Orange Water and Sewer Authority
OWASA is Carrboro-Chapel Hill's not-for-profit public service agency delivering high quality water, wastewater, and reclaimed water services.

Agenda
Virtual Annual Meeting of the OWASA Board of Directors
Thursday, September 24, 2020, 6:00 P.M.

Due to COVID-19 public health concerns, the Orange Water and Sewer Authority (OWASA) Board of Directors is conducting this meeting virtually utilizing Microsoft Teams software. Board Members, General Counsel and staff will be participating in the meeting remotely.

The Board of Directors appreciates and invites the public to attend and observe its virtual meetings online. Public comment is invited via written materials, ideally submitted at least two days in advance of the meeting to the Board of Directors by sending an email to board_and_leadership@owasa.org or via US Postal Service (Clerk to the Board, 400 Jones Ferry Road, Carrboro, NC 27510). Public comments are also invited during the Board Meeting via telephone, and members of the public will need to be available to call-in during the meeting. Please contact the Clerk to the Board at aorbich@owasa.org or 919-537-4217 to make arrangements by 3:00 p.m. the day of the meeting.

Public speakers are encouraged to organize their remarks for delivery within a four-minute time frame allowed each speaker, unless otherwise determined by the Board of Directors. The Board may take action on any item on the agenda.

Announcements

a. Announcements by the Chair
   - Any Board Member who knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight is asked to disclose the same at this time.
   - Update on the September 17, 2020 Orange County Climate Council Meeting

b. Announcements by Board Members
   - Update on the September 17, 2020 Meeting between the Chapel Hill Town Council OWASA Committee and Chapel Hill Appointees to the OWASA Board (Ruchir Vora)

c. Announcements by Staff

d. Additional Comments, Suggestions, and Information Items by Board Members (Ray DuBose)

Petitions and Requests

1. Public
2. Board
3. Staff

Presentation of Annual Report

1. A. Staff Comments
   B. Martin Starnes & Associates, CPAs, P.A.'s Comments

Consent Agenda

Information and Reports

2. 12 Month Board Meeting Schedule (Todd Taylor)

Regular Agenda

Information and Reports

3. Update on OWASA's COVID-19 Information and Discussion by the Board (Todd Taylor)
4. Forest Management Program Update (Johnny Riley)
5. Update on the New Water Main Prioritization Model (Vishnu Gangadharan/Allison Spinelli)
6. Discuss Process to Update the Strategic Plan (Todd Taylor/Mary Tiger)

Discussion and Action

7. Resolution Reappointing the Firm of Epting and Hackney as General Counsel to the Orange Water and Sewer Authority (Jody Eimers)

Summary of Board Meeting Action Items

8. Executive Director will summarize the key staff action items from the Board Meeting and note significant items for discussion and/or action expected at the next meeting

PRESENTATION OF ANNUAL REPORT

Staff Comments ..... Stephen Winters, CPA

Martin, Starnes & Associates ..... Elsa Watts, CPA

September 24, 2020

Orange Water and Sewer Authority

OWASA is Carrboro-Chapel Hill's not-for-profit public service agency delivering high quality water, wastewater, and reclaimed water services.

MEMORANDUM

TO: Board of Directors

THROUGH: Todd Taylor, P.E.

FROM: Stephen Winters, CPA

DATE: September 18, 2020

SUBJECT: Draft of Orange Water and Sewer Authority Comprehensive Annual Financial Report for the year ended June 30, 2020.

A draft of the Comprehensive Annual Financial Report (CAFR) for the year ended June 30, 2020 is presented for the Board's review. Martin, Starnes & Associates has completed its audit and has issued an unmodified opinion.

Unmodified Opinion Explained

An unmodified audit opinion means that in the independent auditor's judgment, a company's financial records and statements are fairly and appropriately presented, and in accordance with Generally Accepted Accounting Principles (GAAP). It is issued when the independent auditor believes that the company's financial statements are sound; that is, the statements are free from material misstatements. This is different from a qualified opinion which is issued when the independent auditor discovers something in the financial statements that is subject to major concern.

Draft Version of CAFR

The report is in draft form as we are still compiling supplemental information that will be included in the report. As a component unit of the Town of Chapel Hill for reporting purposes, we are required to include information from the Town's CAFR that is not yet available. We will provide the final version to the Board of Directors in October after a mandatory review by the North Carolina Local Government Commission.

Stephen Winters, CPA
Director of Finance and Customer Service

400 Jones Ferry Road, Carrboro, NC 27510 919-968-4421 info@owasa.org @OWASA1 www.owasa.org

ORANGE WATER AND SEWER AUTHORITY

(A COMPONENT UNIT OF THE TOWN OF CHAPEL HILL, NORTH CAROLINA)

COMPREHENSIVE ANNUAL FINANCIAL REPORT

FOR THE FISCAL YEARS ENDED JUNE 30, 2020 AND 2019

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Prepared by:

Orange Water and Sewer Authority

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ORANGE WATER AND SEWER AUTHORITY

AUDITED FINANCIAL STATEMENTS
FOR THE FISCAL YEARS ENDED JUNE 30, 2020 AND 2019

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ORANGE WATER AND SEWER AUTHORITY

AUDITED FINANCIAL STATEMENTS
FOR THE FISCAL YEARS ENDED JUNE 30, 2020 AND 2019

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September 2, 2020

To our Customers, Bondholders and the Orange Water and Sewer Authority Board of Directors:

We are pleased to present our Comprehensive Annual Financial Report for the Fiscal Year beginning July 1, 2019 and ending June 30, 2020 (FY 2020). This report conforms to the reporting and accounting standards of the Governmental Accounting Standards Board (GASB), the Financial Accounting Standards Board (FASB), and the Government Finance Officers Association's (GFOA's) *Governmental Accounting, Auditing and Financial Reporting* document. Orange Water and Sewer Authority (OWASA) is responsible for the accuracy, completeness and fairness of the information presented including all disclosures.

Highlights

In FY 2020, OWASA served the Carrboro-Chapel Hill community in full compliance with federal and state standards for drinking water, treated wastewater, and reclaimed water quality.

OWASA's financial position improved during the year. OWASA ended the year with a modified accrual based net income less debt service of about $7.8 million. The resulting increase in financial reserves will be used for future capital improvement needs.

Please refer to the management's discussion and analysis and the audited general purpose financial statements for additional information on OWASA's financial performance during FY 2020.

Scope and Organization of this Report

- The Introductory Section (unaudited) contains this letter of transmittal and information about OWASA's organizational structure, principal officers, major initiatives, accomplishments, and future projects.

- The Financial Section includes the independent auditor's report; OWASA management's discussion and analysis of the year; the general purpose financial statements; and supplementary schedules. The general purpose financial statements can be issued separately for securities offerings or other purposes.

- The Statistical Section (unaudited) presents fiscal and other data to provide a more complete understanding of OWASA, the community we serve and the local economy.

- The Compliance Section presents the independent auditor's report on compliance with various internal control and other requirements related to certain forms of financial assistance.

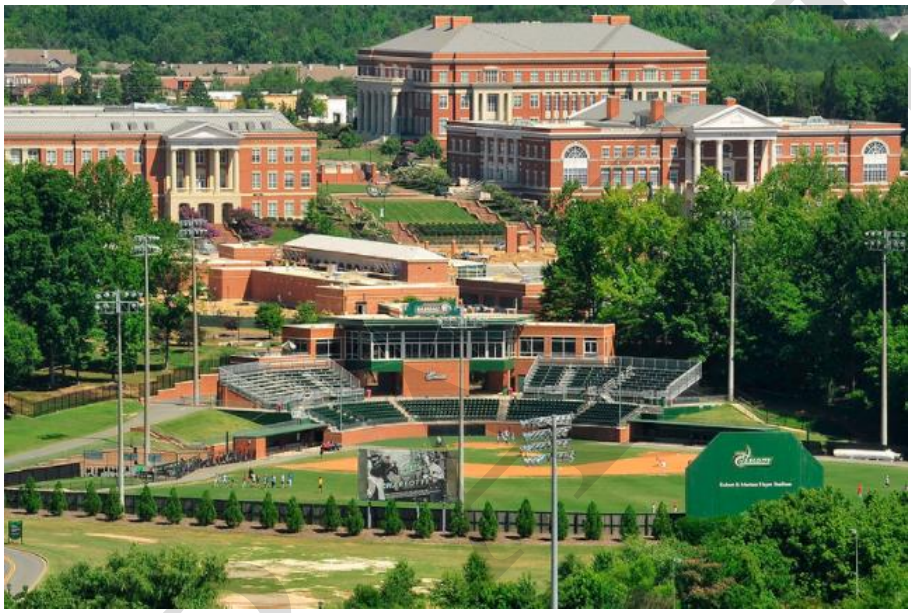
As a single-purpose governmental entity, OWASA's financial activities are reported as a sole enterprise fund through which is captured and disclosed the inflow and outflow of total economic resources under the full accrual method of accounting. For financial reporting purposes under GASB Statement 14,

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OWASA is considered a component unit of the Town of Chapel Hill because the Town Council appoints a majority of OWASA's Board Members and may remove them without cause. The Comprehensive Annual Financial Report (CAFR) of the Town of Chapel Hill therefore includes OWASA's financial data and OWASA's CAFR includes statistical data about the Town.

Background

A special purpose local governmental entity organized under state law, OWASA is a public non-profit agency providing water, wastewater and reclaimed water services to the Carrboro-Chapel Hill community. We serve about 83,000 people.



University of North Carolina Campus

Creation of OWASA

Before OWASA was established, the University of North Carolina at Chapel Hill (UNC) and the Towns of Chapel Hill and Carrboro provided public water and sewer services to the Carrboro-Chapel Hill community.

Following recommendations of a Utilities Study Commission created in 1971, on August 9, 1976, the state approved conveyance of the University's water and wastewater utilities to OWASA in accord with *Agreements of Sale and Purchase* among the University, the Towns and OWASA. The Town of Carrboro, the Town of Chapel Hill and Orange County governing boards incorporated OWASA under Chapter 162A of state law. OWASA began serving the community on February 16, 1977 upon transfer of the municipal and University systems to OWASA.

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Cane Creek Reservoir

Governance

A nine-member Board of Directors governs OWASA. The Chapel Hill Town Council appoints five, and the Carrboro Town Council and the Orange County Board of Commissioners each appoints two Board Members. The OWASA Board adopts the annual budget; sets rates, fees, and charges based on cost-of-service principles; makes policy decisions; approves issuance of revenue bonds or other debt instruments; and appoints the Executive Director, General Counsel and Independent Auditor.

Water System

Our water comes from Cane Creek Reservoir, a three billion-gallon supply eight miles west of Carrboro; University Lake, a 450 million-gallon reservoir on the west side of Carrboro; and the 200 million-gallon Quarry Reservoir three miles west of Carrboro.



Jones Ferry Road Water Treatment Plant

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OWASA has a state allocation of water supply storage capacity in Jordan Lake equivalent to about five million gallons of water per day (MGD). OWASA does not currently receive water from Jordan Lake to meet the daily needs of its service area nor does it own facilities to do so. However, through mutual aid agreements, OWASA can obtain drinking water from Jordan Lake from the Town of Cary through OWASA's system connection with the City of Durham. OWASA also maintains emergency water system connections with the Town of Hillsborough and Chatham County public drinking water systems.

Our Jones Ferry Road Water Treatment Plant (WTP) has a capacity of 20 MGD. Our drinking water storage capacity is eight million gallons and we maintain about 400 miles of raw water, finished water, and water interconnection lines.

OWASA met or surpassed all federal and state standards for drinking water quality in 2020.

Wastewater System

We operate and maintain about 340 miles of sanitary sewer and force main lines, and 21 pump stations to carry wastewater to the Mason Farm Wastewater Treatment Plant (WWTP), which has a peak treatment capacity of 14.5 MGD (daily average for a calendar month).



Mason Farm Wastewater Treatment Plant

Highly treated wastewater is recycled to the natural environment at Morgan Creek on the southeast side of Chapel Hill or provided as reclaimed water for non-drinking uses as described below. Morgan Creek is a tributary of Jordan Lake, a water source for several communities in the region.

OWASA's treated wastewater was in full compliance with regulatory standards in 2020.

Reclaimed Water System

OWASA operates a reclaimed water (RCW) system at the Mason Farm WWTP. Federal and State grants funded about 10% of the project to build the system with UNC, OWASA's primary RCW customer, providing funds for the balance of the construction costs.

The RCW system is financially self-supporting. OWASA recovers all operating, maintenance, management, and overhead costs through rates and fees. Financial responsibilities, including rate decisions by OWASA, and other technical matters are specified in a contract between OWASA and UNC.

The University uses RCW for make-up water in cooling towers at chiller plants, toilet flushing, and irrigation. UNC's RCW use averaged about 680,000 gallons per day during FY 2020.
By decreasing the amount of drinking water used for non-drinking purposes, the RCW system helps reduce the community's risks in future droughts and other water shortages. The system also enables OWASA to defer the need for expansion of water supply and treatment capacity and reduces energy use and costs.

Economic Conditions

In March 2020, the COVID-19 pandemic began impacting the economy of OWASA's service area. UNC essentially closed its campus and conducted classes online for the rest of the semester. Many businesses closed or significantly reduced operations. Drinking water demand for UNC and businesses decreased substantially while water use by residences increased. The net impact was a reduction in overall drinking water demand of about 12% as compared to the same time period in 2019.

In June 2020, the unemployment rate in Orange County was 6% compared to the North Carolina average of 7.6 percent and US average of 11.1 percent (Source: US Bureau of Labor Statistics). The rate for each category is higher than typical, reflecting the impact of the pandemic. According to the most recent census, the estimated population of Orange County increased by 13 percent from 2000 to 2010. The estimated population for Orange County as of December 2019 was 142,938.



Farmers' Market in Carrboro, North Carolina

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Initiatives and Accomplishments

Progress was made on several key initiatives during the year and work will continue in FY 2021.

- Update of OWASA's Long-Range Water Supply Plan. Our raw water demand projections are complete and supply management alternatives narrowed to focus on using our allocation of Jordan Lake.
- To reduce energy costs, we are installing solar panels on three properties as part of our energy management plan.
- In compliance with the America's Water Infrastructure Act, OWASA completed an assessment of risks to our drinking water system. Next steps include evaluating risk and resilience recommendations and developing plans to address them.

No Change in Rates – Finance planning prior to the arrival of the pandemic indicated that, to support investments in operations and infrastructure, OWASA would need to implement a 5% rate increase in October 2020. Given the economic hardship caused by the pandemic, OWASA's Board of Directors and staff realized that increasing the cost of water and sewer services would worsen the financial challenges many of our customers are experiencing. In June 2020, the Board approved a schedule of rates and fees for FY 2021 that does not include an increase in any of the rates OWASA charges for services.

Financial Information

The annual budget is an integral part of OWASA's financial operations. Appropriations are set at the departmental level. The annual budget and capital project ordinances are adopted by the OWASA Board of Directors creating a legal limit on annual spending. Multi-year project ordinances are adopted for capital projects. OWASA's operations are accounted for, and reported as, an enterprise fund because our services are primarily funded with user fees.

OWASA's management is responsible for the accounting system and for establishing and maintaining internal financial controls. The internal control system is designed to provide reasonable assurance regarding the safeguarding of assets against loss from unauthorized use or disposition and the reliability of financial records for preparing financial statements in conformity with accounting principles generally accepted in the United States of America. Management believes that OWASA's internal accounting controls adequately protect assets and provide reasonable assurance of the proper recording of financial transactions.

OWASA is required by law to use cost-of-service rates. We set our rates, fees and charges to cover the cost for each of our services. We use increasing block water rates for individually metered residential customers and a year-round water rate for multi-family master metered customers. OWASA uses seasonal water rates for non-residential customers; non-residential customers pay a higher water rate during the peak demand months of May through September and a lower rate in the remaining months. Irrigation-only water customers pay a year-round water rate which reflects the higher system capacity necessary to serve them. When development creates new connections to OWASA's system, fees are charged to ensure that the appropriate portion of the capital costs of providing system capacity is paid for by the parties that tap into and benefit from that capacity. Annual adjustments of rates, fees and charges normally occurs on October 1.

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Independent Audit

OWASA is required by state law to undergo an annual independent financial audit. OWASA's auditor, Martin, Starnes & Associates, CPAs, P.A., was retained following an open, competitive, qualifications-based selection process. The independent auditor's report on the General Purpose Financial Statements is included in the Financial Section of this report.

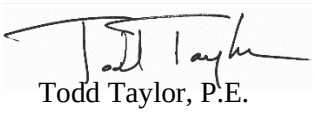
Acknowledgements

We express our appreciation to the independent certified public accountants, Martin, Starnes & Associates, CPAs, P.A., who assisted and significantly contributed to this report.

Preparation of this report could not have been accomplished without the efficient and dedicated work of the OWASA team.

We thank the OWASA Board of Directors for their responsible policy guidance in financial management.

Respectfully submitted,



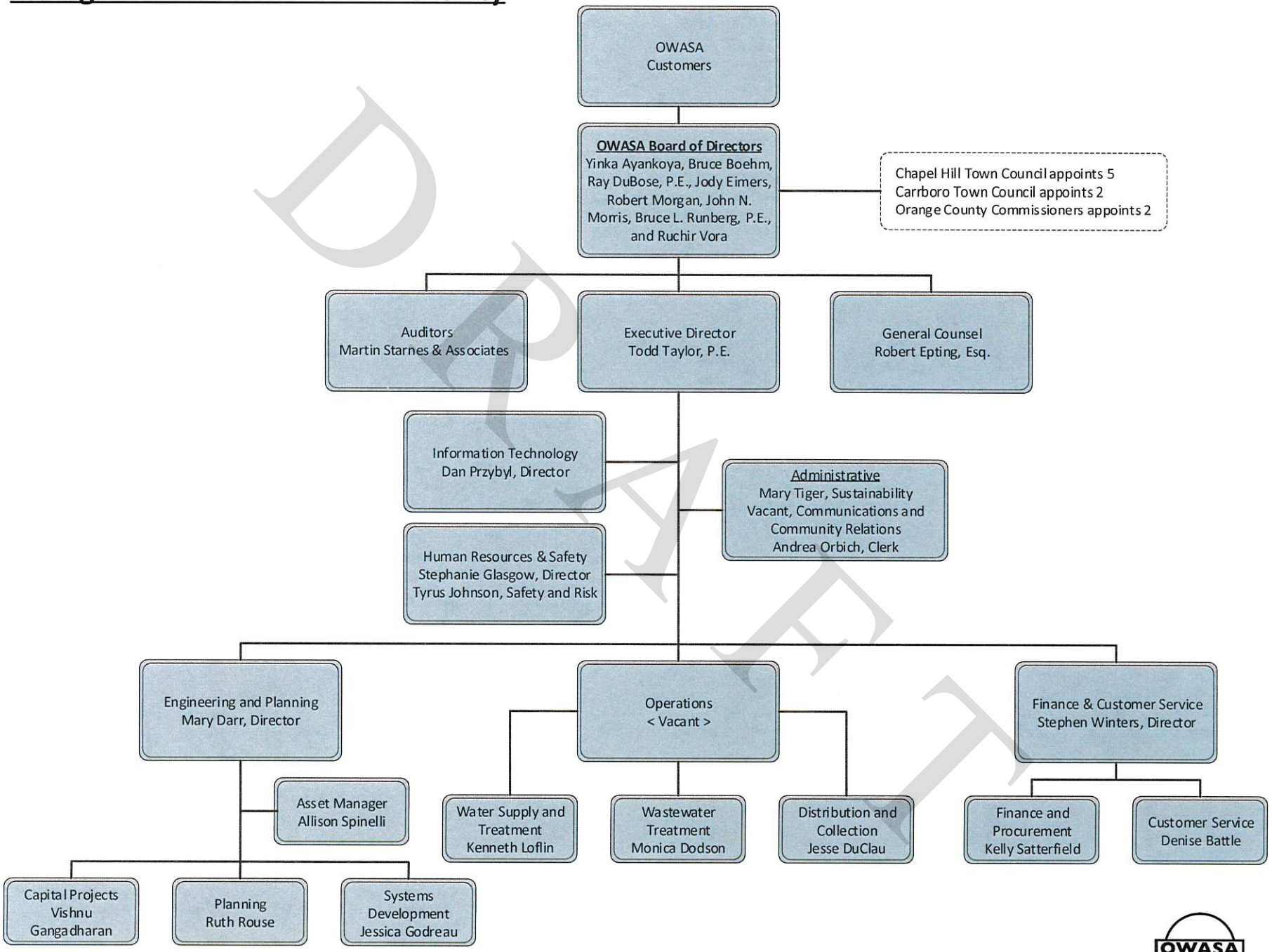
Todd Taylor, P.E.
Executive Director



Stephen Winters, CPA
Director of Finance and Customer Service

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Orange Water and Sewer Authority



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OWASA

07-06-2020

ORANGE WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS

CHAIR

Ray DuBose
103 Easy Street
Chapel Hill, NC 27516
Appointed by Orange County; Term Expires 6/30/23

VICE CHAIR

Ruchir Vora
522 Dogwood Drive
Chapel Hill, NC 27516
Appointed by Chapel Hill; Term Expires 11/30/20*

SECRETARY

Bruce Boehm
1921 South Lakeshore Drive
Chapel Hill, NC 27514
Appointed by Chapel Hill; Term Expires 6/30/22

MEMBERS

Yinka Ayankoya
200 Gary Road
Carrboro, NC 27510
Appointed by Carrboro; Term Expires 6/30/22

John Cooley
140 W. Franklin Street, Unit 418
Chapel Hill, NC 2516
Appointed by Chapel Hill; Resigned 2/27/2020

Jody Eimers
3120 Landeau Drive
Hillsborough, NC 27278
Appointed by Orange County; Term Expires 6/30/21

Robert Morgan
16 Kendall Drive
Carrboro, NC 27510
Appointed by Orange County: Term Expires 6/30/21

John N. Morris
614 Beechtree Court
Chapel Hill, NC 27514
Appointed by Chapel Hill; Term Expires 11/30/20*

Bruce L. Runberg
601 MLK Jr. Blvd., Unit #1
Chapel Hill, NC 27514
Appointed by Chapel Hill; Term Expires 6/30/22

* Member's term has been extended. Chapel Hill Town Council has extended the board member terms originally scheduled to end in June 2020 and plans to make appointments in the fall.

