RIVANNA
WATER & SEWER AUTHORITY

Board of Directors Meeting

August 23, 2022

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 23, 2022**

LOCATION: **Virtually via ZOOM**

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

AGENDA

1. ***CALL TO ORDER***
2. ***STATEMENT FROM THE CHAIR***
3. ***AGENDA APPROVAL***
4. ***MINUTES OF PREVIOUS BOARD MEETING***
   Minutes of Regular Board Meeting on July 26, 2022
5. ***RECOGNITION***
6. ***EXECUTIVE DIRECTOR'S REPORT***
7. ***ITEMS FROM THE PUBLIC***
   Matters Not Listed for Public Hearing on the Agenda
8. ***RESPONSES TO PUBLIC COMMENTS***
9. ***CONSENT AGENDA***
   a. *Staff Report on Finance*
   b. *Staff Report on Operations*
   c. *Staff Report on Ongoing Projects*
   d. *Staff Report on Wholesale Metering*
   e. *Staff Report on Drought Monitoring*

f. *Award Construction Contract and Amend Capital Improvement Plan – South Rivanna Hydropower Plant Decommissioning Project – English Construction Company, Inc.*

g. *Award Professional Services Agreement – Moores Creek AWRRF Engineering and Administration Building Addition and Renovation Project – Short Elliot Hendrickson Inc.*

h. *Authorization of Professional Engineering Services; SCADA Standards Project – Short Elliot Hendrickson Inc.*

i. *Resolution to Amend FY 2022 - 2023 Water Rates and Charges; Authorization to Schedule a Public Hearing*

10. OTHER BUSINESS

a. *Presentation: Wastewater Program Review*
Dave Tungate, Director of Operations

b. *Presentation: Annual Reservoir Report, Results from 2021*
Andrea Bowles, Water Resources Manager

11. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

12. CLOSED MEETING

13. ADJOURNMENT

GUIDELINES FOR PUBLIC COMMENT AT VIRTUAL RIVANNA BOARD OF DIRECTORS MEETINGS

If you wish to address the Rivanna Board of Directors during the time allocated for public comment, please use the "chat" feature in the Zoom Meeting interface.

Members of the public who submit comments will be recognized during the specific time designated on the meeting agenda for "Items From The Public, Matters Not Listed for Public Hearing on the Agenda." The comment(s) will be read aloud to the Board of Directors only during this agenda item, so comments must be received prior to the end of this agenda item. The comments will be read by the Rivanna Authority's Executive Coordinator/Clerk of the Board.

Members of the public requesting to speak will be recognized during the specific time designated on the meeting agenda for "Items From The Public, Matters Not Listed for Public Hearing on the Agenda." 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.

If you would like to submit a comment, please keep in mind that Board of Directors meetings are formal proceedings and all comments are recorded on tape. In order to give all who wish to submit a comment proper respect and courtesy, the Board requests that commenter follow the following guidelines:

- Submit your comment prior to the start of or during the "Items From The Public, Matters Not Listed for Public Hearing on the Agenda" section of the Agenda.
- In your comment, state your full name and address and your organizational affiliation if commenting 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;
- Be respectful and civil in all interactions at Board meetings;
- 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 commenters 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.

Rev. March 24, 2022

CALL TO ORDER

STATEMENT OF CHAIR TO OPEN MEETING

This is Mike Gaffney, Chair of the Rivanna Water and Sewer Authority.

I would like to call the August 23, 2022 meeting of the Board of Directors to order.

Notwithstanding any provision in our Bylaws to the contrary, as permitted under the City of Charlottesville's Continuity of Government Ordinance adopted on March 7, 2022 (Ordinance No. O-22-029), Albemarle County's Continuity of Government Ordinance adopted on April 15th, 2020, and last revised effective November 4, 2020 (Ordinance No. 20-A(16)) and Chapter 1283 of the 2020 Acts of the Virginia Assembly effective April 24, 2020, we are holding this meeting by real time electronic means with no board member physically present at a single, central location.

All board members are participating electronically. This meeting is being held pursuant to the second resolution of the City's Continuity of Government Ordinance and Section 6 of the County's revised Continuity of Government Ordinance. All board members will identify themselves and state their physical location by electronic means during the roll call which we will hold next. I note for the record that the public has real time audio-visual access to this meeting over Zoom as provided in the lawfully posted meeting notice and real time audio access over telephone, which is also contained in the notice. The public is always invited to send questions, comments, and suggestions to the Board through Bill Mawyer, the Authority's Executive Director, at any time.

ROLL CALL:

Ms. Hildebrand: Please state your full name and location.
Ms. Mallek: Please state your full name and location.
Mr. O'Connell: Please state your full name and location.
Mr. Lunsford (attending as alternate for Mr. O'Connell): Please state your full name and location.
Mr. Pinkston: Please state your full name and location.
Mr. Richardson: Please state your full name and location.
Mr. Rogers: Please state your full name and location.

And I am Mike Gaffney, located at _____.

Joining us today electronically are the follow Authority staff members and consultants:

Bill Mawyer, Lonnie Wood, Jennifer Whitaker, David Tungate, John Hull, Jeff Southworth, Deborah Anama, and Andrea Bowles.

We are also joined electronically by Carrie Stanton (Williams Mullen), counsel to the Authority.

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RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
July 26, 2022

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, July 26, 2022 at 2:15 p.m. via Zoom.

Board Members Present: Mike Gaffney, Jeff Richardson, Michael Rogers, Brian Pinkston, Ann Mallek, Lauren Hildebrand, and Quin Lunsford, attending as alternate for Gary O'Connell.

Board Members Absent: Gary O'Connell

Rivanna Staff Present: Bill Mawyer, Lonnie Wood, Jennifer Whitaker, Deborah Anama, David Tungate, John Hull, and Jeff Southworth.

Attorney(s) Present: Carrie Stanton

1. *CALL TO ORDER*
Mr. Gaffney called the July 26, 2022, regular meeting of the Rivanna Water and Sewer Authority to order at 2:15 p.m.

2. *STATEMENT FROM THE CHAIR*
Mr. Gaffney read the following statement aloud:

"This is Mike Gaffney, Chair of the Rivanna Water and Sewer Authority. I would like to call the July 26, 2022 meeting of the Board of Directors to order.

"Notwithstanding any provision in our Bylaws to the contrary, as permitted under the City of Charlottesville's Continuity of Government Ordinance adopted on March 7, 2022, Ordinance number 0-22-029 Albemarle County's Continuity of Government Ordinance adopted on April 15th, 2020, and revised effective November 4, 2020, Ordinance number 20-A16 and Chapter 1283 of the 2020 Acts of the Virginia Assembly effective April 24, 2020, we are holding this meeting by real time electronic means with no Board member physically present at a single, central location.

"All Board members are participating electronically. This meeting is being held pursuant to the second resolution of the City's Continuity of Government Ordinance and Section 6 of the County's revised Continuity of Government Ordinance. All Board members will identify themselves and state their physical location by electronic means during the roll call which we will hold next. I note for the record that the public has real time audio-visual access to this meeting over Zoom as provided in the lawfully posted meeting notice and real time audio access over telephone, which is also contained in the notice. The public is always invited to send questions, comments, and suggestions to the Board through Bill Mawyer, the Authority's Executive Director, at any time."

Mr. Gaffney called the roll.

Ms. Lauren Hildebrand stated she was located at 305 4th Street Northwest in Charlottesville, VA.

Ms. Ann Mallek stated she was located 4826 Advance Mills Road in Earlysville, Albemarle County. She stated there were 3/10 of an inch in her rain gauge because the rain came down sideways.

Mr. Quin Lunsford stated he was located at the ACSA administrative complex at 168 Spotnap Road, Charlottesville, VA.

Mr. Brian Pinkston stated he was located at 575 Alderman Road in Charlottesville, VA.

Mr. Jeff Richardson stated he was located at 401 McIntire Road in Charlottesville, VA (County Office Building).

Mr. Michael Rogers stated he was located at 605 Main Street, Charlottesville, VA (Charlottesville City Hall).

Mr. Mike Gaffney stated he was located in Quebec, Canada.

Mr. Gaffney stated the following Authority staff members and consultants were joining the meeting electronically: Bill Mawyer, Lonnie Wood, David Tungate, Jennifer Whitaker, John Hull, Jeff Southworth, Deborah Anama, Catherine Carter, and Darin Thomas.

Mr. Gaffney stated they were also joined electronically by Ms. Carrie Stanton (Williams Mullen), Counsel to the Authority.

3. AGENDA APPROVAL

Mr. Gaffney asked if there was a motion to approve the agenda.

Ms. Hildebrand moved that the Board approve the agenda. The motion was seconded by Mr. Pinkston and passed unanimously (6-0).

4. MINUTES OF PREVIOUS BOARD MEETING

a. Minutes of Regular Board Meeting on June 28, 2022

Mr. Gaffney asked if there were any comments, questions, or changes to the Board minutes. Hearing none, he asked if there was a motion to approve the minutes.

Mr. Rogers moved that the Board approve the minutes of the June 28, 2022 meeting. The motion was seconded by Ms. Mallek and passed unanimously (6-0).

5. RECOGNITIONS

There were no recognitions.

6. EXECUTIVE DIRECTOR'S REPORT

Mr. Mawyer stated the area received about 1.7 inches of rain yesterday. He stated another

important metric that they monitored was the South Rivanna Reservoir and whether or not water was flowing over the dam, which it had been for quite a while. He stated as of this morning, there were about eight inches of water flowing over the dam, which they approximated to be about 55 million gallons per day. He stated they monitored the South Rivanna Reservoir because as long as that was overflowing, they were taking most of the water from the South Rivanna Reservoir and not from Ragged Mountain Reservoir. When South Rivanna stopped overflowing, that was when they switched priorities and removed water from the Ragged Mountain Reservoir in order to conserve water in the South Rivanna Reservoir.

Mr. Mawyer stated he wanted to recognize two employees. He stated that Maurice Whitlow recently obtained his Class A commercial driver's license, which was due to the new federal requirement that an independent certifier be used for certifying employees for CDL license. He stated they went through the Piedmont Virginia Community College (PVCC) who provided that service. He stated their employee had to go for four weeks to classroom and field training to learn to drive CDL trucks and equipment, and everyone was pleased that Mr. Whitlow passed. He stated Mr. Whitlow had been a mechanic with them for four years and was doing well; they appreciated his efforts and engagement.

