RIVANNA
WATER & SEWER AUTHORITY

Board of Directors Meeting

August 27, 2019

2:15pm

RIVANNA WATER & SEWER AUTHORITY
695 Moores Creek Lane | Charlottesville, Virginia 22902-9016
434.977.2970
434.293.8858
www.rivanna.org

BOARD OF DIRECTORS

Regular Meeting of the Board of Directors of the Rivanna Water & Sewer Authority

DATE: **August 27, 2019**

LOCATION: **Conference Room, Administration Building**
695 Moores Creek Lane, Charlottesville, VA

TIME: **2:15 p.m.**

AGENDA

1. ***CALL TO ORDER***

2. ***MINUTES OF PREVIOUS BOARD MEETINGS***
   a. *Minutes of Regular Board Meeting on May 28, 2019*

   b. *Minutes of Regular Board Meeting on July 23, 2019*

3. ***RECOGNITION***

4. ***EXECUTIVE DIRECTOR'S REPORT***

5. ***ITEMS FROM THE PUBLIC***

6. ***RESPONSES TO PUBLIC COMMENTS***

7. ***CONSENT AGENDA***
   a. *Staff Report on Finance*

   b. *Staff Report on Ongoing Projects*

   c. *Staff Report on Operations*

   d. *Professional Services Authorization and CIP Budget Amendment: Moores Creek Wastewater Facilities Master Plan; Hazen And Sawyer Engineers*

   e. *Professional Services Authorization – Asset Management Plan, Phase 2; GHD, Inc.*

8. ***OTHER BUSINESS***
   a. *Presentation and Request for Approval: University of Virginia Rowing Team and Rivanna Rowing Club Waiver Extension – Kevin Sauer, Head Coach, UVA Women's Rowing Team*

b. *Presentation: Major Construction Projects and Value Engineering Update*
Scott Schiller, Engineering Manager

9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

10. CLOSED MEETING

11. ADJOURNMENT

If you wish to address the Rivanna Board of Directors during the time allocated for public comment, please raise your hand or stand when the Chairman asks for public comments.

Members of the public requesting to speak will be recognized during the specific time designated on the meeting agenda for "Items From The Public." Each person will be allowed to speak for up to three minutes. When two or more individuals are present from the same group, it is recommended that the group designate a spokesperson to present its comments to the Board and the designated speaker can ask other members of the group to be recognized by raising their hand or standing. Each spokesperson for a group will be allowed to speak for up to five minutes.

During public hearings, the Board will attempt to hear all members of the public who wish to speak on a subject, but it must be recognized that on rare occasion presentations may have to be limited because of time constraints. If a previous speaker has articulated your position, it is recommended that you not fully repeat the comments and instead advise the Board of your agreement. The time allocated for speakers at public hearings are the same as for regular Board meetings, although the Board can allow exceptions at its discretion.

Speakers should keep in mind that Board of Directors meetings are formal proceedings and all comments are recorded on tape. for that reason, speakers are requested to speak from the podium and wait to be recognized by the Chairman. In order to give all speakers proper respect and courtesy, the Board requests that speakers follow the following guidelines:

- Wait at your seat until recognized by the Chairman.
- Come forward and state your full name and address and your organizational affiliation if speaking for a group;
- Address your comments to the Board as a whole;
- State your position clearly and succinctly and give facts and data to support your position;
- Summarize your key points and provide the Board with a written statement, or supporting rationale, when possible;
- If you represent a group, you may ask others at the meeting to be recognized by raising their hand or standing;
- Be respectful and civil in all interactions at Board meetings;
- The Board may ask speakers questions or seek clarification, but recognize that Board meetings are not a forum for public debate; Board Members will not recognize comments made from the audience and ask that members of the audience not interrupt the comments of speakers and remain silent while others are speaking so that other members in the audience can hear the speaker;
- The Board will have the opportunity to address public comments after the public comment session has been closed;
- At the request of the Chairman, the Executive Director may address public comments after the session has been closed as well; and
- As appropriate, staff will research questions by the public and respond through a report back to the Board at the next regular meeting of the full Board. It is suggested that citizens who have questions for the Board or staff submit those questions in advance of the meeting to permit the opportunity for some research before the meeting.

The agendas of Board meetings, and supporting materials, are available from the RWSA Administration office upon request or can be viewed on the Rivanna website(s)

Rev. September 22, 2009

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RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
May 28, 2019

A regular meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was held on Tuesday, May 28, 2019 at 2:25 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia.

Board Members Present: Mike Gaffney, Gary O'Connell, Dr. Tarron Richardson, Kathy Galvin.

Board Members Absent: Lauren Hildebrand, Jeff Richardson, Dr. Liz Palmer.

Staff Present: Lonnie Wood, Jennifer Whitaker, Phil McKalips, David Rhoades, Steven Miller, Liz Coleman, Scott Schiller, Bill Morris, Victoria Fort, Dyon Vega, Austin Marrs, Andrea Terry, David Tungate, Michelle Simpson, Bill Mawyer, Katie McIlwee.

Also Present: Mr. Kurt Krueger, RWSA counsel, members of the public and media representatives.

1. *CALL TO ORDER*

At 2:25 p.m., Mr. Gaffney opened the May 28, 2019 regular meeting of the Rivanna Water and Sewer Authority as a joint meeting with the Rivanna Solid Waste Authority.

2. *OTHER BUSINESS*

a. Presentation: Quarterly Strategic Plan Update – year one Wrap-Up; Goal Team Leaders

Ms. Katie McIlwee reminded the Board that they have had three previous updates and stated the champions of the six goal eams will present their year-end wrap ups, after which the Board may ask questions. She stated they have six goals and 12 strategies from which the goal teams have developed 78 tactics and they have completed 100% of what they had intended for year one.

Ms. McIlwee presented for the Communications and Collaboration goal team. She stated that over the last quarter they have continued to collaborate with IT and other members of the goal team to test and research different methods of increasing internal communication and Office 365 products and have also worked with Administration and IT to research a new document management workflow software. She stated they have completed the employee portal, enhanced the usability of the Rivanna website, and coordinated with Environmental Stewardship goal team on some community events, such as Imagine A Day Without Water and Riverfest, as well as a regional managers' mixer, for which they brought in other utilities from the Central Virginia area, and team building events with the City and the Albemarle County Service Authority. She stated they also have quarterly internal employee team building engagements and a bi-monthly Rivanna employees' newsletter.

Mr. O'Connell asked what the communications agreement among water partner agencies was about.

Ms. McIlwee explained that this stemmed from the initial tactic planning meetings when they were deciding how to implement strategies and thought that an agreement was needed, though as they have moved along they have realized that some of the tactics are not necessary. She stated this tactic was about knowing who to speak with at the County, City, or ACSA with regards to communications or marketing and working together, more than developing an actual agreement.

Ms. Betsy Nemeth, Manager of Human Resources, presented for the Workforce Development goal team. She stated they have been busy working their strategy of developing a comprehensive staffing classification and compensation plan and to conduct a training needs assessment and enhance the training program. She noted that they recommend a pay grade scale adjustment as well as new positions for both Authorities, which she noted are in the final draft of the Personnel Management Plan, which now is combined for the two Authorities and has had language regarding standard operating procedures removed. She stated they have conducted and continue to conduct training on CPR, ADAD, and leadership for managers and certain operators, for which they have partnered with PVCC, which she characterized as an amazing and terrific partner. She continued that last July 1st they implemented the recommendations of the compensation plan salary survey conducted by Evergreen. She stated they have a Staffing Master Plan which will be regularly evaluated and a Consolidated Personnel Management Plan.

Mr. David Tungate, Director of Operations, presented for the Operational Optimization goal team. He stated their strategy is to continually evaluate, prioritize, and improve key business and operational processes and to protect our workforce and the public by continually growing a culture of safety. He reviewed recent activity, including completion of Phase 1 and the beginning of Phase 2 of the corrosion inhibitor project, compliance with the American Water Infrastructure Act, by conducting a vulnerability assessment for which they must demonstrate compliance by August 2020 and expect to be compliant by next March, and continuing with the design of the South Rivanna Water Treatment Plant, which will use updated technology and allow them to change some processes. He reviewed year one highlights, which include the hiring of a consultant to conduct a safety master plan to look at how they do things on the operations side, how they treat water and wastewater, and the equipment and processes. He stated they have installed web-based security cameras at South Rivanna, Crozet, and Moores Creek.

Ms. Andrea Terry, Water Resources Manager, presented for the Environmental Stewardship goal team. She stated that their strategies are to increase environmental engagement and designate resources to support environmental outreach agreements. She stated they wanted to have an employee from each division come and sit with them and talk about what Rivanna does that is good for the environment and how they can engage with the community and partners to do this a little bit more. She stated the committee has supported the Rivanna Riverfest, which she characterized as a great effort with Rivanna Conservation Alliance and ACSA and a good collaborative opportunity. She stated they also conducted stream cleanup on Moores Creek after which three employees asked to serve on the committee and now serve. She stated they have catalogued a list of green activities, increased outside collaboration and will continue to do so, and they plan to establish an environmental committee next year, which will meet bi-monthly and consider ways to become more engaged.

Mr. Stewart expressed his thanks to Phil McKalips for taking part in the climate action team and stated that he has been an incredible resource.

Mr. Phil McKalips, Director of Solid Waste, presented for the Solid Waste Services goal team. He stated that when considering their strategies he considers what people want them to be and what the community landscape is. He stated they feel they have set themselves up well to be able to communicate with community partners such as haulers, UVA, the City and County, and the public, which can provide feedback as to where they see needs. He stated they decided to open on Mondays after speaking with haulers, which stimulated them to conduct cost modeling and which has been favorably received. He explained that the idea to introduce composting resulted from dialog with representatives of UVA and the Climate Action Committee. He reviewed ideas they have for next year, including optimization of existing resources at McIntire and improving public outreach.

Mr. Gaffney emphasized that the strategic plan was a long time coming and has taken some time to be developed, and stated that he is thoroughly impressed every time. He asked how it has helped Mr. McKalips as well as others in the organization along the way.

Mr. McKalips replied that putting the idea of optimization on a piece of paper has pushed them to look at things outside of the box and he feels they have utilized the process effectively.

Mr. Mawyer echoed Mr. McKalips' comment, adding that they are looking in every drawer and at every policy and procedure to see if they can do things in a better way. He emphasized that the skillset and knowledge of staff is important to be able to do this.

Mr. Scott Schiller, Engineering Manager, presented for the Infrastructure & Master Planning goal team. He stated their two strategies are to implement an asset management program for the Authority and to develop and maintain long-term master plans. He stated they have developed an internal asset management policy, which can help dictate how the program proceeds and is part of the first phase of the plan, which they focused on this year. He described this as a road map for what they want the plan to look like, how it will be implemented over the next few years and indicated that, as part of the process, they have had staff training workshops, performed a gap assessment on procedures, and are looking at business process improvements and IT strategies.

Mr. Schiller stated they have developed an inventory of master plans to enable to determine if there are projects that have been identified that still have to be done and to see which facilities or systems may have gaps for which they don't have a master plan. He next reviewed year one highlights. He stated they contracted with a nationally recognized consulting firm to guide them through the asset management process, which he characterized as a great learning experience, and for both strategies they have begun to organize internal assets, some of which will be included in the internal asset management program as they move to the implementation phase, and which will allow them to identify some critical assets in the Master Plan that may warrant their own master plans.

Ms. Galvin asked who the consulting firm is.

Mr. Schiller replied that it is GHD, based in Maryland.

Mr. Gaffney asked if there is a way to measure ways to increase the life of equipment and if the consulting company can help with this.

Mr. Schiller replied that a lot of the asset management involves risk assessment and where to best apply their efforts and they will answer questions about pieces of equipment to determine risk and consequence of failure in order to apply efforts most effectively. He stated there could be opportunities to extend the life of equipment through additional preventive maintenance or by having more spare parts in stock.

Mr. Mawyer added that there are benefits in cost savings where they can proactively plan for replacement rather than react when something breaks.

Ms. McIlwee stated that in year two some of the goal teams will be replacing members and inviting additional employees to serve, the teams will develop new tactics, start new strategies, decide what needs to roll forward and what is complete, and they will provide another update to the Board next quarter.

Ms. Galvin remarked that she understands the value of the strategic plan, described it as being crisp, clean, concise, substantive, and can be used to enhance performance. She thanked them for taking it so seriously and for implementing it so wholeheartedly.

Mr. Mawyer remarked that the strategic plan has given them guidance and direction.

Mr. McKalips remarked that it is helpful to have the strategic plan posted at work locations.

Mr. Mawyer stated that at the benefits and safety meeting they talked about the purpose and goals of the strategic plan and have tried to keep it front and center for everyone.

a. Presentations; Lonnie Wood, Director of Finance and Administration
i. Personnel Management Plan Update
ii. FY 2020 Pay Scale Adjustment
iii. Virginia Retirement System Long Term Care Program

Mr. Wood stated they have come up with a new personnel management plan based on the combining of existing plans and the elimination of some procedures. He noted that their payroll timesheet and timekeeping process is manually driven, though they plan to go to an automated system as part of their IT Master Plan, as their policies didn't fit with modern payroll and timekeeping processes. He continued that they have gone to a blended overtime rate, which means that overtime is calculated weekly, whereas the Authority has a bi-weekly pay schedule, which could result in two different overtime rates on one paycheck. System changes they have made will allow them to do this and to bring the overtime policy into the modern era and to meet all FLSA requirements. He stated they have added night differential pay of 2% of base pay for water and wastewater operators that work a rolling 12 hour day/night shift, as this had been identified in meetings with employees and is an incentive for employees to take this shift.

Mr. O'Connell asked if he has included the funding for that in the budget.

Mr. Wood replied that it will cost about $16K and will be absorbed under normal vacancy turnover and, should it run over, they can make up the difference in workman's compensation since they received a better bid this year. He stated they have included a retirement benefit that mirrors what VRS Plan 1 employees receive in the old manual. The new policy enables hybrid employees to receive $200 of sick leave pay for each year of service up to a maximum of $5K. He stated he will review a couple of other notable policy changes. He stated the Wednesday before Thanksgiving will become a formal holiday and they will make April 13, Thomas Jefferson's birthday, a floating holiday for which the Authority will be open. He stated they have increased the tuition reimbursement of college credit courses from $2,625 to $5,250, which is the IRS tax-exempt limit. He thanked Ms. Nemeth for her work on this.

Mr. Wood reminded the Board that in summer 2017, they instituted a salary survey along with the compensation plan and that salary adjustments in 2018 were made based on the results, despite the fact the data was probably a year old. He stated they utilized that year-old data and will now add a CPI-U Index adjustment increase which could support a 5% increase, but which will not have a budget impact.

Dr. Richardson asked how they planned to keep the scale moving.

Mr. Wood replied that the Authority's policy mandates a salary survey every five years, though their goal is to conduct this every three years, and in off years will look at the CPI-U increase.

Mr. Gaffney stated if they only did it once every five years, it would look like a huge jump.

Mr. Wood informed the Board that VRS offers a long-term care insurance program through political subdivision employers, the last time political subdivisions could opt in was in 2010-2011, and the Authority recommends they opt in this time, as this will not entail any cost to the Authority as employees pay for 100% of the cost and it does not have to be deducted by payroll.

Dr. Richardson asked what the savings on overtime will be by calculating overtime pay on a weekly basis.

Mr. Wood explained that under the current system, they consider holiday and unscheduled time pay to be overtime pay, which is difficult to manage, and the new system will be easier to manage by separating out what is truly overtime and allow them to adjust schedules to reduce overtime.

Dr. Richardson remarked that when a person takes off the second week of the pay period the costs jump if overtime is calculated weekly and he thinks they will see cost savings.

Mr. Wood replied that he is hoping they will.

Ms. Galvin asked how often employees were evaluated.

Mr. Wood replied that the evaluation period runs from April 1–March 30, so that the merit system can be effective July 1, and enables them to have sufficient time to conduct evaluations, meet with employees, and enter the information into the system.

Mr. Mawyer explained that employees are rated on a 1 to 3 scale and the 3% pool money approved by the Board is distributed in accordance with the merit score.

Mr. Wood added that the pool of money for merit pay is limited and they have to wait until everyone has been evaluated in order to calculate the merit pay for each employee.

Ms. Galvin moved that the boards of the RSWA and RWSA approve the update of the Personnel Management Plan, FY20 payroll scale adjustment, and Virginia Retirement System Long-Term Care Insurance program. The motion was seconded by Mr. Oberdorfer and passed (5-0) by the RSWA Board and (5-0) by the RWSA Board. Mr. Richardson and Dr. Palmer were absent from the joint meeting and the vote.

The Rivanna Solid Waste Authority Board Meeting was adjourned at this time. At 3:01 p.m., Ms. Galvin moved that the RSWA Board adjourn its meeting. The motion was seconded by Mr. Oberdorfer and passed (5-0).

3. *ELECTION OF VICE-CHAIR*

Ms. Galvin moved to elect Dr. Richardson as Vice-Chair of the RWSA Board. Mr. O'Connell seconded the motion, which passed unanimously (4-0). Ms. Hildebrand, Mr. Richardson, and Dr. Palmer were absent from the meeting and the vote.

4. *APPROVAL OF MINUTES*

a. Approval of April 2019 RWSA Board meeting minutes.

The Board deferred a vote on the April 2019 minutes until the June meeting because Dr. Richardson had not been present at the meeting and thus could not vote.

5. *RECOGNITION*

a. Government Finance Officers Association – Certificate of Achievement for Excellence in Financial Reporting: Director of Finance, Mr. Lonnie Wood

Mr. Gaffney noted that receipt of this Certificate was acknowledged at the RSWA meeting.

6. *EXECUTIVE DIRECTOR'S REPORT*

Nothing Reported

7. *Originally Item 9 c. on the agenda:*

Presentation and Public Hearing: Rate Resolution Adoption, Approval of FY 2019 – 2020 Budget and FY 2020-2024 CIP: Bill Mawyer, Executive Director

Mr. Bill Mawyer presented. He reminded the Board that they discussed the budget and CIP in February and March. He noted that the budget is over $36M, a $2.9M increase over last year, which is split between an operating expense increase of $1.7M and debt service of $1.2M. He stated the operating expense increase represents a $491K increase for the City and $1.5M increase for Service Authority, and Rivanna will contribute $667K from reserves to offset some of the expenses. He noted that 47% of the budget consists of bond debt service of $17M, which is used to finance the CIP. He continued that personnel costs are $8.5M, professional fees, utilities, insurance, and permits are almost $4M, and $6.7M is for chemicals, technology, and building and equipment repairs. He noted that much of the operating expense increase is for replacing the media in the filters of the granular activated carbon system at a budget cost of $900K.

Mr. Mawyer listed the following new positions added to the budget: construction inspector and laboratory chemist. He stated bio-solids have been shipped to Waverly for which they have a $128K increase. He stated they are trying to complete the wholesale meter project, which will add 28 meters that will need to be annually calibrated and maintained. He noted that they have reclassified a lab technician position as a chemist and will now have three chemists in the lab and four inspectors in the CIP group, for a total of 93.4 full-time equivalent (FTE) positions. He stated the $1.2M increase in debt service is to fund projects including Birdwood water line, the Observatory water treatment upgrade, South Rivanna Water Treatment Plant upgrade, Ragged Mountain to Observatory pipe and pump station replacement, Crozet water treatment plant upgrade, and Beaver Creek Dam upgrade. He presented photos of some of the facilities. He stated they will build a flow equalization tank for Crozet, which will store wastewater to prevent system overflows when it rains.

Mr. Mawyer presented the proposed CIP budget for the next five years at $97.2M for completion of 37 projects, including five that would extend to the next five-year cycle, which he stated is a significant decrease from $153M in last year´s CIP. He reminded the Board that these changes were made to level rates and mitigate costs to customers and to the Service Authority. He suggested they hold a public hearing on the wholesale rates charged to the City and to ACSA and asked the Board to approve the budget and CIP.

Mr. Gaffney opened the public hearing on the rates and related budget. As no member of the public came forward to speak Mr. Gaffney closed the public hearing.

Ms. Galvin moved that the Board adopt the rate resolution, approve the FY 20 Budget, and the FY 20–24 CIP. The motion was seconded by Mr. O'Connell and passed unanimously (4:0). Ms. Hildebrand, Mr. Richardson, and Dr. Palmer were absent from the meeting and the vote.

8. *ITEMS FROM THE PUBLIC*

There were none presented.

9. *RESPONSES TO PUBLIC COMMENTS*

There were no responses to public comments.

10. *CONSENT AGENDA*

a. Staff Report on Finance

b. Staff Report on Ongoing Projects

c. Staff Report on Operations

d. Sugar Hollow Dam – Rubber Crest Gate Replacement and Intake Tower Repairs – Engineering Design, Bid, and Construction Phase Services

The Board unanimously approved the consent agenda.

11. *OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA*

There were none presented.

12. *CLOSED MEETING*

There was no closed meeting held.

13. *ADJOURNMENT*

At 3:10 p.m., Ms. Galvin moved to adjourn the RWSA Board meeting. Mr. O'Connell seconded the motion, which passed unanimously 4-0. Ms. Hildebrand, Mr. Richardson, and Dr. Palmer were absent from the meeting and the vote.

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RWSA BOARD OF DIRECTORS

Minutes of Regular Meeting
July 23, 2019

A regular meeting of the Rivanna Water and Authority (RWSA) Board of Directors was held on Tuesday, July 23, 2019 at 2:16 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia

Board Members Present: Lauren Hildebrand, Kathy Galvin, Dr. Tarron Richardson, Mike Gaffney, Jeff Richardson, Gary O'Connell

Rivanna Staff Present: Lonnie Wood, Jennifer Whitaker, Phil McKalips, Austin Marrs, Andrea Terry, David Tungate, Michelle Simpson, Dyon Vega, Victoria Fort, Steven Miller, Betsy Nemeth, Ava Divita, Abby Bryerton, Matt Rudisill, Caitlyn Homey, Bill Mawyer, Katie McIlwee

Attorney(s) Present: Kurt Krueger, RWSA counsel, members of the public and media representatives.

1. *CALL TO ORDER*

Mr. Gaffney opened the July 23, 2019 meeting of the Rivanna Water and Sewer Authority Board at 2:16 p.m.

2. *MINUTES OF PREVIOUS BOARD MEETINGS*

a.Minutes of Regular Board Meeting on May 28, 2019

b.Minutes of Regular Board Meeting on June 25, 2019

Mr. Krueger explained that there were not enough members are present to approve the minutes of the May 28 meeting.

Mr. Gaffney asked members if they had comments regarding the June 25 meeting.

There were no members who made comments.