ORANGE WATER AND SEWER AUTHORITY
MANAGEMENT TEAM

Denise Battle, Customer Service Manager

Mary Darr, P.E., Director of Engineering and Planning

Monica Dodson, Wastewater Treatment and Biosolids Recycling Manager

Jesse DuClau, Water Distribution and Wastewater Collection Systems Manager

Vishnu Gangadharan, P.E., Engineering Manager (Capital Projects)

Stephanie Glasgow, M.E.S.H., MPM, P.H.R., SHRM-CP, Director of Human Resources and Safety

Jessica Godreau, P.E., BCEE, Engineering Manager (Systems Development)

Kenneth Loflin, Water Supply and Treatment Manager

Andrea Orbich, Executive Assistant

Daniel Przybyl, CGCIO, Director of Information Technology

Ruth Rouse, A.I.C.P., Planning and Development Manager

Kelly Satterfield, CPA, Finance and Procurement Manager

Todd Taylor, Executive Director

Mary Tiger, Sustainability Manager

Vacant, General Manager of Operations

Stephen Winters, CPA, Director of Finance and Customer Service

GENERAL COUNSEL

Robert Epting, Esquire

Epting and Hackney, Attorneys at Law

MARTIN ♦ STARNES
& ASSOCIATES, CPAs, P.A.
"A Professional Association of Certified Public Accountants and Management Consultants"

INDEPENDENT AUDITOR'S REPORT

To the Board of Directors
Orange Water and Sewer Authority
Carrboro, North Carolina

Report on the Financial Statements

We have audited the accompanying financial statements of the business-type activities of the Orange Water and Sewer Authority (the "Authority") (a component unit of the Town of Chapel Hill, North Carolina), as of and for the years ended June 30, 2020 and 2019, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

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

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

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Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities of the Orange Water and Sewer Authority as of June 30, 2020 and 2019, and the respective changes in financial position and cash flows, thereof, for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, the Other Post-Employment Benefits Schedules of Changes in the Total OPEB Liability and Related Ratios, and the Local Governmental Employees' Retirement System Schedules of the Proportionate Share of Net Pension Asset/Liability and Contributions be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of the 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.

Supplementary and Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Orange Water and Sewer Authority's basic financial statements. The introductory information, budgetary schedules, the statistical section, as well as the Schedule of Expenditures of Federal and State Awards, as required by Title 2 U.S. *Code of Federal Regulations (CFR) Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards,* and the State Single Audit Implementation Act, are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The budgetary schedules and the Schedule of Expenditures of Federal and State Awards are the responsibility of management and were derived from, and relate directly to, the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the budgetary schedules and the Schedule of Expenditures of Federal and State Awards are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

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

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Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated September 2, 2020 on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, and other matters. The purpose of that report is 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 the Orange Water and Sewer Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control over financial reporting and compliance.

Martin Starnes & Associates, CPAs, P.A.
Hickory, North Carolina
September 2, 2020

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Management's Discussion and Analysis

The management of the Orange Water and Sewer Authority (OWASA) offers the following discussion and analysis as a supplement to the organization's financial position and activities for the fiscal years ended June 30, 2020 and 2019. This presentation is intended to enhance the readers' understanding of the financial statements which follow and should be read in conjunction with those statements and the introductory letter of transmittal found on pages i–vii.

Financial Highlights

- At June 30, 2020, OWASA's assets and deferred outflows of resources exceeded its liabilities and deferred inflows of resources by $276.2 million.
- OWASA's total net position increased by $3.8 million, primarily resulting from income realized from operating activities.
- Due to the condition and capacity of OWASA's system, about 81% of the organization's $25.6 million capital expenditures for Fiscal Year (FY) 2020 were invested in replacing and rehabilitating existing infrastructure.
- Non-current liabilities increased by about $12.5 million as a result of securing low-interest loans from the state of North Carolina, issuing the Series 2019 revenue bonds, and making principal payments on long-term debt.
- OWASA's credit ratings of AA+ from Fitch, Aa1 from Moody's, and AAA from Standard & Poor's remain unchanged.

Overview of the Financial Statements

OWASA's primary mission is to provide water, wastewater, and reclaimed water services to Chapel Hill, Carrboro, and portions of southeastern Orange County. OWASA does not provide other general purpose government services or programs. OWASA's operations, capital improvements program, and debt payments are funded almost entirely through rates, fees and other charges for water, wastewater, and reclaimed water services. OWASA is considered to be, and therefore presents its financial report, as a stand-alone enterprise fund.

As a stand-alone enterprise fund, OWASA's basic financial statements consist of a *Statements of Net Position*, a *Statements of Revenues, Expenses and Changes in Net Position* and a *Statements of Cash Flows*. These statements, together with the *Management's Discussion and Analysis*, provide both short- and long-term financial information about OWASA's financial position. Presentations of two-year and three-year comparative data in these schedules are intended to enhance the reader's ability to gauge OWASA's fiscal strength and provide useful trend information. *Notes to the Financial Statements* and a *Schedule of Revenues and Expenditures – Budget and Actual* appear immediately following the basic financial statements. In addition, other required supplementary information, generally statistical and demographic in nature, is presented.

The *Statements of Net Position* presents OWASA's basic financial position through disclosure of information about OWASA's assets and liabilities. Net position represents the difference between total assets and deferred outflows of resources and total liabilities. Over time, net position may serve as a useful indicator of OWASA's financial condition.

The *Statements of Revenues, Expenses and Changes in Net Position* provides information regarding OWASA's total economic resource inflow and outflow (accrual method of accounting). The difference between these inflows and outflows represents the change in net position, which links this statement to the *Statements of Net Position.*

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The *Statements of Cash Flows* deals specifically with the flow of cash and cash equivalents arising from operating, capital and related financing and investing activities. Because OWASA's *Statements of Revenues, Expenses and Changes in Net Position* measures the flow of total economic resources, operating income usually differs from net cash flow from operations. To supplement the reader's understanding of this difference, the *Statements of Cash Flows* includes reconciliation between these two amounts. In accordance with accounting principles generally accepted in the United States, a reconciliation of cash and cash equivalents is also presented in this statement.

The *Notes to the Financial Statements* provide additional information that is essential to a full understanding of the data provided in the financial statements.

Financial Analysis

Orange Water and Sewer Authority
Schedule of Net Position
($ millions)

	Fiscal Year Ended			Percentage of Change (2019 to 2020)
	2020	**2019**	**2018**	
Current assets	$29.5	$29.5	$31.2	0.0%
Capital and other long-term assets	350.0	331.5	319.0	5.6
Total assets	379.5	361.0	350.2	5.1
Total deferred outflows of resources	2.7	4.0	3.3	(32.5)
Current liabilities	15.8	15.1	13.4	4.6
Non-current liabilities	88.4	75.9	74.0	16.5
Total liabilities	104.2	91.0	87.4	14.5
Total deferred inflows of resources	1.8	1.6	1.2	12.5
Net position				
Net investment in capital assets	270.0	266.1	255.1	1.5
Restricted	0.3	0.2	0.2	50.0
Unrestricted	5.9	6.1	9.5	(3.3)
Total net position	$276.2	$272.4	$264.8	1.4

OWASA's assets exceeded liabilities by $276.2 million at June 30, 2020, compared to $272.4 million and $264.8 million at June 30, 2019 and 2018, respectively. OWASA's overall financial position strengthened between FY 2018 and 2020 as net position increased by $11.4 million. Total assets increased during the same period by $29.3 million. These trends reflect investments in infrastructure improvements funded through a combination of cash and debt.

Net capital assets comprised about 92% of total assets for the comparative years of 2018 through 2020. These capital assets are essential in providing water and wastewater services to customers and are not available for future spending. The resources needed to repay the related debt must be provided by other sources. At June 30, 2020, these other unrestricted resources totaled $5.9 million and may be used for any lawful purpose.

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Non-current liabilities increased by approximately 18.4% or $14.4 million during the same period reflecting increases in low-interest loans from the state of North Carolina and outstanding revenue bonds, net of principal payments on long-term debt.

OWASA anticipates continued increases in net position arising from its planned capital improvements program and projected excess of revenues and contributions over expenditures.

Orange Water and Sewer Authority
Revenues, Expenses and Change in Net Position
($ Millions)

	Fiscal Year Ended			Percentage of Change (2019 to 2020)
	2020	2019	2018	
Operating revenues				
Water, wastewater, reclaimed water	$35.3	$35.2	$36.0	0.3%
Other	1.0	1.0	1.5	0.0
Total operating revenues	36.3	36.2	37.5	0.3
Operating expenses	33.6	32.5	31.5	3.4
Operating income	2.7	3.7	6.0	(27.0)
Non-operating revenues (expenses)	(0.9)	(0.1)	(0.1)	
Income before contributions	1.8	3.6	5.9	(50.0)
Capital contributions	2.0	4.0	1.5	(50.0)
Increase (decrease) in net position	3.8	7.6	7.4	(50.0)
Net position, July 1	272.4	264.8	263.7	2.9
Change in accounting principles / restatement	0.0	0.0	(6.3)	
Net position, June 30	$276.2	$272.4	$264.8	1.4

The above condensed three-year comparison of Revenues, Expenses and Change in Net Position, combined with the following discussion provides additional insight regarding changes in net position.

- **Operating Revenues:** OWASA is not empowered to levy or collect taxes, nor does OWASA receive funding from the taxing authorities within its service area. OWASA's operations, capital improvements program and debt service are funded almost entirely from fees charged to customers for water, wastewater, and reclaimed water services, and other related services. As a result, OWASA's revenue stream is impacted by fluctuations in demand for services and other economic factors.

  Revenues derived from water, wastewater, and reclaimed water services are comprised of two components; a fixed monthly service charge based on the size of the installed water meter and a monthly volume usage (commodity) charge per thousand gallons of water consumed. The wastewater commodity charge is measured based on water consumption. However, for single-family residential customers, the wastewater commodity charge incorporates the assumption that not all water consumed is returned to the wastewater system. Wastewater billings for residential customers are capped at 15,000 gallons per month. All rates, fees and charges are calculated under a cost-of-service rate-making methodology.

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In FY 2020, drinking water volume sales averaged 5.8 million gallons per day (mgd). In both FY 2019 and 2018, drinking water volume sales were 6.0 mgd. As a result of the COVID-19 pandemic, many area businesses and the University of North Carolina closed or significantly reduced operations which resulted in a reduction in drinking water demand of about 12% for the period from mid-March to the end of FY 2020.

Drinking water demand remains much lower than long-term historical trends and reflects OWASA's and its customers' continued commitment to water conservation, the conservation signal delivered through the increasing block rate and seasonal pricing structures for single-family residential and nonresidential customers, respectively, and the use of reclaimed water by the University of North Carolina. Operating revenues for FY 2020 were about 0.3% greater than the previous year or $36.3 million.

- **Operating Expenses**: Operating expenses were $33.6 million or about 3.4% more than FY 2019 and approximately 6.7% greater than FY 2018. OWASA's department managers expended about 3% less than the original amount budgeted for FY 2020. Operating expenses includes an $9.8 million charge for depreciation and a $603,000 charge for post-employment benefits. OWASA's ability to meet operating expenses and adequately cover debt service remained positive.

- **Non-Operating Revenues (Expenses):** Non-operating revenues are comprised primarily of system development fees, interest earnings, and gains (or losses) from the sale of surplus property. System development fees are calculated to recover from new customers a share of the cost of system capacity when a new connection is made to the system. Non-operating expenditures are made up primarily of interest expense on debt and amortization of bond expenses.

  System development fee revenue was approximately $1.4 million in FY 2020: about the 13% less than FY 2019. For FY 2019 and 2018, system development fee revenue was about $1.6 million and $2.2 million, respectively. Interest earned in FY 2020 totaled about $63,000. Investments remained in safe and liquid secured deposits.

- **Capital Contributions**: Capital contributions totaled approximately $2 million for the year and were comprised of construction costs of developer dedicated facilities. Contributions in aid of construction in the form of dedicated service lines are classified as contributions after net income. Although OWASA receives such contributions annually, these transactions are not cash or cash equivalents and are not included in the budget under the modified accrual method.

Capital Assets

Each year, OWASA expands or places into service new and renewed capital assets. Capital assets net of depreciation as of the end of FY 2020 was about $349.7 million, an increase of approximately $18.5 million from FY 2019. The net increase consisted of additions totaling $28.3 million and a reduction due to deprecation of $9.8 million. The asset additions included the rehabilitation or replacement of various water and wastewater mains and improvements to the Jones Ferry Road Water Treatment Plant and the Mason Farm Wastewater Treatment Plant.

The majority of OWASA's capital expenditures over the next 15 years is expected to be invested in replacing and rehabilitating existing assets. System capacity is expected to be sufficient to meet the community's needs well into the future. Please refer to page 23 for additional information on capital assets.

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Orange Water and Sewer Authority Capital Assets ($ Millions)				
	Fiscal Year Ended			Percentage of Change (2019 to 2020)
	2020	2019	2018	
Land	$17.6	$17.6	$17.6	0.0%
Construction in progress	58.6	50.1	40.7	17.0
Water treatment and distribution	105.9	104.0	99.3	1.8
Wastewater collection and treatment	151.6	145.8	148.2	4.0
Fixtures and equipment	16.0	13.7	13.0	16.8
Total	$349.7	$331.2	$318.8	5.6

Debt Administration

OWASA policy stipulates that at least 30% of capital improvements projects be funded with cash from operations. At June 30, 2020, 2019 and 2018, OWASA's outstanding bond and loan debt totaled $80.0 million, $66.5 million, and $65.2 million respectively, net of applicable premiums, discounts and deferred refunding costs. These amounts consist of a low-interest and interest-free loans from the state of North Carolina, and water and wastewater system revenue refunding bonds issued in fiscal years 2010, 2014, 2015, 2018 and 2019. At year end, OWASA owed an accrued debt service liability of approximately $8 million. This amount was credited in full to the trustee restricted bond service account as of June 30, 2020.

OWASA's credit ratings for its bonds are AAA by Standard & Poor's, Aa1 by the Moody's, AA+ by Fitch Ratings. These ratings reflect OWASA's strong fiscal policy and standards and are considered excellent for an entity that does not have taxing authority.

Please refer to page 25 in the Notes to Financial Statements section for greater detail on OWASA's outstanding debt obligations.

Economic Factors

OWASA's location in Orange County, North Carolina includes a number of factors that benefit the organization and, thereby, its customers.

- The University of North Carolina at Chapel Hill (UNC) is OWASA's largest customer and accounts for approximately 20% of total drinking water sales.
- The Carrboro-Chapel Hill economy benefits from the size and strength of UNC and UNC Healthcare: public entities that serve the entire state. The University continues to actively plan and develop new facilities and infrastructure.
- There are no major industries in the service area that are subject to significant changes in economic conditions.
- Orange County's unemployment rate has historically been better than the State and National average.

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OWASA encourages water conservation through public education, voluntary and mandatory water use restrictions, and pricing structures. Reduced water use through conservation provides many benefits to the community including extending the life of OWASA's water supply and system capacity. The organization continues to strive to improve efficiencies and reduce costs to limit rate increases without adversely impacting services levels.

FY 2021 Budget Highlights

OWASA's Board of Directors approved a budget that includes no change in any of the rates charged for services. The FY 2021 budget for Operating expenses is about 1.6% less than the original FY 2020 budget. Capital improvement expenditures are budgeted to be approximately $20.3 million.

Projected operating revenues for Fiscal Year (FY) 2021 reflect the impact of the COVID-19 pandemic on water demand in OWASA's service area. In mid-March 2020, the North Carolina governor issued a stay at home order. Many local businesses closed, and UNC essentially closed its campus resulting in a 12% reduction in customer water demand. Projected revenue has been reduced from original projections by 12% for the first six months of FY 2021.

Pre-pandemic budget planning indicated the need for a 5% rate increase to fund the operating and capital needs of the organization. To achieve a balanced budget without a rate increase, certain capital improvements projects have been deferred to future years. Additionally, reductions were made to the operating budget including eliminating cost of labor and merit pay increases for employees and deferring a project to implement a new computerized maintenance management system. These cuts and deferrals increase certain risks, but the organization considers the additional risks acceptable under the circumstances.

Requests for Information

This report is designed to provide an overview of Orange Water and Sewer Authority's finances. Questions concerning any of the information found in this report or requests for additional information may be directed to the Director of Finance and Customer Service, 400 Jones Ferry Road, Carrboro, North Carolina 27510-2001.

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ORANGE WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION
PROPRIETARY FUND
JUNE 30, 2020 AND 2019

	2020	2019
Assets:		
Current assets:		
Cash and cash equivalents	$ 10,251,654	$ 16,162,754
Receivables:		
Trade accounts (net of allowances for uncollectible accounts of approximately $85,000 for 2020 and 2019)	3,920,289	3,411,381
Other	772,973	951,980
Inventory, materials, and supplies	1,334,873	1,396,186
Prepaid expenses	223,725	182,894
Restricted cash and cash equivalents:		
Cash and cash equivalents	1,187,201	1,121,461
Cash and cash equivalents, trustee	11,785,167	6,273,444
Total current assets	29,475,882	29,500,100
Non-current assets:		
Restricted cash and cash equivalents	276,217	241,332
Capital assets:		
Non-depreciable	76,207,750	67,718,829
Depreciable	273,476,388	263,514,503
Total capital assets, net of accumulated depreciation	349,684,138	331,233,332
Total non-current assets, net	349,960,355	331,474,664
Total assets	379,436,237	360,974,764
Deferred Outflows of Resources:		
Contributions to pension plan in current fiscal year	790,230	655,451
Pension deferrals	1,198,644	1,679,072
Contributions to OPEB plan in current fiscal year	295,137	283,833
OPEB deferrals	22,066	26,684
Deferred charge on refunding	386,106	1,327,210
Total deferred outflows of resources	2,692,183	3,972,250

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The accompanying notes are an integral part of the financial statements.

