ORANGE WATER AND SEWER AUTHORITY

A public, non-profit agency providing water, sewer and reclaimed water services to the Carrboro-Chapel Hill community.

Agenda
Annual Meeting of the OWASA Board of Directors
Thursday, September 28, 2017, 7:00 P.M.
Chapel Hill Town Hall

In compliance with the "Americans with Disabilities Act," interpreter services are available with five days prior notice. If you need this assistance, please contact the Clerk to the Board at 919-537-4217 or aorbich@owasa.org.

The Board of Directors appreciates and invites the public to attend and observe its meetings. Public comment is invited either by petition upon topics not on the Board's agenda, or by comments upon items appearing on the Board's agenda. Speakers are invited to submit more detailed comments via written materials, ideally submitted at least three days in advance of the meeting to the Clerk to the Board via email or US Postal Service (aorbich@owasa.org/400 Jones Ferry Road, Carrboro, NC 27510).

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.

Announcements

1. Announcements by the Chair
   - A. 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.
2. Announcements by Board Members
   - A. Update on the September 26, 2017 Natural Resources and Technical Services Committee Meeting (John Young)
   - B. Chapel Hill Town Council OWASA Committee and Chapel Hill Appointees to the OWASA Board of Directors will meet on Thursday, October 5, 2017 at 8:00 a.m. in the OWASA Board Room (Heather Payne)
3. Announcements by Staff
   - A. Annual Report for July 2016 through June 2017 Collection, Treatment and Recycling of Wastewater and Biosolids (Todd Taylor)

Presentation of Annual Report

1. A. Executive Director's Comments (Ed Kerwin)
   - B. Finance and Customer Service Director's Comments (Stephen Winters)
   - C. Martin Starnes & Associates, CPAs, P.A.'s Comments (Meg Blue)

Petitions and Requests

2. A. Public
   - B. Board
   - C. Staff

Consent Agenda

Information and Reports

3. 12 Month Board Meeting Schedule (Robert Morgan/Ed Kerwin)

Action

4. Resolution Awarding a Construction Contract for the Brandywine Road Water Main Replacement Project (Dustin Rhodes)
5. Minutes of the September 14, 2017 Work Session of the Board of Directors (Andrea Orbich)
6. Minutes of the September 14, 2017 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter (Robert Morgan)

Regular Agenda

Information and Reports

7. Long-Range Water Supply Plan Update (Ruth Rouse)

Discussion and Action

8. Resolution Awarding a Construction Contract for the Administration Building Heating, Ventilation, and Air Conditioning Replacement Project (Dustin Rhodes)
9. Resolution Reappointing the Firm of Epting and Hackney as General Counsel to the Orange Water and Sewer Authority (Robert Morgan)

Summary of Board Meeting Action Items

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

Closed Session

11. The Board of Directors will convene in a Closed Session for the Purpose of Discussing a Personnel Matter (Barbara Foushee)

PRESENTATION OF ANNUAL REPORT

Executive Director Comments ..... Ed Kerwin

Director of Finance and Customer Service Comments..... Stephen Winters

Martin, Starnes & Associates ..... Meg Blue

September 28, 2017

ORANGE WATER AND SEWER AUTHORITY

A public, non-profit agency providing water, sewer and reclaimed water services to the Carrboro-Chapel Hill community.

MEMORANDUM

TO: Board of Directors

THROUGH: Ed Kerwin

FROM: Stephen Winters, CPA

DATE: September 22, 2017

SUBJECT: Draft of Orange Water and Sewer Authority Comprehensive Annual Financial Report for the year ended June 30, 2017.

A draft of the Comprehensive Annual Financial Report (CAFR) for the year ended June 30, 2017 will be provided at the September 28, 2017 Board Meeting. Martin, Starnes & Associates has completed its audit and has issued an unqualified opinion.

Unqualified Opinion explained

An unqualified 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 financial results for Fiscal Year 2017 have been presented to the Board in previous meetings and no significant changes to the information resulted from the audit.

The report is currently in draft form. In addition to correcting any typographical errors, we will insert additional supplemental information 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

ORANGE WATER AND SEWER AUTHORITY

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

AUDITED FINANCIAL REPORT

FOR THE FISCAL YEARS ENDED JUNE 30, 2017 AND 2016

DRAFT

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, 2017 AND 2016

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ORANGE WATER AND SEWER AUTHORITY

AUDITED FINANCIAL STATEMENTS
FOR THE FISCAL YEARS ENDED JUNE 30, 2017 AND 2016

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ORANGE WATER AND SEWER AUTHORITY

A public, non-profit agency providing water, sewer and reclaimed water services to the Carrboro-Chapel Hill community.

September 21, 2017

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, 2016 and ending June 30, 2017 (FY 2017). 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 2017, 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 $10 million which was 13% percent over budget. 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 2017.

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, 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.

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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.



Carrboro Fire Station

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.



The Old Well on UNC's Campus

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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.

Governance

A nine-member Board of Directors governs OWASA. The Chapel Hill Town Council appoints five, and the Carrboro Board of Aldermen 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.



University Lake

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.

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Wastewater System

We operate and maintain 343 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).



Construction to rehabilitate facilities at the 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.

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 630,000 gallons per day during FY 2017.

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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.

Economic Conditions

In June 2017, the unemployment rate in Orange County was 3.7 percent compared to the North Carolina average of 4.1 percent and US average of 4.3 percent (Source: US Bureau of Labor Statistics). The estimated population of Orange County increased by 13 percent from 2000 to 2010.

The relative stability of the Carrboro-Chapel Hill economy is supported by the size and strength of UNC and UNC Healthcare which continue to actively plan and develop new facilities and infrastructure.



Kenan Stadium on the UNC Campus

Initiatives and Accomplishments

Advanced Metering Infrastructure – In FY 2017, OWASA's Board of Directors approved awarding a contract to implement an advanced metering infrastructure (AMI) system. A feasibility study completed in FY 2016 showed that installing AMI would provide significant benefits to OWASA and its customers and cost less than alternative meter replacement strategies.

We read our system's approximately 21,000 meters each month. Currently, about one-third are read using equipment that collects meter readings as staff members drive in close proximity to the meters. The other two-thirds of our meters are read manually by staff members walking throughout our service area. In contrast, through an AMI system, meters are read remotely over a computer network. This reduces costs associated with purchasing and maintaining vehicles, vehicle fuel, and staff time. AMI also significantly enhances our customer service capability allowing OWASA staff and customers to view and analyze hourly water consumption and detect leaks.

The project will cost about $5 million and is expected to take about two years to complete.

No Increase in Monthly Water and Sewer Rates – For the sixth consecutive year, OWASA's Board of Directors approved a new Schedule of Rates and Fees that does not include an increase in monthly water and sewer rates. Fees for establishing a new connection to OWASA's system (Service Availability Fees) were adjusted based on an updated analysis of system assets. Based on our long-range financial planning, we estimate that no rate increase will be necessary for the FY 2019 budget.

Water Emergency Event – In February 2017, we experienced a water emergency that led to issuing *do not use* and *do not drink* water notifications to our service area. On February 2, 2017, OWASA's water supply was disrupted by an over-feed of fluoride at its water treatment plant. The contaminated water was contained within an onsite storage facility and was not introduced to the public water distribution system. Water was supplied by the City of Durham and Chatham County interconnections to meet demand and maintain adequate storage volumes while the water treatment plant was out of service.

On February 3, 2017, in a separate but compounding event, a 12-inch water distribution main break occurred spilling more than a million gallons of water. Although, the break was quickly isolated, we promptly issued the directives on water-use due to concerns about the ability to maintain system pressures for water quality and firefighting needs. On February 4, 2017, after tank levels rebounded and test results confirmed that the water was safe to drink, the water-use restrictions were lifted.

Direct costs related to the incident totaled approximately $125,000 and we are investing an additional $150,000 in a capital improvement project to upgrade our fluoride feed system.

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.

Certificate of Achievement for Excellence in Financial Reporting

OWASA has received the GFOA Certificate of Achievement for Excellence in Financial Reporting each year since 2000. To receive a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and legal requirements.

The Certificate of Achievement is valid for a period of one year. We believe that our comprehensive annual financial report for FY 2017 continues to meet the Certificate of Achievement Program requirements and we will submit it to the GFOA to determine its eligibility for another award.

Distinguished Budget Presentation Award

OWASA received its 17th Distinguished Budget Presentation Award from the GFOA for our FY 2017 budget. This award program recognizes governments that prepare high quality budget documents to meet the needs of decision-makers and citizens. We believe that our budget report for FY 2018 continues to meet the Distinguished Budget Presentation Program requirements and we have submitted it to the GFOA to determine its eligibility for another certificate.

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,

Ed Kerwin
Executive Director

Stephen Winters, CPA
Director of Finance and Customer Service

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Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Orange Water and Sewer Authority

North Carolina

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

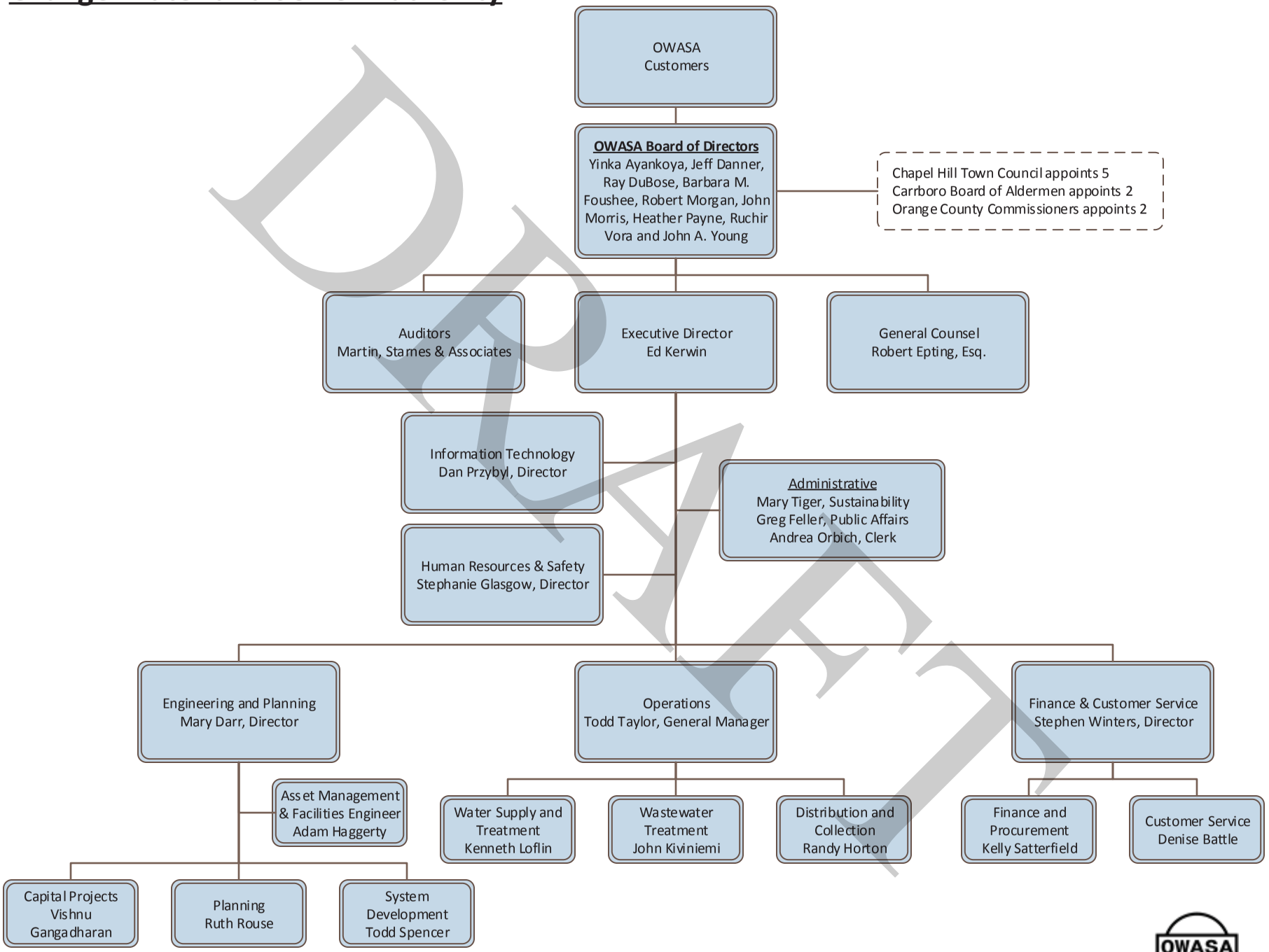
June 30, 2016



Executive Director/CEO

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Orange Water and Sewer Authority



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07-01-2017

ORANGE WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS

CHAIR

Robert Morgan
16 Kendall Drive
Carrboro, NC 27510
Appointed by Orange County: Term Expires 6/30/18

VICE CHAIR

Heather Payne
1300 Mason Farm Road
Chapel Hill, NC 27514
Appointed by Chapel Hill; Term Expires 6/30/19

SECRETARY

Yinka Ayankoya
200 Gary Road
Carrboro, NC 27510
Appointed by Carrboro; Term Expires 6/30/19

MEMBERS

Jeff Danner
423 New Parkside Drive
Chapel Hill, NC 27516
Appointed by Chapel Hill; Term Expires 6/30/18

Raymond DuBose
103 Easy Street
Chapel Hill, NC 27516
Appointed by Orange County; Term Expires 6/30/20

Barbara Middleton-Foushee
100 Williams Road
Carrboro, NC 27510
Appointed by Carrboro; Term Expires 6/30/18

John Morris
614 Beechtree Court
Chapel Hill, NC 27514
Appointed by Chapel Hill; Term Expires 6/30/20

Ruchir Vora
522 Dogwood Drive
Chapel Hill, NC 27516
Appointed by Chapel Hill; Term Expires 6/30/20

John Young
124 Meadowmont Village Circle
Chapel Hill, NC 27517
Appointed by Chapel Hill; Term Expires 6/30/19

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ORANGE WATER AND SEWER AUTHORITY
MANAGEMENT TEAM

Denise Battle, Customer Service Manager
Mary Darr, P.E., Director of Engineering and Planning
Greg Feller, Public Affairs Administrator
Vishnu Gangadharan, P.E., Engineering Manager (Capital Projects)
Stephanie Glasgow, M.E.S.H., P.H.R., Director of Human Resources and Safety
Randy Horton, Water Distribution and Wastewater Collection Systems Manager
Ed Kerwin, Executive Director
John Kiviniemi, Wastewater Treatment and Biosolids Recycling Manager
Kenneth Loflin, Water Supply and Treatment Manager
Andrea Orbich, Executive Assistant
Dan Przybyl, Director of Information Technology
Ruth Rouse, A.I.C.P., Planning and Development Manager
Kelly Satterfield, CPA, Finance and Procurement Manager
Todd Spencer, P.E., Engineering Manager (System Development)
Todd Taylor, P.E., General Manager of Operations
Mary Tiger, Sustainability Manager
Stephen Winters, CPA, Director of Finance and Customer Service

GENERAL COUNSEL

Robert Epting, Esquire
Epting and Hackney, Attorneys at Law

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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, 2017 and 2016, 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 audit. We conducted our audit 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.

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities of the Authority as of June 30, 2017 and 2016, 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 Funding Progress and Employer Contributions, 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 budgetary schedules are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The budgetary schedules 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 are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

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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 21, 2017 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, 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 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.

Martin Starnes & Associates, CPAs, P.A.
Hickory, North Carolina
September 21, 2017

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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, 2017 and 2016. 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, 2017, OWASA's assets and deferred outflows of resources exceeded its liabilities and deferred inflows of resources by $264 million.
- OWASA's total net position increased by $9.1 million, primarily resulting from income realized from operating activities.
- Due to the condition and capacity of OWASA's system, about 72% of the organization's $9.7 million capital expenditures for Fiscal Year (FY) 2017 were invested in replacing and rehabilitating existing infrastructure.
- Non-current liabilities decreased by about $3.6 million due to principal payments on long-term debt.
- OWASA's credit ratings from Standard and Poor's and Fitch of AA+, and Aa1 from Moody's, remain unchanged.

Overview of the Financial Statements

OWASA's primary mission is to provide water, sewer, 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, sewer, 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 *Statement of Net Position*, a *Statement of Revenues, Expenses, and Changes in Net Position* and a *Statement 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 *Statement 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 *Statement 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 *Statement of Net Position.*

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The *Statement 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 *Statement 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 *Statement 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 (2016 to 2017)
	2017	**2016**	**2015**	
Current assets	$39.4	$40.9	$38.6	(3.7%)
Capital and other long-term assets	306.0	301.2	300.9	1.6
Total assets	345.4	342.1	339.5	1.0
Total deferred outflows of resources	4.1	2.5	3.1	64.0
Current liabilities	11.2	11.5	12.1	(2.6)
Non-current liabilities	74.6	78.2	83.3	(4.6)
Total liabilities	85.8	89.7	95.4	(4.3)
Total deferred inflows of resources	0.1	0.3	1.7	(66.7)
Net position				
Invested in capital assets, net of related debt	236.8	224.9	218.4	5.3
Restricted	0.2	0.3	0.2	(33.3)
Unrestricted	26.6	29.3	26.9	(9.2)
Total net position	$263.6	$254.5	$245.5	3.6

OWASA's assets exceeded liabilities by $264 million at June 30, 2017, compared to $255 million and $246 million at June 30, 2016 and 2015, respectively. OWASA's overall financial position strengthened between FY 2015 and 2017 as net position increased by $18.1 million. Total assets increased during the same period by $5.9 million. These trends indicate that a significant portion of recent infrastructure improvements has been funded through cash rather than debt.

Net capital assets comprised about 88% of total assets for the comparative years of 2015 through 2017. These capital assets are essential in providing water and sewer 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, 2017, these other unrestricted resources totaled $26.6 million and may be used for any lawful purpose.

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Non-current liabilities decreased by approximately 10.4%, or $8.7 million, during the same period reflecting decreases from 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 (2016 to 2017)
	2017	2016	2015	
Operating revenues				
Water, wastewater, reclaimed water	$34.5	$34.9	$35.4	(1.1%)
Other	1.2	1.5	1.5	(20.0)
Total operating revenues	35.7	36.4	36.9	(1.9)
Operating expenses	30.5	29.0	28.8	5.2
Operating income	5.2	7.4	8.1	(29.7)
Non-operating revenues (expenses)	1.5	(0.2)	(1.5)	
Income before contributions	6.7	7.2	6.6	(6.9)
Capital contributions	2.4	1.8	1.4	33.3
Increase (decrease) in net position	9.1	9.0	8.0	1.1
Net position, July 1	254.5	245.5	238.4	3.7
Change in accounting principles / restatement (see Note 7)	0.0	0.0	(0.9)	
Net position, June 30	$263.6	$254.5	$245.5	3.6

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, sewer, 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, sewer, 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 sewer commodity charge is measured based on water consumption. However, for single-family residential customers, the sewer commodity charge incorporates the assumption that not all water consumed is returned to the sewer system. Sewer 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 2017 and 2016, drinking water volume sales were 6.0 average million gallons per day each year; in FY 2015, drinking water volume sales were 6.2. Drinking water demand remains much lower than 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 commercial customers, respectively, and the use of reclaimed water by the University. With no rate increase during the year and slightly lower water volume sales, operating revenues for FY 2017 were about 1.1% lower than the previous year or $35.7 million.

- **Operating Expenses**: Operating expenses were $30.5 million or about 5.2% more than FY 2016 and approximately 5.9% greater than FY 2015. OWASA's department managers expended almost exactly the amount budgeted for FY 2017. Operating expenses includes an $8.9 million charge for depreciation and a $493,000 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 customer (service availability) fees, interest earnings, and gains (or losses) from the sale of surplus property. Customer 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.

  Customer fees in FY 2016 and FY 2015 were about $1.4 million each year. Customer fees in FY 2017 were $2.2 million or an increase of about 57% from FY 2016 and FY 2015 levels. Interest earnings in FY 2017 totaling about $33,000. Investments remained in safe and liquid secured deposits.

- **Capital Contributions**: Capital contributions totaled approximately $2.4 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 increased by about 1.6% in FY 2017. The net increase consisted of additions totaling $13.8 million and a reduction due to deprecation of $8.9 million. The asset additions included the rehabilitation or replacement of various water and sewer 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 (2016 to 2017)
	2017	2016	2015	
Land	$17.6	$17.6	$17.6	0.0%
Construction in progress	28.1	32.5	26.0	(13.5)
Water treatment and distribution	99.3	101.4	103.7	(2.1)
Sewer collection and treatment	148.0	138.0	140.7	7.2
Fixtures and equipment	12.8	11.4	12.0	12.3
Total	$305.8	$300.9	$300.0	1.6

Debt Administration

OWASA policy stipulates that at least 30% of capital improvements projects be funded with cash from operations. At June 30, 2017, 2016 and 2015, OWASA's outstanding debt totaled $67.4 million, $73.6 million, and $79.1 million respectively, net of applicable premiums, discounts, and deferred refunding costs. These amounts consist of an interest-free loan from the state of North Carolina, and water and sewer system revenue and refunding bonds issued in fiscal years 2004, 2010, 2014, and 2015. At year end, OWASA owed an accrued debt service liability of approximately $5.3 million. This amount was credited in full to the trustee restricted bond service account as of June 30, 2017.