Ms. Galvin moved that the Board approve the minutes of the June 25, 2019 meeting. The motion was seconded by Ms. Hildebrand and passed unanimously (5-0). Mr. O'Connell and Dr. Palmer were absent from the meeting and the vote.

Mr. Krueger asked Dr. Richardson if he was familiar with the closed meeting certification resolution for the June meeting. For the record he asked him if he would be willing to state that he agrees and consents to the resolution with respect to the portion of the closed meeting that he attended.

Dr. Richardson gave his agreement and consent.

3. ***RECOGNITION***

There were no recognitions.

4. *EXECUTIVE DIRECTOR'S REPORT*

Mr. Bill Mawyer, Executive Director, stated they have continued to communicate and collaborate internally and externally, as guided by the Strategic Plan, held meetings with Chamber of Commerce at the member Monday presentation series and with the Farm Bureau Committee, including Paul Haney and his group, to talk about the water supply plan, and had a tour with Piedmont Virginia Community College students

Mr. Mawyer reminded the Board that they talked about what to do with the Buck Mountain property at last month's meeting and stated they have issued an RFP and advertised for a planning professional to help formulate alternatives for what can be done with the property. He expects to present a report to the Board by late fall or spring. He stated they have sent a renewal contract to Larry Miller, who had expressed concern at last month's meeting about whether or not his Buck Mountain Property lease would be renewed. He stated that Jennifer Whitaker and her staff are getting ready tostart on the next CIP, and preliminary engineering reports are getting underway. He stated these include demolition of two clarifier facilities and a lime silo at Moores Creek that are no longer used and renovation of a duty station building at Moores Creek that used to be used as a laboratory to convert it to office space.

He presented a photograph of the duty station and pointed out the building that will be renovated. He explained that there is an existing septage receiving facility which serves over 6,000 trucks/year bringing septage from residents without access to the public wastewater system and they are evaluating the possibility of moving the septage receiving facility back towards the front gate to get the trucks out of the middle of the plant for security purposes. The third project he mentioned was removal of the old concrete sand filter basins at an active pump station near Albemarle H.S. He presented a photograph taken by a drone of the two clarifiers and lime silo that are no longer used, pointed out that it was located next to Willow Tree, and noted that they will be listed as line items in next year's CIP. He pointed out the new covers on the clarifiers and biofilters they installed for odor control.

Mr. Mawyer informed the Board that installation of the raw water pipeline at Birdwood has been successfully finished at a final cost of $3.2M, compared to its original budget of $4M, with savings to be reflected in next year's CIP. He stated they continue to work will all parties on easements for remaining portions of the South Rivanna to Ragged Mountain pipeline and have recently made several offers and are currently negotiating with the parties. He stated they are trying to get UVA back to the table regarding the Observatory plant lease contract. He pointed out that a contract to further security efforts by hiring an implementer for a card-controlled access key card system for the four major facilities (Crozet, South Rivanna, Observatory, and this plant) was on today's Consent Agenda, and recognized Austin Marrs for doing a great job managing this project. He recounted how at last month's Board of Supervisors' meeting he attended there was discussion about VDOT spraying herbicide on guard rail areas around reservoirs. He stated they have coordinated with VDOT and are evaluating if the product it uses

has any impact on the reservoir. He stated it was like Roundup but chlorination and the GAC system at the treatment plants remove this product from the water; should it get in the reservoirs.

Ms. Galvin asked if the GAC filters out the pesticide.

Mr. Mawyer replied that this was what the literature says. He added that chlorination also helps to dissipate it.

Mr. Mawyer asked the four summer interns that were present today to introduce themselves:

Matt Rudisill, a rising third year at the University of Virginia majoring in computer science, stated he was working on cybersecurity, setting up networks, password authentication, and setting up servers to manage computer updates.

Ava Divita, a rising sophomore at Virginia Tech studying Environmental Science, stated she was working at both the lab and the water department and has conducted water sampling and testing of the reservoir.

Abby Bryerton, a rising junior at Virginia Tech studying Environmental Resources Management, stated she was interning with the water department and collects water samples from the reservoir and from all over the County.

Caitlyn Homey, a rising senior at James Madison University studying General Engineering, stated she was interning in civil engineering. She stated she has her own project of going through the easements the Authority owns and has shadowed and worked alongside civil engineers on their projects.

Mr. Mawyer thanked Ms. Nemeth for coordinating the effort to hire the interns and keeping them busy.

Dr. Richardson asked what the process was for the hiring of interns.

Mr. Mawyer replied that they advertise between January – March on job boards at state schools and then interview and hire the applicants.

Mr. Gaffney asked how long they have had the internship program and how many interns have become employees.

Ms. Nemeth responded that they started the program in 2016 and have hired Bethany Hochens, the first intern, who is a Water Quality Specialist, and Austin Marrs in our Engineering group.

Mr. Gaffney asked where the two interns who are not present today are working.

Ms. Nemeth replied that one was on vacation and the other was Courtney, who worked for them last year and who works for the Authority part-time and also works at the lab at UVA.

Mr. Gaffney told the interns that he hopes to see some of them in the future.

Mr. Mawyer told the interns they are doing a great job and thanked them.

5. *ITEMS FROM THE PUBLIC*

Mr. Neil Williamson, Free Enterprise Forum, addressed the Board. He stated he admires the RWSA for taking a long view and looking at what things will cost and how they will pay for them over the long term. He stated they had an excellent presentation about Buck Mountain last month and noted that the surcharge was part of a four-party agreement dating back many years and from which they have collected almost $4M since 1983, which was likely close to what it cost to acquire Buck Mountain and, if it has not yet covered this cost, the Authority can project when it will have done so. He urged that the Authority end the surcharge once the costs to acquire Buck Mountain have been recovered and that, since it will take some time for the parties to review the agreement, they start having discussions soon.

As no one else came forward to address the Board Mr. Gaffney closed the Items from the Public portion of the meeting.

6. *RESPONSES TO PUBLIC COMMENTS*

In response to Mr. Williams' comments, Mr. Mawyer stated he agrees and informed him that they are working with attorneys from the City, County, and Service Authority to prepare a resolution to terminate the surcharge.

Mr. Gaffney remarked that they also agree as to the purpose of collecting the surcharge.

7. *CONSENT AGENDA*

a. *Staff Report on Finance*

b. *Staff Report on Ongoing Projects*

c. *Staff Report on Operations*

d. *Construction Contract Award and CIP Amendment– Buck's Elbow Ground Storage Tank Chlorination System Improvements – Littleton and Associates, Inc.*

e. *Construction Contract Award and CIP Amendment – Glenmore Secondary Clarifier Coating – Nostos SS Contractors*

f. *Contract Award – Security Enhancements, Access Control Implementer – Security 101*

Mr. Gaffney asked the Board members if there were any items they would like to pull for comments or questions. Mr. Gaffney asked for confirmation that the security enhancements will include the installation of card readers on all the buildings but they will not limit anyone from coming on the properties.

Mr. Mawyer confirmed this. He stated the gates are open from 6:00 a.m. – 6:00 p.m. after which people cannot get in. He emphasized that the cards are only for staff or contractors, as needed.

Ms. Galvin moved that the Board approve the Consent Agenda. The motion was seconded by Ms. Hildebrand and passed unanimously (5-0). Mr. O'Connell and Dr. Palmer were absent from the meeting and the vote.

8. *OTHER BUSINESS*

a. Presentation: Cyber Security; Steven Miller, I.S. Administrator

Mr. Miller stated that they have been very serious about cybersecurity for many years and he will provide a background on the subject. He defined cybersecurity as the practice of defending computers, servers, mobile devices, and other electronic systems or networks from malicious attack or interference, such as viruses, malware, fishing emails, social engineering, simple theft, and communications interception. He explained that viruses self-replicate and spread themselves, malware attacks something specific, and fishing email misleads a person to click and follow a link to fix a password in order to obtain a password. He continued that an example of social engineering was when one receives a phone call requesting a password to fix a locked computer, simple theft was when someone obtains a password from a user, and communications interception was conducted with sophisticated equipment. He stated that Department of Homeland Security has identified cyberattack as the number one threat to water infrastructure.

Mr. Miller remarked that the Authority can make it very difficult to gain access to the system, though not impossible. He explained that the preferred method recommended by AWWA and the Water Sector Coordinating Council's Cybersecurity Working Group and the one that Rivanna uses was known as Defense In Depth, which uses a layered approach consisting of a variety of methods, with each layer being progressively harder, making it less likely that an attempt will be made. He explained that a security breach could affect water treatment, damage valves, set off alarms, disable pumps, deface the website, or breach the email system, which was the most common breach, the easiest to fix, and the most difficult to defend against. He stated that ransomware was a malicious program and the most popular threat in the media at the moment as it could be devastating to companies that are not prepared. He explained that Rivanna identifies seven layers and combines this with a very robust backup scheme that stores information in many different ways and places.

Mr. Miller reviewed the seven layers. He stated the first was the Next Generation Firewall, which was adaptive and located directly in routers at every site. He stated that routers control communication to the outside world and between sites. He stated the second was Anti-Virus Software, which was located in the router and inspects the data package for patterns and sequences that are similar to the ones it knows. He reviewed the third layer, Encryption, which involves the use of an encrypted tunnel from one router to the next. He explained that the fourth layer represents anti-virus software installed by the vendor on the specific devices, with RSWA utilizing SOPHOS commercial-only software. He stated the fifth layer was Access Restriction, which represents a requirement to use a user ID and password, while the sixth layer represents Password Protection at the software level. He stated the final and most vulnerable layer was

represented by Users. He stated they educate users not to write passwords down and how to recognize a fishing attack and report it.

Though not a layer, he stated disaster recovery was how they deal with a ransomware attack through the use of several off-site locations, which can recreate a system from before the ransomware hit. He stated they conduct periodic drills to make sure that everything was working as well as take backups and restore them to random machines and put them on hard drives off-site so they are not on any network and critical information can be recreated on new hardware. He stated they conduct monitoring through the use of an appliance device that talks to all the routers and obtains information on the national origin, most visited websites, and patterns, and provides alerts on unusual activity. He continued that monitoring was also conducted through email communications with Department of Homeland Security, FBI, various associations, and the manufacturers of the anti-virus and router.

Mr. Miller next presented an overview of his IT Administration Department, which consists of an administrator, assistant administrator, IT Administrator supervisor, IT Administrator technician, GIS coordinator, and software analyst. He stated that in addition to cybersecurity they are responsible for control software systems, historical data collection retrieval and reporting, maintenance and updates of over 70 workstations, the servers, and administrative functions of email, software distribution, internal and external GIS system, work order management, document storage, help desk, and the maintenance of mobile devices such as tablets and cell phones. He invited questions and comments.

Mr. Gaffney asked how often they conduct a backup.

Mr. Miller replied that they do real-time backups, in which they duplicate important data to off campus sites and between buildings, as well as nightly on a four-week cycle and weekly backups, with quarterly, semi-annual, and yearly copies stored for a much longer term.

Mr. Mawyer thanked Mr. Miller for the presentation. He remarked that everything they do, especially water treatment technology, was computer based and the six employees of the department manage a large workload.

Mr. Richardson expressed appreciation for their impressive and hard work.

b. Presentation: Emerging Drinking Water and Wastewater Regulations; Dave Tungate, Director of Operations

Mr. Tungate noted that the issue of per- and polyfluoroalkyl substances, which consist of 3,000 man-made chemicals found in items such as firefighting foam, non-stick food packaging, non-stick cookware, stain and water-resistant coatings, Oral B dental floss, and cosmetics, has been in the media lately. He stated that pharmaceutical byproducts found in source water have been a concern and emphasized that RWSA does not have any intake downstream of any wastewater treatment plant discharge, which was the main source of pharmaceutical byproducts. He stated that GAC was the best available technology for removal of these substances.

Ms. Galvin remarked that they still get questions as to why the water rates are going up as well as about additives in the water. She stated this was the best safeguard and expressed support for more public relations to make the public aware of GAC.

Mr. Mawyer replied that they will work on some ways to do that and that whenever he speaks to other bodies he remarks on the benefits of the GAC.

Mr. Tungate continued that there are some proposed wastewater regulatory changes to the total maximum daily load watershed implementation plan that would reduce the maximum nitrogen and phosphorous concentration allowed at the Moores Creek plant, and reduce Ammonia concentrations discharges allowed at the three wastewater plants. He stated the 1969 Cuyahoga river fire near Cleveland, OH was the catalyst for this environmental movement, as this had been the 13th fire on the river in 100 years, after which President Nixon established the Environmental Protection Agency, which was followed by the Clean Water Act in 1972 and the Safe Drinking Water Act in 1974, which establishes many of the standards for safe drinking water. He stated the Clean Water Act established the basic structure for regulating pollutant discharges, gave EPA the authority to implement pollution control programs, and funded the construction of sewage treatment plants through a grants program.

He stated the Safe Drinking Water Act established national standards to protect against naturally occurring and man-made contaminants for public water systems that serve at least 15 service connections or 25 people for at least 60 days/year and there are now 150,000 public water systems in the country serving over 300 million people. He continued that there 87 maximum contaminant levels (MCLs) for chemical contaminants that can adversely affect public health and noted that EPA has delegated enforcement of the Safe Drinking Water Act to Virginia Department of Health, of which has one inspector, Steve Kvech, who reviews RWSA monthly and compliance reports and conducts yearly facility inspections of all six treatment plants.

Mr. Tungate stated they conduct 150 water samples each month in the distribution system for coliform bacteria and have continuous monitoring of treatment plants through the use of online instruments that monitor free chlorine, fluoride, turbidity from filters, pH levels and conduct the majority of analyses in the laboratory, with a $100K line item budgeted for outside laboratory analysis of copper, some organic sampling, algae counts, and algae byproducts. He stated that laboratory technology was quickly improving and that water treatment technology needs to keep up and so now minimum recording levels are as low as parts-per-trillion (ppt) and their ability to detect substances was much greater than it was 25 – 30 years ago. He pointed out that the minimum detection level of per- and polyfluoroalkyl substances in 2014 was 90 ppt while in 2018 it was 2 ppt, though RWSA has no detection of these substances in our reservoirs.

Mr. O'Connell remarked that the beauty of the community's source water was that it is not downstream of any other communities, noting that some communities in North Carolina are struggling with this. He stated it was important for customers to understand that the quality of the water supply was as good as anywhere in the country as a result of both good source water and GAC treatment.

Mr. Mawyer added that the improved measuring ability was driving the regulations to look for smaller and smaller quantities of pollutants in drinking water.

Mr. Tungate presented a list of contaminants the EPA asks utilities to look for as part of its Contaminant Candidate List as, though they are not yet regulated, there was concern that there could be health effects related to these chemicals.

Mr. O'Connell asked if the EPA requests a testing regimen in anticipation.

Mr. Tungate explained that the chemical Contaminant Candidate List was parsed and becomes Unregulated Contaminant Monitoring Rule, which was a multi-year sampling protocol.

Mr. Mawyer added that they are required to conduct the testing and do not have the option not to do it because they are a large utility (over 100,000 customers).

Mr. Tungate stated the current limits under the Chesapeake Bay regulations for their permit for Moores Creek was 6.0 mg/liter for Nitrogen and 0.5 mg/liter for Phosphorous, the proposed limits are 4.0 mg/liter and 0.3 mg/liter, while their average daily loads are 3.7 mg/liter and 0.8mg/liter. He stated the investment they made in the ENR project has kept them in compliance. He next reviewed freshwater ammonia criteria, which varies by season, with 2.2 mg/liter as the average and the maximum of 2.7 mg/liter from May – November and 7.0 mg/liter and 8.6 mg/liter from December – April at Moores Creek, while the proposed limit was 1.9 mg/liter. He stated that Glenmore and Scottsville are not currently regulated due to their size, though this could change, in which case they are below the limits for ammonia concentration.

Ms. Galvin remarked that this was very important information for the general public.

Mr. Mawyer emphasized that it was not a static situation as items could be added to the list and at lower and lower levels.

c. Presentation and Work Authorization Approval: Additional GAC Facilities, Observatory Water Treatment Plant – Jennifer Whitaker, Director of Engineering and Maintenance

Ms. Whitaker stated she will talk about the potential to expand Granular Activated Carbon (GAC) at the Observatory water treatment plant, which was constructed in the early 1900s and the first treatment facility for UVA and Charlottesville, and has Ragged Mountain Reservoir water transferred from Sugar Hollow Reservoir as its source. She stated that modern water treatment at the facility, which includes testing and chemical treatment, started in the 1940s and 50s and significant improvements were made from 2015 – 2018. She presented photographs of the facility and pointed out the chemical feed building, GAC building, chlorine contact tank, pump station, and filter building with sediment basins.

Mr. O'Connell asked for confirmation that the new GAC will go next to the filter building.

Ms. Whitaker replied that there was room behind the building and adjacent to the GAC building where they have sufficient space requirements.

Ms. Whitaker stated the current upgrade project would update all processes, as they have reached the end of useful life for most equipment and need to take it to another 50-year lifecycle, and increase capacity of the plant to 10 MGD, with construction anticipated to begin between 2020 – 2023 and design completion by the end of this year. She stated the total estimated project cost was $19.7M and that the benefit of the upgrade will be to provide greater redundancy in the system as they would have two plants able to produce a larger percentage of needed water for the urban area and the ability for them to tap into available water sources. She stated this would help to alleviate some of the disconnect between treatment capacity location and source water and noted that the facility will be designed for a future connection with South Fork Rivanna with the ability to move water in either direction.

Ms. Galvin asked what the capacity was before the upgrade.

Ms. Whitaker replied that the current capacity they can get out of the facility from treatment, storage, and distribution was 4.5MGD, though the facility can treat up to 7.7MGD; limitations are in the distribution. She stated they typically treat 1.5MGD – 2MGD on any given day. She emphasized that everything that will connect to the facility from the raw and treatment side will be able to transport 10MGD from the reservoir and to the distribution system.

Mr. Mawyer added that South Rivanna has a capacity of 12MGD and the upgrade will make both facilities more similar.

Ms. Whitaker explained that it will give the operations staff flexibility to shift production back and forth based on conditions.

Mr. O'Connell asked Mr. Whitaker to explain the limitations of the system.

Ms. Whitaker replied that on the raw water side they have two vintage 1920 18-inch raw water mains that come from Ragged Mountain and the pump stations that go with them to bring water in and they believe they can get 7.5MGD of raw water in with all the infrastructure, which was about what the treatment plant can handle. She stated the entire facility was designed to run by gravity, does not have pumps, and was set at a certain elevation on the side of the mountain above the City, though with higher demand and velocity it becomes harder to push the water in without larger piping and/or a pump station or combination thereof. She stated they believe the piping coming out of the plant into the distribution system was undersized.

Mr. O'Connell asked if the project will include pumps.

Ms. Whitaker replied that they are considering either pumps and smaller pipes or larger pipes, though they are leaning towards larger pipes rather than pumps on the finished water side.

Ms. Whitaker emphasized that the $19.7M upgrade did not envision the installation of addition GAC contactors for several reasons. She stated they anticipated using more powdered activated carbon to supplement the facility. Additionally, because when GAC was just coming on line they didn't have all the data they have now to understand its ancillary benefits. She stated the South

Rivanna plant has eight contactors, which are big tank vessels that can each treat 1M gallons. With a total plant capacity of 12M gallons, this represents 66% of the maximum capacity. She continued that the North Rivanna treatment plant has one contactor that can process 1MGD and a plant capacity of 1.5MGD, which represents 65% of the facility's capacity. She stated Observatory as originally planned will have two contactors and a 10MGD plant capacity once the upgrades have been made, leaving them with a 20% GAC treatment ratio, which was significantly lower than that of the other facilities. She stated there have been discussions as to possible benefits arise with the potential expansion of GAC in this project. It was clear that there was a dramatic reduction in disinfection byproducts, taste and odor improvements throughout the system, better chlorine residuals in the distribution system, and treatment of emerging contaminants.

She stated the staff recommends the inclusion of four additional GAC contactors to take the total treatment capacity of Observatory up to 6 MGD, which would give RWSA a similar treatment ratios at all three urban treatment plants. The design costs are $291K resulting in a CIP budget increase of $5.8M once construction was added. She anticipates having bids in by the end of the year, at which time staff will have a better feel for the construction market and would then bring a CIP budget amendment forward. She stated this would raise City and Service Authority rates by about ¼% peryear for approximately four years. She concluded and invited questions.

Mr. Gaffney asked for confirmation that they have a 66% GAC ratio at South Rivanna from eight contactors and will go to 80%.

Ms. Whitaker replied that they are not planning to add contactors at South Rivanna but proposing to add four at Observatory for a total of six.

Mr. Mawyer emphasized that the additional contactors would be installed at Observatory.

Ms. Whitaker demonstrated the location where the piping for GAC vessels can be installed at the Observatory plant, noting that space was reserved in the Master Plan to add vessels into this location.

Ms. Galvin asked if everything gets blended together in the water distribution system so that customers receive the same quality of water and that if they weren't to make the GAC upgrade it would not affect specific geographic areas but everyone.

Ms. Whitaker replied that the water combines in the distribution system across the board, though it does not necessarily combine evenly as it depends on what they are treating each day.

Ms. Galvin asked for confirmation that should they not do the GAC upgrade at Observatory the overall system's GAC ratio might go down.

Ms. Whitaker replied that it was not completely uniform mixing and the closer one was to one facility or another increases the likelihood that any given drop of water will be from that facility, though it does change and move on any given day.

Mr. Gaffney observed that in the original design the reason we were at 20% at Observatory was the water comes from Ragged Mountain and Sugar Hollow and the thought was that it doesn't need it but now they are talking about the pipeline and moving the water from South Fork up to Ragged Mountain and it needs to be equal.

Mr. Mawyer agreed.

Mr. O'Connell remarked that the other concept of the original water supply system that got lost during negotiations was that this plant would be improved to try to equalize it and some pieces that were envisioned 20 years ago are just now falling into place. He observed that GAC has greatly improved the water quality and asked for confirmation that they are using less chlorine.

Mr. Tungate agreed that the applied dose was less.

Mr. O'Connell recognized that GAC was much more expensive but it fits all of those pieces into place.

Ms. Galvin emphasized that they will have to see how this fits into the CIP by determining if this was a marginal improvement that will cost more than a marginal increase or not. She stated she was also looking at this from the perspective of the City budget and wants to know if the improvement of water quality will be commensurate with the cost, though she can't answer that at this point. She stated she would like to provide a standardized water quality to everyone, she supports the project, but she wants to see what other CIP requests will be made.

Mr. Mawyer remarked that they don't have any significant changes to the current CIP that they have identified yet and they hope it will be a relatively stable CIP going forward. He pointed out that out of a $100M budget for five years they are adding $5M.