ORANGE WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION
PROPRIETARY FUND
JUNE 30, 2020 AND 2019

	2020	2019
Liabilities:		
Current liabilities:		
Payable from current assets:		
Trade and construction contracts payable	4,410,571	5,514,977
Accrued expenses	309,370	233,378
Payable from restricted cash and cash equivalents:		
Accrued interest	1,107,055	1,081,939
Customer deposits and advances	1,463,418	1,362,793
Current maturity of note payable	775,655	634,011
Current maturities of bonds payable	7,234,478	5,845,149
Current portion of compensated absences	525,644	449,128
Total current liabilities	15,826,191	15,121,375
Non-current liabilities:		
Note payable	12,624,847	11,610,207
Bonds payable	59,391,026	48,410,840
Compensated absences	175,214	149,709
Net pension liability	3,324,897	2,982,507
Total OPEB liability	12,876,052	12,710,564
Total non-current liabilities	88,392,036	75,863,827
Total liabilities	104,218,227	90,985,202
Deferred Inflows of Resources:		
Pension deferrals	39,806	30,490
OPEB deferrals	1,710,345	1,561,639
Total deferred inflows of resources	1,750,151	1,592,129
Net Position:		
Net investment in capital assets	270,044,238	266,060,335
Restricted for capital reserve	276,217	241,332
Unrestricted	5,839,587	6,068,016
Total net position	$ 276,160,042	$ 272,369,683

The accompanying notes are an integral part of the financial statements.

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ORANGE WATER AND SEWER AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION - PROPRIETARY FUND FOR THE YEARS ENDED JUNE 30, 2020 AND 2019

	2020	2019
Operating Revenues:		
Water	$ 17,893,981	$ 17,666,256
Sewer	16,948,606	17,058,037
Service initiation fees	24,680	98,625
Reclaimed water	480,547	456,926
Other	958,380	905,996
Total operating revenues	36,306,194	36,185,840
Operating Expenses:		
Water supply and treatment	4,883,456	5,001,419
Water distribution	4,734,237	4,045,476
Sewer treatment	5,081,371	5,406,223
Sewer collections	1,265,359	1,065,628
General and administrative	7,244,321	6,820,965
Depreciation and amortization	9,780,753	9,558,087
Other post-employment benefits	602,645	613,772
Total operating expenses	33,592,142	32,511,570
Operating income (loss)	2,714,052	3,674,270
Non-Operating Revenues (Expenses):		
System development fees	1,393,871	1,593,210
Investment income, net of fair value of investments adjustment	63,207	64,842
Interest expense	(2,565,779)	(2,161,022)
Amortization of bond and lease expense	611,927	544,907
Gain (Loss) on disposal of capital assets	56,978	27,502
FEMA reimbursement	55,042	-
Costs of issuance	(531,701)	(247,176)
Total non-operating revenues (expenses)	(916,455)	(177,737)

The accompanying notes are an integral part of the financial statements.

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ORANGE WATER AND SEWER AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION - PROPRIETARY FUND FOR THE YEARS ENDED JUNE 30, 2020 AND 2019

	2020	2019
Income (loss) before capital contributions	1,797,597	3,496,533
Capital Contributions:		
Contributions in aid of construction	1,992,762	4,035,076
Change in net position	3,790,359	7,531,609
Net Position:		
Beginning of year - July 1	272,369,683	264,838,074
End of year - June 30	$ 276,160,042	$ 272,369,683

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The accompanying notes are an integral part of the financial statements.

ORANGE WATER AND SEWER AUTHORITY

STATEMENTS OF CASH FLOWS
PROPRIETARY FUND
FOR THE YEARS ENDED JUNE 30, 2020 AND 2019

	2020	2019
Cash Flows from Operating Activities:		
Receipts from customers	$ 35,017,913	$ 37,945,309
Payments to suppliers	(12,688,855)	(10,309,235)
Payments to employees	(11,635,507)	(12,057,677)
Other receipts	1,059,005	1,005,596
Net cash provided (used) by operating activities	11,752,556	16,583,993
Cash Flows from Capital and Related Financing Activities:		
Acquisition and construction of capital assets	(26,283,821)	(17,975,332)
Proceeds from sale of property, plant, and equipment	56,978	44,854
Costs of issuance	(531,701)	(247,176)
Principal paid on bond maturities and other long-term debt	(16,177,407)	(5,317,428)
Interest paid on bond maturities and other long-term debt	(2,495,639)	(1,983,988)
Customer fees received	2,005,798	2,138,117
Proceeds from issuance of debt	31,256,235	7,373,646
Capital grants and contributions	55,042	-
Net cash provided (used) by capital and related financing activities	(12,114,515)	(15,967,307)
Cash Flows from Investing Activities:		
Interest and dividends on investments	63,207	64,842
Net increase (decrease) in cash and cash equivalents	(298,752)	681,528
Cash and Cash Equivalents:		
Beginning of year - July 1	23,798,991	23,117,463
End of year - June 30	$ 23,500,239	$ 23,798,991

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The accompanying notes are an integral part of the financial statements.

ORANGE WATER AND SEWER AUTHORITY

STATEMENTS OF CASH FLOWS
PROPRIETARY FUND
FOR THE YEARS ENDED JUNE 30, 2020 AND 2019

	2020	2019
Reconciliation of Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities:		
Operating income (loss)	$ 2,714,052	$ 3,674,270
Adjustments to reconcile operating income (loss) to net cash provided (used) by operating activities:		
Depreciation	9,780,753	9,558,087
Pension (benefit) expense	(134,779)	(38,232)
Changes in assets and liabilities:		
(Increase) decrease in trade accounts receivable	(508,908)	1,679,110
(Increase) decrease in other receivables	179,007	986,355
(Increase) decrease in inventory	61,313	(204,935)
(Increase) decrease in prepaid expenses	(40,831)	(144,014)
(Increase) decrease in deferred outflows of resources for OPEB	(6,686)	(93,264)
(Increase) decrease in deferred outflows of resources for pensions	480,428	(775,850)
(Increase) decrease in deferred outflows of resources for deferred refunding costs	(611,925)	(544,907)
Increase (decrease) in trade and construction contracts payable	(1,104,406)	961,526
Increase (decrease) in customer deposits	100,625	99,600
Increase (decrease) accrued expenses	75,992	(37,085)
Increase (decrease) compensated absences	102,021	27,688
Increase (decrease) in net pension liability	342,390	1,040,619
Increase (decrease) in deferred inflows of resources for pensions	9,316	(28,178)
Increase (decrease) in deferred inflows of resources for OPEB	148,706	451,182
Increase (decrease) in other post-employment benefits	165,488	(27,979)
Net cash provided (used) by operating activities	$ 11,752,556	$ 16,583,993
Non-Cash Capital and Related Financing Activities:		
Property, plant, and equipment contributed by private developers	$ 1,992,762	$ 4,035,076

The accompanying notes are an integral part of the financial statements.

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ORANGE WATER AND SEWER AUTHORITY

NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEARS ENDED JUNE 30, 2020 AND 2019

1. Summary of Significant Accounting Policies

The accounting policies of the Orange Water and Sewer Authority conform to generally accepted accounting principles as they apply to governments. The following is a summary of the more significant accounting policies:

A. Reporting Entity

The Orange Water and Sewer Authority (the "Authority") was created pursuant to Chapter 162A of the North Carolina General Statutes by the Board of Commissioners of Orange County and the Town Council of Chapel Hill and the Town Council of Carrboro in June 1975, as a public entity, politic and corporate, for the purpose of acquiring, consolidating, improving, and operating the existing water and sewer systems serving the above governmental jurisdictions and certain contiguous areas. The Authority is a separate governmental unit granted independent authority by the North Carolina General Statutes to allow the Authority's Board of Directors to set rates, fees, and charges without oversight, supervision, or direction from any other state or local entity or agency.

Because the Town Council of Chapel Hill appoints a majority of the Authority's Board of Directors and may remove them without cause, the Authority falls within the definition of a "Component Unit" provided in applicable accounting standards. For this reason, the Authority's financial data is incorporated into the Comprehensive Annual Financial Report of the Town of Chapel Hill.

B. Basis of Presentation

The business-type activities are financed in whole or in part by fees charged to external parties. All activities of the Authority are considered business-type activities.

Fund Financial Statements. The fund financial statements provide information about the Authority's funds.

Proprietary fund operating revenues, such as charges for services, result from exchange transactions associated with the principal activity of the fund. Exchange transactions are those in which each party receives and gives up essentially equal values. Non-operating revenues, such as subsidies and investment earnings, result from non-exchange transactions. The Authority has one fund category - proprietary funds.

Enterprise Fund

The Enterprise Fund is used to account for those operations that (a) are financed and operated in a manner similar to private business enterprises, where the intent of the governing body is that the costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges; or (b) where the governing body has decided that the periodic determination of revenues earned, expenses incurred and/or net income is appropriate for capital maintenance, public policy, management control, accountability, or other purposes. The Authority operates as a singular enterprise fund.

The Enterprise Fund is considered a major fund for the year ended June 30, 2020.

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C. Measurement Focus and Basis of Accounting

In accordance with North Carolina General Statutes, all funds of the Authority are maintained during the year using the modified accrual basis of accounting.

Proprietary Fund Financial Statements. The proprietary fund financial statements are reported using the economic resources measurement focus. The proprietary fund financial statements are reported using the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded at the time liabilities are incurred, regardless of when the related cash flows take place. Proprietary funds distinguish operating revenues and expenses from non-operating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the Authority's Enterprise Fund are charges to customers for sales and services. Operating expenses for enterprise funds include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as non-operating revenues and expenses.

D. Budgetary Data

Annual budgets are adopted on a basis consistent with provisions of the North Carolina Local Government Budget and Fiscal Control Act, which is the modified accrual method of accounting. All annual appropriations lapse at fiscal year-end.

The Authority begins developing its budget in the second quarter of each year and the Board of Directors approves the budget in early June after public hearings are held.

Budgeted revenues are reflected by source and budgeted expenses by department. On a periodic basis, as required by changing conditions, the budgeted amounts are amended. The budgeted amounts shown in the supplemental schedules reflect the governing board's amendments through the fiscal year-end. Expenditures may not legally exceed appropriations at the department level.

E. Assets, Liabilities, Deferred Outflows/Inflows of Resources, and Fund Equity

Deposits and Investments

All deposits of the Authority are made in Board-designated official depositories and are secured as required by G.S. 159-31.

The Authority may designate, as an official depository, any bank or savings association whose principal office is located in North Carolina. Also, the Authority may establish time deposit accounts such as money market accounts and certificates of deposit.

State law [G.S. 159-30(c)] authorizes the Authority to invest in obligations of the United States or obligations fully guaranteed both as to principal and interest by the United States; obligations of the State of North Carolina; bonds and notes of any North Carolina local government or public authority; obligations of certain non-guaranteed federal agencies; certain high quality issues of commercial paper and bankers' acceptances; and the North Carolina Capital Management Trust ("NCCMT").

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The Authority's investments with a maturity of more than one year at acquisition and non-money market investments are reported at cost or amortized cost, which approximates their fair value as determined by quoted market prices. The NCCMT Government Portfolio's securities, an SEC-registered 2a-7 government money market fund, is measured at fair market value. Money market investments that have a remaining maturity at the time of purchase of one year or less are reported at amortized cost.

Cash and Cash Equivalents

The Authority's cash and cash equivalents are considered to be cash on hand, demand deposits, and short-term investments with original maturities of three months or less from the date of acquisition.

Restricted Assets

Certain proceeds of the Authority's revenue bonds, as well as certain resources set aside for their repayment, are classified as restricted assets on the Statement of Net Position, because they are maintained in separate bank accounts and their use is limited by applicable bond covenants. Customer deposits held by the Authority before any services were supplied are restricted to the service for which the deposits were collected. Capital reserve amounts are restricted for future maintenance and repairs.

Orange Water and Sewer Authority Restricted Cash

Business-Type Activities:	2020	2019
Bond service	$ 11,785,167	$ 6,273,444
Capital reserve	276,217	241,332
Customer deposits	1,187,201	1,121,461
Total business-type activities	$ 13,248,585	$ 7,636,237

Receivables

All trade receivables are shown net of an allowance for uncollectibles. Trade receivables are determined to be uncollectible based on collection history for similar customers. The Authority grants credit to residential, business and industrial customers, substantially all of whom are local to the Orange County, North Carolina, area.

Allowance for Doubtful Accounts

The Authority historically experiences uncollectible accounts, and accounts receivable is shown net of an allowance for doubtful accounts. This amount is estimated by analyzing the percentage of receivables that were written off in prior years. The allowance was $85,000 at June 30, 2020 and June 30, 2019.

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Inventory and Prepaid Items

Materials and supplies are valued at average cost and are held for subsequent use. The cost of these inventories is expensed when consumed rather than when purchased.

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in the Statement of Net Position and expensed as the items are used.

Capital Assets

Capital assets, which include property, plant, equipment, and infrastructure assets, are reported in the financial statements. Capital assets are defined by the Authority as assets with an initial, individual cost of more than $5,000 and an estimated useful life in excess of one year. Such assets are recorded at historical cost if purchased or constructed. Donated capital assets received prior to June 30, 2015 are recorded at their estimated fair market value at the date of donation. Donated capital assets received after June 30, 2015 are recorded at acquisition value. All other purchased or constructed capital assets are reported at cost or estimated historical cost. The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets' lives are not capitalized.

Major outlays for capital assets and improvements are capitalized as projects are constructed. Interest incurred during the construction phase of capital assets is included as part of the capitalized value of the assets constructed.

Property, plant, and equipment are depreciated using the straight-line method by groups or classes of property over the following expected service lives:

	Years
Water treatment and distribution	20-60
Sewer collection and treatment	40-60
Fixtures and equipment	5-20

Assets under capitalized lease obligations are recorded at the discounted present value of the future minimum lease payments at the inception of the respective leases. The amounts capitalized are being amortized by the straight-line method over the lesser of the term of the lease or the estimated life of the asset. Amortization of these assets is included in depreciation expense.

Deferred Outflows/Inflows of Resources

In addition to assets, the Statement of Net Position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *Deferred Outflows of Resources*, represents a consumption of net position that applies to a future period and so will not be recognized as an expense or expenditure until then. The Authority has several items that meet these criteria, an unamortized loss on bond defeasance for water and sewer refunding bonds, pension related deferrals, contributions made to the pension plan in the current fiscal year, contributions made to the OPEB plan in the current fiscal year, and OPEB related deferrals. In

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addition to liabilities, the Statement of Net Position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *Deferred Inflows of Resources*, represents an acquisition of net position that applies to a future period and so will not be recognized as revenue until then. The Authority has two items that meets these criteria in the current year – pension related deferrals and OPEB related deferrals.

Compensated Absences

It is the Authority's policy to permit employees to accumulate earned, but unused, vacation and sick pay benefits. There is no liability for unpaid accumulated sick leave since the Authority does not have a policy to pay any amounts when employees separate from service with the Authority. All vacation pay is accrued when incurred in the financial statements. At June 30, 2020 and 2019, the Authority had recorded a liability for accrued vacation and the salary-related payments of $700,858 and $598,837, respectively.

Long-Term Debt

Long-term debt is reported net of applicable bond premium or discount, which are deferred and amortized over the life of the bonds using the effective interest method.

Net Position

Net position in the proprietary fund financial statements is classified as net investment in capital assets; restricted; and unrestricted. Restricted net position represents constraints on resources that are either externally imposed by creditors, grantors, contributors, or laws or regulations of other governments or imposed by law through state statute.

Net position classified as net investment in capital assets, consist of capital assets, net of accumulated depreciation, and reduced by the outstanding balances of any bonds, mortgages, notes, or other borrowings that are attributable to the acquisition, construction, or improvement of those assets.

Restricted for Capital Reserve – represents a portion of net position that is restricted by revenue source for future maintenance and capital.

Unrestricted net position consists of net position that does not meet the definition of "restricted" or "net investment in capital assets."

F. Operating Revenues and Expenses

Operating revenues and expenses generally result from providing services in connection with the Authority's principal ongoing operations, which is the sale of water and treatment of wastewater for its customers. The Authority also recognizes as operating revenue the portion of tap fees intended to recover the cost of connecting new customers to the system. Operating expense for the Authority includes the cost of services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as non-operating revenues and expenses.

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G. Accounting Estimates

The preparation of 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 amount of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the period. Actual results could differ from these estimates.

H. Defined Benefit Cost-Sharing Pension Plans

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 positions of the Local Governmental Employees' Retirement System (LGERS) and additions to/deductions from LGERS fiduciary net positions have been determined on the same basis as they are reported by LGERS. For this purpose, plan member contributions are recognized in the period in which the contributions are due. The Authority's employer contributions are recognized when due and the Authority has a legal requirement to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of the state-administered defined benefit pension plans. Investments are reported at fair value.

2. Detail Notes On All Funds

Assets

Deposits

All of the Authority's deposits are either insured or collateralized by using one of two methods. Under the Dedicated Method, all deposits exceeding the federal depository insurance coverage level are collateralized with securities held by the Authority's agents in the unit's name. Under the Pooling Method, which is a collateral pool, all uninsured deposits are collateralized with securities held by the State Treasurer's agent in the name of the State Treasurer. Since the State Treasurer is acting in a fiduciary capacity for the Authority, these deposits are considered to be held by their agents in the Authority's name. The amount of the pledged collateral is based on an approved averaging method for non-interest-bearing deposits and the actual current balance for interest-bearing deposits. Depositories using the Pooling Method report to the State Treasurer the adequacy of their pooled collateral covering uninsured deposits. The State Treasurer does not confirm this information with the Authority, or with the escrow agent. Because of the inability to measure the exact amount of collateral pledged for the Authority, under the Pooling Method, the potential exists for undercollateralization, and this risk may increase in periods of high cash flows. However, the State Treasurer of North Carolina enforces strict standards of financial stability for each depository that collateralizes public deposits under the Pooling Method. The Authority has no policy regarding custodial credit risk for deposits but relies on the State Treasurer to enforce standards for minimum capitalization for all pooling method financial institutions and to monitor them for compliance. The Authority complies with the provisions of G.S. 159-31 when designating official depositories and verifying that deposits are properly secured.

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At June 30, 2020, the Authority's deposits had a carrying amount of $11,641,882 and a bank balance of $11,533,492. Of the bank balance, $250,000 was covered by federal depository insurance, and $11,283,492 in deposits was covered by collateral held under the Pooling Method. The Authority had cash on hand of $2,700 at June 30, 2020.

At June 30, 2019, the Authority's deposits had a carrying amount of $17,456,835 and a bank balance of $16,672,254. Of the bank balance, $250,000 was covered by federal depository insurance, and $16,422,254 in interest-bearing deposits was covered by collateral held under the Pooling Method. The Authority had cash on hand of $2,700 at June 30, 2019.

Cash Equivalents

At June 30, 2020 and 2019, the Authority's cash equivalents balances were as follows:

	2020	2019
The North Carolina Capital Management Trust, government portfolio	$ 11,855,657	$ 6,339,456

Interest Rate Risk. The Authority does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Credit Risk. The Authority's policy regarding credit risk is that funds shall not be exposed to undue or unreasonable risk. State law limits investments in commercial paper to the top rating issued by nationally recognized statistical rating organizations ("NRSROs"). The Authority's investment in the NCCMT government portfolio carried a credit rating of AAAm by Standard & Poor's as of June 30, 2020 and 2019.

