plan 1 or Plan 2, they are not eligible to elect the Hybrid Retirement Plan and must select Plan 1 or Plan 2 (as applicable) or ORP.

	RETIREMENT PLAN PROVISIONS	
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN
Retirement Contributions Employees contribute 5% of their compensation each month to their member contribution account through a pre-tax salary reduction. Member contributions are tax-deferred until they are withdrawn as part of a retirement benefit or as a refund. The employer makes a separate actuarially determined contribution to VRS for all covered employees. VRS invests both member and employer contributions to provide funding for the future benefit payment.	Retirement Contributions Same as Plan 1.	Retirement Contributions A member's retirement benefit is funded through mandatory and voluntary contributions made by the member and the employer to both the defined benefit and the defined contribution components of the plan. Mandatory contributions are based on a percentage of the employee's creditable compensation and are required from both the member and the employer. Additionally, members may choose to make voluntary contributions to the defined contribution component of the plan, and the employer is required to match those voluntary contributions according to specified percentages.
Service Credit Service credit includes active service. Members earn service credit for each month they are employed in a covered position. It also may include credit for prior service the member has purchased or additional service credit the member was granted. A member's total service credit is one of the factors used to determine their eligibility for retirement and to calculate their retirement benefit. It also may count toward eligibility for the health insurance credit in retirement, if the employer offers the health insurance credit.	Service Credit Same as Plan 1.	Creditable Service Defined Benefit Component: Under the defined benefit component of the plan, service credit includes active service. Members earn service credit for each month they are employed in a covered position. It also may include credit for prior service the member has purchased or additional service credit the member was granted. A member's total service credit is one of the factors used to determine their eligibility for retirement and to calculate their retirement benefit. It also may count toward eligibility for the health insurance credit in retirement, if the employer offers the health insurance credit. Defined Contributions Component: Under the defined contribution component, service credit is used to determine vesting for the employer contribution portion of the plan.

RETIREMENT PLAN PROVISIONS				
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN		
Vesting is the minimum length of service a member needs to qualify for a future retirement benefit. Members become vested when they have at least five years (60 months) of creditable service. Vesting means members are eligible to qualify for retirement if they meet the age and service requirements for their plan. Members also must be vested to receive a full refund of their member contribution account balance if they leave employment and request a refund. Members are always 100% vested in the contributions that they make.	Vesting Same as Plan 1.	Defined Benefit Component: Defined benefit vesting is the minimum length of service a member needs to qualify for a future retirement benefit. Members are vested under the defined benefit component of the Hybrid Retirement Plan when they reach five years (60 months) of creditable service. VRS Plan 1 or VRS Plan 2 members with at least five years (60 months) of creditable service who opted into the Hybrid Retirement Plan remain vested in the defined benefit component. Defined Contributions Component: Defined Contribution vesting is the minimum length of service a member needs to be eligible to withdraw the employer contributions from the defined contribution component of the plan Members are always 100% vested in the contributions that they make. Upon retirement or leaving covered employment, a member is eligible to withdraw a percentage of employer contributions to the defined contribution component of the plan, based on service. • After two years, a member is 50% vested and may withdraw 50% of employer contributions. • After three years, a member is 75% vested and may withdraw 75% of employer contributions. • After four or more years, a member is 100% vested and may withdraw 75% of employer contributions. Distribution is not required, except as governed by law.		

	RETIREMENT PLAN PROVISIONS				
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN			
Calculating the Benefit The basic benefit is determined using the average final compensation, service credit and plan multiplier. An early retirement reduction is applied to this amount if the member is retiring with a reduced benefit. In cases where the member has elected an optional form of retirement payment, an option factor specific to the option chosen is then applied.	Calculating the Benefit See definition under Plan 1	Calculating the Benefit Defined Benefit Component: See definition under Plan 1 Defined Contribution Component: The benefit is based on contributions made by the member and any matching contributions made by the employer, plus net investment earnings on those contributions.			
Average Final Compensation A member's average final compensation is the average of the 36 consecutive months of highest compensation as a covered employee.	Average Final Compensation A member's average final compensation is the average of the 60 consecutive months of highest compensation as a covered employee.	Average Final Compensation Same as Plan 2. It is used in the retirement formula for the defined benefit component of the plan.			
Service Retirement Multiplier VRS: The retirement multiplier is a factor used in the formula to determine a final retirement benefit. The retirement multiplier for non- hazardous duty members is 1.7%.	Service Retirement Multiplier VRS: Same as Plan 1 for service earned, purchased or granted prior to January 1, 2013. For non- hazardous duty members, the retirement multiplier is 1.65% for service credit earned, purchased or granted on or after January 1, 2013.	Service Retirement Multiplier Defined Benefit Component: VRS: The retirement multiplier for the defined benefit component is 1.00%. For members that 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. Defined Contribution Component: Not applicable.			

RETIREMENT PLAN PROVISIONS					
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN			
Normal Retirement Age VRS: Age 65.	Normal Retirement Age VRS: Normal Social Security retirement age.	Normal Retirement Age Defined Benefit Component: VRS: Same as Plan 2. Defined Contribution Component: Members are eligible to receive distributions upon leaving employment, subject to restrictions.			
Earliest Unreduced Retirement Eligibility VRS: Age 65 with at least five years (60 months) of service credit or at age 50 with at least 30 years of service credit.	Earliest Unreduced Retirement Eligibility VRS: Normal Social Security retirement age with at least five years (60 months) of service credit or when their age and service credit equal 90.	Earliest Unreduced Retirement Eligibility Defined Benefit Component: VRS: Normal Social Security retirement age and have at least five years (60 months) of service credit or when their age and service equal 90. Defined Contribution Component: Members are eligible to receive distributions upon leaving employment, subject to restrictions.			
Earliest Reduced Retirement Eligibility VRS: Age 55 with at least five years (60 months) of service credit or age 50 with at least 10 years of service credit.	Earliest Reduced Retirement Eligibility VRS: Age 60 with at least five years (60 months) of service credit.	Earliest Reduced Retirement Eligibility Defined Benefit Component: VRS: Age 60 with at least five years (60 months) of service credit. Defined Contribution Component: Members are eligible to receive distributions upon leaving employment, subject to restrictions.			

	RETIREMENT PLAN PROVISIONS	
PLAN 1	PLAN 2	HYBRID RETIREMENT PLAN
Cost-of-Living Adjustment (COLA) in Retirement	Cost-of-Living Adjustment (COLA) in Retirement	Cost-of-Living Adjustment (COLA) in Retirement
The Cost-of-Living Adjustment (COLA) matches the first 3% increase in the Consumer Price Index for all Urban Consumers (CPI-U) and half of any additional increase (up to 4%) up to a maximum COLA of 5%. Eligibility: For members who retire with an unreduced benefit or with a reduced benefit with at least 20 years of creditable service, the COLA will go into effect on July 1 after one full calendar year from the retirement date. For members who retire with a reduced benefit and who have less	The Cost-of-Living Adjustment (COLA) matches the first 2% increase in the CPI-U and half of any additional increase (up to 2%), for a maximum COLA of 3%. Eligibility: Same as Plan 1 Exceptions to COLA Effective Dates: Same as Plan 1	Defined Benefit Component: Same as Plan 2. Defined Contribution Component: Not applicable. Eligibility: Same as Plan 1 and Plan 2. Exceptions to COLA Effective Dates: Same as Plan 1 and Plan 2.
than 20 years of service credit, the COLA will go into effect on July 1 after one calendar year following the unreduced retirement eligibility date.		
Exceptions to COLA Effective Dates: The COLA is effective July 1 following one full calendar year (January 1 to December 31) under any of the following circumstances:		
• The member is within five years of qualifying for an unreduced retirement benefit as of January 1, 2013.		
• The member retires on disability.		
• The member retires directly from short-term or long-term disability.		
• The member is involuntarily separated from employment for causes other than job performance or misconduct and is eligible to retire under the Workforce Transition Act or the Transitional Benefits Program.		
• The member dies in service and the member's survivor or beneficiary is eligible for a monthly death-inservice benefit. The COLA will go into effect on July 1 following one full calendar year (January 1 to December 31) from the date the monthly benefit begins.		
• The COLA will go into effect on July 1 following one full calendar year (January 1 to December 31) from the date the monthly benefit begins.		

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

Employees Covered by Benefit Terms

As of the June 30, 2020 actuarial valuation, the following employees were covered by the benefit terms of the VRS Retirement Plan:

	Number
Inactive members or their beneficiaries currently receiving benefits	_88
Inactive members:	
Vested	37
Non-vested	63
Active elsewhere in VRS	_33
Total inactive members	133
Active members	310
Total covered employees	<u>531</u>

Contributions

The contribution requirement for active employees is governed by Section 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% of annual base compensation toward their retirement. Through June 30, 2012, the Authority had assumed this 5% member contribution for its Plan 1 employees, both before and after the October 1, 2004 employer status change. In June 2010, the Authority's Board adopted a resolution to pay the full 5% member contribution for Plan 2 employees effective July 1, 2010. As the result of Virginia State legislative changes in 2012, VRS participating employers were required to begin withholding the 5% member contribution from employees, and give a corresponding increase in base salary. The Authority's Board adopted resolutions to implement the withholding and related salary increases at 5% effective July 1, 2012.

The Authority's contractually required contribution rate for fiscal year 2021 was 6.48% of covered employee compensation, based on an actuarial valuation as of June 30, 2019.

This rate, when combined with employee contributions, was expected to finance the costs of benefits earned by an employee during the year, with an additional amount to finance any unfunded accrued liability. The total of employer and employee contributions to VRS were \$2,536,813 and \$2,337,015 for the years ended June 30, 2021 and 2020, respectively.

Net Pension Liability

The Authority's net pension liability (NPL) was measured as of June 30, 2021. The total pension liability (TPL) used to calculate the NPL was determined by an actuarial valuation performed as of June 30, 2019, using updated actuarial assumptions applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2021.

Actuarial Assumptions

The Authority's total pension 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, 2021:

Inflation 2.50% Salary increases, including inflation 3.50% - 5.35%

Investment rate of return 6.75%, net of plan investment expense, including inflation*

* Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 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.

