



ORANGE WATER AND SEWER AUTHORITY

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

Agenda

Work Session of the OWASA Board of Directors

Thursday, February 14, 2019, 6:00 P.M.

OWASA Community Room

The Board of Directors appreciates and invites the public to attend and observe its meetings. For the Board's Work Session, public comments are invited on only items appearing on this 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).

For items on the agenda, public speakers are encouraged to organize their remarks for delivery within a four-minute time frame allowed each speaker, unless otherwise determined by the Board of Directors.

The Board may take action on any item on the agenda.

Announcements

- a. Announcements by the Chair
 - Any Board Member who knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight is asked to disclose the same at this time.
 - Update on February 7, 2019, Orientation for Newly Elected Orange County Commissioners
- b. Announcements by Board Members
 - Update on Meeting Between Members of the Orange County Board of Commissioners and Orange County Appointees to the OWASA Board on January 30, 2019 (Ray DuBose)
 - Update on the February 5, 2019 Human Resources Committee Meeting (Robert Morgan)
 - OWASA's Annual Update to the Orange County Board of County Commissioners on Tuesday, February 19, 2019, at 7:00 P.M. at Southern Human Services Center (Ray DuBose)
 - Chatham-Orange Joint Planning Task Force Meeting on Thursday, February 21, 2019 at 12:00 Noon at the Agriculture and Conference Center, Pittsboro (John Young)
 - Community Engagement Committee Meeting on Tuesday, March 5, 2019 at 9:00 A.M. in the OWASA Boardroom to discuss Agua Vista Web Portal (Ruchir Vora)
 - Chapel Hill Town Council OWASA Committee and Chapel Hill Appointees to the OWASA Board will meet on Thursday, March 14, 2019, at 8:30 A.M. in the OWASA Boardroom to discuss items of mutual interest (Ruchir Vora)
- c. Announcements by Staff
- d. Additional Comments, Suggestions, and Information Items by Board Members (Yinka Ayankoya)

Consent Agenda

Action

1. Resolution Accepting Four Low-Interest Loan Offers from the State of North Carolina, and Authorizing Executive Director to Execute and Administer all Related Loan Offer and Acceptance Documents (Stephen Winters)
2. Award the University Lake Raw Water Pump Station Improvements Construction Contract (Simon Lobdell)
3. Sole Source Procurement of Grit Removal Equipment at the Mason Farm Wastewater Treatment Plant (Simon Lobdell)
4. Minutes of the November 15, 2018 Meeting of the Board of Directors (Andrea Orbich)
5. Minutes of the December 13, 2018 Meeting of the Board of Directors (Andrea Orbich)
6. Minutes of the December 19, 2018 Special Meeting of the Board of Directors (Andrea Orbich)
7. Minutes of the January 24, 2019 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter (Robert Morgan)

Regular Agenda

Discussion

8. Review Scope of Water Distribution System Prioritization Model (Vishnu Gangadharan)
9. Community Engagement Approach for Forestry Management Program (Linda Low/Ruth Rouse)
10. Evaluation of Accelerating OWASA's Valve Exercise Program (Todd Taylor)
11. Review Board Work Schedule (Yinka Ayankoya/Ed Kerwin)
 - a. Request(s) by Board Committees, Board Members and Staff
 - b. February 28, 2019 Work Session
 - c. March 14, 2019 Work Session
 - d. 12 Month Board Meeting Schedule
 - e. Pending Key Staff Action Items

Discussion and Action

12. Executive Director Compensation (Robert Morgan)

Summary of Work Session Items

13. Executive Director will summarize the key staff action items from the Work Session

Closed Session

14. The Board of Directors will convene in a Closed Session for the Purpose of Discussing a Personnel Matter (Robert Morgan)

Agenda Item 1:

Resolution Accepting Four Low-Interest Loan Offers from the State of North Carolina, and Authorizing Executive Director to Execute and Administer all Related Loan Offer and Acceptance Documents

Background:

On February 22, 2018, the Board of Directors adopted a resolution accepting six low-interest loan offers from the state of North Carolina. Subsequent to the Board's action, the program that is issuing four of the loans changed the wording required to be included in the resolution accepting the loan offers. (Funding for the other two loan offers is from a different program and the resolution passed by the Board in February 2018 remains valid.)

Loan offers must be officially accepted by the governing board of the loan recipient; adopting the attached resolution meets this requirement.

Action Requested:

Adopt the resolution accepting the loan offers from the state of North Carolina and authorizing the Executive Director to execute the Offer and Acceptance Documents on behalf of OWASA

Information:

- Resolution Accepting North Carolina Division of Water Infrastructure's Loan Offer and Acceptance Documents for Four Projects and Authorizing Executive Director to Execute and Administer Loan Offer and Acceptance Documents

February 14, 2019

Resolution Accepting North Carolina Division of Water Infrastructure’s Loan Offer and Acceptance Documents for Four Projects and Authorizing Executive Director to Execute and Administer Loan Offer and Acceptance Documents

Whereas, the North Carolina Clean Water Revolving Loan and Grant Act of 1987 has authorized the making of loans and grants to aid eligible units of government in financing the cost of construction of wastewater treatment works, wastewater collection systems, and water supply systems, water conservation projects; and

Whereas, the North Carolina Department of Environmental and Natural Resources has offered State Revolving Loans in the following amounts for the following water and wastewater utility system improvements:

- (a) \$1,525,000 Drinking Water State Reserve Program loan for the Dobbins Drive Water Main Replacement project (Project #H-SRP-D-17-0021);
- (b) \$1,056,000 Drinking Water State Reserve loan for the Brandywine Road Water Main Rehabilitation project (Project #H-SRP-D-17-0012);
- (c) \$1,658,000 Wastewater State Reserve Program loan for the Dobbins Drive Sewer Main Rehabilitation project (Project #E-SRP-W-17-0047);
- (d) \$1,071,000 Wastewater State Reserve Program loan for the Mason Farm Wastewater Treatment Plant Intermediate Pump Stations Rehabilitation project (Project #E-SRP-W-17-0049); and

Whereas, the Orange Water and Sewer Authority intends to construct said projects in accordance with the approved plans and specifications;

Now, Therefore, Be It Resolved:

1. That the Orange Water and Sewer Authority Board of Directors does hereby accepts the following loan offer and acceptance documents, copies of which are attached to this resolution:

- (a) Loan Offer and Acceptance document for a \$1,525,000 Drinking Water State Reserve Program loan for the Dobbins Drive Water Main Replacement project (Project #H-SRP-D-17-0021);
- (b) Loan Offer and Acceptance document for a \$1,056,000 Drinking Water State Reserve loan for the Brandywine Road Water Main Rehabilitation project (Project #H-SRP-D-17-0012);
- (c) Loan Offer and Acceptance document for a \$1,658,000 Wastewater State Reserve Program loan for the Dobbins Drive Sewer Main Rehabilitation project (Project #E-SRP-W-17-0047); and
- (e) Loan Offer and Acceptance document for a \$1,071,000 Wastewater State Reserve Program loan for the Mason Farm Wastewater Treatment Plant Intermediate Pump Stations Rehabilitation project (Project #E-SRP-W-17-0049).

2. That the Orange Water and Sewer Authority does hereby give assurance to the North Carolina Department of Environmental Quality that all items specified in the loan offers, Section II – Assurances will be to.

3. That Ed Kerwin, Executive Director, and successors so titled, is hereby authorized and directed to furnish such information as the appropriate state agency may request in connection with such application or the project; to make the assurances as contained above; and to execute such other documents as may be required in connection with the application.

4. That the Orange Water and Sewer Authority has substantially complied or will substantially comply with all federal, state, and local laws, rules, regulations, and ordinances applicable to the above-specified projects and to federal and state grants and loans pertaining thereto.

Adopted this 14th day of February 2019.

Yinka Ayankoya, Chair

ATTEST:

Raymond E. DuBose, Secretary

Agenda Item 2:

Award the University Lake Raw Water Pump Station Improvements Construction Contract

Purpose:

This memorandum recommends that OWASA award a construction contract to Turner Murphy Co. Inc. (“Turner Murphy”) for the construction of the University Lake Raw Water Pump Station Improvements.

Background:

The University Lake Reservoir supplies 20% to 30% of OWASA’s raw water and is one of three sources for the Jones Ferry Road Water Treatment Plant (WTP). OWASA draws water from the reservoir through a single 36-inch pipe coming from the dam to the pump station where electric pumps or a backup diesel pump transfer the raw water to the WTP. The pumps can send water through either a 42” or a 20” pipe from the Lake to the WTP where it is treated and pumped into the distribution system. Two of the four electric pumps are original to the facility and were installed in 1943. A third larger pump was installed in 1973. These three pumps (Pumps #1, #2, and #3) are controlled by valves at the WTP which increase the pressure on the pumps, thereby increasing the energy usage to convey water as well as wear on the equipment at the station and the WTP. The fourth pump (Pump #4) was installed in 2007 and has a Variable Frequency Drive (VFD) to control speed and flow to better match the needs of the system. However, Pump #4 operates in the limited range of 1 to 3 Million Gallons per Day (MGD).

The original pumps are functional but beyond their useful life and replacement parts for the pumps and motors are not widely available. Seals, shaft parts, impellers and other components would require special fabrication and the designs for the parts are not readily available. This would lead to uncertain delivery and lead times if major parts needed replacement in the future. To ensure reliable service at the pump station, staff engaged the engineering firm of McKim and Creed to evaluate the optimal type and number of replacement pumps and to design the improvements.

McKim and Creed completed a Preliminary Engineering Report that identified the best options for replacement, including the addition of VFD’s. The study defined the final scope and budget for a subsequent Capital Improvements Program project ([CIP # 270-11](#)). The options included replacement of the pumps with similar pumps, new pumps with broader operating ranges, and options for electrical upgrades. The existing pumps operate at “medium voltage”, a less commonly used voltage, which requires unique and custom equipment. The new pumps will operate at a lower voltage more typical for the industry and safer for our maintenance staff. Additionally, backup generators and electrical equipment for the new pumps are readily accessible and require less time for replacement. The pumps were also selected to provide a broader and preferred range of operation with improved energy performance. An estimate of the energy savings from the new pumps would be imprecise due to the inherent uncertainty in estimating the usage of the pumps, but it is unlikely that there is a direct return on investment from the improvements. The primary purpose of the project is to ensure the long-term reliability of the pump station.

The planning study refined the project’s primary scope of work to include:

- Replacement of pumps #1, #2 and #3 with two horizontal split-case pumps and VFD’s;
- Replacement of all electrical equipment feeding the pumps;
- Replacement of the valves and pipes at the pump station;
- Replacement of lights and the roof at the pump station;
- Installation of new ventilation equipment and doors at the pump station; and
- New instrumentation and controls equipment at the pump station.

McKim and Creed completed the design of the above improvements in November 2018. Although the construction of the improvements will require some disruption of pumping capacity from the station, the design includes contractual constraints to minimize these capacity impacts. Typical operations of the current station rely almost exclusively on the smaller pump (Pump #4). The main impact will be limiting maximum flow from University Lake to approximately 8 MGD from the current maximum of approximately 20 MGD. This is above the range that the WTP typically needs from University Lake and is not expected to cause any limitations on the Water Treatment Plant’s capacity. There are several times during the construction when the pump station will be out of service for a period of one to three days. During the remainder of the construction work, OWASA will use its smaller pump for typical operation and the emergency diesel pump for higher flow needs.

We will continue to use Cane Creek Reservoir as the primary source of water and use the Quarry Reservoir to meet OWASA’s needs if demand or lake conditions warrant. Additionally, neighboring utilities are aware of the work and are prepared to assist during critical times as necessary. The shutdown events required by University Lake Pump Station Improvements construction will not be allowed to coincide with other significant capacity limitations (e.g. the Sedimentation Basin Rehabilitation project) without formal contingency plans in place and will be avoided as much as is feasible.

Advertising and Bidding:

Prospective bidders were screened through a 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 project work were invited to submit bids.

The Request for Qualifications (RFQ) was posted in June 2018. After review, nine contractors were prequalified to bid on the project. The invitation for bids was issued to the prequalified contractors on December 5, 2018. Six bids were received on the January 17, 2019 deadline and opened publicly. Turner Murphy, Inc. was the low, responsive and responsible bidder for the project with a base bid of \$1,572,425.00. Pricing was also solicited for four additional scope items (“bid alternates”); Turner Murphy’s bid including all alternates was \$1,700,511.00. A copy of the certified bid tabulation is attached with the Engineer’s recommendation to award (Attachment 1), and the results are summarized below:

Bidder	Base	Total w/ all bid alternates
Carolina CivliWorks	\$ 1,792,183.12	\$ 1,891,791.08
Dellinger Inc	\$ 1,675,000.00	\$ 1,776,900.00
English Construction	\$ 1,873,700.00	\$ 2,000,000.00
Haren Construction Co. Inc.	\$ 1,992,000.00	\$ 2,102,500.00

Bidder	Base	Total w/ all bid alternates
Laughlin Sutton Construction Co.	\$ 1,856,500.00	\$ 1,980,600.00
Turner Murphy Co. Inc.	\$ 1,572,425.00	\$ 1,700,511.00
<i>Engineer's Cost Opinion (Final Design)</i>	-	\$ 1,891,974.00

Given the favorable bid results and the value of completing the alternatives, staff recommends the project be awarded including all bid alternates. (See “Bid Analysis and Recommendation” section below.)

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 Request for Qualifications in the Greater Diversity News, the North Carolina Institute of Minority Economic Development, OWASA’s website, and plan rooms, and requiring bidders to follow “good faith” efforts to solicit participation by minority subcontractors. The apparent low bidder (Turner Murphy) identified MWBE participation for the controls integration contractor (CITI, a Hispanic-owned business) totaling \$70,000 (4.1% of the total bid amount). Additionally, the low bidder provided a listing of Good Faith Efforts and supplemental information to confirm sufficient effort was taken to meet the intent and requirements of our Good Faith Efforts.

Bid Analysis and Recommendation:

Bids were relatively close in price with the two lowest bidders varying by less than 5%. Staff is satisfied that the proposed contract amount represents a competitive price for this work based on the close bid results and the engineer’s cost opinion. Turner Murphy’s ability to complete this project successfully was evaluated during the prequalification process, and they have demonstrated sufficient qualifications in past project performance (including the ongoing Rogerson Drive Pump Station Rehabilitation Phase 1 and 2 and Mason Farm Wastewater Treatment Plant Intermediate Pump Station Project), personnel qualifications/experience, reference checks, and all other rated categories. McKim and Creed’s recommendation that the construction contract for this project be awarded to Turner Murphy is attached along with the certified bid tabulation (Attachment 1). OWASA staff concurs with this recommendation and requests the Board’s adoption of the attached resolution (Attachment 2) awarding the construction contract to Turner Murphy.

Action Requested:

Approve Resolution Awarding a Construction Contract for the University Lake Raw Water Pump Station Improvements

Attachments:

- Attachment 1 – Engineer’s Recommendation for Award and Certified Bid Tabulation
- Attachment 2 – Resolution



January 18, 2019

M&C 01519-0044 (54)

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

RE: University Lake Raw Water Pump Station Improvements
OWASA CIP No. 270-11
Recommendation of Award

Dear Mr. Lobdell:

On Thursday, January 17, 2019 at 3:00 p.m., the Orange Water & Sewer Authority received bids for the University Lake Raw Water Pump Station project. Six (6) bids were received 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 Turner Murphy Company, Inc. (NC License #9072) is the apparent low bidder.

The bid includes a base bid and four add alternate bid items. The following represents the total bid amounts as submitted by Turner Murphy Company, Inc.:

Total Base Bid: \$1,572,425.00
Add Alternate Item 5: \$6,694.00
Add Alternate Item 6: \$47,231.00
Add Alternate Item 7: \$43,788.00
Add Alternate Item 8: \$30,373.00
Total Base Bid plus Add Alternate Items 5, 6, 7 and 8: \$1,700,511.00

1730 Varsity Drive

Suite 500

Raleigh, NC 27606

919.233.8091

Fax 919.233.8031

Any combination of award of the base bid or base bid and add alternate results in Turner Murphy Company, Inc. being the apparent low bidder.

Turner Murphy Company, Inc. is properly licensed and experienced in the type of construction involved, as indicated by the information supplied with the bid.

Mr. Simon Lobdell, PE

January 18, 2019

Page 2

Turner Murphy Company, Inc. has also previously been prequalified to bid on 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, Turner Murphy Company, Inc. The amount of award of the construction contract will depend on the selection of the base bid or base bid and add alternate as accepted by the Orange Water & Sewer Authority.

Please accept this letter as the formal recommendation of award of construction contract to Turner Murphy Company, Inc. This recommendation of award is subject to approval and acceptance of the submitted bid by the Orange Water & Sewer Authority.