Receivables

Receivables, net of allowances for uncollectible accounts, at June 30, 2020 and 2019 were as follows:

	2020	2019
Utility accounts receivable	$ 3,920,289	$ 3,411,381
Other receivable	772,973	951,980
Total receivables, net	$ 4,693,262	$ 4,363,361

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Capital Assets

A summary of changes in the Authority's capital assets follows:

	Balance July 1, 2019	Increases	Decreases	Transfers	Balance June 30, 2020
Non-Depreciable Assets:					
Land	$ 17,605,354	$ -	$ -	$ -	$ 17,605,354
Construction in progress	50,113,475	25,676,779	(563)	(17,187,295)	58,602,396
Total non-depreciable assets	67,718,829	25,676,779	(563)	(17,187,295)	76,207,750
Depreciable Assets:					
Water treatment and distribution	175,747,356	1,348,663	-	4,299,961	181,395,980
Sewer collection and treatment	222,398,717	699,342	-	9,594,574	232,692,633
Fixtures and equipment	48,961,413	551,799	(118,844)	3,292,760	52,687,128
Total depreciable assets	447,107,486	2,599,804	(118,844)	17,187,295	466,775,741
Less Accumulated Depreciation:					
Water treatment and distribution	71,714,344	3,738,890	-	-	75,453,234
Sewer collection and treatment	76,576,633	4,564,201	-	-	81,140,834
Fixtures and equipment	35,302,006	1,477,662	(74,383)	-	36,705,285
Total accumulated depreciation	183,592,983	$ 9,780,753	$ (74,383)	$ -	193,299,353
Total depreciable assets	263,514,503				273,476,388
Capital assets, net	$ 331,233,332				$ 349,684,138

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	Balance July 1, 2018	Increases	Decreases	Transfers	Balance June 30, 2019
Non-Depreciable Assets:					
Land	$ 17,605,354	$ -	$ -	$ -	$ 17,605,354
Construction in progress	40,684,883	17,299,150	-	(7,870,558)	50,113,475
Total non-depreciable assets	58,290,237	17,299,150	-	(7,870,558)	67,718,829
Depreciable Assets:					
Water treatment and distribution	167,433,487	1,975,079	-	6,338,790	175,747,356
Sewer collection and treatment	220,187,222	1,836,692	-	374,803	222,398,717
Fixtures and equipment	47,400,290	899,487	(495,329)	1,156,965	48,961,413
Total depreciable assets	435,020,999	4,711,258	(495,329)	7,870,558	447,107,486
Less Accumulated Depreciation:					
Water treatment and distribution	68,026,152	3,688,192	-	-	71,714,344
Sewer collection and treatment	72,046,580	4,530,053	-	-	76,576,633
Fixtures and equipment	34,440,139	1,339,842	(477,975)	-	35,302,006
Total accumulated depreciation	174,512,871	$ 9,558,087	$ (477,975)	$ -	183,592,983
Total depreciable assets	260,508,128				263,514,503
Capital assets, net	$ 318,798,365				$ 331,233,332

Net Investment in Capital Assets

The total net investment in capital assets is composed of the following elements:

	2020	2019
Capital assets	$ 349,684,138	$ 331,233,332
Total debt, gross	(80,026,006)	(66,500,207)
Deferred charge related to debt	386,106	1,327,210
Net investment in capital assets	$ 270,044,238	$ 266,060,335

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Long-Term Debt

Long-term debt as of June 30, 2020 and 2019 consists of the following:

	2020	2019
Revenue Bonds:		
Revenue bonds payable, Series 2020 Revenue Bonds, in the amount of $9,500,000, issued April 7, 2020, with coupon rates of 5.0%, final maturity June 2026; net of unamortized premium of $1,142,676 at June 30, 2020	$ 9,500,000	$ -
Revenue bonds payable, Series 2019 Revenue Bonds, in the amount of $16,640,000, issued November 15, 2019, with coupon rates of 3.0% and 5.0%, final maturity June 2044; net of unamortized premium of $2,058,334 at June 30, 2020	16,640,000	-
Revenue bonds payable, Series 2018 Refunding Revenue Serial bonds, in the amount of $18,075,000, issued April 10, 2018, with a coupon rate of 2.3%, final maturity July 2029, net of unamortized premium of $2,147,151 at June 30, 2019	18,075,000	18,075,000
Revenue bonds payable, Series 2015 Refunding Revenue Serial bonds, in the amount of $8,995,000, issued July 1, 2015, with a coupon rate of 4.5%, final maturity July 2031, net of deferred refunding loss of $27,519 at June 30, 2018	1,420,000	3,975,000
Revenue bonds payable, Series 2014 Refunding Revenue Serial bonds, in the amount of $15,695,000, issued December 18, 2014, with coupon rates of 3.0% and 5.0%, final maturity July 2031, net of unamortized premium of $911,828 at June 30, 2018	13,375,000	14,185,000
Revenue bonds payable, Series 2010 Refunding Revenue Serial bonds, in the amount of $21,645,000, issued September 30, 2010, with coupon rates of 3.0% and 5.0%, final maturity July 2026, net of unamortized premium of $257,227 at June 30, 2018	1,835,000	13,950,000
	$ 60,845,000	$ 50,185,000

The revenue bonds are secured by pledged water and sewer customer revenues, net of specified operating expenses to repay revenue bonds. In the event of a default, the Authority agrees to pay to the purchaser, on demand, interest on any and all amounts due and owing by the Authority under the related agreements.

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	2020	2019
Note Payable Direct Borrowing:		
Note payable to NCDEQ in the amount of $6,560,000 issued October 4, 2014, interest at 0%, Federal Revolving loan, beginning May 2015, payable in annual installments of $328,000, with a final payment due in May 2034	$ 4,592,000	$ 4,920,000
Note payable to NCDEQ in the amount of $1,056,000 issued July 28, 2018, interest at 1.53%, DWSRF loan, beginning May 2019, payable in annual installments of $52,800, with a final payment due in May 2038	889,703	939,131
Note payable to NCDEQ in the amount of $3,028,700 issued June 17th, 2019, interest at 1.53%, DWSRF loan, beginning November 2020, due in annual installments,varying, with a final payment due in May 2040	2,078,001	1,253,431
Note payable to NCDEQ in the amount of $6,132,000 issued June 3, 2019, interest at 1.53%, Federal Revolving loan, beginning May 2020, payable in annual installments of $266,429, with a final payment due in May 2039	5,062,157	5,131,656
Note payable to NCDEQ in the amount of $1,071,000 issued July 27, 2019, interest at 1.53%, Federal Revolving loan, beginning May 2020, payable in annual installments of $53,550, with a final payment due in May 2039	778,641	-
	$ 13,400,502	$ 12,244,218

A state reserve loan note payable to NCDEQ in the amount of $1,525,000 was approved August 3, 2017 at an interest rate of 1.53%, payable in annual installments beginning upon completion of the Dobbins Drive Water Main Replacement project. As of June 30, 2020, no drawdowns have been made on this loan.

A state reserve loan note payable to NCDEQ in the amount of $1,658,000 was issued February 1, 2017 at an interest rate of 1.53%, payable in annual installments beginning upon completion of the Dobbins Drive Sewer Interceptor Rehabilitation project. As of June 30, 2020, no drawdowns have been made on this loan.

The Authority's outstanding notes from direct borrowings related to business-type activities is not secured by a pledge of the faith and credit of the State of North Carolina or of the Authority but is payable solely from the revenues of the project or benefited systems, or other available funds. The note contains provisions that an event of default would result in (1) any other monies due to the Authority from the state may be withheld by the state and applied to the payment of the outstanding note.

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Bonds payable maturities are as follows:

Year Ending June 30	Maturities	Amortization of Premiums and Deferred Refunding Losses	Total	Interest
2021	$ 6,275,000	$ 924,377	$ 7,199,377	$ 2,791,007
2022	3,775,000	856,504	4,631,504	2,295,675
2023	4,515,000	751,169	5,266,169	2,106,675
2024	4,805,000	636,046	5,441,046	1,876,175
2025	5,105,000	510,279	5,615,279	1,631,050
2026-2030	21,920,000	1,196,152	23,116,152	4,940,826
2031-2035	6,225,000	358,395	6,583,395	1,888,050
2036-2040	4,295,000	124,138	4,419,138	991,900
2041-2045	3,930,000	37,336	3,967,336	298,950
Total	$ 60,845,000	$ 5,394,396	$66,239,396	$18,820,308

Notes payable – direct borrowing maturities are as follows:

Year Ending June 30	Maturities	Interest	Total
2021	$ 775,655	$ -	$ 775,655
2022	770,622	-	770,622
2023	772,569	-	772,569
2024	774,545	-	774,545
2025	776,553	-	776,553
2026-2030	3,913,965	-	3,913,965
2031-2035	3,640,975	-	3,640,975
2036-2040	1,975,618	-	1,975,618
Total	$ 13,400,502	$ -	$ 13,400,502

Advance Refunding

On December 18, 2014, the Authority issued $15,695,000 of Series 2014 revenue bonds to provide resources that were placed in an irrevocable trust to be used for all future debt service payments of $16,430,000 of Series 2006 revenue bonds. As a result, the refunded bonds are considered to be defeased and the liability has been removed from the Statement of Net Position. The reacquisition price exceeded the net carrying amount of the old debt by $561,010. This amount is being amortized over the life of the refunded debt, which is shorter than the life of the new debt issued. This advanced refunding was undertaken to reduce total debt service payments over the next 17 years by $1,984,121 and resulted in an economic gain of $1,596,310. On June 30, 2020, $13,970,000 of bonds outstanding are considered defeased.

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Direct Purchase Forward Refunding

On July 1, 2015, the Authority issued $8,995,000 of Series 2015 revenue bonds to provide resources that were placed in an irrevocable trust to be used for all future debt service payments of $8,930,000 of Series 2005 revenue bonds. As a result, the refunded bonds are considered to be defeased and the liability has been removed from the Statement of Net Position. The reacquisition price exceeded the net carrying amount of the old debt by $65,000. This amount is being amortized over the life of the new debt issued, which is shorter than the life of the refunded debt. This direct purchase forward refunding was undertaken to reduce total debt service payments over the next 5 years by $613,660 and resulted in an economic gain of $584,285. On June 30, 2020, $1,510,000 of bonds outstanding is considered defeased.

Advance Refunding

On April 7, 2020, the Authority issued $9,500,000 of Series 2020 revenue bonds to provide resources that were placed in an irrevocable trust to be used for all future debt service payments of $10,350,000 of Series 2010 revenue bonds. As a result, the refunded bonds are considered to be 10defeased and the liability has been removed from the Statement of Net Position. This advanced refunding was undertaken to reduce total debt service payments over the next 6 years by $1,091,381 and resulted in an economic gain of $1,024,076. On June 30, 2020, $10,350,000 of bonds outstanding are considered defeased.

Long-term liability activity for the years ended June 30, 2020 and 2019 is as follows:

	Balance July 1, 2019	Additions	Retirements	Balance June 30, 2020	Due Within One Year
Direct borrowings	$ 12,244,218	$ 1,853,691	$ 697,407	$ 13,400,502	$ 775,655
Bonds Payable:					
Revenue bonds	50,185,000	26,140,000	15,480,000	60,845,000	6,275,000
For issuance premiums	4,070,989	3,262,544	1,553,029	5,780,504	959,478
Compensated absences	598,837	544,642	442,621	700,858	525,644
Net pension liability (LGERS)	2,982,507	342,390	-	3,324,897	-
Total OPEB liability	12,710,564	165,488	-	12,876,052	-
Total	$ 82,792,115	$ 32,308,755	$ 18,173,057	$ 96,927,813	$ 8,535,777

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	Balance July 1, 2018	Additions	Retirements	Balance June 30, 2019	Due Within One Year
Direct borrowings	$ 5,248,000	$ 7,373,646	$ 377,428	$ 12,244,218	$ 634,011
Bonds Payable:					
Revenue bonds	55,125,000	-	4,940,000	50,185,000	5,130,000
For issuance premiums	4,807,515	-	736,526	4,070,989	715,149
Compensated absences	571,149	524,563	496,875	598,837	449,128
Net pension liability (LGERS)	1,941,888	1,040,619	-	2,982,507	-
Total OPEB liability	12,738,543	-	27,979	12,710,564	-
Total	$ 80,432,095	$ 8,938,828	$ 6,578,808	$ 82,792,115	$ 6,928,288

The Authority has pledged future water and sewer customer revenues, net of specified operating expenses, to repay $60,845,000 in revenue bonds issued in 2010, 2014, 2015, 2018, 2019, and 2020. Proceeds from the bonds were used for rehabilitation or expansion of the Authority's water and sewer systems. Annual principal and interest payments are expected to require less than 23% of net revenues. Principal and interest on the bonds are payable through 2033, solely from the water and sewer customer net revenues. The total principal and interest remaining to be paid on the bonds is $79,665,308. Principal and interest paid in the years ended June 30, 2020 and 2019 were $7,566,596 and $6,362,502, respectively, and total customer net revenues for the years ended June 30, 2020 and 2019 were $36,306,194 and $36,185,840, respectively. There is no unused line of credit.

The Authority is in compliance with the covenants to rates, fees, rentals, and charges in the bond order, authorizing the issuance of the Water and Sewer Revenue bonds, Series 2010, 2014, 2015, 2018, 2019, and 2020. The bond order requires the debt service coverage ratio to be no less than 120% of the debt service requirements for parity indebtedness.

The debt service coverage ratio calculation for the year ended June 30, 2020 is as follows:

Operating revenues and charges for services	$ 36,306,194
Operating expenses*	23,208,744
Income available for debt service	$ 13,097,450
Debt service, principal and interest paid	$ 7,566,596
Debt service coverage ratio for parity debt	173.10%

*Per rate covenants, this does not include depreciation, amortization, interest expense, or OPEB.

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3. Pension Plan Obligations

Local Governmental Employees' Retirement System

Plan Description. The Authority is a participating employer in the state-wide Local Governmental Employees' Retirement System (LGERS), a cost-sharing, multiple-employer defined benefit pension plan administered by the State of North Carolina. LGERS membership is comprised of general employees and local law enforcement officers (LEOs) of participating local governmental entities. Article 3 of G.S. Chapter 128 assigns the authority to establish and amend benefit provisions to the North Carolina General Assembly. Management of the plan is vested in the LGERS Board of Trustees, which consists of 13 members – nine appointed by the Governor, one appointed by the State Senate, one appointed by the State House of Representatives, and the State Treasurer and State Superintendent, who serve as ex-officio members. The LGERS is included in the Comprehensive Annual Financial Report (CAFR) for the State of North Carolina. The state's CAFR includes financial statements and required supplementary information for LGERS. That report may be obtained by writing to the Office of the State Controller, 1410 Mail Service Center, Raleigh, North Carolina 27699-1410, by calling (919) 981-5454, or at www.osc.nc.gov.

Benefits Provided. LGERS provides retirement and survivor benefits. Retirement benefits are determined as 1.85% of the member's average final compensation times the member's years of creditable service. A member's average final compensation is calculated as the average of a member's four highest consecutive years of compensation. Plan members are eligible to retire with full retirement benefits at age 65 with five years of creditable service, at age 60 with 25 years of creditable service, or at any age with 30 years of creditable service. Plan members are eligible to retire with partial retirement benefits at age 50 with 20 years of creditable service or at age 60 with five years of creditable service (age 55 for firefighters). Survivor benefits are available to eligible beneficiaries of members who die while in active service or within 180 days of their last day of service and who have either completed 20 years of creditable service regardless of age (15 years of creditable service for firefighters and rescue squad members who are killed in the line of duty) or have completed five years of service and have reached age 60. Eligible beneficiaries may elect to receive a monthly Survivor's Alternate Benefit for life or a return of the member's contributions. The plan does not provide for automatic post-retirement benefit increases. Increases are contingent upon actuarial gains of the plan.

LGERS plan members who are LEOs are eligible to retire with full retirement benefits at age 55 with five years of creditable service as an officer, or at any age with 30 years of creditable service. LEO plan members are eligible to retire with partial retirement benefits at age 50 with 15 years of creditable service as an officer. Survivor benefits are available to eligible beneficiaries of LEO members who die while in active service or within 180 days of their last day of service and who also have either completed 20 years of creditable service regardless of age, or have completed 15 years of service as a LEO and have reached age 50, or have completed five years of creditable service as a LEO and have reached age 55, or have completed 15 years of creditable service as a LEO if killed in the line of duty. Eligible beneficiaries may elect to receive a monthly Survivor's Alternate Benefit for life or a return of the member's contributions.

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Contributions. Contribution provisions are established by General Statute 128-30 and may be amended only by the North Carolina General Assembly. Authority employees are required to contribute 6% of their compensation. Employer contributions are actuarially determined and set annually by the LGERS Board of Trustees. The Authority's contractually required contribution rate for the year ended June 30, 2020, was 9.0% of compensation for general employees, actuarially determined as an amount that, when combined with employee contributions, is expected to finance the costs of benefits earned by employees during the year. Contributions to the pension plan from the Authority were $790,230, for the year ended June 30, 2020.

Refunds of Contributions – Authority employees who have terminated service as a contributing member of LGERS, may file an application for a refund of their contributions. By state law, refunds to members with at least five years of service include 4% interest. State law requires a 60-day waiting period after service termination before the refund may be paid. The acceptance of a refund payment cancels the individual's right to employer contributions, or any other benefit provided by LGERS.

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

At June 30, 2020, the Authority reported a liability of $3,324,897 for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2019. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of December 31, 2018. The total pension liability was then rolled forward to the measurement date of June 30, 2019 utilizing update procedures incorporating the actuarial assumptions. The Authority's proportion of the net pension liability was based on a projection of the Authority's long-term share of future payroll covered by the pension plan, relative to the projected future payroll covered by the pension plan of all participating LGERS employers, actuarially determined. At June 30, 2020, the Authority's proportion was 0.12175% (measured as of June 30, 2019), which was a decrease of 0.00397% from its proportion as of June 30, 2019 (measured as of June 30, 2018).

For the year ended June 30, 2020, the Authority recognized pension expense of $1,487,583. At June 30, 2020, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 569,307	$ -
Changes of assumptions	541,903	-
Net difference between projected and actual earnings on pension plan investments	81,098	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	6,336	39,806
Employer contributions subsequent to the measurement date	790,230	-
Total	$ 1,988,874	$ 39,806

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$790,230 reported as deferred outflows of resources related to pensions resulting from Authority contributions subsequent to the measurement date will be recognized as a decrease of the net pension liability in the year ending June 30, 2021. Other amounts reported as deferred inflows and outflows of resources related to pensions will be recognized in pension expense as follows:

Year Ending June 30	Amount
2021	$ 589,307
2022	172,531
2023	312,068
2024	84,932
Total	$ 1,158,838

Actuarial Assumptions. The total pension liability in the December 31, 2018 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.0 percent
Salary increases	3.50 to 8.10 percent, including inflation and productivity factor
Investment rate of return	7.00 percent, net of pension plan investment expense, including inflation

The plan currently uses mortality tables that vary by age, gender, employee group (i.e. general, law enforcement officer) and health status (i.e. disabled and healthy). The current mortality rates are based on published tables and based on studies that cover significant portions of the U.S. population. The mortality rates also contain a provision to reflect future mortality improvements.

The actuarial assumptions used in the December 31, 2018 valuation were based on the results of an actuarial experience study as of December 31, 2014.

Future ad hoc cost of living adjustment amounts are not considered to be substantively automatic and are, therefore, not included in the measurement.

The projected long-term investment returns and inflation assumptions are developed through review of current and historical capital markets data, sell-side investment research, consultant whitepapers, and historical performance of investment strategies. Fixed income return projections reflect current yields across the U.S. Treasury yield curve and market expectations of forward yields projected and interpolated for multiple tenors and over multiple year horizons. Global public equity return projections are established through analysis of the equity risk premium and the fixed income return projections.

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Other asset categories and strategies' return projections reflect the foregoing and historical data analysis. These projections 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 allocation and best estimates of arithmetic real rates of return for each major asset class as of June 30, 2019 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Fixed income	29.0%	1.4%
Global equity	42.0%	5.3%
Real estate	8.0%	4.3%
Alternatives	8.0%	8.9%
Credit	7.0%	6.0%
Inflation protection	6.0%	4.0%
Total	100%	

The information above is based on 30-year expectations developed with the consulting actuary for the 2019 asset, liability, and investment policy study for the North Carolina Retirement Systems, including LGERS. The long-term nominal rates of return underlying the real rates of return are arithmetic annualized figures. The real rates of return are calculated from nominal rates by multiplicatively subtracting a long-term inflation assumption of 3.00%. All rates of return and inflation are annualized.