Mr. Mawyer stated he also wanted to recognize Michael Hearn, a water operator, who recently passed the Class 1 Water Operator exam. He stated Class 1 was the highest level of water operator licensed in the state. He stated Mr. Hearn had been with them for about 4 years, beginning as a Class 3, and in the past 18 months, he had passed Class 2 and now Class 1 licensing exams, and his efforts were appreciated. He stated Mr. Hearn was working at the Scottsville and Red Hill treatment plants, but now with his new and higher license, he would join the South Rivanna Water Treatment Plant team.

Mr. Mawyer stated David Tungate, Director of Operations, gave a tour to a family he knew from Crozet of the Crozet Water Treatment Plant as a part of their community outreach efforts. He stated they expected to return to in-person Board of Director meetings in September. He stated this was true for both Rivanna Boards, and they would be welcomed back on September 27.

Mr. Gaffney asked if there were any questions for Mr. Mawyer. Hearing none, he moved onto the next item.

7. ITEMS FROM THE PUBLIC

Mr. Gaffney opened the meeting to the public. He asked speakers to identify their name and where they live, and to keep in mind the three-minute time limit.

Mr. Hull stated Dede Smith would like to speak.

Mr. Gaffney greeted Ms. Smith.

Ms. Dede Smith thanked the Chair and greeted the Board. She stated she would like to reflect on the history of their water supply and lessons that had been learned or not learned. She stated back in the 1920s, when Ragged Mountain Reservoir was the only water source they had and was not meeting local water needs, a study was done to look for another source, and in this study, 100

years ago, they found that the only clean water in Albemarle County was the Moormans River. She stated back then, 100 years ago, that was where the decisionmakers went; first the pipeline and then a little bit later the Sugar Hollow Reservoir. She stated when that source needed help back when they were very wasteful water users with very high demand, they asked where to go next, and sure enough, the same information about the only clean water in the whole system was in Sugar Hollow. She stated to remember that it was the 1960s, thinking of Rachel Carson, and against the advice of those who understood the importance of clean water, the City in this case, damned the Rivanna. She stated within a few years, there were massive fish kills and a really stinky pond. She stated this went on for years and was totally putrefied – dead. She stated it was a complete mess for many reasons.

Ms. Smith stated that jumping ahead now to the new century when those same questions were being asked, sure enough, the Virginia Department of Health, in a letter to Rivanna which now existed, to go for the cleanest water, and the only clean water they had was in the Moormans. She stated that was just what Rivanna wanted to do and that was the Nature Conservancy plan: create a massive bathtub and fill it with the cleanest water as healthy flow allows, and all that water would sustain them through a drought. She stated drought protection was what it was all about, but as they all knew, the water may be clean, but politics was not always clean, and because it was not, they were looking at hundreds of millions of dollars in pipelines that were never in the original plan and in her opinion were not necessary. She stated they almost had it right to use the incredible flow of the Rivanna for 1 million to 2 million gallons per day, dismantle the dirty reservoir at South Fork, and use the clean one for drought protection. She stated it was not perfect, but in this day and age, when demand was dropping and would continue to, it was really the only environmentally responsible option they had. She thanked the Board and stated she appreciated their time.

Mr. Gaffney thanked Ms. Smith. He asked Mr. Hull if there were any other members of the public who wished to speak at this time.

Mr. Hull stated there were no further comments from the public.

Mr. Gaffney stated they would close Items from the Public and open the responses to public comments.

Mr. Gaffney closed Items from the Public.

8. RESPONSES TO PUBLIC COMMENT

Mr. Gaffney asked if Mr. Mawyer had any responses to public comment before going to the Board members.

Mr. Mawyer stated he would only offer that the community water supply plan that was approved in 2012 included a pipeline from the South Rivanna Reservoir to the Ragged Mountain Reservoir as the means to fill the new and larger reservoir at Ragged Mountain once the new dam was built. That was part of their plan to execute the community water supply strategy as soon as they could, and that plan did not include taking down the South Rivanna dam. He stated he appreciated Ms. Smith's comments and he would be glad to talk more with her about that, but

that was their plan right now as approved by the City and the County and the Service Authority.

Mr. Gaffney asked if there were any members of the Board who wished to respond to public comment.

Ms. Mallek stated that the Moormans had incidences of almost no flow. She stated when there was no water to release due to low rain, there was no river, so that was really harsh on that section. She reported that there were numerous farms between Sugar Hollow and the more modern piping closer to town, where she guessed monstrous amounts of water was escaping from that pipe that was put in more than 100 years ago, because there were seeps and plants growing where there never were plants before, which indicated an underground water source, and she was not sure they were able to rehabilitate that pipe in that location to keep it worthwhile. She stated she hated to waste any water at all, and they were losing some right now, so she certainly supported the plan as they had it.

Mr. Gaffney asked if anyone else wished to speak. He asked Mr. Mawyer if there was any question about the quality of drinking water coming out of the Observatory Water Treatment Plant or the South Fork Water Treatment Plant.

Mr. Mawyer stated no. He stated they had high-quality water and a granular activated carbon filter that contributed to that quality, so they had no concerns. He stated they dealt with algae in the reservoir sometimes, but that was typical of taking water from reservoirs. He stated otherwise, their water quality was very high.

Ms. Mallek stated at some time in the future, she would like to learn what possibilities existed to trace back some of those sources of the algae along the inlet streams in the system. She stated there may be something ongoing, and if not, she would love to learn how to do a better job of that in order to actually reduce the problem instead of having to treat it all the time.

Mr. Gaffney closed responses to public comment.

9. CONSENT AGENDA

a. Staff Report on Finance

b. Staff Report on Operations

c. Staff Report on Ongoing Projects

d. Staff Report on Wholesale Metering

e. Staff Report on Drought Monitoring

f. Transfer of Ownership to Albemarle County Service Authority – Upper Woodbrook Interceptor

Mr. Gaffney asked if there were any items on the Consent Agenda that Board members would like to pull for comments or questions. Hearing none, he asked if there was a motion to approve the Consent Agenda.

Mr. Rogers moved that the Board approve the Consent Agenda. Ms. Mallek seconded the motion, which passed unanimously (6-0).

10. OTHER BUSINESS

(reconvene RSWA for a Joint Session with the RWSA)

At 2:28 p.m., Mr. Gaffney reconvened the RSWA Board of Directors meeting and called the joint meeting with the RWSA Board of Directors to order.

a. Presentation: Physical and Cyber Security Update

Ms. Whitaker stated she was presenting today with Jeff Southworth from their IT management group. She stated they would be providing an update to the Board on the physical and cyber security program. She stated that infrastructure security had been a longstanding concern for the water and wastewater industry, in part because water and wastewater had historically been fundamental to the security and health of a community.

Ms. Whitaker stated that shortly after the 9/11 tragedy there were significant regulations that looked at the best practices to assess risk to critical infrastructure. She stated there were 16 federally recognized critical infrastructure sectors, and of those 16, three applied to Rivanna Water and Sewer and Solid Waste Authorities. She stated that included the dam sector, the water and wastewater sector, as well as the government facilities sector. She stated more recently, the American Water Infrastructure Act of 2018 mandated that utilities develop and routinely update risk assessments and emergency response plans.

Ms. Whitaker stated the physical security program is used in combination with other mitigative measures to reduce vulnerability and increase resilience within the Authority. She stated their key programs included door hardening and replacement. She stated many of their facilities were a bit older, so the doors themselves had physically deteriorated. She stated it could be seen on the right side of the slide that they had put in new and more modern doors with locking hardware and more intrusion-resistant facilities.

Ms. Whitaker stated they had looked at lock strengthening, key inventory, and gating and fencing improvements at all the facilities, as seen with the new front gate to the Observatory Water Treatment Plant. She stated they were looking at cameras and lighting; the camera system that had been set up and many cameras had been added over the last few months in an effort to get a sight on all critical infrastructure and ingress and egress out of their facilities.

Ms. Whitaker stated they had also done a tremendous amount of lighting work at Moores Creek and other facilities, both security lighting as well as employee safety lighting. She stated that the program also included landscaping and housekeeping, such as clearing fence lines to keep a good line of sight. She stated last on the list was access control and badging, which was what they

likely thought of when discussing physical security. She stated funding for this program came from many different places.

Ms. Whitaker stated that security was included in both specific independent Capital Improvement Projects, as well as other capital projects and more general projects, such as the water treatment plants getting upgraded doors and badging systems. She stated they had routine maintenance activities where they hired out vendors, and they also had specialized tasks that in-house maintenance staff did as well. She stated they were currently seeking funding from Homeland Security for the Moores Creek entrance gate project, which she would discuss more in a moment.

Ms. Whitaker stated access control referred to door locks, badging, and cameras that allowed people to enter and exit buildings in a controlled fashion. She stated they hired a company called Security 101, who had been their consultant for about two years now. She stated they helped them select a system based on their needs. She stated they helped with software installation, training, and support, as well as hardware design and installation, and they had been working their way from the larger facilities to the smaller facilities.

Ms. Whitaker stated they were getting close to having enhanced access control at all Rivanna facilities. She stated they also had an ongoing maintenance contract with Security 101, so they were able to call them if a component or piece of equipment stopped working and they could come out and repair it for them. She stated for instance, they occasionally had trucks hit their gate access control devices and they were able to get them out relatively quickly and repair those.

Ms. Whitaker stated that the key thing about the access control system was that they were able to get RFID badges for employees, vendors, and contractors, so they had been able to keep better control of who was exiting and entering facilities and their location permissions. She stated they were able to designate permissions by department, time of day, facility, and position of the person. She stated this allows them to prove their identification of employees, as well as vendors, visitors, and licensed contractors. She stated it also gave them intrusion notifications and open-door notifications, so if a door was propped open or broken, they were able to see that.

Ms. Whitaker stated they were more easily able to mitigate lost keys and lost badges; they were able to turn them on and off quickly. She stated they were investigating an electronic padlock system which they would be able to remotely control through smart phone devices.

Ms. Whitaker stated the other capital project she wanted to discuss was at Moores Creek Advanced Water Resource Recovery Facility. She stated in September, they would all get the opportunity to see the gate firsthand. She stated displayed on the screen was a map of the Moores Creek facility entrance, which is off Franklin Street in the City, and the red arrow indicated Moores Creek Lane. She stated the orange bar was their current front gate, which was the entrance to the main entrance and exit to the entire 80-acre facility. She stated anyone that had business at the facility—whether it be an employee, a vendor, contractor, the mailman, parks, delivery—everyone passes through this main gate.

Ms. Whitaker stated while it gave a single point of control, it came with a downside. If the gate was open like it is during the day to allow the public to enter, everyone had access to the entire facility, and then at night it was locked and no one had access to the facility. She stated they were going to get a little more nuanced about how they secured the facility.