Enclosed you will find the following documents:

- Certified Bid Tabulations
- Turner Murphy Company, Inc. Bid Package
- Turner Murphy Company, Inc. 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.

Turner Murph Company, Inc. has been requested to provide the Non-Collusion Affidavit for Subcontractors and Minority Business Participation Affidavit D, per the requirements of the bidding documents.

Should you have any questions or concerns in regard 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.



K. Jason Savage, PE
Construction Administrator

Enclosures

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

CERTIFIED BID TABULATION

**Orange Water and Sewer Authority
University Lake Raw Water Pump Station Improvements
BID DATE: January 17, 2019 at 3:00 PM
M&C Project No. 01519-0044**

BIDDER	LICENSE #	BID BOND	ACKNOWLEDGE ADDENDA			TOTAL BASE BID	ADD ALTERNATE ITEM 5	ADD ALTERNATE ITEM 6	ADD ALTERNATE ITEM 7	ADD ALTERNATE ITEM 8
			1	2	3					
Turner Murphy Co., Inc.	9072	✓	✓	✓	✓	\$1,572,425.00	\$6,694.00	\$47,231.00	\$43,788.00	\$30,373.00
Dellinger, Inc.	5992	✓	✓	✓	✓	\$1,675,000.00	\$6,900.00	\$33,000.00	\$37,000.00	\$25,000.00
Carolina Civilworks Inc.	74658	✓	✓	✓	✓	\$1,792,183.12	\$10,653.34	\$0.00	\$29,051.15	\$59,903.47
Laughlin Sutton Construction Co.	3067	✓	✓	✓	✓	\$1,856,500.00	\$3,800.00	\$12,500.00	\$41,600.00	\$66,200.00
English Construction Co. Inc.	8786	✓	✓	✓	✓	\$1,873,700.00	\$19,400.00	\$34,600.00	\$27,300.00	\$45,000.00
Haren Construction Co. Inc.	7770	✓	✓	✓	✓	\$1,992,000.00	\$9,500.00	\$35,000.00	\$22,000.00	\$44,000.00



Certified as Correct

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

1/18/19
Date

CERTIFIED DETAILED BID TABULATION

ORANGE WATER AND SEWER AUTHORITY
 UNIVERSITY LAKE RAW WTER PUMP STATION IMPROVEMENTS
 BID DATE: JANUARY 17, 2019 at 3:00 PM
 M&C PROJECT NO: 01519-0044

BASE BID				TURNER MURPHY CO., INC		DELLINGER, INC.		CAROLINA CIVILWORKS, INC.		LAUGHLIN SUTTON CONSTRUCTION		ENGLISH CONSTRUCTION COMPANY, INC.		HAREN CONSTRUCTION COMPANY, INC.	
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
1	Mobilization and Demobilization	1	LS	\$35,000.00	\$35,000.00	\$50,000.00	\$50,000.00	\$50,165.49	\$50,165.49	\$55,700.00	\$55,700.00	\$56,200.00	\$56,200.00	\$50,000.00	\$50,000.00
2	Pump Station and Electrical Modifications/Upgrades	1	LS	\$1,417,425.00	\$1,417,425.00	\$1,505,000.00	\$1,505,000.00	\$1,622,017.63	\$1,622,017.63	\$1,680,800.00	\$1,680,800.00	\$1,697,500.00	\$1,697,500.00	\$1,822,000.00	\$1,822,000.00
3	CITI Instrumentation and Control Allowance	1	LS	\$70,000.00	\$70,000.00	\$70,000.00	\$70,000.00	\$70,000.00	\$70,000.00	\$70,000.00	\$70,000.00	\$70,000.00	\$70,000.00	\$70,000.00	\$70,000.00
4	Contingency Allowance	1	LS	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00
TOTAL BASE BID SINGLE PRIME (Items 1 thru 4)					\$1,572,425.00		\$1,675,000.00		\$1,792,183.12		\$1,856,500.00		\$1,873,700.00		\$1,992,000.00

ADD ALTERNATES

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
5	Provide and Install Exhaust Fan EF 4	1	LS	\$6,694.00	\$6,694.00	\$6,900.00	\$6,900.00	\$10,653.34	\$10,653.34	\$3,800.00	\$3,800.00	\$19,400.00	\$19,400.00	\$9,500.00	\$9,500.00
6	Provide and Install Influent Control Valves	1	LS	\$47,231.00	\$47,231.00	\$33,000.00	\$33,000.00	\$0.00	\$0.00	\$12,500.00	\$12,500.00	\$34,600.00	\$34,600.00	\$35,000.00	\$35,000.00
7	Provide and Install Lighting	1	LS	\$43,788.00	\$43,788.00	\$37,000.00	\$37,000.00	\$29,051.15	\$29,051.15	\$41,600.00	\$41,600.00	\$27,300.00	\$27,300.00	\$22,000.00	\$22,000.00
8	Demolition and Replacement of Pump Station Roof	1	LS	\$30,373.00	\$30,373.00	\$25,000.00	\$25,000.00	\$59,903.47	\$59,903.47	\$66,200.00	\$66,200.00	\$45,000.00	\$45,000.00	\$44,000.00	\$44,000.00



Certified as Correct

K. Jason Savage

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

1/18/19
 Date

Resolution of Orange Water and Sewer Authority Awarding a Construction Contract for the University Lake Raw Water Pump Station Improvements

Whereas, there is a need to rehabilitate the University Lake Pump Station; and

Whereas, plans and specifications for the construction of this project have been prepared by McKim and 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 on June 21, 2018, and nine contractors were qualified to bid; and

Whereas, on December 5, 2018, the prequalified contractors were formally invited to submit construction bids for the project, and three bids were received; and

Whereas, Turner Murphy Construction, Inc. of Rock Hill, South Carolina has been determined to be the low responsive, responsible bidder for the project; and

Whereas, on June 14, 2018 the Board of Directors 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 Turner Murphy Construction, Inc., the low responsive, responsible bidder for the University Lake Raw Water Pump Station Improvements Construction Contract, in accordance with the approved plans and specifications, in the amount of \$1,700,511.00, 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 14th day of February, 2019.

Yinka Ayankoya, Chair

ATTEST:

Raymond E. DuBose, Secretary

Agenda Item 3:

Sole Source Procurement of Grit Removal Equipment at the Mason Farm Wastewater Treatment Plant (WWTP)

Purpose:

State of North Carolina General Statute 143-129 allows a governing board to approve purchases of apparatus, supplies, materials or equipment through a non-competitive, or “sole source,” process under certain conditions, including when a needed product is available from only one source of supply. This memorandum provides summary information to support the sole source procurement of the Pista Grit Optiflow Baffle System for the Mason Farm Wastewater Treatment Plant (WWTP).

Background:

The Mason Farm WWTP utilizes two large, concrete “Pista Grit” chambers which use a vortexing flow to collect and remove grit from influent wastewater. These units, manufactured by Smith and Loveless, are designed to operate at all ranges of incoming flow. However, at low flows, the units are much less efficient at capturing small and heavy grit. Any grit that does not get captured by the Pista Grit System continues to flow to downstream treatment processes, is expensive to remove, and causes significant operational problems elsewhere in the plant.

Smith and Loveless has developed a product (“Optiflow Baffle”) to retrofit the original Pista Grit design which will increase the capture efficiency across all flow ranges but especially in the low flow ranges where current performance is poor. The unit is installed in the influent channel to the system, making the grit more likely to be captured and removed by the grit cyclone. There are no manufacturers or competitors that can provide a similar product because the Pista Grit System is a trademarked and patented system.

The cost is \$38,110.00, including installation.

Action Needed:

Staff recommends that the Board of Directors adopt the attached resolution approving the sole source purchase of the Pista Grit Optiflow Baffles for the Mason Farm WWTP and authorizes and directs the Executive Director to proceed to negotiate and successfully conclude said purchase upon approval of OWASA’s General Counsel.

Attachments:

Attachment 1: Confirmation of Patent from Smith and Loveless
Attachment 2: Quote for Baffle Purchase and Installation
Attachment 3: Resolution

February 14, 2019



Smith & Loveless, Inc.

January 16, 2019

ATTN: Simon M. Lobdell
Orange Water and Sewer Authority
400 Jones Ferry Rd
Carrboro, NC 27510

Ph: (919) 968-4421
Email: slobdell@owasanc.onmicrosoft.com

Subject: **Sole Source Letter**

Dear Mr. Lobdell,

Smith & Loveless, Inc. is the manufacturer of a full line of water treatment equipment. Smith & Loveless, Inc. only sells proprietary equipment and proprietary parts including the PISTA® GRIT CHAMBER™ internals through our sole source Representatives. Smith & Loveless, Inc also provides patented PISTA® baffling equipment.

This letter is to certify that the Smith & Loveless sole source Representative for water treatment in this area is Carotek. Their phone number is 704-844-1144 and their fax number is 704-841-8821 or contact Scott Oliver at Scott.Oliver@carotek.com.

Feel free to contact either Scott Oliver at Carotek or myself if you need any additional information.

Best Regards,

A handwritten signature in blue ink, appearing to read 'Levi Brunton', is written over a light blue horizontal line.

Levi Brunton
Project Development Engineer
Smith & Loveless, Inc.
lbrunton@smithandloveless.com
913-888-5201 ext. 265

CC: Scott Oliver, Carotek

14040 Santa Fe Trail Drive. Lenexa, KS 66215
P: 913.888.5201 F: 913.748.0106
www.smithandloveless.com



The Power of Solutions

July 26, 2018

Quotation #: 15-184-18072601

Monica Dodson
OWASA – Mason Farm WWTP
400 Jones Ferry Road
Carrboro, NC 27510-2001

RE: Grit Removal System Optiflow Baffles for S/N: 03-01974 & 75

Dear Monica:

The following is for your use when considering upgrade the existing grit removal equipment. We propose adding the Optiflow 270 Baffles, exit baffles to increase your grit capture rate. The existing equipment captures: 95% of 300 Micron, 85% of 210 Micron and 65% of 150 micron, the new baffles improve this capture rate to 95% across the board. We are providing the baffles in 316 SS and installation services will follow under separate cover. The following is for your use:

- A. 2 Model 50, Optiflow 270, 316 SS baffles for flow data provided by you on an enclosed data sheet to eliminate vertical flow/grit exit.

TOTAL EXTENDED PRICE	\$29,400.00
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FOB Factory, freight charges are included.
Terms are Net 30 days.
Delivery is estimated to be 8-10 weeks ADA.
Submittal drawings are 4-6 weeks ARO.
Price is valid for 60 days.
No applicable taxes are included.
Make order to Carotek, Inc.

See the attached information for your use.

Let me know if I can be of additional service.

Best regards,

Carotek, Inc.,

Scott J. Oliver

July 26, 2018

Quotation #: 15-184-18072601-Install

Monica Dodson
OWASA – Mason Farm WWTP
400 Jones Ferry Road
Carrboro, NC 27510-2001

RE: Grit Removal System Optiflow Baffles for S/N: 03-01974 & 75 – **INSTALLATION SERVICES**

Dear Monica:

The following is for your use when considering upgrade the existing grit removal equipment. We propose the following installation services in conjunction with Carolina Civil Works for the referenced Optiflow 270 Exit Baffles. The following is for your use:

- A. 1 Lot installation services with chemical anchors. We include in this proposal assistance by the plant setting the baffles on the headworks deck (so we do not have to rent a forklift) along with the dewatering and wash-down of the tankage. We will also verify the submittal drawing dimensions, during a walk through, to release the baffles to production.

TOTAL EXTENDED PRICE

\$8,710.00

No freight charges apply.
Terms are Net 30 days.
Delivery is 2-3 weeks after equipment receipt.
Price is valid for 60 days.
No applicable taxes are included.
Make order to Carotek, Inc.

Let me know if I can be of additional service.

Best regards,

Carotek, Inc.,

Scott J. Oliver

Resolution of Orange Water and Sewer Authority Declaring Its Intention to Execute a Sole Source Procurement of the Optiflow Baffle System at the Mason Farm Wastewater Treatment Plant

Whereas, Orange Water and Sewer Authority (OWASA) is a political subdivision of, and is organized and existing under the laws of the State of North Carolina; and

Whereas, State of North Carolina General Statute (GS) 143-129 (Procedure for letting of public contracts) allows a governing board to approve purchases of apparatus, supplies, materials or equipment through a non-competitive, or “sole source,” process when: (i) performance or price competition are not available; (ii) a needed product is available from only one source of supply; or (iii) standardization or compatibility is the overriding consideration; and

Whereas, OWASA owns two parallel Pista Grit cyclone grit removal units designed by Smith and Loveless, Inc.; and

Whereas, no alternative manufacturers are available for the grit removal improvements; and

Whereas, Smith and Loveless is the only source for the patented improvements that should increase the grit removal efficiency of the units; and

Whereas, pursuant to GS 143-129, the OWASA Board of Directors must approve purchases made through the sole source process prior to the award of the contract;

Now, Therefore, Be It Resolved:

1. That the Board of Directors has concluded that a sole source procurement for the Optiflow Baffle System is appropriate because:

(i) There is only one practical source for the noted equipment.

2. That the Board of Directors hereby approves the sole source procurement of the Optiflow Baffle System by Smith and Loveless, Inc. for the Mason Farm Wastewater Treatment Plant.

3. This resolution shall take effect immediately upon its passage.

Adopted this the 14th day of February 2019.

Yinka Ayankoya, Chair

ATTEST:

Raymond E. DuBose, Secretary

Agenda Item 4

Orange Water and Sewer Authority

Meeting of the Board of Directors

November 15, 2018

The Board of Directors of the Orange Water and Sewer Authority (OWASA) met in a work session on Thursday, November 15, 2018, at 6 p.m. in OWASA's Community Room, 400 Jones Ferry Road, Carrboro.

Board Members present: Yinka Ayankoya (Chair), Jeff Danner (Vice Chair), Ray DuBose (Secretary), Bruce Boehm, Jody Eimers, Robert Morgan, John N. Morris and Ruchir Vora. Board Member absent: John A. Young.

OWASA staff present: Patrick Davis, Robin Jacobs, Esq., (Epting and Hackney), Ed Kerwin, Andrea Orbich, Ruth Rouse, Todd Taylor, Mary Tiger and Richard Wyatt.

Others present: none.

Motions

1. John Morris made a motion to approve the Minutes of the November 8, 2018 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Bruce Boehm and unanimously approved.

* * * * *

Announcements

Yinka Ayankoya 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.

Ms. Ayankoya said a Diversity and Inclusion session with VISIONS, Inc., was held for new Board Members on November 13, 2018. A full Board session will be scheduled soon.

Ms. Ayankoya requested Board Members complete a doodle poll to schedule a Board Work Session to discuss communications and community relations.

Jeff Danner said the Chapel Hill Town Council OWASA Committee and Chapel Hill Appointees to the OWASA Board meet today to discuss key OWASA initiatives as well as an overview of the November 5, 2018 water emergency; the next meeting will be scheduled in 2019.

Robert Morgan said the November 28, 2018 Human Resources Committee meeting will be rescheduled in early 2019.

Ray DuBose announced a Finance Committee meeting on December 5, 2018 at 5 p.m. in the OWASA Boardroom to review analyses of operating expenses and discuss planning assumptions for the Fiscal Year 2020 budget.

Mr. Dubose said that Jody Eimers and he will meet with Orange County Commissioners, Penny Rich and Mark Marcoplos, on November 16, 2018 at 10 a.m. in the Root Cellar to discuss the November 5, 2018 water main break.

John Morris announced a Natural Resources and Technical Services Committee meeting on Wednesday, December 12, 2018 at 4 p.m. in the OWASA Boardroom to discuss the overall approach for managing forested watershed lands.

Ed Kerwin said the Chamber of Commerce sponsored a meeting on November 12, 2018, with the business community to discuss the November 5th water emergency. Others in attendance included Board Members, elected officials, Orange County Health Department as well as other municipal emergency management staff to talk about what happened, answer questions and hear feedback.

Item One: Minutes

John Morris made a motion to approve the Minutes of the November 8, 2018 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Bruce Boehm and unanimously approved. Please see Motion 1 above.

Item Two: Long-Range Water Supply Plan: a. Scope and Schedule and b. Projected Demands and Yield

The Board agreed with staff's overall process to develop the demand projections and suggested including a break out of weather and climate impacts on demands. The Board agreed to the use of a Monte Carlo analysis or similar and that Board should be notified if such use will impact schedule or cost.

The Board requested information on future access to OWASA's Jordan Lake water supply allocation; how the projected demands affect revenue projections for the budget; additional information on the top ten high water use by master-metered, multi-family customers; and look for other resources on population growth.

The Board is scheduled to receive an update in February 2019.

Item Three: Proposed Process to Update OWASA's Strategic Plan

The Board agreed to delay the update of OWASA's Strategic Plan and that progress reports would continue annually in conjunction with the Annual Review and Updates of Strategic Trends and Utility Planning Issues report.