Discount Rate. The discount rate used to measure the total pension liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that contributions from employers will be made at statutorily required rates, actuarially determined. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of the current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Authority's Proportionate Share of the Net Pension Liability (Asset) to Changes in the Discount Rate. The following presents the Authority's proportionate share of the net pension liability (asset) calculated using the discount rate of 7.00 percent, as well as what the Authority's proportionate share of the net pension asset or net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00 percent) or 1-percentage-point higher (8.00 percent) than the current rate:

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Authority's proportionate share of the net pension liability (asset)	$ 7,604,649	$ 3,324,897	$ (232,443)

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Pension Plan Fiduciary Net Position. Detailed information about the pension plan's fiduciary net position is available in the separately issued Comprehensive Annual Financial Report (CAFR) for the State of North Carolina.

Other Post-Employment Benefits (OPEB)

Plan Description. The Authority administers a single-employer, defined benefit plan (the OPEB plan) that provides health and life insurance benefits to eligible retirees. The Authority has the authority to establish and amend the benefit terms and financing requirements. No assets are accumulated in a trust that meets the criteria in Paragraph 4 of GASB Statement No. 75.

Benefits Provided. If hired prior to September 1, 2019, an employee who retires with 30 or more years of service, or is at least age 60 with at least 10 years of service may continue in the Authority's group health plan until death. Eligible retirees are also provided life insurance coverage of $5,000. Retiree cost sharing is as follows: For retirees age 60 with 10 to 15 years of service, the retiree pays 50% of the retiree premium. For retirees age 60 with 15 to 20 years of service, the retiree pays 25% of the retiree premium. For retirees age 60 with 20 or more years of service, the retiree pays 0% of the retiree premium. There is no spousal coverage provided. The Authority may amend the benefit provisions at any time. Coverage for all retirees who are eligible for Medicare will be transferred to a Medicare Supplemental plan after qualifying for Medicare. A separate stand-alone report is not issued.

If hired after September 1, 2019, employees are required to contribute to a Retirement Health Savings (RHS) account. Employees will contribute 2% each pay period up to $1,000 per plan year. The Authority will contribute $35 per pay period up to $910 per year. The employer contribution and the employee $1,000 per plan year will increase annually by the Board approved Cost of Labor Adjustment.

All active full-time employees are eligible for membership. At June 30, 2019, the plan membership consisted of:

Members	
Retirees and dependents receiving benefits	43
Active members	121
Total	164

Total OPEB Liability

The Authority's total OPEB liability of $12,876,052 was measured as of June 30, 2019 and was determined by an actuarial valuation as of that date.

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Actuarial Assumptions and Other Inputs. The total OPEB liability in the June 30, 2019 actuarial valuation was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement unless otherwise specified:

Inflation	2.5 percent
Salary increases	3.50 - 7.75 percent, average, including inflation
Discount rate	3.50 percent
Healthcare cost trend rates	Pre-Medicare - 7.00% for 2019 decreasing to an ultimate rate of 4.500% by 2026 Medicare - 5.00% for 2019 decreasing to an ultimate rate of 4.50% by 2021

The discount rate used to measure the total OPEB liability is based on the June average of the Bond Buyer General Obligation 20-year Municipal Bond Index published weekly by The Bond Buyer.

Changes in the Total OPEB Liability

Total OPEB Liability:	
Balance at July 1, 2019	$ 12,710,564
Changes for the year:	
Service cost at end of year	445,581
Interest	488,973
Difference between expected and actual experience	(387,860)
Changes of assumptions or other inputs	(97,373)
Benefit payments and implicit subsidy credit	(283,833)
Net change in total OPEB liability	165,488
Balance at June 30, 2020	$ 12,876,052

Changes in assumptions and other inputs reflect a change in the discount rate from 3.89% to 3.50%.

Mortality rates were based on the RP-2014 mortality tables, with adjustments for LGERS experience and generational mortality improvements using Scale MP-2015.

The demographic actuarial assumptions for retirement, disability incidence, withdrawal, and salary increases used in the June 30, 2019 valuation were based on the results of an actuarial experience study for the period January 1, 2010 – December 31, 2014, adopted by the LGERS.

The remaining actuarial assumptions (e.g., initial per capita costs, health care cost trends, rate of plan participation, rates of plan election, etc.) used in the June 30, 2019 valuation were based on a review of recent plan experience done concurrently with the June 30, 2019 valuation.

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Sensitivity of the Total OPEB Liability to Changes in the Discount Rate. The following presents the total OPEB liability of the Authority, as well as what the Authority's total OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower (2.50 percent) or 1-percentage-point higher (4.50 percent) than the current discount rate:

	1% Decrease (2.50%)	Current Discount Rate (3.50%)	1% Increase (4.50%)
Total OPEB liability	$ 15,215,261	$ 12,876,052	$ 11,027,579

Sensitivity of the Total OPEB Liability to Changes in the Healthcare Cost Trend Rates. The following presents the total OPEB liability of the Authority, as well as what the Authority's total OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the current healthcare cost trend rates:

	1% Decrease	Current	1% Increase
Total OPEB liability	$ 10,886,828	$ 12,876,052	$ 15,450,229

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

For the year ended June 30, 2020, the Authority recognized OPEB expense of $602,645. At June 30, 2020, the Authority reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 22,066	$ 333,000
Changes of assumptions or other inputs	-	1,377,345
Contributions made to the OPEB plan in the current year	295,137	-
Total	$ 317,203	$ 1,710,345

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$295,137 reported at deferred outflows of resources related to pensions resulting from benefit payments made and administrative expenses incurred subsequent to the measurement date will be recognized as a decrease of the total OPEB liability in the year ending June 30, 2021. Other amounts reported as deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ending June 30	Amount
2021	$ (331,909)
2022	(331,909)
2023	(331,909)
2024	(331,909)
2025	(242,636)
Thereafter	(118,007)
Total	$ (1,688,279)

Other Employment Benefits

The Authority has elected to provide death benefits to employees through the Death Benefit Plan for members of the Local Government Employees' Retirement System (Death Benefit Plan), a multiple-employer, state-administered, cost-sharing plan funded on a one-year term cost basis. The beneficiaries of those employees who die in active service after one year of contributing membership in the System, or who die within 180 days after retirement or termination of service and have at least one year of contributing membership service in the System at the time of death are eligible for death benefits. Lump sum death benefit payments to beneficiaries are equal to the employee's 12 highest months' salary in a row during the 24 months prior to the employee's death, but the benefit may not exceed $50,000 or be less than $25,000. Because all death benefit payments are made from the Death Benefit Plan and not by the Authority, the Authority does not determine the number of eligible participants. The Authority has no liability beyond the payment of monthly contributions. The contributions to the Death Benefit Plan cannot be separated between the post-employment benefit amount and the other benefit amount. Contributions are determined as a percentage of monthly payroll based upon rates established annually by the state. Separate rates are set for employees not engaged in law enforcement and law enforcement officers. The Authority considers these contributions to be immaterial.

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4. Deferred Outflows and Inflows of Resources

The Authority has several deferred outflows and deferred inflows of resources comprised of the following:

	2020	2019
Deferred Outflows:		
Contributions to pension plan in current fiscal year	$ 790,230	$ 655,451
Pension deferrals	1,198,644	1,679,072
Contributions to OPEB plan in current fiscal year	295,137	283,833
OPEB deferrals	22,066	26,684
Deferred charge on refunding	386,106	1,327,210
Total	$ 2,692,183	$ 3,972,250
Deferred Inflows:		
Pension deferrals	$ 39,806	$ 30,490
OPEB deferrals	1,710,345	1,561,639
Total	$ 1,750,151	$ 1,592,129

5. Risk Management and Commitments

Risk Management. The Authority is exposed to various risks of losses related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees and natural disasters. The Authority has property, general liability, workers' compensation, and employee health coverage. Claims have not exceeded coverage in any of the past three fiscal years. The Authority's property insurance does have a flood coverage endorsement. Coverage is provided in zones B, C and X. There is a $5M single occurrence and yearly aggregate limit and the deductible is $50k for a single occurrence.

In accordance with G.S. 159-29, the Authority's employees that have access to $100 or more at any given time of the Authority's funds are performance bonded through a commercial surety bond. The Finance Officer is individually bonded for $200,000. The remaining employees that have access to funds are bonded under a blanket bond for $200,000.

Commitments. The Authority is committed under various contracts for the completion of water and wastewater treatment facilities and other water and sewer projects. Management estimates the cost to complete these contracts to be approximately $13,526,867 at June 30, 2020.

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6. Net Position

At June 30, 2020 and 2019, the Board of Directors had approved the use of the unrestricted net position for the following purposes:

	2020	2019
Operating reserve	$ 5,839,587	$ 6,068,016

7. Summary Disclosure of Significant Contingencies

Federal and State-Assisted Programs

The Authority has received proceeds from federal and state grants. Periodic audits of these grants are required, and certain costs may be questioned as not being appropriate expenditures under the grant agreements. Such audits could result in the refund of grant monies to the grantor agencies. Management believes that any required refunds will be immaterial. No provisions have been made in the accompanying financial statements for the refund of grant monies.

8. Reclassifications

Certain reclassifications have been made to the prior year's financial statements to conform to the current year's presentation. These reclassifications had no effect on previously reported results of operations or net position.

9. Significant Effects of Subsequent Events

In March 2020, the World Health Organization declared the outbreak of a coronavirus (COVID-19), a pandemic. As a result, economic uncertainties have arisen which are likely to negatively impact Authority revenues. At the current time, we are unable to quantify the potential effects of this pandemic.

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ORANGE WATER AND SEWER AUTHORITY

OTHER POST-EMPLOYMENT BENEFITS
REQUIRED SUPPLEMENTARY INFORMATION
LAST THREE FISCAL YEARS

Schedule of Changes in the Total OPEB Liability and Related Ratios

Total OPEB Liability	2020	2019	2018
Service cost at end of year	$ 445,581	$ 473,531	$ 537,550
Interest	488,973	449,217	396,831
Difference between expected and actual experience	(387,860)	10,631	23,866
Changes of assumptions or other inputs	(97,373)	(719,076)	(1,282,089)
Benefit payments and implicit subsidy credit	(283,833)	(242,282)	(240,928)
Net change in total OPEB liability	165,488	(27,979)	(564,770)
Total OPEB liability - beginning	12,710,564	12,738,543	13,303,313
Total OPEB liability - ending	$ 12,876,052	$ 12,710,564	$ 12,738,543
Covered payroll	$ 7,704,086	$ 7,751,275	$ 7,751,275
Total OPEB liability as a percentage of covered payroll	167.13%	163.98%	164.34%

Notes to Schedule:

Changes of Assumptions: Changes of assumptions and other inputs reflect the effects of on the discount rate of each period. The following are the discount rates used in each period:

Fiscal Year	Rate
2020	3.50%
2019	3.89%
2018	3.56%

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ORANGE WATER AND SEWER AUTHORITY

PROPORTIONATE SHARE OF NET PENSION LIABILITY (ASSET)
REQUIRED SUPPLEMENTARY INFORMATION
LAST SEVEN FISCAL YEARS *

Local Government Employees' Retirement System

	2020	2019	2018	2017	2016	2015	2014
Authority's proportion of the net pension liability (asset) (%)	0.12175%	0.12572%	0.12711%	0.12882%	0.11995%	0.12040%	11.89000%
Authority's proportion of the net pension liability (asset) ($)	$ 3,324,897	$ 2,982,507	$ 1,941,888	$ 2,733,991	$ 538,330	$ (709,819)	$ 1,433,202
Authority's covered payroll	$ 8,396,386	$ 8,171,152	$ 8,194,045	$ 6,980,328	$ 7,352,374	$ 7,297,821	$ 6,909,854
Authority's proportionate share of the net pension liability (asset) as a percentage of its covered payroll	39.60%	36.50%	23.70%	39.17%	7.32%	(9.73%)	20.74%
Plan fiduciary net position as a percentage of the total liability	90.86%	91.63%	94.18%	91.47%	98.09%	102.64%	94.35%

* The amounts presented for each fiscal year were determined as of the prior fiscal year ending June 30

The pension schedules are intended to report information for ten years, and additional years' information will be displayed as it becomes available.

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ORANGE WATER AND SEWER AUTHORITY

CONTRIBUTIONS
REQUIRED SUPPLEMENTARY INFORMATION
LAST SEVEN FISCAL YEARS

Local Government Employees' Retirement System

	2020	2019	2018	2017	2016	2015	2014
Contractually required contribution	$ 790,230	$ 655,451	$ 617,219	$ 598,984	$ 510,262	$ 519,888	$ 516,608
Contributions in relation to the contractually required contribution	790,230	655,451	617,219	598,984	510,262	519,888	516,608
Contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Covered payroll	$ 8,780,335	$ 8,396,386	$ 8,171,152	$ 8,194,045	$ 6,980,328	$ 7,352,374	$ 7,297,821
Contributions as a percentage of covered payroll	9.00%	7.81%	7.55%	7.31%	7.31%	7.07%	7.08%

The pension schedules are intended to report information for ten years, and additional years' information will be displayed as it becomes available.

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ORANGE WATER AND SEWER AUTHORITY

ENTERPRISE FUND - WATER
SCHEDULE OF REVENUES AND EXPENDITURES
BUDGET AND ACTUAL (NON-GAAP)
FOR THE YEAR ENDED JUNE 30, 2020

	Final Budget	Actual	Variance Over/Under
Revenues:			
Operating revenues:			
Water	$ 17,659,996	$ 17,893,981	$ 233,985
Sewer	16,870,041	16,948,606	78,565
Reclaimed water	489,911	480,547	(9,364)
Service initiation fees	34,817	24,680	(10,137)
Other	950,922	958,380	7,458
Total operating revenues	36,005,687	36,306,194	300,507
Non-operating revenues:			
Interest income	66,532	63,207	(3,325)
System development fees	1,371,223	1,393,871	22,648
FEMA Reimbursement	-	55,042	55,042
Total non-operating revenues	1,437,755	1,512,120	74,365
Total revenues	37,443,442	37,818,314	374,872
Expenditures:			
Water supply and treatment:			
Salaries and wages	1,457,662	574,744	882,918
Fringe benefits	602,541	482,875	119,666
Materials and supplies	210,834	179,625	31,209
Chemicals	1,116,829	1,288,512	(171,683)
Utilities	378,045	423,158	(45,113)
Maintenance	854,515	943,172	(88,657)
Professional services	12,000	12,322	(322)
Insurance	72,000	63,880	8,120
Communication	3,200	1,279	1,921
Education and development	12,150	4,480	7,670
Miscellaneous	79,479	77,275	2,204
Total water supply and treatment	4,799,255	4,051,322	747,933

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ORANGE WATER AND SEWER AUTHORITY

ENTERPRISE FUND - WATER
SCHEDULE OF REVENUES AND EXPENDITURES
BUDGET AND ACTUAL (NON-GAAP)
FOR THE YEAR ENDED JUNE 30, 2020

	Final Budget	Actual	Variance Over/Under
Water distribution:			
Salaries and wages	1,681,740	1,649,228	32,512
Fringe benefits	764,922	2,122,670	(1,357,748)
Materials and supplies	85,868	95,158	(9,290)
Utilities	201,341	210,258	(8,917)
Maintenance	549,626	686,565	(136,939)
Insurance	7,680	8,541	(861)
Communication	5,000	3,170	1,830
Printing and reproduction	1,500	274	1,226
Education and development	23,416	4,693	18,723
Miscellaneous	10,230	9,720	510
Total water distribution	3,331,323	4,790,277	(1,458,954)
Construction credits	(90,000)	(56,040)	(33,960)
Wastewater treatment:			
Salaries and wages	1,437,342	1,516,402	(79,060)
Fringe benefits	600,755	471,192	129,563
Materials and supplies	215,945	207,574	8,371
Chemicals	855,632	906,859	(51,227)
Utilities	681,580	722,198	(40,618)
Maintenance	964,240	1,047,066	(82,826)
Professional services	5,000	22,944	(17,944)
Insurance	87,600	78,888	8,712
Communication	11,715	7,054	4,661
Education and development	27,000	27,759	(759)
Miscellaneous	67,625	73,435	(5,810)
Total wastewater treatment	4,954,434	5,081,371	(126,937)
Sewer collections:			
Salaries and wages	555,487	520,341	35,146
Fringe benefits	272,954	208,458	64,496
Materials and supplies	39,999	26,201	13,798
Chemicals	130,000	134,921	(4,921)
Utilities	126,334	121,711	4,623
Maintenance	143,045	246,193	(103,148)

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ORANGE WATER AND SEWER AUTHORITY

ENTERPRISE FUND - WATER
SCHEDULE OF REVENUES AND EXPENDITURES
BUDGET AND ACTUAL (NON-GAAP)
FOR THE YEAR ENDED JUNE 30, 2020

	Final Budget	Actual	Variance Over/Under
Insurance	7,680	8,113	(433)
Communication	500	342	158
Printing and distribution	2,000	-	2,000
Education and development	11,475	3,182	8,293
Miscellaneous	2,110	2,782	(672)
Total sewer collections	1,291,584	1,272,244	19,340
Construction credits	(30,000)	(6,885)	(23,115)
General and administrative:			
Salaries and wages	3,730,321	3,815,720	(85,399)
Fringe benefits	1,571,634	854,108	717,526
Materials and supplies	127,665	94,120	33,545
Utilities	195,400	183,218	12,182
Maintenance	430,903	481,813	(50,910)
Professional services	1,223,536	1,237,176	(13,640)
Insurance	61,200	81,431	(20,231)
Communication	215,146	218,655	(3,509)
Printing and reproduction	6,800	4,543	2,257
Education and development	110,575	56,602	53,973
Miscellaneous	175,969	165,807	10,162
Total general and administrative	7,849,149	7,193,193	655,956
Construction credits	(70,000)	(50,893)	(19,107)
Contingency	(1,252,265)	-	(1,252,265)
Debt Service:			
Principal		5,827,407	
Interest		2,590,895	
Total debt service	10,459,806	8,418,302	2,041,504

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ORANGE WATER AND SEWER AUTHORITY

ENTERPRISE FUND - WATER
SCHEDULE OF REVENUES AND EXPENDITURES
BUDGET AND ACTUAL (NON-GAAP)
FOR THE YEAR ENDED JUNE 30, 2020

	Final Budget	Actual	Variance Over/Under
Capital outlay	28,612,700	26,283,821	2,328,879
Total expenditures	59,855,986	56,976,712	2,879,274
Revenues over (under) expenditures	(22,412,544)	(19,158,398)	3,254,146
Other Financing Sources (Uses):			
Refunding bonds issued	9,500,000	9,500,000	-
Proceeds from borrowing	20,000,000	18,493,691	1,506,309
Bond refunding premium	3,262,544	3,262,544	-
Payment to bondholders - retired debt	(10,350,000)	(10,350,000)	-
Total other financing sources (uses)	22,412,544	20,906,235	1,506,309
Net change in fund balance	$ -	1,747,837	$ 1,747,837
Reconciliation from Budgetary Basis (Modified Accrual) to Full Accrual Basis:			
Principal payments debt		5,827,407	
Refunding bonds issued		(9,500,000)	
Bond refunding premium		(3,262,544)	
Payment to bondholders - retired debt		10,350,000	
Long-term debt issued		(18,493,691)	
Change in interest accrual for bonded debt		25,116	
Depreciation		(9,780,753)	
Change in deferred outflows of resources - pensions		(480,428)	
Change in net pension liability		(342,390)	
Change in deferred inflows of resources - pensions		(9,316)	
Change in compensated absences		(102,021)	
OPEB expense		(602,645)	
Amortization of bond expense and patent		611,927	
Capital outlay		26,283,821	
Gain on disposal of capital asset		56,978	
Costs of issuance		(531,701)	
Capital contributions		1,992,762	
Change in net position		$ 3,790,359	