Ms. Whitaker showed the same graphic along with photographs of the entrance to Moores Creek Lane. She stated the picture at the bottom was looking back towards Franklin Street and coming down the lane was how one entered the facility. She stated the front entrance sign was located at the first island. She stated one could either make an entrance into the septage receiving area where they received septage trucks, usually from the County, and those came in day and night, so having access to this facility in both the day and night was important. She stated if not entering the septage receiving area, drivers could enter this main road, which was shown in the third picture.

Ms. Whitaker stated once making it past the first island, there was a choice of turning back into septage receiving, turn and go to the north side of the plant, which would take one under the bridge at Moore's Creek and to the north side of the facility, or continuing straight across the top of the bridge and to the south side of the plant. She stated there were a lot of turning movements at the front end of this facility and a lot of conflicting uses. She stated because of the geometry, there also was the main pump station, septage receiving area, duty pump station, which was an office facility as well as a functional part of the process, and some maintenance activities, all coming in and intermixing at this location as well as at least three road splits. She stated they had to get creative in their thought process about securing this front facility.

Ms. Whitaker stated shown on the slide were four red arrows, one coming into the main plant and main gate, which when opened, they would have badge-controlled access to the gate, which would allow employees to have access after hours, or anyone who had authorized access would be able to come in after hours through that main gate. She stated normally, during the day that main gate would be left open. She stated septage haulers would be able to pull into the septage receiving facility and employees would be able to continue straight down the road, and with their badge system, access through the gate to either the north or south side of the plant through the north and south gates.

Ms. Whitaker stated visitors would have a visitor lane that would allow people without badge access to pull over into the stippled area. She stated they would be able to go through a camera and access the administrative staff who can buzz them in or provide escorted access to the facility. She stated in addition, they would be installing gates that went down to the creek and fencing to create a holding area at the front of the plant, where people who needed to access septage receiving would be able to do so, but visitors could be greeted. She stated it would greatly reduce the public interaction with their wastewater process, which they felt was necessary. She stated it would integrate with their access control and camera system, so the staff had easy access in and out of the gates without too much slow-down.

Ms. Whitaker stated again, it would allow them to continue to operate septage receiving during normal hours as well as after hours, and it would dramatically improve their visitor check-in process. She stated this project of the Moores Creek gate, doors, and access control were all in

their current capital plan and estimated at about $2.8 million. She asked if there were any questions on the security program.

Mr. Gaffney asked if there were any questions for Ms. Whitaker.

Mr. Southworth stated cybersecurity was the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks. He stated common cyberattacks included computer viruses, malware, phishing emails, social engineering to obtain passwords from users, impersonation, which was pretending to be someone in order to gain information or task performed, and intercepting communications. He continued that there were two different sources for guidance, one being the Cybersecurity & Infrastructure Security Agency (CISA), which was part of the Department of Homeland Security, setting security standards and giving guidance and threat alerts. He stated the other was AWWA guidance tool, which closely aligned with CISA and was used in security assessments.

Mr. Southworth stated for what they needed to protect and why, they needed to understand the risks in both technology and physical security and know that 90% of successful cyberattacks were caused by human error, such as clicking a link, answering questions, or allowing someone inside the network. He stated that third-party vendors could damage the network as well. He stated how the evaluated options and prioritized solutions helped the Authority allocate the resources they needed to secure the network. He stated based on the risk assessments, they were developing a cybersecurity plan and protocols. He stated the Rivanna IT team was the leader for cybersecurity within the organization, but it encompassed all the employees as well as the top management.

Mr. Southworth explained that the CISA Security Assessment looked at the categories of: IT risk assessment; IT asset management; supply chain risk management; identity management, i.e., authentication and access control; awareness and training; data security; IT response planning; and disaster recovery planning.

Mr. Southworth stated for the CISA Security Assessment completed by the outside contractor, they used network mapping tools, the Security Event and Information Management (SEIM) tool, and a vulnerability scan tool. He stated there was a network assessment and a penetration vulnerability testing completed by outside contractors. He provided AWWA recommendations on a slide. He noted one of the recommendations was to implement network segmentation by firewalls. He stated that had been completed. He stated the administrative network was separated from the operational network, so if one network was breached, it did not affect the other. He stated the administrative network was more vulnerable than the operational network.

Mr. Southworth stated they began using strong passwords and had changed the default passwords. He stated they were reviewing other access controls. He stated they had a strong password policy in place. He stated they were evaluating using more multi-factor authentication (MFA) methods. He noted a recommendation was to implement an employee cybersecurity training program. He stated it would be an ongoing training with staff.

Mr. Southworth stated they had adopted a defense-in-depth approach with five different

categories—application and data security; host security; network security; physical security; and policies and procedures. He stated a 90-day password expiration policy and strong password requirements were implemented. He stated the password requirements were over eight characters, to include special characters, uppercase and lowercase characters, and at least one numeric character.

Mr. Southworth stated they were cleaning up the Microsoft Active Directory. He stated there were stale items that had been identified. He stated they were using UltraBac Software for file and folder backups. He stated those backups were taken offsite. He stated they used a Barracuda Microsoft Office 365 backup. He stated the organization used Microsoft Exchange, OneDrive, Teams, and SharePoint. He stated there were backups in place for any instance the cloud may be breached.

Mr. Southworth stated they were working on the monthly patching for the servers and computers. He stated they used Sophos Antivirus on the servers, computers, and phones. He stated there was a mobile-device-management (MDM) process for cellphones and laptops. He stated in regard to network security, they were creating a geo-fence to examine the trouble spots. He stated they installed a firewall to protect the network. He stated on a daily basis, there was anywhere from 20,000 to 25,000 access attempts. He stated there was router antivirus software.

Mr. Southworth stated there were IPSEC tunnels between the internal routes, so there were virtual, private connections to those networks. He stated those protections were still being strengthened. He stated they were constantly monitoring the network to ensure there had been no breaches.

Mr. Southworth stated in regard to physical security, they had implemented a building access badging system. He stated he agreed that they needed more video cameras. He stated they were using email phishing campaign training. He stated they used the KnowBe4 service, and it had been successful. He stated it was rolled out in the past six months, and the staff response had been good.

Mr. Southworth stated they had updated IT policies. He stated they implemented non-disclosure agreements with their IT vendors as well as SCADA vendors coming into the organization. He stated there was a bring-your-own-device (BYOD) policy being developed. He provided an overview of the threat modeling. He stated in terms of geofencing, they were keeping a tight rein on the areas. He stated they were receiving spam mail from all over the world.

Mr. Southworth stated the cybersecurity program was a continuous process of assessing, testing, and implementing the changes to defend against the latest threats. He stated the IT team was committed to leading and fostering a cybersecurity culture with the employees, and providing a security ecosystem that included technology, user training, and leadership awareness.

Mr. Gaffney asked if there were questions or comments.

Ms. Mallek noted the non-disclosure agreement (NDA) for contractors. She asked if the contractors had to provide employee clearance and verification.

Mr. Southworth stated they worked with different, specific companies. He stated they vetted the process before the vendors connected to the internal network. He stated they were also shadowed by the IT department, so they were aware of everything the vendors did on the network. He stated it was also logged.

Ms. Mallek asked if there was a written record of the actions taken, like a keystroke log.

Mr. Southworth stated there was always caution exercised towards outside vendors. He stated they did not have keystroke loggers. He stated they had logs in place for what changes were made to the SCADA system and the internal network. He stated they fully vetted all of the contracted companies before they came into contact with the Authority's network.

Mr. Pinkston asked if the amount of access requests and spam was typical for a utility.

Mr. Southworth stated yes. He stated from his previous experience, cyberattacks could be done remotely and automatically. He stated there were programs that constantly sent out spam requests. He stated the spam was not exclusive to utility organizations. He stated it was typical. He stated the amount of spam depended on how visible and disseminated the organization's email addresses were. He stated Mr. Mawyer, Mr. Wood, and Ms. Nemeth were more vulnerable due to their public exposure. He stated they received nearly 3,000 spam emails a day.

Mr. Pinkston stated he presumed all of the steps taken were also mitigating the risk of a ransomware attack.

Mr. Southworth stated that was correct. He stated he had not mentioned ransomware. He stated there were backups located offsite, so there was an airgap. He stated the cloud services were also backed up to a third party in two different locations.

Mr. Pinkston asked if the SCADA system was provided by a proprietary vendor or if it was home-grown.

Mr. Southworth stated SCADA was the process that the program logic controllers (PLCs) ran in the devices out in the treatment plants, such as the motors to open the gates or the controls for the chemical treatment of the water. He stated the SCADA programmed monitored the PLCs and the treatment. He stated it was important to separate the systems so that they were more secure.

Mr. Mawyer stated the system was proprietary.

Mr. Southworth stated they did not write the program. He stated they worked with a couple different vendors, and GE was one of them. He stated all utilities used the SCADA system.

Mr. Mawyer stated he believed the system was a GE system.

Mr. Pinkston asked what SCADA stood for.

Mr. Mawyer explained SCADA stood for Supervisory Control and Data Acquisition. He stated the acronym was about monitoring the treatment process through data acquisition and controlling the process through supervisory control in response to the data. He stated it was one of the greatest vulnerabilities for the Authority, that someone would hack into and take control of the SCADA system to potentially impact the treatment process.

Mr. Pinkston noted Mr. Southworth was working hard to protect the system.

Mr. Mawyer stated isolating the system from the administrative network was one of the key components of protecting the SCADA. He stated it was not hooked in with the other internet systems.

Mr. Gaffney noted the Badge system. He asked if they proactively reviewed where the badges went on a regular basis, or if they only reviewed them if an event occurred.

Ms. Whitaker stated there were a variety of ways of examining the problem. She stated they had looked at vendor activity through a facility. She stated they had reviewed individual buildings. She stated she did not know how much random auditing was performed. She stated they had historically looked for specific patterns for different reasons.

Mr. Mawyer stated the badges were programmed to only provide access to the places that employees needed to go. He stated people did not have unlimited access because they had a badge.

Mr. Gaffney asked if there were further comments or questions.

Mr. Rogers asked if the camera system was monitored 24/7.

Ms. Whitaker stated operators could view the camera feeds and certain camera feeds were available at their workstations. She stated if the cameras were applicable to the work being done, then the feed may be available to operators. She stated as an example, the South Rivanna WTP had a camera on the dam, and the operator was able to access that camera feed at all times. She stated they did not have access to the entire network of cameras.

Mr. Roger asked if an alarm system had been installed at key vulnerability points to alert the system to intruders.