Mortality Rates - 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:

Mortality Rates (Pre-retirement, post-retirement healthy, and disabled)	Update 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 disability rates
Salary Scale	No change
Discount Rate	Decrease rate from 7.00% to 6.75%

Long-Term Expected Rate of Return

The long-term expected rate of return on VRS 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 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 estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class (Strategy)	Target Allocation	Arithmetic Long Term Expected Rate of Return	Weighted Average Long-Term Expected Rate of Return
Public Equity	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 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 employee 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; political subdivisions were also provided with an opportunity to use an alternate employer 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 the Net Pension Liability

	Increase (Decrease)				
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Position Liability (a) - (b)		
Balance at June 30, 2020	\$ 67,082,894	\$ 57,775,040	\$ 9,307,854		
Changes for the Year:					
Service cost	1,956,296	_	1,956,296		
Interest	4,442,818	_	4,442,818		
Changes in assumptions	1,749,440	_	1,749,440		
Difference between expected and actual experience	939,515	_	939,515		
Contributions – employer	_	1,343,555	(1,343,555)		
Contributions – employee	_	1,159,638	(1,159,638)		
Net investment income	_	15,938,755	(15,938,755)		
Benefit payments, including refunds					
of employee contributions	(2,526,734)	(2,526,734)	_		
Administrative expense	_	(38,631)	38,631		
Other charges	_	1,512	(1,512)		
Net changes	6,561,335	15,878,095	(9,316,760)		
Balance at June 30, 2021	\$ 73,644,229	\$ 73,653,135	\$ (8,906)		
					

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

The following presents the Authority's NPL, using the discount rate of 6.75%, as well as what the Authority's net pension (asset) liability would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current rate:

	1	% Decrease (5.75%)	Curr		Discount Rate .75%)	1% Increase (7.75%)
Net pension (asset) liability	\$	10,549,721	9	5	(8,906)	\$ (8,596,143)

Pension Expense, 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 \$125,304. The Authority also reported deferred outflows of resources and deferred inflows of resources from the following sources:

	Resources	Deferred Inflows of Resources	
Net difference between expected and actual expense	\$ 887,705	\$	_
Net change in assumptions	2,182,762		_
Net difference between projected and actual earnings on plan investments	_		7,976,338
Employer contributions subsequent to the measurement date*	 682,616		
Total	\$ 3,753,083	\$	7,976,338

^{*\$682,616} 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 year ending December 31, 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:

Years Ended June 30,	Amount
June 30,	 Tillouit
2023	\$ (770, 104)
2024	(710,023)
2025	(1,168,851)
2026	(2,256,893)
2027	_
Thereafter	_
Total	\$ (4,905,871)

Pension Plan Data

The System issues a publicly available Annual Comprehensive Financial Report that includes financial statements and required supplementary information for VRS. A copy of the most recent report may be downloaded from the VRS website at http://www.varetire.org/Pdf/Publications/2021-annual-report.pdf or obtained by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA 23218-2500.

8. Other Post-Employment Benefits (OPEB)

A. OPEB Health Benefits

Plan Description

The Loudoun Water OPEB Trust Fund is a single-employer defined benefit healthcare plan (the Plan) administered by the Authority. The Plan provides health, dental, and vision insurance for eligible retirees, their spouses and dependents through the same plan that covers active employees. The Plan is available until the retiree reaches 65 years of age. Retired employees who participate in the Plan receive a health insurance premium contribution that will pay between 25% and 75% of the premium based on years of service. In order to participate, retirees must meet retirement eligibility requirements of the Virginia Retirement System and have a minimum of fifteen years of service with the Authority.

Employees Covered by Benefit Terms

As of the January 1, 2021 actuarial valuation, the following employees were covered by the benefit terms:

	Number
Active Participants	304
Retirees and Beneficiaries	11
Spouses	4
Total Participants	<u>319</u>

Contributions

The contribution requirements of plan members are established and may be amended by the Authority's Board of Directors. The Authority participates in the Virginia Pooled OPEB Trust Fund ("Trust Fund"), which was established as an investment vehicle for participating employers to accumulate assets to fund OPEB. Plan assets for the purposes of GAAP are usually in the form of stocks, bonds, and other classes of investments, that have been segregated and restricted in a trust, in which (a) contributions to the plan are irrevocable, (b) assets are dedicated to provide benefits to retirees and their beneficiaries, and (c) assets are legally protected from creditors of the employer or plan administrator, for payment of benefits in accordance with the terms of the plan. The Trust Fund issues a separate report, which can be obtained by requesting a copy from the plan administrator, VACo/VML at 8 E Canal Street, Richmond, VA 23219.

Net OPEB Liability

The total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation as of January 1, 2021, using the update procedures to roll forward to the measurement date of December 31, 2021. The components of the net OPEB liability are as follows:

Total OPEB Liability	4,551,611
Fiduciary Net Position	3,936,529
Net OPEB Liability	615,082
Fiduciary Net Position as a percentage of the Total OPEB Liability	86.49%

Actuarial Assumptions

Inflation

The Authority's total OPEB liability was based on an actuarial valuation as of January 1, 2021, 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 December 31, 2021:

mmation		2.30 /0		
Investment Return		6.50%, net of investment expense and including inflation		
Healthcare Cost Trend Rates		6.90% in 2021, 5.30% in 2022, then grading to an ultimate rate of 4.00% in 2073		
Mortality Rates				
Pre-Retirement	older projected with S	ates to age 80, Healthy Annuitant Rates at ages 81 and cale BB to 2020; males setback 1 year, 85% of rates; 25% of deaths are assumed to be service-related.		
Post-Retirement	and older projected wi	attes to age 49, Healthy Annuitant Rates at ages 50 ith Scale BB to 2020; males set forward 1 year; females 5% increase compounded from ages 70 to 85.		
Post-Disablement	RP-2014 Disabled Mo	ortality Rates projected with Scale BB to 2020; males		

Long-Term Expected Rate of Return

The long-term expected rate of return on OPEB plan investments was determined by adding expected inflation to expected long-term real returns and reflecting expected volatility and correlation.

Best estimates of real rates of return for each major asset class included in the OPEB plan's target asset allocation as of December 31, 2021, and the final investment return assumption, is summarized in the following table:

115% of rates; females 130% of rates.

Asset Class	Target Allocation	Expected Arithmetic Real Rate of Return	Long-Term Expected Rate of Return
US Core Fixed Income	21.00%	0.83%	0.76%
US Large Caps	26.00	3.93	2.74
US Small Caps	10.00	5.09	3.08
Foreign Developed Equity	13.00	5.73	4.16
Emerging Market Equities	5.00	7.51	4.70
Private Real Estate Property	7.00	3.89	3.18
Private Equity	5.00	8.99	5.19
Commodities	3.00	2.29	0.68
Hedge FOF Strategic	10.00	2.71	2.20
Assumed Inflation		2.40	2.40
Portfolio Real Mean Return		3.93	3.27
Portfolio Nominal Mean Return		6.33	5.74
Portfolio Standard Deviation			11.60
Long-Term Expected Rate of Return			6.50%

Discount Rate

The discount rate used to measure the total OPEB liability was 6.50%. The projection of cash flows used to determine the discount rate assumed that the Authority's contributions will continue in addition to the benefits paid. Based on those assumptions, the OPEB plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rates of return on OPEB Trust investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

Changes in Net OPEB Liability

The components of the net OPEB liability of the Authority at December 31, 2021 is as follows:

	Increase (Decrease)					
	0	Total PEB Liability (a)		an Fiduciary Net Position (b)		Net OPEB Liability (a) - (b)
Balance at December 31, 2020		4,208,478	\$	3,257,499	\$	950,979
Changes for the Year: Service cost		109,362		_		109,362
Interest cost		271,726		_		271,726
Effect of economic/demographic gains		157,158		_		157,158
Effect of assumption changes or inputs		84,176		_		84,176
Benefit payments		(279,289)		(279,289)		_
Contributions – employer		_		472,309		(472,309)
Net investment income		_		490,085		(490,085)
Administrative expense		_		(4,075)		4,075
Net changes		343,133		679,030		(335,897)
Balance at December 31, 2021	\$	4,551,611	\$	3,936,529	\$	615,082

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

The sensitivity of the net OPEB liability to changes in the discount rate was calculated using the discount rate of 6.50%, as well as what the plan's net OPEB liability would be if it were calculated using a discount rate that is 1.00% lower or 1.00% higher than the current rate. The results of the sensitivity analysis are presented below:

	19	1% Decrease 5.50%		Current Discount Rate 6.50%		1% Increase 7.50%	
Total OPEB Liability Fiduciary Net Position	\$ \$	4,936,440 3,936,529	\$ \$	4,551,611 3,936,529	\$ \$	4,206,861 3,936,529	
Net OPEB Liability	\$	999,911	\$	615,082	\$	270,332	

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

The sensitivity of the net OPEB liability to changes in the healthcare cost trend rate was calculated using the current healthcare cost trend rate of 6.90%, as well as what the plan's net OPEB liability would be if it were calculated using a trend rate that is 1.00% lower or 1.00% higher than the current rate. The results of the sensitivity analysis are presented below:

	19	1% Decrease 5.90%		Current Trend Rate 6.90%		1% Increase 7.90%	
Total OPEB Liability Fiduciary Net Position	\$ \$	4,102,844 3,936,529	\$ \$	4,551,611 3,936,529	\$ \$	5,080,846 3,936,529	
Net OPEB Liability	\$	166,315	\$	615,082	\$	1,144,317	

OPEB Expenses

-	 2021	 2020
Service cost	\$ 109,362	\$ 97,893
Interest	271,726	265,381
Projected earnings on plan investments	(212,582)	(177,385)
Recognition of deferred inflows/outflows of resources		
Recognition of economic/demographic gains	165,478	142,367
Recognition of assumption changes or inputs	(115,613)	(127,992)
Recognition of investment losses or gains	(105,548)	(50,047)
Administrative expense	 4,075	 3,130
Total	\$ 116,898	\$ 153,347

Deferred Outflows of Resources and Deferred Inflows of Resources

At December 31, 2021, the Authority reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources		of Resources	
Differences between expected and actual experience	\$	646,567	\$	_
Net difference between projected and actual earnings		_		403,044
Changes in assumptions		71,797		460,772
Total	\$	718,364	\$	863,816

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

Years Ended December 31,	Amount
2022	\$(55,681)
2023	(95,005)
2024	(47,264)
2025	(11,386)
2026	35,490
Thereafter	28,394
Total	\$ (145,452)

B. OPEB Group Life Insurance (GLI)

Plan Description

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

All full-time, salaried permanent employees of the Authority are automatically covered by the GLI program upon employment. The plan is administered by the Virginia Retirement System along with pension and other OPEB plans, for public employer groups in the Commonwealth of Virginia.

In addition to basic group life insurance benefit, members are also eligible to elect additional coverage for themselves as well as a spouse or dependent children through the Optional Group Life Insurance Program. For members who elect the optional group life 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 insurance program, it is not included as part of the GLI OPEB Program.

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

GROUP LIFE INSURANCE PROGRAM PROVISIONS

Eligible Employers

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

Benefit Amounts

The benefits payable under the GLI Program have several components.

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

Reduction in Benefit Amounts

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

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

For covered members with at least 30 years of creditable service, there is a minimum benefit payable under the GLI Program. The minimum benefit was set at \$8,000 by statute in 2015. This amount is increased annually based on the VRS Plan 2 cost-of-living adjustment and was increased to \$8,616 effective July 1, 2021.

Contributions

The contribution requirements for the GLI Program are governed by §51.1-506 and §51.1-508 of the *Code of Virginia*, as amended, but may be impacted as a result of funding provided to state agencies and school divisions by the Virginia General Assembly. The total rate for the GLI Program was 1.34% 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 a part of the employee contribution, however the employer must pay all of the employer contribution. The Authority has elected to pay all of the employee contributions in addition to the employer contributions.

The Authority's contractually required contribution rate for the year ended June 30, 2021 was 0.54% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2019. The actuarially determined rate, when combined with employee contributions, was expected to finance the costs of benefits payable during the year, with an additional amount to finance any unfunded accrued liability. Contributions to the GLI Program from the Authority were \$137,256 and \$125,865 for the years ended June 30, 2021 and 2020, respectively.