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF REVENUE AND EXPENDITURES - PROJECT FUNDS
FROM INCEPTION THROUGH JUNE 30, 2020

	Project Budget	Cumulative Total to June 30, 2020	Unexpended Balance as of June 30, 2020
Raw Water Supply Sources:			
Revenues:			
General Fund	$ 3,992,103	$ 4,091,299	$ (99,196)
Expenditures:			
Jordan Lake raw water supply intake and pumping facility	$ 347,558	$ 350,812	$ (3,254)
Stone quarry development	396,545	177,872	218,673
University Lake pump station improvements	1,346,000	2,164,891	(818,891)
Cane Creek pump station improvements	35,000	-	35,000
University Lake flashboard replacement	500,000	330,309	169,691
Cane Creek raw water transmission main capacity study	100,000	275	99,725
University Lake permanganate facility	347,000	224,822	122,178
Cane Creek permanganate facility	920,000	842,318	77,682
Total expenditures	$ 3,992,103	$ 4,091,299	$ (99,196)
Water Treatment:			
Revenues:			
General Fund	$ 6,951,000	$ 6,560,526	$ 390,474
Expenditures:			
Water facility security upgrades	$ 439,000	$ 598,373	$ (159,373)
Water treatment plant rehabilitation projects	80,000	88,985	(8,985)
Water treatment plant front entry rehabilitation	35,000	11,235	23,765
HVAC replacement	195,000	200,129	(5,129)
Water treatment plant electrical distribution improvements	50,000	210,204	(160,204)
Water treatment plant SCADA obsolete equipment replacement	15,000	13,400	1,600
Plants SCADA master plan	25,000	-	25,000
Water treatment plant turbidimeter replacements	90,000	49,211	40,789
Water treatment plant sedimentation basin rehabilitation	2,647,000	2,809,887	(162,887)
Water treatment plant concrete condition assessment	325,000	161,956	163,044
Water treatment plant filter media and backwash improvements	1,330,000	1,335,321	(5,321)
Water treatment plant finished water pump improvements	300,000	131,299	168,701
Water treatment plant chemical facility upgrades	655,000	304,748	350,252
Water treatment plant belt filter press replacement	765,000	645,778	119,222
Total expenditures	$ 6,951,000	$ 6,560,526	$ 390,474
Water Transmission and Distribution:			
Revenues:			
General Fund	$ 25,265,547	$ 20,349,753	$ 4,915,794

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ORANGE WATER AND SEWER AUTHORITY

**SCHEDULE OF REVENUE AND EXPENDITURES -
PROJECT FUNDS
FROM INCEPTION THROUGH JUNE 30, 2020**

	Project Budget	Cumulative Total to June 30, 2020	Unexpended Balance as of June 30, 2020
Expenditures:			
Water main - road improvement projects	$ 408,000	$ 378,872	$ 29,128
Water main rehabilitation/replacement projects	7,477,547	6,388,176	1,089,371
High priority water main replacement	8,073,000	5,933,250	2,139,750
Water main upgrades - development projects	231,000	-	231,000
Barbee Chapel Road booster pump station study	75,000	-	75,000
Dobbins Drive water main replacement	884,000	1,042,515	(158,515)
Dobbins Drive water main condition assessment	435,000	-	435,000
Cameron Avenue water main replacement	1,159,000	1,014,501	144,499
Cameron Avenue water main design alternatives assessment	25,000	-	25,000
Water distribution system hydraulic model	250,000	84,261	165,739
Jones Ferry water line improvements	300,000	399,860	(99,860)
Galvanized water main replacement	1,709,000	537,864	1,171,136
Kensington water line replacement	626,000	1,579,623	(953,623)
Hillsborough Street water main replacement	1,900,000	2,528,961	(628,961)
Distribution system prioritization model	495,000	459,870	35,130
Distribution system sampling stations	185,000	2,000	183,000
Bolinwood Bridge water main replacement	50,000	-	50,000
Westwood neighborhood water and sewer rehabilitation	50,000	-	50,000
Lake Ellen water main replacement	160,000	-	160,000
Brandywine Road water main replacement	739,000	-	739,000
Barnes Street valve evaluation	34,000	-	34,000
Total expenditures	$ 25,265,547	$ 20,349,753	$ 4,915,794
Wastewater Collection Lines:			
Revenues:			
General Fund	$ 22,962,000	$ 16,911,453	$ 6,050,547
Expenditures:			
Gravity sewer condition evaluation	$ 3,135,000	$ 2,370,187	$ 764,813
Gravity sewer rehabilitation	11,602,000	9,491,907	2,110,093
Bolinwood Drive interceptor replacement	1,054,000	262,745	791,255
Little Creek interceptor replcaement	3,521,000	3,000,640	520,360
Dobbins Drive interceptor replacement	1,520,000	886,067	633,933
Willow Drive interceptor replacement	25,000	-	25,000
Prince Street common service replacement	40,000	42,155	(2,155)
Rocky Branch interceptor replacement	-	16,737	(16,737)
Creek crossing access improvements	721,000	136,643	584,357
Rogers Road sanitary sewer extension	1,803,000	1,135,421	667,579
Credit (Orange County reimbursement) Rogers Road sewer	(1,673,000)	(1,074,845)	(598,155)
Sanitary sewer hydraulic modeling	1,214,000	643,796	570,204
Total expenditures	$ 22,962,000	$ 16,911,453	$ 6,050,547

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF REVENUE AND EXPENDITURES - PROJECT FUNDS
FROM INCEPTION THROUGH JUNE 30, 2020

	Project Budget	Cumulative Total to June 30, 2020	Unexpended Balance as of June 30, 2020
Wastewater Pumping Stations and Force Mains:			
Revenues:			
General Fund	$ 7,083,000	$ 10,756,578	$ (3,673,578)
Expenditures:			
Rogerson Drive pump station rehabilitation	$ 4,448,000	$ 3,272,715	$ 1,175,285
Rogerson Drive force main routing study	50,000	-	50,000
Rogerson Drive force main evaluation	75,000	-	75,000
Rogerson Drive force main and pump station program	-	84,140	(84,140)
Pump station operational assessments	60,000	48,228	11,772
Rogerson Drive force main emergency repair	1,200,000	5,667,960	(4,467,960)
Rogerson Drive force main rehabilitation	1,250,000	1,683,535	(433,535)
Total expenditures	$ 7,083,000	$ 10,756,578	$ (3,673,578)
Wastewater Treatment and Disposal:			
Revenues:			
General Fund	$ 16,590,000	$ 13,351,644	$ 3,238,356
Expenditures:			
Mason Farm waste water treatment plant rehabilitation and improvement project	$ 1,957,000	$ 2,351,238	$ (394,238)
Mason Farm waste water treatment plant comprehensive coatings program	1,637,000	2,050,938	(413,938)
Mason Farm waste water treatment plant inermediate pump station (IPS) rehabilitation	1,716,000	930,680	785,320
Mason Farm waste water treatment plant solids thickening system improvements	4,722,000	3,251,852	1,470,148
Mason Farm waste water treatment plant non-potable water pump replacement	554,000	249,800	304,200
Mason Farm waste water treatment plant bar screen replacement	150,000	133,346	16,654
Mason Farm waste water treatment plant hyper-pitch mixer blades	58,000	-	58,000
Mason Farm waste water treatment plant piping heat tracing and insulation	35,000	-	35,000
Plants facilities building envelope rehabilitation	725,000	568,303	156,697
Mason Farm waste water treatment plant miscellaneous building rehabilitation	65,000	-	65,000
Mason Farm waste water treatment plant biosolids conveyance and loading	91,000	-	91,000
Offsite biosolids storage improvements	40,000	24,169	15,831
Mason Farm waste water treatment plant filtrate side stream treatment	194,000	-	194,000
Mason Farm waste water treatment plant secondary clarifier			

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF REVENUE AND EXPENDITURES - PROJECT FUNDS
FROM INCEPTION THROUGH JUNE 30, 2020

	Project Budget	Cumulative Total to June 30, 2020	Unexpended Balance as of June 30, 2020
rehabilitation and pumping improvements	1,444,000	256,401	1,187,599
Mason Farm waste water treatment plant warehouse improvements	50,000	112	49,888
Mason Farm waste water treatment plant supervisory control and data acquisition system (SCADA) upgrade	360,000	464,063	(104,063)
Mason Farm waste water treatment plant digester complex rehabilitation and improvements	152,000	527,837	(375,837)
Mason Farm waste water treatment plant fermenter tank and pumping rehabilitation	200,000	-	200,000
Mason Farm waste water treatment plant primary sludge pump station rehabilitation and old lab building demo	75,000	-	75,000
Asset Management Plan development	-	24,840	(24,840)
Mason Farm waste water treatment plant rehabilitation and replacement of chemical building and piping	595,000	633,292	(38,292)
Mason Farm waste water treatment plant server room improvements	200,000	355,929	(155,929)
Mason Farm waste water treatment plant security improvements	132,000	33,380	98,620
Mason Farm waste water treatment plant gas monitoring system	190,000	-	190,000
Mason Farm waste water tretament plant headworks rehabilitation	1,248,000	1,495,464	(247,464)
Total expenditures	$ 16,590,000	$ 13,351,644	$ 3,238,356
Facility Improvements:			
Revenues:			
General Fund	$ 2,099,000	$ 2,575,738	$ (476,738)
Expenditures:			
Administration building locker room renovation study	$ -	$ 10,240	$ (10,240)
Information services	-	130,255	(130,255)
Engineering office renovation	-	18,702	(18,702)
Administration building HVAC system upgrade	2,099,000	2,416,541	(317,541)
Total expenditures	$ 2,099,000	$ 2,575,738	$ (476,738)

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

Independent Auditor's Report

To the Board of Directors
Orange Water and Sewer Authority
Carrboro, North Carolina

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to the financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the business-type activities of the Orange Water and Sewer Authority (the "Authority"), a component unit of the Town of Chapel Hill, North Carolina, as of and for the years ended June 30, 2020 and 2019 and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements, and have issued our report thereon dated September 2, 2020.

Internal Control Over Financial Reporting

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

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

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

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Compliance and Other Matters

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

Purpose of This Report

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

Martin Starnes & Associates, CPAs, P.A.
Hickory, North Carolina
September 2, 2020

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"A Professional Association of Certified Public Accountants and Management Consultants"

Report on Compliance for Each Major Federal Program; Report on Internal Control Over Compliance; in Accordance with Uniform Guidance; and the State Single Audit Implementation Act

Independent Auditor's Report

To the Board of Directors
Orange Water and Sewer Authority
Carrboro, North Carolina

Report on Compliance for Each Major Federal Program

We have audited the Orange Water and Sewer Authority's compliance with the types of compliance requirements described in the *OMB Compliance Supplement* and the *Audit Manual for Governmental Auditors in North Carolina*, issued by the Local Government Commission, that could have a direct and material effect on each of the Orange Water and Sewer Authority's major federal programs for the year ended June 30, 2020. The Orange Water and Sewer Authority's major federal programs are identified in the summary of auditor's results section of the accompanying Schedule of Findings, Responses and Questioned Costs.

Management's Responsibility

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

Auditor's Responsibility

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

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

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Opinion on Each Major Federal Program

In our opinion, the Orange Water and Sewer Authority complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on its major federal program for the year ended June 30, 2020.

Report on Internal Control Over Compliance

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

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

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

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

Martin Starnes & Associates, CPAs, P.A.
Hickory, North Carolina
September 2, 2020

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Report on Compliance for Each Major State Program; Report on Internal Control Over Compliance; in Accordance with Uniform Guidance; and the State Single Audit Implementation Act

Independent Auditor's Report

To the Board of Directors
Orange Water and Sewer Authority
Carrboro, North Carolina

Report on Compliance for Each Major State Program

We have audited the Orange Water and Sewer Authority's compliance with the types of compliance requirements described in the *Audit Manual for Governmental Auditors in North Carolina*, issued by the Local Government Commission, that could have a direct and material effect on each of the Orange Water and Sewer Authority's major state programs for the year ended June 30, 2020. The Orange Water and Sewer Authority's major state program is identified in the summary of auditor's results section of the accompanying Schedule of Findings, Responses and Questioned Costs.

Management's Responsibility

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

Auditor's Responsibility

Our responsibility is to express an opinion on compliance for each of the Orange Water and Sewer Authority's major state programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and applicable sections of Title 2 US *Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance), as described in the *Audit Manual for Governmental Auditors in North Carolina*, and the State Single Audit Implementation Act. Those standards, Uniform Guidance, and the State Single Audit Implementation Act require that we plan and perform the audit to obtain reasonable assurance about whether non-compliance with the types of compliance requirements referred to above that could have a direct and material effect on a major state program occurred. An audit includes examining, on a test basis, evidence about the Orange Water and Sewer Authority's compliance with those requirements and performing such other procedures, as we considered necessary in the circumstances.

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

Opinion on Each Major State Program

In our opinion, the Orange Water and Sewer Authority complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on its major state program for the year ended June 30, 2020.

Report on Internal Control Over Compliance

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

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

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

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

Martin Starnes & Associates, CPAs, P.A.
Hickory, North Carolina
September 2, 2020

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF FINDINGS, RESPONSES AND QUESTIONED COSTS
FOR THE YEAR ENDED JUNE 30, 2020

1. Summary of Auditor's Results

Financial Statements

Type of auditor's report issued on whether the financial statements audited were prepared in accordance to GAAP:	Unmodified			
Internal control over financial reporting:				
• Material weakness(es) identified?	_____	Yes	X	No
• Significant deficiency(ies) identified?	_____	Yes	X	None reported
Non-compliance material to financial statements noted?	_____	Yes	X	No

Federal Awards

Internal control over major federal programs:				
• Material weakness(es) identified?	_____	Yes	X	No
• Significant deficiency(ies) identified?	_____	Yes	X	None reported
Type of auditor's report issued on compliance for major federal programs:	Unmodified			
Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)?	_____	Yes	X	No

Identification of major federal programs:

CFDA No(s).	Names of Federal Program or Cluster
66.468	Drinking Water State Revolving Fund Cluster

Dollar threshold used to distinguish between Type A and Type B programs	$750,000			
Auditee qualified as low-risk auditee?	X	Yes	_____	No

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF FINDINGS, RESPONSES AND QUESTIONED COSTS
FOR THE YEAR ENDED JUNE 30, 2020

State Awards

Internal control over major state programs:

- Material weakness(es) identified? _____ Yes ___X___ No
- Significant deficiency(ies) identified? _____ Yes ___X___ None reported

Type of auditor's report issued on compliance for major state programs: Unmodified

Any audit findings disclosed that are required to be reported in accordance with the State Single Audit Implementation Act? _____ Yes ___X___ No

Identification of major state programs:

State Reserve Loan

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF FINDINGS, RESPONSES AND QUESTIONED COSTS
FOR THE YEAR ENDED JUNE 30, 2020

2. Findings Related to the Audit of the Basic Financial Statements

None

3. Findings Related to the Audit of Federal Awards

None

4. Findings Related to the Audit of State Awards

None

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF PRIOR YEAR AUDIT FINDINGS
FOR THE YEAR ENDED JUNE 30, 2020

None reported.

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF EXPENDITURES OF FEDERAL AND STATE AWARDS
FOR THE YEAR ENDED JUNE 30, 2020

Grantor/Pass-through Grantor/Program Title	Federal CFDA Number	State/ Pass-through Grantor's Number	Federal (Direct & Passed-through) Expenditures	State Expenditures	Passed Through To Subrecipients
Federal Grants:					
U.S. Environmental Protection Agency					
Passed-through the N.C. Department of Environmental Quality:					
Division of Water Infrastructure:					
Drinking Water State Revolving Fund Cluster:					
Capitalization Grants for Drinking Water State Revolving Funds	66.468	WIF-1928	$ 1,163,130	$ -	$ -
Capitalization Grants for Drinking Water State Revolving Funds	66.468	WIF-1981	290,843	-	-
Capitalization Grants for Drinking Water State Revolving Funds	66.468	WIF-1983	44,140	-	-
Total Drinking Water State Revolving Fund Cluster			1,498,113	-	-
Total U.S. Environmental Protection Agency			1,498,113	-	-
Total Federal Assistance			$ 1,498,113	$ -	$ -
N.C. Department of Environmental Quality					
Division of Water Infrastructure:					
State Reserve Loan		E-SRP-W-17-0049	$ -	$ 45,576	$ -
State Reserve Loan		H-SRP-D-17-0021	-	929,263	-
State Reserve Loan		E-SRP-W-17-0047	-	773,082	-
Total N.C. Department of Environmental Quality			-	1,747,921	-
Total State Assistance			$ -	$ 1,747,921	$ -
Total Federal and State Assistance			$ 1,498,113	$ 1,747,921	$ -

Notes to the Schedule of Expenditures of Federal and State Awards:

1. **Basis of Presentation**

The accompanying schedule of expenditures of federal and state awards (SEFSA) includes the federal and State grant activity of the Orange Water and Sewer Authority under the programs of the federal government and the State of North Carolina for the year ended June 30, 2020. The information in this SEFSA is presented in accordance with the requirements of Title 2 US *Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* and the State Single Audit Implementation Act. Because the schedule presents only a selected portion of the operations of the Orange Water and Sewer Authority, it is not intended to and does not present the financial position, changes in net position, or cash flows of the Orange Water and Sewer Authority.

2. **Summary of Significant Accounting Policies**

Expenditures reported in the SEFSA are reported on the modified accrual basis of accounting. Such expenditures are recognized following the cost principles contained in Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Orange Water and Sewer Authority has elected not to use the 10-percent de minimus indirect cost rate as allowed under the Uniform Guidance.

3. **Loans Outstanding**

The Authority had the following loan balances outstanding at June 30, 2020 for loans that the grantor/pass-passthrough grantor has still imposed continuing compliance requirements. Loans outstanding at the beginning of the year and loans made during the year are included in the SEFSA.

The balance of loans outstanding at June 30, 2020 consist of:

Program Title	CFDA Number	Pass-Through Grantor's Number	Amount Outstanding
Capitalization Grants for Drinking Water State Revolving Funds	66.468	WIF-1928	$ 2,078,001
State Reserve Loan	N/A	E-SRP-W-17-0049	778,641

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Report of Independent Auditors on Revenue Bond Covenant Compliance

To the Board of Directors
Orange Water and Sewer Authority
Carrboro, North Carolina

We have audited, in accordance with auditing standards generally accepted in the United States of America, the Statements of Net Position of the Orange Water and Sewer Authority (the "Authority"), a component unit of the Town of Chapel Hill, North Carolina, as of June 30, 2020 and 2019, and the related statements of revenues, expenses, and changes in net position and cash flows for the years then ended, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements, and have issued our report thereon dated September 2, 2020.

In connection with our audit, nothing came to our attention that caused us to believe that the Authority failed to comply with the terms, covenants, provisions, or conditions of Section 7.04 contained in the amended and restated bond order, dated September 13, 2001 with the Bank of New York and the North Carolina Local Government Commission, insofar as they relate to accounting matters. However, our audit was not directed primarily toward obtaining knowledge of such non-compliance. Accordingly, had we performed additional procedures, other matters may have come to our attention regarding the Authority's non-compliance with the above referenced terms, covenants, provisions, or conditions of the bond order, in so far as they relate to accounting matters.

This report is intended solely for the information and use of the Board of Directors and management of the Authority, the Bank of New York, and the North Carolina Local Government Commission and is not intended to be, and should not be, used by anyone other than these specified parties.