Ms. Whitaker stated the systems in place could be set for several different purposes. She stated cameras could be set to provide internal notifications if there was a particularly heightened concern. She stated the issue became what to do with the information once the alarm was triggered. She stated there were intrusion devices at key doors, hatches, and fences that will trigger an alarm alerting that someone entered the facility unauthorized.

Ms. Mallek stated if someone were busy, they could be notified to review the camera feed when there were people where they should not be. She stated she hoped they were programming the cameras to detect those situations so they were not triggered by the motion of the water.

Ms. Whitaker stated occasionally, they also caught a few bears and deer on the camera.

b. Presentation and Work Session: 2023-2028 Strategic Plan Update

Mr. Darin Thomas, Vice-President of Raftelis Financial Consultants Inc, stated Ms. Catherine Carter, Senior Manager of Raftelis Financial Consultants Inc, was also present. He stated the intent of the presentation was to provide the Board with a briefing on where things stood relative to the development and update of the Authority's strategic plan. He stated the organization had a rich history of strategic planning. He stated he and Ms. Carter did this as a living for utility authorities and local governments around the country.

Mr. Thomas stated he lived in Greensboro, North Carolina, and Ms. Carter worked from the headquarters in Charlotte, North Carolina. He stated they were involved with the development of the previous strategic planning document. He stated typically, it was best practice to update the plans on a five-year cycle. He stated the planning had been initiated by the Board. He stated they had requested a readout on where the Authority was going, what its goals were, and the direction of the organization. He stated he would provide an overview of the process and the timeline. He stated stakeholder input had been gathered. He stated it was best practice when drafting a strategic plan to get the input from people who were leading the organization. or a stakeholder in the organizations.

Mr. Thomas stated he would discuss the stakeholder feedback. He stated the Board had items in their packets that provided more details. He stated he would review vision, mission, and values. He stated they did not recommend, nor was the steering committee recommending—composed of Mr. Mawyer, his leadership team, and a few others—significant changes to the vision, mission, and values. He stated they would discuss emerging or proposed areas of focus for the organization—also known as goals, focus areas, or priorities. He stated the presentation would wrap up with next steps.

Mr. Thomas provided a project timeline for the overall project. He stated there were six events. He stated there had been a kickoff meeting—a structured conversation with the core strategic planning team. He stated the team had about 12 people, including Mr. Mawyer, Ms. Whitaker, Mr. Tungate, Mr. Wood and other leaders in the organization. He stated the event was on June 9, and they produced a project charter and defined the stakeholders to consult at the meeting.

Mr. Thomas stated shortly after the June 9 meeting, many members of the Board were interviewed as part of the portfolio of stakeholder engagement. He stated the engagements included structured interviews, online surveys, and others. He stated stakeholder engagement was concluded in July. He stated on July 7, there was a foundation workshop. He stated at the workshop, development of the draft strategic plan was advanced. He stated moving forward, after receiving Board input, they would have another workshop with the core planning team on August 18. He stated it was a strategy workshop where they add more specificity to the strategic plan.

Mr. Thomas stated that in the August and September timeframe, they would start designing and writing a new, updated, five-year strategic plan for the Authority that would be presented to the

Board for its input. He stated once they received the Board's input, they would finalize the draft. He stated in September and October, they would transition into implementation.

Mr. Thomas stated Ms. Carter was involved in driving the stakeholder feedback. He stated the Board had two deliverables in the packets, and Ms. Carter would provide a high-level discussion on the contents.

Ms. Carter noted about 76% of the employees in the Authority took the survey. She stated they performed interviews with members of the leadership team and employee focus groups. She stated about 35 people participated across three different focus groups. She stated Board interviews and external stakeholder interviews were conducted as well. She stated they were still working to schedule some of the interviews, but had been in contact with most of the people identified as high-priority stakeholders. She stated the results were captured in the Board's informational packet.

Ms. Carter stated when they performed stakeholder interviews and employee engagement, they often focused on different types of questions. She stated the first question revolved around aspirations—what would make them proud of the organization in five years, and what did they want the Authority to be known for. She stated there were themes common across the responses. She stated key aspirations focused on regional leadership and being the model for other organizations and utilities. She stated there was focus on workforce development and engagement.

Ms. Carter stated other key themes included topic such as updated facilities and infrastructure. She stated people wanted to work in facilities that met their needs, and people wanted the infrastructure to continue to meet the needs of the client population. She stated another topic was streamlined and efficient operations. She stated the workforce was professional, and strides had been taken to make the operational processes more efficient. She stated employees were especially proud of the work done in those areas. She stated it would make them proud if the stakeholders and community had an understanding of the value of the services provided.

Ms. Carter stated they then asked respondents and interviewees about strengths. She stated there was a lot of energy around the professional and knowledgeable workforce. She stated excellent product quality was mentioned. She stated people felt strongly about the leadership and organizational culture. She stated long-term and capital planning was a strength of the organization. She stated stakeholders and others felt the Authority was responsive and reliable. She stated members of the leadership team and the Authority general felt they had sufficient resources to fulfill the organizational missions—financial resources, operational resources, and internal expertise.

Ms. Carter stated there was the desire for the Authority to seize the opportunity to increase regional visibility through engagement in regional conversations. She stated there were opportunities for external partnerships to help support the Authority goals. She stated an example may be the relationship with PVCC. She stated in light of the Great Resignation, there was still the feeling of opportunity around employee recruitment and retention, but continued effort was needed.

Ms. Carter stated there was the feeling they would have the opportunity to expand internal opportunities. She stated a cohesive, shared vision with RSWA was emphasized. She stated there were big opportunities and discussions around environmental stewardship. She stated they were ensuring the operations and activities of the Authority were environmentally friendly. She stated there was the conversation around increasing the organizations focus on diversity, equity, and inclusion. She stated it was a common point.

Ms. Carter stated they asked questions regarding the critical issues, such as the barriers that needed to be addressed and the things they needed to ensure they were capturing and responding to in the strategic plan. She stated there was a real need to address technology upgrades and cybersecurity needs. She noted the growth of the population of the service area and the future impacts. She noted supply chain issues - materials that the organization needed to operate - were less available, more expensive, or both.

Ms. Carter stated there was discussion around the lack of community understanding and awareness of the services the Authority provided. She stated it was a topic that needed to be addressed for the organization to be successful. She stated there was discussion around service affordability, capital project financing, and regulatory requirements. She stated a lot was uncertain, and the uncertainty could be addressed through capital projects. She stated addressing changing regulations was expensive. She stated there was discussion around staff workload and capacity. She stated with the turnover and the range of activities at the Authority, people were moving in many directions.

Ms. Carter stated there was the issue of climate change and operational resiliency. She stated the organization would be forced to adapt to mitigate the impacts of climate change. She stated in the survey, they asked employees to give a sense of the performance in various areas. She stated employees were asked to rate performance from “Excellent” to “Poor,” and the responses were given an average numerical score. She stated the same questions were asked in 2017 and in 2022. She stated in every one of the categories, employees considered performance to have increased between 2017 and 2022.

Ms. Carter stated employees felt performance increased the most in the areas of workforce and employee/leadership development, and in infrastructure stability. She stated both were focus areas of the previous strategic plan. She stated there was a bigger awareness of what the Authority did among the employees and clients. She stated there was deliberate effort to improve in those areas.

Mr. Richardson asked if the improvements related to performance in workforce was related to the employee perception of the employer’s commitment to employee development.

Ms. Carter stated for each of the categories, there was a short accompanying statement to provide more context. She stated in the case of workforce, it was focused on employee and leadership development—the organization’s ability to attract, develop, and retain a highly skilled and professional workforce. She stated the increase was a reflection of employee’s perception of the categories and concepts.

Mr. Thomas stated the Board could be comforted that the organization appeared to make progress. He stated it had been five years since his firm last engaged with the Authority. He stated they were able to feel the improvements throughout the organization. He stated in some cases, perception was reality. He stated the data reflected the perception of the employees.

Mr. Thomas stated they needed to determine a way to deal with the input they received. He stated it was the job of the consultant to help the core planning team convert the input to decision making. He stated they had the tendency to rely on the aspiration questions. He stated they reviewed the aspirational themes against the vision statement. He stated the strengths were used to inform the mission of the strategic plan.

Mr. Thomas provided the current vision of the organization. He stated after the previous workshop, there was an edit made to the vision statement that smoothed the wording. He stated there was no significant energy from the core planning team to make a radical change to the vision statement. He stated they proposed to make a small change to the vision statement. He read the current vision statement:

"To serve the community and be a recognized leader in environmental stewardship by providing exceptional water and solid waste services."

as compared to the proposed vision statement:

"To serve the community as a recognized leader in environmental stewardship by providing exceptional water and solid waste services."

Mr. Thomas asked if the Board had any reactions or thoughts in response to the changes made to the vision statement.

Ms. Mallek stated either wording was fine. She stated she appreciated seeing the written vision statement because it showed the provision of services was the priority, and being a recognized leader was a byproduct of providing services. She stated she was concerned all the energy would be devoted to being a regional leader, but the change in the vision statement addressed that concern.

Mr. Gaffney noted in the current vision statement, there were two goals, and in the proposed statement, there was only one. He stated he supported the conciseness.

Mr. Thomas read the current mission statement:

"Our professional team of knowledgeable and engaged personnel serve the Charlottesville, Albemarle, and UVA community by providing high quality water treatment, refuse, and recycling services in a financially and environmentally responsible manner."

and the proposed mission statement:

"Our knowledgeable and professional team serves the Charlottesville, Albemarle, and UVA community by providing high-quality water treatment, refuse, and recycling services in a financially responsible and sustainable manner."

Mr. Thomas stated there was a subtle change in the mission statement. He stated the mission statement was the purpose of the organization and communicated the reason it existed. He stated the emphasis of the statement was on a fiscally responsible and sustainable manner at the end. He stated there was sufficient input from all of the stakeholders about the recognition of environmental stewardship and sustainability, and the revisions better emphasized those categories.

Mr. Gaffney noted financial stability and responsibility meant the Authority was breaking even.

Mr. Thomas stated utilities were expensive to operate.

Ms. Mallek stated she was glad the statement did not say "financially feasible," because there are things that must be done even though they were expensive.

Mr. Thomas stated there were no proposed changes to the values. He stated during the previous work session, the core planning team thought through what the most deeply held beliefs were and what it wanted the culture to be. He stated values were used to make decisions when no one was watching. He stated the values were still representative of the organization's beliefs.