Item Four: Discuss Draft OWASA Action Items Recurring Every 3 to 5+ Years

The Board agreed that OWASA's Action Items Recurring Every 3 to 5+ years will be reviewed by the Board quarterly and in the suggested format.

Item Five: Discuss Key Focus Areas for OWASA's Executive Director

Key feedback the Board provided on the Key Focus Areas for OWASA's Executive Director for the period October 2018 to September 2019 included: updating Strategic Plan as approved by the Board tonight; re-prioritizing the High Quality and Reliable Service tasks as well as reliability and risk assessment of the treatment plants; and additional detail on diversity and inclusion including metrics. The Board will review and discuss an update of this document at the December 13, 2018 meeting.

Item Six: Review Board Work Schedule – Water System Resiliency

The Board discussed a possible action agenda item for the December 13th meeting regarding resources needed (equipment, new valve maintenance crew and an additional utilities engineer) to improve distribution system resiliency and capital improvements program execution.

Ed Kerwin said staff emailed the Board the scope of services developed by Hazen and Sawyer to investigate the cause of the November 5th water main break and response for feedback.

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

Ed Kerwin noted the following items for staff follow-up:

- Incorporate the Board's feedback on the projected demands and yield for the Long-Range Water Supply Plan and provide additional information as requested.
- Update and seek guidance about short and longer-term plans to improve drinking water system resiliency to include initial resource needs.

Without objection, the Board meeting was adjourned at 8:30 p.m.

Respectfully submitted by:

Andrea Orbich
Executive Assistant/Clerk to the Board

Agenda Item 5

Orange Water and Sewer Authority

Meeting of the Board of Directors

December 13, 2018

The Board of Directors of the Orange Water and Sewer Authority (OWASA) met in a work session on Thursday, December 8, 2018, at 6:00 p.m. in OWASA's Community Room, 400 Jones Ferry Road, Carrboro.

Board Members present: Yinka Ayankoya (Chair), Ray DuBose (Secretary), Bruce Boehm, Jody Eimers, Robert Morgan, John N. Morris, Ruchir Vora and John A. Young. Board Member absent: Jeff Danner (Vice Chair).

OWASA staff present: Denise Battle, Mary Darr, Robert Epting, Esq., (Epting and Hackney), Vishnu Gangadharan, Ed Kerwin, Andrea Orbich, Allison Reinert, Nicholas Rogers, Ruth Rouse, Todd Taylor, Mary Tiger, Stephen Winters and Richard Wyatt.

Others present: Ben Poulson (UNC Associate Director of Energy Services) and Meg Holton (UNC Water Resources Manager).

Motions

1. BE IT RESOLVED THAT the Board of Directors of the Orange Water and Sewer Authority adopts the Resolution to Amend the Schedule of Employee Classification and Authorized Compensation to Reclassify the Maintenance Coordinator Position. (Motion by Robert Morgan, second by John Young and unanimously approved.)
2. Robert Morgan made a motion to approve the Minutes of the October 25, 2018 Meeting of the Board of Directors; second by John Young and unanimously approved.
3. BE IT RESOLVED THAT the Board of Directors of the Orange Water and Sewer Authority adopts the Resolution Awarding a Construction Contract for the Gravity Sewer Rehabilitation FY 17-19 Package 3 Project. (Motion by Ray DuBose, second by John Morris and unanimously approved.)
4. BE IT RESOLVED THAT the Board of Directors of the Orange Water and Sewer Authority adopts the Resolution of Orange Water and Sewer Authority to Approve a New Utilities Engineer Position and to Reclassify a Vacant Utility Mechanic I/II Position to a Utility Mechanic III. (Motion by Bruce Boehm, second by Ruchir Vora and unanimously approved.)

* * * * *

Announcements

Yinka Ayankoya 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.

Ms. Ayankoya announced a Special Work Session scheduled for Wednesday, December 19, 2018 at 6 p.m. in the OWASA Boardroom to discuss Communications and Community Engagement.

Ray DuBose said the Finance Committee met on Wednesday, December 5, 2018 to: review financial analyses related to the Committee's previous discussion of longer-term approaches and strategies for managing operating expenses and a draft of the Fiscal Year 2020 budget calendar and planning assumptions. Mr. Dubose said the Committee chose not to pursue projects to identify and implement new innovative approaches to operating the utility at this time. Staff will continue the practice of looking for ways to optimize operations, manage costs, and watch for innovations and focus on system resiliency. The Fiscal Year 2020 budget calendar and planning assumptions will be discussed at the Board meeting on January 24, 2019.

Mr. DuBose announced a meeting of Members of the Orange County Board of Commissioners (Penny Rich and Mark Marcoplos) and the Orange County Appointees to the OWASA Board (Jody and me) will take place on Wednesday, January 30, 2019 at 8:30 a.m. in the OWASA Boardroom to discuss items of mutual interest.

Mr. DuBose announced that Jody Eimers, Yinka Ayankoya and he will provide OWASA's Annual Update to the Orange County Board of County Commissioners on Tuesday, February 19, 2019, at 7:00 p.m. at Southern Human Services Center in Chapel Hill.

John Young said the Natural Resources and Technical Services (NRTS) Committee met on December 5, 2018 to discuss forestry management. The Committee discussed two items: an outline or process to develop plans for forestry management of OWASA land, and to receive feedback on guiding principles for managing forestry lands. The Board will receive a report on January 10, 2019 and following the Board's review and approval, a community engagement plan will be initiated. Staff and OWASA's forestry consultant, will identify up to 10 forested stands as appropriate for active management. Mr. Young also announced that the NRTS' December 20, 2018 meeting is cancelled.

Mary Tiger said the report assessing the cause and response to the November 5, 2018 water emergency is to be delayed, but is anticipated to be available the week of December 17th.

Item One: Proposed Key Focus Areas for OWASA's Executive Director

Meg Holton, UNC Water Resources Manager, expressed support for this item as it pertains to water system resiliency.

John Young suggested amending the Expected Results under Diversity and Inclusion program, stating measures will be selected and measured as a baseline for the future; the Board agreed.

Item Two: Position Reclassification for Maintenance Coordinator

Robert Morgan made a motion to approve the Resolution to Amend the Schedule of Employee Classification and Authorize Compensation to Reclassify the Maintenance Coordinator Position; second by John Young and unanimously approved. Please see Motion 1 above.

Item Three: Minutes

Robert Morgan made a motion to approve the Minutes of the October 25, 2018 Meeting of the Board of Directors; second by John Young and unanimously approved. Please see Motion 2 above.

Item Four: Resolution Awarding a Construction Contract for Gravity Sewer Rehabilitation

Ray DuBose made a motion to approve the Resolution Awarding a Construction Contract for the Gravity Sewer Rehabilitation FY 17-19 Package 3 Project, second by John Morris and unanimously approved. Please see Motion No. 3 above.

Item Five: Proposed Resources for Capital Improvements Program (CIP) Execution and Water Distribution System Maintenance

Meg Holton, UNC Water Resources Manager, expressed support for this item as it pertains to water system resiliency, equipment and staffing.

Bruce Boehm made a motion to approve the Resolution of Orange Water and Sewer Authority to Approve a New Utilities Engineer Position and to Reclassify a Vacant Utility Mechanic I/II Position to a Utility Mechanic III; second by Ruchir Vora and unanimously approved. Please see Motion No. 4 above.

The Board is scheduled to approve an amendment to the Capital Equipment Budget to purchase valve exercising equipment in January 2019.

Item Six: Review Status of Fiscal Year 2019 Budget

The Board received and supported the status report of Fiscal Year 2019 budget and potential budget amendment which will be scheduled for discussion in January 2019.

Item Seven: Administration of Strategic Plan

Meg Holton, UNC Water Resources Manager, expressed support for this item as it pertains to water supply resiliency.

The Board suggested modifying the report to include Alamance and Chatham Counties as part of the water supply watersheds. The Board also suggested providing data on chlorophyll a and harmful algal blooms in our water supply reservoirs since climate change could impact them.

Item Eight: Discuss Water Loss and Non-Revenue Water Key Performance Indicator

The Board received and supported staff's recommendation to: continue evaluating the applicability and cost-effectiveness of leak detection as a method for assessing the condition of our water mains; develop and implement a new water replacement/renewal prioritization model; continue conducting annual water audit; and consider the use of hourly customer water use data to further analyze trends in and troubleshoot water loss.

Item Nine: Discuss Priorities for Natural Resources and Technical Services Committee

The Board agreed to include climate change as it pertains to flooding and its impacts at the Mason Farm Wastewater Treatment Plant a potential item for staff's evaluation.

Item Ten: Review Board Work Schedule

The Board agreed to include a new agenda item at the February 14, 2019 meeting - Review Scope of Work for Water Main Prioritization Model.

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

Ed Kerwin noted the following items for staff follow-up:

- Update Executive Director Key Focus areas to include the Board suggestion of establishing measurements for OWASA's diversity and inclusion work.
- Update Strategic Trends Report to reflect Board Member suggestions.

The Board meeting was adjourned at 7:56 p.m.

Respectfully submitted by:

Andrea Orbich
Executive Assistant/Clerk to the Board

Attachments

Agenda Item 6

Orange Water and Sewer Authority
Special Meeting of the Board of Directors
December 19, 2018

The Board of Directors of the Orange Water and Sewer Authority (OWASA) met in a Special meeting on Wednesday, December 19, 2018, at 6:00 p.m. in OWASA's Boardroom, 400 Jones Ferry Road, Carrboro.

Board Members present: Yinka Ayankoya (Chair), Jeff Danner (Vice Chair), Ray DuBose (Secretary), Bruce Boehm, Jody Eimers, Robert Morgan, John N. Morris and John A. Young.
Board Member absent: Ruchir Vora.

OWASA staff present: Mary Darr, Jessica Godreau, Ed Kerwin, Linda Low, Andrea Orbich, Ruth Rouse, Todd Taylor, Mary Tiger, Stephen Winters and Richard Wyatt.

Others present: none.

* * * * *

Announcements

Yinka Ayankoya 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.

Mary Darr introduced Jessica Godreau, OWASA's new Engineering Manager – Systems Development.

Item One: Discuss Communications and Community Engagement

The Board discussed and provided feedback on the development of a draft Communications and Community Engagement Plan. Feedback included: develop different ways to dialog with individuals at Board meetings; educate the public on what OWASA is; promote Care to Share; reestablish trust; affordability; land management; more participation in established community events; the process and channel(s) to measure communication and engagement.

The Board agreed to schedule another work session to receive a draft Plan including proposed resources for discussion and possible approval.

The Special Meeting of the Board was adjourned at 7:48 p.m.

Respectfully submitted by:

Andrea Orbich
Executive Assistant/Clerk to the Board

Agenda Item 7

Orange Water and Sewer Authority

Closed Session of the Board of Directors

January 24, 2019

The Board of Directors of Orange Water and Sewer Authority met in Closed Session in the first floor conference room at Chapel Hill Town Hall on Thursday, January 24, 2019, following the Board meeting.

Board Members present: Yinka Ayankoya (Chair), Jeff Danner (Vice Chair), Ray DuBose (Secretary), Bruce Boehm, Jody Eimers, Robert Morgan, John Morris, Ruchir Vora and John A. Young.

Staff present: none.

ITEM ONE

The Board of Directors met in Closed Session for the purpose of discussing a personnel matter.

No official action was taken at the meeting.

The meeting was adjourned at 9:25 p.m.

Robert Morgan, Chair
Human Resources Committee

Agenda Item 8:

Review Scope of Water Distribution System Prioritization Model

Purpose:

To provide additional detail about the consultant scope of services for a comprehensive update to the risk model used to prioritize water main replacement projects and additional analysis which will be used to guide infrastructure investment decisions and operational strategies to manage the water distribution system consistent with expected level of service criteria.

Summary:

OWASA uses a Distribution System Prioritization Model to identify and prioritize mains for rehabilitation or replacement. This model was developed in 2003 and updated in 2010 to provide a basis for the annual reinvestment decisions for water pipes and to provide a dynamic model for prioritizing the replacement of water pipes.

The current project will update the model's risk framework to account for current data sources and provide recommendations for both the rate of water main replacement and the use of condition assessment strategies for the distribution system. In addition, and in consideration of increased focus on distribution system reliability and resiliency, the study scope has been expanded to include some analysis of the most high risk water mains in the system in terms of both capital improvements and operational response plans for critical main failures.

Background:

OWASA's drinking water distribution system consists of approximately 380 miles of pipe and about 12,900 valves. For long-term renewal of this system, the CIP has historically included funds each fiscal year (FY) for the replacement of aging water mains.

As with other risk models within our Asset Management Program, the Distribution System Prioritization Model determines a given asset's level of risk through factors which fall into two categories: characteristics that relate to the asset's likelihood of failure (LOF) and factors which define the consequence of asset failure (COF). In contrast to the wastewater collection system (another major asset class which consists primarily of buried assets), water distribution systems generally do not lend themselves to cost-effective, programmatic use of actual condition assessment to help inform the understanding of an asset's LOF. The evaluation of risk therefore relies heavily on surrogate factors related to LOF in conjunction with criteria which represent COF.

In 2003, OWASA engaged a consulting engineer to develop a prioritization model in order to provide an objective basis for the prioritization of replacement projects in the CIP. The model was configured in a Microsoft Access database and utilized known pipe LOF and COF factors such as age, material, break history, water pressure, location, and critical customers, combined with deterioration trends for different pipe materials. The model's output provided "Priority Action Numbers" (PAN) for each distribution system pipe segment over 6 inches in diameter which were then used to generate the extents of prioritized pipeline replacement projects. (The

majority of the pipe segments below 6 inches in diameter are older water mains composed of galvanized steel; these galvanized mains were prioritized – typically by age – under a separate replacement program in the CIP.)

The prioritization model was updated in 2010 to account for changes in the various platforms housing the input data, as well as a revisiting of the criteria weighting.

Due to the maturation of OWASA’s Asset Management program (which provides an overall framework for risk evaluation) over the last several years, developments in asset management and modeling software, improvements in OWASA data collection and management, and further developments in condition assessment technologies, funding was included in the CIP beginning in FY 2019 for a major update to the prioritization model ([Capital Improvements Project \(CIP\) #275-89](#)).

Staff posted a public solicitation in Summer 2018 for engineering firms to submit Statement of Qualifications to provide services for the study. Following a qualifications-based selection process, staff selected HDR Engineering, Inc. of the Carolinas (HDR). HDR’s team includes national and international experts in water distribution system asset management, and HDR’s project manager, Adam Sharpe, has thorough knowledge of OWASA’s risk framework, having worked extensively with OWASA staff since 2012 during the development of the Asset Management program.

Scope of work:

The scope of this study is summarized in the scope outline (Attachment 1) and detailed in the scope of services (Attachment 2). The title referenced in these two documents, “Water Distribution System Management Program Development,” reflects the expansion of this project’s objectives. No longer just a refinement of our prioritization model and long-term capital investment strategy for the distribution system (Tasks 2 – 4), this study will provide some comprehensive recommendations for system management including in-depth operational and capital strategies to manage high-risk water mains, including preparation of specific break response plans for the most critical water mains (Tasks 5 and 6). Tasks 7 through 9 will develop certain strategies or tasks to help us further understand likelihood of failure, particularly an analysis for the prudent use of condition assessment. The scope also includes consultant effort for training and on-call support to ensure that the prioritization model is able to provide appropriate and useful guidance for years after the initial study is complete.

The scope of work reflects input from partners at University of North Carolina (UNC) and UNC Hospitals (UNC-H), particularly in the outcomes envisioned from Task 6. Coordination with UNC, UNC-H, and other external stakeholders will occur throughout the course of the study and will be particularly useful to refining our understanding of COF for certain mains.

Initially, the study was scoped primarily as a capital planning tool and was to include analysis corresponding to Tasks 1 through 4 and Tasks 10 through 13. The increased focus on resiliency and reliability of the system justified the addition of Tasks 5 through 9, which not only bring operational strategies and plans into scope but also dive more deeply into management of the

highest risk assets. Because the outcome of Task 3 (Risk Prioritization) will inform the relative value and appropriate level of effort for many of the subsequent tasks, staff intends to authorize the scope in phases. However, given our current assumptions about the level of effort for all thirteen tasks, staff expects that the total cost of services will be between \$450,000 and \$500,000. The study is expected to take about a year to complete.

Conclusion:

It is typically the case that each successive version of our various master planning or risk management tools provides us with more reliable and more granular results than the prior version; not only do we expect this to be true of this prioritization model update (due to improvements in input data quality, software capability, and historical knowledge base), but this study scope is expected to generate some important findings, action plans, and recommendations that will inform both capital and operating efforts to prudently manage the water distribution system to most effectively meet our level of service objectives.