Martin Starnes & Associates, CPAs, P.A.
Hickory, North Carolina
September 2, 2020

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OWASA Board of Directors – 12 Month Board Meeting Schedule (September 18, 2020)

Month	Board Meetings		Committee Meetings & Other Board Items
	Work Session	Business Meeting	
September 2020	Annual Report on Disposal of Surplus Personal Property (↻) Consideration of Juneteenth Paid Holiday EEO/Affirmative Action Report and D&I Update (↻) Proposed Changes to Referral Fee Program Discuss Work Plan for New ED (Virtual Meeting) 9/10/2020	Annual Report and Financial Audit (↻) Update on COVID-19 **Forest Management Update** Discuss Process to Update the Strategic Plan Update on the Water Main Prioritization Model Approve GC Engagement (↻) (Annual Virtual Meeting of the BOD) 9/24/2020	*Meeting between the CHTC OWASA Committee & Chapel Hill Appointees to the BOD (9-17-2020)*
October 2020	**Strategic Trends Report** (↻) Discuss Results of Board Self-Assessment (Virtual Meeting) 10/8/2020	Q1 Financial Report (↻) Update on COVID-19 Reliability and Resiliency Improvements Update (Tentative) Sewer Use Ordinance and Service Lateral Policy Updates to Align with House Bill 873 CS – ED Performance Review (Virtual Meeting) 10/22/2020	*Possible welcome of new Board member(s)*
November 2020	**Annual Update of the Energy Management Plan** (↻) **(Tentative) LRWSP – Drought Response Operating Protocol** (Tentative) Response to Petition to Modify WSMPBA Boundary 11/12/2020	*Holiday – no meeting*	*Possible welcome of new Board member(s)*
December 2020	**(Tentative) LRWSP – Drought Response Operating Protocol** 12/10/2020	*Holiday – no meeting*	
January 2021	Appoint Audit Firm (↻) Employee Health and Dental Insurance Update for FY 22 (↻) Affordability Outreach Program Update (↻) D&I Update (↻) 1/14/2021	Annual Lakes Recreation Report (↻) CIP Semiannual Report (↻) Q2 Financial Report (↻) Discuss FY 22 Budget Calendar, Planning Assumptions, and New Budget Format (↻) 1/28/2021	
February 2021	Department Managers FY 22 Budget Presentations (↻) CS – Prepare for GC Interim Review (↻) 2/11/2021	CS – GC Interim Review (↻) 2/25/2021	
March 2021	FY 22 Draft Budget and Rates (↻) 3/11/2021	Set date for Public Hearings – FY 22 Budget & Rates (↻) 3/25/2021	
April 2021	Review Employee Health and Dental Insurance Renewals (↻) FY 22 Draft Budget and Rate Adjustment (↻) BOD Eligible for Nominations to Election as Board Officers (include Officer descriptions) (↻) CS – Prepare for ED Interim Review (↻) 4/8/2021	Q3 Financial Report (↻) FY22 Draft Budget and Rates Adjustment Information and Authorize Staff to Publish Proposed Rates (↻) CS – Prepare for ED Interim Review (↻) 4/22/2021	
May 2021	Approve Employee Health and Dental Insurance Renewals (↻) 5/13/2021	Public Hearings – FY 22 Budget and Rates (↻) 5/27/2021	
June 2021	Approve FY 22 Budget and Rates (↻) Election of Officers (↻) 6/10/2021	TBD 6/24/2021	
July 2021	D&I Update (↻) 7/8/2021	TBD 7/22/2021	

Current and Pending Key Projects and Strategic Initiatives– in **bold**

OWASA Board of Directors – 12 Month Board Meeting Schedule (September 18, 2020)

Month	Board Meetings		Committee Meetings & Other Board Items
	Work Session	Business Meeting	
August 2021	CS – Prepare for GC Annual Review ↻ 8/12/2021	Preliminary 12 Month Financial Report ↻ CIP Semiannual Report ↻ CS – GC Annual Review ↻ 8/26/2021	

The 12 Month Board Meeting Schedule shows Strategic Plan initiatives and other priority efforts that the Board and staff plan to give greatest consideration to during the next twelve months. The schedule also shows major recurring agenda items that require Board action, or items that have been scheduled in response to the Board's prior standing request. This schedule does not show all the items the Board may consider in a work session or business meeting. It also does not reflect meetings at which the Board will discuss and act on the update of the Strategic Plan.

The 12 Month Board Meeting Schedule will be reviewed and updated at each monthly work session and may also be discussed and updated at the Board's business meetings.

In addition to the initiatives shown in this schedule, staff will be working on other Strategic Plan and organizational priorities that are not expected to require major additional discussion with the Board except as part of budget deliberations.

The schedule implies that the following Strategic Plan initiatives would be addressed beyond the 12-month period. The Board may conclude that one or more of the following initiatives are higher priority. The schedule will be revised as needed to reflect the Board's priorities, and any additional initiatives that the Board may decide to address.

- Development of a plan and policy framework for OWASA lands is considered a longer-term priority. The NRTS Committee discussed this issue in September 2017 and determined it was lower priority than Forest Management.
- Water Conservation Plan will be prepared concurrent with update of the Long-Range Water Supply Plan.
- Update of Strategic Plan. On October 24, 2019, the Board and staff agreed to begin updating the Strategic Plan in FY 2021.

The OWASA Board determines which topics it wants to explore as a full Board (potentially in a work session format) and which topics it wants to assign to Board committees or committee chairs for further analysis and development of recommendations. Board also determines priorities and desired timeframes for addressing topics. Committee meetings will be updated on the schedule routinely.

Abbreviations Used in Draft Schedule:

↻	Recurring agenda item (generally these are "required" items)
AV/AMI	Agua Vista/Advanced Metering Infrastructure
BOCC	Board of County Commissioners
BOD	Board of Directors
CE	Community Engagement
CEP	Community Engagement Plan
CHTC	Chapel Hill Town Council
CIP	Capital Improvements Program
COLA	Cost of Labor Adjustment
CS	Closed Session of the Board
CTC	Carrboro Town Council
CY	Calendar Year
D&I	Diversity and Inclusion
ED	Executive Director
EEO	Equal Employment Opportunity
EPA	Environmental Protection Agency
FY	Fiscal Year
GC	General Counsel
HR	Human Resources
JLP	Jordan Lake Partnership
KPI	Key Performance Indicator

Current and Pending Key Projects and Strategic Initiatives– in **bold**

LRWSP	Long-Range Water Supply Plan
MOA	Memorandum of Agreement
MWBE	Minority/Women-owned Business Enterprises
MST	Mountains-to-Sea Trail
MFMM	Multi-Family Master Meter
NCDOT	North Carolina Department of Transportation
NRTS	Natural Resources and Technical Services
OC	Orange County
Q	Quarter
RFP	Request for Proposals
SRF	State Revolving Fund
SOW	Scope of Work
TBD	To Be Determined
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

Agenda Item

- Update on OWASA's COVID-19 Information and Discussion by the Board

Purpose

- To provide the Board of Directors and public an update on OWASA's response to COVID-19 to ensure we continue to provide the Carrboro and Chapel Hill communities with high-quality and reliable water, wastewater, and reclaimed water services during the pandemic.

- Staff will provide a verbal update on activities since August 27, 2020.

Action Needed

- Discussion and questions by the Board of Directors.

September 24, 2020

Agenda Item

- Forest Management Program Update

Purpose

- Provide the Board of Directors and public an update on OWASA's Forest Management Program.

Background

- OWASA owns about 2,400 acres of forest lands, much of which is for protecting water quality in the Cane Creek Reservoir, the primary source of drinking water for the Carrboro-Chapel Hill communities.

- On September 26, 2019, following a community engagement process, the Board authorized staff to implement the Forest Management Program on OWASA owned lands in accordance with the Board approved vision, guiding principles and management strategies.

- The prescribed burn scheduled for the Mitigation Tract was postponed by the N.C. Forest Service due to concerns regarding the adverse effects smoke might play in combating COVID-19 and will be revisited next year.

- Various other activities have occurred in since March 2020 and are outlined in the memorandum including engaging with our neighbors and finalizing Forest Management Plans for Meadow Crest North and South.

- This fall our forestry consultant will be touring both Meadow Crest sites with prospective bidders and reviewing proposals.

Action Needed

- Information only, no action needed.

September 24, 2020

Memorandum

To: Board of Directors

Through: Todd Taylor, P.E., Executive Director

From: Johnny Riley

Date: September 18, 2020

Subject: **Forest Management Program Update**

Purpose:

Provide the Board of Directors and public an update on OWASA's Forest Management Program.

Background:

OWASA owns about 2,400 acres of forest lands, much of which is for protecting water quality in the Cane Creek Reservoir, the primary source of drinking water for the Carrboro-Chapel Hill communities.

On September 26, 2019, following a community engagement process, the Board authorized staff to implement the Forest Management Program on OWASA owned lands in accordance with the Board approved vision, guiding principles and management strategies.

Forest Management Vision

Protect water quality now and for future generations by following science-based principles to manage our forest lands so they are healthy, diverse, resilient, and sustainable.

Guiding Principles

OWASA plans to achieve its vision through the application of seven guiding principles for our forest management program, forest stewardship plans, decisions, and actions:

- Protect water quality, OWASA's highest priority
- Improve ecological health of forested land
- Reduce the risk of wildfire
- Improve wildlife habitat and species diversity
- Sustainably manage OWASA's resources

- Engage the community and partner agencies
- Minimize adverse impacts on neighbors and surrounding community

Progress since the March 12, 2020 Update to OWASA Board:

The prescribed burn scheduled for the Mitigation Tract was postponed by the N.C. Forest Service due to concerns regarding the adverse effects smoke might play in combating COVID-19.

In May we hired a crew of workers to mechanically remove small diameter pine trees from a portion of the Mitigation Tract. This was done to promote the growth of desirable trees and decrease competition within this area.

In July we met with a group of neighbors to answer questions and receive any additional feedback regarding the draft Meadow Crest North and South forestry plans.

In August we sprayed a selective herbicide to kill the small trees that were growing within the fire lines at the Mitigation Tract. This action will ensure these areas are clear when we conduct the next prescribed burn.

Forestry plans for both Meadow Crest North and South were finalized and are now available on the OWASA website.

Next Steps:

This fall our forestry consultant will be touring both Meadow Crest sites with prospective bidders and reviewing proposals.

The fiscal year 2022 budget will include funding to draft the next forest management plan on our priority list.

In April 2021 we plan on revisiting the prescribed burn at the Mitigation Tract that was originally scheduled for this past Spring.

I look forward to Board discussion and questions.

Johnny W. Riley
Reservoir and Land Resources Supervisor

Agenda Item

- Update on New Water Main Prioritization Model

Purpose

- To provide an update on the development of a new risk model used to prioritize water main replacement projects and additional analysis and decision support tools used to guide infrastructure investment decisions and operational strategies to manage the water distribution system consistent with expected level of service criteria.

Background

- In 2003, OWASA developed a data-driven distribution system prioritization model to identify and prioritize water mains for replacement. The model used factors such as age, material, break history, water pressure, and consequence of failure – referenced to industry standards – in order to generate an assessment of a given water main's risk. In 2010, the underlying risk criteria were reviewed and revised.

- In March 2019, work began as part of CIP #275-89 Distribution System Prioritization Model to complete a major update of this model. In addition to improving our ability to identify and prioritize needed water main replacements, the study's objectives were expanded to include additional planning and operational improvements for a more comprehensive and integrated approach to the management of risk in the water distribution system.
- The consulting firm of HDR Engineering, Inc. of the Carolinas (HDR) completed the study. At the Board's February 14, 2019 Work Session, staff presented background information about OWASA's water distribution system and the project's scope of work. An interim update, including discussion of the risk framework, was provided at the July 11, 2019 Work Session near the completion of Phase 1. The study was completed earlier this year, and results from the prioritization model were used to inform the approved five-year FY 2021 – 2025 Capital Improvements Program (CIP) budget.

- This memo presents an overview of the key tasks completed during the study and discussion of the benefits of the study deliverables.

Action Requested

- Vishnu Gangadharan and Allison Spinelli will deliver a presentation on the study and answer questions.

- Request a Motion to approve the revision to the water main break Key Performance Indicator (KPI) setting a target range of 8 to 13 breaks per 100 miles and revising the KPI target range only after a period of five to seven years (see page 3 of the memo and Attachment 1).

Memorandum

To: Board of Directors

Through: Todd Taylor, P.E., Executive Director

From: Vishnu Gangadharan, P.E., and Allison M. Spinelli, P.E.

Date: September 18, 2020

Subject: **Update on New Water Main Prioritization Model**

Purpose:

To provide an update on the development of a new risk model used to prioritize water main replacement projects and additional analysis and decision support tools which will be used to guide infrastructure investment decisions and operational strategies to manage the water distribution system consistent with expected level of service criteria.

Background:

In 2003, OWASA developed a data-driven distribution system prioritization model to identify and prioritize water mains for replacement. The model used factors such as age, material, break history, water pressure, and consequence of failure – referenced to industry standards – in order to generate an assessment of a given water main's risk. In 2010, the underlying risk criteria were reviewed and revised.

In March 2019, work began as part of CIP #275-89 Distribution System Prioritization Model to complete a major update of this model. In addition to improving our ability to identify and prioritize needed water main replacements, the study's objectives were expanded to include additional planning and operational improvements for a more comprehensive and integrated approach to the management of risk in the water distribution system. Questions central to the study include:

- What is our best understanding of the risk profile of any given distribution system pipe?
- Which pipes should we be replacing?
- What should our long-term rate of pipe replacement be?
- What is the best use of pipe condition assessment?
- How can we improve our ability to prepare for and respond to water main breaks?

The consulting firm of HDR Engineering, Inc. of the Carolinas (HDR) was hired through a qualification-based selection process. At the Board's February 14, 2019 Work Session, staff

presented background information about OWASA's water distribution system and the project's scope of work, which was divided into two major phases. An interim update, including discussion of the risk framework, was provided at the July 11, 2019 Work Session near the completion of Phase 1.

The study was completed earlier this year, and results from the prioritization model were used to inform the approved five-year FY 2021 – 2025 Capital Improvements Program (CIP) budget. This memo presents an overview of the key tasks completed during the study and discussion of the benefits of the study deliverables.

Key Tasks:

Key tasks for the study are outlined below.

- *Pipe Deterioration Analysis* – Based on the data we have, what are the statistically significant factors that lead to pipe deterioration and water main breaks? For this analysis, HDR reviewed staff input, Geographic Information System (GIS) data, distribution system hydraulics, and a substantial set of OWASA water main break data collected over decades. The resulting correlations provide the basis for the Likelihood of Failure (LoF) component of the risk prioritization framework, as well as help predict the effect of different long-term pipe replacement rates on water main break rates. This task represents a notable refinement of the prior risk model, which relied on industry reference points rather than actual performance of pipes within the OWASA system.

- *Risk Prioritization Framework* – This framework represents our understanding of overall pipe risk and combines the above mentioned LoF with the Consequence of Failure (CoF) for each segment of pipe in the distribution system. The CoF quantifies the various negative impacts (e.g. critical customer without service, traffic disruption) of a given pipe break. We engaged UNC and UNC Healthcare when identifying critical customers for the CoF analysis. The outputs from the risk framework are leveraged not only to support the prioritization of water main replacement and reliability improvements, but also to identify condition assessment and pipe break response planning opportunities. HDR developed decision logic trees which utilize LoF, CoF, and overall risk scores to guide appropriate actions (replacement, condition assessment, etc.) for each pipe. This improves upon the prior risk model, which was built only to inform prioritization of replacement projects based on overall risk scores; the updated model provides more appropriate decision guidance for pipes in good condition (i.e., low LoF) with high CoF.

- *Renewal Investment Scenarios* – This task provides decision support for setting the level of long-term investment for pipe replacement. Using the results of the deterioration analysis above, HDR developed a planning tool to forecast long-term system performance (i.e., water main break rate) based on differing investment levels (i.e., annual rate of water main replacement), as well as benchmark those two factors against other local and national utilities. The tool found that an annual water main replacement rate of 3.0 miles/year would be necessary to meet the current Key Performance Indicator

(KPI) target of 8.7 breaks per 100 miles, and that replacement rate is reflected in the approved five-year CIP budget for Fiscal Year 2021 – 2025.

The KPI target is based on the results from the most recently available AWWA Benchmarking Study, and therefore is changed each time new survey results are released. Upon further research into this performance indicator, **staff suggests setting a KPI target range of 8 to 13 breaks per 100 mile and revising the KPI target range only after a period of say, five to seven years.** Additional information about this recommendation is included in Attachment 1 and will be presented at the September 24, 2020 Work Session.

- *Opportunistic Condition Assessment* - When a water main is exposed for any reason (e.g. service tap, break, valve replacement, water main replacement), it provides a cost-effective opportunity to gather pipe samples and soil samples for assessment since roughly 90% of the cost of testing is in accessing the pipe. As part of this task, HDR reviewed current staff procedures for various work processes and provided recommendations and conducted staff training for data collection related to site (i.e., photos), soil, and pipe condition during the aforementioned events. Over the past several months staff has implemented these recommendations, and initial results from this data collection are being analyzed and reviewed for effectiveness and actionability.

- *Proactive Condition Assessment* – The methods and proprietary technologies for pressurized water main condition assessment have continued to advance in recent years, but are generally very expensive to implement. This task reviewed the state of available technology that might be appropriate for the pipe materials and sizes in the OWASA distribution system. The initial intent was to set up a pilot test of one or more of these technologies as part of the study scope in order to help assess the benefit and programmatic investment in given technologies. However, detailed discussions about implementation revealed some logistical concerns including in-line valves and tapping locations for the insertion and extraction of the condition assessment tools. Additionally, the OWASA distribution system has relatively few candidate pipes for proactive condition assessment, and even fewer that would not pose a significant risk to the overall distribution system should the tool become stuck or need emergency extraction.

  The study has developed a long-term framework and decision logic for the cost-effective use of proactive condition assessment to assess pipe risk and inform replacement decisions. However, the approved FY 2021 CIP budget reflects a ramped approach to the use of proactive condition assessment, which starts with non-invasive condition assessment methods and then moves towards the use of in-pipe technologies with the expectation that logistical concerns will be addressed over time and the continued development of in-pipe technologies.

- *System Monitoring Recommendations* – HDR completed a high-level review of water distribution system monitoring options to identify key opportunities for improving the planning processes and increasing the effectiveness of water main break responses within

the OWASA distribution system. The review included an investigation of system pressure monitoring as a means of detecting line failure or system anomalies, which may precede a line break, as well as acoustic leak detection monitoring. OWASA currently has ten existing pressure monitors throughout the system; the study recommended adding up to eight additional permanent and up to four temporary pressure monitoring locations and integrating those devices into the Supervisory Control and Data Acquisition (SCADA) system. The review also recommended OWASA invest in up to 4 acoustic leak detector sensors. In the study it was also noted that there is a limitation of the current Advanced Meter Infrastructure (AMI) system to communicate pressure and leak monitoring, but OWASA staff will continue to monitor ongoing improvements in meter network technologies to consider a deployment of network pressure sensors and leak detection sensors that can be integrated into OWASA's existing AMI system in the future. Funding is not currently included in the approved CIP budget for any of the system monitoring recommendations.

- *Break Response Preparedness* – HDR developed an uncalibrated hydraulic model of the distribution system appropriate for the goals of this study; a separate, more detailed hydraulic analysis of the distribution system had been planned to start this year but was deferred due to budget constraints. One key finding from HDR's hydraulic modeling is that the OWASA distribution system is well-looped such that it remains hydraulically robust when taking any given pipe segment out of service anywhere in the system. However, this hydraulic robustness also means that a relatively greater volume of water can be lost through a given main break than would be lost in a more hydraulically constrained network. Thus, the ability to respond quickly to isolate main breaks is critical for our distribution system.

  Beyond the study, staff has focused on break response preparedness in recent years through such efforts as the accelerated valve exercising program and monthly meetings with UNC and UNC Healthcare specifically on distribution system resiliency. Tabletop exercises with UNC and UNC Healthcare were held in June and December 2019 to test and improve various elements of coordinated break response. Within the study, several subtasks focused specifically on improving staff's ability to minimize the time between main break identification and break isolation, including:

  - detailed review and charting of the break response protocol;
  - development of break response plans for several high CoF pipe segments;
  - development of a web-based visual tool, now used by operations staff, that allow for immediate identification of the necessary valves to close (both primary and, if needed, secondary) when isolation of a pipe segment is needed for main break response;
  - development of a prioritization framework for isolation valves that corresponds with the pipe risk prioritization framework;
  - identification of several opportunities for addition of isolation valves (subsequently programmed into the CIP budget);
  - review of spare parts inventory needed to respond to main breaks; and
  - recommendations for improvements in data collection and management (separate from the opportunistic data collection strategies discussed above).