Mr. Thomas stated all of the stakeholder input was used in the foundation workshop. He stated they would review what they had focused on in the past and consider what needed to be done to be responsive to some of the opportunities that had been brought up by the stakeholders. He stated the organization had been focused on advancing workforce development. He stated that was visible in survey results that had been presented. He stated operational optimization had been a focus area along with being an efficient organization that used resources wisely. He stated communication and collaboration served to allow the organization to support its primary customers.

Mr. Thomas stated the organization had a focus on and strategies for communication and collaboration. He stated they were an environmental company at the core and focused on environmental stewardship. He stated a lot of feedback was received related to infrastructure master planning. He stated solid waste services was another topic of focus.

Mr. Thomas stated there were proposed or emerging areas of focus. He stated the solid waste service goal was not as prominent. He stated it had been assumed by the emerging focus areas. He stated there were six goals in the previous strategic plan. He stated the core planning team was considering having five goals. He stated those five goals were displayed on the slide. He stated they recognized that workforce was a focus of the organization. He stated they needed highly skilled, competent, engaged, and highly performing employees to accomplish the organizational goals. He stated workforce was about attracting, developing, and retaining an adequate and competent workforce.

Mr. Thomas stated in addition to optimization, the organization needed to be resilient. He stated the second emerging goal category focused on the notion of organizational optimization and resiliency. He stated the organization should be efficient, leverage technology, and be able to know where its risks were and be able to mitigate those risks. He stated the third proposed area of focus was on planning and infrastructure. He stated the organization, as a utility, must always take a long-term view. He stated the fourth proposed goal area related to communication and collaboration with stakeholders. He stated they did that to elevate the brand and the awareness of the organization.

Mr. Thomas stated the fifth goal of environmental stewardship was about the organization being a strong voice for sustainability, locally and in the region. He stated the message to the Board was that they were proposing five goal areas instead of the former six. He asked for thoughts or reactions from the Board. He asked if there were other priorities that the Board believed should be considered that would not fall under one of the five proposed categories.

Mr. Rogers asked if diversity, equity, and inclusion would fall under the workforce category.

Mr. Thomas stated yes.

Ms. Carter stated they did not put all the information on the slide. She stated at the previous work session, they determined what concepts fell into the five goal categories. She stated diversity, equity, and inclusion was included in the workforce theme and the stakeholder communication and collaboration theme.

Mr. Rogers asked if there would be a work plan within each one the goals to realize the intent.

Mr. Thomas stated that was correct. He stated the next work session would add more specificity and detail to the goals. He stated they would address specific strategies to drive success.

Mr. Rogers stated the five areas were right. He stated he supported the messaging and the intent of the proposed goals.

Ms. Mallek confirmed that the five proposed goals would apply to RWSA and RSWA.

Mr. Thomas stated that was correct.

Ms. Mallek asked when the adjustments for new regulations would be implemented. She stated they had discussed the uncertainty regarding future regulations.

Ms. Carter stated it depended on which regulations. She stated if they were discussing the American Water Infrastructure Act, then it would fall under operational resiliency. She stated some regulations would be addressed through planning and infrastructure, and some planning would fall under environmental stewardship. She stated it would depend on what the content of the regulation was and where they came from. She stated regulations could come from the EPA or be related to the workforce.

Ms. Mallek asked if water quality regulations would be addressed through efficient operations and performing whatever capital investments were required. She stated new water regulations were coming with new testing guidelines.

Mr. Pinkston stated he supported the proposed goals and reflected how he felt about the organization. He stated many people had no concept of what the Authority did. He stated for instance, with the CWL, roughly half the cost was borne by the County. He stated elevating the brand was important.

Mr. Smalls asked if climate action would be included under environmental stewardship.

Mr. Thomas stated exactly.

Mr. Smalls stated it was difficult to have to interpret the goals. He asked if using the Authority's expertise was included under stakeholder communication.

Mr. Thomas stated that would be his reaction, but he would take that input from Mr. Smalls. He stated these were the conversations needed to sort through the details.

Mr. Richardson noted solid waste was not included at all within the five proposed goals. He stated his assumption was that as staff worked with the consultant and received input, then they were looking at topics such as waste-stream reduction and performance measurements to take advantage of recycling technology. He stated they looked to be an Authority in a leadership role as technology improved. He asked if solid waste and environmental stewardship connected.

Mr. Thomas stated he thought it did. He stated Mr. Richardson provided great input because it was helping them prepare from a strategy development perspective. He stated they would weave the themes throughout each of the goals.

Ms. Hildebrand stated she liked that the "infrastructure and master planning" category had evolved to "planning and infrastructure." She noted the large projects the Authority had undertaken. She stated the master planning that had been accomplished would be put into long-term goals for infrastructure planning.

Mr. Thomas stated they had that very same discussion.

Mr. Gaffney asked what the next steps were.

Mr. Thomas stated the Board's input was appreciated. He stated they would begin to incorporate the feedback, and it would inform how decisions were made for the next work session. He stated they would be able to work with the leadership team to define the specificity around each of the particular focus areas.

Mr. Thomas stated the specificity would be in the form of various strategies. He stated they would ensure they identified key metrics. He stated they would return to the Board in September. He stated after the September meeting, the goal was to draft a strategic plan by October. He

stated the Board would deliberate on the final draft. He stated the plan was then passed to Mr. Mawyer to implement. He stated the plan would then guide the organization for the next five years.

Mr. Rogers stated he had been through many strategic planning sessions and processes through the years. He stated he supported the way the plan was being done.

Mr. Stewart stated he was familiar with the current strategic plan. He stated there were more details to revisit and work through with stakeholders. He asked if there were future plans to gain input from stakeholders, such as himself, the County representative for RSWA, Mr. Smalls, and others.

Mr. Thomas stated the part of the data collection from stakeholder engagement was complete. He stated there were a few people to touch base with. He stated as some of the strategies began to develop, and if there were key stakeholders impacted by some of the strategies, it was in their purview to reach out and get input from the stakeholders who may participate. He stated they did not have a formal point where they would validate the specificity of the plan to outside stakeholders.

Mr. Mawyer stated it sounded like a good plan. He stated if there were particular items that related, then they could reconnect with Mr. Stewart and Mr. Smalls.

11. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

Mr. Gaffney asked if there were other items from Board members or staff not on the agenda and heard none.

12. CLOSED MEETING – PERSONNEL REVIEW

At 3:59 p.m., Ms. Mallek moved that the RWSA enter into a joint closed session with the RSWA. Mr. Pinkston seconded the motion, which passed unanimously (6-0).

Mr. Gaffney asked if a roll call vote was required to leave the closed session.

Ms. Stanton stated the boards would reconvene in public and take a roll call vote to certify the closed session. She explained that any resolution or motion agreed to in the closed session must be voted on in the public meeting for it to be effective. She stated after the certification vote, there would need to be a motion, a second, and a vote to approve whatever was agreed to in the closed meeting.

At 4:49 p.m., Ms. Mallek moved that the RWSA certify the closed session. Mr. Pinkston seconded the motion, which carried unanimously (6-0).

Mr. Gaffney requested both boards make a motion that gave the executive director, Mr. Mawyer, a 6% increase in his salary as of July 1, and increase his vacation from 4 weeks to 5 weeks after 5 years of service in keeping with the Rivanna Employees Standard Policy.

Mr. Rogers made the motion for the RWSA to approve an increase to the Executive

Director's salary by 6% and his vacation time to 5 weeks after 5 years of service in keeping with the Rivanna Employees Standard Policy. Mr. Pinkston seconded the motion, which carried unanimously (6-0).

13. ADJOURNMENT

At 4:53 p.m., Mr. Rogers moved to adjourn the meeting of the Rivanna Water and Sewer Authority. Ms. Mallek seconded the motion, which passed unanimously (6-0).

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 23, 2022**

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

Recognitions

The professional qualifications of our staff continue to improve and enhance our services. We congratulate the following employees for successfully completing the requirements for a license from the State:

- Chris Ward – Wastewater Operator, Class 2
- Robbie McMullen – Wastewater Operator, Class 2

STRATEGIC PLAN GOAL: OPERATIONAL OPTIMIZATION

Emergency Power Generator

As was reported to you in June 2021 and February 2022, we have been in discussions with the Virginia Department of Environmental Quality, Air Pollution Control Division concerning the operating permit for the emergency power generator which serves the Rivanna Wastewater Pumping Station completed in 2017. Design and construction of the pump station and generator were approved by VDEQ before the station was allowed to operate. The pump station generator operated as designed and was not in violation of any environmental limitation, although a permit specific to this generator was not obtained from VDEQ. With assistance from our attorney with Williams Mullens, a Consent Order with VDEQ has been executed, a charge of $11,798.92 has been paid (reduced from $26,849.55), and all corrective measures have been completed.

STRATEGIC PLAN GOAL: COMMUNICATION & COLLABORATION

Community Profile

We sponsored a small advertisement in the UVA football game program to increase community awareness of the services we provide.

Return to In-Person Board of Director Meetings

We understand local emergency ordinances will expire, and we will be required to return to in-person Board of Director meetings in our Administration Building conference room starting on September 27.

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

REVIEWED: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **JUNE MONTHLY FINANCIAL SUMMARY – FY 2022**

DATE: **AUGUST 23, 2022**

Financial Snapshot

Revenues and expenses exceeded estimates in FY 2022. With a budget of $38.95 M, the fiscal year ended with a deficit of 0.6%, or $234,700. Flows and related rate revenues were slightly higher that budget estimates (Urban Water - 1.6% over budget estimates, Urban Wastewater - 2.7% over budget estimates.) This helped generate roughly $526,000 in revenues over our budget estimates for those two rate centers. Operating expenses exceeded budget by roughly 6.3% or $1.3 million. A brief summary of revenues and expenses is provided below.

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	$ 8,563,055	$ 9,592,662	$ 2,362,855	$ 20,518,572
Expenses	(8,716,960)	(9,454,384)	(2,567,806)	(20,739,150)
Surplus (deficit)	$ (153,905)	$ 138,278	$ (204,951)	$ (220,578)
Debt Service				
Revenues	$ 7,684,206	$ 8,729,395	$ 2,010,630	$ 18,424,231
Expenses	(7,684,228)	(8,741,380)	(2,012,703)	(18,438,311)
Surplus (deficit)	$ (22)	$ (11,985)	$ (2,073)	$ (14,080)
Total				
Revenues	$ 16,247,261	$ 18,322,057	$ 4,373,485	$ 38,942,803
Expenses	(16,401,188)	(18,195,764)	(4,580,509)	(39,177,461)
Surplus (deficit)	$ (153,927)	$ 126,293	$ (207,024)	$ (234,658)

A more detailed financial analysis is in the following monthly report and reviews more closely actual financial performance compared to budgeted estimates. There are comments listed that will reference to the applicable line items in the financial statement for each rate center and each support department in the following pages. Please refer to the Budget vs Actual financial statements when reviewing these comments.