Mr. O'Connell remarked that from his perspective the thing they have to sell was water quality and this clearly improves water quality for a reasonable cost.

Ms. Galvin emphasized that it will be important to articulate the benefits of GAC to the public to justify the spending, including that they have the best water supply in Virginia.

Mr. Gaffney recognized that there will be new regulations with a new contaminant list coming and they are already set.

Mr. Mawyer remarked that they will be hiring a firm to produce videos of the upgrades and perhaps they can dedicate a video to GAC and get this out to the public.

Ms. Galvin urged that it be conveyed in a way the public can understand with an emphasis on human health and environmental health outcomes, in order to reassure constituents who are concerned about their rates.

Mr. O'Connell observed that the recent customer survey indicated that people want safe, clean drinking water and assurance that the Authority was doing everything it can to reduce lead and

contaminants. He noted that 90% responded that they were satisfied with water rates and stated that if they are concerned about the rates there could be movement of other items in the CIP budget.

Mr. O'Connell moved that the Board authorize the Executive Director to execute the amendment for additional GAC contactors outlined in the Board packet. The motion was seconded by Ms. Galvin and passed unanimously (5-0). Dr. Palmer and Dr. Richardson were absent from the meeting and the vote.

9. *OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA*

There were none.

10. *CLOSED MEETING*

There was none.

11. *ADJOURNMENT*

At 3:33 p.m., Ms. Galvin moved that the Board adjourn. The motion was seconded by Mr. Richardson and passed unanimously (5-0). Dr. Palmer and Dr. Richardson were absent from the meeting and the vote.

RIVANNA WATER & SEWER AUTHORITY
695 Moores Creek Lane | Charlottesville, Virginia 22902-9016
434.977.2970
434.293.8858
www.rivanna.org

MEMORANDUM

TO: **RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS**

FROM: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **EXECUTIVE DIRECTOR'S REPORT**

DATE: **AUGUST 27, 2019**

STRATEGIC PLAN UPDATE

Year two of Strategic Plan implementation has begun. Each Goal Team Leader evaluated their team's membership; vacant positions were filled and employees who were not currently on teams were given the opportunity to join. The renewed teams then worked together to examine their strategies and develop new tactics. Four additional strategies were started, and 65 new tactics were developed.

Communications and Collaboration

- Began work on Strategy: "Enhance internal and external collaboration"
  - Worked with the City and ACSA to plan the Imagine a Day Without Water event, which has been updated this year to attract more participation.
  - Partnered with the Environmental Stewardship Goal Team to assemble a group of employees, across all departments, to participate in the United Way's Day of Caring on September 25th.

Operational Optimization

- Continued work on strategy: "Protect our workforce and the public through continually growing Rivanna's Culture of Safety"
  - Installed additional cloud-based cameras at Sugar Hollow, South Rivanna, Scottsville WTP, and Moores Creek solids building.

Infrastructure and Master Planning

- Continue work on strategy: "Implement an Authority-wide asset management program"
  - Developed a scope of work for the pilot study as well as other first year implementation tasks and are bringing it to the Board this month for approval, and determined the facility that will be used in the pilot study (Rivanna Pump Station).
- Continued work on strategy: "Develop and maintain long-term master plans for all critical asset classes"

- Determined when the annual master planning gap assessment process should take place each year, and began to develop protocols for asset class master plan champions to update and review master planning needs.

Workforce Development

- Continued work on strategy: "Conduct a training needs assessment and enhance the training program"
  - Continuing review and use of different sources for our employee training needs, which includes a continuing partnership with PVCC Workforce Services and using the vast training resources from the Virginia Risk Sharing Association.

Solid Waste Services

- Began work on strategy: "Explore and implement high impact, best-in-class solid waste business practices and service delivery"
  - Held the first customer appreciation and safety awareness event at the Ivy MUC – hot dogs were handed out to customers along with safety information that was prepared by Solid Waste Association of North America (SWANA).

Environmental Stewardship

- Began work on strategy: "Provide regional leadership in environmental stewardship"
  - Provided technical expertise and guidance to Albemarle County Parks staff on the management of recreational lakes to help minimize harmful algal blooms at swimming areas.

STRATEGIC PLAN GOAL: COMMUNICATION AND COLLABORATION

Community Outreach

Rivanna is once again working with Charlottesville's Water Efficiency Program and the ACSA to sponsor the Imagine a Day Without Water Art Contest. The theme for this year is, "Only Use What You Need" and there will be a kick-off event at the Shops at Stonefield on August 28th. Submissions for the art contest are due on October 23rd, which coincides with the national Imagine a Day Without Water. This year the art contest is also expanding to include kindergarten and students in grades 9-12.

STRATEGIC PLAN GOAL: INFRASTRUCTURE AND MASTER PLANNING

Buck Mountain Property Master Plan

Consultant interviews will be held next week to consider firms who can help us develop alternatives for beneficial use of the properties. Completion of this plan is anticipated by the spring of 2020.

Buck Mountain Surcharge

A resolution is being finalized to terminate the surcharge. After approval by RWSA and the Bond Trustees, the resolution must be approved by the County, City, and ACSA.

South Rivanna to Ragged Mountain Water Line

Meetings are in progress with the private property owners, UVA Foundation, VDOT, and Albemarle School Board staff about locations for the water line easements. Field surveying, easement appraisals and offers to acquire easements are underway.

Observatory Water Treatment Plant Lease

We will meet with UVA staff this week to make progress towards finalizing lease and easement documents.

Observatory Water Treatment Plant Capacity Agreement

An Agreement has been developed to establish a funding plan for the additional capacity to be constructed in the Observatory WTP (from 7.7 to 10 mgd), as well for the additional capacity to be constructed in the new raw water pumping station and piping system which will convey raw water from the Ragged Mountain Reservoir to the Observatory WTP. The ACSA, City and RWSA must approve the Agreement.

Observatory and South Rivanna WTP Upgrade Project

We are planning a contractor's breakfast for the last week in September 2019 to increase interest in the contractor community for the project prior to the official advertisement.

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

Security of our Employees and Facilities

Measures continue to be taken to secure our facilities. The Moores Creek front gate will remain closed until 7 a.m., Monday – Friday, beginning September 3. This gate is currently opened at 6 a.m., before most of our employees arrive. Septage haulers have been notified about this change.

STRATEGIC PLAN GOAL: ENVIRONMENTAL STEWARDSHIP, INFRASTRUCTURE AND MASTER PLANNING, OPERATIONAL OPTIMIZATION

RWSA coordinated with the Virginia Department of Environmental Quality to reinstate a stream gage on the South Fork Rivanna River, downstream from the South Rivanna Reservoir. A gage previously existed but was taken out of service in 1998. RWSA funded the equipment needs for the new gage. This will be a valuable resource to the Authority for measuring the flows that come over and through the dam.

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MEMORANDUM

TO: **RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS**

FROM: **LONNIE WOOD, DIRECTOR OF FINANCE AND ADMINISTRATION**

REVIEWED: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **JULY MONTHLY FINANCIAL SUMMARY – FY 2020**

DATE: **AUGUST 27, 2019**

Urban Water flow and rate revenues are 18% over budget estimates for July, and Urban Wastewater flow and rate revenues are 5% over budget. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	$ 711,855	$ 821,651	$ 189,554	$ 1,723,060
Expenses	(613,625)	(656,379)	(145,563)	(1,415,567)
Surplus (deficit)	$ 98,230	$ 165,272	$ 43,991	$ 307,493
Debt Service				
Revenues	$ 560,034	$ 832,970	$ 125,498	$ 1,518,502
Expenses	(568,062)	(729,208)	(125,059)	(1,422,329)
Surplus (deficit)	$ (8,028)	$ 103,762	$ 439	$ 96,173
Total				
Revenues	$ 1,271,889	$ 1,654,621	$ 315,052	$ 3,241,562
Expenses	(1,181,687)	(1,385,587)	(270,622)	(2,837,896)
Surplus (deficit)	$ 90,202	$ 269,034	$ 44,430	$ 403,666

Urban Wastewater received the annual Nutrient Exchange Credit of $78,763 and Albemarle County's annual septage receiving support of $109,441 in July.

Some expense categories are over the prorated year-to-date budget as follows, but should even out over the course of the year compared to budget estimates, unless otherwise noted:

A. Personnel Costs (Urban Water, Urban Wastewater, Administration, Engineering – pages 2, 5, 8, 11) – The annual contributions to health savings accounts and wages paid to summer interns are causing this category to exceed the prorated budget for the year and will even out as the fiscal year progresses.

B. Information Technology (Engineering – page 11) – Engineering is over budget on a $15,000 purchase of a mobile form application for GIS software. This was a budgeted item and will even out the budget vs. actual over the fiscal year.
C. Operations & Maintenance (Administration – page 8) – The Administration department paid $12,600 in July for some heating and air conditioning work in the Administration building.

Attachments

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019
Fiscal Year 2020

Consolidated
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2020*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 17,381,293	$ 1,448,441	$ 1,589,794	$ 141,352	9.76%
Lease Revenue		100,000	8,333	12,099	3,766	45.19%
Admin., Maint. & Engineering Revenue		478,000	39,833	38,974	(859)	-2.16%
Other Revenues		562,478	46,873	116,134	69,261	147.76%
Use of Reserves		667,000	55,583	-	(55,583)	-100.00%
Interest Allocation		31,500	2,625	5,032	2,407	91.70%
Total Operating Revenues		**$ 19,220,271**	**$ 1,601,689**	**$ 1,762,033**	**$ 160,344**	**10.01%**
Expenses						
Personnel Cost	**A**	$ 8,760,078	$ 689,452	$ 767,766	$ (78,314)	-11.36%
Professional Services		666,050	55,504	13,068	42,436	76.46%
Other Services & Charges		2,980,612	248,384	206,817	41,567	16.73%
Communications		142,593	11,883	12,619	(737)	-6.20%
Information Technology	**B**	352,750	29,396	31,316	(1,920)	-6.53%
Supplies		46,180	3,848	1,608	2,241	58.23%
Operations & Maintenance	**C**	5,069,478	422,457	323,624	98,832	23.39%
Equipment Purchases		359,550	29,963	27,473	2,489	8.31%
Depreciation		843,000	70,250	70,250	-	0.00%
Reserve Transfers		-	-	-	-	
Total Operating Expenses		**$ 19,220,291**	**$ 1,561,137**	**$ 1,454,542**	**$ 106,595**	**6.83%**
Operating Surplus/(Deficit)		**$ (20)**	**$ 40,553**	**$ 307,492**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 15,861,022	$ 1,321,752	$ 1,321,752	$ 0	0.00%
Septage Receiving Support - County		109,440	9,120	109,441	100,321	1100.01%
Buck Mountain Surcharge		125,900	10,492	-	(10,492)	-100.00%
Buck Mountain Lease Revenue		1,600	133	691	558	418.21%
Trust Fund Interest		158,200	13,183	18,786	5,603	42.50%
Reserve Fund Interest		690,000	57,500	67,833	10,333	17.97%
Total Debt Service Revenues		**$ 16,946,162**	**$ 1,412,180**	**$ 1,518,503**	**$ 106,323**	**7.53%**
Debt Service Costs						
Total Principal & Interest		$ 14,473,236	$ 1,206,103	$ 1,206,103	$ -	0.00%
Reserve Additions-Interest		690,000	57,500	67,833	(10,333)	-17.97%
Debt Service Ratio Charge		725,000	60,417	60,417	-	0.00%
Reserve Additions-CIP Growth		1,055,725	87,977	87,977	-	0.00%
Total Debt Service Costs		**$ 16,943,961**	**$ 1,411,997**	**$ 1,422,330**	**$ (10,333)**	**-0.73%**
Debt Service Surplus/(Deficit)		**$ 2,201**	**$ 183**	**$ 96,174**		

Summary

Total Revenues	$ 36,166,433	$ 3,013,869	$ 3,280,537	$ 266,667	8.85%
Total Expenses	36,164,252	2,973,133	2,876,871	96,262	3.24%
Surplus/(Deficit)	**$ 2,181**	**$ 40,736**	**$ 403,665**		

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019

Urban Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2020*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 7,118,541	$ 593,212	$ 700,826	$ 107,614	18.14%
Lease Revenue		70,000	5,833	8,931	3,098	53.10%
Miscellaneous		-	-	-	-	
Use of Reserves		600,000	50,000	-	(50,000)	-100.00%
Interest Allocation		13,200	1,100	2,098	998	90.76%
Total Operating Revenues		**$ 7,801,741**	**$ 650,145**	**$ 711,855**	**$ 61,710**	**9.49%**
Expenses						
Personnel Cost	**A**	$ 1,861,134	$ 147,123	$ 168,801	$ (21,678)	-14.73%
Professional Services		207,200	17,267	5,707	11,560	66.95%
Other Services & Charges		574,963	47,914	49,438	(1,524)	-3.18%
Communications		65,100	5,425	6,336	(911)	-16.79%
Information Technology		77,000	6,417	1,094	5,322	82.95%
Supplies		6,100	508	411	97	19.14%
Operations & Maintenance		2,356,590	196,383	150,243	46,139	23.49%
Equipment Purchases		50,500	4,208	6,378	(2,170)	-51.56%
Depreciation		300,000	25,000	25,000	-	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 5,498,587	$ 450,244	$ 413,408	$ 36,836	8.18%
Allocation of Support Departments		2,303,155	182,324	200,217	(17,893)	-9.81%
Total Operating Expenses		**$ 7,801,742**	**$ 632,568**	**$ 613,625**	**$ 18,943**	**2.99%**
Operating Surplus/(Deficit)		**$ (1)**	**$ 17,577**	**$ 98,230**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 6,178,598	$ 514,883	$ 514,883	$ (0)	0.00%
Trust Fund Interest		54,000	4,500	6,406	1,906	42.36%
Reserve Fund Interest		387,000	32,250	38,054	5,804	18.00%
Buck Mountain Surcharge		125,900	10,492	-	(10,492)	-100.00%
Lease Revenue		1,600	133	691	558	418.21%
Total Debt Service Revenues		**$ 6,747,098**	**$ 562,258**	**$ 560,034**	**$ (2,224)**	**-0.40%**
Debt Service Costs						
Total Principal & Interest		$ 5,223,498	$ 435,292	$ 435,292	$ -	0.00%
Reserve Additions-Interest		387,000	32,250	38,054	(5,804)	-18.00%
Debt Service Ratio Charge		400,000	33,333	33,333	-	0.00%
Reserve Additions-CIP Growth		736,600	61,383	61,383	-	0.00%
Total Debt Service Costs		**$ 6,747,098**	**$ 562,258**	**$ 568,062**	**$ (5,804)**	**-1.03%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ (8,028)**		
Rate Center Summary						
Total Revenues		$ 14,548,839	$ 1,212,403	$ 1,271,889	$ 59,486	4.91%
Total Expenses		14,548,840	1,194,826	1,181,688	13,139	1.10%
Surplus/(Deficit)		**$ (1)**	**$ 17,577**	**$ 90,202**		
Costs per 1000 Gallons		$ 2.30		$ 1.83		
Operating and DS		$ 4.28		$ 3.53		
Thousand Gallons Treated		3,397,700	283,142	334,523	51,381	18.15%
or						
Flow (MGD)		9.309		10.791		

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019

Crozet Water Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2020	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 1,028,808	$ 85,734	$ 85,734	$ -	0.00%
Lease Revenues		30,000	2,500	3,168	668	26.73%
Use of Reserves		52,000	4,333	-	(4,333)	-100.00%
Interest Allocation		1,800	150	292	142	94.57%
Total Operating Revenues		**$ 1,112,608**	**$ 92,717**	**$ 89,194**	**$ (3,523)**	**-3.80%**
Expenses						
Personnel Cost		$ 300,589	$ 23,773	$ 26,399	$ (2,627)	-11.05%
Professional Services		12,850	1,071	-	1,071	100.00%
Other Services & Charges		137,816	11,485	5,103	6,382	55.57%
Communications		4,950	413	471	(58)	-14.14%
Information Technology		2,600	217	40	177	81.53%
Supplies		1,395	116	168	(52)	-44.89%
Operations & Maintenance		398,400	33,200	1,637	31,563	95.07%
Equipment Purchases		6,500	542	208	333	61.54%
Depreciation		30,000	2,500	2,500	-	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 895,100	$ 73,315	$ 36,527	$ 36,788	50.18%
Allocation of Support Departments		217,513	17,229	18,829	(1,600)	-9.29%
Total Operating Expenses		**$ 1,112,613**	**$ 90,544**	**$ 55,356**	**$ 35,188**	**38.86%**
Operating Surplus/(Deficit)		**$ (5)**	**$ 2,173**	**$ 33,838**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 1,311,312	$ 109,276	$ 109,276	$ -	0.00%
Trust Fund Interest		5,500	458	658	199	43.46%
Reserve Fund Interest		21,500	1,792	2,103	311	17.37%
Total Debt Service Revenues		**$ 1,338,312**	**$ 111,526**	**$ 112,036**	**$ 510**	**0.46%**
Debt Service Costs						
Total Principal & Interest		$ 1,230,815	$ 102,568	$ 102,568	$ -	0.00%
Reserve Additions-Interest		21,500	1,792	2,103	(311)	-17.37%
Reserve Additions-CIP Growth		86,000	7,167	7,167	-	0.00%
Total Debt Service Costs		**$ 1,338,315**	**$ 111,526**	**$ 111,837**	**$ (311)**	**-0.28%**
Debt Service Surplus/(Deficit)		**$ (3)**	**$ (0)**	**$ 199**		

Rate Center Summary

Total Revenues	$ 2,450,920	$ 204,243	$ 201,230	$ (3,013)	-1.48%
Total Expenses	2,450,928	202,070	167,194	34,877	17.26%
Surplus/(Deficit)	**$ (8)**	**$ 2,173**	**$ 34,037**		
Costs per 1000 Gallons	$ 5.59		$ 2.71		
Operating and DS	$ 12.31		$ 8.20		
Thousand Gallons Treated	199,053	16,588	20,394	3,806	22.95%
Flow (MGD)	0.545		0.658		

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019

Scottsville Water Rate Center
Revenues and Expenses Summary

	Budget FY 2020	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual					
Notes					
Revenues					
Operations Rate Revenue	$ 520,812	$ 43,401	$ 43,401	$ -	0.00%
Use of Reserves	15,000	1,250	-	$ (1,250)	-100.00%
Interest Allocation	800	67	131	64	96.25%
Total Operating Revenues	**$ 536,612**	**$ 44,718**	**$ 43,532**	**$ (1,186)**	**-2.65%**
Expenses					
Personnel Cost	$ 197,349	$ 15,589	$ 15,911	$ (322)	-2.07%
Professional Services	20,000	1,667	-	1,667	100.00%
Other Services & Charges	33,318	2,777	930	1,846	66.50%
Communications	3,430	286	419	(133)	-46.52%
Information Technology	800	67	80	(13)	-20.03%
Supplies	410	34	89	(55)	-161.86%
Operations & Maintenance	121,340	10,112	3,812	6,300	62.30%
Equipment Purchases	3,200	267	208	58	21.88%
Depreciation	20,000	1,667	1,667	(0)	0.00%
Reserve Transfers	-	-	-	-	
Subtotal Before Allocations	$ 399,847	$ 32,463	$ 23,116	$ 9,347	28.79%
Allocation of Support Departments	136,770	10,854	11,684	(830)	-7.65%
Total Operating Expenses	**$ 536,617**	**$ 43,317**	**$ 34,800**	**$ 8,517**	**19.66%**
Operating Surplus/(Deficit)	**$ (5)**	**$ 1,400**	**$ 8,732**		
Debt Service Budget vs. Actual					
Revenues					
Debt Service Rate Revenue	$ 128,749	$ 10,729	$ 10,729	$ (0)	0.00%
Trust Fund Interest	1,700	142	188	46	32.61%
Reserve Fund Interest	8,400	700	814	114	16.28%
Total Debt Service Revenues	**$ 138,849**	**$ 11,571**	**$ 11,731**	**$ 160**	**1.38%**
Debt Service Costs					
Total Principal & Interest	$ 129,524	$ 10,794	$ 10,794	$ -	0.00%
Reserve Additions-Interest	8,400	700	814	(114)	
Reserve Additions-CIP Growth	925	77	77	-	
Total Debt Service Costs	**$ 138,849**	**$ 11,571**	**$ 11,685**	**$ (114)**	**-0.99%**
Debt Service Surplus/(Deficit)	**$ -**	**$ -**	**$ 46**		
Rate Center Summary					
Total Revenues	$ 675,461	$ 56,288	$ 55,263	$ (1,026)	-1.82%
Total Expenses	675,466	54,888	46,485	8,403	15.31%
Surplus/(Deficit)	**$ (5)**	**$ 1,400**	**$ 8,778**		
Costs per 1000 Gallons	$ 29.56		$ 24.98		
Operating and DS	$ 37.21		$ 33.37		
Thousand Gallons Treated	18,151	1,513	1,393	(120)	-7.91%
or					
Flow (MGD)	0.050		0.045		

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019

Urban Wastewater Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2020	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 8,033,620	$ 669,468	$ 703,207	$ 33,739	5.04%
Stone Robinson WWTP		22,478	1,873	1,311	(562)	-30.01%
Septage Acceptance		450,000	37,500	36,060	(1,440)	-3.84%
Nutrient Credits		90,000	7,500	78,763	71,263	950.17%
Miscellaneous Revenue		-	-	-	-	
Interest Allocation		14,400	1,200	2,310	1,110	92.48%
Total Operating Revenues		**$ 8,610,498**	**$ 717,542**	**$ 821,651**	**$ 104,109**	**14.51%**
Expenses						
Personnel Cost	**A**	$ 1,281,463	$ 101,118	$ 115,104	$ (13,986)	-13.83%
Professional Services		175,000	14,583	500	14,083	96.57%
Other Services & Charges		2,030,825	169,235	133,817	35,418	20.93%
Communications		10,430	869	806	63	7.29%
Information Technology		62,500	5,208	184	5,025	96.48%
Supplies		2,700	225	-	225	100.00%
Operations & Maintenance		1,724,650	143,721	122,909	20,812	14.48%
Equipment Purchases		77,500	6,458	5,000	1,458	22.58%
Depreciation		470,000	39,167	39,167	(0)	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 5,835,068	$ 480,585	$ 417,487	$ 63,098	13.13%
Allocation of Support Departments		2,775,430	220,014	238,892	(18,878)	-8.58%
Total Operating Expenses		**$ 8,610,498**	**$ 700,599**	**$ 656,379**	**$ 44,221**	**6.31%**
Operating Surplus/(Deficit)		**$ (0)**	**$ 16,942**	**$ 165,272**		