Given the inherent difficulties with evaluating risk on buried water distribution systems, the refinements in our understanding of our risk profile and the resulting strategies and actions will have meaningful and lasting effects on the management of our distribution system. As such, staff is excited to embark on the work associated with the study and looks forward to the discussion with and feedback from the Board on February 14, 2019. Should you have any questions or comments before then, please feel free to contact me.

Action Required:

The Board is not required to take any action, but staff requests the Board's feedback on the key outcomes to be delivered by the project.

Information:

Attachment 1 Scope of Services Outline with Key Task Outcomes

Attachment 2 Consultant Scope of Services



OWASA WATER DISTRIBUTION SYSTEM MANAGEMENT PROGRAM DEVELOPMENT SCOPE OF SERVICES OUTLINE WITH KEY TASK OUTCOMES

Task 1 - Project Initiation, Data Acquisition and Assessment

Key outcomes: Build the foundation for a Best-In-Class distribution system management program. This will include collaborative workshops with HDR industry experts and OWASA staff to ensure HDR understands OWASA's unique drivers, operating context, workflows, information systems, strengths and weaknesses of the data, and challenges. In addition, the project and system reliability objectives will be defined, as well as, the completion of a review and gap analysis on current available data, and strategies to address any identified data gaps.

Task 2 – System Deterioration Analysis

Key outcomes: Quantify key parameters that cause some pipes to deteriorate faster than others to support a transparent and data driven budget, along with renewal project identification and prioritization. Understanding of system-wide drivers, causes and frequency of pipe failures, as well as, the patterns in pipe deterioration (spatial distribution, pipe material, pipe vintage, etc.).

Task 3 – Risk Prioritization

Key outcomes: Development of a dynamic risk prioritization framework and model to support the determination of risk priorities within the OWASA water distribution system, allowing for updates over time as OWASA collects additional data. The model will capture the likelihood of failure (LOF) and consequence of failure (COF) for each water main in the system. The hydraulic COF determination will be supported by OWASA's hydraulic model to quantify the customers out of service, customers with low pressure, volume of water not delivered, and identification of critical customers out of service resulting from each main break.

Task 4 – Renewal Investment Scenarios

Key outcomes: Quantify the return on a 20-year pipeline renewal investment, in terms of, service levels to enable OWASA to define the appropriate balance between near term costs and long term service levels and minimizing system risk.

Task 5 – System Reliability Improvements for Critical Water Mains

Key outcomes: Detailed hydraulic analysis of a range of infrastructure and operational strategies to mitigate the risks associated with the failure of the most critical (highest risk and highest COF) water mains. Specific attention will be focused on water mains that are a single point of failure with the potential for large scale service outages.

Task 6 – Pipe Break Response Planning for Critical Water Mains

Key outcomes: A plan for the response to the failure of the most critical water mains will be developed, inclusive of an isolation zone analysis, system operations requirements (valves, interconnections, storage), and necessary water main repair material inventory. The plan will focus on the occurrence of a disruptive event and minimizing the effect of that event, as well as, retuning service as quickly as possible.

Task 7 – External Corrosion Control Review

Key outcomes: Completion of an inventory and assessment of current buried metallic pipe corrosion control, and an analysis of cathodic protection system requirements for OWASA’s service area. A review of potential retrofit and/or management options for metallic pipe cathodic protection for current pipe and standards for the future will be completed.

Task 8 – Opportunistic Asbestos Cement (AC) Pipe Condition Assessment

Key outcomes: Development of a cost-effective AC pipe condition assessment program to develop a greater level of understanding of AC pipe conditions and to integrate findings into the decision making process for the program.

Task 9 – Condition Assessment and System Monitoring Strategy

Key outcomes: Definition of a standard decision logic for condition assessment, maintenance and renewal strategies based on the risk prioritization, identification of condition assessment priorities based on the risk prioritization, and system monitoring opportunities (acoustic, pressure) will be reviewed.

Task 10 – Program Recommendations and Implementation Plan

Key outcome: Development of a Program Report and Implementation Plan that integrates all recommendations and findings across all Tasks. Additionally, targeted data collection strategies will be identified to continually improve the risk prioritization model and OWASA’s understanding of the status of water main condition and risks within the distribution system. The Program Report will be based on the following outline as a starting point:

1. Introduction
2. Data Review and Analysis
3. Risk Prioritization Framework and Model
 - a. Prioritization Framework
 - b. Consequence of Failure Analysis
 - c. Risk Model Selection
 - d. Risk Model Configuration
4. System Priorities
 - a. Water Main Risk Prioritization Results

- b. Valve Risk Prioritization Results
- 5. System Renewal Investment
 - a. Pipe Deterioration Factors
 - b. Renewal Investment Scenario Analysis
 - c. 20-year Renewal Investment Recommendations
- 6. System Reliability Improvements
 - a. Detailed Hydraulic Analysis
 - b. Reliability Improvements
 - i. Project Scope & Cost Estimates
 - c. O&M Improvements
 - i. Valve Exercising & Replacement Program
- 7. Emergency Response Planning
 - a. Isolation Zone Analysis
 - b. System Operations
 - c. Water Main Repair Material Inventory
- 8. Condition Assessment and Data Collection Strategy
 - a. Condition Assessment Strategy
 - i. Assessment Options
 - 1. By pipe material and type
 - ii. Assessment Priorities and Action Plan
 - iii. Ongoing Opportunistic Condition Assessment Program
 - b. Business Practices and Data Collection Strategy
- 9. External Corrosion Control
 - a. Current Corrosion Control Strategy and Gaps
 - b. Areas of Concern for Corrosion Control
 - c. Options for Enhanced Corrosion Control Protection
- 10. Continuous Improvement Initiatives
- 11. Integrated Program Recommendations and Implementation Plan

Task 11 – Risk Prioritization Model Training

Key outcome: Staff training on the risk prioritization model.

Task 12 – Project Management

Key outcome: Overall management and coordination for project.

Task 13 - Implementation Support

Key outcomes: Provide on-call as needed support.



January 31, 2018

Mr. Vishnu Gangadharan, PE
Orange Water and Sewer Authority (OWASA)
400 Jones Ferry Road
Carrboro, NC 27510

RE: Water Distribution System Management Program Development Scope of Services

Dear Mr. Gangadharan,

OWASA owns and operates over 375 miles of distribution system water mains to serve approximately 21,000 customer accounts. These mains have been installed over the past 95 years, and two high consequence failures over the past 18 months have increased public interest in the management of this aging infrastructure. Without intervention, OWASA's distribution system mains will continue to age over time, a full replacement of the system is unrealistic with a likely cost exceeding \$500 million. The overarching objective of the Water Distribution System Management Program Development Project is to develop an industry-leading program to address the challenges of aging water distribution system mains and cost-effectively manage the risk associated with this infrastructure.

The attached scope of services presents a data-driven approach to addressing the challenges associated with OWASA's aging water distribution system. A dynamic risk prioritization model informed by protocol-driven water main condition assessments will position OWASA to be able to continually assess and update its understanding of the risks associated with its portfolio of water mains. While the Project will not yield a failure prediction model for water mains, the output will allow OWASA to prioritize the right capital projects for the right reasons while proactively crafting pipe break response plans for your most critical water mains. In so doing, the Project will enable OWASA to increase the reliability and resiliency of its water distribution system within the reality of financial and logistical constraints.

The industry-leading practices for water distribution system management and decision support in the attached scope of services will provide OWASA with a best-in-class program focused on strategic main replacement and proactive preparation for disruptive events to increase overall reliability and resiliency of the system. We look forward to working collaboratively with OWASA staff in developing this program.

Sincerely,
HDR Engineering, Inc. of the Carolinas

A handwritten signature in black ink, appearing to read 'Adam J. Sharpe', written in a cursive style.

Adam Sharpe
Project Manager

hdrinc.com

555 Fayetteville Street, Suite 900, Raleigh, North Carolina, 27601-3034
T 919-232-6600

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WATER DISTRIBUTION SYSTEM MANAGEMENT PROGRAM DEVELOPMENT SCOPE OF SERVICES

OVERVIEW

OWASA serves approximately 21,000 customer accounts, providing water, wastewater, and reclaimed water services. The replacement cost of OWASA's water distribution system pipeline infrastructure likely exceeds \$500 million. As this infrastructure ages and deteriorates, an effective pipe condition assessment and renewal program will enable OWASA to continue to provide reliable, high-quality water at desired service levels and an affordable price. This project will support OWASA's desire to further its understanding of the water distribution system's risk profile, allow staff to make informed decisions related to the identification and prioritization of system renewal and condition assessment investments, and identify capital projects and pipe break response plans for OWASA's most critical water mains.

The project scope of services includes the following tasks:

- Task 1 – Project Initiation, Data Acquisition and Assessment
- Task 2 – System Deterioration Analysis
- Task 3 – Risk Prioritization
- Task 4 – Renewal Investment Scenarios
- Task 5 – System Reliability Improvements for Critical Water Mains
- Task 6 – Pipe Break Response Planning for Critical Water Mains
- Task 7 – External Corrosion Control Review
- Task 8 – Opportunistic Asbestos Cement (AC) Pipe Condition Assessment
- Task 9 – Condition Assessment and System Monitoring Strategy
- Task 10 – Program Recommendations and Implementation Plan
- Task 11 – Risk Prioritization Model Training
- Task 12 – Project Management
- Task 13 – Ongoing Implementation Support

The integration of leading industry practices for water distribution system management and decision support, represented in this scope of services, will provide OWASA with a best-in-class program that will identify the risk profile for all distribution system mains, focus on proactively addressing the most critical water mains and preparing for disruptive events within the distribution system to increase overall system reliability and resiliency.

PROJECT TASKS

Task 1 – Project Initiation, Data Acquisition and Assessment

Project Initiation

HDR Engineering, Inc. of the Carolinas (HDR) will meet with OWASA staff in a two-hour Project Initiation workshop. The first portion of the workshop will be used to confirm OWASA's project objectives and

critical success factors. A Project Charter will be developed from the outputs of this workshop to document the common understanding of OWASA's goals and objectives for the project, confirm each team member's role, and establish communication protocols, project milestones, and points of contact within each organization.

The second portion of the Project Initiation workshop will aim to discuss OWASA's existing data collection and management practices related to distribution system data. This knowledge will inform the remaining tasks and provide a framework for evaluating distribution system risk prioritization models that align with current practices and future needs of OWASA.

Data Acquisition and Assessment

HDR will review data provided by OWASA and identify technical data gaps and/or new data requirements to support the ongoing distribution system prioritization efforts. To do this, HDR will first develop a matrix of data requirements to support distribution system risk prioritization efforts. The matrix will include, but is not limited to:

- Linear asset data: pipe diameter, material type, and date installed
- Assessment studies: pipeline breaks and condition assessment studies
- Operation and maintenance (O&M) historical expenditures and budgets and renewal records
- O&M standard operating procedures (SOP)
- Town street maintenance program
- Work order management system data
- Current Asset Management Plan(s)
- Current water main prioritization model
- Spatial GIS information and hydraulic models
- Engineering studies and technical memorandums
- Current and recent capital projects
- Georeferenced customer meters with identification of critical customers.
- Isolation valve location and pipe reference data
- Water quality sampling locations and data
- Customer complaints
- Customer water billing data

HDR will then identify potential gaps in the data and work with OWASA staff to define the logical path forward (assumptions, data collection, etc.) to fill high priority data gaps. Data clean-up to address issues or gaps in the data will likely include removing duplicates, associating data to specific assets, incorporating assumptions to close gaps, and staging data for analysis. As part of this task HDR will review OWASA's hydraulic model and provide any necessary updates/modifications for the utilization of the model for this project.

Additionally, HDR will conduct interviews with OWASA management, engineering and O&M staff to help fill data gaps and gain valuable institutional knowledge/insights on the water distribution system (operations, renewal and repairs history, emergency protocols, data collection, line failure history, etc.). In addition, initial discussions will be conducted with staff on factors to be considered as part of Task 2 (System Deterioration) and Task 3 (Risk Prioritization – Risk Framework Development). These staff

interviews will be scheduled during the same time period as the Project Initiation workshop and will occur over a consecutive three day period.

Existing Practices and Workflow Documentation

HDR will document existing practices and workflows including issue identification and customer call screening, break investigation, repair planning, repair and restoration, customer notification, work documentation and close-out, data management and cleansing, risk evaluation, decision making (e.g. condition assessment, replacement), definition of project extents, and reporting.

Gathering and storing high quality break data (mains, services, valves, etc.) is critical for cost effective decision making. Since the pipe is already exposed, break response provides a unique opportunity to cost effectively collect data about the asset and samples (e.g. pipe sample, soil samples, CCTV) that will enhance future decision making regarding the timing and method for renewal. In this task, OWASA’s existing data collection form(s) will be compared against industry standards and best practices. Data collection will be optimized based on OWASA primary failure mechanisms and with the goal of striking the appropriate balance between the level of effort to collect the data and the usefulness of that data. When the break data collection form is final, HDR will support the training of frontline staff on the new standards and data collection requirements.

Task 1 Deliverables:

- Initial data request
- Project Initiation Workshop
- Project charter
- Staff interviews (over the course of a 3-day period)
- Data Gap Analysis Review Workshop (to be conducted during the same week as the staff interviews)
- Workflow documentation
- Updated Break Data Collection Forms

Task 1 Assumptions:

- OWASA will provide requested data within two (2) weeks of initial request.
- OWASA staff will assist in identifying and filling data gaps or coordinating workshops necessary to access necessary data.
- OWASA staff will assist in scheduling workshops and staff interviews.
- Project Initiation Workshop and Data Acquisition/Staff Interviews will occur during the same week.
- OWASA staff will participate in all workshops and interviews.
- HDR will provide 16 hours for any data clean-up activities required.
- HDR will provide 20 hours for any necessary updates/modifications to OWASA’s hydraulic model for use on this project.
- HDR will provide 4 hours of training of frontline staff on updated break data collection requirements.
- Workshops will be two (2) hours in length and held at OWASA’s offices.

Task 2 – System Deterioration Analysis

The objective of this task will be to leverage the cleansed OWASA data from Task 1 to validate staff input regarding the drivers, causes, and frequency of failures. This information will be used to better understand the broad infrastructure performance trends associated with OWASA’s water distribution system assets, estimate remaining useful life, size sustainable budgets (for maintenance, condition assessment, and installation), assess possible break mitigation strategies, prioritize investments, and optimize renewal based on cost and useful-life expectations.

HDR will assess pipe deterioration as a function of the pipe age and break rate (i.e., annual breaks per 100 miles for pipes). This analysis will quantify systematic deterioration rates as well as determine what factors drive the deterioration of different pipes groups. Key available data associated to the pipe that may drive the pipe deterioration will be analyzed (e.g. pressure, pressure class, material, vintage, diameter, potential conflicts with other pipe infrastructure, soil characteristics). In some cases, where system-wide data does not exist, such as soil characteristics, readily available USGS data may be used to supplement OWASA’s data.

HDR will develop a spatial evaluation of break density (break density mapping) to compare with institutional knowledge regarding the cause and location of breaks. The deterioration analysis will provide an OWASA specific context for pipe failure modes and factors driving pipe deterioration to carry forward to the risk prioritization and renewal planning tasks. HDR will meet with OWASA staff to review the findings of this deterioration analysis, including break density and driving factors of pipe deterioration in OWASA’s system.

Task 2 Deliverables:

- System Deterioration Analysis Review Workshop

Task 2 Assumptions:

- HDR will have access to data associated to the pipe that may drive deterioration (e.g. pressure, pressure class, material, vintage, diameter, potential conflicts with other pipe infrastructure, soil characteristics).
- OWASA staff will assist in scheduling workshops and participate in workshops.
- Workshops will be two (2) hours in length and held at OWASA’s offices.

Task 3 – Risk Prioritization

Develop Risk Prioritization Framework

HDR will work with OWASA staff to identify factors that contribute to the likelihood of failure (LOF) and consequence of failure (COF) of distribution system assets by leveraging the results of Task 2, HDR’s industry experience, and OWASA staff input from Task 1. The LOF and COF factors will be identified and weighted, with OWASA staff input, for the risk prioritization framework. The intent of the risk prioritization framework will be to define a consistent, transparent, and defensible approach to supporting the prioritization of water main renewal projects. HDR will conduct two workshops with OWASA staff as part of the framework development process.

Consequence of Failure Analysis

HDR will leverage OWASA's existing hydraulic model to support the quantification of the COF factors by using the model to measure the impact of a pipe failure. This will be completed using an automated routine that 'breaks' every pipe in the entire distribution system hydraulic model to determine the estimated hydraulic impact of that event. The estimated impact will be based on the selected COF factors: the number of customers out of service, the number of customers with low pressure, the volume of water not delivered, and the identification of how many critical customers are placed out of service.