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

At June 30, 2021 and 2020, the Authority reported a liability of \$1,433,335 and \$1,962,718, respectively, for its proportionate share of the Net GLI OPEB Liability. The Net GLI OPEB Liability was measured as of June 30, 2021 and the total GLI OPEB liability used to calculate the Net GLI OPEB Liability was determined by an actuarial valuation as of that date. The covered employer's proportion of the Net GLI OPEB Liability was based on the covered employer's actuarially determined employer contributions to the Group Life Insurance Program for the year ended June 30, 2021 relative to the total of the actuarially determined employer contributions for all participating employers. At June 30, 2021, the Authority's proportion was 0.123% as compared to 0.118% at June 30, 2020.

For the year ended June 30, 2021, the Authority recognized GLI OPEB expense of \$92,499. 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.

As of June 30, 2021, the Authority 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	
\$	163,477	\$	10,921
	_		342,106
	79,019		196,111
	112,768		1,342
	69,495		
\$	424,759	\$	550,480
	of	\$ 163,477 - 79,019 112,768 69,495	of Resources of \$ 163,477 \$ 79,019 112,768 69,495

^{* \$69,495} 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 fiscal year ending December 31, 2022. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to the GLI OPEB will be recognized in the OPEB expense in future reporting periods as follows:

Years Ended December 31,	 Amount
2022	\$ (36,834)
2023	(27,107)
2024	(34,454)
2025	(90,340)
2026	(6,481)
Thereafter	 0
Total	\$ (195,216)

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, 2021.

Inflation 2.50%
Salary increases, including inflation 3.50% - 5.35%
Investment rate of return 6.75%, net of investment expenses, including inflation*

Mortality Rates

Pre-Retirement	RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with Scale BB to 2020; males 95% of rates; females 105% of rates.
Post-Retirement	RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with Scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.
Post-Disablement	RP-2014 Disability Life Mortality Table projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

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 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 are as follows:

Mortality Rates (Pre-retirement, post-retirement healthy, and disabled)	Update 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 termination rates to better fit experience at each year age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Discount Rate	Decrease rate from 7.00% to 6.75%

Net GLI OPEB Liability

The net OPEB liability (NOL) for the Group Life Insurance Program represents the program's total OPEB liability determined in accordance with GASB Statement No. 74, less the associated fiduciary net position. As of June 30, 2021, NOL amounts for the Group Life Insurance Program are as follows (amounts expressed in thousands):

Total GLI OPEB Liability	\$ 3,577,346
Plan Fiduciary Net Position	2,413,074
GLI Net OPEB Liability	\$ 1,164,272
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	67.45%

^{*} Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 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 the OPEB liabilities.

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 Stmt. 74 in the System's notes to the financial statements and required supplementary information.

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	Target Allocation	Expected Arithmetic Real 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 employee contributions will be made per the VRS guidance and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Through the fiscal year ending June 30, 2021, the employer rate contributed by the Authority will be subject to the portion of the VRS Board-certified rates that are funded by the Virginia General Assembly. From July 1, 2021 on, employers are assumed to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the GLI OPEB's fiduciary net position was projected to be available to make all projected future benefit payments of eligible employees. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total GLI OPEB liability.

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

The following presents the employer's proportionate share of the net GLI OPEB liability using the discount rate of 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 1.00% lower or 1.00% higher than the current rate:

		1% Decrease 5.75%		Current Discount Rate 6.75%		1% Increase 7.75%	
Net OPEB Liability - Group Life Insurance	\$	2,094,154	\$	1,433,335	\$	889,693	

Group Life Insurance Program Fiduciary Net Position

Detailed information about the Group Life Insurance Program's Fiduciary Net Position is available in the separately issued VRS 2021 Annual Comprehensive Financial Report. A copy of the 2021 VRS Annual Report may be downloaded from the VRS website at http://www.varetire.org/Pdf/Publications/2021-annual-report.pdf, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA, 23218-2500.

C. Combined OPEB Plans

The OPEB Trust and VRS GLI have been reported separately since each plan has different and distinct characteristics, reporting requirements and valuations. For purposes of aiding the reader of these financial statements in gaining a full understanding of the impact of total OPEB requirements on the net position of the Authority, the following combing schedule is presented:

	OPEB Trust		VRS GLI		Total OPEB Combined	
Net OPEB Liability	\$	615,082	\$	1,433,335	\$	2,048,417
OPEB Expense		116,898		92,499		209,397
Deferred Outflows of Resources						
Differences between expected and actual experience		646,567		163,477		810,044
Changes in assumptions		71,797		79,019		150,816
Changes in proportionate share		_		112,768		112,768
Employer contribution subsequent to measurement date		<u> </u>		69,495		69,495
Total Deferred Outflows of Resources	\$	718,364	\$	424,759	\$	1,143,123
Deferred Inflows of Resources						
Differences between expected and actual experience		-		10,921		10,921
Net difference between projected and actual earnings		403,044		342,106		745,150
Changes in assumptions		460,772		196,111		656,883
Changes in proportionate share		_		1,342		1,342
Total Deferred Inflows of Resources	\$	863,816	\$	550,480	\$	1,414,296

9. Net Investment in Capital Assets

Net investment in capital assets includes all capital assets as well as purchased capacity rights. These values have been recorded net of depreciation, outstanding principal related to the asset and any unspent bond proceeds related to the outstanding debt.

Net investments in capital assets are as follows:

	2021	2020
Net Capital Assets	\$ 1,759,911,904	\$ 1,745,526,610
Net Deferred Outflows/Inflows of Resources	3,044,876	7,588,064
Capital Related Debt	(191,597,807)	(266,377,987)
	\$ 1,571,358,973	\$ 1,486,736,687

10. Restricted Net Position

Restricted net position reflects that portion of total net position legally or contractually segregated for a specific future use. The following amounts represent restricted net position at December 31, 2021 and 2020:

	 2021	2020		
Revenue Bond Accounts	\$ 95,855,310	\$	32,549,363	
Other Restricted Assets	7,034,038		7,363,198	
Customer Advance Payment Fees	(2,244,020)		(2,236,303)	
Developers' Advances Payable	(25,000)		(25,000)	
Performance Bonds	(4,535,524)		(4,848,728)	
Maintenance Bonds	(229,494)		(253, 167)	
Bond Interest Payable	(3,859,637)		(4,836,673)	
	\$ 91,995,673	\$	27,712,690	

11. 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. These risks are covered by insurance purchased through the Virginia Municipal Liability Pool, a public entity risk pool that provides commercial general liability, property, automobile and other types of insurance coverage. Settled claims from these risks did not exceed coverage in the three most recent fiscal years.

The Authority also has coverage with the Virginia Municipal Group Self Insurance Association (Association) for workers' compensation. Each Association member jointly and severally agrees to assume, pay and discharge any liability. The Authority pays Virginia Municipal Group contributions and assessments based upon classifications and rates into a designated cash reserve fund out of which expenses of the Association and claims and awards are to be paid.

12. Commitments and Contingencies

A. Broad Run Water Reclamation Facility

In 1998, the Authority initiated the Broad Run Water Reclamation Facility (BRWRF) Preliminary Design Study to identify the best overall solution to meet the area's increasing need for wastewater treatment while considering and protecting the interests of the community and the environment. The study was completed in 2000 at a cost of approximately \$975,000. After extensive evaluation, the Authority identified membrane bioreactor (MBR) technology as the most promising treatment process for the future BRWRF and began pilot testing of the process in 2000. The pilot program was completed in May of 2001, and the BRWRF became operational on April 1, 2008. As of December 31, 2021, the Authority has paid approximately \$231.6 million in expenses associated with the Plant.

In 2011, Fairfax County purchased 1 MGD of capacity at the BRWRF for the amount of \$20.9 million. The Authority is committed to reserve this capacity for Fairfax County.

B. District of Columbia Water and Sewer Authority (DC Water)

In 1998, the Authority, DC Water and the District of Columbia executed an Agreement whereby DC Water agreed to provide wastewater treatment capacity at the Blue Plains Wastewater Treatment Plant, as well as corresponding transmission entitlements in the Potomac Interceptor System. The Authority pays DC Water for capital expenses based on the Authority's allocated capacity of 13.8 MGD. Operation and maintenance costs are based on actual flows. For the year ended December 31, 2021, the Authority paid DC Water approximately \$6.3 million for on-going capital improvements at Blue Plains.

C. Claims and Legal Proceedings

The Authority has become subject to litigation incidental to its business. Management, based on consultation with legal counsel, expresses no opinion on outcome, results or even likelihood.



REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability and Related Ratios

	Fiscal Year Ending December 31				
	2021	2020	2019	2018	
Total Pension Liability					
Service Cost	\$ 1,956,296	\$ 1,919,064	\$ 1,822,392	\$ 1,796,398	
Interest	4,442,818	4,250,110	3,927,320	3,694,873	
Change in Assumptions	1,749,440	_	2,012,467	_	
Difference Between Actual and Expected Experience	939,515	(825,248)	1,496,869	(36,206)	
Benefit Payments, including Refunds of Employee Contributions	(2,526,734)	(2,451,244)	(2,343,971)	(1,927,653)	
	(2,320,731)	(2,131,211)	(2,3 13,7 1)	(1,727,033)	
Net Change in Total Pension Liability	6,561,335	2,892,682	6,915,077	3,527,412	
Total Pension Liability - Beginning	67,082,894	64,190,212	57,275,135	53,747,723	
Total Pension Liability - Ending (a)	\$ 73,644,229	\$ 67,082,894	\$ 64,190,212	\$ 57,275,135	
Plan Fiduciary Net Position					
Contributions - Employer	\$ 1,343,555	\$ 1,051,036	\$ 1,038,736	\$ 1,681,357	
Contributions - Employee	1,159,638	1,147,676	1,313,832	1,088,084	
Net investment Income	15,938,755	1,094,029	3,602,161	3,683,582	
Benefit Payments, including Refunds of Employee Contributions	(2,526,734)	(2,451,244)	(2,343,971)	(1,927,653)	
Administrative Expense	(38,631)	(36,638)	(34,674)	(30,974)	
Other	\$ 1,512	\$ (1,303)	\$ (2,274)	\$ (3,314)	
Net Change in Plan Fiduciary Net Position	15,878,095	803,556	3,573,810	4,491,082	
Plan Fiduciary Net Position - Beginning	57,775,040	56,971,484	53,397,674	48,906,592	
Plan Fiduciary Net Position - Ending (b)	\$ 73,653,135	\$ 57,775,040	\$ 56,971,484	\$ 53,397,674	
Net Pension Liability - Ending (a) - (b)	<u>\$ (8,906)</u>	\$ 9,307,854	\$ 7,218,728	\$ 3,877,461	
Plan Fiduciary Net Position as a percentage of Total					
Pension Liability	100.01%	86.12%	88.75%	93.23%	
Covered Payroll	\$ 26,097,117	\$ 24,924,480	\$ 23,482,772	\$ 22,590,740	
Net Pension Liability as a percentage of Covered Payroll	-0.03%	37.34%	30.74%	17.16%	