Debt Service Budget vs. Actual

	Budget FY 2020	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues					
Debt Service Rate Revenue	$ 8,229,143	$ 685,762	$ 685,762	$ 0	0.00%
Septage Receiving Support - County	109,440	9,120	109,441	100,321	1100.01%
Trust Fund Interest	96,900	8,075	11,516	3,441	42.61%
Reserve Fund Interest	266,900	22,242	26,251	4,010	18.03%
Total Debt Service Revenues	**$ 8,702,383**	**$ 725,199**	**$ 832,970**	**$ 107,772**	**14.86%**
Debt Service Costs					
Total Principal & Interest	$ 7,880,079	$ 656,673	$ 656,673	$ -	0.00%
Reserve Additions-Interest	266,900	22,242	26,251	(4,010)	-18.03%
Debt Service Ratio Charge	325,000	27,083	27,083	-	0.00%
Reserve Additions-CIP Growth	230,400	19,200	19,200	-	0.00%
Total Debt Service Costs	**$ 8,702,379**	**$ 725,198**	**$ 729,208**	**$ (4,010)**	**-0.55%**
Debt Service Surplus/(Deficit)	**$ 4**	**$ 0**	**$ 103,763**		

Rate Center Summary

	Budget FY 2020	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Total Revenues	$ 17,312,881	$ 1,442,740	$ 1,654,621	$ 211,881	14.69%
Total Expenses	17,312,877	1,425,798	1,385,587	40,211	2.82%
Surplus/(Deficit)	**$ 4**	**$ 16,943**	**$ 269,034**		
Costs per 1000 Gallons	$ 2.54		$ 2.21		
Operating and DS	$ 5.11		$ 4.67		
Thousand Gallons Treated	3,390,400	282,533	296,837	14,304	5.06%
or					
Flow (MGD)	9.289		9.575		

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

	Budget FY 2020	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual					
Notes					
Revenues					
Operations Rate Revenue	$ 370,524	$ 30,877	$ 30,877	$ -	0.00%
Interest Allocation	700	58	111	52	89.79%
Total Operating Revenues	**$ 371,224**	**$ 30,935**	**$ 30,988**	**$ 52**	**0.17%**
Expenses					
Personnel Cost	$ 95,340	$ 7,527	$ 8,524	$ (997)	-13.24%
Professional Services	-	-	-	-	
Other Services & Charges	35,210	2,934	2,426	508	17.32%
Communications	3,000	250	267	(17)	-6.82%
Information Technology	3,700	308	-	308	100.00%
Supplies	100	8	-	8	100.00%
Operations & Maintenance	119,450	9,954	8,314	1,640	16.48%
Equipment Purchases	2,900	242	200	42	17.24%
Depreciation	5,000	417	417	0	0.00%
Subtotal Before Allocations	$ 264,700	$ 21,641	$ 20,148	$ 1,493	6.90%
Allocation of Support Departments	106,527	8,468	8,982	(514)	-6.07%
Total Operating Expenses	**$ 371,227**	**$ 30,108**	**$ 29,130**	**$ 978**	**3.25%**
Operating Surplus/(Deficit)	**$ (3)**	**$ 827**	**$ 1,858**		
Debt Service Budget vs. Actual					
Revenues					
Debt Service Rate Revenue	$ 3,778	$ 315	$ 315	$ 0	0.05%
Trust Fund Interest	-	-	-	-	
Reserve Fund Interest	3,100	258	339	81	31.29%
Total Debt Service Revenues	**$ 6,878**	**$ 573**	**$ 654**	**$ 0**	**0.03%**
Debt Service Costs					
Total Principal & Interest	$ 1,578	$ 132	$ 132	$ -	0.00%
Reserve Additions-CIP Growth	$ 2,200				
Reserve Additions-Interest	3,100	258	339	(81)	-31.29%
Total Debt Service Costs	**$ 6,878**	**$ 390**	**$ 471**	**$ (81)**	**-20.74%**
Debt Service Surplus/(Deficit)	**$ -**	**$ 183**	**$ 184**		
Rate Center Summary					
Total Revenues	$ 378,102	$ 31,509	$ 31,642	$ 133	0.42%
Total Expenses	378,105	30,498	29,601	898	2.94%
Surplus/(Deficit)	**$ (3)**	**$ 1,010**	**$ 2,041**		
Costs per 1000 Gallons	$ 9.31		$ 11.03		
Operating and DS	$ 9.48		$ 11.20		
Thousand Gallons Treated	39,892	3,324	2,642	(682)	**-20.53%**
or					
Flow (MGD)	0.109		0.085		

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

	Budget FY 2020	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual					
Notes					
Revenues					
Operations Rate Revenue	$ 308,988	$ 25,749	$ 25,749	$ -	0.00%
Interest Allocation	600	50	91	41	81.16%
Total Operating Revenues	**$ 309,588**	**$ 25,799**	**$ 25,840**	**$ 41**	**0.16%**
Expenses					
Personnel Cost	$ 95,366	$ 7,529	$ 8,524	$ (995)	-13.21%
Professional Services	2,000	167	-	167	100.00%
Other Services & Charges	28,000	2,333	1,288	1,046	44.81%
Communications	3,930	328	285	42	12.85%
Information Technology	1,700	142	-	142	100.00%
Supplies	25	2	-	2	100.00%
Operations & Maintenance	58,850	4,904	6,146	(1,241)	-25.31%
Equipment Purchases	3,200	267	200	67	25.00%
Depreciation	18,000	1,500	1,500	-	0.00%
Subtotal Before Allocations	$ 211,071	$ 17,172	$ 17,943	$ (771)	-4.49%
Allocation of Support Departments	98,523	7,828	8,334	(506)	-6.46%
Total Operating Expenses	**$ 309,594**	**$ 24,999**	**$ 26,277**	**$ (1,277)**	**-5.11%**
Operating Surplus/(Deficit)	**$ (6)**	**$ 800**	**$ (437)**		
Debt Service Budget vs. Actual					
Revenues					
Debt Service Rate Revenue	$ 9,442	$ 787	$ 787	$ 0	0.02%
Trust Fund Interest	100	8	19	10	
Reserve Fund Interest	3,100	258	271	13	5.03%
Total Debt Service Revenues	**$ 12,642**	**$ 1,054**	**$ 1,077**	**$ 24**	**2.24%**
Debt Service Costs					
Total Principal & Interest	$ 7,742	$ 645	$ 645	$ -	0.00%
Reserve Additions-Interest	3,100	258	271	(13)	
Estimated New Principal & Interest	1,800	150	150	-	
Total Debt Service Costs	**$ 12,642**	**$ 1,054**	**$ 1,066**	**$ (13)**	**-1.23%**
Debt Service Surplus/(Deficit)	**$ -**	**$ -**	**$ 11**		

Rate Center Summary

Total Revenues	$ 322,230	$ 26,853	$ 26,917	$ 64	0.24%
Total Expenses	322,236	26,053	27,343	(1,290)	-4.95%
Surplus/(Deficit)	**$ (6)**	**$ 800**	**$ (426)**		
Costs per 1000 Gallons	$ 14.28		$ 14.24		
Operating and DS	$ 14.87		$ 14.82		
Thousand Gallons Treated	21,677	1,806	1,845	39	**2.14%**
or					
Flow (MGD)	0.059		0.060		

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019

Administration

Operating Budget vs. Actual

	Notes	*Budget FY 2020*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ 466,000	$ 38,833	$ 38,833	$ (0)	0.00%
Miscellaneous Revenue		2,000	167	141	(26)	-15.30%
Total Operating Revenues		**$ 468,000**	**$ 39,000**	**$ 38,974**	**$ (26)**	**-0.07%**
Expenses						
Personnel Cost	**A**	$ 1,841,351	$ 144,269	$ 169,742	$ (25,473)	-17.66%
Professional Services		229,000	19,083	6,861	12,222	64.05%
Other Services & Charges		106,400	8,867	10,924	(2,057)	-23.20%
Communications		18,500	1,542	1,486	56	3.61%
Information Technology		174,250	14,521	14,869	(349)	-2.40%
Supplies		21,500	1,792	520	1,271	70.96%
Operations & Maintenance	**C**	64,500	5,375	16,580	(11,205)	-208.47%
Equipment Purchases		24,000	2,000	1,167	833	41.67%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 2,479,501**	**$ 197,448**	**$ 222,149**	**$ (24,701)**	**-12.51%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (2,011,501)**	**$ (158,448)**	**$ (183,175)**	**$ 24,726**	**-15.61%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 885,060**	**$ 69,717**	**$ 80,597**	**$ (10,880)**	
Crozet Water	4.00%	**$ 80,460**	**6,338**	**7,327**	**(989)**	
Scottsville Water	2.00%	**$ 40,230**	**3,169**	**3,663**	**(495)**	
Urban Wastewater	48.00%	**$ 965,520**	**76,055**	**87,924**	**(11,869)**	
Glenmore Wastewater	1.00%	**$ 20,115**	**1,584**	**1,832**	**(247)**	
Scottsville Wastewater	1.00%	**$ 20,115**	**1,584**	**1,832**	**(247)**	
	100.00%	**$ 2,011,501**	**$ 158,448**	**$ 183,175**	**$ (24,726)**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019

Maintenance

Operating Budget vs. Actual

	Notes	*Budget FY 2020*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ 10,000				
Miscellaneous Revenue		-	-	-	-	
Total Operating Revenues		**$ 10,000**	**$ -**	**$ -**	**$ -**	
Expenses						
Personnel Cost		$ 1,345,633	$ 105,867	$ 109,412	$ (3,545)	-3.35%
Professional Services		-	-	-	-	
Other Services & Charges		14,500	1,208	1,725	(517)	-42.75%
Communications		17,600	1,467	1,396	71	4.81%
Information Technology		6,500	542	-	542	100.00%
Supplies		2,000	167	-	167	100.00%
Operations & Maintenance		77,400	6,450	5,020	1,430	22.16%
Equipment Purchases		147,150	12,263	12,144	118	0.96%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 1,610,783**	**$ 127,963**	**$ 129,698**	**$ (1,735)**	**-1.36%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,600,783)**	**$ (127,963)**	**$ (129,698)**	**$ 1,735**	**-1.36%**
Allocations to the Rate Centers						
Urban Water	30.00%	**$ 480,235**	**$ 38,389**	**$ 38,909**	**$ (520)**	
Crozet Water	3.50%	**56,027**	**4,479**	**4,539**	**(61)**	
Scottsville Water	3.50%	**56,027**	**4,479**	**4,539**	**(61)**	
Urban Wastewater	56.50%	**904,442**	**72,299**	**73,279**	**(980)**	
Glenmore Wastewater	3.50%	**56,027**	**4,479**	**4,539**	**(61)**	
Scottsville Wastewater	3.00%	**48,023**	**3,839**	**3,891**	**(52)**	
	100.00%	**$ 1,600,783**	**$ 127,963**	**$ 129,698**	**$ (1,735)**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019

Laboratory

Operating Budget vs. Actual

	Notes	*Budget FY 2020*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
N/A						
Expenses						
Personnel Cost		$ 394,222	$ 30,965	$ 29,889	$ 1,076	3.47%
Professional Services		-	-	-	-	
Other Services & Charges		9,230	769	104	665	86.47%
Communications		1,153	96	171	(75)	
Information Technology		2,500	208	-	208	100.00%
Supplies		2,150	179	11	169	94.14%
Operations & Maintenance		61,500	5,125	6,350	(1,225)	-23.90%
Equipment Purchases		2,200	183	142	42	22.73%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 472,955**	**$ 37,526**	**$ 36,667**	**$ 859**	**2.29%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (472,955)**	**$ (37,526)**	**$ (36,667)**	**$ (859)**	**2.29%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 208,100**	**$ 16,511**	**$ 16,133**	**$ 378**	
Crozet Water	4.00%	**18,918**	**1,501**	**1,467**	**34**	
Scottsville Water	2.00%	**9,459**	**751**	**733**	**17**	
Urban Wastewater	47.00%	**222,289**	**17,637**	**17,233**	**404**	
Glenmore Wastewater	1.50%	**7,094**	**563**	**550**	**13**	
Scottsville Wastewater	1.50%	**7,094**	**563**	**550**	**13**	
	100.00%	**$ 472,955**	**$ 37,526**	**$ 36,667**	**$ 859**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - July 2019

Engineering

Operating Budget vs. Actual

		Budget FY 2020	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ -	$ -	
Total Operating Revenues		**$ -**	**$ -**	**$ -**	**$ -**	
Expenses						
Personnel Cost	**A**	$ 1,347,631	$ 105,693	$ 115,460	$ (9,767)	-9.24%
Professional Services		20,000	1,667	-	1,667	100.00%
Other Services & Charges		10,350	863	1,063	(200)	-23.20%
Communications		14,500	1,208	982	226	18.73%
Information Technology	**B**	21,200	1,767	15,049	(13,282)	-751.81%
Supplies		9,800	817	408	409	50.05%
Operations & Maintenance		86,798	7,233	2,613	4,620	63.87%
Equipment Purchases		42,400	3,533	1,826	1,708	48.33%
Depreciation & Capital Reserve Transfers		-	-	-	-	
Total Operating Expenses		**$ 1,552,679**	**$ 122,780**	**$ 137,400**	**$ (14,620)**	**-11.91%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,552,679)**	**$ (122,780)**	**$ (137,400)**	**$ 14,620**	**-11.91%**
Allocations to the Rate Centers						
Urban Water	47.00%	**$ 729,759**	**$ 57,707**	**$ 64,578**	**$ (6,871)**	
Crozet Water	4.00%	**62,107**	**4,911**	**5,496**	**(585)**	
Scottsville Water	2.00%	**31,054**	**2,456**	**2,748**	**(292)**	
Urban Wastewater	44.00%	**683,179**	**54,023**	**60,456**	**(6,433)**	
Glenmore Wastewater	1.50%	**23,290**	**1,842**	**2,061**	**(219)**	
Scottsville Wastewater	1.50%	**23,290**	**1,842**	**2,061**	**(219)**	
	100.00%	**$ 1,552,679**	**$ 122,780**	**$ 137,400**	**$ (14,620)**	

RIVANNA WATER & SEWER AUTHORITY
695 Moores Creek Lane | Charlottesville, Virginia 22902-9016
434.977.2970
434.293.8858
www.rivanna.org

MEMORANDUM

TO: **RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS**

FROM: **JENNIFER WHITAKER, DIRECTOR OF ENGINEERING & MAINTENANCE**

REVIEWED BY: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **STATUS REPORT: ONGOING PROJECTS**

DATE: **AUGUST 27, 2019**

This memorandum reports on the status of the following Capital Projects as well as other significant operating, maintenance and planning projects.

Under Construction

1. Crozet Water Treatment Plant Expansion
2. Wholesale Water Master Metering
3. Interceptor Sewer & Manhole Repair
4. Valve Repair – Replacement (Phase 2)
5. Piney Mountain Tank Rehabilitation
6. Scottsville WTP – Finished Water Metering Improvements
7. Buck's Elbow Ground Storage Tank Chlorination System
8. Glenmore Secondary Clarifier Coating
9. Security Enhancements
10. Urgent and Emergency Repairs

Design and Bidding

11. Observatory Water Treatment Plant Expansion
12. South Rivanna Water Treatment Plant Improvements
13. Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line and Raw Water Pump Station
14. Crozet Flow Equalization Tank
15. Beaver Creek Dam Alterations
16. Beaver Creek Raw Water Pump Station
17. Crozet Interceptor Pump Station Rebuilds
18. MCAWRRF Digester Sludge Storage Improvements
19. MCAWRRF Aluminum Slide Gate Replacements

20. Sugar Hollow Dam – Rubber Crest Gate Replacement and Intake Tower Repairs
21. South Rivanna Dam – Gate Repairs
22. Moores Creek Wetland Hydrology Improvements

Planning and Studies

23. Avon to Pantops Water Main (on hold until completion of the Urban Water Master Plan)
24. South Fork Rivanna Reservoir to Ragged Mountain Reservoir Water Line Right-of-Way
25. Urban Water Demand and Safe Yield Study
26. Urban Finished Water Infrastructure Master Plan
27. South Rivanna River Crossing and North Rivanna Transmission Main
28. Route 29 Pump Station
29. South Rivanna Hydropower Plant Decommissioning
30. Upper Schenks Branch Interceptor, Phase II
31. Asset Management Plan

O&M Related Projects

32. NRWTP Raw Metering Improvements
33. NRWTP Sludge Lagoon Study and Needs Assessment
34. MCAWRRF Cogeneration System Analysis
35. SRWTP Future Site Development Analysis

1. Crozet Water Treatment Plant Expansion

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Orders Construction Co. (WVA)
Construction Start:	December 2018
Percent Completion:	13%
Base Construction Contract + Change Order to Date = Current Value:	$7,170,000- $285,000 = $6,885,000
Expected Completion Date:	May 2021
Total Capital Project Budget:	$8,500,000

Current Status:

Work towards the completion of Milestone No. 1 continues, which includes rehabilitation and construction of the PAC contactors and flocculation basins.

History:

This project was created to increase the supply capacity of the existing Crozet WTP by modernizing plant systems. The goal was to not drastically increase the plant footprint in regard to the existing filter plant, flocculation tanks, and sedimentation basins. By modernizing the outdated equipment within these treatment systems, the plant discharge capacity will be improved by approximately 100% (from 1 to 2 mgd). SEH completed a Preliminary Engineering Report (PER); watershed data collection; raw water jar testing; pilot scale testing, as well as preliminary and final design. A Notice to Proceed was

issued on December 13, 2018 and the contractor mobilized on February 26, 2019.

2. Wholesale Water Master Metering

Design Engineer:	Michael Baker International (Baker)
Construction Contractor:	Linco, Inc.
Construction Start:	January 2016
Percent Complete:	98%
Base Construction Contract + Change Orders to Date = Current Value:	$2,228,254 - $284,104.24 = $1,944,149.76
Expected Completion Date:	August 2019
Total Capital Project Budget:	$3,200,000

Current Status:

Three water treatment plant flow meters, and all 25 distribution system flow meters have been installed. Of those 25 meters, 16 are currently functional, 6 are pending additional calibration testing during the week of August 19, and 3 have been returned to the manufacturer to resolve calibration issues.

History:

In January 2012, a Water Cost Allocation Agreement was signed by the City of Charlottesville (City) and ACSA designating how the two agencies would share in the financing of the New Ragged Mountain Dam project. Within the agreement is a general provision developed by the ACSA and City to enhance measurement of the water usage by each of the distribution agencies.

The Board authorized staff in August of 2012 to enter into an agreement with Michael Baker International, Inc. (Baker) to complete an engineering study on metering plan alternatives. Baker's study identified several alternatives for a metering plan based on combinations of metering and estimating methodologies. Based on feedback from ACSA, the City, and RWSA, Baker recommended a Jurisdictional Approach which included installation of water meters at 34 locations at the City/County corporate boundary and at each of the three urban water treatment plants at an estimated cost of $6.4 million. At its September 2013 meeting, the RWSA Board of Directors requested staff to proceed with the Jurisdictional Coverage Approach. In February 2014, the Board of Directors authorized Baker to complete preliminary and final design for the project and to provide bid-phase services. The final design includes construction of 25 metering systems in underground vaults and required acquisition of twenty (20) permanent water line easements and one (1) permanent access easement.

In May 2018, a final version of the *Wholesale Metering Administration and Implementation Policy* was completed and forwarded to the ACSA and the City. RWSA terminated the construction contract with Linco, Inc. on April 2, 2018 and is coordinating the remaining work in-house.

3. Interceptor Sewer and Manhole Repair

Design Engineer:	Frazier Engineering
Construction Contractor:	IPR Northeast

Construction Start:	November 2017
Percent Complete:	25%
Base Construction Contract + Change Orders to Date = Current Value:	$1,244,337.19
Expected Completion:	October 2021
Total Capital Project Budget:	$1,088,330 (Urban) + $625,000 (Crozet) = $1,713,330

Current Status:

Frazier Engineering continues to conduct condition assessment activities and has reviewed CCTV results from investigation activities performed by IPR Northeast. The results from these investigations and previous investigations have been compiled into an initial construction work authorization for rehabilitation work on portions of the Crozet and Morey Creek Interceptors. IPR Northeast will be mobilizing to the area during late August in order to complete work under the initial construction work authorization. In addition, staff is developing a subsequent construction work authorization, which will complete rehabilitation work on the upper portion of the Morey Creek Interceptor. Some additional CCTV work will also be performed following the cleaning of certain sections of the interceptor system. Additional investigation and rehabilitation work will follow after the initial round of CCTV investigations.

History:

Results from sewer flow monitoring and modeling under the Comprehensive Sanitary Sewer Study provided awareness to specific inflow and infiltration (I&I) concerns in the collection system and resulted in strengthened commitments from the City, ACSA and RWSA to continue professional engineering services to aid in the rehabilitation and repair of the sewer collection system. Engineering services will be used for sewer infrastructure condition assessments and the development of a sewer rehabilitation bid package for the procurement of a contractor to perform the recommended rehabilitation work.

4. Valve Repair – Replacement (Phase 2)

Design Engineer:	RWSA / Dewberry
Construction Contractor:	Garney Construction
Construction Start:	May 2019
Percent Complete:	15%
Base Construction Contract + Change Orders to Date = Current Value:	$843,460.00 + ($56,762.10)= $770,092.90
Expected Completion:	June 2020
Total Capital Project Budget:	$882,914

Current Status:

Due to the recently completed Piney Mountain Tank Rehabilitation project and bypass pumping necessary for that work, two valves identified for replacement in the Valve Repair-Replacement Project have been unavailable to be replaced. As such, the Contractor demobilized from the project after the valve replacement completed on May 21, 2019. The Contractor plans to return in August once some administrative items associated with the project have been rectified. RWSA staff is

continuing internal coordination, as well as external communication with the Contractor and other utilities involved to help ensure that the remainder of the work can be completed as scheduled.

History:
Isolation valves are critical for normal operation of the water distribution system and timely emergency response to water main breaks. Staff continuously reviews results from an ongoing Valve Exercising and Condition Assessment Program. This project will replace the highest-priority valves that are identified during the condition assessment as not operable and not repairable. Phase 2 will continue replacing inoperable and unrepairable valves in the North Rivanna Finished Water System, but it will also replace (and potentially repair) valves on the South Rivanna, Crozet, Pantops, and Southern Loop Finished Water Systems. Once all specified valves have been repaired/replaced in Phase 2, the focus will shift to replacing older isolation valves in subsequent phases.

A Request for Bids (RFB) was issued on November 6, 2018. RWSA staff opened bids for the project on December 11, 2018, and Garney Companies, Inc. was the apparent low bidder ($843,460). The RWSA Board of Directors approved the bid award recommendation and Capital Improvement Plan Budget Amendment on January 22, 2019. A Notice to Proceed was issued on May 6, 2019.