Risk Prioritization Model Selection

HDR will work with OWASA staff to define the business, personnel, and IT needs for the risk prioritization model. The resulting model will be able to update dynamically, leveraging current and future data maintained by OWASA. To complete this, HDR and OWASA staff will identify key selection criteria to evaluate the range of commercial off-the-shelf options as well as custom built solutions; the primary criteria will be a system's ability to both incorporate the developed risk prioritization framework and update the risk prioritization scoring as new data is collected. HDR will leverage selection criteria used for other utilities to customize the criteria and selection process for an OWASA specific context. HDR will conduct an initial prioritization model needs assessment workshop and a subsequent model selection review workshop with OWASA.

Risk Prioritization Model Development/Configuration

HDR will configure the selected risk prioritization model with the OWASA specific risk prioritization framework and identify the necessary data sources required for the prioritization framework. The data sources are likely to include the primary sources of OWASA's Enterprise GIS system, tabular data that resides on OWASA's servers, and perhaps OWASA's hydraulic model outputs. As part of the model development/configuration process, HDR will work with OWASA to define these data sources, data format, and location of the data for utilization by the risk prioritization model.

HDR will conduct a workshop with OWASA staff to review the draft results of the risk prioritization model. The analysis will be updated and finalized based on comments received from staff. As part of the risk prioritization analysis a sensitivity analysis will be completed on the COF and LOF factors to determine the sensitivity of the results to each factor.

Risk Prioritization Model Comparison to Machine Learning Tool Pilot

OWASA has been approached by Fracta, a company that has developed a machine learning tool that is designed to predict the likelihood of failure of water mains; there are other companies with similar tools as well. This type of technology is early in its implementation in the water sector and Fracta has provided OWASA an opportunity for a low cost pilot. For this Task, HDR will support OWASA in comparing the output from the Risk Prioritization Model with the Fracta tool (or similar) and providing a recommendation on the potential of the tool for use by OWASA in the future.

Task 3 Deliverables:

- Risk Prioritization Framework Development Workshop #1 & Prioritization Model Needs Assessment Workshop (combined Workshop)

- Risk Prioritization Framework Development Workshop #2 & Prioritization Model Selection Workshop (combined Workshop)
- Risk Prioritization Results Review Workshop
- Risk Prioritization model configured to with OWASA's specific prioritization framework
- Graphical results of the Risk Prioritization analysis

Task 3 Assumptions:

- OWASA will provide HDR with the latest distribution system hydraulic model. Hydraulic model provided will be representative of the system, accurate and adequate for consequence of failure analysis.
- OWASA will provide geo-referenced customer information and support the identification of critical customers.
- OWASA will procure any commercial off-the-shelf system identified as preferred under this Task.
- HDR will only be required to complete one (1) primary model run for the COF analysis, and one (1) updated model run after review by OWASA.
- HDR will provide 80 hours of support to OWASA in developing or configuring the risk model.
- HDR will provide a valve risk prioritization for this task, commensurate to the water main prioritization, based on the water main an individual valve is associated with.
- HDR will not be required to provide any system integration services (i.e. integration of the risk model to OWASA's CMMS).
- OWASA staff will assist in scheduling workshops and participate in workshops.
- Workshops will be two (2) hours in length and held at OWASA's offices.

Task 4 – Renewal Investment Scenarios

This task aims to leverage OWASA data and staff input to forecast future breaks and quantify how various investment scenarios will impact service levels over a 20-year period. HDR will leverage the data and insights on pipe deterioration, historic break rates, risk, COF, etc., developed for Task 1-3, to complete a renewal investment scenario analysis to evaluate various levels of service goals, risk management, and capital funding requirements. Included as part of this analysis will be the impact of a scenario on required pipe replacement rates, main break rates, staffing for break response, and OWASA's current key performance indicators for the distribution system (break rate (# of break /100 miles/year), % of customer in service, and % non-revenue water). Investment levels will be placed in the context of national, regional, and local benchmarking to illustrate how OWASA's system current and future (scenario) performance and service levels compare. HDR will conduct an initial investment scenario planning workshop to identify the range of scenarios OWASA would like to review and a workshop will be conducted at the end of this task to review the results of the scenario analysis.

Task 4 Deliverables:

- Renewal Investment Scenarios Planning Workshop
- Final Renewal Investment Scenario Analysis Results Review Workshop

Task 4 Assumptions:

- Three (3) forecast investment scenarios, varying by levels of service goals and capital funding requirements, will be developed.

- OWASA staff will assist in scheduling workshops and participate in workshops.
- Workshops will be two (2) hours in length and held at OWASA's offices.

Task 5 – System Reliability Improvements for Critical Water Mains

Mitigation Strategies for Critical Mains

HDR will work with OWASA staff to review the top five (5) most critical (highest risk and highest COF) water mains from Task 3 and identify a range of capital and operational strategies to mitigate the risks associated with their failure. This will take place in a workshop setting with the hydraulic model, as well as operations staff, to identify reasonable and practical strategies for each of the most critical water mains. An outcome for this workshop will be an understanding of OWASA staff preferences on reliability improvement strategies (parallel lines, increased storage, interconnections, etc.).

Special attention will be focused on water mains that are single points of failure with the potential for large scale service outages. The workshop will also seek to identify acceptable levels of risk for each major critical customer for the purposes of comparison in the analysis.

Reliability Analysis

HDR will develop scenario(s) in OWASA's hydraulic model to implement the draft mitigation strategies identified with OWASA staff and analyze to confirm configuration, length, size and/or operational controls. Using a similar routine to the COF analysis, HDR will analyze each of the strategies for resultant impacts of pipe failure. Again, the estimated impact will be based on selected COF factors: miles of pipe whose failure would impact customer water supply, miles of pipe that would affect customer pressure, the volume of water not delivered, and the identification of how many critical customers are placed out of service. If a line is selected that is identified as having a significant impact on a single critical customer's supply at the point of connection, that customer's supply reliability can be evaluated.

System Reliability Improvements

Based on the results from the Reliability Analysis in comparison with the defined acceptable levels of risk, HDR will present to OWASA staff the findings and recommendations to mitigate the risk of pipe failure of the identified critical mains. Each recommendation will include planning level cost estimates for implementation, as well as priority. Potential recommendations could include: alternative supply, redundant transmission and/or distribution, and local storage/optimized pipe break response.

Task 5 Deliverables:

- System Reliability Strategies and Critical Asset Review Workshop
- Reliability Improvements Results Review Workshop
- Prioritized Recommended Reliability Improvements and Planning Level Cost Estimates
- Updated Hydraulic Model with Reliability Improvements

Task 5 Assumptions:

- Five (5) critical water main reliability improvement scenarios will be modeled, requiring a total of 8 hours per model scenario (model set-up, model run, model results review and model output generation).

- OWASA staff will assist in scheduling workshops and participate in workshops.
- Workshops will be two (2) hours in length and held at OWASA's offices.

Task 6 – Pipe Break Response Planning for Critical Water Mains

Based on the water mains identified for evaluation in Task 5 or different mains selected by OWASA, HDR will develop a plan for pipe break response for the critical mains. The majority of the effort will take place in a workshop setting with the hydraulic model, as-built records and GIS, as well as operational staff, to identify reasonable and practical steps to respond to a failure in each of the critical mains. Response planning will be developed with the goal of returning the main to service as quickly as possible. Workshop exercise(s) will also include identification of isolation zone(s), system operations requirements, including valves, pressure loss mitigation strategies, as well as the water main repair material inventory for each event.

Based on the results from the water main break response planning workshop, HDR will conduct an isolation zone analysis using the hydraulic model for the selected critical water mains to validate the isolation zones identified during the initial planning workshop.

HDR will develop a response plan for each of the identified critical water mains, as well as a template for conducting the exercise with subsequent mains. Overall recommendations for water main break response planning will be prepared and reviewed with OWASA staff.

Task 6 Deliverables:

- Water Main Break Response Planning Workshop
- Water Main Break Response Plan Results Workshop
- Water Main Break Response Planning Template
- Water Main Break Response Repair Inventory

Task 6 Assumptions:

- Five (5) critical water mains will be included for this task.
- Geo-referenced isolation valves will be provided for the isolation zone analysis.
- OWASA staff will assist in scheduling workshops and participate in workshops.
- Workshops will be two (2) hours in length and held at OWASA's offices.

Task 7 – External Corrosion Control Review

The overall goal of this task will be to first, gain an understanding of the corrosion protection standards and systems currently employed by OWASA and second, to investigate and review existing OWASA corrosion control practices, break history along with suspected causes, and existing information on the pertinent as-builts for transmission mains 18 inches in diameter and greater. It is HDR's understanding that this accounts for approximately 20 miles of OWASA's water mains, which is predominantly ductile iron, and a good starting point for this review. The end result of HDR's external corrosion control review will provide a path forward for the development of corrosion prediction and protection strategies. This would ultimately provide appropriate algorithms to assess the condition of OWASA's water mains, along with procedures and practices to maintain and extend transmission infrastructure service life. Some of the techniques and tools that could be recommended will be the determination of soil corrosivity through

field testing as well as chemical testing of soil, assessment of corrosion activity through over-the-line pipe-to-soil surveys, direct assessment, as well as the production of standard details. The output from the corrosion control review paired with the Task 3 Risk Prioritization results will allow HDR to provide a targeted path forward/plan for additional testing. For this task HDR will:

- Conduct a workshop with OWASA to review industry leading practices in corrosion testing and protection strategies, as well as review with operations and engineering staff OWASA’s corrosion control practices, pipe break histories, relevant concerns and observations with respect to external corrosion that staff may have.
- During the site visit for workshops, review as-built drawings and other pertinent records that have not been digitized.
- Review electronic records of as-built information, break history, and suspected causes.

After the completion of the corrosion control review, HDR will conduct a workshop to review the task outcomes with OWASA staff.

Task 7 Deliverables:

- Initial Corrosion Control Review Workshop
- Corrosion Control Review Results Workshop
- Draft and Final Corrosion Control Review technical memorandum (TM), this TM will detail the review findings that provides options for enhanced external corrosion control practices and pipeline rehabilitation.

Task 7 Assumptions:

- OWASA will provide as-built drawings for identified transmission mains.
- HDR’s efforts for this task will be limited to existing records and information available from OWASA.
- Draft TM will be revised one time based on OWASA comments. Comments will be received within 2 week from OWASA.
- OWASA staff will assist in scheduling workshops and participate in workshops.
- Workshops will be two (2) hours in length and held at OWASA’s offices.

Task 8 – Opportunistic Asbestos Cement (AC) Pipe Condition Assessment

When a pipe is exposed (e.g. break response, new tap installation, pipe renewal, and appurtenance renewal), it provides a unique opportunity to cost effectively gather condition assessment data (e.g. pipe samples, photos, soil samples) that can be crucial in making effective pipe management decisions. In this task, HDR will support OWASA in developing and implementing an opportunistic AC pipe condition assessment program. For this task HDR will:

- Provide examples of how other industry leading utilities are executing opportunity condition assessment programs. HDR will work with OWASA staff to define opportunity assessment workflows, roles and responsibilities. This will include field work, coordination with laboratories, data management, and decision making.
- Review existing OWASA SOPs related to opportunity condition assessment events (e.g. break response, service taps, valve installation, pipe replacement) and provide recommended updates to

align with OWASA’s opportunity assessment workflow. If appropriate, this may include a simplified stand-alone document to communicate field procedures.

- Support OWASA in conducting training for field staff regarding why opportunity condition assessment is important and appropriate procedures.
- Where OWASA determines outside support is needed (e.g. laboratory testing), HDR will provide contact information, planning level pricing, and recommendations based on historic performance. Outside support is considered additional services and not part of this project.
- HDR will provide examples of how other industry leading utilities are integrating opportunity condition assessment data in their risk prioritization efforts to make more effective decisions. HDR will support OWASA in refining these decision processes to align with OWASA needs. Develop initial protocols for using the data to make more effective decisions. This may include risk assessment, triggering proactive condition assessment, estimating condition based remaining useful life, and renewal decision making.
- Support OWASA in developing planning level budget estimates for continuous execution of the Opportunity Condition Assessment Program.

Task 8 Deliverables:

- AC Pipe Condition Assessment Approaches and SOPs Workshop
- AC Pipe Condition Assessment Sampling SOP Training (to occur the same time period as the Approaches and SOP Workshop)
- AC Pipe Condition Assessment Draft TM Review Workshop
- Draft and Final Opportunistic AC Pipe Condition Assessment TM describing how AC pipe corrodes, industry best practices for condition assessment, implementation support (workflow, SOPs, decision making, roles/responsibilities, budgeting), and assessment of readily available test data collected during this project.

Task 8 Assumptions:

- OWASA will perform and pay for all handling, shipping, and testing of samples.
- Draft TM will be revised one time based on OWASA comments. Comments will be received within 2 week from OWASA.
- OWASA staff will assist in scheduling workshops and participate in workshops.
- Workshops will be two (2) hours in length and held at OWASA offices.

Task 9 – Condition Assessment and System Monitoring Strategy

Condition Assessment Strategy

HDR will develop a technical memorandum documenting OWASA’s condition assessment program for distribution and transmission pipelines. Based on the characteristics and operational context of the OWASA system, the TM will:

- Identify and describe proven condition assessment technologies that OWASA should consider leveraging.
- Identify planning level unit costs for each technology.
- Define a standardized condition assessment guideline to identify and prioritize condition assessment activities. The guideline is expected to include parameters such as material, diameter, accessibility, risk, cost (both condition assessment and renewal), source of corrosion (internal vs

external), available cathodic protection test stations, replacement cost, renewal decision making confidence required, and other pipe characteristics (e.g. soil type, electrical continuity, etc.). The output will include pipe specific condition assessment technologies, costs, and priorities.

- Apply the condition assessment guideline to all mains, based on current asset data, to determine the total cost and timing of condition assessment activities.
- Refine the condition assessment guideline to strike the appropriate balance between near-term cost, desired service levels, and risk tolerances.
- A prioritized plan for critical water mains to complete condition assessment with an identified assessment technology, assessment considerations, and an estimate of the assessment costs.

System Monitoring Strategy

HDR will develop a system monitoring strategy to include:

- A scoping level assessment of acoustic monitoring for use in the OWASA distribution system.
- A scoping level assessment of using OWASA’s planned advanced metering infrastructure (AMI) system to monitor daily (or a finer increment) system pressure, flow, and water loss.
- An assessment of the current pressure monitoring network in the distribution system to develop recommendations on the expansion of this network and/or integration with the AMI system.

The system monitoring strategy will be documented in a TM.

Task 9 Deliverables:

- Condition Assessment and System Monitoring Options Review Workshop
- Draft Condition Assessment Strategy TM and System Monitoring Strategy Review Workshop
- Draft and Final Water Main Condition Assessment Strategy TM
- Draft and Final Water Distribution System Monitoring Strategy TM

Task 9 Assumptions:

- Draft TMs will be revised one time based on OWASA comments. Comments will be received within 2 week from OWASA.
- OWASA staff will assist in scheduling workshops and staff will participate in workshops.
- Workshops will be two (2) hours in length and be held at OWASA offices.

Task 10 – Program Recommendations and Implementation Plan

The goal of this task is to establish a clear, practical, and prudent path towards continuous improvement. This multi-year implementation plan will:

- Document specific opportunities for improvement identified by OWASA staff and HDR in Tasks 1 through 9,
- Determine the level of effort to implement and continuously execute the improvement,
- Prioritize each opportunity,
- Strategically sequence those improvements, and
- Define a practical implementation schedule that aligns with OWASA’s priorities and resource constraints.

The implementation plan will include a one-page graphic summarizing each initiative (schedule, status, owner, dependencies with other initiatives, and benefits). For each initiative, a scope and level of effort will also be included. The implementation plan is intended to be a living document that can be used to communicate to all levels of the organization what has been accomplished, where current continuous improvement efforts are currently focused, as well as future initiatives. As new challenges and drivers emerge, the implementation plan can be updated to address those challenges.

Business Practices and Incorporation of New Data

HDR will develop recommendations for new or updated business practices associated with the data collection and management of information related to the distribution system assets and project definition for renewal efforts. These recommendations will have a general focus on:

- Workflows related to the update of data used by the risk prioritization model; to potentially include: break data, CMMS data, GIS data, and/or hydraulic model data.
- Periodic process for updating the prioritization model and identifying key indicators for evaluating system performance and failures, as well as the effectiveness of the risk prioritization model outputs.
- Capital project development protocol for defining project extents that would leverage the risk prioritization model outputs and additional data layers, such as a neighborhood limits, street pavement schedule, or sewer line projects.

Water Distribution System Management Program Development Report

HDR will summarize all analyses and recommendations developed over the course of the preceding tasks in a comprehensive summary report. The report will contain tabular and graphic summaries for all results and recommendations.