Schedule of Changes in Net Pension Liability and Related Ratios

Fiscal Year Ending December 31

		Fiscal	1 ear	Ending Decem	ber	31
		2017		2016		2015
Total Pension Liability						
Service Cost	\$	1,854,142	\$	1,807,259	\$	1,773,936
Interest		3,477,398		3,218,327		3,009,500
Change in Assumptions		(1,199,985)		_		-
Difference Between Actual and Expected Experience		837,373		340,825		(326,390)
Benefit Payments, including Refunds of Employee Contributions		(1,796,647)		(1,534,137)		(1,413,476)
Net Change in Total Pension Liability		3,172,281		3,832,274		3,043,570
Total Pension Liability - Beginning	_	50,575,442		46,743,168	_	43,699,598
Total Pension Liability - Ending (a)	\$	53,747,723	\$	50,575,442	\$	46,743,168
Plan Fiduciary Net Position						
Contributions - Employer	\$	1,100,980	\$	1,510,324	\$	651,113
Contributions - Employee		1,165,954		1,168,027		1,078,785
Net investment Income		5,388,063		772,404		1,827,075
Benefit Payments, including Refunds of Employee Contributions		(1,796,647)		(1,534,137)		(1,413,476)
Administrative Expense		30,088)		(1,334,137) $(25,392)$		(23,671)
Other	\$	(4,834)	\$	(319)	\$	(388)
Net Change in Plan Fiduciary Net Position		5,823,428		1,890,907		2,119,438
Plan Fiduciary Net Position -						
Beginning	_	43,083,164		41,192,257	_	39,072,819
Plan Fiduciary Net Position - Ending (b)	\$	48,906,592	\$	43,083,164	\$	41,192,257
Net Pension Liability - Ending (a) - (b)	\$	4,841,131	\$	7,492,278	\$	5,550,911
Plan Fiduciary Net Position as a percentage of Total		_				
Pension Liability		90.99%		85.19%		88.12%
Covered Payroll	\$	21,575,706	\$	20,476,432	\$	17,866,892
Net Pension Liability as a percentage of Covered Payroll		22.44%		36.59%		31.07%

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

Schedule of Employer Contributions - Pension

Fiscal Year Ending December 31,	iding Required		R Co	Contributions in Relation to Contractually Required Contribution		ribution iciency xcess)	Covered Payroll		Contributions as a Percentage of Covered Payroll
2021	\$	1,361,259	\$	1,361,259	\$	_	\$	26,508,440	5.14%
2020		1,195,288		1,195,288		_		25,636,401	4.66%
2019		1,040,880		1,040,880		-		23,878,697	4.36%
2018		1,083,514		1,083,514		-		23,177,069	4.67%
2017		1,110,465		1,110,465		-		21,983,932	5.05%
2016		1,243,763		1,243,763		_		21,164,245	5.88%
2015		1,373,430		1,373,430		_		18,617,434	7.38%

Notes to Required Supplementary Information

Changes of Benefits 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:

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
Discount Rate	Decrease rate from 7.00% to 6.75%

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ending December 31 2021 2020 2019 2018 2017 **Total OPEB Liability** \$ Service Cost \$ 109,362 97,893 \$ 147,701 \$ 126,084 \$ 106,287 Interest 271,726 265,381 312,964 243,596 239,308 Effect of Economic/ Demographic Gain 157,158 939,621 Effect of Assumption Changes or Inputs 84,176 (844,748)166,826 Benefit Payments (279, 289)(275,047)(320,534)(208,670)(197,824)Net change in total **OPEB** liability 88,227 235,004 161,010 314,597 343,133 Total OPEB Liability - Beginning 4,208,478 4,120,251 3,885,247 3,724,237 3,409,640 Total OPEB Liability - Ending (a) 4,551,611 4,208,478 4,120,251 3,885,247 3,724,237 Plan Fiduciary Net Position Contributions - Employer \$ 472,309 \$ 559,698 \$ 634,534 \$ 491,070 \$ 471,624 Net Investment Income/(Expense) 490,085 385,525 372,586 (76,926)191,749 Benefit Payments (279, 289)(275,047)(320,534)(208,670)(197,824)Administrative expense (4,075)(3,130)(2,695)(2,317)(1,886)Net change in plan fiduciary net position 679,030 667,046 683,891 203,157 463,663 Plan Fiduciary Net Position - Beginning 3,257,499 2,590,453 1,906,562 1,703,405 1,239,742 Plan Fiduciary Net Position - Ending (b) 3,936,529 3,257,499 2,590,453 1,906,562 1,703,405 Net OPEB Liability -Ending (a) - (b) 615,082 950,979 1,529,798 1,978,685 2,020,832 Plan Fiduciary Net Position as a percentage of Total **OPEB** Liability 86.49% 77.40% 62.87% 49.07% 45.74% Covered Payroll \$ 25,358,092 24,260,228 \$ 24,260,228 \$ 20,783,700 \$ 20,783,700 Net OPEB Liability as a percentage of Covered Payroll 2.43% 3.92% 6.31% 9.52% 9.72%

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

Schedule of Employer Contributions – OPEB

Fiscal Year Ending December 31,	Year Actuarially Eing Determined Con		Actual Contribution Contribution Deficiency (1) (2) (Excess)		Deficiency	Covered Payroll	Contributions as a Percentage of Covered Payroll	
2021	\$	193,020	\$	472,309	\$	(279,289)	\$ 25,358,092	1.86%
2020		284,651		559,698		(275,047)	24,260,228	2.31%
2019		277,158		634,534		(357,376)	24,260,228	2.62%
2018		282,400		491,070		(208,670)	20,783,700	2.36%
2017		273,800		471,624		(197,824)	20,783,700	2.27%
2016		208,400		320,800		(112,400)	18,405,600	1.74%
2015		202,700		337,000		(134,300)	18,405,600	1.83%
2014		214,100		313,300		(99,200)	14,720,700	2.13%
2013		208,700		290,300		(81,600)	14,720,700	1.97%
2012		285,500		355,200		(69,700)	12,393,600	2.87%

⁽¹⁾ The Authority established its OPEB trust during the fiscal year ending December 31, 2012

Notes to Required Supplementary Information

Changes of Benefits Terms

There have been no changes to the OPEB Plan benefit provisions since the prior actuarial valuation.

Changes of Assumptions

The following changes in actuarially assumptions used to calculate the Actuarially Determined Contribution since the prior actuarial valuation.

Interest rate	6.50%, net of investment expense
Healthcare Cost Trend Rates	6.90% in 2021, 5.30% in 2022, then grading to an ultimate rate of 4.00% in 2073
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

⁽²⁾ Employer contributions include trust contribution, implicit and explicit subsidy payments provided directly to retirees from the Authority's own resources

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Employer's Share of Net OPEB Liability - Group Life Insurance Program

	_	Fiscal Year Ending December 31							
		2021	_	2020	_	2019	2018	_	2017
Employer's Proportion of the Net GLI OPEB Liability		0.12%		0.12%		0.12%	0.12%		0.11%
Employer's Proportionate Share of the Net GLI OPEB Liability	\$	1,433,335	\$	1,962,718	\$	1,916,000	\$ 1,756,000	\$	1,713,000
Employer's Covered Payroll	\$	25,417,749	\$	24,204,790	\$	23,080,316	\$ 21,994,276	\$	20,998,945
Employer's Proportionate Share of the Net GLI OPEB Liability as a Percentage of its Covered Payroll		5.64%		8.11%		8.30%	7.98%		8.16%
Plan Fiduciary Net Position as a Percentage of the Total GLI OPEB Liability		67.45%		52.64%		52.00%	51.22%		48.86%

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

Schedule of Employer Contributions – Group Life Insurance Program

Fiscal Year Contractually Ending Required December 31, Contribution		Re Cor R	Contributions in Relation to Contractually Required Contribution		ibution ciency cess)	 Covered Payroll	Contributions as a Percentage of Covered Payroll	
2021	\$	137,256	\$	137,256	\$	_	\$ 25,829,072	0.53%
2020		125,865		125,865		_	24,916,711	0.51%
2019		120,018		120,018		_	23,476,241	0.51%
2018		114,370		114,370		_	22,580,605	0.51%
2017		109,195		109,195		_	21,407,171	0.51%
2016		94,656		94,656		_	20,407,724	0.46%
2015		89,737		89,737		_	19,445,726	0.46%
2014		78,038		78,038		_	17,603,051	0.44%
2013		71,971		71,971		_	15,205,271	0.47%
2012		37,914		37,914		_	14,344,943	0.26%

REQUIRED SUPPLEMENTARY INFORMATION

Notes to Required Supplementary Information

Changes of Benefits 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:

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 year
Disability rates	Lowered rates
Salary Scale	No change
Discount Rate	Decrease rate from 7.00% to 6.75%







The statistical section of the Annual Comprehensive Financial Report presents detailed information as a context for understanding what the information presented in the financial statements, note disclosures and required supplementary information say about the Authority's overall financial health. This information has not been audited by the independent auditor.

76-78 FINANCIAL TRENDS

These tables contain trend information to help the reader understand how the Authority's financial performance and wellbeing have changed over time.

78-83 REVENUE CAPACITY INFORMATION

These tables contain information to help the reader assess the Authority's significant revenue sources.

84-85 DEBT CAPACITY INFORMATION

These tables present information to help the reader assess the affordability of the Authority's current level of outstanding debt and the Authority's ability to issue additional debt in the future.

86-87 DEMOGRAPHIC AND ECONOMIC INFORMATION

These tables offer demographic and economic indicators to help the reader understand the environment within which the Authority's financial activities take place.

88-89 OPERATING INFORMATION

These tables contain service and infrastructure data to help the reader understand how the information in the Authority's financial report relates to the services the Authority provides and the activities it performs.

Sources: Unless otherwise noted, the information in this section is derived from the Authority's Annual Comprehensive Financial Reports for the relevant year.

FINANCIAL TRENDS

Financial trend information is intended to help the reader understand how the Authority's financial well-being has changed over time.

TABLE 1

NET POSITION BY COMPONENT

LAST TEN FISCAL YEARS (UNAUDITED)

			Fiscal Year		
	2021	2020	2019	2018	2017
Net Investment in Capital Assets	\$ 1,571,358,973	\$ 1,486,736,687	\$ 1,472,036,076	\$ 1,439,867,536	\$ 1,382,225,134
Restricted	91,995,673	27,712,690	27,527,317	28,807,540	28,265,041
Unrestricted	206,897,642	315,181,493	277,642,398	228,707,756	232,221,546
Total Net Position	\$ 1,870,252,288	\$ 1,829,630,870	\$ 1,777,205,791	\$ 1,697,382,832	\$ 1,642,711,721
			Fiscal Year		
	2016	2015	2014	2013	2012
Net Investment in Capital Assets	\$ 1,269,997,525	\$ 1,146,550,399	\$ 1,061,130,183	\$ 990,801,931	\$ 908,977,893
Restricted	28,146,477	60,934,260	40,383,734	26,481,652	25,811,603
Unrestricted	255,905,913	267,020,978	283,635,257	305,314,727	305,939,192
Total Net Position	\$ 1,554,049,915	\$ 1,474,505,637	\$ 1,385,149,174	\$ 1,322,598,310	\$ 1,240,728,688

Source: Authority Annual Comprehensive Financial Report for the relevant year.