Two (2) valve replacements were completed in May 2019; one (1) valve was replaced on the Crozet Waterline, and one (1) valve was replaced on the South Rivanna Waterline.

5. Piney Mountain Tank Rehabilitation

Design Engineer:	Johnson, Mirmiran & Thompson (JMT)
Construction Contractor:	Utility Service Co, Inc.
Construction Start:	April 2019
Percent Complete:	99%
Base Construction Contract + Change Orders to Date = Current Value:	$251,700 + $16,605 = $268,305
Expected Completion:	August 2019
Total Capital Project Budget:	$570,000

Current Status:

The Piney Mountain Tank was taken offline during the week of April 22, 2019. The Contractor completed all structural repairs on June 21, 2019 and completed the coating portions of the work on July 25, 2019. Substantial completion was achieved on July 25, 2019, and the Piney Mountain Tank was placed back into service on August 8, 2019. The Contractor is currently working on several site-related items in order to achieve final completion.

History:

The 700,000 gallon Piney Mountain Tank serves the North Rivanna pressure zone. A routine inspection of the Piney Mountain Tank in April of 2012 revealed several deformed roof rafters, indicating the potential for structural deficiency. An in-depth structural inspection was performed in May of 2013 and a list of recommended roof repairs provided. This project includes consultant services for design and bidding of necessary roof repairs and other ancillary items, as well as construction,

construction administration, and inspection services. Long term plans for the Rt. 29 service area include the modification or elimination of this facility. The current recommended improvements are needed in order to maintain the existing tank in service for at least the next 10 years.

The project was advertised for bid on November 28, 2017 and bids were opened on January 9, 2018. At its January 2018 meeting, the RWSA Board of Directors approved staff's recommendation of award to Utility Service Co., Inc., the apparent low bidder on the project. Due to unforeseen complications with an extended tank shutdown and other ongoing construction activities in the North Rivanna Water System in spring of 2018, construction of the Piney Mountain Tank repairs was postponed to spring of 2019. The RWSA Board of Directors approved an amendment to the Capital Improvement Plan Budget at its March 2019 meeting.

6. <u>Scottsville WTP – Finished Water Metering Improvements</u>

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Anderson Construction Inc.
Construction Start:	September 2019
Percent Complete:	0%
Base Construction Contract + Change Orders to Date = Current Value:	$115,500
Completion:	April 2020
Approved Capital Budget:	$145,000

<u>Current Status</u>:

Construction bids were opened on May 29, 2019. Notice of Award was provided to the contractor on July 9, 2019 and final contract documents are being executed

<u>History</u>:

The Scottsville WTP is permitted to provide up to 0.25 MGD of potable drinking water to RWSA customers in the Scottsville service area. After water has been treated in the plant it is collected in an existing clearwell, which was constructed with the original facility. From the clearwell, the water is pumped into the distribution system by one of the two high service pumps. The flow from these pumps is not metered. In order to keep a record of the total flow entering the Scottsville system, plant operators must periodically conduct draw-down tests to verify the pumping rate of each of the two pumps. The total flow is then calculated based on the run time of each pump. This method of measuring flow is not accurate, as the pumping rate will vary based on the clearwell level and the hydraulic grade line of the distribution system. In addition, the Virginia Department of Health has indicated that the flow should be metered during recent conversations related to the disinfection profile calculation throughout the plant. The purpose of this project is to install a finished water meter at the plant.

7. <u>Buck's Elbow Ground Storage Tank Chlorination System</u>

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Littleton and Associates, Inc.
Construction Start:	September 2019
Percent Complete:	0%

Base Construction Contract + Change Orders to Date = Current Value:	$186,000
Completion:	April 2020
Approved Capital Budget:	$239,000

Current Status:

A Notice of Award was issue to Littleton and Associates, Inc. on August 6, 2019. Execution of the Contract Documents by both parties is ongoing. Once the Contract Documents have been fully executed, a Notice to Proceed will be issued, and a Pre-Construction Conference will take place.

History:

The two million-gallon Bucks Elbow Ground Storage Tank provides finished water storage for the Crozet Area. Historically, RWSA has experienced low chlorine residuals in the tank during the warm weather months due to water age and stratification. When chlorine residuals drop, RWSA must manually feed chlorine into the tank. Previously, this meant that staff had to bring all required pumping infrastructure to the site and climb the tank to access the injection point(s). To enhance the efficiency and safety of this process, SEH is assisting RWSA with the design of a chlorine feed system that is capable of one-person operation, will not require tank climbing or confined space entry into the adjacent altitude valve vault, and will minimize overall chemical exposure risk to RWSA staff. An active mixing system will also be installed at the Buck's Elbow Ground Storage Tank as a part of the work to supplement the existing passive mixing system. This will ensure that the tank is being appropriately mixed during the chlorine feed process and will decrease overall stratification in the tank.

SEH completed an update to the project's original Alternatives Analysis (completed in Winter 2017 as an O&M Project) and held a review meeting with RWSA Engineering and Operations staff during the week of May 6, 2019. This document was submitted to VDH for preliminary review following the meeting. Bidding documents were finalized, and the Request for Bids was issued on June 20, 2019. Bids were opened on July 11, 2019, and the apparent low bidder was Littleton and Associates, Inc. ($186,000). A Bid Award Recommendation and Capital Improvement Plan Amendment was approved by the Board of Directors on July 23, 2019.

8. Glenmore Secondary Clarifier Coating

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Nostos SS Contractors, LLC
Construction Start:	August 2019
Percent Complete:	5%
Base Construction Contract + Change Orders to Date = Current Value:	$98,900
Completion:	January 2020
Approved Capital Budget:	$110,000 + $50,000 requested = $160,000

Current Status:

Request for Quote No. 1087 was awarded in July 2019. The contractor mobilized August 12, 2019 and set up the containment on the first clarifier. Blasting is anticipated to begin the week of August

19th.

History:

The secondary clarifiers at the Glenmore facility were painted over 10-years ago. The clarifier environment is a particularly harsh environment subject to corrosive gases, grit abrasion and mechanical wear. Based on observations by operations staff, the coating system is in need of replacement to prevent deterioration and failure of the underlying metal superstructure. This project includes the cleaning and full coating of the clarifier.

9. Security Enhancements

Contractor:	Security 101
Construction Start:	August 2019
Percent Complete:	0%, Award
Completion:	2024
Approved Capital Budget:	$1,000,000

Current Status:

Our CIP Project engineer is S drafting Contract Documents for review and execution, as well as engaging Security 101 in preliminary design/coordination meetings related to the various ongoing WTP upgrades. SOur engineer is also working onan inventory of all doors/gates desired to be included in the Access Control System, and will be conducting subsequent site visits at MCAWRRF, SRWTP, OBSWTP, and CZWTP with Security 101 in order to develop the initial construction work authorization.

History:

As required by the Federal Bioterrorism Act of 2002, water utilities must conduct Vulnerability Assessments and have Emergency Response Plans. RWSA recently completed an updated Risk Assessment of its water system in collaboration with the Albemarle County Service Authority (ACSA), City of Charlottesville (City), and University of Virginia (UVA). A number of security improvements that could be applied to both the water and wastewater systems were identified. The purpose of this project will be to install security improvements at RWSA facilities including additional security gate and fencing components, vehicle bollards, facility signage, camera system enhancements, additional security lighting, intrusion detection systems, door and window hardening, installation of industrial strength locks, communication technology and cable hardening, and an enhanced access control program.

RWSA Engineering staff held a meeting with Operations staff to discuss overall project needs and priorities in October 2018. Meetings with ACSA and City staff were held in Fall/Winter 2018-2019 to discuss how access control and intrusion detection systems have been implemented into to the day-to-day operations of the two utilities. A Request for Proposal (RFP) for an Implementer to facilitate selection of an access control system, confirmation of design requirements based upon RWSA's facilities and project goals, and installation of the selected system was issued on June 6, 2019. RWSA conducted a Pre-Proposal Meeting on June 14, 2019, and proposals were opened on June 27, 2019. Interviews were conducted on July 15-16, 2019, and a Contract Award Recommendation was brought to the Board on July 23, 2019.

10. Urgent and Emergency Repairs

Staff is currently working on several urgent repairs within the water and wastewater systems as listed below:

Project No.	Project Description	Approx. Cost
2017-03	Crozet Sewer Force Main Air Release Valve Repair	$135,000
2018-06	South Rivanna Dam Apron and River Bank Repairs	$200,000
2019-05	Observatory Water Line Repair near Lambeth Pump Station	$100,000
2019-06	Upper Sugar Hollow Water Line near Meriwether Drive	$15,000
2019-07	Urban Water Line Valve and Blow-off Repair	TBD

- Crozet Sewer Force Main Air Release Valve Repair

  During routine inspections of the sewer force main, the Maintenance Department identified that the saddle for one of the air release valves was loose and needed to be repaired. Due to the profile of the force main however, it is not possible to dewater the force main and take pressure off the pipe at this location without the installation of line stops. As a result, a contractor was contacted to begin development of a method to address the issue and a site meeting was conducted. The contractor has provided estimated pricing and a work authorization is being developed. Coordination with the property owner is underway and this repair will be scheduled this summer.

- South Rivanna Dam Apron and River Bank Repairs

  Intense rainfall between May 30-31, 2018 resulted in extensive flooding throughout Charlottesville and parts of Albemarle County, with flows over the South Fork Rivanna Dam reaching more than 7 feet over the spillway crest at its peak. Staff has inspected the dam and abutments to determine the extent of damage resulting from the extreme flooding. Although there is no discernible damage to the dam itself, staff found erosion damage to the north downstream river bank and substantial displacement of large stone downstream of the dam to form a rock dam and pool below the north apron. Additionally, some damage to concrete structures on both aprons was noted, including possible creation of voids beneath the concrete and loss of concrete joint filler. Repairs to the river bank and removal of the rock dam were completed June 3-7, 2019 under RWSA's on-call construction contract. Repairs to the north and south concrete aprons will be designed by Schnabel Engineering and those services will be procured separately from the on-call contract.

- Observatory Water Line Repair near Lambeth Pump Station

  A small leak was observed along the Observatory Water Line near the Lambeth Pump Station. We coordinated with UVA to confirm whether small diameter irrigation lines in the vicinity could be causing the issue, but after isolating those lines the leak was still present. As a result, we contacted one of our On-Call Maintenance contractors, Faulconer Construction, to visit the site and plan for an exploratory excavation. This work is being coordinated and a repair approach will be confirmed once the source of the leak is identified.

- Upper Sugar Hollow Water Line near Meriwether Drive

  A leak was observed along the transfer line near sugar hollow. We have coordinated with Faulconer to investigate the leak. We are meeting them for a site visit. We are turning the transfer line on to allow water through to pipe so leak will be visible during site visit. Once confirmed again on-site with Faulconer we plan to repair leak.

- Urban Water Line Valve and Blow-off Repair

  During its routine inspections of the Water System, the RWSA Maintenance Department discovered a blowoff (drain) valve along the Urban Waterline (UWL-017) that had significant leakage. In addition, during one of the numerous heavy rain events received in 2018, the water in the creek adjacent to the drain line rose, eroding the area around the drain line and causing the headwall to become disconnected from the end of the pipe. Staff will be coordinating internally to confirm the overall scope of the project, including whether or not the drain line will need to be further reinforced or restrained. Once the scope has been finalized, Faulconer Construction will be performing the valve replacement(s), as well as any piping/outlet modifications to the drain line.

11. <u>Observatory Water Treatment Plant Expansion</u>

Design Engineer:	Short Elliot Hendrickson, Inc. (SEH)
Project Start:	October 2017
Project Status:	75% Design
Construction Start:	March 2020
Completion:	2023
Approved Capital Budget:	$19,700,000
Current Project Estimate:	$25,500,000

<u>Current Status</u>:

Final design continues with submission of design plans to VDH anticipated for early September. A request to add the design of four GAC contactors to this project was approved by the Board in July 2019. RWSA is planning a contractor's breakfast for the last week in September 2019 to increase interest in the contractor community for the project prior to the official advertisement. An ad for this breakfast will be placed in national publications. The official advertisement for competitive bids is anticipated for October 2019.

<u>History</u>:

A project kickoff meeting with staff was held on November 14, 2018 and 30% design documents were provided in February. A Value Engineering Workshop took place the week of April 8th and a memo summarizing the results has being completed. Any agreed upon results will be incorporated into the project. This project will consider the design and costs for upgrading the plant systems to achieve a consistent 7.7 MGD plant capacity, as well as consider the costs involved with upgrading the plant to

10 or 12 MGD capacity. Much of the Observatory Water Treatment Plant is original to the 1953 construction. In an effort to better understand the needed future improvements, a Condition Assessment Report was completed by SEH in October of 2013. The approved Capital Improvement Plan project was based on the findings from this report. A portion of this project was expedited in order to repair and replace old, existing equipment that was not functional. The flocculator systems have been replaced and upgraded as part of the Drinking Water Activated Carbon and WTP Improvements project (GAC). The second flocculator system was started up in May 2017, and both systems are currently in full service. The PER has been finalized, as well as a Work Authorization with the design engineer for design, bidding and construction administration services.

12. <u>South Rivanna Water Treatment Plant Improvements</u>

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	October 2017
Project Status:	75% Design
Construction Start:	March 2020
Completion:	2023
Approved Capital Budget:	$15,000,000

<u>Current Status:</u>

Final design continues with submission of design plans to VDH anticipated for early September. RWSA is planning a contractor's breakfast for the last week in September 2019 to increase interest in the contractor community for the project prior to the official advertisement. An ad for this breakfast will be placed in national publications. The official advertisement for competitive bids is anticipated for October 2019.

<u>History:</u>

A project kickoff meeting with staff was held on November 13, 2018 and 30% design documents were provided in February. A Value Engineering Workshop took place the week of April 8th and a memo summarizing the results has being completed. Any agreed upon results will be incorporated into the project. The South Rivanna Water Treatment Plant is currently undergoing significant upgrades as part of the Granular Activated Carbon Project. Several other significant needs have also been identified and have been assembled into a single project. The projects herein include: expansion of the coagulant storage facilities; installation of additional filters to meet firm capacity needs; the addition of a second variable frequency drive at the Raw Water Pump Station; the relocation for the electrical gear from a sub terrain location at the Sludge Pumping Station; a new building on site for additional office, lab, control room and storage space; improvements to storm sewers to accept allowable WTP discharges; and the construction of a new metal building to cover the existing liquid lime feed piping and tanks.

The scope of this project will not increase plant treatment capacity. The PER has been finalized, as well as a Work Authorization with the design engineer for design, bidding and construction administration services.

13. <u>Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line and Raw Water Pump Station</u>

Design Engineer:	Michael Baker International (Baker)
Project Start:	August 2018
Project Status:	Prelim Design & Easement Acquisition in Progress
Construction Start:	2022
Completion:	2026
Approved Capital Budget:	$3,877,000
Current Project Estimate:	$18,000,000

Current Status:

A site evaluation study to recommend a location for the raw water pipe and pump station has been completed and is currently under review. Survey and appraisal work have been completed for portions of this alignment.

History:

A Work Authorization was executed in December 2018 with Michael Baker International for the raw water line routing study, preliminary design, plat creation and the easement acquisition process for this portion of the project. Raw water is transferred from the Ragged Mountain Reservoir to the Observatory Water Treatment Plant by way of two 18-inch cast iron pipelines, which have been in service for more than 110 and 70 years, respectively. The increased frequency of emergency repairs and expanded maintenance requirements are one impetus for replacing these pipelines. The proposed water line will be able to reliably transfer water to the expanded Observatory plant, which may eventually have the capacity to treat 10 mgd. The new pipeline is expected to be constructed of 36-inch ductile iron and will approximately 14,000 feet in length. The opportunity to integrate the Observatory WTP raw water supply line with the proposed South Rivanna Reservoir to RMR raw water main project is currently being investigated as part of the approved 50-year Community Water Supply Plan.

The RMR to Observatory WTP raw water pump station is planned to replace the existing Stadium Road and Royal pump stations, which have exceeded their design lives or will require significant upgrades with the Observatory WTP expansion. The pump station will pump up to 10 million gallons per day (mgd) of raw water to the Observatory WTP. Integration of the new pump station with the planned South Rivanna Reservoir to RMR pipeline is being considered in the interest of improved operational and cost efficiencies. An integrated pump station would also include the capacity to transfer up to 16 mgd of raw water from RMR back to the SRR WTP.

14. Crozet Flow Equalization Tank

Design Engineer:	Schnabel Engineering
Project Start:	October 2016
Project Status:	80% Design
Construction Start:	December 2019
Completion:	2021
Approved Capital Budget:	$4,860,000

Current Status:

Final design continues with an advertisement for competitive bids anticipated for September 2019.

History:

A 2016 update to the 2006 model was completed which evaluated the I&I reduction goals previously established and future capital project needs. Based on the results of that study, it was determined that the Crozet Interceptor system and namely the existing Crozet Pump Stations (1 through 4) have adequate capacity to handle the 2015 peak wet weather flow from the Crozet Service Area during a two-year storm. However, as projected growth in the service area occurs, peak wet weather flows in the area under the storm conditions established in the updated model will begin to exceed the firm capacities of the pump stations by 2025. Additional I&I reductions in order to reduce flows enough to not exceed the pump station firm capacities are not feasible and as a result, the construction of a flow equalization tank was identified as the best method to alleviate wet weather capacity issues.

While the study indicates that capacity should not be an issue until 2025, a flow equalization tank would also provide a significant benefit to the maintenance of the Crozet Pumping Station system which currently lacks system storage necessary to allow adequate time to perform repairs on the pumps and the associated force mains while the system is down. As a result, it is important to progress into the siting study for the flow equalization tank to ensure that it can be constructed in time for the 2025 flow targets but also to facilitate less complicated and more thorough maintenance on the system that has not been possible previously.

Greeley and Hansen completed a siting study to determine the location for the flow equalization tank based on the results of the comprehensive model update. The results of the siting study were reviewed with ACSA and a final tank location was determined.

A work authorization with Schnabel Engineering was finalized and a Project Kick-off Meeting was held on July 12, 2018. A data collection period has begun which includes a wetlands investigation of the project site and a topographic survey of the site has also been completed. An inspection of the existing Pump Station No. 4 is scheduled for September 20, 2018 where information on the control and electrical systems will be gathered.

15. Beaver Creek Dam Alterations

Design Engineer:	Schnabel Engineering
Project Start:	February 2018
Project Status:	Final Design and Permitting Underway
Construction Start:	2023
Completion:	2026
Approved Capital Budget:	$4,898,000
Current Project Estimate:	$15,000,000

Current Status:

A Preliminary Engineering Report has been completed for the selected design alternative. Final design of the dam improvements is underway. Development of a Joint Permit Application for the new Pump Station, Intake, and Beaver Creek Dam Spillway Upgrades began in May 2019 by Hazen & Sawyer and is expected to be completed in the summer of 2020. Staff is also currently pursing federal funding for the project.

History:

RWSA operates the Beaver Creek Dam and reservoir as the sole raw water supply for the Crozet Area. In 2011, an analysis of the Dam Breach inundation areas and changes to Virginia Department of Conservation and Recreation (DCR) *Impounding Structures Regulations* prompted a change in hazard classification of the dam from Significant to High Hazard. This change in hazard classification requires that the capacity of the spillway be increased. This CIP project includes investigation, preliminary design, public outreach, permitting, easement acquisition, final design, and construction of the anticipated modifications. Work for this project will be coordinated with the new relocated raw water pump station and intake and a reservoir oxygenation system project.

Schnabel Engineering developed three alternatives for upgrading the capacity of the Beaver Creek Dam Spillway in 2012. Following the adoption of a new Probable Maximum Precipitation (PMP) Study on December 9, 2015 and the release of DCR guidelines for implementing the PMP study in March of 2016, RWSA determined it would proceed with an updated alternatives analysis and Preliminary Engineering Report for upgrading the dam spillway. In 2017, RWSA entered into a term contract with Schnabel Engineering for dam-related engineering services. The design work for this project is being completed under Schnabel's term contract.

Following the completion of an updated alternatives analysis by Schnabel Engineering, staff met with members of Albemarle County and ACSA staff to discuss the preferred alternative. It was determined that staff would proceed with design of a labyrinth spillway and chute through the existing dam with a bridge to allow Browns Gap Turnpike to cross over the new spillway.

16. Beaver Creek Raw Water Pump Station and Intake

Design Engineer:	Hazen & Sawyer
Project Start:	August 2018
Project Status:	Permitting and Site Selection Work Underway
Construction Start:	2023
Completion:	2026
Approved Capital Budget:	$4,138,000
Current Project Estimate:	$8,000,000

Current Status:

Hazen and Sawyer is continuing work on a site selection study for the new Raw Water Pump Station and intake. Initial site alternatives have been narrowed down to a shortlist and geotechnical evaluations are anticipated this fall to aid in determining the preferred site for the project. Development of a Joint Permit Application for the new Pump Station, Intake, and Beaver Creek Dam Spillway Upgrades is also underway and is expected to be completed in the summer of 2020.

History:

The Drinking Water Infrastructure Plan for the Crozet water service area, developed by Hazen and Sawyer, recommends installation of a new Raw Water Pump Station and Intake at the Beaver Creek Dam in order to meet new minimum instream flow requirements and provide adequate raw water pumping capacity to serve the growing Crozet community for the next 50 years. The pump station will

be moved out of its existing location at the toe of the dam to a new location, to be determined during design. The new intake structure will include enhanced controls to allow for access to the best quality water at any given time.

17. Crozet Interceptor Pump Station Rebuilds

Design Engineer:	RWSA
Project Start:	July 2018
Project Status:	25% Design
Construction Start:	2019
Completion:	2023
Approved Capital Budget:	$545,000

Current Status:

The Maintenance Department has begun pump replacement work associated with this overall project. Staff is reviewing the overall scope of work for the project and will be coordinating other items with the Maintenance Department regarding schedule and preferred equipment and materials. Work will be performed via quote packages and the need for consultant assistance is being determined.

History:

The Crozet Interceptor Pump Stations were constructed in the 1980's and many of the components are still original. The project will include the replacement of pumps and valves at Pump Station No. 2 in order to improve pumping capabilities at this location and provide spare parts for the pumps at Pump Station No. 1. This work will also include roof replacements at all four pump stations, siding replacement for the wet well enclosure at Pump Station No. 3, and installation of a new water well at Pump Station No. 3. Components of this project will be coordinated and timed to properly coincide with the Crozet Flow Equalization Tank project.