HDR will prepare the Water Distribution System Management Program Development Report in draft format for review by OWASA. HDR will meet with OWASA to review and discuss the report. Comments will be addressed by HDR and incorporated into a final report.

As a final activity for this Task a summary workshop on the Water Distribution System Management Program Development Report will be conducted by the HDR for Department Manager(s) and technical staff from OWASA.

Task 10 Deliverables:

- Program Recommendations and Implementation Plan Review (Draft Report) Workshop
- Draft and Final Program Development Report
- Final Water Distribution System Management Program Development Report Presentation Workshop

Task 10 Assumptions:

- Draft Report will be revised one time based on OWASA comments. Comments will be received within 2 week from OWASA.
- OWASA staff will assist in scheduling workshops and participate in workshops.
- Workshops will be two (2) hours in length and held at OWASA’s offices.

Task 11 – Risk Prioritization Model Training

HDR will provide practical hands-on training to OWASA staff for the on-going use of the distribution system risk prioritization model.

Task 11 Deliverables:

- Training Presentation
- Formal Training Workshop

Task 11 Assumptions:

- OWASA will be coordinate the training workshop for up to six (6) staff.
- OWASA provided computers will be available for training workshop.
- Formal training workshop will be four (4) hours in length and held at OWASA's offices.

Task 12 – Project Management

HDR will perform project management functions associated with the Project as identified below:

1. Project management activities including managing scope, task goals, budget, schedule, quality control, and coordination among HDR team members
2. Coordination of activities with OWASA staff.
3. Attendance and preparation for monthly progress meetings with OWASA staff, as needed.
 - It is the intent of HDR to coordinate, as needed, the monthly progress meetings with technical workshops related to work activities under Task 1 through Task 5.
4. Assist OWASA staff with preparation of progress reports.
5. Assist OWASA staff with preparation for and in conducting stakeholder meetings.
 - One (1) stakeholder meeting to be held during Task 1.
 - Two (2) stakeholder meetings to be held during Task 3, one during the risk prioritization framework development and one during the review of the risk prioritization results.
 - One (1) stakeholder meeting towards the end of Task 10.

Task 12 Deliverables:

- Monthly progress reports
- Monthly status meetings/calls
- Four (4) meetings with OWASA stakeholders

Task 12 Assumptions:

- Monthly progress meetings will be one (1) hour in length and follow planned meetings to be held for Task 1 through Task 10.
- Stakeholder workshops will be up to two (2) hours in length and located in the Chapel Hill – Carrboro area.
- OWASA staff will lead the scheduling of stakeholder workshops.
- HDR's role at the stakeholder meetings will be to present project information and status. The content for the stakeholder meetings will be primarily based upon the information presented to OWASA staff.

Task 13 – Ongoing Implementation Support

HDR will provide on-call, ongoing implementation support to OWASA for additional analysis or workshops (with OWASA or OWASA’s stakeholder) beyond those identified in this scope of services.

Agenda Item 9:

Community Engagement Approach for Forestry Management Program

Purpose:

To receive the OWASA Board of Directors' questions, comments, and feedback on a draft approach for engaging with the public on OWASA's forestry management program.

Introduction:

OWASA owns approximately 2,400 acres of forested lands, much of it near Cane Creek Reservoir. The reservoir is a primary water source for OWASA's customers, and much of the forested land acts as the reservoir's protective watershed. Providing responsible and sustainable management of these lands supports OWASA's mission of providing safe and reliable water, wastewater, and reclaimed water services for the Chapel Hill-Carrboro community. Some of the forests OWASA owns are poor quality and are diseased, include storm damaged areas, or are stands of planted pines which require active management. Some of the poorer quality areas also pose a wildfire risk.

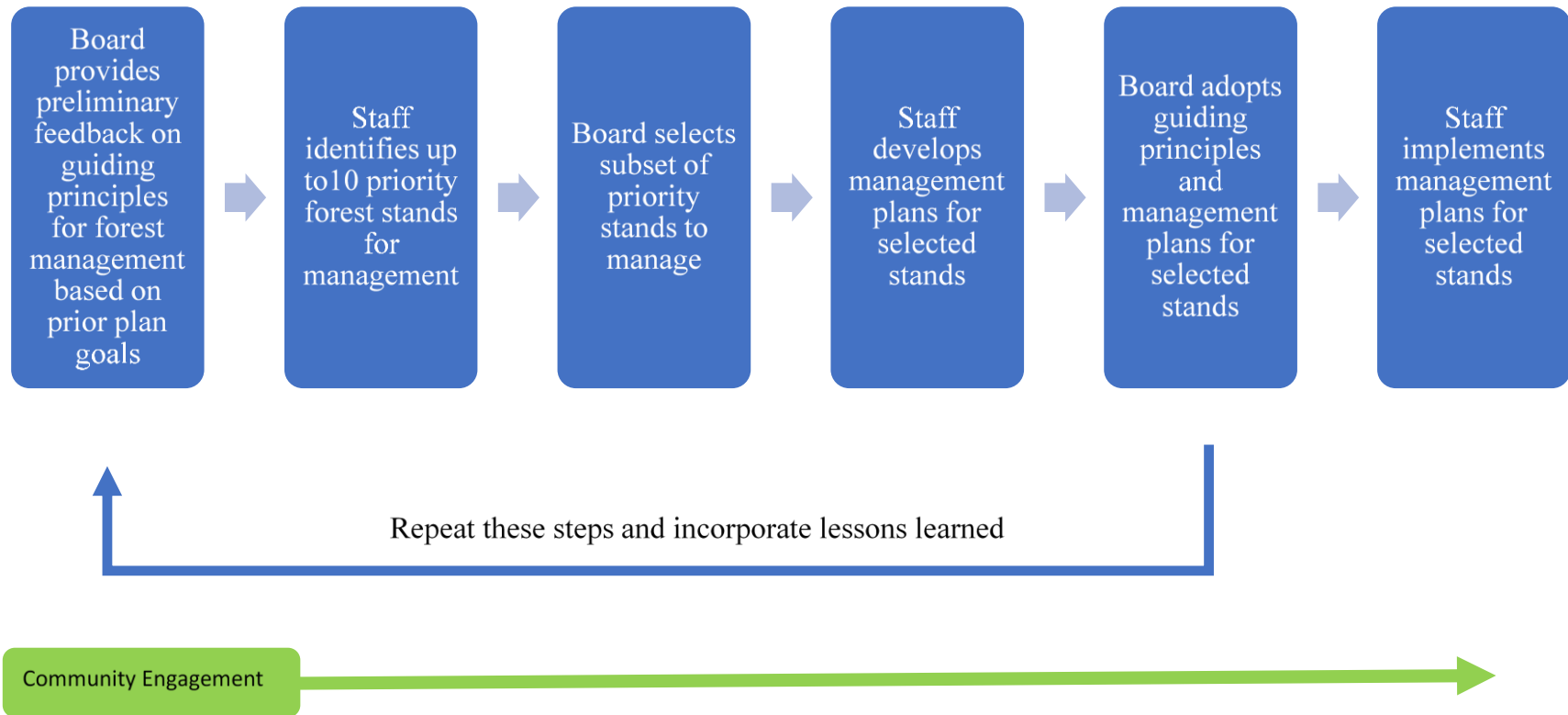
On January 10, 2019, the Board of Directors supported the approach outlined in Figure 1 for developing a forestry management program. This approach is iterative in which the Board selects a few forested stands to manage that would result in immediate environmental benefits. We would develop management plans and implement the plans on these few selected stands. Based on what is learned, we would modify the program and select a few new stands to develop and implement stand management plans on.

The Board of Directors also requested that staff develop an approach to engage the community on OWASA's Forestry Management Program. The information included in this package includes options for community engagement and staff's recommended approach.

Background:

OWASA has already implemented a forest management plan developed by the North Carolina Wildlife Resources Commission on the 491-acre Cane Creek Mitigation Tract to comply with state and federal permit requirements. To address the remaining 1,900 acres of forested land, OWASA hired True North Forest Management Services to develop plans to manage them. These Forest Stewardship Plans were presented to the public in late 2010 and subsequently put on hold following extensive public comments, and OWASA's need to focus on higher priority strategic plan initiatives. OWASA made a promise to the public that it would conduct a public meeting before implementing any forest management on the remaining 1,900 acres. In addition, the local government Boards (Town of Chapel Hill Council, Town of Carrboro Board of

Figure 1: Approach for Developing a Forestry Management Program



Aldermen, and Orange County Board of County Commissioners) requested a presentation on the draft Forest Management Plan before it is finalized.

While the proposed approach illustrated in Figure 1 and discussed by the Board of Directors on January 10, 2019 is very different from the 2010 approach (plans proposed for the entire 1900 acres in 2010, while current approach has us developing plans for a few individual stands at a time), staff believe that OWASA should fulfill the promise made to the local elected Boards and the public to be proactive in sharing information and engaging with the community to understand local knowledge and priorities to inform decision making.

Proposed Community Engagement Approach:

Staff proposes a different approach to engage the community than occurred in 2010. In general, we are proposing a three-phased approach:

- Phase 1: Information sharing with locally elected officials
- Phase 2: Community engagement in Cane Creek and Carrboro-Chapel Hill (two options presented)
- Phase 3: Targeted engagement with residents who live in close proximity to the stands that eventually get selected for priority management.

These activities are outlined in the following three items below and illustrated in Figure 2:

Phase 1 – information sharing with locally elected officials

Share proposed approach to develop a forest management program with local elected Boards and others – OWASA would develop a letter to the local elected Boards that summarizes our proposed approach and offer to make presentations to each elected Board and/or one of their advisory boards (note: each of the local governments has a citizens’ advisory board that addresses environmental stewardship that may be interested in our proposed program). Staff suggests that these letters and any requested meetings occur prior to the Board selecting the first group of stands to manage.

Phase 2 – community engagement

What follows are two different approaches to community engagement.

The first option, called Community Meeting, combines a formal presentation from OWASA with opportunity for discussion in small groups.

The second option, called Public Comment at OWASA Board Meetings and Information Session, combines OWASA’s standard procedure whereby members of the public can comment at regularly scheduled or special Board meetings in Carrboro and Chapel Hill, supplemented by an information meeting in Cane Creek.

Both options are described below.

Option 1: Community Meeting

This approach combines a formal presentation with opportunity for discussion in small groups. The recommended format for the Community Meeting is outlined as follows:

- Following opening remarks, OWASA shares its new incremental approach to forest management and shows images of examples of issues we currently see in our stands (but not identify location of stands).
- Participants are invited to break out into small groups to provide feedback on the incremental process, and share their thoughts and/or concerns based on the types of issues OWASA presented. A facilitator in each small group would document the main themes expressed throughout the small group conversation on poster paper.
- Participants reconvene as a large group:
 - The lead facilitator summarizes the local knowledge shared in the small groups (as documented and collated at the front of the room on posters).
 - The lead facilitator then shares the guiding principles for forest management that are in the process of being developed. The facilitator takes care to note that the principles will be adapted based on learnings from the initial tracts that OWASA manages in its incremental approach.
 - The facilitator invites feedback from the large group about the process and the guiding principles in development.
 - The facilitator states OWASA's commitment to share next steps and formally closes the community meeting.

Time required: Approximately 90 minutes per session

Location: 1 session in Cane Creek, 1 session in Carrboro-Chapel Hill
Note: in Carrboro-Chapel Hill, we would share the local knowledge garnered from the Cane Creek session, and invite questions rather than local knowledge

Pros to this approach: Accessible to local residents, informative, provides participants an opportunity to provide feedback.

Cons to this approach: Possibility for dominant voices to mitigate opportunities for others to speak/share their thoughts in the large group discussion.

Option 2: Public Comment at OWASA Board Meetings supplemented by Information Meeting in Cane Creek

This approach combines the more traditional Public Comment opportunity at scheduled OWASA Board Meetings in Carrboro and Chapel Hill, supplemented by an information meeting in Cane Creek. The recommended format for the Community Meeting is as follows:

- OWASA Board reviews and formalizes its new draft guiding principles, and invites public comment, at a regularly scheduled Board meeting.
- OWASA Board reviews the priority stands it selects for priority management, and invites public comment, at a regularly scheduled Board meeting.

- Following the two steps above, OWASA organizes an Information Meeting in Cane Creek to share OWASA's new incremental process for forest management (guiding principles and identification of priority sites), answer questions, and work with residents near the priority sites to identify access points, buffers, and ways minimize potential inconvenience to nearby residents.

Time required:	3 separate sessions at approximately 60 to 90 minutes each
Location:	Carrboro-Chapel Hill, Cane Creek
Pros to this approach:	More streamlined internal process which will enable faster decision making
Cons to this approach:	Less accessible to Cane Creek residents given the first 2 components are in Carrboro-Chapel Hill rather than in the impacted community, less opportunity for dialogue amongst participants and with OWASA.

Phase 3 – targeted engagement with residents in close proximity to priority stands

Following the community engagement process outlined in phase 2, staff will develop unique engagement plans targeting residents that live near the selected stands. These targeted plans will align with the Administrative Guide for Community Engagement Plans, incorporating core messages to ensure people have the information they need to know, and relevant outreach activities (Attachment 1). This is similar to the process that we use for implementing our Capital Improvements Program projects.

Next Steps:

Staff proposes the following next steps for OWASA's Forestry Management Program:

- Staff continue to work on identifying priority forest stands.
- Staff draft community engagement plan and present it to Board.
- Staff draft letter to local elected governing Boards.
- Staff schedule community engagement meetings.
- OWASA make any requested presentations to governing Boards and/or advisory Boards.
- OWASA host community engagement activities.
- Staff work with forestry consultant to develop draft forest management plans for selected tracts.
- Board of Directors provides comments on draft forest management plans for selected tracts.
- Staff implements targeted engagement with neighboring landowners regarding draft forest management plans.

Staff Recommendation:

For Phase 2: Community Engagement, two options were presented in this document: 1) Community Meeting, and 2) Public Comment at OWASA Board Meetings supplemented by Information Meeting at Cane Creek. Of the two options, staff recommends Option 1: Community Meeting. We believe this approach provides the greatest opportunity for engagement with the community and aligns with Board guidance to date on fostering substantive community engagement. We further note that this option is very different from the public meeting approach that was implemented in 2010. Taking a different approach to community engagement will demonstrably support OWASA's message that it is taking a different approach to the entire forest management process.

Action Needed:

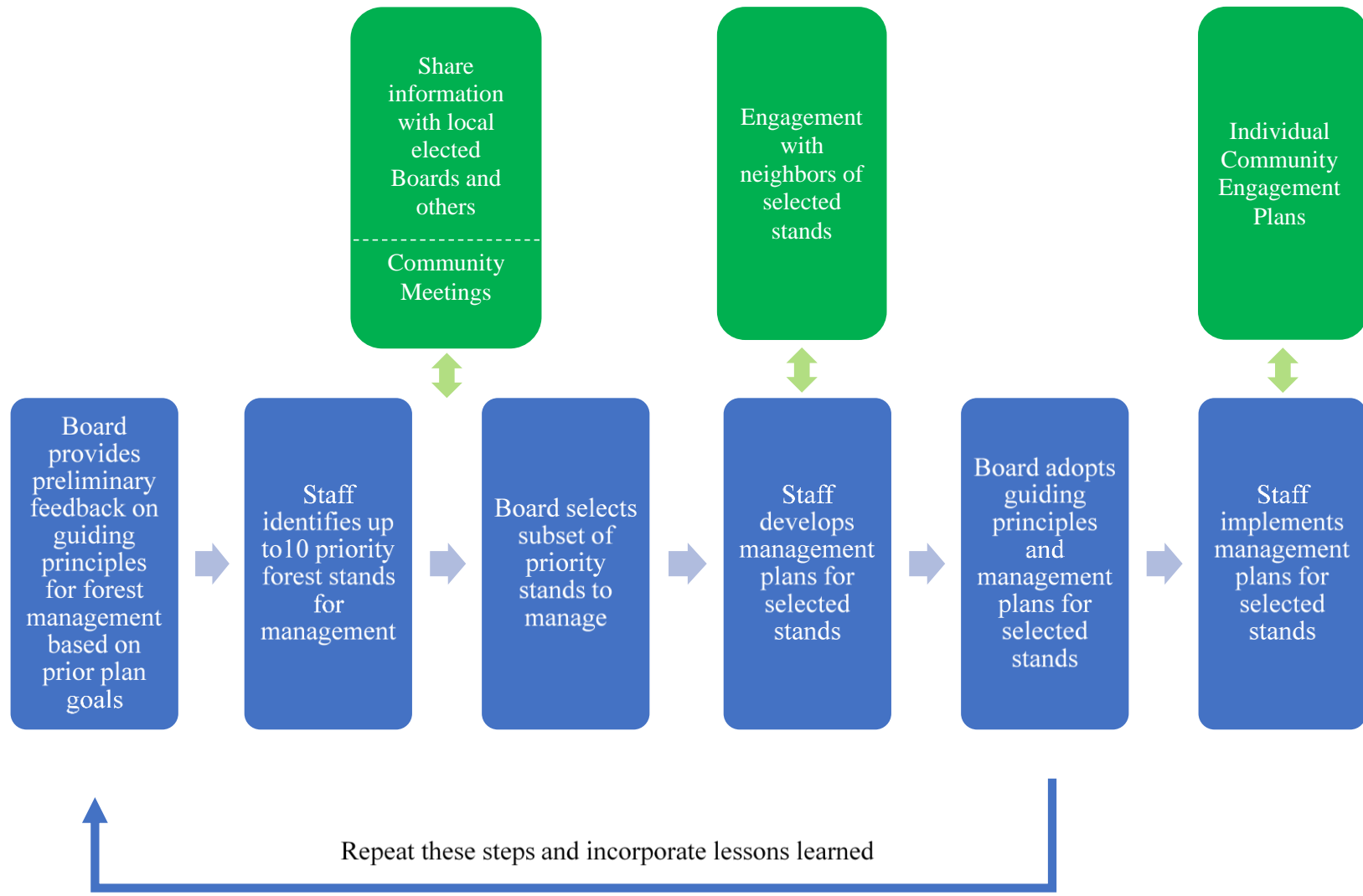
While no formal resolution is needed, if the Board reaches agreement on an overall community engagement approach, staff recommends that the Board consider acting on the matter in the form of a motion, perhaps similar to the following:

“Motion that the Board of Directors authorizes staff to develop a Community Engagement Plan around Option ___ for Phase 2 of the Community Engagement Approach and begin to prepare for the community meetings outlined in that option”.