TABLE 2

CHANGES IN NET POSITION

LAST TEN FISCAL YEARS (UNAUDITED)

Fiscal Year	Operating Revenues	Operating Expenses	Operating Income (Loss)	Net Non-Operating Revenues (Expenses)	(Loss) before Capital Contributions	Capital Contributions	Change in Net Position
2021	\$111,771,057	\$ (129,104,930)	\$ (17,333,873)	\$ (6,305,473)	\$ (23,639,346)	\$ 64,260,764	\$ 40,621,418
2020	101,603,174	(124,552,400)	(22,949,226)	1,590,129	(21,359,097)	73,784,176	52,425,079
2019	99,226,529	(124,425,893)	(25,199,364)	4,660,199	(20,539,165)	100,362,124	79,822,959
2018	89,185,271	(106,226,900)	(17,041,629)	649,050	(16,392,579)	71,063,690	54,671,111
2017	87,924,692	(97,127,709)	(9,203,017)	(363,515)	(9,566,532)	98,228,338	88,661,806
2016	88,032,744	(87,679,863)	352,881	(1,843,791)	(1,490,910)	81,035,188	79,544,278
2015	81,280,474	(84,862,095)	(3,581,621)	(1,544,887)	(5,126,508)	100,803,381	95,676,873
2014	79,018,383	(78,334,955)	683,428	(4,444,050)	(3,760,622)	66,311,486	62,550,864
2013	72,436,422	(72,682,427)	(246,005)	(9,240,456)	(9,486,461)	91,356,083	81,869,622
2012	70,068,729	(70,902,517)	(833,788)	(4,588,382)	(5,422,170)	68,800,253	63,378,083

Source: Authority Annual Comprehensive Financial Report for the relevant year..

TABLE 3

OPERATING REVENUES BY SOURCE

LAST TEN FISCAL YEARS (UNAUDITED)

Fiscal Year	Water Revenue	Sewage Disposal Fees	Penalties & Fees ⁽¹⁾		Miscellaneous(2)		Total	
2021	\$ 50,691,670	\$ 55,927,713	\$ 4.	,194,679	\$	956,995	\$	111,771,057
2020	46,280,789	51,590,873	2.	,890,714		840,798		101,603,174
2019	45,633,147	49,239,167	3.	,467,889		886,326		99,226,529
2018	39,066,229	45,846,228	3.	,587,250		685,564		89,185,271
2017	36,896,957	46,072,656	4.	,104,368		850,711		87,924,692
2016	40,141,669	42,378,231	4.	,554,090		958,754		88,032,744
2015	37,418,322	38,445,588	4.	,316,302		1,100,262		81,280,474
2014	34,079,991	37,455,045	5.	,967,433		1,515,914		79,018,383
2013	31,250,357	33,802,446	4.	,712,826		2,670,793		72,436,422
2012	30,993,072	31,995,492	5	,533,815		1,546,350		70,068,729

Notes:

Source: Authority Annual Comprehensive Financial Report for the relevant year.

TABLE 4

OPERATING EXPENSES

LAST TEN FISCAL YEARS (UNAUDITED)

Fiscal Year	Personnel(1)	Repairs & Maintenance Materials	Supplies & Minor Equipment	Utilities	Contractual Services ⁽²⁾	Administration Costs(3)	Depreciation and Amortization	Total Operating Expenses
2021	\$ 31,851,149	\$ 2,185,238	\$ 3,686,041	\$ 4,185,811	\$ 21,639,562	\$ 407,661	\$ 65,149,468	\$ 129,104,930
2020	32,326,145	2,080,958	3,642,959	4,261,666	21,349,099	1,300,414	59,591,159	124,552,400
2019	29,674,102	2,021,157	3,640,763	4,667,777	22,877,416	1,956,261	59,588,417	124,425,893
2018	24,697,189	2,138,653	2,722,103	3,838,745	21,942,482	903,983	49,983,745	106,226,900
2017	26,847,887	1,614,239	2,937,257	3,556,596	17,334,972	1,573,661	43,263,097	97,127,709
2016	23,237,460	1,656,789	2,638,127	3,395,861	17,487,714	1,053,450	38,210,462	87,679,863
2015	22,851,955	1,424,927	2,189,719	3,421,799	16,583,277	1,802,218	36,588,200	84,862,095
2014	19,157,981	1,752,799	1,976,804	2,902,294	14,643,890	832,648	37,068,539	78,334,955
2013	17,053,901	1,288,212	1,712,899	2,040,920	14,947,090	2,441,088	33,198,317	72,682,427
2012	16,325,138	1,226,584	1,593,361	2,117,216	15,741,493	1,699,456	32,199,269	70,902,517

Notes:

Source: Authority Annual Comprehensive Financial Report for the relevant year.

⁽¹⁾ Penalties and fees include plan review, inspection, and backflow prevention fees, cut-off/on charges and miscellaneous penalties.

⁽²⁾ Miscellaneous income includes sales of goods and services, income from leased land and facilities and miscellaneous revenues.

⁽¹⁾ Total employment cost net of capitalized salaries.

⁽²⁾ Contractual Services includes purchased water and sewage disposal fees, professional services, maintenance contracts and other contractual services.

⁽³⁾ Administration Costs includes communication costs, insurance, travel, leases and rentals and miscellaneous costs.

TABLE 5

Non-Operating Revenues and Expenses

LAST TEN FISCAL YEARS (UNAUDITED)

LAST IE	:N F	ISCAL YEARS	(UI	NAUDITED)								Net
Fiscal Year		Availability Fees		Investment come (Loss)	o	ain (Loss) n Sale of pital Assets	_	Interest Expense	Bond Issuance Costs		Non-Operating Revenues/ (Expenses)	
2021	\$	4,055,805	\$	(1,594,623)	\$	47,240	\$	(8,519,663)	\$	(294,232)	\$	(6,305,473)
2020		5,495,167		5,980,479		(23,274)		(9,862,243)		_		1,590,129
2019		7,330,607		7,566,376		40,894		(10, 137, 709)		(139,969)		4,660,199
2018		6,248,570		5,195,499		13,069		(10,808,088)		_		649,050
2017		6,394,729		2,285,153		1,767,415		(10,810,812)		_		(363,515)
2016		4,764,399		2,462,585		41,847		(9,112,622)		_		(1,843,791)
2015		5,526,342		1,432,470		92,287		(7,602,084)		(993,902)		(1,544,887)
2014		4,468,324		2,080,612		_		(10,992,986)		_		(4,444,050)
2013		4,834,564		509,738	((3,987,266)		(9,975,689)		(621,803)		(9,240,456)
2012		3,496,322		2,882,984		_		(10,967,688)		_		(4,588,382)

Note: Interest expense is net of capitalized interest.

Source: Authority Annual Comprehensive Financial Report for the relevant year.

REVENUE CAPACITY INFORMATION

Revenue capacity information is provided to assist the reader in understanding the Authority's significant revenue sources.

TABLE 6
WATER PRODUCED AND CONSUMED AND WASTEWATER TREATED (PER 1,000 GALLONS)

LAST TEN FISCAL YEARS (UNAUDITED)

(Gallons of Water	er	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Wastewate er Treated							
	WA/Goose Cre	eek/	- 44		Blue			Wa	ater		Wastewater		
Fiscal	Trap Rock/ Community	Gallons of Water	Gallons of Water	Average Percent	Plains (million	BRWRF (million	——— Usage Rates ———						
Year	Wells) (3)	Consumed	Unbilled	Unbilled	gallons)	gallons)	Base Rate(2)	Tier 1	Tier 2	Tier 3	Base Rate(2)	Usage Rate	
2021	9,116,724	8,776,686	340,038	3.73%	4,716	2,952	\$ 12.25	\$ 2.69	\$ 7.47	\$10.00	\$12.24	\$ 5.27	
2020	8,754,237	8,376,719	377,518	4.31%	4,868	3,046	11.95	2.62	7.29	9.76	11.94	5.14	
2019	8,940,850	8,461,067	479,783	5.37%	4,787	2,856	11.54	2.53	7.04	9.43	11.53	4.97	
2018	8,580,263	8,145,954	434,309	5.06%	5,084	2,389	11.15	2.44	6.80	9.77	11.14	4.80	
2017	8,678,789	8,250,441	428,348	4.94%	4,733	2,175	10.83	2.37	6.60	8.84	10.82	4.66	
2016	8,702,906	8,367,785	335,121	3.85%	4,731	1,858	10.51	2.30	6.41	8.58	10.50	4.52	
2015	8,501,733	7,765,499	736,234	8.66%	4,430	1,591	10.21	2.23	6.22	8.33	10.20	4.39	
2014	7,198,969	6,898,455	300,514	4.17%	4,320	1,767	9.91	2.16	6.04	8.08	9.90	4.26	
2013	8,098,031	7,634,861	463,170	5.72%	4,166	1,679	9.62	2.10	5.86	7.85	9.61	4.14	
2012	8,071,946	7,975,803	96,143	1.19%	3,976	1,608	9.34	2.04	5.69	7.62	9.33	4.02	

Notes:

Source: Authority Division of Finance and Operations and Maintenance.

⁽¹⁾ Total direct rates are reviewed annually by the Authority. Any change to rates is subject to a public hearing and a change is adopted by a Resolution of the Board of Directors of the Authority.

⁽²⁾ Base rates above represent one month of service.

⁽³⁾ Starting in 2018 Community Wells production was added to the total.

TABLE 7

ANNUAL WATER AND SEWER PERMITS (ERCs)

LAST TEN FISCAL YEARS (UNAUDITED)

Fiscal Year	Water Permits Issued	Sewer Permits Issued	Total Permits
2021	4,242	2,865	7,107
2020	4,206	3,004	7,210
2019	6,268	4,278	10,546
2018	4,269	3,289	7,558
2017	4,097	3,575	7,672
2016	3,709	3,121	6,830
2015	4,703	3,974	8,677
2014	3,780	3,825	7,605
2013	4,116	4,055	8,171
2012	3,404	3,134	6,538

Note: Equivalent Residential Connections (ERCs) are determined based upon the rated capacity of a water meter (e.g. the average amount of water which can flow through such a meter on a continuous basis) as compared to the rated capacity for a typical 5/8" residential water meter.

Source: Authority Division of Engineering.

TABLE 8

NUMBER OF WATER AND SEWER CUSTOMERS BY TYPE
LAST TEN FISCAL YEARS (UNAUDITED)

Water & Sewer **Fiscal** Total Year Residential Commercial **Industrial** Other 2021 79,853 4,967 84,820 2020 78,773 4,850 83,623 2019 77,662 4,725 82,387 2018 76,096 4,555 80,651 2017 74,293 4,399 78,692 2016 72,179 4,196 76,375 2015 70,170 3,779 13 228 74,190 2014 67,570 3,795 13 228 71,606 2013 65,054 3,596 13 228 68,891 2012 62,539 3,520 14 142 66,215

Notes: Information is from customer billing records as of December 31. "Commercial" includes apartments, multiple business malls, government buildings, schools and churches. As of 2016 only residential and commercial customer types are maintained. Source: Authority Division of Finance.