18. MCAWRRF Digester Sludge Storage Improvements

Design Engineer:	TBD
Project Start:	Summer 2019
Project Status:	Preliminary Design
Construction Start:	Fall 2019
Completion:	June 2020
Approved Capital Budget:	$313,000

Current Status:

We are currently scheduling an engineer to perform an interior inspection of the sludge storage tank. Preparation of construction documents will begin after an inspection is completed and scope of repair work better defined. Implementation of this work will commence after Digester No. 3 is coated and back in service in late summer 2019.

History:

With the second centrifuge installation, additional capacity for storage of digested sludge would provide the Authority operational flexibility it does not currently have. Additionally, the sole sludge storage tank at the MCAWRRF was constructed in 1959 of reinforced concrete and is in need of repairs. This project would convert one of the three existing anaerobic digesters (Digester No. 1) into a sludge storage tank through piping modifications, and would provide redundancy to the existing sludge storage tank so it can be removed from service, cleaned, inspected, and repaired with minimal impact to the existing sludge dewatering operations. The piping configuration would also allow flexibility for the anaerobic digester to be used as either an anaerobic digester or sludge storage tank as needed for operations. The scope of work would include piping modifications, hydraulic improvements, tank safety improvements such as handrail and lights, and structural improvements to the existing sludge storage tank roof.

19. MCAWRRF Aluminum Slide Gate Replacements

Design Engineer:	Hazen and Sawyer
Project Start:	November 2018
Project Status:	95% Design (for UV Facility work)
Construction Start:	November 2019
Completion:	June 2020
Approved Capital Budget:	$470,000

Current Status:

Staff is currently finalizing the design for the UV Facility Slide Gate Replacement Project for which a quote package will be advertised in August 2019.

History:

Several large aluminum slide gates are located at the influent side of the Moores Creek Pump Station. These gates allow staff to stop or divert flow to perform maintenance activities. After repeated attempts to access and repair the gates, it is now necessary to replace and modify the gate arrangement. The replacement includes new gates for greater flexibility and resiliency as well as significant influent flow bypass pumping. Likewise, there are several gates at the Ultraviolent disinfection facility that leak water, causing a reduced capacity of the facility. Replacement of these gates will restore the process to full capacity.

20. Sugar Hollow Dam – Rubber Crest Gate Replacement and Intake Tower Repairs

Design Engineer:	Schnabel Engineering
Project Start:	January 2019
Project Status:	Design Work Underway
Construction Start:	2020
Completion:	2021
Approved Capital Budget:	$1,140,000

Current Status:

Schnabel Engineering has begun design work on the Sugar Hollow Dam Rubber Crest Gate

Replacement. A dive inspection of the intake tower and evaluation of existing electrical and mechanical equipment are anticipated in September 2019. Construction is anticipated to begin in spring or summer of 2020.

History:

In 1998, the Sugar Hollow Dam underwent a significant upgrade to improve structural stability and spillway capacity. The original metal spillway gates were replaced with a manufactured five-foot-high inflatable rubber dam that is bolted to the existing concrete structure. This rubber dam allows for the normal storage of water in the reservoir with the ability to be lowered during extreme storm events. The rubber dam has an approximate service life of twenty years and is therefore now due for replacement. The aging intake tower structure will be inspected and evaluated. Recommended repairs may include issues relating to the intake gate valves and tower walls, including repair or replacement of intake trash racks, and sealing/grouting of minor concrete wall cracks.

21. South Rivanna Dam – Gate Repairs

Design Engineer:	Schnabel
Project Start:	July 2019
Project Status:	Work Authorization Development
Construction Start:	Spring- Fall 2020
Completion:	2020
Approved Capital Budget:	$900,000

Current Status:

Design will begin in September 2019 with construction in 2020, pending preliminary findings.

History:

The South Rivanna Dam, originally constructed in 1965, is equipped with two 36” diameter slide gates and conduits, one each on the north and south abutments of the dam, which can be utilized to dewater the facility or to meet minimum instream flow (MIF) requirements when the dam is not spilling. These gates are original to the dam and while they are operable and are exercised regularly, they can no longer provide a complete seal, therefore allowing some leakage through the dam. RWSA has protocols in place to temporarily stop leakage through the gates when necessary to conserve water; however, there is a desire to repair or replace the gates and components as needed to restore full functionality. The project includes other repairs to the facility, including improvements to the concrete wall adjacent to the Raw Water Pump Station as well as improvements to the north dam tower to provide safer access by staff while still discouraging access by the general public.

22. Moores Creek Wetland Hydrology Improvements

Design Engineer:	VHB/ECS, Mid-Atlantic
Project Start:	March 2019
Project Status:	90% Design
Construction Start:	October 2019
Completion:	February 2020

Approved Capital Budget: $95,000

Current Status:
Design is underway. Anticipate construction bidding in August.

History:
As part of the Ragged Mountain project, RWSA was required to mitigate for impacts to streams and wetlands. The wetland mitigation site is located along Moores Creek on Franklin St. RWSA has been monitoring the mitigation sites, as required by the project permit, since construction in 2014. Reports on the success of the site are submitted to the Department of Environmental Quality (DEQ) at intervals during the first 10 year of the project construction. From this monitoring it was determined that the wetland is holding more water than is ideal for its function. VHB designed a Hydrology Improvement Plan for the site, which was approved by DEQ. RWSA is now working with ECS Mid-Atlantic, to obtain the necessary County permits for the improvements (i.e., Erosion and Sediment Control permit).

23. Avon to Pantops Water Main (on hold until completion of the Urban Water Master Plan)

Design Engineer:	Michael Baker International (Baker)
Project Start:	August 2017
Project Status:	Preliminary Engineering Report
Construction Start:	TBD
Completion:	TBD
Approved Capital Budget:	$2,100,000

Current Status:

Route alignment determination, hydraulic modeling, and preliminary design were underway. Due to the complicated nature of our finished water systems, it was decided at the August 2018 Board meeting that a more comprehensive approach is warranted and we should complete the Finished Water Master Plan prior to moving forward with final design and construction of the Avon to Pantops Water Main. This project is on hold.

History:

The focus of this project is on the southern half of the urban area water system which is currently served predominantly by the Avon Street and Pantops water storage tanks. The Avon Street tank is hydraulically well connected to the Observatory Water Treatment Plant while the Pantops tank is well connected to the South Rivanna Water Treatment Plant. The hydraulic connectivity between the two tanks, however, is less than desired, creating operational challenges and reduced system flexibility. In 1987, the City and ACSA developed the Southern Loop Agreement which laid out two key phases (with the first being built at the time). The 1987 Agreement and planning efforts will service as a starting point for this current project. An engineering contract has been negotiated and was approved by the Board of Directors in July 2017.

24. South Rivanna Reservoir to Ragged Mtn. Reservoir Water Line Right-of-Way

Design Engineer:	Michael Baker International (Baker)
Project Start:	October 2017

Project Status:	Easement Acquisition Underway
Completion:	2021
Approved Capital Budget:	$2,295,000

Current Status:

Appraisal work is ongoing for any easements with an estimated value over $10,000 in accordance with RWSA policy, and we have begun making offers to private property owners.

History:

A Draft PER was completed in January 2019. Survey work began in late March to begin preparation of easement plats. Several of the properties are owned by the VDOT, Albemarle School Board, UVA Foundation and the City of Charlottesville. A work authorization for easement acquisition services with ERM and Associates was approved by the Board in April.

The approved 50-year Community Water Supply Plan includes the future construction of a raw water line from the South Fork Rivanna Reservoir to the Ragged Mountain Reservoir. This water line will replace the existing Upper Sugar Hollow Pipeline along an alternative alignment to increase raw water transfer capacity in the Urban Water System. The preliminary route for the water line followed the proposed Route 29 Charlottesville Bypass; however, the Bypass project was suspended by VDOT in 2014, requiring a more detailed routing study for the future water line. This project includes a routing study, preliminary design and preparation of easement documents, as well as acquisition of water line easements along the approved route.

Baker is now completing the routing study. Preliminary design, plat creation and the acquisition of easements will take place as soon as the final route determination has been made. Property owners have been contacted to request permission to access properties for topographical surveying which will take place following completion of the PER. A recommendation for a tentative final alignment was presented at a community information meeting in June 2018.

25. Urban Water Demand and Safe Yield Study

Design Engineer:	Hazen and Sawyer
Project Start:	November 2018
Project Status:	70% complete
Completion:	November 2019
Approved Capital Budget:	$154,000

Current Status:

Initial demand projections were presented to staff in mid-June. Additional workshops are anticipated with City, ACSA and County staff in early September.

History:

The City of Charlottesville, Albemarle County Service Authority, and RWSA entered into the Ragged Mountain Dam Project Agreement in 2012. This Agreement included provisions to monitor the bathymetric capacity of the Urban water reservoirs as well as a requirement to conduct reoccurring demand analysis, demand forecasting and safe yield evaluations. This study will evaluate and

calculate current and future demands and present safe yield. Per the project Agreement, these analyses shall be completed by calendar year 2020.

26. Urban Finished Water Infrastructure Master Plan

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2018
Project Status:	45% complete
Completion:	April 2020
Approved Capital Budget:	$253,000

Current Status:

Work on model development and calibration is on-going. Flow data will be provided by the City and ACSA for use by the consultant.

History:

As identified in the 2017 Strategic Plan, the Authority has a goal to plan, deliver and maintain dependable infrastructure in a financially responsible manner. Staff has identified asset master planning as a priority strategy to improve overall system development. Many previously identified projects in the urban finished water treatment and distribution system are in preliminary engineering, design or construction. As such, staff have identified a need to develop a current and ongoing finished water master plan.

27. South Rivanna River Crossing and North Rivanna Transmission Main

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2020
Project Status:	Planning
Construction Start:	2021
Completion:	2023
Approved Capital Budget:	$5,340,000

Current Status:

An update to the Airport Zone Study Report was completed in summer of 2018, confirming the need for and timing of the river crossing and transmission main. Design of the project will begin in summer 2020.

History:

RWSA has previously identified through master planning that a 24-inch water main will be needed from the South Rivanna Water Treatment Plant (SRWTP) to Hollymead Town Center to meet future water demands. Two segments of this water main were constructed as part of the VDOT Rt. 20 Solutions projects, including approximately 10,000 LF of 24-inch water main along Rt. 29 and 600 LF of 24-inch water main along the new Berkmar Drive Extension, behind the Kohl's department

store. To complete the connection between the SRWTP and the Airport Road Pump Station Site, RWSA plans to construct a new river crossing at the South Fork Rivanna River and two "gap" sections of 24-inch water main between the already completed sections. Much of the new water main route is within VDOT right-of-way; however, acquisition of right-of-way will be required at the river crossing and on the Kohl's Property at Hollymead Town Center.

28. <u>Route 29 Pump Station</u>

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	July 2019
Project Status:	Work Authorization Development
Construction Start:	2021
Completion:	2022
Approved Capital Budget:	$2,300,000

<u>Current Status</u>:

RWSA is negotiating a work authorization with SEH for design of the pump station and extensions to the North Rivanna Transmission Main.

<u>History</u>:

The Rt. 29 Pipeline and Pump Station master plan was developed in 2007 and originally envisioned a multi-faceted project that reliably connected the North and South Rivanna pressure bands; reduced excessive operating pressures, and developed a new Airport pressure zone to serve the highest elevations near the Airport and Hollymead Town Center. The master plan update was completed in June of 2018 to reflect the changes in the system and demands since 2007. This project, along with the South Rivanna River Crossing and North Rivanna Transmission Main project, will provide a reliable and redundant finished water supply to the North Rivanna area. The proposed pump station will be able to serve system demands at both the current high pressure and future low pressure conditions. These facilities will also lead to future phase implementation which will include a storage tank and the creation of the Airport water pressure zone.

29. <u>South Rivanna Hydropower Plant Decommissioning</u>

Consultant:	Gomez and Sullivan
Project Start:	October 2016
Project Status:	Exemption Surrender Process – Phase 2 Underway
Construction Start:	2019
Completion:	2020
Approved Capital Budget:	$725,000

<u>Current Status</u>:

A revised decommissioning plan was developed and distributed to local regulatory agencies to identify any issues prior to final submission to FERC. A consultation conference call with regulatory agencies was held on August 7, 2019 and comments are being received. Following this process, the surrender application will be finalized and provided to FERC.

History:

RWSA constructed a hydropower plant at the South Fork Rivanna Dam in 1987. Power generation at the plant was limited for a number of years due to various mechanical issues. In December 2011, RWSA retained HDR to perform a mechanical and electrical equipment assessment and to provide recommendations for capital expenditures and continued operation. This assessment identified the need to perform a number of mechanical and electrical modifications to improve operation of the hydropower plant. On June 16, 2013, while the plant was down for testing associated with repairs to the speed reducer and generator, the powerhouse flooded during a heavy rainfall event. A post-flood inspection indicated that the rising water damaged the electrical equipment. In addition to electrical system issues, the turbine blades were "stuck" and inoperable prior to the flood event. Prior to beginning any rehabilitation work on the hydropower plant, it was determined that a feasibility study should be performed that reviewed previous recommendations and took into account interaction with the Federal Energy Regulatory Commission (FERC) to determine if it was cost effective for RWSA to rehabilitate the facility. The feasibility study was conducted by Gomez and Sullivan and concluded that rehabilitation of the facility would most likely not provide a return on investment based on current market conditions. Staff recommended that RWSA proceed with surrendering the exemption to licensure with FERC and decommission the facility. During the meeting on October 25, 2016, the Board of Directors agreed with the recommendation and staff began to proceed with the surrender process.

Work associated with the first phase of the exemption surrender process with Gomez and Sullivan and Van Ness Feldman was completed confirming with FERC what the next steps in the surrender process would include. A work authorization with Gomez and Sullivan for Phase 2 of the exemption surrender process was finalized in August 2017 and includes tasks to manage the local regulatory agencies consultation process and development of the surrender application and decommissioning plan.

A consultation document was provided to local regulatory agencies and a meeting was held on May 21, 2018 with the agencies to discuss the decommissioning process. Minor comments were provided by those agencies and development of the surrender application for submission to FERC was underway. As part of the application, a draft decommissioning plan was developed and was being reviewed by RWSA. Due to a significant wet weather event, returning the 72-inch diameter penstock to a reservoir drain was evaluated by Gomez and Sullivan and modifications to the decommissioning plan are being developed to incorporate that into the project.

30. Upper Schenks Branch Interceptor, Phase II

Design Engineer:	Frazier Engineering, P.A.
Project Start:	TBD
Project Status:	Work Authorization Development
Construction Start:	TBD
Completion:	TBD
Approved Capital Budget:	$3,985,000

Current Status:

Discussions are underway to determine an alignment for the replacement sewer line, generally located

between the McIntire Recycling Center and Preston Avenue along McIntire Road. As part of this process, a work authorization to perform some additional subsurface exploration work was finalized to gather rock information along the alignment in McIntire Road as well as across the ballfield. The field work is scheduled for August and September with a final report anticipated by October 2019.

History:

The Schenks Branch Sanitary Sewer interceptor is a pipeline operated by RWSA that serves the City of Charlottesville. The 21-inch sewer line was originally constructed by the City in the 1950s. Evaluations from the flow metering and modeling from the Comprehensive Sanitary Sewer Interceptor Study, and negotiations with the ACSA and City, resulted in an inflow and infiltration reduction plan from which it was concluded that increased capacity of the Schenks Branch Interceptor was needed for wet weather peak flow. Due to several road construction projects and the construction of the Meadow Creek Interceptor project along the sewer alignment, Schenks Branch was to be constructed in multiple phases. The completed sections, collectively known as the Lower Schenks Branch Interceptor, include the Tie-in to Meadow Creek, the section along McIntire Road Ext, and the section though the Route 250 Interchange.

The remaining sections, which are considered the Upper Schenks Branch Interceptor, were split into 2 phases. The first phase has been completed and is located within City-owned Schenks Greenway adjacent to McIntire Road and the second phase is to be located on County property (baseball field and County Office Building) adjacent to McIntire Road or within McIntire Road. Both phases are included in a DEQ Consent Order. As a result of discussions between RWSA and DEQ, DEQ approved a milestone schedule for completing the Phase 1 section by March 31, 2017 and set in "abeyance" a schedule for completing work on Phase 2 as a result of complications associated with the execution of the necessary easements. Phase 2, preliminary construction drawings and specifications have been developed. No new agreements concerning right-of-way have been reported to RWSA regarding Phase 2. No bidding or construction can take place until one of the following two options occur: (1) County grants RWSA a suitable easement on County property; or (2) City grants RWSA permission and a street cut permit to install the sewer directly under McIntire Road.

31. Asset Management Plan

Design Consultant:	GHD, Inc.
Project Start:	July 2018
Project Status:	99% Complete (Phase 1)
Completion:	2020
Approved Capital Budget:	$500,000

Current Status:

As part of the first phase, Asset Management awareness training and workshops related to Asset Management Program Development, the Gap Assessment process, development of an Asset Management Policy, and the implementation process have been conducted. A draft report documenting the first phase of the work has been submitted to RWSA for review. RWSA has also negotiated a work authorization with GHD for the second phase of development for the Asset Management Plan. This second phase will include work associated with development of an asset register, development of condition assessment protocols, and a pilot study of the asset management

process. This work authorization is included in this month's Board packet for approval.

History:

Asset management is the practice of managing our infrastructure to minimize the total cost of owning and operating these assets while providing desired service levels. In doing so, it is used to make sure planned maintenance activities take place and that capital assets are replaced, repaired or upgraded at the right time, while ensuring that the money necessary to perform those activities is available. RWSA has some components of an asset management program in place (i.e. GIS, work order system), but has identified the need to further develop the program as part of our Strategic Planning process. In order to continue to build the program, a consultant has been procured to assist with a three-phase process that will include facilitation and development of an asset management strategic plan, development and management of a pilot study where the results of the strategic plan will be applied to a specific class of assets, and assistance through a full implementation process. As part of this three-phase process, the consultant will also assist RWSA with the procurement of a software package to facilitate the overall program.

O&M Related Projects

Staff is currently working on several O&M related projects within the water and wastewater systems as listed below:

#	Project Description	Total Approx. Value
35	NRWTP Raw Water Metering Improvements	$135,000
36	NRWTP Sludge Lagoon Study and WTP Needs Assessment	$60,100
37	MCAWRRF Cogeneration System Analysis	$48,300
38	SRWTP Future Site Development Analysis	$15,000

- NRWTP Raw Water Metering Improvements

  The NRWTP is permitted to provide up to 2.0 MGD of potable drinking water to customers located in the Urban service area. After water is pumped from the raw water pump station on the North Fork Rivanna River, the raw water flow is metered by an orifice plate, or insert style meter, prior to entering the rapid mix chamber. The meter is located behind the existing powdered activated carbon feed system and is difficult to access. In addition, RWSA recognizes that the accuracy of this style of meter is reduced by laying length conditions in comparison to modern magnetic flow meters which have been installed at other locations. RWSA is working with SEH to develop contract documents to have a magnetic flow meter installed on the raw water line in an exterior below grade vault. The schedule for bidding of this work will be dependent on the availability of funds.

- NRWTP Sludge Lagoon Study and WTP Needs Assessment

  The two lagoons or settling ponds at the plant are earthen basins designed to capture and hold residuals generated through the treatment process as well as periodic draining and washdown of the sedimentation and flocculation basins. The basins were designed to allow all the residuals and solids to settle out and then the clarified water to be decanted and conveyed to the river. The operational use of these lagoons is not as originally intended, and the Virginia Department of Environmental Quality

has concerns regarding their condition. A study is being performed to determine how they can be improved, and other locations on site that may be less prone to flood waters. Under this project, a needs assessment at the plant will be also be performed and updated. Construction activities associated with these improvements have been proposed in the FY20 CIP.

- MCAWRRF Cogeneration System Analysis

  The MCAWRRF currently utilizes a cogeneration facility which accepts digester gas and uses it to create electricity and heat. The facility was put into operation in 2011. The generator supplies power back to the plant electrical distribution system providing energy usage savings through offsetting usage through the electric utility. Unfortunately, there have been a number of issues associated with operation of the generator including, expensive and proprietary maintenance services and temperature issues. With a significant and expensive scheduled maintenance event forthcoming, RWSA wanted to conduct a study to determine if these issues could be resolved or if there was a more efficient way to utilize the digester gas. This study will evaluate options for improvements to the existing system or new systems that could be implemented along with estimated costs and returns on investment. A final report was submitted in February 2019, and RWSA is evaluating the alternatives.

- SRWTP Future Site Development Analysis

  As future water demands increase, facility expansions and additions at the SRWTP site are proposed to continue. At some point in the future, RWSA plans to increase the capacity at the SRWTP to 16 MGD along with preliminary plans for a 41 MGD raw water pump station and a 25 MGD pretreatment facility associated with the future transfer of raw water from the South Rivanna Reservoir to the Ragged Mountain Reservoir. With property development activity increasing near the plant, the intent of this analysis is to confirm what approximate space would be needed to meet the plant's future needs in order to better determine future property requirements. A technical memo summarizing the analysis was provided and this project is complete.

RIVANNA WATER & SEWER AUTHORITY
695 Moores Creek Lane | Charlottesville, Virginia 22902-9016
434.977.2970
434.293.8858
www.rivanna.org

MEMORANDUM

TO: **RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS**

FROM: **DAVE TUNGATE, DIRECTOR OF OPERATIONS**

REVIEWED BY: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **OPERATIONS REPORT FOR July 2019**

DATE: **AUGUST 27, 2019**

WATER OPERATIONS:

The average daily/monthly total water distributed for July 2019 was as follows:

Water Treatment Plant	***Average Daily Production (MGD)***	***Total Monthly Production (MG)***	***Maximum Daily Production in the Month (MGD)***
Observatory	1.29	39.97	2.25 (7/30/19)
South Rivanna	9.49	294.05	10.38 (7/18/19)
North Rivanna	0.016	0.496	0.110 (7/30/19)
Urban Total	10.80	334.52	12.07 (7/18/19)
Crozet	0.658	20.39	0.857 (7/02/19)
Scottsville	0.046	1.49	0.070 (7/21/19)
RWSA Total	11.50	356.40	---

- All RWSA water treatment facilities were in regulatory compliance during the month of July.
- North Rivanna WTP was operating on an intermittent basis while Piney Mountain Tank was inoperable for repairs.