OWASA's credit ratings for its bonds are Aa1 by the Moody's rating agency. Standard & Poor's and Fitch rate OWASA's creditworthiness as AA+. These "double A" 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 21% 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 2018 Budget Highlights

For the sixth consecutive year, OWASA's Board of Directors approved a budget that includes no increase in the monthly rates charged for water, sewer and reclaimed water services. The FY 2018 budget for operating expenses is about 4.3% greater than the FY 2017 budget. Capital improvement expenditures are budgeted to be approximately $15.1 million.

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, 2017 AND 2016

	2017	2016
Assets:		
Current assets:		
Cash and cash equivalents	$ 25,782,665	$ 26,578,064
Receivables:		
Trade accounts (net of allowances for uncollectible accounts of approximately $85,000 for 2017 and 2016)	4,133,233	3,560,101
Other	1,050,244	1,298,055
Inventory, materials, and supplies	1,046,669	892,145
Prepaid expenses	249,466	298,684
Restricted cash and cash equivalents:		
Cash and cash equivalents	1,505,011	1,294,633
Cash and cash equivalents, trustee	5,671,864	6,932,067
Total current assets	39,439,152	40,853,749
Non-current assets:		
Restricted cash and cash equivalents	171,013	260,978
Capital assets:		
Non-depreciable	45,668,275	50,206,880
Depreciable	260,126,247	250,756,206
Total capital assets, net of accumulated depreciation	305,794,522	300,963,086
Total non-current assets, net	305,965,535	301,224,064
Total assets	345,404,687	342,077,813
Deferred Outflows of Resources:		
Contributions to pension plan in current fiscal year	598,984	510,262
Pension deferrals	1,817,261	55,837
Deferred charge on refunding	1,710,448	1,902,066
Total deferred outflows of resources	4,126,693	2,468,165

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

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ORANGE WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION
PROPRIETARY FUND
JUNE 30, 2017 AND 2016

	2017	2016
Liabilities:		
Current liabilities:		
Payable from current assets:		
Trade and construction contracts payable	2,480,222	1,752,268
Accrued expenses	261,691	378,751
Payable from restricted cash and cash equivalents:		
Accrued interest	873,738	1,007,975
Customer deposits and advances	1,505,011	1,294,633
Current maturity of note payable	328,000	328,000
Current maturities of bonds payable	5,289,894	6,266,841
Current portion of compensated absences	495,019	500,000
Total current liabilities	11,233,575	11,528,468
Non-current liabilities:		
Note payable	5,248,000	5,576,000
Bonds payable	59,710,364	65,724,727
Compensated absences	60,640	44,683
Net pension liability	2,733,991	538,330
OPEB liability	6,788,961	6,295,768
Total non-current liabilities	74,541,956	78,179,508
Total liabilities	85,775,531	89,707,976
Deferred Inflows of Resources:		
Pension deferrals	95,802	279,798
Net Position:		
Net investment in capital assets	236,928,712	224,969,584
Restricted for capital reserve	171,013	260,978
Unrestricted	26,560,322	29,327,642
Total net position	$ 263,660,047	$ 254,558,204

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, 2017 AND 2016

	2017	2016
Operating Revenues:		
Water	$ 17,540,247	$ 17,894,907
Sewer	16,561,076	16,514,394
Service initiation fees	169,965	169,660
Reclaimed water	431,185	442,785
Other	1,037,921	1,347,624
Total operating revenues	35,740,394	36,369,370
Operating Expenses:		
Water supply and treatment	5,145,181	4,692,599
Water distribution	3,554,221	2,781,136
Sewer treatment	4,813,684	4,561,981
Sewer collections	1,329,131	1,185,549
General and administrative	6,331,018	6,403,637
Depreciation and amortization	8,909,129	8,919,124
Other post-employment benefits	493,193	466,573
Total operating expenses	30,575,557	29,010,599
Operating income (loss)	5,164,837	7,358,771
Non-Operating Revenues (Expenses):		
Customer fees	2,219,227	1,397,652
Investment income, net of fair value of investments adjustment	32,802	20,663
Interest expense	(1,668,138)	(1,729,871)
Amortization of bond and lease expense	914,691	120,781
Gain (Loss) on disposal of capital assets	75,348	-
Total non-operating revenues (expenses)	1,573,930	(190,775)

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, 2017 AND 2016

	2017	2016
Income (loss) before capital contributions	6,738,767	7,167,996
Capital Contributions:		
Capital grants and contributions	-	18,170
Contributions in aid of construction	2,363,076	1,828,305
Total capital contributions	2,363,076	1,846,475
Change in net position	9,101,843	9,014,471
Net Position:		
Beginning of year - July 1	254,558,204	245,543,733
End of year - June 30	$ 263,660,047	$ 254,558,204

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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, 2017 AND 2016

	2017	2016
Cash Flows from Operating Activities:		
Receipts from customers	$ 34,377,152	$ 35,386,202
Payments to suppliers	(10,246,305)	(8,233,889)
Payments to employees	(11,163,539)	(11,525,600)
Other receipts	1,248,299	1,096,531
Net cash provided (used) by operating activities	14,215,607	16,723,244
Cash Flows from Capital and Related Financing Activities:		
Acquisition and construction of capital assets	(11,394,323)	(8,049,438)
Proceeds from sale of property, plant, and equipment	92,182	-
Principal paid on bond maturities and other long-term debt	(6,213,000)	(14,513,000)
Interest paid on bond maturities and other long-term debt	(1,802,375)	(2,365,810)
Customer fees received	3,133,918	1,518,433
Proceeds from issuance of debt	-	8,995,000
Capital grants and contributions	-	18,170
Net cash provided (used) by capital and related financing activities	(16,183,598)	(14,396,645)
Cash Flows from Investing Activities:		
Interest and dividends on investments	32,802	20,663
Net increase (decrease) in cash and cash equivalents	(1,935,189)	2,347,262
Cash and Cash Equivalents:		
Beginning of year - July 1	35,065,742	32,718,480
End of year - June 30	$ 33,130,553	$ 35,065,742

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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, 2017 AND 2016

	2017	2016
Reconciliation of Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities:		
Operating income (loss)	$ 5,164,837	$ 7,358,771
Adjustments to reconcile operating income (loss) to net cash provided (used) by operating activities:		
Depreciation	8,909,129	8,919,124
Changes in assets and liabilities:		
(Increase) decrease in trade accounts receivable	(573,132)	703,226
(Increase) decrease in other receivables	247,811	(338,770)
(Increase) decrease in net pension asset	-	709,819
(Increase) decrease in deferred outflows	(1,761,424)	(8,591)
(Increase) decrease in inventory	(154,524)	10,143
(Increase) decrease in prepaid expenses	49,218	(280,262)
(Increase) decrease in deferred outflows of resources for pensions	(183,996)	(1,450,204)
(Increase) decrease in deferred outflows of resources for deferred refunding costs	(914,692)	(71,209)
Increase (decrease) in trade and construction contracts payable	727,954	442,391
Increase (decrease) in customer deposits	210,378	(251,093)
Increase (decrease) accrued expenses	(117,060)	(62,450)
Increase (decrease) compensated absences	10,976	27,820
Increase (decrease) in net pension liability	2,195,661	538,330
Increase (decrease) in deferred inflows of resources for pensions	(88,722)	9,626
Increase (decrease) in other post-employment benefits	493,193	466,573
Net cash provided (used) by operating activities	$ 14,215,607	$ 16,723,244
Non-Cash Capital and Related Financing Activities:		
Property, plant, and equipment contributed by private developers	$ 2,363,076	$ 1,828,305

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

ORANGE WATER AND SEWER AUTHORITY

NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEARS ENDED JUNE 30, 2017 AND 2016

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 Board of Aldermen of the Town 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, 2017.

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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 object 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 deposits.

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, a SEC-registered 2a-7 external investment pool, is measured at amortized cost, which is the NCCMT's share price. 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:	
Bond service	$ 5,671,864
Capital reserve	171,013
Customer deposits	1,505,011
Total business-type activities	$ 7,347,888

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, 2017 and June 30, 2016.

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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 this criterion, an unamortized loss on bond defeasance for Water and Sewer Refunding bonds, pension related deferrals, and contributions made to the pension plan in the current fiscal year. 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 one item that meets this criterion in the current year – pension 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, 2017 and 2016, the Authority had recorded a liability for accrued vacation and the salary-related payments of $555,659 and $544,683, 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 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 undercollaterization, 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, 2017, the Authority's deposits had a carrying amount of $27,399,465 and a bank balance of $27,569,629. Of the bank balance, $2,293,200 was covered by federal depository insurance, and $25,276,429 in deposits was covered by collateral held under the Pooling Method. The Authority had cash on hand of $2,700 at June 30, 2017.

At June 30, 2016, the Authority's deposits had a carrying amount of $28,078,156 and a bank balance of $18,406,716. Of the bank balance, $2,284,237 was covered by federal depository insurance, and $16,122,479 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, 2016.

Cash Equivalents

At June 30, 2017 and 2016, the Authority's cash equivalents balances were as follows:

	2017	2016
The North Carolina Capital Management Trust, government portfolio	$ 5,728,388	$ 6,984,886

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 has no policy regarding credit 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, 2017 and 2016.

Receivables

Receivables, net of allowances for uncollectible accounts, at June 30, 2017 and 2016 were as follows:

	2017	2016
Utility accounts receivable	$ 4,133,233	$ 3,560,101
Other receivable	1,050,244	1,298,055
Total receivables, net	$ 5,183,477	$ 4,858,156

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Capital Assets

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

	Balance July 1, 2016	Increases	Decreases	Transfers	Balance June 30, 2017
Non-Depreciable Assets:					
Land	$ 17,605,354	$ -	$ -	$ -	$ 17,605,354
Construction in progress	32,601,526	9,857,418	-	(14,396,023)	28,062,921
Total non-depreciable assets	50,206,880	9,857,418	-	(14,396,023)	45,668,275
Depreciable Assets:					
Water treatment and distribution	162,205,005	1,035,406	-	468,703	163,709,114
Sewer collection and treatment	201,626,364	1,160,914	-	12,912,264	215,699,542
Fixtures and equipment	43,558,605	1,703,661	(273,117)	1,015,056	46,004,205
Total depreciable assets	407,389,974	3,899,981	(273,117)	14,396,023	425,412,861
Less Accumulated Depreciation:					
Water treatment and distribution	60,774,202	3,652,259	-	-	64,426,461
Sewer collection and treatment	63,631,954	4,070,132	-	-	67,702,086
Fixtures and equipment	32,227,612	1,186,738	(256,283)	-	33,158,067
Total accumulated depreciation	156,633,768	$ 8,909,129	$ (256,283)	$ -	165,286,614
Total depreciable assets	250,756,206				260,126,247
Capital assets, net	$ 300,963,086				$ 305,794,522

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	Balance July 1, 2015	Increases	Decreases	Transfers	Balance June 30, 2016
Non-Depreciable Assets:					
Land	$ 17,605,354	$ -	$ -	$ -	$ 17,605,354
Construction in progress	26,015,137	8,366,893	-	(1,780,504)	32,601,526
Total non-depreciable assets	43,620,491	8,366,893	-	(1,780,504)	50,206,880
Depreciable Assets:					
Water treatment and distribution	160,751,096	707,678	-	746,231	162,205,005
Sewer collection and treatment	200,258,937	470,920	-	896,507	201,626,364
Fixtures and equipment	43,088,587	332,252	-	137,766	43,558,605
Total depreciable assets	404,098,620	1,510,850	-	1,780,504	407,389,974
Less Accumulated Depreciation:					
Water treatment and distribution	57,084,167	3,690,035	-	-	60,774,202
Sewer collection and treatment	59,570,208	4,061,746	-	-	63,631,954
Fixtures and equipment	31,060,269	1,167,343	-	-	32,227,612
Total accumulated depreciation	147,714,644	$ 8,919,124	$ -	$ -	156,633,768
Total depreciable assets	256,383,976				250,756,206
Capital assets, net	$ 300,004,467				$ 300,963,086

Net Investment in Capital Assets

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

	2017	2016
Capital assets	$ 305,794,522	$ 300,963,086
Total debt, gross	(70,576,258)	(77,895,568)
Deferred charge related to debt	1,710,448	1,902,066
Net investment in capital assets	$ 236,928,712	$ 224,969,584

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Long-Term Debt

Long-term debt as of June 30, 2017 and 2016 consists of the following:

	2017	2016
Revenue Bonds:		
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 $41,278 at June 30, 2017	$ 8,915,000	$ 8,995,000
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 $1,085,777 at June 30, 2017	15,695,000	15,695,000
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 $410,311 at June 30, 2017	17,225,000	18,745,000
Revenue bonds payable, Series 2006 Revenue Serial Bonds, in the amount of $15,500,000, issued October 26, 2006, with coupon rates of 4.0% and 5.0%, final maturity July 2026, net of unamortized premium of $417,587 at June 30, 2015; revenue bonds payable, Series 2006 Revenue Term Bonds, in the amount of $6,785,000, issued October 26, 2006, with an interest rate of 5.0%, due in full July 2031	-	755,000
Revenue and revenue refunding bonds payable, Series 2005, issued June 9, 2005, with coupon rates of 3.5% to 5.0%, final maturity in July 2020	-	2,275,000

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	2017	2016
Revenue Bonds (continued):		
Revenue bonds payable, Series 2004A Revenue Bonds, in the amount of $21,265,000, issued June 1, 2004, with coupon rates of 3.0% and 5.25%, final maturity July 2021; revenue bonds payable, Series 2004B Revenue Bonds, in the amount of $20,000,000, issued June 1, 2004, bearing a weekly interest rate determined by a remarketing agent (0.90% at June 30, 2017), final maturity July 1, 2029	20,000,000	20,000,000
Revenue and revenue refunding bonds payable, Series 2003, issued April 9, 2003, with coupon rates of 2.5% to 5.0%, final maturity in July 2016	-	1,255,000
	$ 61,835,000	$ 67,720,000
Note Payable:		
Note payable to NCDENR 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	$ 5,576,000	$ 5,904,000

Bond payable maturities are as follows:

Year Ending June 30	Maturities	Amortization of Premiums and Deferred Refunding Losses	Total	Interest
2018	$ 4,785,000	$ 313,275	$ 5,098,275	$ 7,629,241
2019	4,940,000	271,946	5,211,946	7,371,002
2020	5,130,000	244,198	5,374,198	7,111,487
2021	4,105,000	209,318	4,314,318	6,846,285
2022	4,250,000	156,755	4,406,755	6,611,097
2023-2027	24,575,000	259,318	24,834,318	23,274,885
2028-2032	14,050,000	-	14,050,000	5,356,988
Total	$ 61,835,000	$ 1,454,810	$ 63,289,810	$ 64,200,985

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Note payable maturities are as follows:

Year Ending June 30	Maturities	Interest	Total
2018	$ 328,000	$ -	$ 328,000
2019	328,000	-	328,000
2020	328,000	-	328,000
2021	328,000	-	328,000
2022	328,000	-	328,000
2023-2027	1,640,000	-	1,640,000
2028-2032	1,640,000	-	1,640,000
2033-2034	656,000	-	656,000
Total	$ 5,576,000	$ -	$ 5,576,000

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, 2017, $16,430,000 of bonds outstanding are considered defeased.

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, 2017, $8,930,000 of bonds outstanding is considered defeased.

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Long-term liability activity for the years ended June 30, 2017 and 2016 is as follows:

	Balance July 1, 2016	Additions	Retirements	Balance June 30, 2017	Due Within One Year
Notes Payable	$ 5,904,000	$ -	$ 328,000	$ 5,576,000	$ 328,000
Bonds Payable:					
Revenue bonds	67,720,000	-	5,885,000	61,835,000	4,785,000
For issuance premiums	4,271,568	-	1,106,310	3,165,258	504,894
Compensated absences	544,683	505,995	495,019	555,659	495,019
Net pension liability (LGERS)	538,330	2,195,661	-	2,733,991	-
OPEB	6,295,768	762,025	268,832	6,788,961	-
Total	$ 85,274,349	$ 3,463,681	$ 8,083,161	$ 80,654,869	$ 6,112,913

	Balance July 1, 2015	Additions	Retirements	Balance June 30, 2016	Due Within One Year
Notes Payable	$ 6,232,000	$ -	$ 328,000	$ 5,904,000	$ 328,000
Bonds Payable:					
Revenue bonds	72,910,000	8,995,000	14,185,000	67,720,000	5,885,000
For issuance premiums	4,937,175	-	665,607	4,271,568	381,841
Compensated absences	516,863	537,023	509,203	544,683	500,000
Net pension liability (LGERS)	-	538,330	-	538,330	-
OPEB	5,829,195	739,324	272,751	6,295,768	-
Total	$ 90,425,233	$ 10,809,677	$ 15,960,561	$ 85,274,349	$ 7,094,841

The Authority has pledged future water and sewer customer revenues, net of specified operating expenses, to repay $61,835,000 in revenue bonds issued in 2003, 2004A, 2005, 2006, 2010, 2014, and 2015. 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 2032, solely from the water and sewer customer net revenues. The total principal and interest remaining to be paid on the bonds is $126,035,985. Principal and interest paid in the years ended June 30, 2017 and 2016 were $7,930,519 and $7,312,093, respectively and total customer net revenues for the years ended June 30, 2017 and 2016 were $35,740,394 and $36,369,370, respectively.

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 2003, 2004A, 2005, 2006, 2010, 2014, and 2015. The Bond Order requires the debt service coverage ratio to be no less than 120% of the debt service requirements for parity indebtedness.

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The debt service coverage ratio calculation for the year ended June 30, 2017, is as follows:

Operating revenues and charges for services	$ 37,992,423
Operating expenses*	21,173,235
Income available for debt service	$ 16,819,188
Debt service, principal and interest paid	$ 7,930,519
Debt service coverage ratio for parity debt	212.08%

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

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.

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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.

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, 2017, was 7.31% 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 $598,984, for the year ended June 30, 2017.

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, 2017, the Authority reported a liability of $2,733,991 for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2016. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of December 31, 2015. The total pension liability was then rolled forward to the measurement date of June 30, 2016 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, 2016, the Authority's proportion was 0.12882%, which was an increase of 0.00887% from its proportion measured as of June 30, 2015.

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For the year ended June 30, 2017, the Authority recognized pension expense of $760,503. At June 30, 2017, 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	$ 51,367	$ 95,802
Changes of assumptions	187,254	-
Net difference between projected and actual earnings on pension plan investments	1,511,553	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	67,087	-
Employer contributions subsequent to the measurement date	598,984	-
Total	$ 2,416,245	$ 95,802

$598,984 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 ended June 30, 2018. 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
2018	$ 275,712
2019	275,802
2020	729,333
2021	440,612
Total	$ 1,721,459

Actuarial Assumptions. The total pension liability in the December 31, 2015 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 7.75 percent, including inflation and productivity factor
Investment rate of return	7.25 percent, net of pension plan investment expense, including inflation

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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, 2015 valuation were based on the results of an actuarial experience study for the period January 1, 2010 through 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. 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, 2016 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 2016 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.

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Discount Rate. The discount rate used to measure the total pension liability was 7.25%. 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 7.25 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 (6.25 percent) or 1-percentage-point higher (8.25 percent) than the current rate:

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Authority's proportionate share of the net pension liability (asset)	$ 6,489,038	$ 2,733,991	$ (402,502)

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. 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.

All active full-time employees are eligible for membership. At December 31, 2014, the plan membership consisted of:

Members	
Inactive	31
Active	126
Total	157

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Funding Policy. The Authority plan members pay their share of the cost of coverage (premiums) for healthcare benefits provided to qualified retirees. The Authority has chosen to fund the plan benefits on a pay-as-you-go basis. The Authority contributed $268,832 or 3.7% and $272,751 or 3.8% of the annual covered payroll during the years ending June 30, 2017 and 2016, respectively.

The current annual required contribution (ARC) rate is 9.65% of annual covered payroll. For the current year, the Authority contributed $272,751 or 3.7% of annual covered payroll. The Authority obtains healthcare coverage through private insurers. There were no contributions made by employees. The Authority's obligation to contribute to the Plan is established and may be amended by the Board of Directors.

Summary of Significant Accounting Policies. Post-employment expenses are made from the Enterprise Fund, which is maintained on the accrual basis of accounting. No funds are set aside to pay benefits and administration costs. These expenses are paid as they come due.

Annual OPEB Cost and Net OPEB Obligation

The Authority's annual OPEB cost (expense) is calculated based on the annual required contribution of the employer (ARC), an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis is projected to cover normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed 30 years. The following table shows the components of the Authority's annual OPEB cost for the year, the amount actually contributed to the plan, and changes in the Authority's net OPEB obligation:

	2017	2016
Employer annual required contribution	$ 750,771	$ 728,904
Interest paid on OPEB obligation	251,831	233,168
Adjustment to annual required contribution	(240,577)	(222,748)
Annual OPEB cost	762,025	739,324
Employer contributions made for current fiscal year	268,832	272,751
Increase in net OPEB obligation	493,193	466,573
Net OPEB obligation:		
Beginning of year - July 1	6,295,768	5,829,195
End of year - June 30	$ 6,788,961	$ 6,295,768

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The Authority's annual OPEB cost, the percentage of annual OPEB cost contributed to the plan, and the net OPEB obligation for 2017 were as follows:

Year Ended June 30	Annual Plan Cost (APC)	Percentage of APC Contributed	Net OPEB Obligation End of Year
2015	$ 594,245	37.23%	$ 5,829,195
2016	739,324	36.89%	6,295,768
2017	762,025	35.28%	6,788,961

Funded Status and Funding Progress. As of December 31, 2014, the most recent actuarial valuation date, the plan was not funded. The actuarial accrued liability for benefits and, thus, the unfunded actuarial accrued liability (UAAL) was $9,341,682. The covered payroll (annual payroll of active employees covered by the plan) was $7,247,100, and the ratio of UAAL to the covered payroll was 128.9% percent. Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and healthcare trends.

Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The Schedule of Funding Progress, presented as required supplementary information following the notes to the financial statements, presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

Actuarial Methods and Assumptions. Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing the benefit costs between the employer and the plan members at that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

In the December 31, 2014 actuarial valuation, the Projected Unit Credit cost method was used. The actuarial assumptions included a 4% investment rate of return which is the expected long-term investment returns on the employer's own investments calculated based on the funded level of the plan at the valuation date, and an annual medical cost trend increase of 7.5% to 5% annually. Both rates included a 3% inflation assumption. There are no assets set aside for these benefits. The plan is funded on a pay-as-you-go basis. The actuarial value of assets, if any, was determined using techniques that spread the efforts of short-term volatility in the market value of investments over a five-year period. The UAAL is being amortized as a level percentage of projected payroll on an open basis. The remaining amortization period at December 31, 2014 was 30 years.

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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:

Deferred Outflows:	
Contributions to pension plan in current fiscal year	$ 598,984
Pension deferrals	1,817,261
Charge on refunding	1,710,448
Total	$ 4,126,693
Deferred Inflows:	
Pension deferrals	$ 95,802

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 currently does not carry flood insurance.

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 $9,911,496 at June 30, 2017.

6. Net Position

At June 30, 2017 and 2016, the Board of Directors had approved the use of the unrestricted net position for the following purposes:

	2017	2016
Operating reserve	$ 8,303,415	$ 11,070,735
Other reserves	7,766,315	4,550,000
Capital projects	10,490,592	13,706,907
Total	$ 26,560,322	$ 29,327,642

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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.

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ORANGE WATER AND SEWER AUTHORITY

OTHER POST-EMPLOYMENT BENEFITS
REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2017

Schedule of Funding Progress

Actual Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Projected Unit Credit (b)	Unfunded AAL (UAAL) (b)-(a)	Funded Ratio (a)/(b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b)-(a))/(c)
07/01/2007	$ -	$ 9,918,000	$ 9,918,000	0.00%	$ 6,375,000	155.60%
07/01/2009	-	12,597,000	12,597,000	0.00%	5,924,000	212.60%
12/31/2011	-	6,741,739	6,741,739	0.00%	7,074,967	95.29%
12/31/2014	-	9,341,682	9,341,682	0.00%	7,247,100	128.90%

Schedule of Employer Contributions

Year Ended	Annual Required Contribution (ARC)	Percentage of ARC Contributed
06/30/2011	$ 944,000	6.00%
06/30/2012	1,124,000	17.00%
06/30/2013	1,163,000	11.00%
06/30/2014	1,163,000	11.60%
06/30/2015	584,492	37.85%
06/30/2016	728,904	37.42%
06/30/2017	750,771	35.81%

Notes to the Required Schedules:
The information presented above was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest valuation follows:

Valuation date	12/31/2014	
Actuarial cost method	Projected unit credit	
Amortization method	Level percentage of pay, open	
Remaining amortization period	30 years	
Asset valuation method	Market value of assets	
Actuarial assumptions:		
Investment rate of return *	4.00%	* Includes inflation at 3%
Medical cost trend rate	7.50-5.00%	
Year of Ultimate trend rate	2020	

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ORANGE WATER AND SEWER AUTHORITY

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

Local Government Employees' Retirement System

	2017	2016	2015	2014
Authority's proportion of the net pension liability (asset) (%)	0.12882%	0.11995%	0.12040%	11.89000%
Authority's proportion of the net pension liability (asset) ($)	$ 2,733,991	$ 538,330	$ (709,819)	$ 1,433,202
Authority's covered-employee payroll	$ 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-employee payroll	39.17%	7.32%	(9.73%)	20.74%
Plan fiduciary net position as a percentage of the total pension liability	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 FOUR FISCAL YEARS

Local Government Employees' Retirement System

	2017	2016	2015	2014
Contractually required contribution	$ 598,984	$ 510,262	$ 519,888	$ 516,608
Contributions in relation to the contractually required contribution	598,984	510,262	519,888	516,608
Contribution deficiency (excess)	$ -	$ -	$ -	$ -
Covered-employee payroll	$ 8,194,045	$ 6,980,328	$ 7,352,374	$ 7,297,821
Contributions as a percentage of covered-employee payroll	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, 2017

	Final Budget	Actual	Variance Over/Under
Revenues:			
Operating revenues:			
Water	$ 17,923,072	$ 17,540,247	$ (382,825)
Sewer	16,578,878	16,561,076	(17,802)
Reclaimed water	439,110	431,185	(7,925)
Service initiation fees	168,898	169,965	1,067
Other	743,812	1,037,921	294,109
Total operating revenues	35,853,770	35,740,394	(113,376)
Non-operating revenues:			
Interest income	14,708	32,802	18,094
Customer fees	995,950	2,219,227	1,223,277
Total non-operating revenues	1,010,658	2,252,029	1,241,371
Total revenues	36,864,428	37,992,423	1,127,995
Expenditures:			
Water supply and treatment:			
Salaries and wages	1,377,064	712,223	664,841
Fringe benefits	650,490	574,422	76,068
Materials and supplies	1,262,043	182,057	1,079,986
Chemicals	-	1,330,413	(1,330,413)
Utilities	346,927	377,087	(30,160)
Maintenance	1,050,173	1,056,884	(6,711)
Professional services	152,287	66,185	86,102
Insurance	-	80,386	(80,386)
Communication	4,000	1,094	2,906
Education and development	17,900	9,999	7,901
Miscellaneous	13,075	7,939	5,136
Total water supply and treatment	4,873,959	4,398,689	475,270

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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, 2017

	Final Budget	Actual	Variance Over/Under
Water distribution:			
Salaries and wages	1,421,839	1,468,401	(46,562)
Fringe benefits	761,829	1,367,270	(605,441)
Materials and supplies	82,979	69,328	13,651
Utilities	196,586	200,051	(3,465)
Maintenance	550,087	578,396	(28,309)
Professional services	8,019	-	8,019
Insurance	-	9,775	(9,775)
Communication	1,500	1,591	(91)
Printing and reproduction	2,000	359	1,641
Education and development	17,595	11,198	6,397
Miscellaneous	1,900	3,629	(1,729)
Total water distribution	3,044,334	3,709,998	(665,664)
Construction credits	(93,500)	(155,777)	62,277
Wastewater treatment:			
Salaries and wages	1,341,954	1,386,416	(44,462)
Fringe benefits	633,159	504,814	128,345
Materials and supplies	916,470	185,130	731,340
Chemicals	-	713,841	(713,841)
Utilities	682,850	773,154	(90,304)
Maintenance	935,876	951,600	(15,724)
Professional services	244,225	132,282	111,943
Insurance	-	98,652	(98,652)
Communication	8,935	7,825	1,110
Education and development	20,000	12,452	7,548
Miscellaneous	41,625	47,518	(5,893)
Total wastewater treatment	4,825,094	4,813,684	11,410

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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, 2017

	Final Budget	Actual	Variance Over/Under
Sewer collections:			
Salaries and wages	548,800	535,957	12,843
Fringe benefits	301,824	236,369	65,455
Materials and supplies	249,636	29,206	220,430
Chemicals	-	200,229	(200,229)
Utilities	127,188	130,722	(3,534)
Maintenance	181,000	191,417	(10,417)
Professional services	8,019	-	8,019
Insurance	-	6,146	(6,146)
Communication	1,000	483	517
Printing and distribution	500	2,238	(1,738)
Education and development	11,160	7,093	4,067
Miscellaneous	4,024	1,697	2,327
Total sewer collections	1,433,151	1,341,557	91,594
Construction credits	-	(12,426)	12,426
General and administrative:			
Salaries and wages	3,127,108	3,272,719	(145,611)
Fringe benefits	1,454,466	1,160,383	294,083
Materials and supplies	141,685	135,314	6,371
Utilities	190,660	190,052	608
Maintenance	313,295	243,425	69,870
Professional services	1,368,729	1,051,211	317,518
Insurance	-	35,829	(35,829)
Communication	153,612	152,096	1,516
Printing and reproduction	27,905	5,383	22,522
Education and development	58,460	62,939	(4,479)
Miscellaneous	162,125	146,713	15,412
Total general and administrative	6,998,045	6,456,064	541,981
Construction credits	(73,500)	(114,070)	40,570

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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, 2017

	Final Budget	Actual	Variance Over/Under
Debt Service:			
Principal		6,213,000	
Interest		1,717,519	
Total debt service	6,932,059	7,930,519	(998,460)
Capital outlay	14,875,000	11,210,705	3,664,295
Total expenditures	42,814,642	39,578,943	3,235,699
Revenues over (under) expenditures	(5,950,214)	(1,586,520)	4,363,694
Other Financing Sources (Uses):			
Appropriated fund balance	5,950,214	-	5,950,214
Net change in fund balance	$ -	(1,586,520)	$ (1,586,520)
Reconciliation from Budgetary Basis (Modified Accrual) to Full Accrual Basis:			
Principal payments debt		6,213,000	
Capital interest		183,618	
Change in interest accrual for bonded debt		(134,237)	
Depreciation and amortization		(8,909,129)	
Change in deferred outflows of resources - pensions		(1,035)	
Change in net pension liability		(2,195,661)	
Change in deferred inflows of resources - pensions		1,450,204	
Change in compensated absences		10,976	
Other post-employment benefits		(493,193)	
Amortization of bond expense and patent		914,691	
Capital outlay		11,210,705	
Gain on disposal of capital asset		75,348	
Capital contributions		2,363,076	
Change in net position		$ 9,101,843	

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ORANGE WATER AND SEWER AUTHORITY

**SCHEDULE OF REVENUE AND EXPENDITURES -
PROJECT FUNDS
FROM INCEPTION THROUGH JUNE 30, 2017**

	Project Budget	Cumulative Total to June 30, 2017	Unexpended Balance as of June 30, 2017
Raw Water Supply Sources:			
Revenues:			
General Fund	$ 1,629,103	$ 1,315,424	$ 313,679
Expenditures:			
Jordan Lake raw water supply intake and pumping facility	$ 327,558	$ 334,794	$ (7,236)
Stone quarry acquisition	351,545	132,872	218,673
University Lake pump station improvements	50,000	46,558	3,442
Cane Creek sodium permanganate feed systems	900,000	801,200	98,800
Total expenditures	$ 1,629,103	$ 1,315,424	$ 313,679
Water Treatment:			
Revenues:			
General Fund	$ 1,869,500	$ 1,900,631	$ (31,131)
Expenditures:			
Water treatment plant rehabilitation projects	$ 710,500	$ 968,518	$ (258,019)
Jones Ferry Road security improvements	200,000	392,504	(192,504)
Water treatment plant switchgear upgrade	85,000	35,495	49,505
OWASA facilities pavement improvements	89,000	73,167	15,833
Water treatment plant secondary containment	127,000	136,273	(9,273)
Water treatment plant pulsator controls electrical upgrade	70,000	50,873	19,127
Water treatment plant generator building louver replacement	88,000	17,314	70,686
Water treatment plant lighting improvements	50,000	41,786	8,214
Water treatment plant sedimentation basin rehabilitation	100,000	16,711	83,289
Facilities concrete condition assessment	100,000	18,447	81,553
Water treatment plant filter media and backwash pump replacement	250,000	92,130	157,870
Water treatment plant fluoride system review	-	57,413	(57,413)
Total expenditures	$ 1,869,500	$ 1,900,631	$ (31,131)
Drinking Water Storage:			
Revenues:			
General Fund	$ 58,000	$ 53,301	$ 4,699
Expenditures:			
Nunn Mountain pump station evaluation	$ 58,000	$ 53,301	$ 4,699
Water Transmission and Distribution:			
Revenues:			
General Fund	$ 12,417,547	$ 8,023,488	$ 4,182,787

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF REVENUE AND EXPENDITURES -
PROJECT FUNDS
FROM INCEPTION THROUGH JUNE 30, 2017

	Project Budget	Cumulative Total to June 30, 2017	Unexpended Balance as of June 30, 2017
Expenditures:			
Force account water line rehabilitation	$ -	$ 410,058	$ (410,058)
Water main - road improvement projects	360,000	102,331	257,669
Water line rehabilitation, replacement projects	5,416,547	4,351,099	1,065,448
Dobbins Drive - Erwin to Estes water main	134,000	86,238	47,762
Cameron Avenue water line replacement	984,000	723,600	260,400
Water distribution system hydraulic model	30,000	41,899	-
Rosemary, Henderson, Hillsborough Streets water mains	2,110,000	1,886,829	-
Distribution system pressure monitoring	32,000	7,772	24,228
Advanced meter infrastructure	2,430,000	319,641	2,110,359
Galvanized water main replacement	687,000	91,979	595,021
Hillsborough Street water main replacement and MLK Boulevard abandonment	200,000	2,044	197,956
Barnes Street valve evaluation	34,000	-	34,000
Total expenditures	$ 12,417,547	$ 8,023,488	$ 4,182,787
Wastewater Collection Lines:			
Revenues:			
General Fund	$ 15,311,000	$ 8,933,051	$ 3,917,968
Expenditures:			
Force account sewer line rehabilitation	$ -	$ 11,372	$ (11,372)
Sanitary sewer condition evaluation	3,094,000	1,846,605	
Service area sewer line rehabilitation and replacement projects	6,167,000	4,865,084	1,301,916
Bolinwood Drive interceptor	754,000	67,647	686,353
Little Creek interceptor	2,507,000	1,162,415	1,344,585
Dobbins Drive interceptor	200,000	-	200,000
Tom's Creek/Morgan Creek aerial crossings	1,609,000	732,790	876,210
Gravity sewer creek crossings	601,000	116,289	-
Rogers Road sanitary sewer	1,446,000	718,125	-
Credit (Orange County reimbursement) Rogers Road sewer	(1,316,000)	(619,124)	(696,876)
Easement acquisition program	99,000	31,848	67,152
Gravity sewer hydraulic model	150,000	-	150,000
Total expenditures	$ 15,311,000	$ 8,933,051	$ 3,917,968
Wastewater Pumping Stations and Force Mains:			
Revenues:			
General Fund	$ 3,389,000	$ 2,439,793	$ 344,798
Expenditures:			
Pump station improvements	$ 312,000	$ 251,945	$ 60,055
Force main condition evaluation	1,102,000	436,339	665,661
Eastowne pump station rehabilitation	157,000	161,710	(4,710)
Oaks 3 and Tinkerbell pump station	719,000	635,547	-
Rogerson Drive force main redundancy evaluation	50,000	-	-
Rogerson Drive pump station rehabilitation	694,000	223,044	-
Piney Mountain pump station rehabilitation	105,000	129,098	(24,098)

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF REVENUE AND EXPENDITURES -
PROJECT FUNDS
FROM INCEPTION THROUGH JUNE 30, 2017

	Project Budget	Cumulative Total to June 30, 2017	Unexpended Balance as of June 30, 2017
Manning Drive pump station rehabilitation	139,000	27,333	111,667
Heritage Hills and Eubanks pump station rehabilitation	31,000	15,975	15,025
Knolls pump station rehabilitation	80,000	27,237	52,763
Rogerson Drive emergency repair	-	531,565	(531,565)
Total expenditures	$ 3,389,000	$ 2,439,793	$ 344,798
Wastewater Treatment and Disposal:			
Revenues:			
General Fund	$ 19,024,000	$ 18,993,609	$ 30,391
Expenditures:			
Mason Farm waste water treatment plant rehabilitation and improvement project	$ 1,597,000	$ 1,926,920	$ (329,920)
Mason Farm waste water treatment plant odor control and aeration	10,526,000	11,701,448	(1,175,448)
Mason Farm waste water treatment plant comprehensive coatings program	1,029,000	1,422,477	(393,477)
Mason Farm waste water treatment plant digesters #1 and #2	2,919,000	2,805,929	113,071
Mason Farm waste water treatment plant IPS rehabilitation and replacement	231,000	130,540	100,460
Mason Farm waste water treatment plant digester pumps #3 and #4	-	76	(76)
Mason Farm stormwater pump station electrical rehabilitation	551,000	157,799	393,201
Mason Farm waste water treatment plant polymer feed/gravity belt thickener	410,000	215,465	194,535
Mason Farm waste water treatment plant nondrinking water pump replacement	384,000	30,861	353,139
Mason Farm waste water treatment plant pump station LED upgrades	74,000	121,805	(47,805)
Mason Farm waste water treatment plant pavement improvements	113,000	14,009	98,991
Mason Farm waste water treatment plant administration building improvements	43,000	30,314	12,686
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
Mason Farm waste water treatment plant roof replacement	364,000	47,977	316,023
Mason Farm waste water treatment plant biosolids conveyance and loading	91,000	-	91,000
Mason Farm waste water treatment plant filtrate side stream treatment	194,000	-	194,000
Mason Farm waste water treatment plant backflow prevention	80,000	75,824	4,176
Mason Farm waste water treatment plant secondary clarifier rehabilitation	50,000	39,520	10,480
Mason Farm waste water treatment plant SCADA system upgrade	150,000	141,550	8,450
Mason Farm waste water treatment plant critical spare pumps	125,000	59,191	65,809
Mason Farm waste water treatment plant remote storage facility electrical upgrade	-	71,905	(71,905)
Total expenditures	$ 19,024,000	$ 18,993,609	$ 30,391
Facility Improvements:			
Revenues:			
General Fund	$ 1,049,000	$ 271,890	$ 777,110
Expenditures:			
Information Services	$ -	$ 22,998	$ (22,998)
Administration building chiller replacement	169,000	55,640	113,360
Asset management development	880,000	193,252	686,748
Total expenditures	$ 1,049,000	$ 271,890	$ 777,110

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

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, 2017 and 2016 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 21, 2017.

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) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of 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, non-compliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of non-compliance 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.

Martin Starnes & Associates, CPAs, P.A.
Hickory, North Carolina
September 21, 2017

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ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF FINDINGS AND RESPONSES
FOR THE YEAR ENDED JUNE 30, 2017

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

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

None

DRAFT

ORANGE WATER AND SEWER AUTHORITY

SCHEDULE OF PRIOR YEAR AUDIT FINDINGS
FOR THE YEAR ENDED JUNE 30, 2017

None reported

DRAFT

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

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, 2017 and 2016, 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 21, 2017.

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.

Martin Starnes & Associates, CPAs, P.A.
Hickory, North Carolina
September 21, 2017

DRAFT

730 13th Avenue Drive SE ♦ Hickory, NC 28602 ♦ 828-327-2727 ♦ Fax 828-328-2324
13 South Center Street ♦ Taylorsville, NC 28681 ♦ 828-632-9025 ♦ Fax 828-632-9085
PO Box 5729 ♦ Statesville, NC 28687 ♦ 1710 Wilkesboro Hwy ♦ Statesville, NC 28625 ♦ 704-872-8923 ♦ Fax 704-872-4982
800-948-0585 ♦ **www.martinstarnes.com**

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DRAFT

OWASA Board of Directors – 12 Month Board Meeting Schedule (September 22, 2017)

Month	Board Meetings		Committee & Other Meetings and Reports
	Work Session	Business Meeting	
September 2017	Award the Administration Building HVAC Replacement Contract Discuss KPI Trends Discuss Employee Merit Pay for FY 2018 Diversity and Inclusion Progress Report EEO/Affirmative Action Report ( ) CS – General Counsel Review ( ) 9/14/2017	***LRWSP Update*** Annual Report and Financial Audit ( ) Approve General Counsel Engagement ( ) Award the Brandywine Drive Water Main Replacement Contract Award the Administration Building HVAC Replacement Contract CS – ED Review ( ) 9/28/2017	*OWASA Annual Update - Carrboro Board of Aldermen (9-5-2017)* *NRTS Committee Meeting on Biogas-to-Energy and potential Land Disposition (9/26/17)*
October 2017	***Discuss AMI Policies*** Discuss Request from Carrboro Mayor Lavelle Discussion of impact on MFMM rate change Discuss Televising Board Meetings CS – ED Review ( ) 10/12/2017	***Approve AMI Policies*** Process for Periodic review of Fluoridation Q1 Financial Report ( ) Strategic Trends Report ( ) Strategic Plan Update and Progress Report ( ) 10/26/2017	*Open House at Cane Creek (10-21-2017)* *Human Resources Committee Meeting (TBD)*
November 2017	Discuss revisions to Retiree Health Insurance, 457 Retirement Contributions and Parental Leave Status of Action Items on Communications during Emergencies Discuss Financial Reserves Policy Review and Approve Position Reclassification (Tentative) Discuss/approve ED Key Focus Areas 11/9/2017	*Holiday - no meeting*	*Open House at Jones Ferry Road Complex (11-4-2017)* *Finance Committee Meeting (TBD)*
December 2017	***Discuss LRWSP – Demands & Yield*** Award the Rogerson Drive Pump Station Phase 2 Contract Appoint Audit Firm ( ) (Tentative) Discuss Employee Compensation for next FY Affordability Outreach Program Update 12/14/2017	*Holiday - no meeting*	
January 2018	FY 19 Budget Calendar and Assumptions ( ) Employee Health and Dental Insurance Update ( ) Discuss KPI Trends CY 17 Biosolids Report 1/11/2018	Annual Lakes Recreation Report (regular agenda) ( ) Q2 Financial Report ( ) CIP Semiannual Report ( ) 1/25/2018	
February 2018	Energy Management Plan Update Diversity and Inclusion Progress Report CS - General Counsel Interim Review ( ) 2/8/2018	CS - General Counsel Interim Review ( ) 2/22/2018	
March 2018	FY 19 Draft Budget & Rates ( ) Set date for Public Hearings – FY 19 Budget & Rates ( ) CS - ED Interim Review ( ) 3/8/2018	FY 19 Draft Budget & Rates ( ) CS – ED Interim Review ( ) 3/22/2018	
April 2018	Review Employee Health and Dental Insurance Renewal ( ) FY 19 Draft Budget and Rates ( ) Authorize staff to publish proposed rates ( ) Appointment of the Nominating Committee ( )	Q3 Financial Report ( )	

Current and Pending Key Projects and Stages – in ***bold italics***

OWASA Board of Directors – 12 Month Board Meeting Schedule (September 22, 2017)

	4/12/2018	4/26/2018	
May 2018	Discuss Employee Health and Dental Insurance Renewal ↻ Discuss Employee Merit Pay for FY 19 ↻ ***Discuss Community Engagement Plan for Forestry Management*** 5/10/2018	Public Hearings – FY 19 Budget and Rates ↻ 5/24/2018	
June 2018	Approve FY 19 Budget and Rates ↻ Election of Officers ↻ 6/14/2018	TBD 6/28/2018	
July 2018	Discuss KPI Trends 7/12/2018	TBD 7/26/2018	
August 2018	CS – General Counsel Review ↻ 8/9/2018	Preliminary 12 Month Financial Report ↻ CIP Semiannual Report ↻ EEO/Affirmative Action Report ↻ CS – General Counsel Review ↻ 8/23/2018	

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 will begin to discuss this issue in September 2017, and staff will develop a Community Engagement Plan for Forestry Management by late spring 2018.
- Improve effectiveness as a learning organization is considered a longer-term priority.
- Water Conservation Plan will be prepared concurrent with update of the Long-Range Water Supply Plan.