TABLE 9

WATER AND SEWER RATES CENTRAL SYSTEM
LAST TEN FISCAL YEARS (UNAUDITED)

					Fiscal Ye	ar				
Water Rates ⁽¹⁾	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Base Rate (Meter Size										
5/8"	\$ 12.25	\$ 11.95	\$ 11.54	\$ 11.15	\$ 10.83	\$ 10.51	\$ 10.21	\$ 9.91	\$ 9.62	\$ 9.34
3/4"	17.25	16.83	16.26	15.71	15.25	14.81	14.38	13.96	13.55	13.16
1"	36.26	35.38	34.18	33.03	32.06	31.13	30.23	29.34	28.49	27.66
1.5"	57.28	55.89	54.00	52.17	50.65	49.17	47.74	46.35	45.00	43.69
2"	92.31	90.06	87.01	84.07	81.62	79.24	76.94	74.69	72.52	70.41
3"	152.36	148.64	143.61	138.76	134.72	130.79	126.99	123.28	119.69	116.21
4"	252.43	246.28	246.28	229.90	223.21	216.71	210.41	204.27	198.32	192.54
6"	502.63	490.37	473.79	457.77	444.43	431.49	418.95	406.72	394.87	383.37
Usage Rate (per 1,000 gallons)										
Tier 1	\$ 2.69	\$ 2.62	\$ 2.53	\$ 2.44	\$ 2.37	\$ 2.30	\$ 2.23	\$ 2.16	\$ 2.10	\$ 2.04
Tier 2	7.47	7.29	7.04	6.80	6.60	6.41	6.22	6.04	5.86	5.69
Tier 3	10.00	9.79	9.43	9.11	8.84	8.58	8.33	8.08	7.85	7.62
					Fiscal Ye	ar				
Sewer					110001 10					
Rates(1)	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Base Rate (Meter Size										
5/8"	\$ 12.24	\$ 11.94	\$ 11.53	\$ 11.14	\$ 10.82	\$ 10.50	\$ 10.20	\$ 9.90	\$ 9.61	\$ 9.33
3/4"	17.50	17.08	16.50	15.94	15.48	15.03	14.59	14.17	13.75	13.35
1"	37.56	36.64	35.40	34.20	33.21	32.24	31.30	30.39	29.50	28.64
1.5"	59.71	58.25	56.28	54.38	52.79	51.26	49.77	48.31	46.91	45.54
2"	96.63	94.27	91.09	88.01	85.44	82.95	80.55	78.19	75.91	73.70
3"	159.93	156.03	150.75	145.66	141.41	137.29	133.31	129.41	125.64	121.98
4"	265.43	258.95	250.20	241.74	234.70	227.86	221.26	214.78	208.52	202.45
6"	529.17	516.26	498.80	481.94	467.90	454.27	441.11	428.20	415.73	403.62
Usage Rate (per 1,000 gallons)		\$ 5.14	\$ 4.97	\$ 4.80	\$ 4.66	\$ 4.52	\$ 4.39	\$ 4.26	\$ 4.14	\$ 4.02

Notes:

(1) Water and sewer rates are reviewed annually by the Authority. Any change to rates is subject to a public hearing and a change is adopted by a Resolution of the Board of Directors of the Authority. Base rates represent one month of service.

Source: Authority Division of Finance.

TABLE 10

WATER AND SEWER RATES COMMUNITY SYSTEMS

LAST TEN FISCAL YEARS (UNAUDITED)

				Fis	scal Year					
Water Rates ⁽¹⁾	2021	2020	2019	2018	2017	2016(2)	2015	2014	2013	2012
Base Rate (Meter Size)										
5/8"	\$	\$	\$	\$	\$	\$	\$ 22.00	\$ 10.04	\$ 10.04	\$ 10.04
3/4"							15.25	15.06	15.06	15.06
1"							34.58	34.14	34.14	34.14
1.5"							55.94	55.22	55.22	55.22
2"							91.53	90.36	90.36	90.36
3"							152.55	150.60	150.60	150.60
4"							254.25	251.00	251.00	251.00
6"							508.50	502.00	502.00	502.00
Usage Rate (per 1,000 gallons)										
Tier 1							\$ 3.03	\$ 2.99	\$ 2.99	\$ 2.99
Tier 2							\$ 7.32	\$ 7.17	\$ 7.17	\$ 7.23
Tier 3							\$ 9.46	\$ 9.29	\$ 9.29	\$ 9.34
New Customers							\$	\$	\$	\$
Established Customers	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
				Fis	scal Year					
Sewer Rates ⁽¹⁾	2021	2020	2019	2018	2017	2016(2)	2015	2014	2013	2012
Base Rate (Meter Size)										
5/8"	\$	\$	\$	\$	\$	\$	\$ 22.20	\$ 21.35	\$ 20.12	\$ 11.75
3/4"							33.30	32.03	30.18	17.63
1"							75.48	72.59	68.41	39.95
1.5"							122.10	117.43	110.66	64.63
2"							199.80	192.15	181.08	105.75
3"							337.50	320.25	301.80	176.25
4"							555.00	533.75	503.00	293.75
6"							1,110.00	1,067.50	1,006.00	587.50
Usage Rate (per 1,000	ф	d.	d.	d.	d.	d.	h 44.2.	Ф. 40.00	Φ 10.0=	ф. ссс
gallons)	\$	\$	\$	\$	\$	\$	\$ 11.34	\$ 10.90	\$ 10.27	\$ 6.00

Notes:

⁽¹⁾ Water and sewer rates are reviewed annually by the Authority. Any change to rates is subject to a public hearing and a change is adopted by a Resolution of the Board of Directors of the Authority. Base rates represent one month of service.

⁽²⁾ Effective April 1, 2016 Community System rates are the same as Central System rates. Please refer to table 9 for Central System Rates.

TABLE 11

AVAILABILITY CHARGES

LAST TEN FISCAL YEARS (UNAUDITED)

Residential (1)

Commercial (2)

Fiscal Year	Water		Wastewater		Total		Water		Wastewater		Total	
2021	\$	7,180	\$	8,711	\$	15,891	\$	21,540	\$	26,134	\$	47,674
2020		7,039		8,541		15,580		21,118		25,622		46,740
2019		6,901		8,373		15,274		20,704		25,120		45,824
2018		6,766		8,209		14,975		20,298		24,627		44,925
2017		6,766		8,209		14,975		20,298		24,627		44,925
2016		6,514		7,896		14,410		19,542		23,688		43,230
2015		6,514		7,896		14,410		19,542		23,688		43,230
2014		6,514		7,896		14,410		19,542		23,688		43,230
2013		6,514		7,896		14,410		19,542		23,688		43,230
2012		6,417		7,616		14,033		19,251		22,848		42,099

⁽¹⁾ Residential availability fee disclosed above is based on a 5/8" meter size..

⁽²⁾ Commercial availability fee disclosed above is based on a 1" meter size.

TABLE 12 TEN PRINCIPAL CUSTOMERS

Current Year and Ten Years Ago, 2021 and 2012 (Unaudited)

Fiscal Year 2021

	Annual Revenues											
Customers	Water	Percentage	Wastewater	Percentage	Total	Percentage						
VADATA Inc.	\$ 524,707	1.04%	\$ 348,575	0.62%	\$ 873,282	0.82%						
Loudoun County Public Schools	367,224	0.72%	486,684	0.87%	853,908	0.80%						
Amberlea @ South Riding	222,187	0.44%	296,141	0.53%	518,328	0.49%						
Newberry 1 Condominiums	220,467	0.43%	293,821	0.53%	514,288	0.48%						
Cuisine Solutions	240,237	0.47%	264,775	0.47%	505,012	0.47%						
Summit Properties Partnership LP	193,068	0.38%	247,453	0.44%	440,521	0.41%						
Howard Hughes Medical Institute	188,499	0.37%	168,207	0.30%	356,706	0.33%						
VADATA Inc.	244,359	0.48%	106,347	0.19%	350,706	0.33%						
Hayden Technologies	210,830	0.42%	76,993	0.14%	287,823	0.27%						
Wheeler Survey Company	185,348	0.37%	54,766	0.10%	240,114	0.23%						
Subtotal	2,596,926	5.12%	2,343,762	4.19%	4,940,688	4.63%						
Balance from other customers	48,094,744	94.88%	53,583,951	95.81%	101,678,695	95.37%						
Grand Totals	\$ 50,691,670	100.00%	\$ 55,927,713	100.00%	\$106,619,383	100.00%						

Fiscal Year 2012

	Annual Revenues										
Customers		Water	Percentage		Wastewater	Percentage	_	Total	Percentage		
Loudoun County Public Schools	\$	271,177	0.87%	\$	330,001	1.03%	\$	601,178	0.95%		
DDI Inc		185,458	0.60%		273,495	0.85%		458,953	0.73%		
Fox Properties, LLC		356,217	1.15%		96,846	0.30%		453,063	0.72%		
VADATA Inc.		213,576	0.69%		215,930	0.67%		429,506	0.68%		
AERC Ashbourough, LLC		196,059	0.63%		224,333	0.70%		420,392	0.67%		
Grizzly Properties, LLC		240,232	0.78%		89,948	0.28%		330,180	0.52%		
Amberlea @ South Riding		130,702	0.42%		169,840	0.53%		300,542	0.48%		
Summit Properties Partnership		118,510	0.38%		153,014	0.48%		271,524	0.43%		
VA Data		142,084	0.46%		128,449	0.40%		270,533	0.43%		
Stoneridge, LLC		111,911	0.36%		137,108	0.43%		249,019	0.40%		
Subtotal		1,965,926	6.34%		1,818,964	5.69%		3,784,890	6.01%		
	_2	9,027,176	93.66%		30,176,528	94.31%	5	9,203,704	93.99%		
Grand Totals	\$ 3	0,993,102	100.00%	\$	31,995,492	100.00%	\$ 6	52,988,594	100.00%		

DEBT CAPACITY INFORMATION

Debt capacity information is intended to assist the reader in understanding the Authority's debt burden and ability to issue additional debt. The ultimate guarantor of Authority debt are its customers; however, availability fees are designed to recover the cost of debt associated with expansion.

TABLE 13

RATIOS OF OUTSTANDING DEBT

LAST TEN FISCAL YEARS (UNAUDITED)