Detailed Financials

The Authority's actual operating revenues and other inflows were $1,076,000 over the annual budget estimates. There was a one-time inflow of debt proceeds of $518,300 that was used to pay for bond issuance costs. There were also rate revenues of $356,000 more than budget estimates. The Authority also received $121,500 more in nutrient credits and $59,500 more in septage than planned.

The Authority's operating expenses exceeded budget by roughly 6.3% or $1.3 million. A large portion of that was the bond issuance costs mentioned above of $518,300. The following comments help explain most of the other budget vs. actual variances. After our audit is complete, any surplus funds or (deficits) will be allocated to (from) our reserve accounts for each rate center.

A. There are several expenses that are paid yearly or quarterly that cause the budget vs actual comparison to appear to be overstated. The overstatements usually even out as the year progresses as the straight-line monthly budget increases over time. Examples are property/general liability insurance, workers comp. insurance, certain membership dues.
B. Personnel Costs (Urban Wastewater – page 5) – The Urban Wastewater rate center salaries were 3%, or $42k, over budget to pay salary increases for plant operators who achieved higher licenses.
C. Professional Services (Crozet Water, Scottsville Water, Urban Wastewater, Glenmore Wastewater, Administration, Engineering – pages 3, 4, 5, 6, 8, 11) – The Administration department has incurred $518,000 in unbudgeted bond issuance costs which were paid with bond proceeds. Crozet Water incurred unbudgeted engineering and technical services expenses for a water demand forecast update, and Scottsville Water paid $11,900 for an unbudgeted tank inspection. Urban Wastewater went over budget on legal fees and engineering /technical service fees. Glenmore Wastewater spent $95,000 this year to perform a needs evaluation for Glenmore WRRF, which was an unbudgeted cost. This will cause Glenmore Reserves to be overdrawn, causing the other rate centers to fund Glenmore cost overruns. Engineering went over budget on the cost of a baseline greenhouse gas assessment for Moores Creek AWRRF.
D. Information Technology (Urban Water, Crozet Water, Scottsville Water, Administration – pages 2, 3, 4, 8) – Urban Water went over the annual budget on computer hardware purchases. Crozet and Scottsville Water incurred some unbudgeted SCADA maintenance and support costs to replace modems. The Administration department spent $235,000 more than the annual budget in this category. Extra costs have been incurred this year to mitigate several items identified in a Cyber Security Assessment conducted in August 2021.
E. Operations & Maintenance (Urban Water, Crozet Water, Scottsville Water, Urban Wastewater, Scottsville Wastewater, Maintenance – pages 2, 3, 4, 5, 7, 9) – Urban Water spent $271,000 more than budgeted for Chemical costs, but $256,800 of GAC chemical purchases were funded by budgeted reserves included in the budgeted revenues. Urban Water went over budget on costs to repair pipelines and other equipment. Scottsville Water has incurred some unbudgeted building and grounds maintenance costs. Crozet Water is over budget for Beaver Creek Watershed signs, which will be reimbursed by VDH, and

utility easement clearing costs. Urban Wastewater's chemical costs are $319,000 over budget and maintenance and actual equipment repair costs have been higher than estimated. Scottsville Wastewater incurred $14,000 of unbudgeted repairs to the lagoon intake gates. The Maintenance department went over budget on the cost of fuel, lubricants, and other maintenance supplies.

F. Other Services and Charges (Crozet Water, Urban Wastewater, Administration – pages 3, 5, 8) - Urban Wastewater spent more on the cost of sludge hauling for composting than originally estimated. Crozet Water's utility costs were also higher than estimated. Administration exceeded budget for support services for virtual board meetings, updating our strategic plan, and bank service charges.

Please note that the budget and these monthly budget vs. actual statements are prepared on a different basis than the annual comprehensive financial report (ACFR). Year-end adjustments are recorded every year to conform to the accounting principles required for the ACFR. These monthly statements were prepared prior to recording those year-end adjustments.

Attachments

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022
Fiscal Year 2022

Consolidated
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 18,810,555	$ 18,810,555	$ 19,166,566	$ 356,011	1.89%
Lease Revenue		105,000	105,000	125,075	20,075	19.12%
Admin., Maint. & Engineering Revenue	C	553,000	553,000	1,090,841	537,841	97.26%
Other Revenues		540,589	540,589	734,312	193,723	35.84%
Use of Reserves-GAC		316,250	316,250	273,050	(43,200)	-13.66%
Rate Stabilization Reserves		200,000	200,000	200,000	-	0.00%
Interest Allocation		8,200	8,200	19,569	11,369	138.65%
Total Operating Revenues		**$ 20,533,594**	**$ 20,533,594**	**$ 21,609,413**	**$ 1,075,819**	**5.24%**
Expenses						
Personnel Cost	B	$ 9,649,988	$ 9,649,988	$ 9,555,302	$ 94,686	0.98%
Professional Services	C	712,050	712,050	1,378,958	(666,908)	-93.66%
Other Services & Charges	F	3,111,400	3,111,400	3,127,368	(15,968)	-0.51%
Communications		191,412	191,412	202,224	(10,812)	-5.65%
Information Technology	D	447,100	447,100	724,053	(276,953)	-61.94%
Supplies		42,160	42,160	35,711	6,449	15.30%
Operations & Maintenance	E	4,864,235	4,864,235	5,616,917	(752,682)	-15.47%
Equipment Purchases		615,250	615,250	289,459	325,791	52.95%
Depreciation		900,000	900,000	900,000	-	0.00%
Reserve Transfers		-	-	-	-	
Total Operating Expenses		**$ 20,533,594**	**$ 20,533,594**	**$ 21,829,991**	**$ (1,296,397)**	**-6.31%**
Operating Surplus/(Deficit)		**$ 0**	**$ 0**	**$ (220,578)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 18,193,960	$ 18,193,960	$ 18,193,980	$ 20	0.00%
Use of Reserves		-	-	-	-	
Septage Receiving Support - County		109,440	109,440	109,441	1	0.00%
Buck Mountain Lease Revenue		1,600	1,600	9,224	7,624	476.52%
Trust Fund Interest		33,700	33,700	11,986	(21,714)	-64.43%
Reserve Fund Interest		80,000	80,000	99,599	19,599	24.50%
Total Debt Service Revenues		**$ 18,418,700**	**$ 18,418,700**	**$ 18,424,230**	**$ 5,530**	**0.03%**
Debt Service Costs						
Total Principal & Interest		$ 14,256,077	$ 14,256,077	$ 14,837,078	$ (581,001)	-4.08%
Reserve Additions-Interest		80,000	80,000	99,599	(19,599)	-24.50%
Debt Service Ratio Charge		725,000	725,000	725,000	-	0.00%
Reserve Additions-CIP Growth		3,357,623	3,357,623	2,776,633	580,990	17.30%
Total Debt Service Costs		**$ 18,418,700**	**$ 18,418,700**	**$ 18,438,310**	**$ (19,610)**	**-0.11%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ (14,080)**		

Summary

Total Revenues	$ 38,952,294	$ 38,952,294	$ 40,033,643	$ 1,081,349	2.78%
Total Expenses	38,952,294	38,952,294	40,268,301	(1,316,007)	-3.38%
Surplus/(Deficit)	**$ 0**	**$ 0**	**$ (234,658)**		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022

Urban Water Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 7,971,504	$ 7,971,504	$ 8,097,034	$ 125,530	1.57%
Lease Revenue		75,000	75,000	94,333	19,333	25.78%
Grants		-	-	4,800	4,800	
Miscellaneous		-	-	1,987	1,987	
Use of Reserves-GAC		300,000	300,000	256,800	(43,200)	-14.40%
Rate Stabilization Reserves		100,000	100,000	100,000	-	0.00%
Interest Allocation		3,400	3,400	8,102	4,702	138.28%
Total Operating Revenues		**$ 8,449,904**	**$ 8,449,904**	**$ 8,563,055**	**$ 113,151**	**1.34%**
Expenses						
Personnel Cost		$ 2,039,157	$ 2,039,157	$ 2,022,131	$ 17,026	0.83%
Professional Services		279,200	279,200	239,323	39,877	14.28%
Other Services & Charges		734,150	734,150	691,932	42,218	5.75%
Communications		98,670	98,670	101,496	(2,826)	-2.86%
Information Technology	D	80,500	80,500	90,804	(10,304)	-12.80%
Supplies		5,100	5,100	6,923	(1,823)	-35.75%
Operations & Maintenance	E	2,250,440	2,250,440	2,623,178	(372,738)	-16.56%
Equipment Purchases		15,400	15,400	16,585	(1,185)	-7.69%
Depreciation		300,000	300,000	300,000	-	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 5,802,617	$ 5,802,617	$ 6,092,372	$ (289,755)	-4.99%
Allocation of Support Departments		2,647,289	2,647,289	2,624,589	22,700	0.86%
Total Operating Expenses		**$ 8,449,906**	**$ 8,449,906**	**$ 8,716,960**	**$ (267,055)**	**-3.16%**
Operating Surplus/(Deficit)		**$ (2)**	**$ (2)**	**$ (153,905)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 7,621,725	$ 7,621,725	$ 7,621,728	$ 3	0.00%
Trust Fund Interest		12,000	12,000	4,351	(7,649)	-63.74%
Reserve Fund Interest		39,300	39,300	48,903	9,603	24.44%
Use of Reserves		-	-	-	-	
Lease Revenue		1,600	1,600	9,224	7,624	476.52%
Total Debt Service Revenues		**$ 7,674,625**	**$ 7,674,625**	**$ 7,684,206**	**$ 9,581**	**0.12%**
Debt Service Costs						
Total Principal & Interest		$ 5,215,275	$ 5,215,275	$ 5,747,472	$ (532,197)	-10.20%
Reserve Additions-Interest		39,300	39,300	48,903	(9,603)	-24.44%
Debt Service Ratio Charge		400,000	400,000	400,000	-	0.00%
Reserve Additions-CIP Growth		2,020,050	2,020,050	$ 1,487,853	532,197	26.35%
Total Debt Service Costs		**$ 7,674,625**	**$ 7,674,625**	**$ 7,684,228**	**$ (9,603)**	**-0.13%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ (22)**		