Conclusion:

The study was completed earlier this summer. The primary deliverable of the study is the updated risk prioritization model, which is intended to be a tool for use and refinement by staff for years to come. To that end, staff received detailed training on the model and utilized model results during the development of the FY 2021-2025 CIP budget. Other key deliverables include the isolation valve identification tool and the renewal investment scenario modeling tool. The study also provided other tools and improvements affecting main break response.

This comprehensive study of this asset class created a framework and several tools to enhance the management of our water distribution system, and staff is confident that the study has provided us with the best answers to the core questions listed at the start of this memo.

We look forward to Board discussion and questions.

Vishnu Gangadharan, P.E.
Engineering Manager – Capital Projects

Allison M. Spinelli, P.E.
Asset Manager

Attachment - Recommended Revision to the Water Main Break Key Performance Indicator (KPI) Goal

Attachment
Recommended Revision to the Water Main Break Key Performance Indicator (KPI) Goal

OWASA's monthly KPI Report contains a chart that summarizes annual water main breaks per 100 miles of distribution system piping (example below) for the past four plus years. A water main break is defined as physical damage to a pipe, valve, hydrant, or other appurtenance in the distribution system that results in an abrupt loss of water. In our KPI, we include breaks that occur directly on main lines and breaks that occur where a where a main and service lateral connect. We specifically identify breaks that are due to contractor damage; these breaks are not related to the integrity of the infrastructure, but impact customers just the same.

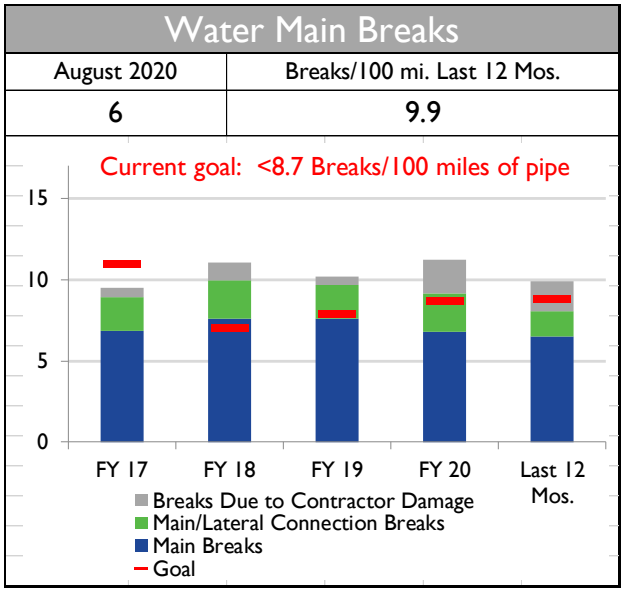


Figure 1 – Current KPI

Prior to FY 2017, the KPI goal was set at 15 breaks/100 mile. Starting in FY 2017, the KPI goal tracks the most recent American Water Works Association (AWWA) Benchmarking Survey results. As part of the recently completed Water Main Prioritization Model Update, staff considered the usefulness of this target and recommends the following revision:

> **The goal for water main break rate should be adjusted to fall within a range between 8 and 13 breaks/100 miles of pipe. This range should be reviewed every five to seven years.**

The revised goal improves the usefulness of this metric from these perspectives:

- Prioritized replacement of aging water mains is the primary strategy for lowering the number of water main breaks not caused by contractors. However, the response of the break rate to an adjustment – even a dramatic adjustment – in main replacement rate would take several years to become apparent. By decoupling the KPI goal from the annual AWWA Benchmarking Survey, keeping the consistency of the goal across a period of five to seven years would help align the goal with the timeframe of

adjustments in the primary strategy.

- Figure 1 shows that the goal for FY 2020, based on the latest AWWA Benchmarking Survey, is 8.7 breaks/100 miles. The annual AWWA Benchmarking Survey is extensive, but there are some caveats in using it to set a goal. (1) It is a voluntary survey that is annually updated with data from the utilities that elect to participate in that year. It is not a consistent peer group. (2) It is not a statistically representative sample, although utilities making the time to take the survey are likely some of the leading utilities in the country. (3) The data are self-reported.

- In consultation with HDR, a study performed at Utah State University (*Water Main Break Rates In the USA and Canada: A Comprehensive Study*; Folkman, 2018) represents a larger, more detailed, and more reliable (e.g., study's survey uses a consistent definition of main break) data set than is available from the annual AWWA Benchmarking Survey. This study found an overall average of 14 breaks/100 miles among the nearly 200,000 miles of pipe evaluated.

- Some utilities elect to set a goal so as to maintain historical service level. Our system's break rate over the previous 10 years is 12.5 breaks/100 miles.

- Of seven local utilities in our area, break rate ranges from about 4 to 20 breaks/100 miles, with an average of 11.3 breaks/100 miles.

Considering the above information, staff recommends setting this KPI goal as a range between 8 and 13 breaks/100 mile to capture the low end of the AWWA Benchmarking Survey and our historical average, while remaining below the national average reported by the 2018 Utah State University study referenced above. The revised KPI would display similarly to Figure 2 below.

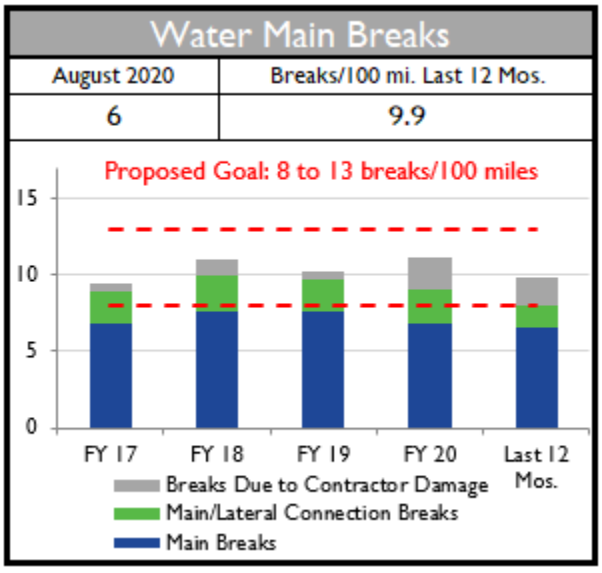


Figure 2 – Proposed KPI Goals

Agenda Item

- Discuss Process to Update the Strategic Plan

Purpose

- To initiate the OWASA Board of Directors' consideration of the need and process for updating OWASA's strategic plan.

Background

- The goals and objectives identified in OWASA's current Strategic Plan (originally adopted on March 13, 2014) have been completed or are considerably underway.

- Staff believes a new strategic plan is needed to ensure that we are anticipating and preparing for the future that we want and setting a course for aligning scarce resources with strategic goals and objectives.

Action Needed

- Discuss and provide feedback on staff on the strategic planning timing and process, as well as guiding principles for the strategic plan.

September 24, 2020

Orange Water and Sewer Authority
OWASA is Carrboro-Chapel Hill's not-for-profit public service agency
delivering high quality water, wastewater, and reclaimed water services.

MEMORANDUM

TO: Board of Directors

FROM: Todd Taylor and Mary Tiger

DATE: September 18, 2020

SUBJECT: Discuss Process to Update the Strategic Plan

Purpose

The goals and objectives of OWASA's current strategic plan are complete or significantly underway. An updated strategic plan is needed to ensure that we are anticipating and preparing for the future that we want and setting a course for aligning scarce resources with our strategic goals and objectives.

The purpose of this memo is to initiate the OWASA Board of Directors' consideration of the need and process for updating OWASA's strategic plan.

Background

On March 13, 2014, the OWASA Board of Directors adopted a Strategic Plan for Fiscal Years 2014 – 2017. The Plan was developed over a series seven strategic planning work sessions in 2013 and 2014. The Board and staff considered information learned from the 2012 Customer Satisfaction Survey, as well as comments and feedback received from the community on a draft strategic plan.

In June 2016, the Board adopted a Plan updated by staff using new information collected from the 2015 Customer Survey. That plan is still in-place, and the Board and community have been provided annual updates on our progress.

The current strategic plan includes the following initiatives:

1. Provide reliable and high-quality supply of water for the next 50 years
2. Engage the community
3. Adopt financial management policies and budget decision processes to ensure affordable services and fiscal sustainability
4. Implement an energy management program
5. Implement advanced metering infrastructure
6. Develop a plan and policy framework for long-term management and disposition of OWASA lands

The plan also identifies other high priority, non-strategic tasks, including:

1. Implement an affordability outreach program
2. Evaluate alternative employee compensation strategies
3. Develop and implement a diversity and inclusion plan

OWASA has made significant progress in achieving these goals and objectives, therefore, it is time to develop a new strategic plan. OWASA is now under new leadership and the COVID-19 pandemic has impacted our community in significant ways, the lasting effects of which are unknown.

A new strategic plan is needed to ensure that we are anticipating and preparing for the future that we want and setting a course for aligning scarce resources with strategic goals and objectives.

Guiding Principles

The OWASA Board of Directors and staff should agree on the set of guiding principles for the strategic plan prior to beginning the planning process. A few examples may include:

- The strategic planning process will consider and/or reinforce OWASA's mission, vision, and values.
- The community will be encouraged to be involved in the strategic planning process.
- We will set strategic goals needed to achieve our long-term vision.
- SMART (Specific, Measurable, Attainable, Relevant, and Time-based) objectives will be developed for each goal.
- We will utilize set mechanisms (define) for monitoring and reporting on progress.

Process Considerations

Planning for the strategic planning process requires the OWASA Board of Directors to consider and provide guidance to staff on some key factors including (but not limited to) the following:

1. Level of community, stakeholder, and employee engagement in strategic planning process, with consideration given to specifically encouraging involvement of historically underrepresented communities

2. Level of staff involvement in the strategic planning process

3. Level of Board (and/or Board Committee) involvement in the strategic planning process

4. Unique to current conditions, how much of the process can effectively be conducted virtually versus in-person? And how does that impact the timing of the planning process?

5. Process facilitator (Third-party, staff, or other)

6. Budget and timeline for the process (related to use outside facilitation)

7. Time horizon for the plan (3-5 years or more)

8. Outcome of process (see guiding principles)

Next Steps

1. At the September 24, 2020 Board meeting (and future meetings, if necessary), the Board of Directors will discuss and provide feedback to staff on the strategic planning timing and process, as well as guiding principles for the strategic plan.

2. Using the feedback from the previous step, staff will draft an approach for updating the strategic plan, including guiding principles, for future Board consideration.

Todd Taylor, P.E.
Executive Director

Mary Tiger
Sustainability Manager

Agenda Item

- Resolution Reappointing the Firm of Epting and Hackney as General Counsel to the Orange Water and Sewer Authority

Purpose

- General Counsel is appointed annually by the Board of Directors to provide legal services to the Board of Directors and staff, to observe the general operation and management of OWASA from a legal perspective, to assist in the establishment of policy and the administration and operations of the business and affairs of OWASA, to initiate legal comment and advise on matters before OWASA or relating to OWASA, so that due regard may be given to pertinent laws, regulations, and statutes.

Background

- The firm of Epting and Hackney has capably served as General Counsel to OWASA since October 1, 1984.

- The hourly rate for services of General Counsel remains unchanged.

- Maintain monthly retainer at $10,000.

Recommendation

- Reappoint Epting and Hackney as General Counsel to the Orange Water and Sewer Authority in accordance with the terms and conditions set out in his letter dated September 17, 2020 to the Executive Director (attached).

  "*Motion that the Board of Directors approves the Resolution Reappointing the Firm of Epting and Hackney as General Counsel to the Orange Water and Sewer Authority.*"

September 24, 2020

Resolution Reappointing the Firm of Epting and Hackney as General Counsel to the Orange Water and Sewer Authority

Whereas, the Orange Water and Sewer Authority (OWASA) is a public, corporate entity organized and operated under the laws and statutes of the State of North Carolina and is engaged in the provision of public water, sewer and reclaimed water services within its service area; and

Whereas, the OWASA Board of Directors finds it is necessary and appropriate to provide for and obtain general legal counsel and services to assist in the establishment of policy and the administration and operations of the business and affairs of OWASA so that due regard may be given to the pertinent laws, regulations, and statutes; and

Whereas, Robert Epting, General Partner of the firm Epting and Hackney, has served as General Counsel to OWASA since October 1, 1984, and has rendered competent and appropriate legal services in that regard, and the Board of Directors wishes to continue their services as General Counsel;

Now, Therefore, Be It Resolved by the Orange Water and Sewer Authority Board of Directors:

1. That the firm of Epting and Hackney, Chapel Hill, N.C., is hereby reappointed General Counsel of Orange Water and Sewer Authority in accordance with the terms and conditions set out in Robert Epting's letter dated September 17, 2020 to the Executive Director.

2. That as General Counsel, he and his firm will serve under the general direction of the Executive Director, subject to the ultimate authority of the Board of Directors.

3. That this reappointment will be effective October 1, 2020 and shall continue until terminated as provided in Mr. Epting's said letter dated September 17, 2020.

Adopted this 24th day of September 2020.

_____
Raymond E. DuBose, P.E., Chair

ATTEST:

_____
Jo Leslie Eimers, Secretary

EPTING AND HACKNEY
ATTORNEYS AND COUNSELLORS AT LAW
410 MARTIN LUTHER KING, JR. BOULEVARD
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ROBERT EPTING
JOE HACKNEY
ELIZABETH LACKEY JACOBS
STEVE LACKEY

TELEPHONE 919-929-0323
FACSIMILE 919-929-3960

OF COUNSEL:
ELLEN B. SCOUTEN

September 17, 2020

Mr. Todd Taylor
Executive Director
Orange Water and Sewer Authority
Carrboro, NC 27510

General Counsel Engagement Letter

Dear Mr. Taylor:

We appreciate the privilege of having been appointed to serve as General Counsel to the Orange Water and Sewer Authority since 1984. As General Counsel is appointed to serve on an annual basis from October 1 through September 30, I write to suggest the terms upon which we propose to continue in this capacity, should the Board of Directors choose to continue our appointment at its annual meeting.

First though, I want to thank you and the staff, and each of the members of the Board of Directors, for the support given our work as General Counsel. Surely few public agency lawyers have the advantage of working with so qualified and cooperative an administrative and support staff, or to report to as dedicated a governing Board, as we enjoy at OWASA.

Today most of the matters we handle directly as OWASA's General Counsel are things I believe benefit from the scope of our training and experience as environmental lawyers for more than thirty years, and from our many years of experience serving on and working with our local governments, and with state and federal agencies. In that work, for other clients, our hourly rate is now $325.00 per hour, and up, depending upon the complexity of the matter.

We are willing and would be pleased to continue to serve as General Counsel upon the terms and conditions of our present understanding, under which we are paid $150.00 per hour, and under which it is understood and agreed that I will devote most of my forty hour work week to OWASA matters, as a priority. When I do work for other clients, I will subtract the time involved in those services from the remainder of my work week, and the balance will be billed to OWASA for our representation and services.

The amount of my work for OWASA has increased over the years and now constitutes most of my own legal work. But we constantly look for ways to educate staff to be able to minimize legal costs, and I am satisfied that OWASA obtains a fair bargain for our services. I am proud of our efforts on OWASA's behalf, and we continue to enjoy the work and appreciate OWASA's very prompt payment for this representation.

Again, we propose to continue to serve in the coming year upon the same terms and conditions as last year, and which have not changed for a number of years, as set out below.

1. Appointment and Service as General Counsel.

As General Counsel, we would undertake and agree to exercise our best professional judgment and to provide our best efforts in that service, including, as necessary the services of my partners, associates, and firm employees and contractors under our direction and supervision, to the Authority, its Board and staff, as to the legal affairs, rights, and responsibilities of the Authority. My partner Elizabeth Jacobs and I will be OWASA's primary legal contacts, and we will devote not less than forty hours per week to these services.

Appointment of General Counsel would be made and accepted anticipating and engaging our legal services on an operating year basis, that is, from October 1, 2020 through September 30, 2021, subject to such reviews, renewal, or termination as the Board of Directors may deem appropriate; provided, that such appointment will be deemed to continue in full effect until terminated as provided herein by either of the parties.

The Authority Board of Directors shall have the right to terminate, or not to renew, this appointment upon not less than ninety days written notice to me as General Counsel, or with the payment of the monthly retainer for at least three months past the effective termination date, along with such other fees and charges as may be due at the date of termination.

I will also retain the right to end my service as General Counsel should that necessity arise. Unless that termination or retirement is caused by health or other circumstances beyond my control, I would endeavor to give the Board not less than one year's notice in advance of any termination on my part. And, for so long as my health allowed after my retirement, I would always remain available to confer and consult with OWASA representatives as you or the Board might find useful, upon such terms and conditions as may be agreed in that event. In the event of my unavailability, or as I might otherwise assign, my partner Elizabeth Jacobs will continue to serve as General Counsel to fulfill this engagement.

While serving as General Counsel, I will be permitted to continue in the general practice

of law, as a partner in the firm of EPTING & HACKNEY, or otherwise, as I might choose. And, I would avoid in that practice the representation of any clients whose interests might be in conflict with those of OWASA.

2. Specific Services.

As General Counsel, I will be available generally for consultations and assignments as noted above. I will attend regular Board meetings and such other meetings and work sessions as requested. Whenever I may be unable to attend such meetings, one of my partners, Elizabeth Jacobs or Joe Hackney, will attend in my place. The term "General Counsel" used herein includes their service as needed or assigned, as well as my own, as well as our firm EPTING & HACKNEY, a law partnership. I or my partner(s) will be available regularly in my firm office, or in OWASA's offices as requested, and at any other time by telephone and electronic messaging means, for regular consultations by Board and staff.

3. Compensation by Monthly Retainer; Other Compensation.

For my primary professional availability and the services provided as General Counsel, the Authority will pay to me as a retainer the sum of Ten Thousand Dollars ($10,000.00) per month, on or before the first business day of each month.

The monthly retainer will be applied against the fees charged for our time in the month for which the retainer is paid. An invoice for the net due for time and services beyond those paid by the retainer will be provided on a monthly basis, and the net due will be paid promptly to the firm.

For such time and services as may be devoted hereunder to my representation of the Authority, where such time exceeds the hours devoted per month multiplied by the hourly rate provided for under the monthly retainer, the Authority will compensate the firm at the rate of $150.00 per hour for my services and those of my partners Joe Hackney and Elizabeth Jacobs.

4. Expenses.

The Authority will also reimburse me for the reasonable and necessary expenses incurred in the performance of my duties as General Counsel. These would include, among others:

a) The costs of supplies and copies, when incurred for copies made, or for supplies necessary for our services to the Authority and devoted solely to its use;

b) The costs of our Clerks' time and related expenses, insofar as expended or incurred solely on behalf of the Authority, at a rate not to exceed $25.00 per hour;

c) The costs of non-local travel (distance exceeding 25 miles), meals and lodging when incurred in the service of the Authority; automobile expenses for personal vehicles to be reimbursed at the IRS-allowed rate, currently 58 cents per mile; and the expenses and fees for continuing education authorized and approved by the Executive Director of the Authority;

d) Such other costs as may be authorized by the Authority and incurred by reason of my appointment and service as General Counsel.

5. Other Services.

Matters involving opinions upon title and closing in the acquisition or disposal of real property by the Authority will be charged for and compensated on a parcel-by-parcel basis, in accordance with factors including the time expended and the consideration involved. Unless unusual effort and time are required in our closing of such matters for the Authority, our fees for title examination and the transactional closing would not normally exceed one percent of the purchase price, subject to a minimum of five hundred dollars per parcel.

I will be happy to provide such further information or response as you or the Board may wish with regard to this proposal.

I remain grateful and proud to have served the Authority as its General Counsel, and I hope that the Board of Directors will find this proposal acceptable to the end that we might continue in this capacity.

With kindest regards, I remain

Sincerely yours,

Robert Epting

Robert Epting