_	Revenue Bonds	e Fairfax Water Agreement			Virginia Revolving Loan Fund		Virginia Resources Authority Loan Fund		Total Amount	Per Capita ⁽¹⁾		As a Share of Personal Income ⁽²⁾
\$	241,159,142	\$	538,349	\$	5,150,242	\$	53,369	\$	246,901,102	\$	751	0.93%
	260,222,754		594,679		5,501,960		58,594		266,377,987		822	1.03%
	272,208,352		649,162		5,847,775		63,669		278,768,958		877	1.09%
	286,338,172		701,858		6,187,785		68,599		293,296,414		946	1.21%
	296,993,400		752,827		6,522,088		73,387		304,341,702		1,007	1.34%
	307,273,629		802,126		6,850,779		78,038		315,004,572		1,072	1.46%
	318,080,815		847,621		7,173,953		82,556		326,184,945		1,428	2.02%
	277,212,790		893,740		_	2	2,642,549		280,749,079		1,271	1.86%
	286,889,625		938,347		_		833,401		288,661,373		1,362	2.03%
	235,088,993		981,675		_		91,207		236,161,875		1,164	1.70%
	\$	Bonds \$ 241,159,142 260,222,754 272,208,352 286,338,172 296,993,400 307,273,629 318,080,815 277,212,790 286,889,625	Bonds \$ 241,159,142 \$ 260,222,754 272,208,352 286,338,172 296,993,400 307,273,629 318,080,815 277,212,790 286,889,625	Bonds Agreement \$ 241,159,142 \$ 538,349 260,222,754 594,679 272,208,352 649,162 286,338,172 701,858 296,993,400 752,827 307,273,629 802,126 318,080,815 847,621 277,212,790 893,740 286,889,625 938,347	Bonds Agreement I \$ 241,159,142 \$ 538,349 \$ \$ 260,222,754 594,679 \$ 272,208,352 649,162 \$ 286,338,172 701,858 \$ 296,993,400 752,827 \$ 307,273,629 802,126 \$ 318,080,815 847,621 \$ 277,212,790 893,740 \$ 286,889,625 938,347	Revenue Bonds Fairfax Water Agreement Revolving Loan Fund \$ 241,159,142 \$ 538,349 \$ 5,150,242 260,222,754 594,679 5,501,960 272,208,352 649,162 5,847,775 286,338,172 701,858 6,187,785 296,993,400 752,827 6,522,088 307,273,629 802,126 6,850,779 318,080,815 847,621 7,173,953 277,212,790 893,740 — 286,889,625 938,347 —	Revenue Bonds Fairfax Water Agreement Revolving Loan Fund I. \$ 241,159,142 \$ 538,349 \$ 5,150,242 \$ \$ 260,222,754 594,679 5,501,960 \$ 272,208,352 649,162 5,847,775 \$ 286,338,172 701,858 6,187,785 \$ 296,993,400 752,827 6,522,088 \$ 307,273,629 802,126 6,850,779 \$ 318,080,815 847,621 7,173,953 \$ 277,212,790 893,740 — 22 286,889,625 938,347 — 22	Revenue Bonds Fairfax Water Agreement Revolving Loan Fund Authority Loan Fund \$ 241,159,142 \$ 538,349 \$ 5,150,242 \$ 53,369 260,222,754 594,679 5,501,960 58,594 272,208,352 649,162 5,847,775 63,669 286,338,172 701,858 6,187,785 68,599 296,993,400 752,827 6,522,088 73,387 307,273,629 802,126 6,850,779 78,038 318,080,815 847,621 7,173,953 82,556 277,212,790 893,740 — 2,642,549 286,889,625 938,347 — 833,401	Revenue Bonds Fairfax Water Agreement Virginia Revolving Loan Fund Resources Authority Loan Fund \$ 241,159,142 \$ 538,349 \$ 5,150,242 \$ 53,369 \$ 260,222,754 \$ 594,679 \$ 5,501,960 \$ 58,594 272,208,352 649,162 5,847,775 63,669 63,669 6,187,785 68,599 296,993,400 752,827 6,522,088 73,387 307,273,629 802,126 6,850,779 78,038 318,080,815 847,621 7,173,953 82,556 277,212,790 893,740 — 2,642,549 286,889,625 938,347 — 833,401	Revenue BondsFairfax Water AgreementVirginia Revolving Loan FundResources Authority Loan FundTotal Amount\$ 241,159,142\$ 538,349\$ 5,150,242\$ 53,369\$ 246,901,102260,222,754594,6795,501,96058,594266,377,987272,208,352649,1625,847,77563,669278,768,958286,338,172701,8586,187,78568,599293,296,414296,993,400752,8276,522,08873,387304,341,702307,273,629802,1266,850,77978,038315,004,572318,080,815847,6217,173,95382,556326,184,945277,212,790893,740—2,642,549280,749,079286,889,625938,347—833,401288,661,373	Revenue Bonds Fairfax Water Agreement Virginia Revolving Loan Fund Resources Authority Loan Fund Total Amount Ca \$ 241,159,142 \$ 538,349 \$ 5,150,242 \$ 53,369 \$ 246,901,102 \$ 260,222,754 594,679 5,501,960 58,594 266,377,987 272,208,352 649,162 5,847,775 63,669 278,768,958 286,338,172 701,858 6,187,785 68,599 293,296,414 296,993,400 752,827 6,522,088 73,387 304,341,702 307,273,629 802,126 6,850,779 78,038 315,004,572 318,080,815 847,621 7,173,953 82,556 326,184,945 277,212,790 893,740 — 2,642,549 280,749,079 286,889,625 938,347 — 833,401 288,661,373	Revenue BondsFairfax Water AgreementVirginia Revolving Loan FundResources Authority Loan FundTotal

Notes

⁽¹⁾ Represents the total outstanding debt as a share of the population served by the Authority.

⁽²⁾ Represents the total outstanding debt as a share of the personal income of the population served by the Authority. Personal income and population figures can be found in Table 14.

TABLE 14

REVENUE COVENANT

LAST TEN FISCAL YEARS (UNAUDITED)

TEST NUMBER 1 (AMOUNTS EXPRESSED IN THOUSANDS)

Fiscal Year	F	Gross Revenues(1)	Less: Operating Expenses ⁽²⁾		Net Revenues Available for Debt Service		1.2 Times Senior Debt Service Requirements(3)		Subordinate Debt Service ⁽⁴⁾		Coverage (1.00 Req'd)
2021	\$	167,722	\$	63,956	\$	103,766	\$	20,879	\$	527	4.85
2020		161,673		34,535		127,138		25,026		527	4.98
2019		174,885		34,537		140,348		24,638		527	5.58
2018		143,985		44,142		99,843		24,422		527	4.00
2017		142,410		53,865		88,545		25,467		527	3.41
2016		136,522		49,469		87,053		25,881		527	3.30
2015		144,559		47,442		97,117		25,768		527	3.69
2014		135,640		41,266		94,374		24,762		235	3.78
2013		137,710		40,696		97,014		24,762		83	3.90
2012		119,030		38,703		80,327		21,569		83	3.71

⁽¹⁾ Total operating and non-operating revenues plus availability fees credited to capital contributions.

TEST NUMBER 2 (AMOUNTS EXPRESSED IN THOUSANDS)

Either/Or Coverage Requirements Adjusted Net Revenues Less 50% Adjusted Senior Debt Plus 50% Availability Net **Fiscal** Net Coverage Unrestricted Service Coverage Revenues (1.00 Req'd) (1.50 Req'd) Revenues Requirement $Reserves^{(1)} \\$ Year Fees 2021 \$ 103,766 26,604 77,162 17,399 4.43 206,920 11.89 2020 127,138 28,306 98,832 20,855 4.74 253,858 12.17 140,348 35,876 104,472 20,532 5.09 243,553 2019 11.86 2018 99,843 25,781 74,062 20,352 3.64 192,474 9.46 88,545 26,004 62,541 21,222 2.95 185,620 8.75 2017 87,053 23,050 64,003 21,568 2.95 196,936 9.15 2016 97,117 30,065 67,052 21,473 203,482 9.48 2015 3.12 2014 94,373 26,418 67,955 20,635 3.29 214,431 10.39 2013 97,014 30,216 66,798 20,635 3.24 218,639 10.60 2012 80,327 21,863 58,464 17,975 3.25 206,816 11.51

Notes:

(1) Unrestricted Reserves include unrestricted cash and investments less one month's operating budget (exclusive of depreciation and amortization).

Revenue Bonds, Refunding Series 2010, were issued in April, 2010.

Revenue Bonds, Refunding Series 2010A, were issued in September, 2010.

Revenue Bonds, Refunding Series 2012, were issued in March, 2012.

Revenue Bonds and Refunding Series 2013, were issued in June 2013.

Revenue Bonds and Refunding Series 2015, were issued in August 2015.

Revenue Bonds and Refunding Series 2019, were issued in October 2019

Revenue Bonds and Refunding Series 2021, were issued in August 2021

⁽²⁾ Total of operating expenses exclusive of depreciation and amortization.

⁽³⁾ Includes principal and interest of Revenue Bonds only.

⁽⁴⁾ Includes principal and interest payments to Fairfax Water and Virginia Resources Authority.

DEMOGRAPHIC AND ECONOMIC INFORMATION

Demographic and economic information is intended to assist the reader in understanding the environment within which the Authority's financial activities take place and to help make comparisons over time.

TABLE 15

DEMOGRAPHIC AND ECONOMIC STATISTICS

LAST TEN FISCAL YEARS (UNAUDITED)

	Co	oun	ty of Loudoun,	Loudoun Water - Service Area					
			Personal				Usa	age	
Fiscal Year	Population ⁽¹⁾		Income ⁽¹⁾ (thousands of dollars)	er Capita Personal ncome ⁽¹⁾	Unemploy- ment Rate ⁽¹⁾	Estimated Population Served ⁽²⁾	Water (Millions Gal.) ⁽²⁾	Sewage (Millions Gal.) ⁽²⁾	Customer Accounts(2)
2021	427,642	\$	34,545,348	\$ 80,781	3.6%	328,737	8,776	7,220	84,820
2020	423,953		33,910,305	79,986	7.5%	323,990	8,377	6,877	83,623
2019	412,864		33,142,658	80,275	2.4%	317,789	8,460	6,959	82,387
2018	402,561		31,762,679	78,070	2.7%	310,083	8,146	6,546	80,651
2017	392,711		29,726,365	74,878	3.2%	302,322	8,250	6,486	78,692
2016	379,807		28,256,919	73,295	3.4%	293,739	8,368	7,915	76,375
2015	368,669		26,464,381	70,750	3.8%	228,443	7,765	6,257	74,190
2014	354,983		24,739,279	68,286	4.5%	220,928	6,898	5,740	71,606
2013	341,187		23,456,669	67,023	4.7%	211,959	7,635	5,799	68,891
2012	328,890		23,134,171	68,468	4.8%	202,974	7,976	6,733	66,215

Sources: (1) County of Loudoun, VA Annual Comprehensive Financial Report - 2020.

⁽²⁾ Authority Department of Billing.

TABLE 16

PRINCIPAL EMPLOYERS, 2021 AND 2012

(UNAUDITED)

2021

Employers	Rank	Number of Employees	Percentage of Total Employment
Loudoun County Public Schools	1	12,382	7.50%
County of Loudoun	2	4,298	2.60%
Verizon Business (formerly MCI Worldcom)	3	2,500-5,000	2.27%
Northrop Grumman Innovation Systems (formerly Orbital ATK)	4	1,000-5,000	1.06%
U.S. Department of Homeland Security	5	1,000-5,000	1.06%
United Airlines	6	1,000-2,500	1.06%
Raytheon Technoloiges	7	1,000-2,500	1.06%
INOVA Health System - (Loudoun Hospital Center)	8	1,000-5,000	1.06%
Walmart	9	1,000-2,500	1.06%
United Postal Service	10	1,000-2,500	1.06%

2012

Employers	Rank	Number of Employees	Percentage of Total Employment
Loudoun County Public Schools	1	9,663	6.95%
County of Loudoun	2	3,477	2.50%
U.S. Department of Homeland Security	3	1,000-5,000	2.16%
Northrop Grumman Innovation Systems (formerly Orbital ATK)	4	1,000-5,000	2.16%
United Airlines	5	1,000-5,000	2.16%
M.C. Dean, Inc.	6	1,000-5,000	2.16%
Verizon Business (formerly MCI Worldcom)	7	1,000-5,000	2.16%
INOVA Health System - (Loudoun Hospital Center)	8	1,000-5,000	2.16%
United Postal Service	9	1,000-5,000	2.16%
America Online	10	1,000-5,000	2.16%

Note: These are the principal employers within the County of Loudoun, VA and are not necessarily customers of the Authority. Source: County of Loudoun, VA Annual Comprehensive Financial Report - 2021.