Status of Reservoirs (as of August 19, 2019):

- Urban Reservoirs: 96 % of Total Useable Capacity
- Ragged Mountain Reservoir is -0.86 feet (96 %)
- Sugar Hollow Reservoir is -3.5 feet (85 %)
- South Rivanna Reservoir is full (100%)
- Beaver Creek Reservoir is full (100%)
- Totier Creek Reservoir is full (100%)

WASTEWATER OPERATIONS:

All RWSA Water Resource Recovery Facilities (WRRFs) were in regulatory compliance with their effluent limitations during July 2019. Performance of the WRRFs in July was as follows compared to the respective VDEQ permit limits:

WRRF	*Average Daily Effluent Flow (mgd)*	*Average $CBOD_5$ (ppm)*		*Average Total Suspended Solids (ppm)*		*Average Ammonia (ppm)*	
		RESULT	*LIMIT*	*RESULT*	*LIMIT*	*RESULT*	*LIMIT*
Moores Creek	9.05	<QL	11	<QL	22	<QL	2.2
Glenmore	0.085	5.0	15	4.0	30	NR	NL
Scottsville	0.060	<QL	25	2.0	30	NR	NL
Stone Robinson	0.001	NR	30	NR	30	NR	NL

NR = Not Required
NL = No Limit
<QL: Less than analytical method quantitative level (2.0 ppm for CBOD, 1.0 ppm for TSS, and 0.1 ppm for Ammonia).

Nutrient discharges at the Moores Creek AWRRF were as follows for July 2019.

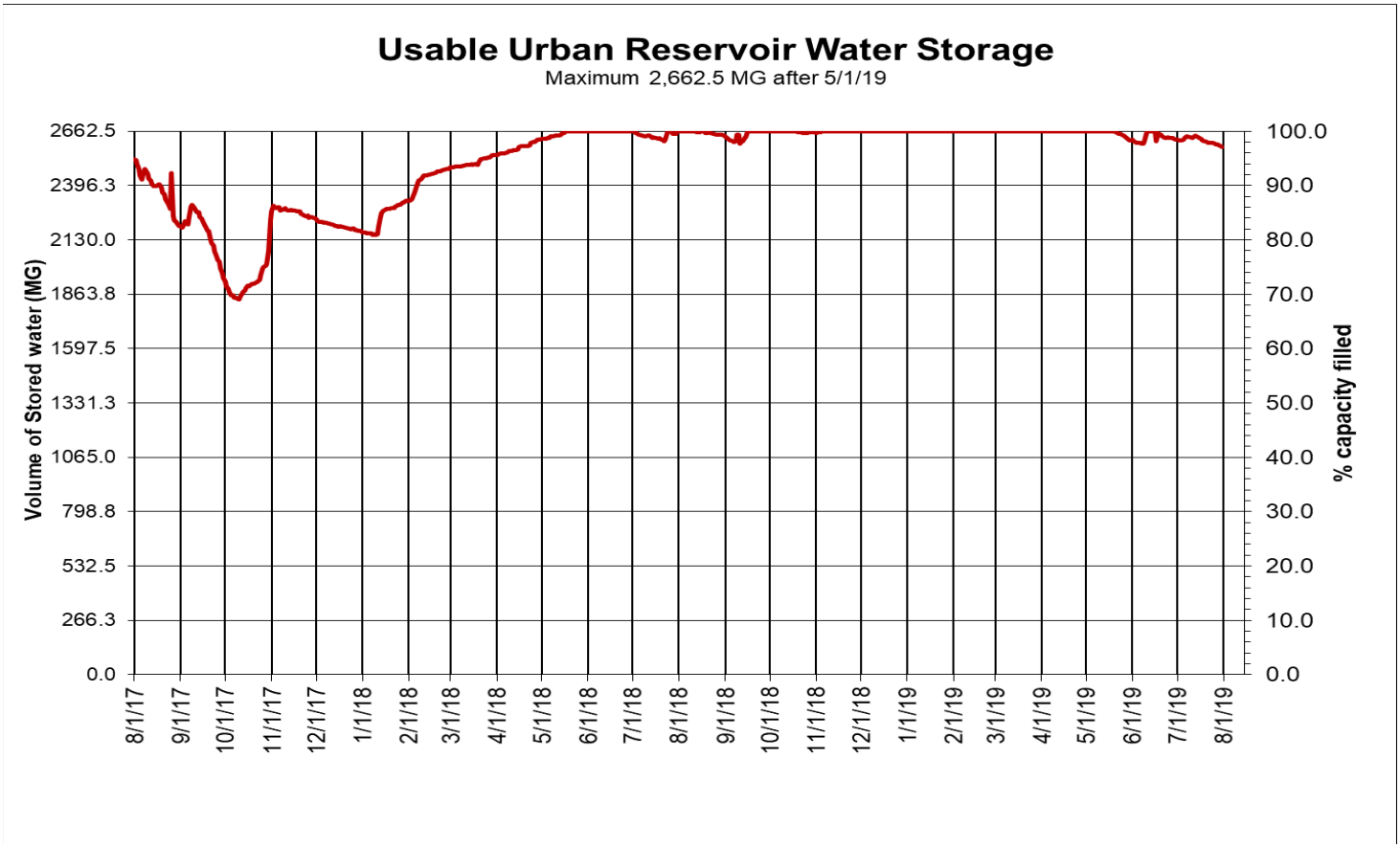
State Annual Allocation (lb./yr.) Permit		*Average Monthly Allocation (lb./mo.) **	*Moores Creek Discharge June (lb./mo.)*	*Performance as % of monthly average Allocation**	*Year to Date Performance as % of annual allocation*
Nitrogen	282,994	23,583	4633	19%	42%
Phosphorous	18,525	1,544	390	25%	20%

*State allocations are expressed as annual amounts. One-twelfth of that allocation is an internal monthly benchmark for comparative purposes only.

WATER AND WASTEWATER DATA:

The following graphs are provided for review:

- Usable Urban Reservoir Water Storage
- Urban Water and Wastewater Flows versus Rainfall


Usable Urban Reservoir Water Storage
Maximum 2,662.5 MG after 5/1/19
Volume of Stored water (MG)
% capacity filled
2662.5
2396.3
2130.0
1863.8
1597.5
1331.3
1065.0
798.8
532.5
266.3
0.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
8/1/17
9/1/17
10/1/17
11/1/17
12/1/17
1/1/18
2/1/18
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4/1/18
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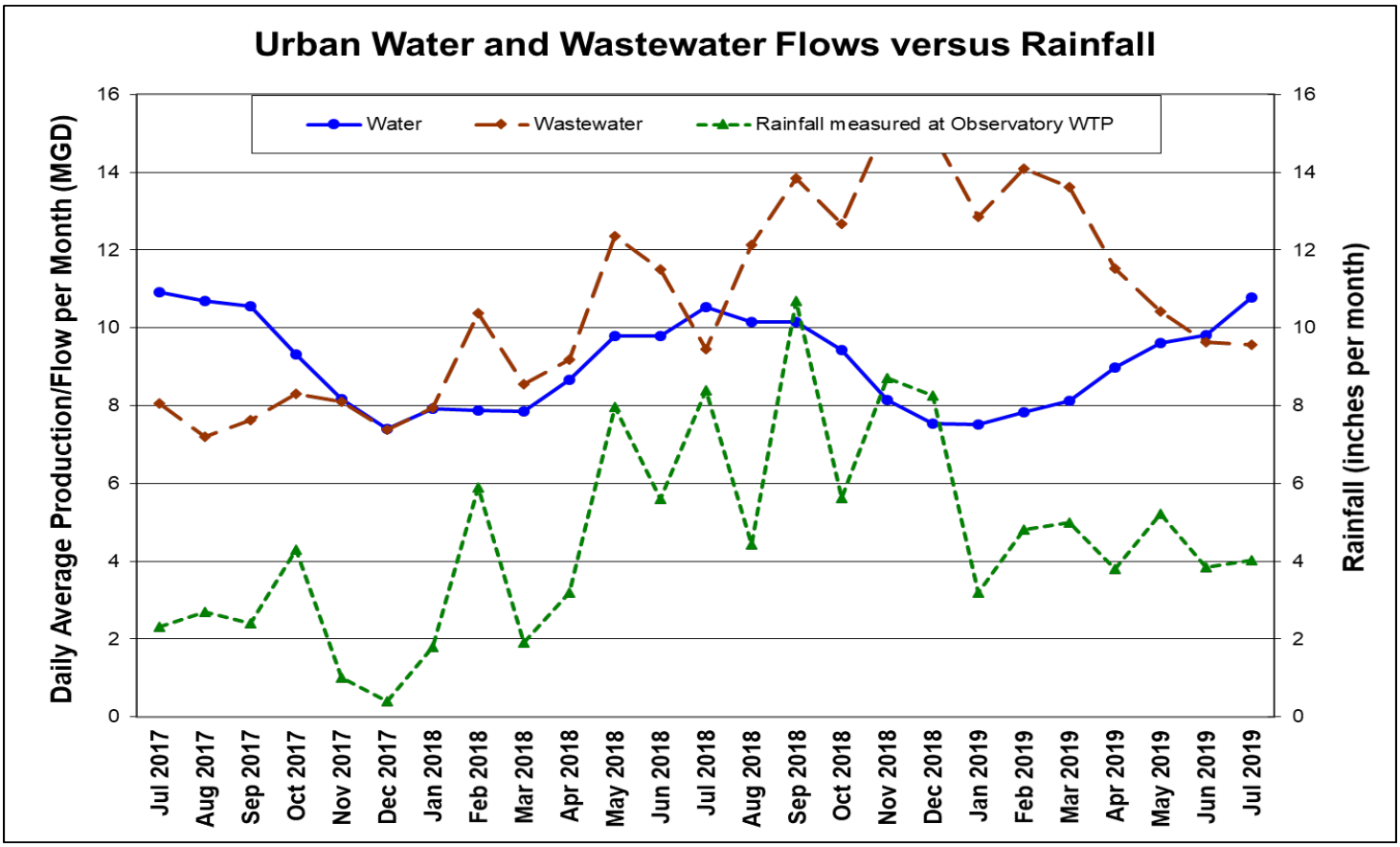
8/1/19


Urban Water and Wastewater Flows versus Rainfall
Water
Wastewater
Rainfall measured at Observatory WTP
Daily Average Production/Flow per Month (MGD)
Rainfall (inches per month)
16
14
12
10
8
6
4
2
0
Jul 2017
Aug 2017
Sep 2017
Oct 2017
Nov 2017
Dec 2017
Jan 2018
Feb 2018
Mar 2018
Apr 2018
May 2018
Jun 2018
Jul 2018
Aug 2018
Sep 2018
Oct 2018
Nov 2018
Dec 2018
Jan 2019
Feb 2019
Mar 2019
Apr 2019
May 2019
Jun 2019
Jul 2019

RIVANNA WATER & SEWER AUTHORITY
695 Moores Creek Lane | Charlottesville, Virginia 22902-9016
434.977.2970
434.293.8858
www.rivanna.org

MEMORANDUM

TO: **RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS**

FROM: **JENNIFER A. WHITAKER, DIRECTOR OF ENGINEERING AND MAINTENANCE**

REVIEWED BY: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **PROFESSIONAL SERVICES AUTHORIZATION AND CIP BUDGET AMENDMENT: MOORES CREEK WASTEWATER FACILITIES MASTER PLAN: HAZEN AND SAWYER ENGINEERS**

DATE: **AUGUST 27, 2019**

The majority of the Moores Creek Water Resource Recovery Facility was constructed in the early 1980's. At the time, the plant layout was developed with space held open for future process expansion. With the Enhanced Nutrient Removal project in 2009, the operation and layout of the plant was fundamentally altered to meet the new regulation. The project anticipated the need for future expansion, and some of the future processes have readily available space. However, a full expansion plan was not developed.

As identified in the 2017 Strategic Plan, the Authority has a goal to plan, deliver and maintain dependable infrastructure in a financially responsible manner. Staff have identified asset master planning as a priority strategy to improve overall system development. As such, this project will serve to evaluate and plan for future space and process needs to accommodate capacity expansion and/or anticipated regulatory changes.

Through our term contract for Wastewater Treatment Plants, we requested that Hazen and Sawyer Engineers provide a scope of work for this project, including a few additional tasks that were not originally envisioned. Following review of the draft work authorization, our engineering staff have negotiated a scope of work and fee to include:

- Collect current wastewater system operating data and pertinent planning reports
- Assess treatment plant capacity at build-out based on future flow and loading projections
- Create a site map to determine areas available for future expansion
- Develop plant-wide energy baseline conditions to assist in planning for future energy management and optimization strategies
- Perform a broad regulatory review to develop boundary conditions for near and long-term planning
- Complete a condition assessment and asset renewal plan

- Evaluate non-process space needs
- Summarize in a Wastewater Facilities Master Plan

Board Action Requested:

Staff requests that the Board of Directors authorize the Executive Director to execute a Work Authorization with Hazen and Sawyer for the MC Wastewater Facilities Master Plan for a fee not to exceed $275,000 along with any necessary amendments not to exceed 10% of the initial authorization.

Staff also requests the Board of Directors to amend the Capital Improvement Plant for Fiscal Years 2020 – 2024 to include an increase of $25,000 to the total project capital budget in Fiscal Year 2020. This amendment will increase the total project budget from $250,000 to $275,000.

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MEMORANDUM

TO: **RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS**

FROM: **JENNIFER A. WHITAKER, DIRECTOR OF ENGINEERING AND MAINTENANCE**

REVIEWED BY: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **PROFESSIONAL SERVICES AUTHORIZATION – ASSET MANAGEMENT PLAN, PHASE 2 – GHD, INC.**

DATE: **AUGUST 27, 2019**

Asset management is the practice of managing our infrastructure to minimize the total cost of owning and operating these assets while providing desired levels of service. In doing so, the system is used to make sure planned maintenance activities take place and that capital assets are replaced, repaired, or upgraded at the right time, while ensuring that the funding necessary to perform those activities is available. RWSA has some components of an asset management program in place (i.e. GIS, work order system), but has identified the need to further develop the program as part of our Strategic Plan. In order to continue to build the program, a consultant was procured to assist with a three-phase process that will include:

- Facilitation and development of an asset management strategic plan
- Development and management of a pilot study where the results will be applied to a specific facility or class of assets
- Assistance through a full implementation process

RWSA entered into an agreement with GHD, Inc. on August 13, 2018 to provide these services and a report documenting the first phase of the process was submitted in July 2019. RWSA has negotiated another work authorization with GHD, Inc. to cover the second phase of this overall process which includes the following:

- Asset hierarchy, inventory, and register development
- Development of condition assessment protocols
- Pilot study of the asset management framework developed under the first phase on the Rivanna Pump Station, and development of a tactical asset management plan for the pilot study area

Under the first phase of the process, an implementation roadmap was developed that not only included the pilot study, but also additional tasks that should be completed during the first year of the implementation process. The tasks included in this second phase work authorization along

with the pilot study, include some of those recommended first year items.

Board Action Requested:

Staff requests that the Board of Directors authorize the Executive Director to execute a work authorization with GHD, Inc. for Phase 2 of the Asset Management Plan for a not to exceed value of $153,053, and that the Executive Director be authorized to execute necessary amendments not to exceed 10% of the initial authorization.

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MEMORANDUM

TO: **RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS**

FROM: **ANDREA B. TERRY, WATER RESOURCES MANAGER**

REVIEWED BY: **BILL MAWYER, EXECUTIVE DIRECTOR**
JENNIFER WHITAKER, DIRECTOR OF ENGINERING AND MAINTENANCE

SUBJECT: **WAIVER EXTENSION FOR UNIVERSITY OF VIRGINIA ROWING PROGRAMS AND RIVANNA ROWING CLUB**

DATE: **AUGUST 27, 2019**

The Board has previously granted permission for the University of Virginia (UVA) rowing programs and the Rivanna Rowing Club to use gasoline-powered safety and coaching launches on the South Fork Rivanna Reservoir (SFRR) with the requirement that they continue to research and develop electric launches. On August 22, 2017, the Board granted the Executive Director the approval to extend the waiver to those organizations for two years, through August 2019 with the agreement that they would continue to research the use of electric technology.

Mr. Kevin Sauer, Head Coach of the University of Virginia Women's Rowing Crew, has submitted the attached August 14, 2019 progress report indicating the efforts made towards converting gasoline-powered safety and coaching launches to electrical motor driven technology. In their last report in August of 2017, UVA Women's Rowing had received $75,000 from the athletic department and $60,000 from the Perkins Foundation for retrofitting of existing launches. Since that time, an additional $25,000 has been received from the Perkins Foundation. UVA Rowing has been working with Purewater out of Seattle, WA and is expecting delivery of the first retrofitted launch by the end of August. A second launch is being retrofitted and will be delivered later this year. The team has a total of 5 electric launches, and the existing funding will be used to retrofit the other 3 launches. Mr. Sauer is requesting a two-year waiver extension to 2021.

Board Action Needed:

Staff recommends that the Board of Directors authorize the Executive Director to extend UVA's waiver to August 2021 to allow the use of gasoline-powered safety and coaching launches by the UVA Women's and Men's rowing programs, and the Rivanna Rowing Club, subject to UVA agreeing to other conditions RWSA deems necessary to protect the drinking water supply and the water quality of the SFRR, to include continued research on electric motor technology.

Attachment

UNIVERSITY OF VIRGINIA
Women's Rowing

P.O. Box 400852, McCue Center, Charlottesville, Virginia 22904-4852
Office (434) 982-5827 Fax (434) 982-4926

August 14, 2019

Andrea Terry
Water Resources Manager
Rivanna Water and Sewer Authority
695 Moore's Creek Lane
Charlottesville, Virginia 22902

Dear Andrea,

The permit for gasoline powered safety and coaching launches on the Rivanna Reservoir expires this month and this letter is written to request an extension. The UVA women's and men's rowing teams plus the Rivanna Rowing Club appreciate the RWSA's willingness to allow us this permit.

As we have researched the electric technology for our coaching boats, Purewater from Seattle has gone into production. I have secured $75,000 from the athletic department (over three years) and have applied for and received a grant from the Perkin Foundation for another $60,000 AND an additional $25,000 just approved to be able to retrofit our launches with these powerplants. Purewater has had delays and we are expecting delivery at the end of August. I hope to have pictures and/or video for you of the first coach boat retrofit at the board meeting!

In advance, we thank you for considering a two-year permit extension for our programs. Allowing our programs this permit is an essential component to achieving success. Since the last permit extension in 2017, UVA Women's Rowing has added two more ACC Championships for a total of 19!

Sincerely,

Kevin Sauer

Kevin Sauer, Head Coach
University of Virginia

Major Capital Projects Construction and Value Engineering Update

RIVANNA WATER & SEWER AUTHORITY

Presented By:

Scott Schiller, Engineering Manager

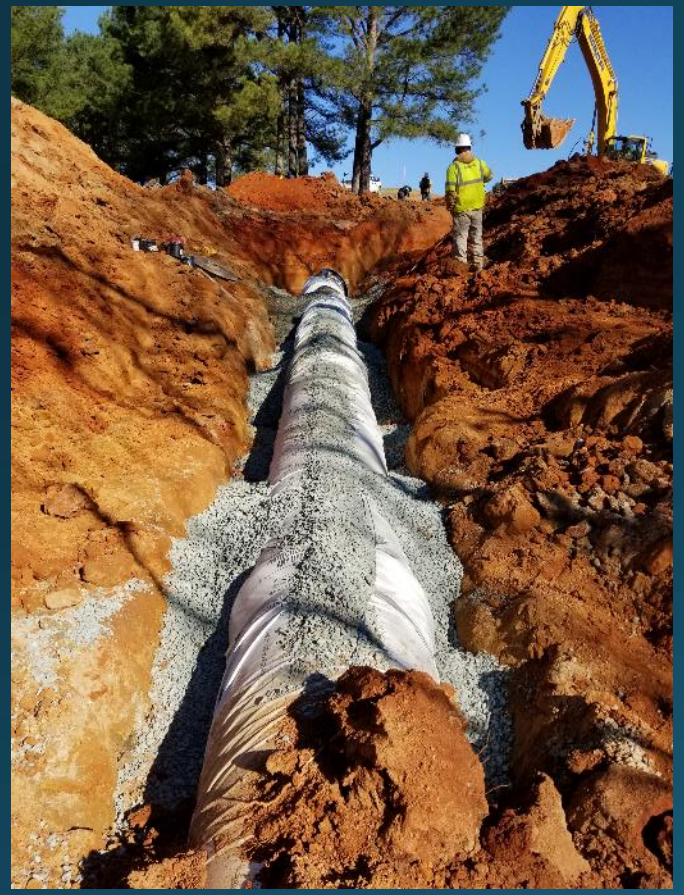
August 27, 2019

Recently Completed Projects

Crozet Finished Water Pump Station

- New, Higher Capacity Pump Station (1 mgd vs. 1.6 mgd)
- Original 1960's
- Designed for Expansion
- Completed June 2019
- $2.6 M

Birdwood Raw Water Main

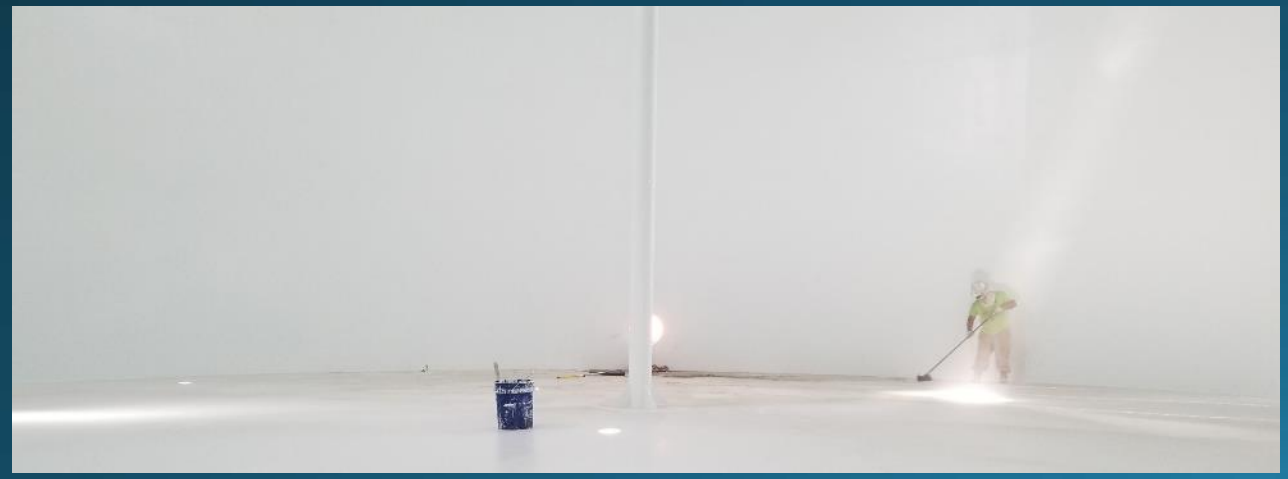


- 5,900 linear feet of 36-inch water main
- Part of future South Rivanna Reservoir to Ragged Mountain Reservoir Water Line
- 99% Complete
- Pipe work complete June 2019
- $3.2 M