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.

OWASA Board of Directors – 12 Month Board Meeting Schedule (September 22, 2017)

Abbreviations Used in Draft Schedule:

( )	Recurring agenda item (generally these are "required" items)
AMI	Advanced Metering Infrastructure
CE	Community Engagement
CEP	Community Engagement Plan
CIP	Capital Improvements Program
COLA	Cost of Labor Adjustment
CS	Closed Session of the Board
CY	Calendar Year
ED	Executive Director
FY	Fiscal Year
JLP	Jordan Lake Partnership
LRWSP	Long-Range Water Supply Plan
MST	Mountains-to-Sea Trail
MFMM	Multi-Family Master Meter
NRTS	Natural Resources/Technical Services
Q	Quarter
SOW	Scope of Work
TBD	To Be Determined
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

Current and Pending Key Projects and Stages

Project	Strategic Initiative	Project Lead	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	June-18	July-18	Aug-18
AMI	6	Taylor		AMI Policies										
Total Compensation Study		Glasgow	*Schedule To Be Determined*											
LRWSP	1	Rouse				Demand & Yield								
Energy Plan	5	Tiger		Biogas-to-Energy										

Stages	Committee Discussion	Feasibility Study	Board Review	Community Engagement	Action	Procurement	Implementation

AGENDA ITEM

- Resolution Awarding a Construction Contract for the Brandywine Road Water Main Replacement Project

PURPOSE

- To request the Board's approval to award a construction contract for the Brandywine Road Water Main Replacement Project.

BACKGROUND

- The Project consists of 2,600 feet of 8-inch diameter water main, 120 feet of 2-inch diameter water main, and other associated work.

- Plans and specifications for the construction of this project were prepared by McKim & Creed ("Engineer").

- Prospective bidders for the construction contract were screened through a prequalification process. Minority outreach was performed for the prequalification process in accordance with standard practice. Five (5) bidders were prequalified.

- The project was advertised for bids on August 1, 2017. Bids from two (2) prequalified contractors were received on August 29, 2017. Bids were not opened on this date because the statutory requirement for a minimum of three (3) bids was not met. The project was re-advertised for bids on August 29, 2017 to the prequalified contractors. Two (2) bids were received and opened publicly at the second bid opening on September 11, 2017. The low responsive and responsible bidder was Moffat Pipe, Inc. (Moffat) with a bid of $872,357.00. The Engineer's estimate was $884,741.00.

- The Engineer evaluated bids and recommended award of the construction contract to Moffat.

STAFF RECOMMENDATION

- Staff recommends that the Board of Directors adopt the attached resolution awarding the construction contract for the Brandywine Road Water Main Replacement Project to Moffat.

ORANGE WATER AND SEWER AUTHORITY

A public, non-profit agency providing water, sewer and reclaimed water services to the Carrboro-Chapel Hill community.

M E M O R A N D U M

TO: Board of Directors

THROUGH: Ed Kerwin

FROM: Dustin Rhodes, P. E.

DATE: September 22, 2017

SUBJECT: **Award of Construction Contract for Brandywine Road Water Main Replacement Project**

Purpose

This memorandum recommends that OWASA award a construction contract to Moffat Pipe, Inc. ("Moffat") for the construction of the Brandywine Road Water Main Replacement Project ("Project").

Background

The Project area extends along Brandywine Road from the intersection with Princeton Drive to the intersection with Concord Drive, as shown in Attachment 1. This Project will replace approximately 2,600 feet of 8-inch asbestos cement pipe along Brandywine Road and 120 feet of 2-inch galvanized water main within the cul-de-sac on Brandywine Road with new 8-inch ductile iron and 2-inch PVC water main, respectively. Approximately 46 service connections will be replaced as well.

The water mains in the Project area were identified by OWASA for replacement due to the frequency of water main breaks in the area. The Project is also part of OWASA's overall program to replace or abandon aging water mains to ensure a safe and reliable supply of drinking water for our customers. The existing mains within this project were identified as a high priority for replacement by our Water Main Prioritization Model.

Due to limited road shoulder accessibility for construction and future operation and maintenance, potential driveway repairs and interruption to property owners, and the presence of other utilities, the most practical location for the new water main was determined to be within the roadway through the Project area. Brandywine Road is scheduled to be resurfaced by the N.C. Department of Transportation (NCDOT) following replacement of the water main.

In addition, the design engineer for the project, McKim and Creed, completed a preliminary evaluation of several "trenchless technology" alternatives that had potential to further reduce the construction impacts to the community in comparison to traditional open-cut excavation, including pipe bursting, horizontal directional drilling (HDD), and Cured-in-Place-Pipe (CIPP) lining. However, the preliminary evaluation recommended against these options, identifying several concerns with each.

- **Pipe Bursting** allows installation of a new pipe within the existing pipe's location, which can save repair costs to sidewalks, pavement, and other above ground features. This option is not feasible because the existing pipe material is asbestos cement, and current regulations dictate that pipe bursting of asbestos cement would establish an inactive hazardous waste site.

- **Horizontal Directional Drilling (HDD)** involves drilling a borehole in the soil and pulling a new pipe into the borehole. HDD also minimizes disturbance to roadways, sidewalks, and any other existing utilities. Reconnecting the services will require open cut installation, and due to the high number of water service reconnections required in this Project, HDD is not preferred. Open cut requirements for each service connection defeats the purpose of the trenchless advantages that HDD offers.

- **Cured-in-Place-Pipe (CIPP)** lining involves curing a resin-based material inside the existing pipe. CIPP lining of the water main is a viable option; however, the engineer's cost estimate of this option was higher than open cut installation of a new water main.

The design engineer, McKim & Creed, recommended open cut installation for this project as opposed to CIPP lining due to the estimated cost savings of approximately $60,000. The typical cost advantages enjoyed by CIPP were offset in this case by the large number of service connections in this Project corridor, since service connections will still require excavation and roadway repair. OWASA staff concur with McKim & Creed's recommendation that open cut installation of a new water main is the best option for this Project.

Brandywine Road is a heavily used collector street for the Heritage Hills neighborhood, and effective communication with residents will be critical throughout this Project. Residents in the affected area have already experienced water main repairs and sewer force main replacement within the past several years. OWASA staff will work with McKim & Creed to communicate schedules and activities of the contractor so that timely information about construction can be delivered to the affected customers. Initial public notification regarding this project was sent in December 2016 in advance of site surveying activities. Additional public communication is planned to start October 2017 (about 4 to 6 weeks prior to construction) and continue throughout the construction period.

Advertising and Bidding

Prospective bidders were screened through our standard prequalification process, which involved having interested contractors submit a package outlining their qualifications, including past performance on similar projects, credentials of their management team, safety record, etc. Only those firms that clearly demonstrated the capability to adequately perform the work were invited to submit bids.

The Request for Qualifications (RFQ) was posted January 18, 2017. After review, five (5) contractors were prequalified to bid on the project. The invitation for bids was issued to the prequalified contractors on August 1, 2017. A total of two (2) bids were received on August 29, 2017; however, the bids were returned to bidders unopened because the statutory requirement for a minimum of three (3) bids was not met. Therefore, the project was re-advertised for bids on August 29, 2017 to the prequalified contractors. Two (2) bids were received and opened on September 11, 2017 by the same contractors that previously submitted bids at the first bid opening. Moffat was the low, responsive and responsible bidder for the project with a bid of $872,357.00. A copy of the certified bid tabulation is attached with the Engineer's recommendation for award (Attachment 2), and the results are summarized below:

Moffat Pipe, Inc.	$872,357.00
Pipeline Utilities, Inc.	$945,000.00
Engineer's Final Estimate	*$884,741.00*

State Reserve Loan (SRL) Funding

The Project was awarded a State Reserve Loan (SRL) in the amount of $1,056,000 at a maximum interest rate of 1.53%. This loan is offered through the State Drinking Water Reserve Program, which provides grants and loans to Local Government Units for planning, design, and construction of critical water infrastructure.

Minority and Women Business Enterprise (MWBE) Participation

OWASA's Minority Business Participation Outreach Plan and Guidelines include all of the statutory requirements from the State of North Carolina, and specify a 10% goal for participation by minority businesses. In keeping with standard practice, OWASA staff took several actions to solicit minority participation in this contract, including advertising the RFQ in the Greater Diversity News, North Carolina Institute of Minority Economic Development, North Carolina Department of Administration Historically Underutilized Businesses, OWASA's website, and plan rooms. OWASA also requires bidders to complete "good faith" efforts to solicit participation by minority subcontractors. OWASA staff publicly advertised the formal bid as an additional effort to encourage participation by subcontractors where it was feasible.

The apparent low bidder (Moffat) is a Women Owned Business Enterprise (WBE) and they

anticipate self-performing at least $500,000.00 of the work. Additionally, they provided documentation of good faith efforts although none of their subcontractors qualify as Minority and Women Owned Business Enterprise (MWBE) contractors. The total percentage of work going to an MWBE in this contract is approximately 57%, all of which will be performed by a women-owned business (Moffat).

Bid Analysis and Recommendation

Although only two (2) bids were received for the project, staff is satisfied that the proposed contract amount represents a competitive price for this work. Based on feedback received from contractors and consultants, the low number of bids (and prequalification applications) on this project appears to reflect the general bidding climate at this time, with an increasing number of private and public projects competing for a limited set of qualified utility contractors.

The two (2) bids received were in the anticipated range with favorable pricing for the low bid (the high bid was 8.33% higher than the low bid). The low bid was 1.40% lower than the Engineer's estimate and is a competitive cost for the work.

Moffat has the ability to complete this project, was evaluated thoroughly during the prequalification process, and has demonstrated sufficient qualifications in past project performance, personnel qualifications/experience, reference checks, and all other rated categories. OWASA staff also determined that Moffat's safety performance, relevant project experience, bonding capacity, and other non-rated categories met our requirements. Moffat has performed numerous successful water main replacement projects for OWASA over the past several years, including water main replacements along Purefoy Road, Rosemary-Henderson-Hillsborough Streets, and South Estes Drive.

McKim & Creed's recommendation that the construction contract for this project be awarded to Moffat is attached along with the certified bid tabulation (Attachment 2). OWASA staff concurs with this recommendation. In order to proceed, we request the Board's adoption of the attached resolution (Attachment 3) awarding the construction contract to Moffat.

Please let me know if you have any questions or need additional information. I can be reached at 919-537-4249 or drhodes@owasa.org. Thank you.

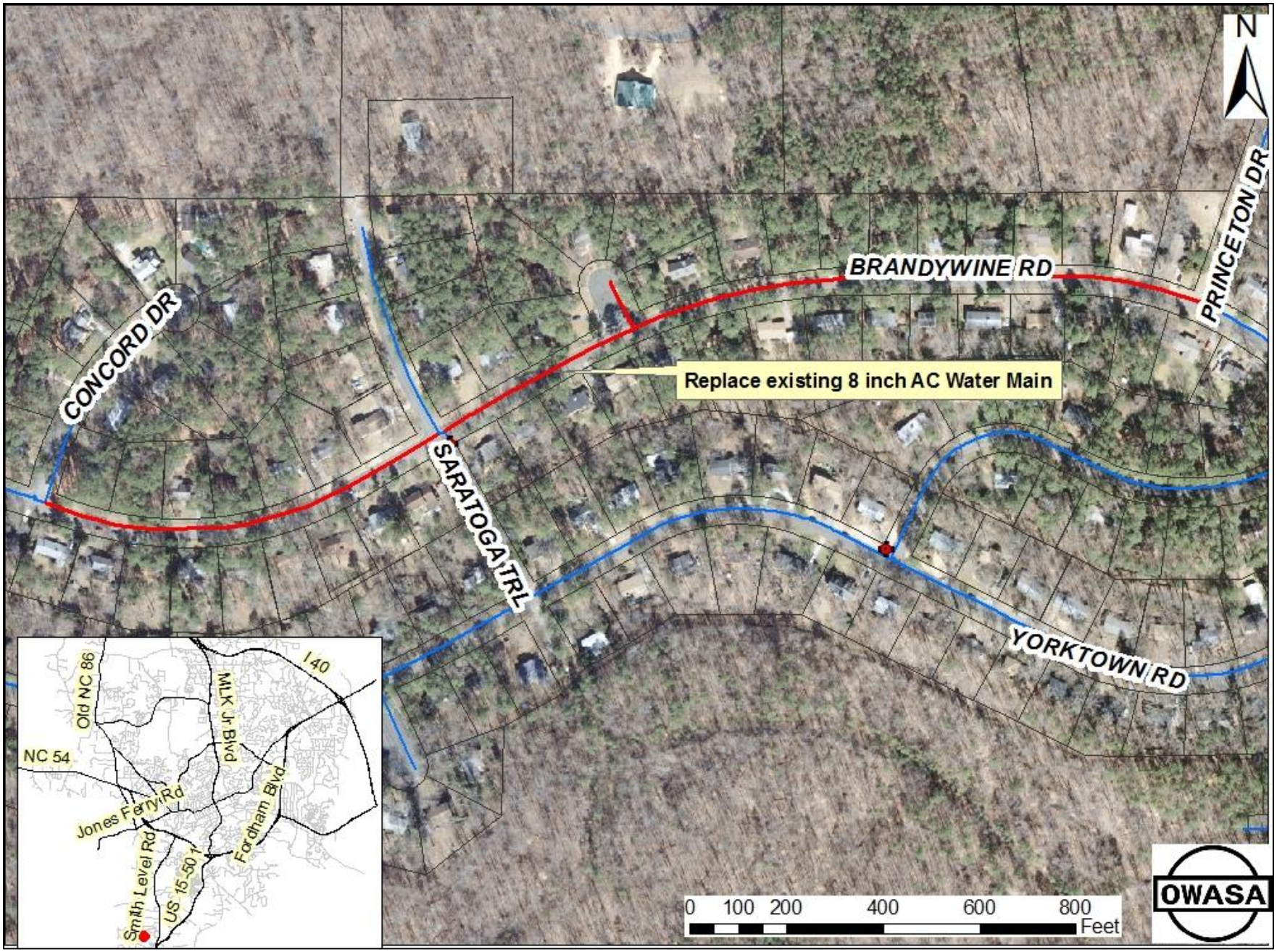
Dustin M. Rhodes

_____

Dustin M. Rhodes, P.E.
Utilities Engineer

Attachment 1 – Location Map
Attachment 2 – Engineer's Recommendation for Award and Certified Bid Tabulation
Attachment 3 – Resolution

Attachment 1 – Work Area Location Map



McKIM&CREED

ENGINEERS
SURVEYORS
PLANNERS

September 13, 2017

M&C 01519-0040 (54)

Mr. Dustin Rhodes, PE
Utilities Engineer
Orange Water & Sewer Authority
400 Jones Ferry Road
Carrboro, NC 27510

RE: Brandywine Road Water Main Rehabilitation
Recommendation of Award of Construction Contract

Dear Mr. Rhodes:

On Tuesday, August 29, 2017 at 2:00 pm, the Orange Water and Sewer Authority originally received bids for the Brandywine Road Water Main Rehabilitation project. Two (2) bids were received from prequalified bidders; however, the bids were returned to bidders unopened, as the statutory requirement of receipt of three (3) bids for a formal bid opening was not met. As a result, the project was re-bid in accordance with statutory requirements for formal bidding, with a revised bid date issued in Addendum No. 2.

The re-bid date was established for Monday, September 11, 2017 at 2:00 pm. On the date of the re-bid, the Orange Water and Sewer Authority received two (2) bids from prequalified bidders, and the bids were opened and read aloud. The advertisement and bidding procedures were consistent with statutory requirements to the best of our knowledge. Please refer to the attached detailed bid tabulation and bid summary tabulation for the bids received. The referenced bids have been reviewed by the Engineer, and Moffat Pipe, Inc. (NC License # 54906) is the apparent low bidder, with a bid submitted in the base bid amount of $872,357.00.

Prior to bid advertisement, five (5) contractors were prequalified for the construction project utilizing the Orange Water and Sewer Authority prequalification process. Prequalified contractors were listed in the bid documents, and only bidders who had been prequalified were allowed to submit bids for the referenced project.

1730 Varsity Drive
Suite 500
Raleigh, NC 27606
919.233.8091
Fax 919.233.8031
www.mckimcreed.com

Moffat Pipe, Inc. is properly licensed and experienced in the type of construction involved, as indicated by the information supplied with the bid. Based on the Engineer's review of the bids, we recommend award of the project to the lowest responsible, responsive bidder, Moffat Pipe, Inc. in the base bid amount of $872,357.00. The referenced bid is subject to review by the North Carolina Department of Environmental Quality, Division of Water Infrastructure.

Please accept this letter as the formal recommendation of award of construction contract to Moffat Pipe, Inc. This recommendation of award is subject to acceptance of the submitted bid by the Orange Water and Sewer Authority, in addition to approval by the North Carolina Department of Environmental Quality, Division of Water Infrastructure.

Enclosed you will find the following documents:

- Certified Bid Tabulations
- Moffat Pipe, Inc. Bid Package
- Moffat Pipe, Inc. Bid Bond

It is recommended a construction contingency be held in the budget to cover any unforeseen conditions which may be encountered during construction.

Should you have any questions or concerns in regards to this letter or any of the enclosures, please do not hesitate to contact our office.

Sincerely,

McKIM & CREED, INC.