Information:

Administrative Guide for Community Engagement Plans

Figure 2: Draft Approach for Incorporating Community Engagement in OWASA’s Forestry Management Program



Community may also provide comments at any Board meeting where forestry management is being discussed.

ORANGE WATER AND SEWER AUTHORITY

ADMINISTRATIVE GUIDE

COMMUNITY ENGAGEMENT PLANS

PURPOSE

This Administrative Guide sets forth the process for preparing, implementing and successfully executing Community Engagement Plans (CEPs) for all capital improvement projects and key initiatives.

ADMINISTRATIVE PROCEDURE

1. CEPs will be prepared for all capital improvement projects and other key initiatives.
2. All CEPs will be prepared following the Guide for Preparing a Community Engagement Plan (Attachment 1). It is understood that not all elements of the Guide will be applicable to all capital improvement projects and key initiatives based on their scope and level of community importance.
3. Staff will seek review and approval by the Board of Directors of CEPs for projects or key initiatives that:
 - are expected to be of great interest to a large number of our customers and stakeholders due to one or more of the following:
 - significant benefits to customers and/or stakeholders;
 - significant environmental and/or sustainability impacts (positive or negative);
 - significant changes in scope, reliability, quality, etc. of our services;
 - the need for action/behavioral change by a significant number of customers and/or stakeholders due to changes in conditions, needs, etc.;
 - significant total project cost; or
 - will require extensive involvement, collaboration and/or support by our customers, partners or other stakeholders; or
 - include potential alternatives for which OWASA would seek extensive public input prior to Board action.
4. The Director of Engineering and Planning or his/her designee will be responsible for preparing, implementing and successfully executing CEPs for capital improvement projects.

Community Engagement Plans

April 12, 2016

Page 2

5. The Executive Director or his/her designee will be responsible for preparing, implementing and successfully executing CEPs for all applicable key initiatives. The Executive Director or his/her designee will determine which key initiatives require CEPs.
6. Checklists will be used to ensure all applicable requirements of each CEP have been met (sample checklist - Attachment 2). The responsible person may choose to use an alternate checklist if desired.
7. For the purposes of records retention, all CEP records will be classified under Standard 1, Administrative and Management Records, Item #40 "Projects Files" of OWASA Records Retention and Destruction Schedule adopted by the Board of Directors on August 12, 2004.

This Administrative Guide is effective April 12, 2016.



Ed Kerwin
Executive Director

Attachment 1 – Guide for Preparing a Community Engagement Plan

Attachment 2 – Checklist for Preparing, Implementing and Executing Community Engagement Plans

GUIDE FOR PREPARING A COMMUNITY ENGAGEMENT PLAN

1. **Purpose** of the proposed policy/plan/initiative
2. **Outcomes/objectives**
 - a. **Define key messages**, information to be communicated, level of engagement desired, etc.
 - b. **Inform the relevant stakeholder group(s)** about what is proposed, how they would be affected, costs and benefits, what would change, etc.
 - c. **Seek stakeholders' feedback and questions** so that we can better understand their perspectives and expectations.
 - d. **Engage in dialogue** by receiving stakeholders' comments, responding to questions and providing additional information as needed.
 - e. **Show that we listened to stakeholders' comments.**
 - f. **Encourage action by customers** when applicable to the proposed policy, plan, initiative, etc.
3. **Identify the stakeholder groups** we want to inform and engage

The engagement may include all accountholders, all system users including people who are not OWASA accountholders, or specific categories of customers/citizens.
4. **Set forth our core messages**

These messages should concisely explain the key benefits or needs we want to meet.
5. **Identify the key information stakeholders should have** throughout the various stages of the engagement process
 - a. **What is proposed** and why, including alternatives under consideration
 - b. **Who would be affected** and how
 - c. **Costs and benefits/advantages** and disadvantages
 - d. **Return on community investment** if applicable
 - e. **Timetable** for public comment opportunities, decisions and potential implementation
 - f. **How to get more information**
 - g. **Board actions**
 - h. **Other** as needed
6. **Identify practical and cost-effective communication/engagement methods** that are appropriate considering the level of impact and importance of the policy issue, plan, initiative, etc.
 - a. The **information process** will include an appropriate mix of methods, which may include some or all of the following: electronic or paper mailing(s) to stakeholders,

- news releases, outreach presentations to interested community groups including elected officials, paid advertising, social media, website information, announcements/presentations in televised Board meetings and community meeting(s).
- b. The ***engagement/dialogue process*** will include opportunities to comment/ask questions in meeting(s) of the Board of Directors, to participate in less formal meetings for open discussion, outreach presentations and informal surveys. Formal surveys designed to achieve a representative sample of stakeholders' views may be done for high priority initiatives. It is important that OWASA take the message to stakeholders rather than expecting them to come to OWASA.
 - c. ***The level of resources and activity*** for a given engagement plan will depend on the expected level of community interest and the costs, benefits and impacts of the proposed initiative. For example, a proposal that would affect rates would normally involve a high level of information/engagement.
7. ***Provide a timetable*** for the information/engagement process
- a. The timetable will ***normally allow at least two to four weeks*** for the information process before the engagement/feedback opportunities.
 - b. Some timetables ***may include multiple phases***.
8. ***Plan to measure effectiveness*** of the engagement
- a. Will include seeking ***stakeholders' feedback on quality and timeliness of information and engagement opportunities***.
 - b. Will normally include ***measurable objectives such as the number of outreach presentations***, level of stakeholder participation in community meetings, etc.
 - c. ***Formal surveys*** may be done to evaluate high priority engagements.
9. ***Board engagement and staff communications:***
- a. What specific ways will the Board be involved in the community engagement activities?
 - b. With what frequency and by what method(s) will staff keep the Board updated about the initiative?
 - c. With what frequency and by what method(s) will the Board provide staff feedback regarding the effectiveness of the community engagement work for the initiative?

**REVIEW CHECKLIST FOR COMMUNITY ENGAGEMENT PLAN
PREPARATION AND EXECUTION**

Name of Project/Initiative:		
Reviewed by:		
	Yes	No
Community Engagement Plan (CEP) has been prepared in accordance with applicable parts of the <i>Guide for Preparing a Community Engagement Plan</i>	<input type="checkbox"/>	<input type="checkbox"/>
This project or initiative involves:		
- significant benefits to customers and/or stakeholders	<input type="checkbox"/>	<input type="checkbox"/>
- significant environmental and/or sustainability impacts (positive or negative)	<input type="checkbox"/>	<input type="checkbox"/>
- significant changes in scope, reliability, quality, etc. of our services	<input type="checkbox"/>	<input type="checkbox"/>
- the need for action/behavioral change by a significant number of customers and/or stakeholders due to changes in conditions, needs, etc.	<input type="checkbox"/>	<input type="checkbox"/>
- significant total project cost	<input type="checkbox"/>	<input type="checkbox"/>
- extensive involvement, collaboration and/or support by our customers, partners or other stakeholders	<input type="checkbox"/>	<input type="checkbox"/>
- potential alternatives for which OWASA would seek extensive public input prior to Board action	<input type="checkbox"/>	<input type="checkbox"/>
Board approval has been obtained if any of the above are true.	<input type="checkbox"/>	<input type="checkbox"/>
Community Engagement for this project or initiative was executed in substantial compliance with the CEP.	<input type="checkbox"/>	<input type="checkbox"/>
Reasons for any substantial variances from CEP requirements:		
Lessons learned for future CEP development:		

Agenda Item 10:

Evaluation of Accelerating OWASA’s Valve Exercise Program

Purpose:

Present in-house options to accelerate an initial push to enhance OWASA’s valve exercise program and support discussion of how those options could transition into a sustainable long-term program.

Summary:

Enhancements to OWASA’s Valve Exercise Program (VEP) approved by the Board on December 13, 2018 allow us to exercise all critical valves (on water lines 12” or greater), as well as those for which we do not have a record-of-exercise, by July 2020. Staff estimates that for an additional \$73,000, we can accelerate the completion of this “initial push” by six months (completion by December 2019), while maintaining our options to establish a sustainable long-term program.

Staff recommends accelerating the initial push, which will require renting one additional valve exercise machine and filling two unfunded Utility Mechanic positions. If this level of effort is determined efficient and effective, it would transition into a three-year cycle for a sustained VEP, putting the goal of our VEP in-line with the best-practice goals of neighboring utilities.

Background:

OWASA’s drinking water distribution system consists of approximately 380 miles of pipe and about 12,900 valves. These valves are critical for efficient isolation of segments of the pipe network during planned or unplanned maintenance and repair. In isolating sections of water main, we mitigate customer and environmental impact. Valves are mechanical devices, and they require routine operation (“exercise”) to ensure they remain in good working order. Exercising involves opening and closing the valve several times to ensure it functions properly.

OWASA began a strategic valve exercise program in 2013. The original program goal was to exercise all of the system valves within a five-year period (at a rate of roughly 2,600 valves per year). This program was supported by two staff members and one valve exercise machine. In the past five years, our team has exercised about 7,900 valves, about 61% of the valves in the system (averaging about 1,600 valves per year). A number of factors have contributed to us falling short of our goal, including difficulty in locating valves, accessibility, and additional responsibilities of the staff assigned to the program.

There are approximately 5,000 valves for which we do not have a record-of-exercise since 2013. Six hundred (600) of these unexercised valves are on water lines that are 12 inches or larger and, for purposes of water transmission and potential customer impact, are considered “critical.”

Type	Unexercised since 2013	Exercised since 2013	Total Quantity
Critical (≥12-inch)	600	600	1,200
Other	4,400	7,300	11,700

Shaded cells indicate focus of initial push

The priority for an accelerated valve exercise program would be to exercise all 1,200 critical valves and all 4,400 of the “under 12-inch” unexercised valves. This memo refers to this effort as the “initial push.”

The initial push is expected to transition to a long-term sustained VEP, applying the lessons learned from the initial push into an effective and efficient program. The following analysis is not a comprehensive plan for a sustained VEP; however, it considers how the resources of the initial push would transition into a sustained program. Staff expects to develop a long-term plan with the lessons-learned from the initial push.

Recent approved enhancements to Valve Exercise Program (VEP):

The water main break in front of the Jones Ferry Road Water Treatment Plant on November 5, 2018 that required a system-wide boil water advisory highlighted the important role of operable valves, especially critical valves on large transmission lines. As a result, the Board approved a plan to enhance OWASA’s VEP by establishing a dedicated crew of five staff members (~\$250,000 additional annual expense) and purchasing an additional valve exercise machine (~\$130,000 additional upfront expense). The new machine is expected to be in-service by June 2019, at which point the full crew will set a pace for the initial push and sustained VEP. (In the meantime, a team of 2 staff and one machine have been working through the critical “initial push” valves.) Under this plan, we expected to complete the initial push by September 2020.

Staff analyzed the impact of getting a head-start on the initial push by renting a valve exercise machine until our new machine arrives. This would allow a full crew of five to double current efforts. This will cost OWASA an additional \$30,000 in rental fees for the valve exercise machine and will accelerate completing the initial push by three months (July 2020). Given the relatively modest cost of renting a valve machine for three months and the impact on the schedule, we are moving forward with renting a machine and shifting staff to the effort.

Fully staffed and equipped, this crew can exercise approximately 340 valves per month. The plan includes exercising all 1,200 critical valves each year and the remaining 11,700 valves once every four years. As currently planned, this puts us on a track to have four-year cycle for a sustained VEP. This assumes that the VEP crew is exclusively dedicated to valve exercise and no other organizational needs.

	Initial Push				Sustained VEP			
	Staff	Machines	Total Cost	Completed	Staff	Machines	Est. Annual Cost	Completed
Current Plan	5	2	\$602,000	July 2020	5	2	\$404,000	All valves every 4 years (critical valves every year)

Acceleration Option:

With additional staff and equipment, we believe we can accelerate completing the initial push by six months (end of calendar year 2019). With a crew of seven staff members and three machines in service, we estimate that we could exercise about 510 valves per month. This would cost an additional \$101,000 in machine rental fees and \$13,000 per month in personnel expenses. Ultimately, it would save on staffing costs for the initial push by \$28,000 in reducing the schedule for the initial push by six months. (Net cost = \$73,000 more for six months faster completion of initial push)

If we continue with seven staff members, this crew could achieve a 3-year cycle of exercising all non-critical valves and annual exercise of all critical valves. This could be achieved without purchasing an additional machine, assuming that second shift is authorized for two staff members to use of our two machines at night.

	Initial Push				Sustained VEP			
	Staff	Machines	Total Cost	Completed	Staff	Machines	Estimated Annual Cost	Completed
Accelerated Plan	7	3	\$675,000	December 2019	7	2	\$560,000	All valves every 3 years (critical valves every year)

Cost and Caution of Further Accelerating the VEP:

A more rapid approach raises concerns regarding water quality and service. Staff does not recommend pursuing a faster initial push than the accelerated plan. In addition to being costly, operating multiple valves in the system simultaneously could have consequences on water quality (i.e. sediment), pressure fluctuations, water hammer (which could lead to water main breaks), service disruptions, etc.

Recommendation and Conclusion:

With the resources already committed by the OWASA Board of Directors and renting an additional valve exercise machine for three to four months, we are on track to work through the initial push by July 2020. If continued, this pace sets us up for a four-year cycle sustained valve exercise program cycle.

OWASA staff supports an Accelerated Plan. Pursuing this option would require that we fill two of the unfunded Utility Mechanic positions and rent an additional valve exercise machine for the initial push.

Staff supports this because the sooner that we can assess the condition and accessibility of the 5,000 unexercised valves in our system, as well as all of our critical valves, the sooner we can make decisions about how to move forward in the Fiscal Year 2021 budget and beyond to advance system resiliency in a cost-effective manner.

The Accelerated Plan positions our effort to align with best-practice goals of neighboring utilities to exercise all critical valves every year and other valves every three years. Taking a more accelerated approach to the initial push will allow us to assess the sustainability of meeting this goal.

There are costs related to any VEP option that have not been analyzed, including:

- Cost to repair/replace broken or inoperable valves
- Valve population growth
- Cost for traffic control
- Cost of related water quality issues
- Delays and costs associated with stakeholder coordination efforts
- Cost escalation/inflation

The immediate focus is on the initial push. This memo summarizes the resources required and goals of a sustained VEP because it helps to provide context to the pace and commitment of the initial push. It should not be considered a final plan for a sustained VEP. There will likely be many lessons learned in this initial push that will inform the structure and resources required for a sustained VEP. For example, the definition of critical valves will likely evolve over time potentially impacting the program's overall productivity by increasing or decreasing the recurring annual exercise needs.

With the experience of the initial push, we can refine our resource needs and pace. If experience tells us that we can reduce the frequency with which we exercise valves, we will be able to fairly quickly adjust Distribution and Collection staff through attrition.

Furthermore, we can consider if and how a private company can assist to achieve goals and/or reduce costs. Identifying and procuring private services will take several months, therefore, the impact on the initial push would be minimal. Long-term, there is value in considering how a private third party could assist in making the program more efficient and effective. The cost and turnaround time of contracted services has not yet been investigated.