Sugar Hollow Reservoir to Ragged Mountain Reservoir Transfer Flow Meter

- New automatically controlled isolation valve and flow meter
- Demolition of gate keeper house and all other out-buildings
- Allows for remote raw water transfer
- Completed June 2019
- $480,000

Piney Mountain Tank Rehabilitation



- Structural repairs, full interior blast and recoat, and exterior clean and overcoating
- 99% Complete
- Complete – August 2019
- $570,000

Currently Under Construction

Crozet Water Treatment Plant Expansion

- Increase capacity of the plant by modernizing plant systems
- New PAC contactors, plate settlers in the sedimentation basins, chemical building expansion, backwash storage improvements and filter rebuilds
- Estimated Completion May 2021
- Budget $8.5 M

Moores Creek Digester Coating

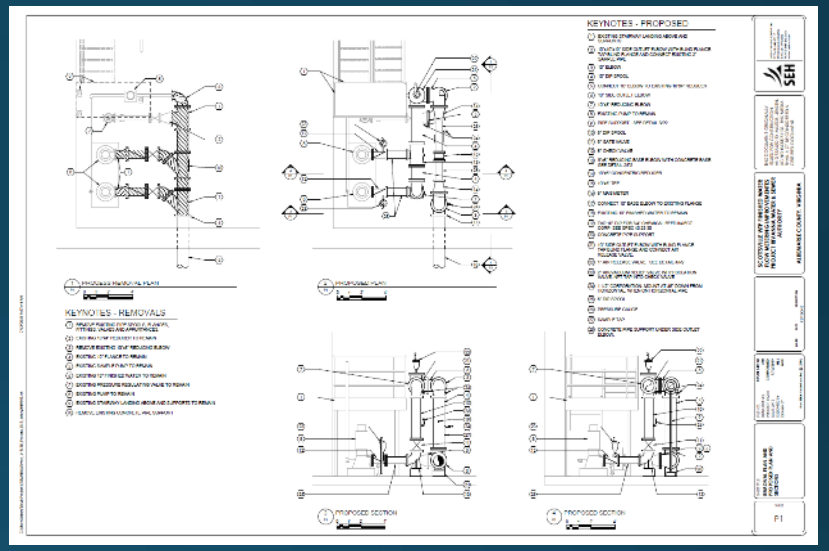
- Internally Seal the Roof of Digesters
- Completed coatings in Digester Nos. 1 & 2
- Currently working on Digester No. 3
- Improve Odor Control, Gas Collection and Structural Degradation
- Estimated Completion June 2020
- Budget $1.54 M

Glenmore Secondary Clarifier Coating

- Replace coating system to prevent metal deterioration and failure
- Includes cleaning and coating both clarifiers
- Over 10 years since last coating
- Estimated Completion January 2020
- Budget $160,000

Construction Projects about to Kick-Off

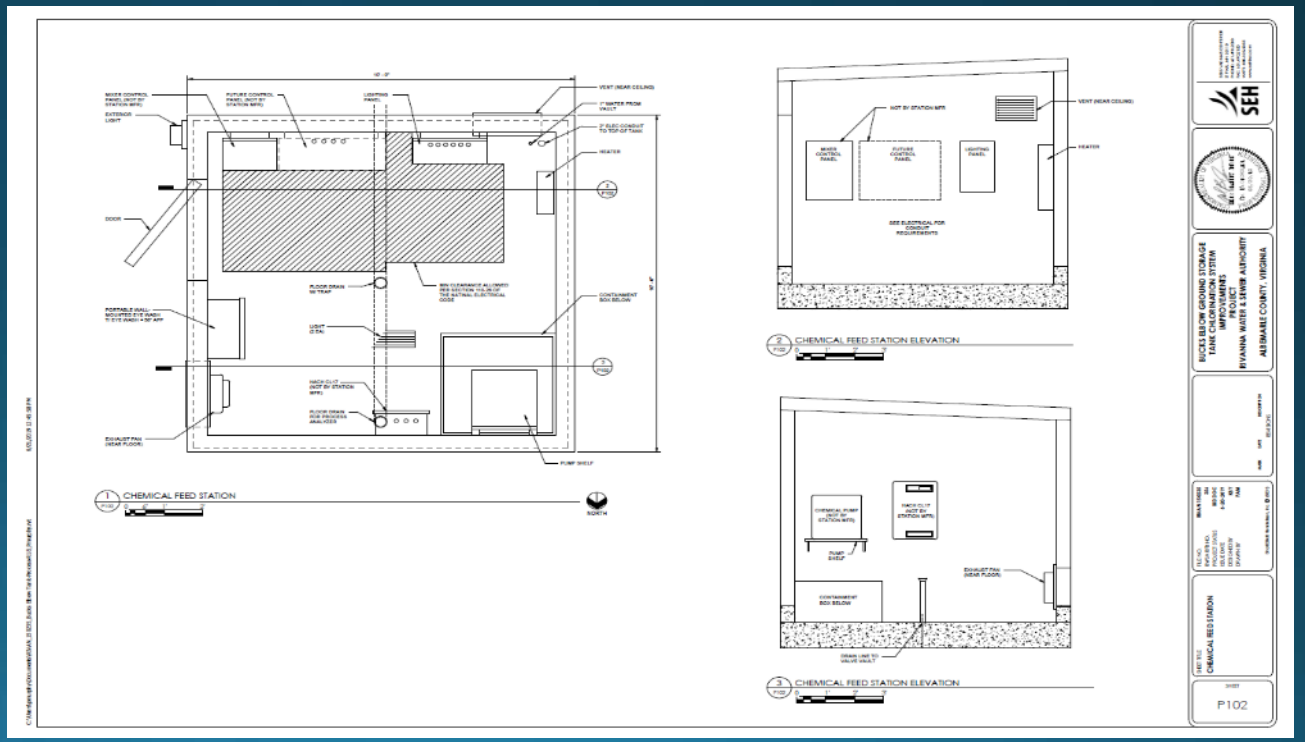
Scottsville WTP Finished Water Flow Meter



- Install a finished water flow meter to replace the current run time calculation method
- Modifies gallery piping for install
- Estimated Completion April 2020
- Budget $145,000

Buck's Elbow Ground Storage Tank Chlorination System Improvements

- Replaces labor intensive chlorine feed process with a permanent chemical feed system
- Estimated Completion April 2020
- Budget $239,000

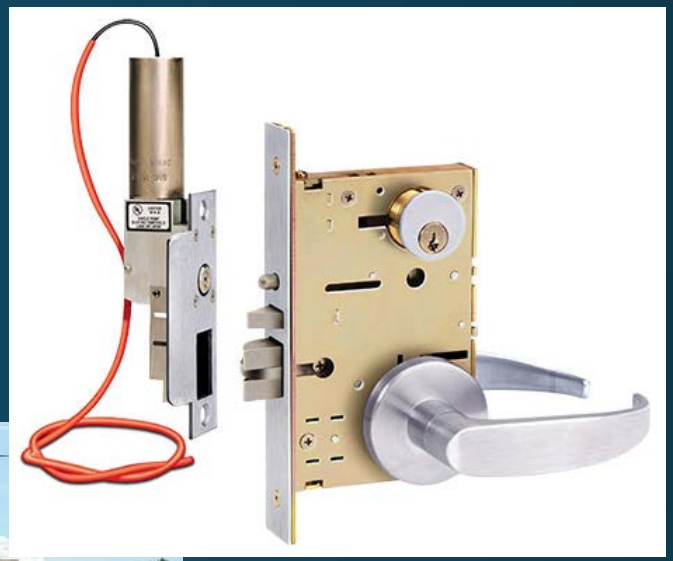


MC Aluminum Slide Gate Replacements

- Replace failing aluminum slide gates at the Moores Creek PS and UV Facility
- Significant bypass pumping is required for replacement of the Moores Creek PS gates
- UV Facility gates to be replaced first – Quote Package advertised on 8/19
- Estimated Completion June 2020
- Budget $470,000

Security Enhancements - Access Control

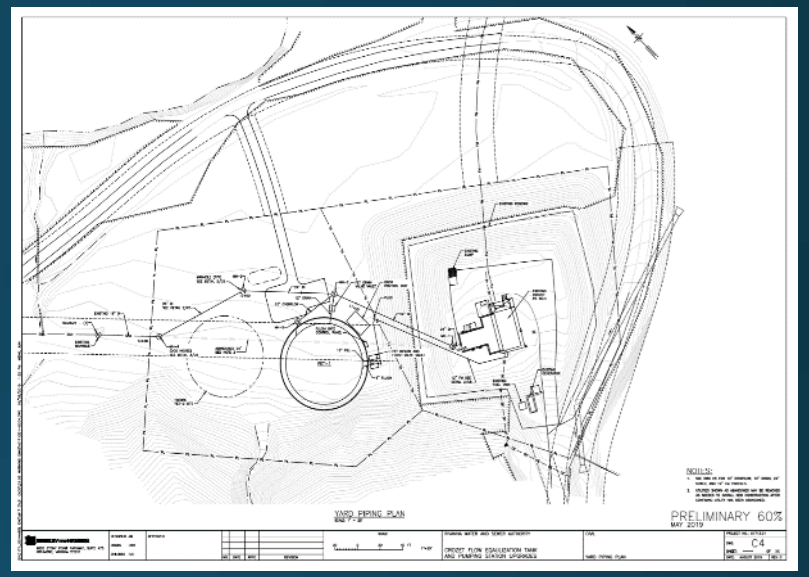
- Access control for all exterior doors, limited interior doors, and facility gates
- Starting at MCAWRRF, South Rivanna WTP, Observatory WTP and Crozet WTP
- Contract allows for expansion to other facilities as well as other security enhancements
- Estimated Completion 2024
- Budget $1M

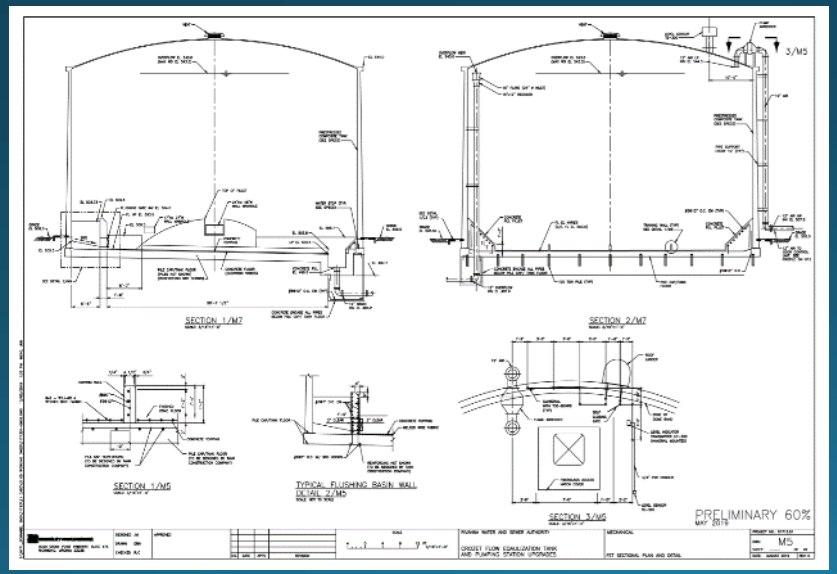


Design Phase and Upcoming Construction Projects

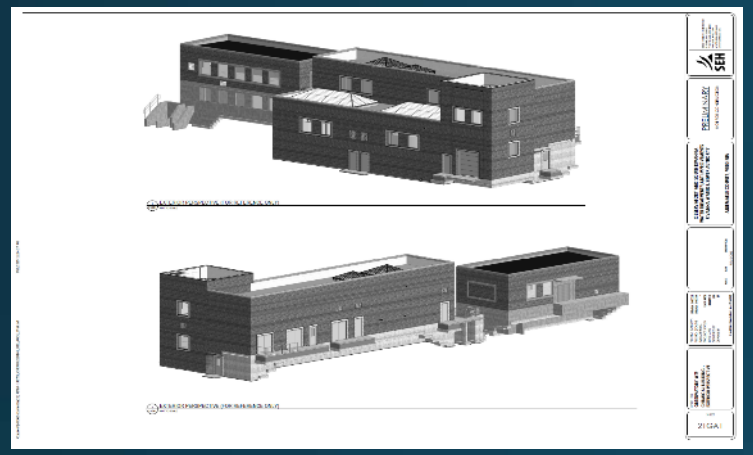
Crozet Flow Equalization Tank

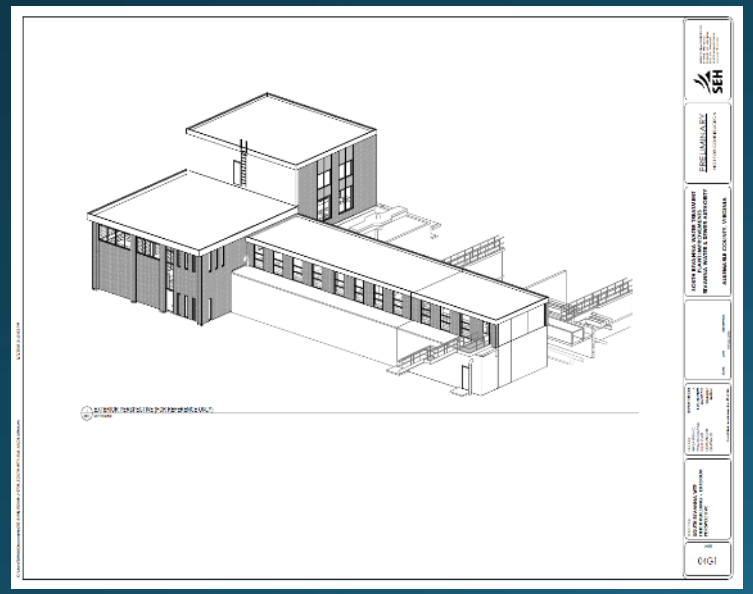
- Would store wet-weather flow to minimize impact on downstream sewer capacity
- Identified as a need during the 2016 Comprehensive Sanitary Sewer Model Study
- 1 MG Capacity and improvements to existing Crozet Pump Station No. 4
- Estimated Start of Construction - Winter 2019-2020
- Estimated Completion 2021
- Budget $4.86M

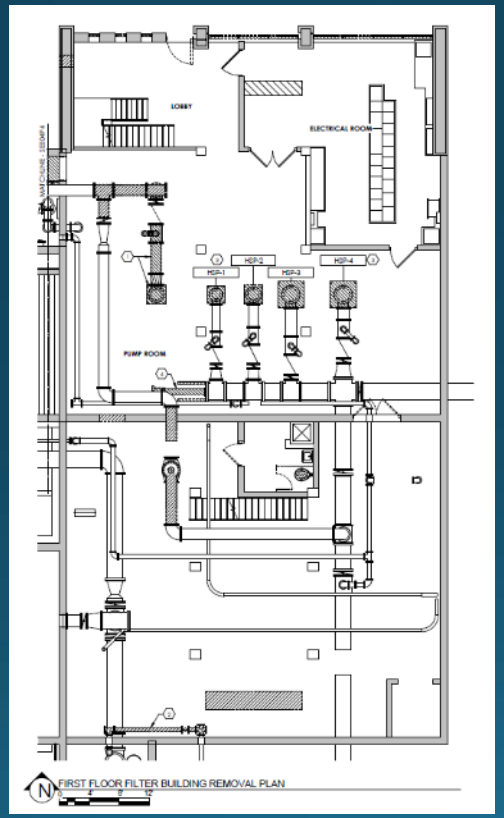




South Rivanna WTP and Observatory WTP Improvements







- Overall improvements to both plants
- Increases Observatory WTP capacity to 10 MGD – includes plate settlers in the sedimentation basins, new settled water flume, rebuilt filters, and new chemical building
- South Rivanna WTP improvements include a new Alum and Fluoride Building, raw water and finished water pumping improvements, 2 new filters, and a new Administration Building
- Estimated Start of Construction – Winter 2019-2020
- Estimated Completion 2023
- Estimated Budget $40.5M
- Performed VE in April 2019

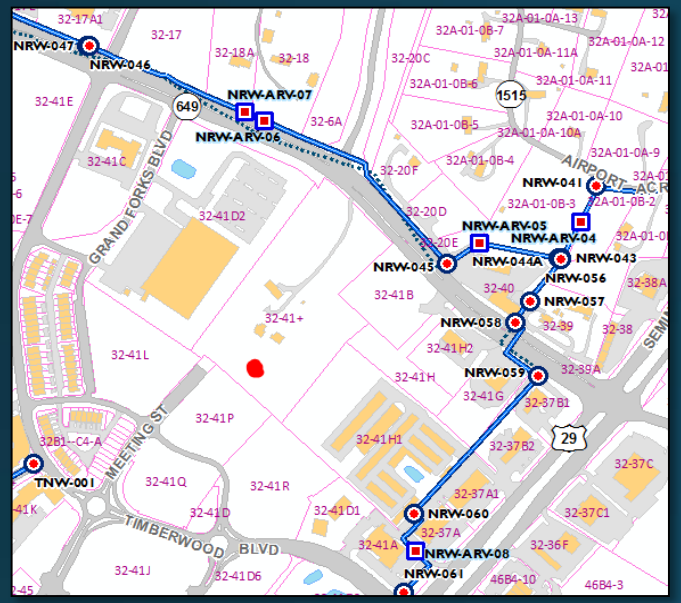
South Rivanna WTP and Observatory WTP Improvements – VE Summary

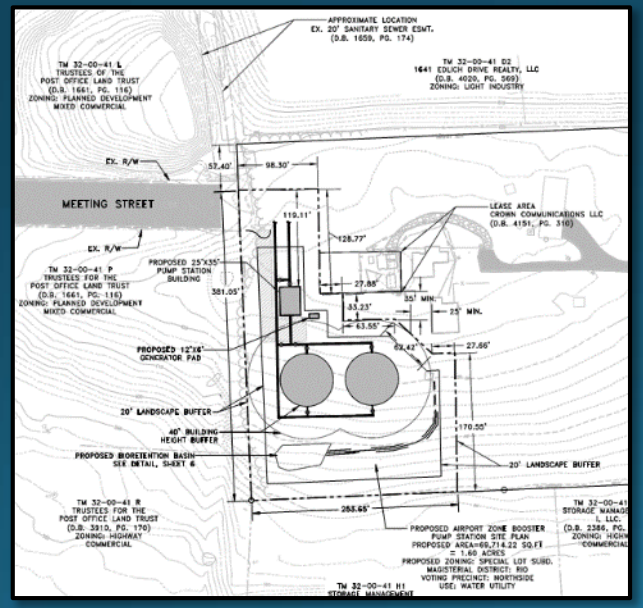
- Performed to ensure expenses are cost effective and include life-cycle considerations to provide value to the facilities
- Done in accordance with RWSA policy
- SEH, RWSA and Hazen and Sawyer Participated
- Took place over 4 days with multiple site visits
- Identified a number of design enhancements and cost savings

Highlights

- Identified $795,000 in potential cost savings, including:
  - Removed a high service pump from South Rivanna
  - Reduced size of new buildings when possible
  - Optimized HVAC needs
- Enhanced plant water design at Observatory
- Improved power transfer process at South Rivanna

Route 29 Pump Station and North Rivanna Transmission Main

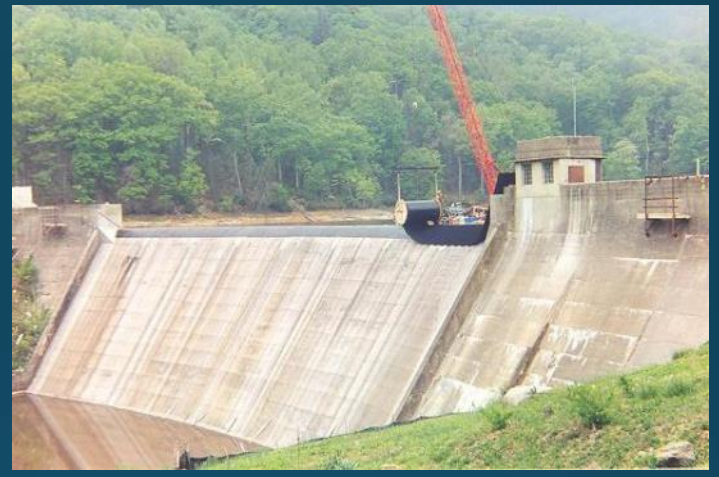




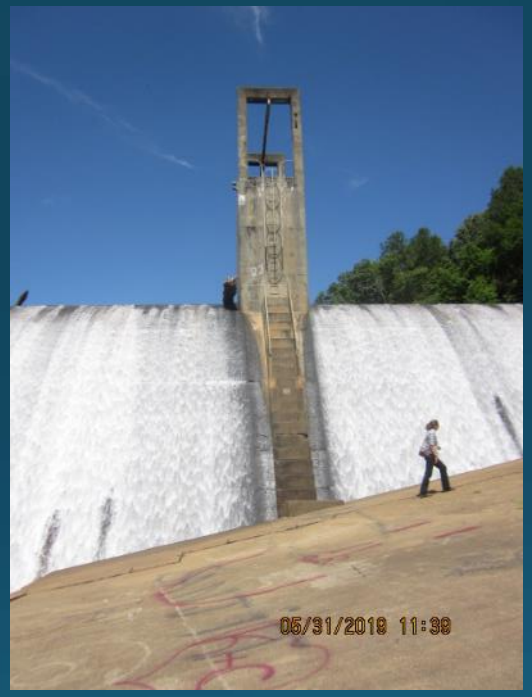
- Would provide a reliable redundant source of finished water for the North Rivanna Area
- Takes the place of the temporary "Kohl's" pump
- Is part of future development of an Airport Pressure Zone
- Located in Hollymead Town Center
- Includes portion of separate CIP project to install extension to North Rivanna Transmission Main
- Estimated Start of Construction – Fall 2020
- Estimated Completion 2022
- Estimated Budget $5.7M

Sugar Hollow Dam – Rubber Crest Gate Replacement and Intake Tower Repairs

- Replace 20 year old rubber dam
- Evaluate intake tower and perform necessary repairs
- Repairs may include intake gate valves, tower walls, intake trash racks and sealing/grouting minor concrete cracks
- Estimated Start of Construction – Summer 2020
- Estimated Completion 2021
- Budget $1.14M



South Rivanna Dam – Gate Repairs



- Repair or replace the two 36" diameter slide gates on the North and South Mud Gates
- Improve north dam tower access
- Improvements to Raw Water Pump Station concrete walls
- Estimated Start of Construction – Summer 2020
- Estimated Completion 2020
- Budget $900,000