K. Jason Savage, PE
Construction Administrator

Enclosures

cc: File, w/encl.
Adam Paukovich, PE (M&C)
Matthew Rushing, EI (NCDEQ-DWI)

BID TABULATION

Orange Water and Sewer Authority
Brandywine Road Water Main Rehabilitation
CIP No. 275-70
RE-BID DATE: September 11, 2017 at 2:00 PM
M&C Project No. 01519-0040

BIDDER	LICENSE #	BID BOND	ACKNOWLEDGE ADDENDUM NO. 1	ACKNOWLEDGE ADDENDUM NO. 2	ACKNOWLEDGE ADDENDUM NO. 3	BASE BID
Moffat Pipe, Inc.	54906	✓	✓	✓	✓	$872,357.00
Pipeline Utilities, Inc.	13040	✓	✓	✓	✓	$945,000.00



Certified as Correct

K. Jason Savage, PE — 9/12/17
Construction Adminstrator — Date
McKim & Creed, Inc.

CERTIFIED DETAILED BID TABULATION
ORANGE WATER & SEWER AUTHORITY
BRANDYWINE ROAD WATER MAIN REHABILITATION
CIP NO.: 275-70
RE-BID DATE: SEPTEMBER 11, 2017 @ 2:00 PM
M&C PROJECT NO: 01519-0040

Item	Description	Estimated Quantity		MOFFAT PIPE, INC.			PIPELINE UTILITIES, INC.		
				Unit Price		Total Cost	Unit Price		Total Cost
1	Mobilization	1	LS	$43,000.00	/LS	$43,000.00	$46,000.00	/LS	$46,000.00
2	Water Lines								
	a. 8" Diameter Ductile Iron Pipe, Class 350 RJ Water Line	2,625	LF	$125.00	/LF	$328,125.00	$84.00	/LF	$220,500.00
	b. 6" Diameter Ductile Iron Pipe, Class 350 RJ Water Line	100	LF	$150.00	/LF	$15,000.00	$105.00	/LF	$10,500.00
	c. 2" Water Line (including fittings, but not including service pipe)	150	LF	$68.00	/LF	$10,200.00	$170.00	/LF	$25,500.00
3	Testing, Seeding and Restoration for Water Lines								
	a. 8" Water Line	2,625	LF	$3.00	/LF	$7,875.00	$7.00	/LF	$18,375.00
	b. 6" Water Line	100	LF	$6.00	/LF	$600.00	$7.00	/LF	$700.00
	c. 2" Waterline (not including 2" service pipe)	150	LF	$3.71	/LF	$556.50	$7.00	/LF	$1,050.00
4	Ductile Iron Restrained Mechanical Joint Fittings (Compact Weight)	1,300	LB	$10.00	/LB	$13,000.00	$8.00	/LB	$10,400.00
5	8" Gate Valve with Box	8	EA	$3,100.00	/EA	$24,800.00	$2,000.00	/EA	$16,000.00
6	6" Gate Valve with Box	4	EA	$2,750.00	/EA	$11,000.00	$1,500.00	/EA	$6,000.00
7	2" Gate Valve with Box (including tap, saddle, and brass nipple)	2	EA	$1,800.00	/EA	$3,600.00	$1,000.00	/EA	$2,000.00
8	DELETED								
9	Fire Hydrant Assembly Complete with Valve and Box	1	EA	$6,500.00	/EA	$6,500.00	$6,000.00	/EA	$6,000.00
10	2" Blow Off Assembly	4	EA	$2,500.00	/EA	$10,000.00	$3,000.00	/EA	$12,000.00
11	New 3/4" Service, Meter Setter and Meter Box (complete)								
	a. Same Side (Open Cut)	18	EA	$1,800.00	/EA	$32,400.00	$3,200.00	/EA	$57,600.00
	b. Opposite Side (Trenchless)	28	EA	$2,200.00	/EA	$61,600.00	$3,900.00	/EA	$109,200.00
12	Remove/Abandon Existing AC Water Lines, Services, Valves and Fire Hydrants	1	LS	$13,500.00	/LS	$13,500.00	$43,000.00	/LS	$43,000.00
13	Remove and Replace existing 8" Sewer Line with 8" DIP	40	LF	$225.00	/LF	$9,000.00	$260.00	/LF	$10,400.00
14	Remove and Replace NCDOT Asphalt Roadway (6" CABC, 6" B25.0B, 1" SF9.5A)	1,750	SY	$70.00	/SY	$122,500.00	$81.00	/SY	$141,750.00
15	Remove and Replace Concrete Curb & Gutter	1,400	LF	$32.00	/LF	$44,800.00	$39.00	/LF	$54,600.00
16	Remove and Replace Concrete Sidewalk	10	SY	$100.00	/SY	$1,000.00	$250.00	/SY	$2,500.00
17	Concrete Driveway Removal and Replacement	75	SY	$100.00	/SY	$7,500.00	$100.00	/SY	$7,500.00
18	Rock Removal and Replacement with Select Backfill	225	CY	$200.00	/CY	$45,000.00	$1.00	/CY	$225.00
19	Remove And Replace Unsuitable Excavated Material And Replace With Select Offsite Borrow	50	CY	$0.01	/CY	$0.50	$20.00	/CY	$1,000.00
20	Undercut Excavation and Disposal of Unsuitable Material	25	CY	$35.00	/CY	$875.00	$50.00	/CY	$1,250.00
21	Protection Concrete	5	CY	$125.00	/CY	$625.00	$600.00	/CY	$3,000.00
22	Traffic Control	1	LS	$45,000.00	/LS	$45,000.00	$123,000.00	/LS	$123,000.00
23	Tree Protection Fence	100	LF	$2.00	/LF	$200.00	$10.00	/LF	$1,000.00
24	Inlet Protection Devices	20	EA	$180.00	/EA	$3,600.00	$200.00	/EA	$4,000.00
25	Project Signs	2	EA	$750.00	/EA	$1,500.00	$475.00	/EA	$950.00
26	Utility Relocation Allowance	1	LS	$5,000.00	/LS	$5,000.00	$5,000.00	/LS	$5,000.00
27	Testing Allowance (Vibration Monitoring)	1	LS	$1,500.00	/LS	$1,500.00	$1,500.00	/LS	$1,500.00
28	NCDOT Bond Allowance	1	LS	$2,500.00	/LS	$2,500.00	$2,500.00	/LS	$2,500.00
TOTAL BID AMOUNT IN FIGURES (ITEMS 1-28)						**$872,357.00**			**$945,000.00**



Certified as Correct

K. Jason Savage, PE
Construction Administrator
McKim & Creed, Inc.

9/12/17
Date

RESOLUTION AWARDING A CONSTRUCTION CONTRACT FOR THE BRANDYWINE ROAD WATER MAIN REPLACEMENT PROJECT

WHEREAS, there is a need to replace the water main along Brandywine Road due to its age and condition; and

WHEREAS, plans and specifications for the construction of this project have been prepared by McKim & Creed; and

WHEREAS, advertisement for contractor qualifications was published on the websites of the North Carolina Institute of Minority Economic Development, North Carolina Department of Administration, and OWASA in January 2017, and five contractors were qualified to bid; and

WHEREAS, the prequalified contractors were formally invited to submit bids for the project on August 29, 2017, and only two bids were received; and the prequalified contractors were formally invited to resubmit bids on September 11, 2017, and two bids were received; and Moffat Pipe, Inc. of Wake Forest, North Carolina has been determined to be the low, responsive, and responsible bidder; and

WHEREAS, on June 8, 2017 the Board approved a resolution authorizing funds for Capital Improvement Projects, including funds for this project; and Orange Water and Sewer Authority expects to receive low-interest loan funding for this project through North Carolina's State Drinking Water Reserve Program;

NOW, THEREFORE, BE IT RESOLVED:

1. That, subject to the approval of the North Carolina Division of Water Infrastructure (DWI), and provided said approval is received on or before November 10, 2017, the Orange Water and Sewer Authority Board of Directors awards the construction contract to Moffat Pipe, Inc., the low responsive, responsible bidder for the Brandywine Road Water Main Replacement Project, in accordance with the approved plans and specifications, in the amount of $872,357.00, subject to such change orders as may apply.

2. That, following receipt of the North Carolina DWI's approval as provided above, or after November 10, 2017 whichever occurs first, the Executive Director be, and hereby is, authorized to execute said contract, subject to prior approval of legal counsel, and to approve and execute change orders and such documents as may be required in connection with the construction contract.

Adopted this 28th day of September, 2017.

_____
Robert Morgan, Chair

ATTEST:

_____
Yinka Ayankoya, Secretary

Orange Water and Sewer Authority

Meeting of the Board of Directors

September 14, 2017

The Board of Directors of the Orange Water and Sewer Authority (OWASA) met in work session on Thursday, September 14, 2017, at 6:00 p.m. in OWASA's Community Room, 400 Jones Ferry Road, Carrboro.

Board Members present: Robert Morgan (Chair), Heather Payne (Vice Chair), Yinka Ayankoya (Secretary), Jeff Danner. Ray DuBose, Barbara Foushee, John N. Morris, Ruchir Vora, and John A. Young.

OWASA staff present: Denise Battle, Mary Darr, Robert Epting, Esq., (Epting and Hackney), Greg Feller, Vishnu Gangadharan, Stephanie Glasgow, Ed Kerwin, Andrea Orbich, Dustin Rhodes, Nicolas Rogers, Ruth Rouse, Kelly Satterfield, Todd Taylor, Mary Tiger, Rosa Valdez, Stephen Winters and Millie Zeno-Chapman.

Others present: Margaret Holton (Water, Sewer and Reclaimed Water Coordinator) and Ben Poulson (Associate Director of Energy Services) of the University of North Carolina at Chapel Hill; and Braxton Foushee.

Motions

1. Heather Payne made a motion to approve the Minutes of the August 10, 2017 Work Session of the Board of Directors; second by Jeff Danner and unanimously approved.

2. Heather Payne made a motion to approve the Minutes of the August 10, 2017 Closed Session of the Board of Directors; second by Jeff Danner and unanimously approved.

3. Ruchir Vora made a motion that staff prepare a letter to Wells Fargo stating OWASA's displeasure with their banking practices as it pertains to the Dakota pipeline; second by Barbara Foushee and the motion failed with a vote of three to six with Jeff Danner, Ray DuBose, John Morris, Robert Morgan, Heather Payne and John Young opposed.

4. BE IT RESOLVED THAT the Board of Directors of the Orange Water and Sewer Authority adopts the Resolution Updating the Schedule of Employee Classification and Authorized Compensation; Adjusting Affected Employees' Compensation to the Minimum of the Pay Range; and Authorizing Cost of Labor and Merit Pay Increases for Eligible Employees and allowing for the Executive Director to provide up to 15% of the organization for Exceptional performance reviews. (Motion by John Young, second by Jeff Danner and unanimously approved.)

5. Ruchir Vora made a motion that the Board of Directors convene in a Closed Session for the purpose of discussing a personnel matter; second by John Morris and unanimously approved.

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Announcements

Robert Morgan asked if any Board Member knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight to disclose the same at this time; none were disclosed.

Mr. Morgan said he and Yinka Ayankoya provided an OWASA annual update to the Carrboro Board of Alderman on September 5, 2017, that included discussion about Advanced Metering Infrastructure and drinking water fluoridation. Without objection, the Board agreed to continue discussion of water fluoridation under Item Eight A., Review Board Work Schedule, Request(s) by Board Committees, Board Members and staff.

John Young said the Natural Resources and Technical Systems Committee will meet on September 26th at 4 PM in the OWASA Boardroom to discuss biogas-to-energy opportunities and potential land disposition.

Heather Payne said the Chapel Hill Town Council's OWASA Committee will meet with Chapel Hill appointees to the OWASA Board on October 5, 2017, at 8:00 a.m. in the OWASA Boardroom. Mayor Pam Hemminger and Roger Stancil, Chapel Hill Town Manager, as well as OWASA Chair Robert Morgan are expected to attend.

Item One: Annual Report on Disposal of Surplus Personal Property

The Board accepted the Annual Report on Disposal of Surplus Personal Property as an information item.

Item Two: Minutes

Heather Payne made a motion to approve the Minutes of the August 10, 2017 Work Session of the Board of Directors; second by Jeff Danner and unanimously approved. Please see Motion No. 1 above.

Item Three: Minutes

Heather Payne made a motion to approve the Minutes of the August 10, 2017 Closed Session of the Board of Directors; second by Jeff Danner and unanimously approved. Please see Motion No. 2 above.

Item Four: Resolution Awarding a Construction Contract for the Administration Building Heating, Ventilation, and Air Conditioning (HVAC) Replacement Project

Vishnu Gangadharan introduced Dustin Rhodes, OWASA's new Utilities Engineer.

Barbara Foushee arrived at 6:13 p.m.

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After discussion, the Board requested additional information on the evaluation of alternatives for this project and agreed to defer consideration of approval of the resolution to the Board's September 28, 2017 meeting.

Change to the Agenda

Without objection, the Board agreed to move up Items Seven and Eight (Discuss Key Performance Indicator Report and Review Board Work Schedule) so that all Board Members would be in attendance for Items Five and Six (Diversity and Inclusion Program Progress Report and Equal Employment Opportunity/Affirmative Action Report for Fiscal Year 2017 and Discuss Employee Merit Pay for Fiscal Year 2018).

Item Seven: Discuss Key Performance Indicator Report

The Board reviewed and discussed monthly Key Performance Indicators, provided feedback and agreed to have further discussion in January 2018.

Item Eight: Review Board Work Schedule

After discussion, the Board agreed that staff will propose a process for the periodic review of guidance from professional organizations regarding fluoridation for discussion at the October 26, 2017 Board meeting.

Jeff Danner, Chair of the Finance Committee, noted that Ray DuBose agreed to serve on the audit firm selection committee. Either Heather Payne or Ruchir Vora will also participate once a schedule of audit firm interviews is known.

The Board agreed that the Finance Committee will schedule a meeting this fall to discuss the budget process for next fiscal year.

Yinka Ayankoya arrived at 7:14 p.m.

The Board agreed that staff will issue a Request for Proposals in the spring of 2018 for banking services, and the Board will provide input on the criteria to be considered in selecting the best-qualified bank.

Ruchir Vora made a motion that staff prepare a letter to Wells Fargo stating OWASA's displeasure with their banking practices as it pertains to the Dakota pipeline; second by Barbara Foushee and the motion failed with a vote of three to six with Jeff Danner, Ray DuBose, John Morris, Robert Morgan, Heather Payne and John Young opposed. Please see Motion 3 above.

The Board received an update from Ed Kerwin regarding the 40th Anniversary Open Houses scheduled for Saturday, October 21, 2017 at Cane Creek Reservoir and Saturday, November 4, 2017 at the Jones Ferry Road campus. The Board agreed with Mr. Kerwin's recommendation to waive the Lake Use Fee for the October 21st event at Cane Creek for Orange County residents.

The Board agreed that John Morris will explore options to capture more of OWASA's history.

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The Board requested more information and deferred until the September 28, 2017 agenda the Resolution Awarding a Construction Contract for the Administration Building HVAC Replacement Project.

Item Five: Diversity and Inclusion Program Progress Report and Equal Employment Opportunity/Affirmative Action Report for Fiscal Year 2017

Stephanie Glasgow provided an overview of staff's work with the consulting firm of VISIONS, Inc. on OWASA's Diversity and Inclusion Program. Nicholas Rogers (Assistant Distribution and Collection System Manager), Rosa Valdez (Clerk Cashier), Millie Zeno-Chapman (Water Treatment Plant Operator) and Todd Taylor (General Manager of Operations) provided comments on their experiences.

Ms. Glasgow provided additional information on the Equal Employment Opportunity/ Affirmation Action Report. She asked the Board what they liked about the work to date? If there were suggested improvements? If Board Members where interested in a focus group meeting? Does the Board desire a training session with the consultant?

The Board agreed to schedule training by VISIONS and requested recommendations on the timing and length of training. The Board also agreed to participate in a focus group meeting as part of the organizational climate assessment work.

Item Six: Discuss Employee Merit Pay for Fiscal Year 2018

Stephanie Glasgow restated the Human Resources (HR) Committee's recommendation to:

a) approve a 1% cost of labor increase for eligible employees who have earned a "Successful" or "Exceptional" Performance review during the October 2017 annual review process and adjust by the same percentage the salary ranges in the Schedule of Employee Classification and Authorized Compensation;

b) approve a merit increase to employees earning a performance review rating of "Successful" during the October 2017 annual review by increasing base pay 3%; and

c) approve a merit increase to employees earning a performance review rating of "Exceptional" during the October 2017 annual review by increasing base pay by 6%.

After discussion, the Board agreed with the HR Committee's recommendation and resolved to approve a 4% (total of cost of labor and merit increases) for eligible employees earning a performance review rating of Successful during the October 2017 annual review, a 7% increase for eligible employees earning a performance review rating of Exceptional during the October 2017 annual review and adjusting the Schedule of Employee Classification and Authorized Compensation by 1%.

John Young made a motion to approve the Resolution Updating the Schedule of Employee Classification and Authorized Compensation; Adjusting Affected Employees' Compensation to

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the Minimum of the Pay Range; and Authorizing Cost of Labor and Merit Pay Increases for Eligible Employees and allowing for the Executive Director to provide up to 15% of the organization for Exceptional performance reviews; second by Jeff Danner and unanimously approved. Please see Motion 4 above.

The Board agreed that the HR Committee will meet this fall to discuss compensation options for next fiscal year.

Item Nine: Executive Director Will Summarize the Key Staff Action Items from the Work Session

Ed Kerwin said items for staff follow-up are:

- Provide additional information on the evaluation of alternatives of improvements for the Administration Building Heating, Ventilation, and Air Conditioning Replacement project.
- Key Performance Indicators discussion will be scheduled for a January 2018 meeting.
- Propose a process for the periodic review of guidance from professional organizations regarding fluoridation for discussion at the October 26, 2017 Board meeting.
- Schedule interviews of potential audit firms.
- Schedule a Finance Committee meeting this fall to discuss the budget process and planning assumptions for next fiscal year.
- Issue a Request for Proposals in the spring of 2018 for banking services and seek the Board's input on the criteria to be considered in selecting the best-qualified bank.
- VISIONS, Inc. will provide the Board options for Diversity and Inclusion training as well as participate in a focus group meeting.
- Schedule an HR Committee meeting this fall to discuss options for employee compensation for next fiscal year.

Item Ten: Closed Session

Ruchir Vora made a motion that the Board of Directors convene in a Closed Session for the purpose of discussing a personnel matter; second by John Morris and unanimously approved. Please see Motion No. 5.

The Board came out of closed session and the work session was adjourned at 9:27 p.m.

Respectfully submitted by:

Andrea Orbich
Executive Assistant/Clerk to the Board

Attachment

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Orange Water and Sewer Authority

Closed Session of the Board of Directors

September 14, 2017

The Board of Directors of Orange Water and Sewer Authority met in Closed Session on Thursday, September 14, 2017, following the Board meeting.

Board Members present: Robert Morgan, Chair; Heather Payne, Vice Chair; Yinka Ayankoya, Secretary; Jeff Danner; Ray DuBose; Barbara M. Foushee; John N. Morris; Ruchir Vora; and John A. Young.

Staff present: Robert Epting, General Counsel.

****

ITEM ONE

The Board of Directors met in Closed Session with staff to evaluate the General Counsel's annual performance review.

No official action was taken at the meeting.

The meeting was adjourned at 9:27 p.m.

_____

Robert Morgan, Chair
Board of Directors

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AGENDA ITEM

- Long-Range Water Supply Plan Update

PURPOSE

- The purpose of this agenda item is to provide information regarding OWASA's update of its Long-Range Water Supply Plan (LRWSP). Updating the LRWSP will ensure we have a reliable, high quality supply of water for the community for the next fifty years.

BACKGROUND

- Cane Creek Reservoir, University Lake, and the Quarry Reservoir provide a yield of approximately 10.5 million gallons per day based on the 2001-02 drought of record.
- OWASA has an allocation of 5 percent of the water supply pool of Jordan Lake (approximately 5 mgd) (for which OWASA does not have a direct intake, but treated water is available via mutual aid agreements with the City of Durham and Town of Cary).
- The OWASA Board of Directors adopted a LRWSP in 2010.
- The 2010 LRWSP identified expanding the quarry reservoir as the most cost-effective supply to meet long-term demands. The expanded Quarry Reservoir will be filled with water from Cane Creek Reservoir, and staff estimates it will be available in approximately 2035.
- The 2010 LRWSP also recognized Jordan Lake as an important water supply source, particularly for the years before the Quarry Reservoir expansion is completed and as an additional source during an operational emergency or during an extended drought.
- The OWASA Board of Directors' adopted Strategic Plan identified updating the LRWSP as a Strategic Initiative.
- Updating the LRWSP at this time is desirable since the local governments are currently updating growth projections, and water use per customer account has decreased since the last water demand projections were developed.
- The OWASA Board of Directors approved a *Charter for Long-Range Water Supply Plan* in March 2014 and *Community Engagement Plan for Long-Range Water Supply Plan Update* in February 2015, subsequently updated in November 2016, and *Evaluating Supply and Demand Management Alternatives Against Goals and Objectives for the Long-Range Water Supply Plan Update* in November 2016.

ACTION REQUESTED

- Staff will provide a brief presentation on the Long-Range Water Supply Plan process. While no formal Board action is needed, staff appreciates any guidance provided by the Board to consider when updating the LRWSP.

ORANGE WATER AND SEWER AUTHORITY

A public, non-profit agency providing water, sewer and reclaimed water services to the Carrboro-Chapel Hill community.

MEMORANDUM

TO: Board of Directors

THROUGH: Ed Kerwin

FROM: Ruth Rouse

DATE: September 22, 2017

SUBJECT: Long-Range Water Supply Plan Update

PURPOSE

The purpose of this agenda item is to provide information regarding OWASA's update of its Long-Range Water Supply Plan (LRWSP). Updating the LRWSP will ensure we have a reliable, high quality supply of water for the community for the next fifty years. Since it can take many years – even decades - to plan, design, permit, and construct new water supplies, work must be done early to ensure we take timely action to meet drinking water needs far into the future.