Staff looks forward to the discussion with the Board on February 14, 2019. Should you have any questions or comments before then, please feel free to contact me.

Agenda Item 11:

Review Board Work Schedule

Purpose:

- a) Request(s) by Board Committees, Board Members and Staff
- b) February 28, 2019 Work Session
- c) March 14, 2019 Work Session
- d) Review and update the 12 Month Board Meeting Schedule
- e) Review Pending Key Staff Action Items

Information:

- Draft agenda for the February 28, 2019 meeting
- Draft agenda for the March 14, 2019 meeting
- 12 Month Board Meeting Schedule
- Pending Key Staff Action Items from Board Meetings

February 14, 2019

Agenda
Work Session of the OWASA Board of Directors
Thursday, February 28, 2019, 6:00 P.M.
OWASA Board Room

The Board of Directors appreciates and invites the public to attend and observe its meetings. For the Board's Work Session, public comments are invited on only items appearing on this 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).

For items on the agenda, public speakers are encouraged to organize their remarks for delivery within a four-minute time frame allowed each speaker, unless otherwise determined by the Board of Directors.

The Board may take action on any item on the agenda.

Announcements

- a. Announcements by the Chair
 - Any Board Member who knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight is asked to disclose the same at this time.
- b. Announcements by Board Members
 - OWASA's Annual Update to the Orange County Board of County Commissioners on Tuesday, February 19, 2019 (Ray DuBose)
 - Update on Chatham-Orange Joint Planning Task Force Meeting on Thursday, February 21, 2019 (John Young)
 - Community Engagement Committee Meeting on Tuesday, March 5, 2019 at 9:00 A.M. in the OWASA Boardroom to discuss Agua Vista Web Portal (Ruchir Vora)
 - Chapel Hill Town Council OWASA Committee and Chapel Hill Appointees to the OWASA Board of Directors will meet on Thursday, March 14, 2019 at 8:30 a.m. in OWASA's Boardroom (Ruchir Vora)
- c. Announcements by Staff
- d. Additional Comments, Suggestions, and Information Items by Board Members (Yinka Ayankoya)

Consent Agenda

Information and Reports

1. 12 Month Board Meeting Schedule (Yinka Ayankoya/Ed Kerwin)

Regular Agenda

Discussion and Action

2. Award the Wastewater Treatment Plant Solids Thickening Improvements and Headworks Rehabilitation Construction Contract (Simon Lobdell)
3. Resolution Honoring the Service of Jeff Danner to the Chapel Hill-Carrboro-Orange County Community as a Member of the Orange Water and Sewer Authority's Board of Directors (Yinka Ayankoya)

Discussion

4. Draft Communications and Community Engagement Plan (Linda Low)

Summary of Work Session Items

5. Executive Director will summarize the key staff action items from the Work Session

Closed Session

6. The Board of Directors will convene in a Closed Session for the Purpose of Discussing a Personnel Matter (Robert Morgan)

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Agenda
Work Session of the OWASA Board of Directors
Thursday, March 14, 2019, 6:00 P.M.
OWASA Community Room

The Board of Directors appreciates and invites the public to attend and observe its meetings. For the Board's Work Session, public comments are invited on only items appearing on this 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).

For items on the agenda, public speakers are encouraged to organize their remarks for delivery within a four-minute time frame allowed each speaker, unless otherwise determined by the Board of Directors.

The Board may take action on any item on the agenda.

Announcements

- a. Announcements by the Chair
 - Any Board Member who knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight is asked to disclose the same at this time.
- b. Announcements by Board Members
 - Update on the March 5, 2019 Community Engagement Committee Meeting (Ruchir Vora)
 - Update on the March 14, 2019 Meeting Between the Chapel Hill Town Council OWASA Committee and Chapel Hill Appointees to the OWASA Board (Ruchir Vora)
- c. Announcements by Staff
- d. Additional Comments, Suggestions, and Information Items by Board Members (Yinka Ayankoya)

Consent Agenda

Action

1. Sole Source Procurement of Solids Dewatering Equipment for the Jones Ferry Road Water Treatment Plant (Allison Reinert)
2. (Tentative) Authorize Applying for State Revolving Fund Loans (Stephen Winters)

Regular Agenda

Discussion

3. Diversity and Inclusion Update (Stephanie Glasgow)
4. Review Status of Agua Vista Manual Read Option (Stephen Winters)
5. Long-Range Water Supply Plan Final Demands and Yield (Ruth Rouse)
6. Review Preliminary Fiscal Year 2020 Budget Information (Stephen Winters)
7. Review Board Work Schedule (Yinka Ayankoya/Ed Kerwin)
 - a. Request(s) by Board Committees, Board Members and Staff
 - b. March 28, 2019 Board Meeting
 - c. April 11, 2019 Work Session
 - d. 12 Month Board Meeting Schedule

- e. Pending Key Staff Action Items

Summary of Work Session Items

- 8. Executive Director will summarize the key staff action items from the Work Session

Closed Session

- 9. The Board of Directors will convene in a Closed Session for the Purpose of Discussing a Personnel Matter (Robert Morgan)

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OWASA Board of Directors – 12 Month Board Meeting Schedule (February 8, 2019)

Month	Board Meetings		Committee & Other Meetings
	Work Session	Business Meeting	
February 2019	<p>Community Engagement Approach for Forestry Management</p> <p>Review Scope of Water Distribution System Replacement Prioritization Model</p> <p>Award the University Lake Raw Water Pump Station Improvements Construction Contract</p> <p>Sole Source Procurement of Grit Removal Equipment for the Mason Farm Wastewater Treatment Plant</p> <p>Resolution Accepting NC Division of Water Infrastructure Loan Offer and Acceptance Documents</p> <p>Options for Accelerating Valve Maintenance</p> <p>CS – Prepare for General Counsel Interim Review (C)</p> <p style="text-align: right;">2/14/2019</p>	<p>This meeting will be a Work Session at 6 PM (at OWASA)</p> <p>Discuss Draft Communications and Community Engagement Plan</p> <p>Award the WWTP Solids Thickening Improvements and Headworks Rehabilitation Construction Contract</p> <p>CS – General Counsel Interim Review (C)</p> <p style="text-align: right;">2/28/2019</p>	<p><i>HR Committee Meeting to discuss retiree health and 457 deferred compensation (2/5/2019)</i></p> <p><i>OWASA's Annual Update to the Orange County BOCC (2/19/2019)</i></p> <p><i>Chatham-Orange Joint Planning Task Force Meeting (2/21/2019)</i></p> <p><i>NRTS Committee Meeting to discuss forest management (TBD)</i></p>
March 2019	<p>LRWSP Final Demands and Yield</p> <p>FY 20 Draft Budget & Rates (C)</p> <p>Review AMI Manual Read</p> <p>(Tentative) Authorize Applying for SRF Loans</p> <p>Diversity and Inclusion Update</p> <p>Sole Source Procurement of Solids Dewatering Equipment for the Jones Ferry Road Water Treatment Plant</p> <p>CS – Prepare for ED Interim Review (C)</p> <p style="text-align: right;">3/14/2019</p>	<p>Annual Update of the Energy Management Plan (C)</p> <p>Award the Manning and Country Club Water Main Replacement Construction Contract</p> <p>FY 20 Draft Budget & Rates and Proposed Staff Rate Adjustment Recommendation (C)</p> <p>Set date for Public Hearings – FY 20 Budget & Rates (C)</p> <p>CS – ED Interim Review (C)</p> <p style="text-align: right;">3/28/2019</p>	<p><i>Community Engagement Committee Meeting to discuss Agua Vista Web Portal (3/5/2019)</i></p> <p><i>Chapel Hill OWASA Board Members meet with TOCH OWASA Committee (3/14/2019)</i></p> <p><i>HR Committee Meeting to complete discussion of 457 deferred compensation (TBD)</i></p>
April 2019	<p>Review Employee Health and Dental Insurance Renewals (C)</p> <p>FY 20 Draft Budget and Rate Adjustment Information (C)</p> <p>(Tentative) LRWSP – Discuss Water Supply and Demand Management Alternatives</p> <p>Award the Mason Farm Wastewater Treatment Plant Secondary Clarifier Rehabilitation Construction Contract</p> <p>(Tentative) Update on Potential Western Intake Partnership to access Jordan Lake</p> <p>Appointment of the Nominating Committee (C)</p> <p style="text-align: right;">4/11/2019</p>	<p>Q3 Financial Report (C)</p> <p>FY 20 Budget and Rates Discussion and Authorize Staff to Publish Proposed Rates</p> <p>Demonstration of Agua Vista Web Portal</p> <p style="text-align: right;">4/25/2019</p>	<p><i>OC Appointees to the OWASA Board meet with Members of Orange County BOCC (4/25/2019)</i></p>
May 2019	<p>Approve Employee Health and Dental Insurance Renewals (C)</p> <p>Discuss Employee Merit Pay for FY 2020 (C)</p> <p style="text-align: right;">5/9/2019</p>	<p>Public Hearings – FY 20 Budget and Rates (Tentative) Approve New Banking Services Provider (C)</p> <p>Approve Employee Health and Dental Insurance Renewals (if needed)</p> <p style="text-align: right;">5/23/2019</p>	
June 2019	<p>Approve FY 20 Budget and Rates, including merit pay decision (C)</p> <p>(Tentative) LRWSP – Final Water Supply and Demand Management Alternatives</p> <p>Award the Dobbins Drive Water and Sewer Replacement Construction Contract</p> <p>Election of Officers (C)</p> <p style="text-align: right;">6/13/2019</p>	<p>Award Kensington Drive Water Main Replacement Construction Contract</p> <p>Diversity and Inclusion Update</p> <p style="text-align: right;">6/27/2019</p>	

OWASA Board of Directors – 12 Month Board Meeting Schedule (February 8, 2019)

Month	Board Meetings		Committee & Other Meetings
	Work Session	Business Meeting	
July 2019	TBD 7/11/2019	TBD 7/25/2019	
August 2019	TBD 8/8/2019	Preliminary 12 Month Financial Report (C) CIP Semiannual Report (C) CS – Prepare for General Counsel Review (C) 8/22/2019	
September 2019	EEO/Affirmative Action Report (C) Annual Report on Disposal of Surplus Personal Property (C) AMI Low-Flow Leak Alerts CS – General Counsel Review (C) 9/12/2019	Annual Report and Financial Audit (C) Approve General Counsel Engagement (C) CS – Prepare for ED Review (C) 9/26/2019	
October 2019	Diversity and Inclusion Update (C) CS – ED Review (C) 10/10/2019	Q1 Financial Report (C) Strategic Trends Report and Strategic Plan Update (C) 10/24/2019	
November 2019	TBD 11/14/2019	<i>Holiday – no meeting</i>	
December 2019	TBD 12/12/2019	<i>Holiday – no meeting</i>	
January 2020	Appoint Audit Firm (C) Employee Health and Dental Insurance Update for FY21 (C) 1/9/2020	Annual Lakes Recreation Report (C) CIP Semiannual Report (C) Q2 Financial Report (C) FY 21 Budget Calendar and Assumptions (C) 1/23/2020	

Note: Additional Board Meetings will include matters related to improving reliability and resiliency on OWASA’s services.

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

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

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

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

- Development of a plan and policy framework for OWASA lands is considered a longer-term priority. The NRTS Committee discussed this issue in September 2017 and determined it was lower priority than Forestry Management.
- Water Conservation Plan will be prepared concurrent with update of the Long-Range Water Supply Plan.
- Update of Strategic Plan. On November 15, 2018, the Board and staff agreed to defer update of the Strategic Plan to a date to be determined.

OWASA Board of Directors – 12 Month Board Meeting Schedule (February 8, 2019)

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

Abbreviations Used in Draft Schedule:

Ⓞ	Recurring agenda item (generally these are “required” items)	JLP	Jordan Lake Partnership
AMI	Advanced Metering Infrastructure	KPI	Key Performance Indicator
BOCC	Board of County Commissioners	LRWSP	Long-Range Water Supply Plan
CBOA	Carrboro Board of Aldermen	MOA	Memorandum of Agreement
CE	Community Engagement	MST	Mountains-to-Sea Trail
CEP	Community Engagement Plan	MFMM	Multi-Family Master Meter
CHTC	Chapel Hill Town Council	NCDOT	North Carolina Department of Transportation
CIP	Capital Improvements Program	NRTS	Natural Resources and Technical Services
COLA	Cost of Labor Adjustment	OC	Orange County
CS	Closed Session of the Board	Q	Quarter
CY	Calendar Year	RFP	Request for Proposals
D&I	Diversity and Inclusion	SRF	State Revolving Fund
ED	Executive Director	SOW	Scope of Work
EEO	Equal Employment Opportunity	TBD	To Be Determined
FY	Fiscal Year	WTP	Water Treatment Plant
HR	Human Resources	WWTP	Wastewater Treatment Plant

Pending Key Staff Action Items from Board Meetings

No.	Date	Action Item	Target Board Meeting Date	Person(s) Responsible	Status
1.	1-24-2019	Address suggestions and requests on our Affordability Outreach report and program.	NA	Tiger	Complete - final plan posted on: https://www.owasa.org/service-affordability
2.	1-24-2019	Provide Board update on matters related to our work to effectively manage taste and odor in our drinking water.	NA	Loflin Taylor	
3.	1-24-2019	Address comments and suggestions on Annual Lakes Recreation Report to include opportunities to promote birdwatching.	NA	Riley Loflin Low	
4.	1-10-2019	Provide Board option(s) for consideration to greatly accelerate valve exercising and maintenance program for water distribution system.	2-14-2019	Taylor Horton	Complete
5.	1-10-2019	Provide Board progress reports on action items addressing opportunities for improvement identified in Hazen's report on November 5 th water main break.	TBD	Taylor Darr Gangadharan Horton	Progress reports may be combined with action items for risk and reliability work at treatment plants (see item #13).
6.	1-10-2019	Staff will proactively look for and consider opportunities for savings in the FY 2019 O&M budget.	NA	Winters Kerwin Directors	
7.	1-10-2019	Provide the Board by email detail on additional FY 2019 budget expenses (D&I, communications & engagement, other).	NA	Winters Glasgow Low	Complete - information emailed on 1-23-2019
8.	1-10-2019	Yinka and Ed K. will discuss the Board's Jan. 9 th session with VISIONS regarding D&I action plans and future updates.	TBD	Ayankoya Kerwin	Complete – Yinka updated Ed K. on 1-30-2019.
9.	12-13-2018	Update Strategic Trends Report to reflect Board Member suggestions.	10-24-2019	Rouse	
10.	11-15-2018	Incorporate the Board's feedback on the projected demands and yield for the Long-Range Water Supply Plan and provide the additional information that was requested.	3-14-2019	Rouse	Partially complete, Jordan Lake briefing paper emailed on 1-28-2019.

Pending Key Staff Action Items from Board Meetings

No.	Date	Action Item	Target Board Meeting Date	Person(s) Responsible	Status
11.	11-8-2018	Provide the Board via email the Scope of Work for the Distribution System Prioritization Model.	2-14-2019	Gangadharan	Complete - emailed 2-1-2019.
12.	11-8-2018	Schedule full Board discussion on PFAS sampling plan.	TBD	Kerwin	Will first follow up with Ruchir regarding this matter.
13.	10-25-2018	Incorporate Board feedback on WTP & WWTP Reliability and Risk Assessment Action Plan and provide the Board a yearly progress report via email in October 2019.	NA	Darr Taylor Loflin Dodson	
14.	7-12-2018	Address the Board's feedback on the action plan on communications during OWASA-related emergencies.	NA	Low	Discussion to be continued following review of 2019 Communications Plan.

Agenda Item 12:

Executive Director Compensation

Purpose:

Possible Board action to adjust the Executive Director's salary.

Background:

On December 13, 2018, the OWASA Board approved the Key Focus Areas for OWASA's Executive Director for the period of October 2018 to September 2019.

The OWASA Board held an annual performance review meeting with the Executive Director on November 8, 2018 to discuss his Accomplishment Report on the Key Focus Areas and other matters related to his performance.

The OWASA Board held an interim performance review meeting with the Executive Director on March 22, 2018.

Information:

- Draft Resolution submitted by Robert Morgan, Chair of Human Resources Committee

Resolution Adjusting the Executive Director's Compensation

Whereas, the Board of Directors has reviewed the Executive Director's Accomplishment Report and overall performance for the period October 2017 to September 2018; and

Whereas, the Board of Directors has met with the Executive Director to discuss his annual performance review: and

Whereas, the Board of Directors has determined to adjust the Executive Director's compensation as provided herein;

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

1. That the Executive Director's annual base salary is hereby increased by 5.5 percent.
2. This increase shall be applied retroactively, effective October 29, 2018.

Adopted this 14th day of February 2019.

Yinka Ayankoya, Chair

ATTEST:

Raymond E. DuBose, Secretary