Rate Center Summary

Total Revenues	$ 16,124,529	$ 16,124,529	$ 16,247,261	$ 122,732	0.76%
Total Expenses	16,124,531	16,124,531	16,401,188	(276,658)	-1.72%
Surplus/(Deficit)	**$ (2)**	**$ (2)**	**$ (153,927)**		
Costs per 1000 Gallons	$ 2.49		$ 2.53		
Operating and DS	$ 4.75		$ 4.75		
Thousand Gallons Treated	3,397,700	3,397,700	3,451,421	53,721	1.58%
or					
Flow (MGD)	9.309		9.456		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022

Crozet Water Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2022	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 1,058,856	$ 1,058,856	$ 1,058,856	$ -	0.00%
Grants		-	-	4,800	4,800	
Lease Revenues		30,000	30,000	30,742	742	2.47%
Use of Reserves-GAC		13,000	13,000	13,000	-	0.00%
Interest Allocation		500	500	1,135	635	127.01%
Total Operating Revenues		**$ 1,102,356**	**$ 1,102,356**	**$ 1,108,533**	**$ 6,177**	**0.56%**
Expenses						
Personnel Cost		$ 324,463	$ 324,463	$ 321,084	$ 3,379	1.04%
Professional Services	**C**	15,100	15,100	26,683	(11,583)	-76.71%
Other Services & Charges	**F**	104,450	104,450	124,652	(20,202)	-19.34%
Communications		17,530	17,530	18,144	(614)	-3.50%
Information Technology	**D**	5,250	5,250	37,386	(32,136)	-612.11%
Supplies		1,500	1,500	1,532	(32)	-2.11%
Operations & Maintenance	**E**	296,900	296,900	354,549	(57,649)	-19.42%
Equipment Purchases		28,000	28,000	3,572	24,428	87.24%
Depreciation		60,000	60,000	60,000	-	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 853,193	$ 853,193	$ 947,602	$ (94,409)	-11.07%
Allocation of Support Departments		249,161	249,161	246,350	2,811	1.13%
Total Operating Expenses		**$ 1,102,354**	**$ 1,102,354**	**$ 1,193,952**	**$ (91,598)**	**-8.31%**
Operating Surplus/(Deficit)		**$ 2**	**$ 2**	**$ (85,419)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 1,847,832	$ 1,847,832	$ 1,847,832	$ -	0.00%
Trust Fund Interest		2,900	2,900	1,007	(1,893)	-65.28%
Use of Reserves		-	-	-	-	
Reserve Fund Interest		2,500	2,500	3,088	588	23.50%
Total Debt Service Revenues		**$ 1,853,232**	**$ 1,853,232**	**$ 1,851,926**	**$ (1,306)**	**-0.07%**
Debt Service Costs						
Total Principal & Interest		$ 1,216,667	$ 1,216,667	$ 1,216,667	$ -	0.00%
Reserve Additions-Interest		2,500	2,500	3,088	(588)	-23.50%
Reserve Additions-CIP Growth		634,070	634,070	634,070	-	0.00%
Total Debt Service Costs		**$ 1,853,237**	**$ 1,853,237**	**$ 1,853,825**	**$ (588)**	**-0.03%**
Debt Service Surplus/(Deficit)		**$ (5)**	**$ (5)**	**$ (1,898)**		

Rate Center Summary

Total Revenues	$ 2,955,588	$ 2,955,588	$ 2,960,459	$ 4,871	0.16%
Total Expenses	2,955,591	2,955,591	3,047,776	(92,185)	-3.12%
Surplus/(Deficit)	**$ (3)**	**$ (3)**	**$ (87,317)**		
Costs per 1000 Gallons	$ 5.44		$ 4.86		
Operating and DS	$ 14.58		$ 12.40		
Thousand Gallons Treated	202,697	202,697	245,862	43,165	21.30%
Flow (MGD)	0.555		0.674		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022

Scottsville Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 514,704	$ 514,704	$ 514,704	$ -	0.00%
Grants		-	-	4,800	4,800	
Use of Reserves-GAC		3,250	3,250	3,250	-	0.00%
Interest Allocation		200	200	548	348	173.97%
Total Operating Revenues		**$ 518,154**	**$ 518,154**	**$ 523,302**	**$ 5,148**	**0.99%**
Expenses						
Personnel Cost		$ 195,695	$ 195,695	$ 195,702	$ (7)	0.00%
Professional Services	**C**	2,900	2,900	21,851	(18,951)	-653.48%
Other Services & Charges		28,100	28,100	29,003	(903)	-3.21%
Communications		4,930	4,930	6,860	(1,930)	-39.15%
Information Technology	**D**	1,250	1,250	13,559	(12,309)	-984.75%
Supplies		770	770	227	543	70.55%
Operations & Maintenance	**E**	87,200	87,200	120,347	(33,147)	-38.01%
Equipment Purchases		1,500	1,500	1,994	(494)	-32.92%
Depreciation		40,000	40,000	40,000	0	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 362,345	$ 362,345	$ 429,544	$ (67,199)	-18.55%
Allocation of Support Departments		155,813	155,813	152,118	3,695	2.37%
Total Operating Expenses		**$ 518,158**	**$ 518,158**	**$ 581,662**	**$ (63,505)**	**-12.26%**
Operating Surplus/(Deficit)		**$ (4)**	**$ (4)**	**$ (58,360)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 138,888	$ 138,888	$ 138,888	$ -	0.00%
Trust Fund Interest		300	300	108	(192)	-64.05%
Reserve Fund Interest		1,200	1,200	1,494	294	24.50%
Total Debt Service Revenues		**$ 140,388**	**$ 140,388**	**$ 140,490**	**$ 102**	**0.07%**
Debt Service Costs						
Total Principal & Interest		$ 125,892	$ 125,892	$ 132,864	$ (6,972)	-5.54%
Reserve Additions-Interest		1,200	1,200	1,494	(294)	
Reserve Additions-CIP Growth		13,299	13,299	$ 6,327	6,972	
Total Debt Service Costs		**$ 140,391**	**$ 140,391**	**$ 140,685**	**$ (294)**	**-0.21%**
Debt Service Surplus/(Deficit)		**$ (3)**	**$ (3)**	**$ (195)**		
Rate Center Summary						
Total Revenues		$ 658,542	$ 658,542	$ 663,792	$ 5,250	0.80%
Total Expenses		658,549	658,549	722,347	(63,799)	-9.69%
Surplus/(Deficit)		**$ (7)**	**$ (7)**	**$ (58,556)**		
Costs per 1000 Gallons		$ 30.07		$ 28.02		
Operating and DS		$ 38.22		$ 34.80		
Thousand Gallons Treated		17,230	17,230	20,759	3,529	20.48%
or						
Flow (MGD)		0.047		0.057		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022

Urban Wastewater Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2022	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 8,535,195	$ 8,535,195	$ 8,765,677	$ 230,482	2.70%
Stone Robinson WWTP		20,589	20,589	16,944	(3,645)	-17.70%
Septage Acceptance		475,000	475,000	596,506	121,506	25.58%
Nutrient Credits		45,000	45,000	104,475	59,475	132.17%
Rate Stabilization Reserve		100,000	100,000	100,000	-	0.00%
Miscellaneous Revenue		-	-	-	-	
Interest Allocation		3,800	3,800	9,061	5,261	138.44%
Total Operating Revenues		**$ 9,179,584**	**$ 9,179,584**	**$ 9,592,662**	**$ 413,078**	**4.50%**
Expenses						
Personnel Cost	**B**	$ 1,289,471	$ 1,289,471	$ 1,332,107	$ (42,636)	-3.31%
Professional Services	**C**	208,500	208,500	278,936	(70,436)	-33.78%
Other Services & Charges	**F**	2,011,700	2,011,700	2,067,757	(56,057)	-2.79%
Communications		9,800	9,800	11,194	(1,394)	-14.23%
Information Technology		56,500	56,500	57,043	(543)	-0.96%
Supplies		1,200	1,200	1,690	(490)	-40.83%
Operations & Maintenance	**E**	1,672,520	1,672,520	2,033,824	(361,304)	-21.60%
Equipment Purchases		294,250	294,250	84,490	209,760	71.29%
Depreciation		470,000	470,000	470,000	(0)	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 6,013,941	$ 6,013,941	$ 6,337,041	$ (323,100)	-5.37%
Allocation of Support Departments		3,165,643	3,165,643	3,117,343	48,300	1.53%
Total Operating Expenses		**$ 9,179,584**	**$ 9,179,584**	**$ 9,454,384**	**$ (274,800)**	**-2.99%**
Operating Surplus/(Deficit)		**$ (0)**	**$ (0)**	**$ 138,278**		

Debt Service Budget vs. Actual

	Budget FY 2022	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues					
Debt Service Rate Revenue	$ 8,568,221	$ 8,568,221	$ 8,568,228	$ 7	0.00%
Septage Receiving Support - County	109,440	109,440	109,441	1	0.00%
Trust Fund Interest	18,500	18,500	6,509	(11,991)	-64.82%
Use of Reserves	-	-	-	-	
Reserve Fund Interest	36,300	36,300	45,218	8,918	24.57%
Total Debt Service Revenues	**$ 8,732,461**	**$ 8,732,461**	**$ 8,729,395**	**$ (3,066)**	**-0.04%**
Debt Service Costs					
Total Principal & Interest	$ 7,689,212	$ 7,689,212	$ 7,725,815	$ (36,603)	-0.48%
Reserve Additions-Interest	36,300	36,300	45,218	(8,918)	-24.57%
Debt Service Ratio Charge	325,000	325,000	325,000	-	0.00%
Reserve Additions-CIP Growth	681,950	681,950	$ 645,347	36,603	5.37%
Total Debt Service Costs	**$ 8,732,462**	**$ 8,732,462**	**$ 8,741,380**	**$ (8,918)**	**-0.10%**
Debt Service Surplus/(Deficit)	**$ (1)**	**$ (1)**	**$ (11,984)**		