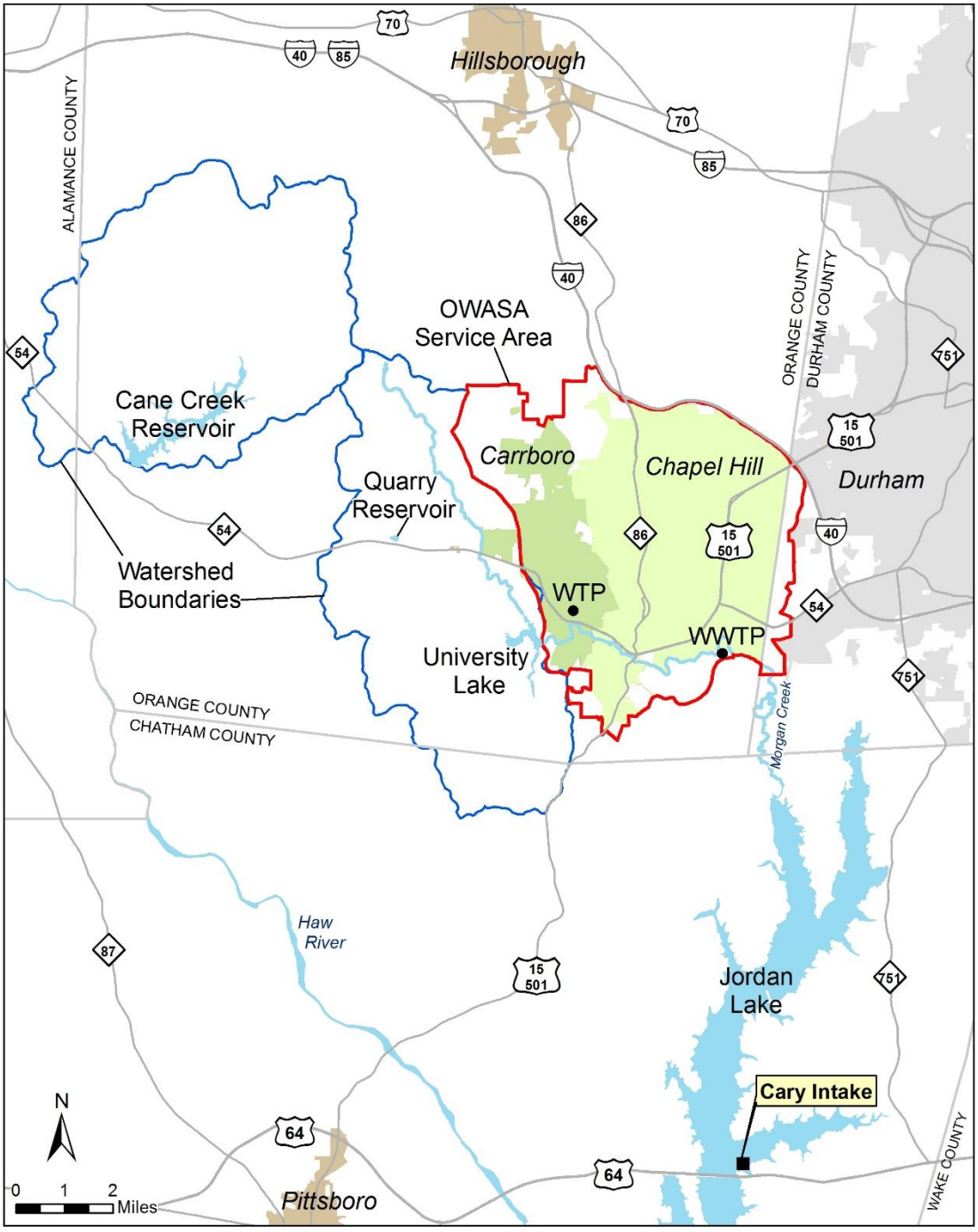
BACKGROUND

OWASA has two upland water supply reservoirs and a small off-stream Quarry Reservoir to meet the community's drinking water needs (Figure 1). Cane Creek Reservoir was put online in 1989 and has a useable storage volume of about 3 billion gallons. University Lake was built in the early-1930s and has a usable storage volume of about 450 million gallons. The Quarry Reservoir has a usable storage volume of about 200 million gallons. Together these three water sources provide a yield of approximately 10.5 million gallons per day (mgd) based on the 2001-02 drought of record. In addition, OWASA has an allocation of 5 percent of the water supply pool of Jordan Lake (approximately 5 mgd), for which OWASA does not have a direct intake, but treated water is available via regional interconnections and mutual aid agreements with the Town of Cary and City of Durham.

The OWASA Board of Directors adopted a LRWSP in 2010. The LRWSP was developed following the historic droughts of 2001-02 and 2007-08 to help ensure we have enough water to meet the community's current and future demands. Key assumptions which underlie the 2010 LRWSP include:

- OWASA's utility service area does not change.
- Water demand projections do not anticipate any retail or wholesale water, wastewater, or reclaimed water sales outside of our service area.
- Future state and federal regulations will allow OWASA to continue to recycle water treatment plant process water and operate its reclaimed water program.

Figure 1: OWASA's Water Supply Reservoirs



The 2010 LRWSP identified expanding the quarry reservoir as the most cost-effective supply to meet long-term demands. OWASA owns the Quarry Reservoir and surrounding land, and approvals were obtained in 2001 to expand the nearby active quarry. The Special Use Permit for the mining operation stipulates that mining operations cease by 2030; the final stage of mining will connect the existing Quarry Reservoir (for which draining will begin in approximately 2025) to the active mining pit. The expanded Quarry Reservoir will be filled with water from Cane Creek Reservoir, and staff estimates it will be available in approximately 2035. The 2010

LRWSP also recognized Jordan Lake as an important water supply source, particularly for the years before the Quarry Reservoir expansion is completed and as an additional source during an operational emergency or an extended drought. Jordan Lake also provides diversity to our water supply portfolio, an important factor for climate change planning.

The OWASA Board of Directors developed a Strategic Plan in March 2014 and updated it in June 2016. This Strategic Plan identified "Provide reliable and high quality supply of water for the next 50 years" as Strategic Initiative 1. One of the actions included in this Strategic Initiative is to update the LRWSP. Updating the LRWSP at this time is desirable for the following reasons:

- The Towns of Carrboro and Chapel Hill and Orange County are estimating growth in their jurisdictions through a regional transportation planning process. These updates will include the latest information on the types and location of growth. OWASA staff will use this information as a basis for updating our water supply demand projections.
- OWASA's water demand per customer account has decreased since the last water supply projections were developed. Updated water use information will be included in our demand projections.
- The Environmental Management Commission approved OWASA's request to retain its existing allocation from Jordan Lake (approximately 5 mgd) in March 2017. OWASA will need to determine the most effective short and long-term method(s) to access our allocation to Jordan Lake.
- Climate science has advanced over the last ten years, and there are now better data and tools to assess the impact of climate change on our water supply.

The OWASA Board of Directors approved a *Charter for Long-Range Water Supply Plan* (Attachment 1) at its March 27, 2014 meeting. This document outlines the project vision, need for the project, deliverables, water supply alternatives that will not be evaluated in the LRWSP, and risks.

The OWASA Board of Directors approved *Community Engagement Plan for Long-Range Water Supply Plan Update* at its February 12, 2015 work session; this document was updated in November 2016 (Attachment 2) based on feedback from the Board of Directors provided during discussion on Goals and Objectives at is November 10, 2016 work session. At that November 2016 work session, the Board agreed that the community would be most interested in understanding how much water we will need in the future and providing feedback on the alternative methods to meet those future needs. This Plan identifies important stakeholders, key topics to seek feedback from the community, key information to provide to the community, and methods to provide information and receive feedback. As part of this community engagement effort, staff has developed a project webpage and developed a project email address (LRWSP@owasa.org).

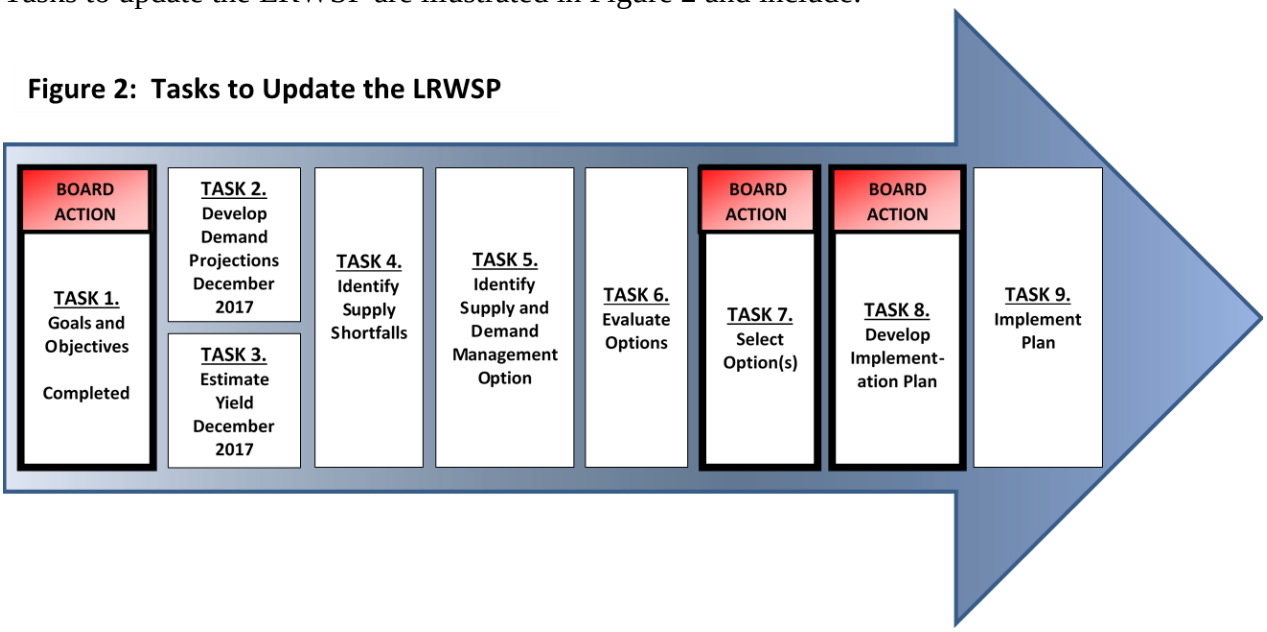
Staff developed *Evaluating Supply and Demand Management Alternatives Against Goals and Objectives for the Long-Range Water Supply Plan Update* and presented this document to the Board of Directors on November 10, 2016 (Attachment 3). (Note: supply alternatives are those that create a new or expanded source of water and demand management alternatives are those

that promote a more efficient use of water). At that meeting, the Board agreed that staff could use those goals to evaluate supply and demand management alternatives against.

STEPS TO UPDATE THE LRWSP

Tasks to update the LRWSP are illustrated in Figure 2 and include:

Figure 2: Tasks to Update the LRWSP



- Task 1: Develop goals and objectives to evaluate supply and demand management alternatives against – completed in November 2016 (Attachment 3).
- Task 2: Estimate community's future water supply needs – Staff will use growth projections currently being finalized for regional transportation planning as the basis for our future demand projections. Staff plan to present this information to the Board of Directors on December 14, 2017, but the schedule will be dependent on the local government time frame to finalize the growth projections.
- Task 3: Incorporate climate change into our water supply yield estimates – Since the 2001- 2002 drought is still the drought of record, the estimated yield of our water supply system will not change. However, staff is working with a graduate student at the University of South Carolina who is evaluating the dependability of that estimated yield under different climate change assumptions. Staff will present preliminary information to the Board of Directors with the future water supply needs (current schedule is December 14, 2017).
- Task 4: Identify any shortfall in water supply – Staff will base this on the future supply needs and current estimated yield (current schedule is December 14, 2017).
- Task 5: Identify water supply and demand management alternatives to meet future water supply needs - Staff will develop a preliminary list of supply and demand management alternatives to evaluate in the plan and present these to the Board of Directors and community prior to completing the alternatives analysis. Assuming that demand projections are completed in December 2017, this draft list of alternatives would be presented to the Board of Directors during the first quarter of calendar year 2018.

- Task 6: Evaluate supply and demand management alternatives – The alternatives selected in Task 5 will be evaluated against the goals and criteria developed in Task 1. This task will also include developing a Conservation Plan as identified in Strategic Initiative 1 of the Strategic Plan. The schedule for this task will be developed upon completion of Task 5.
- Task 7: Identify the preferred mix of water supply and demand management alternatives
- Task 8: Develop the LRWSP and identify the resources needed to implement it
- Task 9: Implement the LRWSP

Staff will make a brief presentation regarding the update to the LRWSP at the September 28 Board meeting. We look forward to your questions and comments, as well as your feedback as we move forward on this important strategic initiative.

Ruth C. Rouse, AICP
Planning and Development Manager

Attachments:
1: Charter for Long-Range Water Supply Plan
2: Community Engagement Plan for Long-Range Water Supply Plan Update
3: Evaluating Supply and Demand Management Alternatives Against Goals and Objectives for the Long-Range Water Supply Plan Update

CHARTER FOR LONG-RANGE WATER SUPPLY PLAN

Orange Water and Sewer Authority
400 Jones Ferry Road
Carrboro, NC 27510

CHARTER FOR LONG-RANGE WATER SUPPLY PLAN

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PROJECT VISION

We will implement environmentally, socially, and financially acceptable and technically practical water supply and demand management strategies to ensure a reliable and high quality supply of water for the community for the next 50 years. We will seek to involve and engage the community as we define and evaluate our community's needs, identify and evaluate our options, and proceed to implement the preferred strategies. Our plans will be periodically re-evaluated and adjusted as assumptions, trends, and conditions change over time.

PROJECT GOALS AND OBJECTIVE

The goals and objectives are organized along the three pillars of sustainability: social performance, environmental performance, and financial performance. As with many decisions, selection of the optimum mix of supply and demand management strategies will require balancing the multiple and sometimes competing objectives.

(Note: Goals and objectives will be reviewed and revised, where needed, as the project progresses, and as the Board receives and considers feedback received through the public engagement process. For this reason, some objectives listed below have not yet been fully developed.)

1. **Social Performance:** Our operations and facilities affect the well-being of the people, businesses, institutions and the community we serve. We will address the needs of and enhance our relationships with our customers, the whole community, our employees, the local governments and other public agencies that we work with.
    a. Annual average-day raw water demand does not exceed the reliable capacity of OWASA's existing and planned water supply sources. This could be achieved through a mix of supply and demand management alternatives.
    b. Our plan will include contingency measures for meeting water demands if and when an extreme event (such as an exceedance of the 2001-02 drought of record or sudden loss of water supply storage capacity) is projected to cause us to drawdown our remaining supply to 20 percent or less of total storage.
    c. We will maintain a diverse and resilient portfolio of water supply and demand management strategies so we are positioned to meet the community's water needs as we face increasing uncertainty in the future.
    d. Selected water supply strategies must enable us to meet all applicable drinking water-related standards.
    e. Mandatory water use restrictions and associated drought rate surcharges will not be implemented more frequently than once in ## years on average.
    f. In any given year, mandatory water use restrictions will not be in place more than ## percent of the year.
    g. The community is engaged in the development of the LRWSP such that OWASA understands and reflects the community's values in the selected mix of supply and demand management options.
    h. Key stakeholders are involved in evaluating and implementing demand management strategies.
    i. Water supply and demand management strategies are evaluated against their impacts on the community. These include but are not limited to impacts to landowners, recreation, and transportation.
2. **Environmental Performance:** We will pursue strategies that help us preserve natural resources; maintain or restore natural systems; conserve energy, water, and other natural resources; minimize waste and pollution emissions, and reduce our environmental impacts.

a. Water supply and demand management alternatives are evaluated against their relative projected energy use and greenhouse gas emissions.
b. Water supply and demand management alternatives are evaluated against their relative impacts on streams, wetlands, groundwater, air quality, habitat, and other environmental considerations.
c. The selected set of water supply and demand management strategies will be environmentally acceptable to the community and regulatory agencies.

3. **Financial Performance** The economic well-being of our customers and our community depend upon our ability to ensure high quality and reliable water services at an acceptable financial cost.
    a. Water supply and demand management alternatives are evaluated against their relative life cycle financial costs (capital and operating and maintenance costs).
    b. The selected set of water supply and demand management strategies represents a reasonable balance of financial considerations with our social and environmental performance objectives.

PROJECT OVERVIEW

The goal of this project is to develop a plan that helps guide OWASA's decisions, actions, and investments to ensure a reliable and high quality supply of water for the next 50 years.

PROBLEM STATEMENT

OWASA's mission is to provide its customers with high quality water, wastewater and reclaimed water services through responsible, sustainable, and creative stewardship of the resources and assets we manage. Since it can take many years – even decades - to plan, design, permit, and construct new water supplies, work must be done early to ensure we take timely action to meet drinking water needs far into the future (water supply planning done on 50-year basis). This project will ensure we meet our core mission.

COMMUNITY NEED

The last update of our Long-Range Water Supply Plan was completed in 2010. Since that time, water demands have continued to decline and updated planning documents have been developed by the Towns and UNC. In light of these and other factors, the OWASA Board of Directors has concluded that the LRWSP needs to be updated to reflect the best information available.

Update of the plan is one of the seven strategic initiatives identified in the Board's draft Strategic Plan for Fiscal Years 2014-2017.

The plan will document the optimum mix of technically, environmentally, economically, and socially feasible water supply and demand management alternatives that meet projected demands and level-of-service objectives under a range of future conditions and uncertainties that are presented in the Plan.

As a first step in the planning process, the Board of Directors will establish the proposed over-arching goals and objectives, water supply level-of-service requirements, and criteria (and associated weighting) to be used to evaluate a range of potential supply and demand management options. Consistent with OWASA's community engagement goals expressed in the draft Strategic Plan, the Board will also need to determine the proposed scope and process for engaging the public in this important planning initiative.

HIGH-LEVEL SCOPE/DELIVERABLES

	HIGH-LEVEL DELIVERABLE AND/OR SERVICE
1.	More detailed information on individual tasks are found in Supplement 1. Specific task scopes will be developed as the project progresses (e.g., the community engagement process).
2.	Updated water demand projections that incorporate the best information available and appropriately reflect the uncertainty surrounding local governments' population and economic growth projections and UNC's projections.
3.	Updated estimates of water supply yield, including more rigorous assessment of potential effects of climate change on yield.
4.	List of supply and demand management alternatives; financial and non-financial evaluation of those alternatives (evaluation criteria identified in Task 1)
5.	Communication plan to provide community with meaningful input to the process.
6.	Concise final plan which summarizes OWASA water supply goals and objectives, projected water supply needs, alternatives considered to meet those needs, the cost and schedule to implement the selected alternatives, and the assumptions used to develop the plan.
7.	Implementation plan which includes legal/policy frameworks and funding

EXCLUSIONS

	EXCLUSIONS
1.	Alternatives which involve the transfer of water from outside the Jordan Lake watershed will not be considered.
2.	Alternatives which were evaluated in the 2010 Long-Range Water Supply Plan but eliminated from detailed consideration will not be considered during the update. These include: new reservoir on Sevenmile Creek, dredging University Lake, expanding Cane Creek Reservoir, expanding University Lake, and putting a permanent intake on the Haw River.
3.	Demand management alternatives for which firm, measurable savings cannot be documented (such as public education and outreach) will not be included in the plan update. However, such measures will be considered during the planned development of OWASA's formal Water Conservation Plan.

ASSUMPTIONS

	ASSUMPTIONS
1.	OWASA strongly supports and promotes activities which result in additional water conservation by its customers.
2.	The plan will carefully consider input from the Town of Carrboro, Town of Chapel Hill, UNC, and Orange County. The plan elements will be developed iteratively such that others are clear on potential policy issues associated with different water supply and demand management alternatives.
3.	The Plan is an opportunity to engage OWASA's customers. Further details on community engagement will be developed in Task 1.

ASSUMPTIONS	
4.	The Plan should include a list of actions that could be used if extended drought or other operational emergency outside the assumptions used to develop Plan put community at risk; in other words, the Plan should include a back-up strategy if the water supply and demand management alternatives selected may not be adequate for some future situation.
5.	Supply and demand management evaluations will be based on desktop analyses using readily available data.
6.	Energy use and greenhouse gas emissions are assumed to based on operation of the applicable strategy (embedded energy for materials in construction will not be included in the analyses).

CONSTRAINTS

	SCOPE	TIME	COST	DESCRIPTION
1.	N/A	N/A	X	Consulting support – tasks such as updating yield and demand projections to address climate change considerations, and preparing life-cycle cost evaluations for certain alternatives will require consulting support. The level of detail provided by consultants should be based on balancing the risk of developing a higher level analysis against OWASA's affordability goal.
2.	N/A	X	X	The timetable and scope of the project will depend in part on the Board's decisions regarding the community engagement process. Providing meaningful opportunities for stakeholder input to the process (including customers, local governments, UNC, etc.) will require additional time and project support. This is internally driven schedule so low risk.

HIGH-LEVEL RISKS

High-Level Risks	
1.	Climate change could impact yield of reservoir system, demands – should be accounted for during planning process.
2.	Local governments development policies/ordinances, changes in UNC and UNC Hospitals plans, changes in the OWASA service area, and other factors could result directly or indirectly in faster (or slower) growth than anticipated.
3.	Demand management strategies result in reduced revenues; policies which could reduce demand should be evaluated against current pricing structure

SERVICE IMPACT

	Service Group	Impact Potential			Notes
		Low	Med	High	
1.	Water Supply and Treatment			X	Will ultimately affect staffing needs, facility operations and maintenance requirements, etc.
2.	Finance and Customer Service	X			Potential effects related to drought surcharge billing, potential financial incentive program for demand management, etc.
3.	Engineering and Planning		X		Will affect future engineering design and project support services.
4.	Office of Executive Director			X	Will affect policy evaluation and implementation, public education and outreach, drought response planning, demand management program, etc.