OPERATING INFORMATION

Operating information is intended to provide contextual information about the Authority's operations and resources to assist readers in using financial statement information to understand and assess the Authority's economic condition.

TABLE 17

NUMBER OF EMPLOYEES BY IDENTIFIABLE ACTIVITY

LAST TEN FISCAL YEARS (UNAUDITED)

Name	ENST TEN TISEME TENNS (STANGE	1120)	Full-time-Equivalent Employees as of December 31,								
Field Services		2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Unlity Protection	Water:										
Unlity Protection	Field Services	12	12	13	10	10	10	9	1	3	9.19
Cross Connection/BackFlow 8											
Unlify Systems Maintenance											
Fleet Maintenance			40	38	39		32	29	30	28	
Operations Technology 16 12 11 13 11 10 8 8 7 6 Water Operations 14 13 12 11 11 12 13 1 6 Plant Maintenance - 8 6 -<		2	2	2	2	2	2	1	1	1	1
Water Operations 14 13 12 11 11 11 12 13 1 6 Plant Maintenance - 8 6 -		16	12	11	13	11	10	8	8	7	6
Plant Maintenance		14	13	12	11	11	11	12	13	1	6
Sewer Sewe		_	8	6	_	_	_	_	_	_	_
Remote Facilities		29		40	32	21	22	17	9	9	9
Laboratory 10 10 9 9 9 9 9 8 6 5 -	Sewer:										
Laboratory 10 10 9 9 9 9 9 8 6 5 -	Remote Facilities	18	8	10	9	9	10	14	18	13	14.21
Broad Run WRF											_
Regulatory Programs 4 6 6 16 17 15 14 14 15 12 - Waste Water Operations 16 16 17 15 14 14 14 15 12 - Water Treatment Administration 22 17 17 21 19 8 6 12 8 - Plant Maintenance 22 17 17 21 19 8 6 12 8 - Engineering: Capital Programs -											28.55
Waste Water Operations 16 16 17 15 14 14 14 15 12 - Water Treatment Administration - - - - - 3 8 6 8 7 - Plant Maintenance 22 17 17 21 19 8 6 12 8 - Engineering: Capital Programs - - - - - - - - 8 9 9 Capital Design 7 7 7 7 5 6 5 6 -		4	6	6							
Water Treatment Administration Plant Maintenance 2 7 - - 3 8 6 12 8 - Engineering: Capital Programs - <td< td=""><td>0 , 0</td><td>16</td><td>16</td><td>17</td><td>15</td><td>14</td><td>14</td><td>14</td><td>15</td><td>12</td><td>_</td></td<>	0 , 0	16	16	17	15	14	14	14	15	12	_
Capital Programs		_	_	_	_	3	8	6	8	7	_
Capital Programs -	Plant Maintenance	22	17	17	21	19	8	6	12	8	-
Capital Construction 5 5 4 3 5 5 4 - - - Capital Design 7 7 7 7 5 6 5 6 - - - - Inspections 18 18 19 20 19 21 20 20 17 15 Land Development 6 7 6 6 5 6 4 7 9 9 11 Utility Planning 3 2 2 2 3 3 3 4 - - Administrative Staff 9 5 5 5 5 5 6 8 6.55 Trap Rock Water Treatment -	Engineering:										
Capital Construction 5 5 4 3 5 5 4 - - - Capital Design 7 7 7 7 5 6 5 6 - - - - Inspections 18 18 19 20 19 21 20 20 17 15 Land Development 6 7 6 6 5 6 4 7 9 11 Utility Planning 3 2 2 2 3 3 3 4 - - Administrative Staff 9 5 5 5 5 5 6 8 6.55 Trap Rock Water Treatment -	Capital Programs	_	_	_	_	_	_	_	8	9	9
Inspections		5	5	4	3	5	5	4	-	-	_
Land Development 6 7 6 6 5 6 4 7 9 11 Utility Planning 3 2 2 2 3 3 3 4 - - Administrative Staff 9 5 5 5 5 5 6 8 6.55 Trap Rock Water Treatment - - - - 4 4 5 5 - - Administration: Billing -	Capital Design	7	7	7	5	6	5	6	-	-	_
Utility Planning 3 2 2 2 3 3 3 4 - - Administrative Staff 9 5 5 5 5 5 6 8 6.55 Trap Rock Water Treatment - - - - 4 4 5 5 - - Administration: Billing/Customer Service -	Inspections	18	18	19	20	19	21	20	20	17	15
Administrative Staff 9 5 5 5 5 5 5 6 8 6.55 Trap Rock Water Treatment - - - - 4 4 5 5 - - Administration: Billing/Customer Service -	Land Development	6	7	6	6	5	6	4	7	9	11
Trap Rock Water Treatment - - - 4 4 5 5 - - Administration: Billing/Customer Service -	Utility Planning								4		
Administration: Billing/Customer Service	Administrative Staff	9	5	5	5	5	5	5	6	8	6.55
Billing/Customer Service - <td>Trap Rock Water Treatment</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>4</td> <td>4</td> <td>5</td> <td>5</td> <td>_</td> <td>-</td>	Trap Rock Water Treatment	-	-	-	-	4	4	5	5	_	-
Finance 2 2 2 2 3 5 8 7 3 3 4 Accounting 6 6 6 5 6 4 5 3 3 1 1	Administration:										
Accounting 6 6 5 6 4 4 4 6 5 4 Billing 4 4 4 4 4 4 3 3 4 4.46 4.71 Procurement 3 4 3 3 4 4 4 4 5 3 Safety - - - - - - - 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 1 3 3 3 3 3 3	Billing/Customer Service	_	_	-	-	-	3	_	-	-	_
Billing 4 5 3 Safety -	Finance	2	2	2	3	5	8	7	3	3	4
Procurement 3 4 3 3 4 4 4 4 4 4 4 4 5 3 Safety - - - - - - - - 2 3	Accounting	6	6	5	6	4	4	4	6	5	4
Safety - - - - - 2 2 2 2 2 2 Business Solutions -	Billing	4	4	4	4	4	3	3	4	4.46	4.71
Business Solutions - - - - 6 5 5 7 -	Procurement	3	4	3	3	4	4		-		
Facilities 9 8 8 7 6 6 5 6 6 6 Customer Relations 16 15 15 15 15 13 12 27 18.61 10.31 Information Technology 26 25 22 19 20 16 16 16 15 13 Human Resources 3 3 3 3 3 0 5 3 4 Corporate Communications 2 3 3 3 3 3 3 3 - - - - Corporate Services -		_	-	-					2	2	2
Customer Relations 16 15 15 15 15 13 12 27 18.61 10.31 Information Technology 26 25 22 19 20 16 16 16 15 13 Human Resources 3 3 3 3 3 0 5 3 4 Corporate Communications 2 3 3 3 3 3 3 - </td <td>Business Solutions</td> <td></td> <td></td> <td>_</td> <td>6</td> <td>5</td> <td>5</td> <td></td> <td>_</td> <td>-</td> <td>_</td>	Business Solutions			_	6	5	5		_	-	_
Information Technology 26 25 22 19 20 16 16 16 15 13 Human Resources 3 3 3 3 3 3 0 5 3 4 Corporate Communications 2 3 3 3 3 3 - <td>Facilities</td> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td>6</td> <td></td> <td></td> <td>6</td> <td></td>	Facilities	9					6			6	
Human Resources 3 3 3 3 3 3 3 3 4 Corporate Communications 2 3 3 3 3 3 3 3 3 - <td></td>											
Corporate Communications 2 3 3 3 3 3 3 - <td>0,</td> <td></td>	0,										
Corporate Services -									5	3	4
General Services 4 4 4 4 4 4 -		2	3	3	3	3	3		-	-	-
General Managers' Office 7 9 9 8 7 7 5 11 9 8									-	-	-
Total Employees: 325.00 318.00 308.00 293.00 282.00 272.00 252.00 263.00 216.07 210.52	General Managers' Office	7	9	9	8	7	7	5	11	9	8
	Total Employees:	325.00	318.00	308.00	293.00	282.00	272.00	252.00	263.00	216.07	210.52

Notes: All managers or directors are included with their divisions. A full-time employee is scheduled to work 1,950 hours per year (including vacation and sick leave). Full-time-equivalent employment is calculated by dividing total labor hours by 1,950.

Source: Authority Division of Human Resources.

TABLE 18

OPERATING AND CAPITAL INDICATORS
LAST TEN FISCAL YEARS (UNAUDITED)

	Fiscal Year									
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Water Services:										
Miles of Main Miles of Service Lines	1,421.5 179.0	1,381.9 168.0	1,358.2 159.0	1,332.4 151.0	1,285.0 138.0	1,250.0 127.0	1,210.0 112.0	1,156.0 96.0	1,129.0 89.0	1,103.0 62.0
Number of:										
Pressure Regulating Stations Valves Fire Hydrants Service Accounts Community Water Systems	36 46,414 14,044 84,820 5	36 44,535 13,598 83,623 5	35 43,332 13,270 82,387 5	28 42,044 12,981 80,651 5	27 41,994 12,551 78,692	23 38,773 12,177 76,375 6	23 37,123 11,755 74,190 6	23 34,886 11,130 71,606 6	23 34,120 10,917 68,891 5	17 32,537 10,439 65,589 5
Water Capacity (MGD):										
Capacity at Fairfax Water Capacity at City of Fairfax Capacity at Goose Creek WTP ⁽²⁾ Capacity at Trap Rock WTP ⁽³⁾	50.0 - 7.0 20.0	50.0 - 7.0 20.0	50.0 - 7.0 20.0	50.0 - 7.0 20.0	50.0 - 7.0 -	50.0 - 7.0 -	50.0 - 7.0 -	50.0 - 7.0 -	50.0 7.0 - -	50.0 7.0 - -
Wastewater Services:										
Miles of Gravity Main Miles of Force Main Miles of Lateral Number of Disposal Systems	1,000.0 55.0 265.0 8	983.0 54.0 250.0 8	969.0 53.0 237.0 8	956.0 54.0 225.0 8	928.0 49.0 210.0 9	908.0 48.0 194.0 11	884.0 48.0 138.0 11	848.0 47.0 138.0 11	831.0 47.0 127.0 9	803.0 46.0 103.0 9
Wastewater Treatment Capacity (M	GD):									
Capacity at DCWASA Capacity at Broad Run Water Reclamation Facility	13.8 11.0	13.8 11.0	13.8 11.0	13.8 11.0	13.8 11.0	13.8 11.0	13.8 11.0	13.8 11.0	13.8 11.0	13.8 11.0
Reclaimed Water Services:										
Miles of Mains Miles of Service Lines(1)	21.0 2.2	19.0 1.9	19.0 1.9	18.0 1.5	20.0	20.0 0.8	18.0 0.5	16.0 0.5	14.0 0.5	12.0

Notes: Additional operating indicators can be found in Tables 7-9.

Source: Divisions of Information Technology, Finance and Water Treatment.

⁽¹⁾ This is a new service, the data is unavailable, in this format, prior to 2013. This data will be presented prospectively until ten years is accumulated.

⁽²⁾ Loudoun Water purchased the Goose Creek WTP from the City of Fairfax in 2014. This data will be presented prospectively until ten years is accumulated.

⁽³⁾ Loudoun Water began producing water at the Trap Rock WTP in 2018. This data will be presented prospectively until ten years is accumulated.





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