ESTIMATED TIMELINE

Estimated Start Date	Target Delivery Date
March 2014	Oct 2016 (does not include budget/implementation); schedule will likely slide with in depth stakeholder involvement (low impact)

PROJECT SPONSORS AND STAKEHOLDERS

Role	Description	Responsibility	Name(s)
Project Sponsor	Executive Leadership and Decision Maker	Executive Leadership, Champion and Requester	Board of Directors
Project Manager	Project Manager	Supports the Initiator and/Sponsor in Document Preparation	Ruth Rouse, Planning and Development Manager

COMMUNITY ENGAGEMENT PROCESS

The success of our water supply plan will depend on the effectiveness of our partnerships – with local governments, our customers, the business community, conservation organizations, regulatory agencies, and others. To obtain their participation in the development of the plan, and their commitment to helping implement the plan, we need to develop an effective public engagement plan for the project.

Effective community engagement is a key goal expressed in our draft Strategic Plan, and it is implied in our Commitments to Our Customers, and our Mission and Values statement.

Examples of key goals of the public engagement process for this project are:

- ✓ Involve stakeholders in the exchange of information and ideas, and in the decision-making process so that we can better understand and incorporate public values, and ultimately improve the quality of the decisions;
- ✓ Increase public awareness of and support for the findings, recommendations, and implementation of the plan;
- ✓ Obtain commitments from stakeholders that will have key roles in the implementation of the plan;
- ✓ Build trust in OWASA;
- ✓ Develop and implement outreach strategies to better serve minority communities, persons with limited English proficiency, and socio-economically disadvantaged individuals;
- ✓ Better understand and seek to minimize sources of conflict among interested and affected parties by building agreement on proposed strategies;

The public engagement plan for this project will identify the target stakeholders and strategies and general timetable and methods for informing and involving them throughout the project. It will also document the projected staffing, support service, and funding requirements for implementation of the community engagement process.

CRITICAL SUCCESS FACTORS

- ✓ Project goals and objectives, evaluation criteria, scope, technical approach, and community engagement process are clearly defined and agreed upon as a first step in the process.
- ✓ The plan development process is open and transparent.
- ✓ The plan is developed through a highly collaborative process with the public, local governments, UNC, and others.
- ✓ Demand projections reflect the best information available from local governments and UNC, and the inherent uncertainty in forecasts of population and economic growth, water use trends, climate, etc.
- ✓ OWASA provides the necessary funding for (a) the consulting services needed to ensure quality technical analyses in support of the plan, and (b) an effective community engagement process for the project.
- ✓ The public is provided (a) timely information about the purpose, technical approach, and technical findings and recommendations of the plan, and (b) meaningful opportunities to provide feedback throughout the various phases of the planning process.
- ✓ For any action item coming out of the plan, the partner organization responsible for implementation endorses the action and agrees in principle to undertake it.
- ✓ The plan includes a proposed process for periodic review and update.

Community Engagement Plan for Long-Range Water Supply Plan Update (approved 2/12/2015; updated November 22, 2016)

Purpose

OWASA is updating its Long-Range Water Supply Plan (LRWSP) to ensure a reliable and high quality supply of water for the community for the next 50 years. As part of this process, OWASA will seek to involve and engage the community as we identify and evaluate our water supply and demand management options.

The intent of this community engagement plan is to set goals for this effort, identify meaningful engagement activities, identify resource needs, and provide a schedule for engagement activities.

Outcomes/Objectives

Goals for the public engagement process are:

- Involve stakeholders in the exchange of information and ideas, and in the Board of Directors' decision-making process so that we can better understand and incorporate public values, and ultimately improve the quality of the decisions;
- Increase public awareness and understanding of the findings, recommendations, and implementation of the plan;
- Obtain commitments from stakeholders that will have key roles in the implementation of the plan;
- Build trust in OWASA;
- Develop and implement outreach strategies to help engage minority communities and socio-economically disadvantaged individuals;
- Better understand and seek to minimize sources of conflict among interested and affected parties by building agreement on proposed strategies.

Stakeholders

Stakeholders we will seek to engage as the Plan proceeds include, but are not limited to, the following. Additional stakeholders may be identified and included once the project is underway.

- Our residential and non-residential customers
- Local government Boards and staff
- UNC-Chapel Hill
- UNC Health Care
- Community organizations
- Neighbors in our water supply watersheds
- Local government utility neighbors

Core Messages

1. Providing a high quality and reliable water supply is a key mission of OWASA and OWASA seeks to proactively inform and engage stakeholders as we update the LRWSP
2. OWASA values community feedback
3. OWASA wants to ensure an adequate, high quality supply of water while being mindful of affordability, social, and environmental issues

Key Topics Seeking Feedback from the Community

1. OWASA will develop a list of supply and demand management options to evaluate in the LRWSP. OWASA will seek feedback from the community on the list of options prior to evaluating the options to ensure we are not omitting any options important to the community to include in the LRWSP.
2. Alternatives analysis – OWASA would like feedback from the community on the alternatives being evaluated, how they compare to the goals and objectives in the project charter and other financial and non-financial factors.
3. Draft LRWSP

Key Information Provided To Community

1. Why is long-range water supply planning important?
2. Why is OWASA updating its Plan?
3. What are the proposed goals and objectives of the Plan?
4. How much water can OWASA provide?
5. How much water does our community need now and in the future?
6. What alternatives are available to meet future water supply needs?
7. What is the difference between demand management and water supply alternatives?
8. What alternatives will help OWASA meet the community's future water needs and what are the relative advantages and disadvantages (financial and non-financial) of those alternatives?
9. What is the preferred mix of water supply and demand management alternatives?
10. What opportunities will the public have to provide input to the LRSWP?
11. What is the schedule for public input?
12. What decisions has the OWASA Board of Directors made regarding the LRWSP, and what future decisions will the Board make after community engagement/feedback processes?

Communication/Engagement Methods

OWASA will use a variety of methods to inform and actively engage stakeholders and evaluate the success of our engagement effort. For the purposes of this Community Engagement Plan, informing stakeholders provides them with information while engagement provides stakeholders with information and an opportunity for them to provide feedback to inform the Board of

Directors' decision making process. Three core strategies are proposed that will be common to all our information, engagement, and evaluation efforts:

1. Establish and publicize a LRWSP project webpage to convey information about the project and enable interested stakeholders to submit their questions, comments, and suggestions on-line.
2. Establish an email distribution list, which includes all Board of Directors' members that helps us convey project information and public participation opportunities to stakeholders in a timely and efficient way through our Constant Contact service.
3. Include informal survey and feedback opportunities as a feature of our project website, public meetings on the project, and presentations to stakeholder groups.

Other information efforts include: Blue Thumb articles, news releases, and LRWSP tweets.

Engagement efforts include:

- Offers of presentations at meetings of local elected Boards; if not accepted, make short announcement during public comment period of an elected Board meeting
- Participation at project-related community outreach meetings
- Face-to-face meetings with stakeholder groups
- Participation at meetings of the OWASA Board of Directors

Table 1 includes a summary of proposed information and engagement efforts for this project. Staff will provide additional information on potential costs or support needs as we proceed in the engagement process.

Staff also proposes to establish an informal Technical Advisory Committee (TAC) comprised of local experts. The Committee could include water resource, environmental and public policy experts from UNC-Chapel Hill, other customers with expertise in water resources or decision processes, and other regional experts in water resources planning. The TAC would provide peer review of information before it was provided to stakeholders.

Table 1: Summary of Potential Community Engagement Activities, Target Audiences, and Methods for the Long-Range Water Supply Plan

ID	Description	Activity Type*	Responsibility	Schedule	Target Audience	Communication Methods	Resources	Comments
1	Dedicated project webpage	Information	Staff	Established Sept. 2016	Stakeholders	Information provided via Internet; on-line methods for stakeholder comment and feedback	TBD	Potential resource need depending on amount of activity
2	Project stakeholder email list and dedicated project email	Information	Staff	Established Sept. 2016	Stakeholders	Email distribution through Constant Contact to provide timely e-mail updates to stakeholders with notice of opportunities for participation and feedback; dedicated project email address to accept comments from public	TBD	Need to have staff to respond to emails that come in; potential resource need depending on amount of activity
3	LRWSP Tweets	Information	Staff	Established Sept. 2016	Stakeholders	LRWSP-specific Tweets about information availability and opportunities to be involved	TBD	Need to have staff to respond; potential resource need depending on amount of activity
4a	Background on LRWSP process	Information & Engagement	Board/Staff	Fall 2016 (Completed)	Elected officials and customers	Letter to elected officials from Board Chair providing information and offering to make presentation. Presentation on LRWSP process at Board/Council meetings if requested	Board and Staff time	Information item provided to Assembly of Governments in November 2016 Included link to project charter and project webpage
4b		Information	Staff	Fall 2016	Customers	Electronic and paper mailings; Blue Thumb newsletter; local media outlets	Staff time	Include link to project charter and project webpage
5	Goals/Objectives - weighing financial and non-financial metrics	Engagement	Board/Staff	4th Qtr CY 2016 (Completed)	Stakeholders	Board work session	Staff time	Publicize through project webpage, email distribution list Discussed at November 2016 Board work session
6	Water demands	Engagement	Staff	1st Qtr CY 2017	Local Govt Staff, UNC staff, UNC-H staff	Meetings with local govt staff to ensure they concur with our methods to extend their growth projections to 2065 and our use of their information	Staff time	May be multiple meetings; will QA/QC demand process with local govt staff, UNC, and UNC-H
7	Water demands and yield	Engagement	Board, Staff and consultant	2nd Qtr CY 2017	Stakeholders	Board work session	Staff time	Publicize through project webpage, email distribution list, and LRWSP tweet
8	Identify Supply and Demand Management Options to evaluate	Information & Engagement	Board/Staff	TBD	Stakeholders	Board work session	Board and Staff time	Publicize through project webpage, email distribution list, and LRWSP tweet
9a	Alternatives evaluation	Information & Engagement	Board, Staff and consultant	TBD	Stakeholders	Board work session	TBD	Publicize through project webpage, email distribution list, and LRWSP tweet
9b		Information & Engagement	Board/Staff	TBD	Elected officials and customers	Letter to elected officials regarding alternatives and offering to make presentation. Presentation at Board meetings upon request.	Board and Staff time	
9c		Information & Engagement	Board/Staff	TBD	Targeted stakeholder groups	Meetings with targeted stakeholder groups to provide opportunity for input on goals/objectives (financial/non-financial metrics), future water supply needs, and water supply and demand management alternatives to meet those needs. Alternatives will be evaluated against metrics.	TBD	Provide opportunity for attendees to provide feedback on the stakeholder group session
9d		Information & Engagement	Board/Staff	TBD	Stakeholders	Board work session - provide follow up information regarding alternatives from targeted stakeholder groups	Staff time	Publicize through project webpage, email distribution list, and LRWSP tweet

Table 1: Summary of Potential Community Engagement Activities, Target Audiences, and Methods for the Long-Range Water Supply Plan

ID	Description	Activity Type*	Responsibility	Schedule	Target Audience	Communication Methods	Resources	Comments
10a	Draft LRWSP	Engagement	Board/Staff	TBD	Stakeholders	Board Work Session	Staff time	
10b		Information	Staff	TBD	Stakeholders	Media notice of upcoming Open House along with notification through webpage, email distribution list, Twitter, and Blue Thumb (if time)		
10c		Engagement	Board/Staff	TBD	Stakeholders	Public Information Open House between Board Work Session and Board meeting on Draft Plan	TBD	Provide opportunity for attendees to provide feedback on the Open House format
10d		Information & Engagement	Board/Staff	TBD	Elected officials	Letter to elected officials from Board Chair, providing information regarding the LRWSP and offering to make presentations. Presentations made upon request.	Board and Staff time	
10e		Engagement	Board/Staff	TBD	Stakeholders	Board Meeting	Staff time	
11a	Final LRWSP	Engagement	Board/Staff	TBD	Stakeholders	Board Work Session	Staff time	Publicize through media, project webpage, email distribution list, LRWSP tweet; make clear that this is discussion about final LRWSP
11b		Engagement	Board/Staff	TBD	Stakeholders	Board Meeting	Staff time	Publicize through media, project webpage, email distribution list, LRWSP tweet; make clear that this is discussion and action around final LRWSP
11c		Information	Board/Staff	TBD	Elected Officials	Letter to elected officials informing them of final LRWSP. Presentation at Board meetings upon request.	Board and Staff time	
11d		Information	Board/Staff	TBD	Stakeholders	Information provided regarding the approval of LRWSP		Publicize through media, project webpage, email distribution list, LRWSP tweet; include link to final plan
12a	Measure effectiveness of stakeholder engagement process	Survey external stakeholders	Staff	Ongoing	Stakeholders	Electronic and paper survey methods	Staff time	Provide opportunities through website or Survey Monkey; paper surveys at targeted stakeholder meetings and public meetings
12b		Survey Board	Board/Staff	TBD (end of project)	Board	Electronic survey	Board and staff time	
12c		After Action Review By Board and Staff	Board/Staff	TBD (end of project)	Board and Staff	After-Action-Review meeting with documentation for future reference	Board and staff time	

* Written communication is typically labeled as "information", but material will also include information on how to provide feedback or obtain additional information in the written package.

* Engagement typically means that there is a face-to-face meeting or conversation occurring.

Evaluating Supply and Demand Management Alternatives Against Goals and Objectives for the Long-Range Water Supply Plan (LRWSP)

Background

The OWASA Board of Directors approved a Charter for Long-Range Water Supply Plan (Charter) at its March 27, 2014 meeting. The Charter outlines the need for the project, project vision, deliverables, water supply and demand management alternatives that will not be evaluated in the LRWSP, risks, and associated community engagement process. It also includes draft goals and objectives for the project which may change based on community input. These goals will serve as the basis to evaluate water supply and demand management alternatives. Supply alternatives are those that create a new or expanded source of water; demand management alternatives are those that promote more efficient use of water.

Proposed Approach

The goals and objectives included in the Charter are organized along the three pillars of sustainability: social performance, environmental performance, and financial performance. Based on guidance the Board of Directors has provided regarding goals and objectives for energy management, biosolids management, and the advanced metering infrastructure (AMI) study, staff does not propose to establish specific weights for the given objectives. However, each supply and demand management option will be generally evaluated against the objectives, and the results will be presented in a table as was done for the biosolids plan and AMI feasibility study.

In evaluating supply and demand management options and potential "portfolios" strategies (combinations of supply and demand management options), there are several social performance goals which must be met or the alternative is unacceptable. Running out of water is not an option; neither is providing water to our customers that does not meet drinking water standards. Criteria which must be met for the selected mix of supply and demand management alternatives (i.e. the portfolio) include:

1. Annual average-day raw water demand does not exceed the reliable capacity of OWASA's existing and planned water supply sources. This could be achieved through a mix of supply and demand management alternatives.
2. Our plan will include contingency measures for meeting water demands if and when an extreme event (such as an exceedance of the 2001-02 drought of record or sudden loss of water supply storage capacity) is projected to cause us to drawdown our remaining supply to 20 percent or less of total storage.
3. We will maintain a diverse and resilient portfolio of water supply and demand management strategies so we are positioned to meet the community's water needs as we face increasing uncertainty in the future.

4. Selected water supply strategies must enable us to meet all applicable drinking water-related standards.

Staff also recognizes that a given water supply or demand management option may not meet one of first three criteria on its own, but when evaluated as one element within a portfolio of water supply and demand management options, it may meet those four elements. Thus, staff proposes a 2-step approach:

- Step 1: Evaluate each supply and demand management option against the framework outlined in Table 1. This table does not include community values; those will be evaluated in Step 2. Similar to what has been done to evaluate alternatives for biosolids management and AMI, each option would be categorized (coded) as unacceptable, acceptable, better, and best against the criteria.
- Step 2: Evaluate alternative portfolios (combinations of supply and demand management alternatives) against the goals and objectives included in the Charter as outlined in Table 2. This evaluation includes community values for the social, environmental and financial performance goals. Our ratings for the community values criteria will incorporate the feedback obtained during the community engagement process for the water supply and demand management alternatives. As proposed for Step 1, each combination of supply and demand management alternatives would be categorized as unacceptable, acceptable, better, and best against the criteria.

TABLE 1. RELATIVE COMPARISON OF WATER SUPPLY AND DEMAND MANAGEMENT OPTIONS AGAINST EVALUATION CRITERIA (Step 1)

Each option will be shaded to illustrate the relative comparison of performance to each other (only applicable to the objective for that row)

Key to Cell Shading: UNACCEPTABLE | ACCEPTABLE | BETTER | BEST

		SUPPLY OPTIONS			DEMAND MANAGEMENT OPTIONS		
EVALUATION CRITERIA		**Supply Option 1**	**Supply Option 2**	**Additional Columns for Supply Options 3, 4, 5…**	**Demand Mgmt Option 1**	**Demand Mgmt Option 2**	**Demand Mgmt Options 3, 4, 5…**
SOCIAL PERFORMANCE	Estimated Yield	Estimated Yield for each Supply Option.			Quantity of water saved where possible (annual average day and/or maximum day during peak season); narrative description on other demand management options Note: Charter indicates that demand management savings where firm, measureable savings cannot be documented (such as public education and outreach) wouls not be considered in LRWSP update, but in the Conservation Plan.		
	Impact on portfolio's diversity and resilience	Location and size of watershed, confidence in yield in extreme circumstances, length of time to activate in drought.			Length of time to activate in drought; potential impacts on customer behavior; potential impacts on targeted water use.		
	Does strategy enable us to meet all applicable drinking water-related standards and other public health regulatory requirements?	Any option that did not meet this criteria would be rated as unacceptable and not move on to Step 2.			Any option that did not meet this criteria would be rated as unacceptable and not move on to Step 2.		
	Water Use Restrictions	Provide description of how frequently we may enter any declared drought stage, how long we are in declared drought, and which stage we may reach (Stages 2 and 3 impact certain commercial uses; drought surcharges also apply).			Narrative description of how option may reduce demand and delay declaration of various drought stages.		
	Legal in North Carolina?	This criteria was not included in the Charter. There are some supply options that are not legal in North Carolina such as direct potable reuse. Staff may evaluate the option, but any that are not legal will be rated as unacceptable and not move on to Step 2.			This criteria was not included in the Charter. There are some demand management options that are not legal in North Carolina such as mandatory water use efficiency retrofits at time of property resale. Staff may evaluate the option, but any that are not legal will be rated as unacceptable and not move on to Step 2.		
	Impacts on community	Based on information in geographic information system, estimate number of private parcels and recreation areas impacted. Provide narrative description of potential traffic, noise, and other impacts to human environment.			Demand management options may have no new OWASA infrastructure, but could have impacts on the community (economic impact, targeted groups versus community-wide approach, public health, ability to enforce).		
ENVIRONMENTAL PERFORMANCE	Energy use and greenhouse gas emissions	Narrative description of energy use and associated greenhouse gas emissions for each option.			Narrative description of energy use and associated greenhouse gas emissions for each option.		
	Impacts on streams, wetlands, groundwater	Based on data in geographic information system, estimate the number of stream crossings (pipelines) and acres of wetlands impacted. Narrative description of other potential impacts to surface and groundwater.			Narrative description of impacts to surface and groundwater; may be limited impacts for many options.		
	Other environmental impacts	Narrative descrption of impacts to air quality, habitat, soils, and other environmental features.			Narrative descrption of impacts to air quality, habitat, soils, and other environmental features; may be limited impacts for many options.		
	Highest and best use of local water resources	This criteria was not included in the Charter, but is based on the Sustainability Value within the Strategic Plan. Narrative description of how option promotes the highest and best use of our local water resources and promotes conservation of water and other natural resources.			This criteria was not included in the Charter, but is based on the Sustainability Value within the Strategic Plan. Narrative description of how option promotes the highest and best use of our local water resources and promotes conservation of water and other natural resources.		
FINANCIAL PERFORMANCE	Relative life-cycle costs	Provide estimates of capital costs and operating and maintenance costs through 2065.			Provide estimates of initial costs plus any annual costs; also provide information on revenue impacts.		
	Levelized cost /1000 gallons	Relative life cycle costs/estimated yield.			Relative life cycle costs/estimate of water saved.		

TABLE 2. RELATIVE COMPARISON OF WATER SUPPLY AND DEMAND MANAGEMENT PORTFOLIO OF ALTERNATIVES AGAINST EVALUATION CRITERIA (Step 2)

Each supply and demand management portfolio alternative will be shaded to illustrate the relative comparison of performance to each other (only applicable to the objective for that row)

UNACCEPTABLE	ACCEPTABLE	BETTER	BEST

	EVALUATION CRITERIA	Baseline (Existing Plan) Portfolio CCR, UL, Expand Quarry (shallow option) Jordan Lake - no guaranteed access	Water Supply and Demand Management Portfolio Alternative 2	Additional Columns for Water Supply and Demand Management Portfolio Alternatives 3, 4, 5…
SOCIAL PERFORMANCE	Supply meet projected demand?	Yes/No; Unacceptable portfolio if does not meet projected demand.		
	Description of contingency for extreme drought event	Narrative description of contingency plan.		
	Diverse and resilient portfolio	Narrative description of how portfolio provides diversity, resiliency, and redundancy.		
	Water Use Restrictions	Provide description of how frequently we may enter any declared drought stage, how long we are in declared drought, and which stage we may reach (Stages 2 and 3 impact certain commercial uses; drought surcharges also apply)		
	Impacts on community	Based on information in geographic information system, estimate number of private parcels and recreation areas impacted. Provide narrative description of potential traffic, noise, and other impacts to human environment.		
	Community values	Narrative description of comments made during the public process will be incorporated into the summary table.		
ENVIRONMENTAL PERFORMANCE	Energy use and greenhouse gas emissions	Narrative description of energy use and associated greenhouse gas emissions.		
	Impacts on streams, wetlands, groundwater	Based on data in geographic information system, estimate the number of stream crossings (pipelines) and acres of wetlands impacted. Narrative description of other potential impacts to surface and groundwater.		
	Other environmental impacts	Narrative descrption of impacts to air quality, habitat, soils, and other environmental features.		
	Acceptability to community and regulatory agencies	Narrative description of comments made during the public process will be incorporated into the summary table; also describe acceptability to neighboring communities.		
	Highest and best use of local water resources	This criteria was not included in the Charter, but is based on the Sustainability Value within the Strategic Plan. Narrative description of how portfolio promotes the highest and best use of our local water resources and promotes conservation of water and other natural resources.		
FINANCIAL PERFORMANCE	Relative life-cycle costs	Provide estimates of capital costs and operating and maintenance costs through 2065.		
	Levelized cost /1000 gallons	Estimated capital and operating costs per 1000 gallons of yield and water saved.		
OVERALL PERFORMANCE	Balance of social, environmental, and financial considerations	Narrative description of comments made during the public process will be incorporated into the summary table.		

AGENDA ITEM

- Resolution Awarding a Construction Contract for the Administration Building Heating, Ventilation, and Air Conditioning (HVAC) Replacement Project

PURPOSE

- To request the Board's approval to award a construction contract for the Administration Building HVAC Replacement Project.

BACKGROUND

- The Project consists of replacement of the Administration Building's aging and inefficient HVAC system, including installation of three (3) new rooftop 4-pipe air handling units with variable frequency drives (VFDs) on the supply and return fans, installation of new terminal units with hot water reheat coils, installation of new water-source heat recovery chillers, installation of six (6) new inline pumps with VFDs, and installation of a new building automation system.

- Plans and specifications for the construction of this project were prepared by McKim & Creed ("Engineer").

- Prospective bidders for the construction contract were screened through a prequalification process. Minority outreach was performed for the prequalification process in accordance with standard practice. Five (5) bidders were prequalified.

- Bids from three (3) prequalified contractors were received and opened on August 31, 2017. The responsive and responsible low bidder was Comfort Systems USA (MidAtlantic), LLC with a bid of $1,532,000. The Engineer's estimate was $1,327,500.

- The Engineer evaluated bids and recommended award of the construction contract to Comfort Systems.

STAFF RECOMMENDATION

- Staff recommends that the Board of Directors adopt the attached resolution awarding the construction contract for the Administration Building HVAC Replacement Project to Comfort Systems.

ORANGE WATER AND SEWER AUTHORITY

A public, non-profit agency providing water, sewer and reclaimed water services to the Carrboro-Chapel Hill community.

M E M O R A N D U M

TO: Board of Directors

THROUGH: Ed Kerwin

FROM: Dustin Rhodes, P. E.

DATE: September 22, 2017

SUBJECT: **Award of Construction Contract for the Administration Building Heating, Ventilation, and Air Conditioning (HVAC) Replacement Project**

Purpose

The staff request that the OWASA Board award a construction contract to Comfort Systems USA (MidAtlantic), LLC ("Comfort Systems") for the construction of the Administration Building HVAC Replacement Project ("Project").

Background

The purpose of this Project is to resolve significant and ongoing comfort issues in the Administration Building by replacing the HVAC system. The building's main HVAC system was installed when the building was constructed in 1990. Outdated HVAC system controls do not allow for temperature adjustment in individual building zones nor do they allow for integration of additional system components that have been added over the years. Adjustments and repairs to the current HVAC system were not able to resolve the issues and the system's inability to adequately control temperature and humidity levels has led to continued discomfort of employees and customers within the building. To address the current comfort concerns, the Project will replace the outdated, patchwork system with a new, innovative, energy efficient system that will provide adequate temperature and moisture control throughout the Administration Building. Construction is expected to take about 10 months.

Evaluation of Alternatives and Energy Savings

The design engineer, McKim & Creed, developed a Preliminary Engineering Report (PER) that provides an in-depth analysis of the five (5) examined HVAC alternatives. The PER can be found here.

The five (5) alternatives were evaluated based on the triple bottom line analysis of social (customer service, employee health and safety, etc.), environmental (energy use, greenhouse gas emissions), and financial (capital, operating, and maintenance costs, risk factors)

performance measures. Using these performance measures, the best alternative was identified to be variable flow air handling units and a heat pump that utilizes potable water from OWASA's distribution system for heating and cooling. This potable water loop, which is being installed through a different contract, is kept physically separate from the process water used in the double-walled heat exchanger. The potable water loop water will be returned to the water treatment plant for treatment. In addition to the HVAC system, this Project includes minor repairs to the building's envelope or exterior. These repairs include replacing weatherstripping and sealant at doors and windows, repairing holes in brickwork, repairing cracked mortar joints, and other minor items that will improve the efficiency of the new HVAC system.

The energy-saving features of this Project include the aforementioned use of water as the heat exchanging mechanism as well as the use of variable frequency drive pumps for pumping water throughout the system. Due to these features, OWASA was awarded a $14,000 incentive from Duke Energy as part of their Smart $aver Incentive Program. It is estimated that the new system will save approximately 30% on annual energy costs compared to the existing system.

In terms of the 20-year cost of ownership, this Project alternative fell in the middle of the five (5) alternatives that were examined. This alternative provides optimal comfort (temperature and humidity control) for OWASA customers and employees. Of the five (5) alternatives, the Project was determined to have the greatest impact in reducing energy use and greenhouse gas emissions. It is projected to reduce our use of electricity for cooling by about 200,000 kWh per year and natural gas for heating by about 9,000 therms per year. This project helps us achieve an additional 1% reduction in energy consumption from our baseline energy consumption in 2010. Our goal is to reduce energy consumption by 35% by 2020.

Attachment 1 is a summary of the PER's "triple bottom line analysis" which provides a relative comparison of the selected alternative (Option 2B) with four (4) other alternatives. Details about the selection process are found on pages 14-23 of the PER.

Other Project Considerations

In response to feedback received at the September 14, 2017 Board Work Session, we are having McKim & Creed evaluate options to reduce HVAC noise in the Community Room. If improvements can be cost-effectively made, staff will consider issuing a change order during construction of the improvements. In the interim, staff will evaluate improvements to the sound system.

Throughout construction of the HVAC system, Capital Improvements Program (CIP) staff will provide periodic project updates and will interact with OWASA customers and employees who may be impacted by the construction. Close coordination with OWASA employees will be conducted so that office spaces may be relocated during construction and impacts to services and functions are minimized.

Advertising and Bidding

Prospective bidders were screened through our standard prequalification process, which involved having interested contractors submit a package outlining their qualifications, including past performance on similar projects, credentials of their management team, safety record, etc. Only those firms that clearly demonstrated the capability to adequately perform the work were invited to submit bids.

The Request for Qualifications (RFQ) was posted June 6, 2017. After review, five contractors were prequalified to bid on the project. The invitation for bids was issued to the prequalified contractors on August 7, 2017. A total of three bids were received on August 31, 2017 and opened publicly. Comfort Systems was the low, responsive and responsible bidder for the project with a bid of $1,532,000.00. A copy of the certified bid tabulation is attached with the Engineer's recommendation for award (Attachment 1), and the results are summarized below:

Comfort Systems USA (MidAtlantic), LLC	$1,532,000.00
Superior Mechanical Services, Inc.	$1,700,000.00
H.M. Kern Corporation	$1,734,000.00
Engineer's Final Estimate	*$1,327,500.00*

Minority and Women Business Enterprise (MWBE) Participation

OWASA's Minority Business Participation Outreach Plan and Guidelines include all of the statutory requirements from the State of North Carolina, and specifies a 10% goal for participation by minority businesses. In keeping with standard practice, OWASA staff took several actions to solicit minority participation in this contract, including advertising the RFQ in the Greater Diversity News, North Carolina Institute of Minority Economic Development, North Carolina Department of Administration Historically Underutilized Businesses, OWASA's website, and plan rooms. OWASA also requires bidders to complete "good faith" efforts to solicit participation by minority subcontractors. OWASA staff publicly advertised the formal bid as an additional effort to encourage participation by subcontractors where it was feasible.

The apparent low bidder (Comfort Systems) anticipates that $71,000.00 of the work will be performed by Minority and Women Business Enterprise (MWBE) subcontractors. Additionally, they provided documentation of good faith efforts of their attempts to involve MWBE subcontractors. The total percentage of work going to an MWBE in this contract is approximately 4.6%, all of which will be performed by women-owned businesses. Although the portion of work performed by an MWBE falls short of OWASA's MWBE participation goal, every attempt was made to involve MWBEs by OWASA and Comfort Systems. Comfort Systems was responsive in its good faith efforts to reach MWBEs and achieved 110 points in its "Listing of Good Faith Efforts." A minimum of 50 points is required on this list in order for the contractor's bid to be considered responsive. In addition, Comfort Systems solicited bids from a list of 25 MWBEs, several of which have local operations within the Triangle.

Bid Analysis and Recommendation

The three bids received were in the anticipated range with favorable pricing for the low bid (the high bid was roughly 13% higher than the low bid). However, the low bid was approximately 15% higher than the Engineer's estimate. An alternative was considered for re-bidding the Project in the hopes to obtain a lower bid. However, current demand for HVAC work is high and appears to be driving the price for HVAC work even higher. Based on communication with the design engineer, McKim & Creed, increasing prices for this type of work has been a trend they have noticed on other similar projects in recent years. Re-bidding the project in the future was viewed as a risk that could potentially lead to even higher prices. Therefore, it was determined that the current bid is a competitive cost under current market conditions.

Comfort Systems has worked with the design engineer, McKim & Creed, on a couple similar HVAC projects. Comfort Systems was the contractor who performed an HVAC renovation in 2011 for Partnership Elementary School in Raleigh. They also replaced components of the HVAC system at the Glaxo building on UNC Chapel Hill's campus in 2015.

Comfort Systems has the ability to complete this project, was evaluated thoroughly during the prequalification process, and they demonstrated sufficient qualifications in past project performance, personnel qualifications/experience, reference checks, and all other rated categories. OWASA staff also determined that Comfort System's safety performance, relevant project experience, bonding capacity, and other non-rated categories met our requirements.

McKim & Creed's recommendation that the construction contract for this project be awarded to Comfort Systems is attached along with the certified bid tabulation (Attachment 2). OWASA staff concurs with this recommendation. In order to proceed, we request the Board's adoption of the attached resolution (Attachment 3) awarding the construction contract to Comfort Systems.

Please let me know if you have any questions or need additional information. I can be reached at 919-537-4249 or drhodes@owasa.org. Thank you.

Dustin M. Rhodes

_____

Dustin M. Rhodes, P.E.
Utilities Engineer

Attachment 1 – Triple Bottom Line Analysis of Alternatives
Attachment 2 – Engineer's Recommendation for Award and Certified Bid Tabulation
Attachment 3 – Resolution

Triple Bottom Line Analysis
RELATIVE COMPARISON OF HVAC SYSTEM OPTIONS

Shading Key: UNACCEPTABLE | ACCEPTABLE | BETTER | BEST

Evaluation Criteria		Option 1: VRF System with DOAH	Option 2A: VAV AHU's with HW & CHW / Air-Cooled Chiller & Condensing Boiler	Option 2B: VAV AHU's with HW & CHW / Water-to-Water Heat Pumps	Option 3A: Chilled Beams with DOAH / Air-Cooled Chiller & Cond. Boiler	Option 3B: Chilled Beams with DOAH / Water-to-Water Heat Pumps
SOCIAL PERFORMANCE	**Service to Our Customers**	Customers will experience improved temperature and humidity control when visiting the building. HVAC noise level highest for this option.	Customers will experience the optimal space temperature / humidity control within the constraints of the existing building envelope. HVAC noise level similar to current system.	Customers will experience the optimal space temperature / humidity control within the constraints of the existing building envelope. HVAC noise level similar to current system.	Customers will experience improved temperature control when visiting the building. Humidity control may be compromised due to building envelope. HVAC noise level lowest for this option.	Customers will experience improved temperature control when visiting the building. Humidity control may be compromised due to building envelope. HVAC noise level lowest for this option.
	Employee Health and Safety	Employees will experience improved temperature and humidity control when visiting the building.	Employees will experience the optimal space temperature / humidity control within the constraints of the existing building envelope.	Employees will experience the optimal space temperature / humidity control within the constraints of the existing building envelope.	Employees will experience improved temperature control when visiting the building. Humidity control may be compromised due to building envelope.	Employees will experience improved temperature control when visiting the building. Humidity control may be compromised due to building envelope.
	Work Effect on Employees	Improved zoning and thermal treatment increases productivity. HVAC noise level highest for this option.	Improved zoning and thermal treatment increases productivity. HVAC noise level similar to current system.	Improved zoning and thermal treatment increases productivity. HVAC noise level similar to current system.	Productivity improved by optimal zoning options but thermal treatment least effective with this option. HVAC noise level lowest for this option.	Productivity improved by optimal zoning options but thermal treatment least effective with this option. HVAC noise level lowest for this option.
ENVIRONMENTAL PERFROMANCE	**Energy Use and Greehouse Gas Emissions**	Better	Good	Best	Good	Better
FINANCIAL PERFORMANCE	**20 Year Cost of Ownership**	$2,491,000	$2,607,000	$2,675,000	$2,757,000	$2,888,000
	Initial Capital Costs	$1,090,000	$1,119,000	$1,331,000	$1,315,000	$1,528,000
	Annual Maintenance Costs	$22,000	$17,000	$18,000	$17,000	$17,000
	Annual Energy Costs	$30,000	$34,000	$28,000	$36,000	$29,000
	Major Project Risk Factors	None	None	None	Improving the building envelope to work with this HVAC system may be cost prohibitive.	Improving the building envelope to work with this HVAC system may be cost prohibitive.

McKIM&CREED

ENGINEERS
SURVEYORS
PLANNERS

September 5, 2017 M&C 01519-0042

Mr. Dustin Rhodes, PE
Orange Water & Sewer Authority
400 Jones Ferry Road
Carrboro, NC 27510

RE: Administration Building HVAC Replacement (CIP No. 280-06)
Recommendation of Award

Dear Mr. Rhodes:

On Thursday, August 31, 2017 at 3:00 p.m., the Orange Water & Sewer Authority received bids for the Administration Building HVAC Replacement project. Three (3) bids were received and the bids were opened and read aloud. The advertisement and bidding procedures were consistent with statutory requirements to the best of our knowledge. Please refer to the attached certified bid tabulation for the bids received. The referenced bids have been reviewed by the Engineer, and Comfort Systems USA (MidAtlantic), LLC (NC GC License #45477) is the apparent low bidder.

Comfort Systems USA (MidAtlantic), LLC is properly licensed and experienced in the type of construction involved, as indicated by the information supplied with the bid. Comfort Systems USA (MidAtlantic), LLC has also previously been prequalified to submit Bids for the project by the Orange Water & Sewer Authority. Based on the Engineer's review of the bids, we recommend award of the project to the lowest responsible, responsive bidder, Comfort Systems USA (MidAtlantic), LLC in the total amount of $1,532,000.00. This amount includes the base bid and Alternate M1 for commissioning support.

Please accept this letter as the formal recommendation of award of construction contract to Comfort Systems USA (MidAtlantic), LLC. This recommendation of award is subject to approval and acceptance of the submitted bid by the Orange Water & Sewer Authority.

Venture IV Building
1730 Varsity Drive
Raleigh, NC 27606

919.233.8091
Fax 919.233.8031
www.mckimcreed.com

Enclosed you will find the following documents:

- Certified Bid Tabulation
- Comfort Systems USA (MidAtlantic), LLC Bid Package
- Comfort Systems USA (MidAtlantic), LLC Bid Bond

It is recommended that a construction contingency be held in the budget to cover any unforeseen conditions that may be encountered during construction.

Should you have any questions or concerns in regards to this letter or any of the enclosures, please do not hesitate to contact our office. We look forward to working with the Orange Water & Sewer Authority to successfully complete the construction phase of this project.

Sincerely,

McKIM & CREED, INC.

Christopher M. Martin, Jr., PE
Sr. Project Engineer

Enclosures

cc: File, w/encl.
Ben Latino, PE (M&C)

CERTIFIED BID TABULATION

Orange Water and Sewer Authority
Administration Building HVAC Replacement
OWASA CIP #: 280-06
McKim & Creed Project #: 01519-0042
BID DATE: August 31, 2017 at 3:00 PM

Bidder:	Comfort Systems USA (MidAtlantic), LLC	H.M. Kern Corporation	Superior Mechanical Services, Inc.
License Number:	45477 (GC) 24425 (P&H)	8542	6911
Bid Bond:	Yes	Yes	Yes
MBE Forms:	Yes	Yes	Yes
Acknowledge Addendum No. 1	Yes	Yes	Yes
Acknowledge Addendum No. 2	Yes	Yes	Yes
ITEM 1: Administration Building HVAC Replacement	$1,515,000.00	$1,707,000.00	$1,685,000.00
ITEM 2: Alternate M1 - Support Commissioning Effort as Outlined in Specifications	$17,000.00	$27,000.00	$15,000.00
Total Bid Amount	**$1,532,000.00**	**$1,734,000.00**	**$1,700,000.00**

Certification:
I hereby certify that the above recording sheet is a true, accurate tabulation of the bids received on August 31, 2017, at 3:00 PM in the Orange Water and Sewer Authority Administration Building, Board Room, 400 Jones Ferry Road, Carrboro, North Carolina 27510.

Christopher M. Martin, Jr., PE

NORTH CAROLINA PROFESSIONAL SEAL 028630 ENGINEER CHRISTOPHER M. MARTIN, JR.
9/1/17

RESOLUTION AWARDING A CONSTRUCTION CONTRACT FOR THE ADMINISTRATION BUILDING HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) REPLACEMENT PROJECT

WHEREAS, there is a need to improve energy efficiency and resolve ongoing comfort issues experienced by OWASA customers and employees in the Administration Building by replacing the HVAC system; and

WHEREAS, plans and specifications for the construction of this project have been prepared by McKim & Creed; and

WHEREAS, advertisement for contractor qualifications was published on the websites of the North Carolina Institute of Minority Economic Development, North Carolina Department of Administration, and OWASA in June 2017, and five contractors were qualified to bid; and

WHEREAS, on August 31, 2017, the prequalified contractors were formally invited to submit construction bids for the project, and three bids were received; and

WHEREAS, Comfort Systems USA (MidAtlantic), LLC of South Boston, Virginia has been determined to be the low, responsive, and responsible bidder for the project; and

WHEREAS, on June 8, 2017 the Board approved a resolution authorizing funds for Capital Improvement Projects, including funds for this project;

NOW, THEREFORE, BE IT RESOLVED:

1. That the Orange Water and Sewer Authority Board of Directors awards the construction contract to Comfort Systems USA (MidAtlantic), LLC, the low responsive, responsible bidder for the Administration Building HVAC Replacement Project, in accordance with the approved plans and specifications, in the amount of $1,532,000.00, subject to such change orders as may apply.

2. That the Executive Director be, and hereby is, authorized to execute said contract, subject to prior approval of legal counsel, and to approve and execute change orders and such documents as may be required in connection with the construction contract.

Adopted this 28th day of September, 2017.

_____
Robert Morgan, Chair

ATTEST:

_____
Yinka Ayankoya, Secretary

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 advice 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 1, 2017 to the Executive Director (attached).

September 28, 2017

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 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 Board of Directors of Orange Water and Sewer Authority finds that 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 1, 2017 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, 2017, and shall continue until terminated as provided in Mr. Epting's said letter dated September 1, 2017.

Adopted this 28th day of September 2017.

_____
Robert Morgan, Chair

ATTEST:

_____
Yinka Ayankoya, Secretary

EPTING AND HACKNEY
ATTORNEYS AND COUNSELLORS AT LAW
410 MARTIN LUTHER KING, JR. BOULEVARD
P. O. DRAWER 1329
CHAPEL HILL, NORTH CAROLINA 27514

ROBERT EPTING
JOE HACKNEY
ELIZABETH LACKEY JACOBS
STEVE LACKEY
HATHAWAY S. PENDERGRASS

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

OF COUNSEL:
ELLEN B. SCOUTEN

September 1, 2017

Mr. Ed Kerwin
Executive Director
Orange Water and Sewer Authority
Carrboro, NC 27510

General Counsel Engagement Letter

Dear Mr. Kerwin:

I 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 I propose to continue in this capacity, should the Board of Directors choose to continue my 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 my 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 I enjoy at OWASA.

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

I am willing and would be pleased to continue to serve with my firm as General Counsel upon the terms and conditions of our present understanding, under which I am 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 to more than eighty percent of all my work, and the total bill has gone up accordingly. But we are constantly looking 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 I continue to enjoy the work and 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, which are 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.

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, 2017 through September 30, 2018, 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 they might find useful, upon such terms and conditions as may be agreed in that event.

While serving as General Counsel, I will 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 Lackey Jacobs or Joe Hackney, will attend in my place. I 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 me.

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 Lackey 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 61 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