Rate Center Summary

	Budget FY 2022	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Total Revenues	$ 17,912,045	$ 17,912,045	$ 18,322,057	$ 410,012	2.29%
Total Expenses	17,912,046	17,912,046	18,195,764	(283,718)	-1.58%
Surplus/(Deficit)	**$ (1)**	**$ (1)**	**$ 126,293**		
Costs per 1000 Gallons	$ 2.71		$ 2.71		
Operating and DS	$ 5.28		$ 5.22		
Thousand Gallons Treated	3,390,400	3,390,400	3,482,589	92,189	2.72%
or					
Flow (MGD)	9.289		9.541		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 404,028	$ 404,028	$ 404,028	$ -	0.00%
Rate Stabilization Reserve		-	-	-	-	
Interest Allocation		200	200	411	211	105.50%
Total Operating Revenues		**$ 404,228**	**$ 404,228**	**$ 404,439**	**$ 211**	**0.05%**
Expenses						
Personnel Cost		$ 94,885	$ 94,885	$ 97,832	$ (2,947)	-3.11%
Professional Services	C	12,900	12,900	95,000	(82,100)	
Other Services & Charges		34,300	34,300	32,847	1,453	4.23%
Communications		3,130	3,130	3,247	(117)	-3.74%
Information Technology		2,000	2,000	787	1,213	60.67%
Supplies		-	-	69	(69)	
Operations & Maintenance		121,650	121,650	94,048	27,602	22.69%
Equipment Purchases		3,800	3,800	3,800	(0)	0.00%
Depreciation		10,000	10,000	10,000	0	0.00%
Subtotal Before Allocations		$ 282,665	$ 282,665	$ 337,630	$ (54,965)	-19.45%
Allocation of Support Departments		121,563	121,563	116,675	4,888	4.02%
Total Operating Expenses		**$ 404,229**	**$ 404,229**	**$ 454,305**	**$ (50,077)**	**-12.39%**
Operating Surplus/(Deficit)		**$ (1)**	**$ (1)**	**$ (49,866)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 7,412	$ 7,412	$ 7,416	$ 4	0.05%
Trust Fund Interest		-	-	-	-	
Reserve Fund Interest		200	200	299	99	49.39%
Total Debt Service Revenues		**$ 7,612**	**$ 7,612**	**$ 7,715**	**$ 4**	**0.05%**
Debt Service Costs						
Total Principal & Interest		$ 1,578	$ 1,578	$ 6,807	$ (5,229)	-331.37%
Reserve Additions-CIP Growth		5,834	5,834	605	5,229	89.63%
Reserve Additions-Interest		200	200	299	(99)	-49.39%
Total Debt Service Costs		**$ 7,612**	**$ 7,612**	**$ 7,711**	**$ (99)**	**-1.30%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 4**		

Rate Center Summary

Total Revenues	$ 411,840	$ 411,840	$ 412,154	$ 314	0.08%
Total Expenses	411,841	411,841	462,016	(50,175)	-12.18%
Surplus/(Deficit)	**$ (1)**	**$ (1)**	**$ (49,862)**		
Costs per 1000 Gallons	$ 9.76		$ 13.50		
Operating and DS	$ 9.95		$ 13.73		
Thousand Gallons Treated	41,401	41,401	33,642	(7,759)	**-18.74%**
or					
Flow (MGD)	0.113		0.092		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2022	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 326,268	$ 326,268	$ 326,268	$ -	0.00%
Interest Allocation		100	100	313	213	213.05%
Total Operating Revenues		**$ 326,368**	**$ 326,368**	**$ 326,581**	**$ 213**	**0.07%**
Expenses						
Personnel Cost		$ 94,875	$ 94,875	$ 97,832	$ (2,957)	-3.12%
Professional Services		10,250	10,250	2,151	8,099	79.02%
Other Services & Charges		21,800	21,800	22,146	(346)	-1.59%
Communications		3,400	3,400	3,808	(408)	-12.01%
Information Technology		1,500	1,500	1,999	(499)	-33.26%
Supplies		-	-	-	-	
Operations & Maintenance	E	58,100	58,100	77,746	(19,646)	-33.81%
Equipment Purchases		3,800	3,800	3,800	(0)	0.00%
Depreciation		20,000	20,000	20,000	(0)	0.00%
Subtotal Before Allocations		$ 213,725	$ 213,725	$ 229,482	$ (15,756)	-7.37%
Allocation of Support Departments		112,640	112,640	108,406	4,234	3.76%
Total Operating Expenses		**$ 326,365**	**$ 326,365**	**$ 337,887**	**$ (11,522)**	**-3.53%**
Operating Surplus/(Deficit)		**$ 3**	**$ 3**	**$ (11,306)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 9,882	$ 9,882	$ 9,888	$ 6	0.06%
Trust Fund Interest		-	-	12	12	
Reserve Fund Interest		500	500	598	98	19.53%
Total Debt Service Revenues		**$ 10,382**	**$ 10,382**	**$ 10,498**	**$ 116**	**1.11%**
Debt Service Costs						
Total Principal & Interest		$ 7,453	$ 7,453	$ 7,453	$ -	0.00%
Reserve Additions-Interest		500	500	598	(98)	-19.53%
Estimated New Principal & Interest		2,431	2,431	2,431	-	0.00%
Total Debt Service Costs		**$ 10,384**	**$ 10,384**	**$ 10,482**	**$ (98)**	**-0.94%**
Debt Service Surplus/(Deficit)		**$ (2)**	**$ (2)**	**$ 16**		

Rate Center Summary

Total Revenues	$ 336,750	$ 336,750	$ 337,079	$ 329	0.10%
Total Expenses	336,749	336,749	348,369	(11,620)	-3.45%
Surplus/(Deficit)	**$ 1**	**$ 1**	**$ (11,290)**		
Costs per 1000 Gallons	$ 13.80		$ 18.95		
Operating and DS	$ 14.24		$ 19.54		
Thousand Gallons Treated	23,643	23,643	17,833	(5,810)	**-24.57%**
or					
Flow (MGD)	0.065		0.049		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022

Administration

Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ 551,000	$ 551,000	$ 554,004	$ 3,004	0.55%
Bond Proceeeds Funding Bond Issuance Costs	C	-	-	518,307	518,307	
Miscellaneous Revenue		2,000	2,000	14,110	12,110	605.52%
Total Operating Revenues		**$ 553,000**	**$ 553,000**	**$ 1,086,422**	**$ 533,422**	**96.46%**
Expenses						
Personnel Cost		$ 2,177,998	$ 2,177,998	$ 2,155,427	$ 22,571	1.04%
Professional Services	C	163,200	163,200	682,833	(519,633)	-318.40%
Other Services & Charges	F	86,200	86,200	101,353	(15,153)	-17.58%
Communications		21,000	21,000	30,373	(9,373)	-44.63%
Information Technology	D	171,900	171,900	407,248	(235,348)	-136.91%
Supplies		21,500	21,500	19,116	2,384	11.09%
Operations & Maintenance		68,600	68,600	51,940	16,660	24.29%
Equipment Purchases		25,200	25,200	15,200	10,000	39.68%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 2,735,598**	**$ 2,735,598**	**$ 3,463,489**	**$ (727,891)**	**-26.61%**

Department Summary

Net Costs Allocable to Rate Centers	**$ (2,182,598)**	**$ (2,182,598)**	**$ (2,377,067)**	**$ 194,470**	**-8.91%**
Allocations to the Rate Centers					
Urban Water	44.00% **$ 960,343**	**960,343**	**1,045,910**	**(85,567)**	
Crozet Water	4.00% **$ 87,304**	**87,304**	**95,083**	**(7,779)**	
Scottsville Water	2.00% **$ 43,652**	**43,652**	**47,541**	**(3,889)**	
Urban Wastewater	48.00% **$ 1,047,647**	**1,047,647**	**1,140,992**	**(93,345)**	
Glenmore Wastewater	1.00% **$ 21,826**	**21,826**	**23,771**	**(1,945)**	
Scottsville Wastewater	1.00% **$ 21,826**	**21,826**	**23,771**	**(1,945)**	
	100.00% **$ 2,182,598**	**$ 2,182,598**	**$ 2,377,067**	**$ (194,470)**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022

Maintenance

Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ -	$ -	
Miscellaneous Revenue		-	-	1,352	1,352	
Total Operating Revenues		**$ -**	**$ -**	**$ 1,352**	**$ 1,352**	
Expenses						
Personnel Cost		$ 1,398,597	$ 1,398,597	$ 1,367,496	$ 31,101	2.22%
Professional Services		-	-	-	-	
Other Services & Charges		61,200	61,200	33,240	27,960	45.69%
Communications		15,730	15,730	14,951	779	4.95%
Information Technology		9,500	9,500	988	8,512	89.60%
Supplies		2,000	2,000	395	1,605	80.26%
Operations & Maintenance	**E**	89,600	89,600	112,946	(23,346)	-26.06%
Equipment Purchases		208,100	208,100	125,250	82,850	39.81%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 1,784,727**	**$ 1,784,727**	**$ 1,655,265**	**$ 129,461**	**7.25%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,784,727)**	**$ (1,784,727)**	**$ (1,653,913)**	**$ (128,109)**	**7.18%**
Allocations to the Rate Centers						
Urban Water	30.00%	**$ 535,418**	**$ 535,418**	**$ 496,174**	**$ 39,244**	
Crozet Water	3.50%	**62,465**	**62,465**	**57,887**	**4,578**	
Scottsville Water	3.50%	**62,465**	**62,465**	**57,887**	**4,578**	
Urban Wastewater	56.50%	**1,008,371**	**1,008,371**	**934,461**	**73,910**	
Glenmore Wastewater	3.50%	**62,465**	**62,465**	**57,887**	**4,578**	
Scottsville Wastewater	3.00%	**53,542**	**53,542**	**49,617**	**3,924**	
	100.00%	**$ 1,784,727**	**$ 1,784,727**	**$ 1,653,913**	**$ 130,814**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022

Laboratory

Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
N/A						
Expenses						
Personnel Cost		$ 411,037	$ 411,037	$ 377,663	$ 33,374	8.12%
Professional Services		-	-	-	-	
Other Services & Charges		7,900	7,900	11,289	(3,389)	-42.90%
Communications		1,300	1,300	1,264	36	
Information Technology		200	200	610	(410)	-205.00%
Supplies		1,300	1,300	1,358	(58)	-4.49%
Operations & Maintenance		120,590	120,590	96,299	24,291	20.14%
Equipment Purchases		1,700	1,700	1,848	(148)	-8.68%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 544,027**	**$ 544,027**	**$ 490,330**	**$ 53,696**	**9.87%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (544,027)**	**$ (544,027)**	**$ (490,330)**	**$ (53,696)**	**9.87%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 239,372**	**$ 239,372**	**$ 215,745**	**$ 23,626**	
Crozet Water	4.00%	**21,761**	**21,761**	**19,613**	**2,148**	
Scottsville Water	2.00%	**10,881**	**10,881**	**9,807**	**1,074**	
Urban Wastewater	47.00%	**255,693**	**255,693**	**230,455**	**25,237**	
Glenmore Wastewater	1.50%	**8,160**	**8,160**	**7,355**	**805**	
Scottsville Wastewater	1.50%	**8,160**	**8,160**	**7,355**	**805**	
	100.00%	**$ 544,027**	**$ 544,027**	**$ 490,330**	**$ 53,696**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2022

Engineering

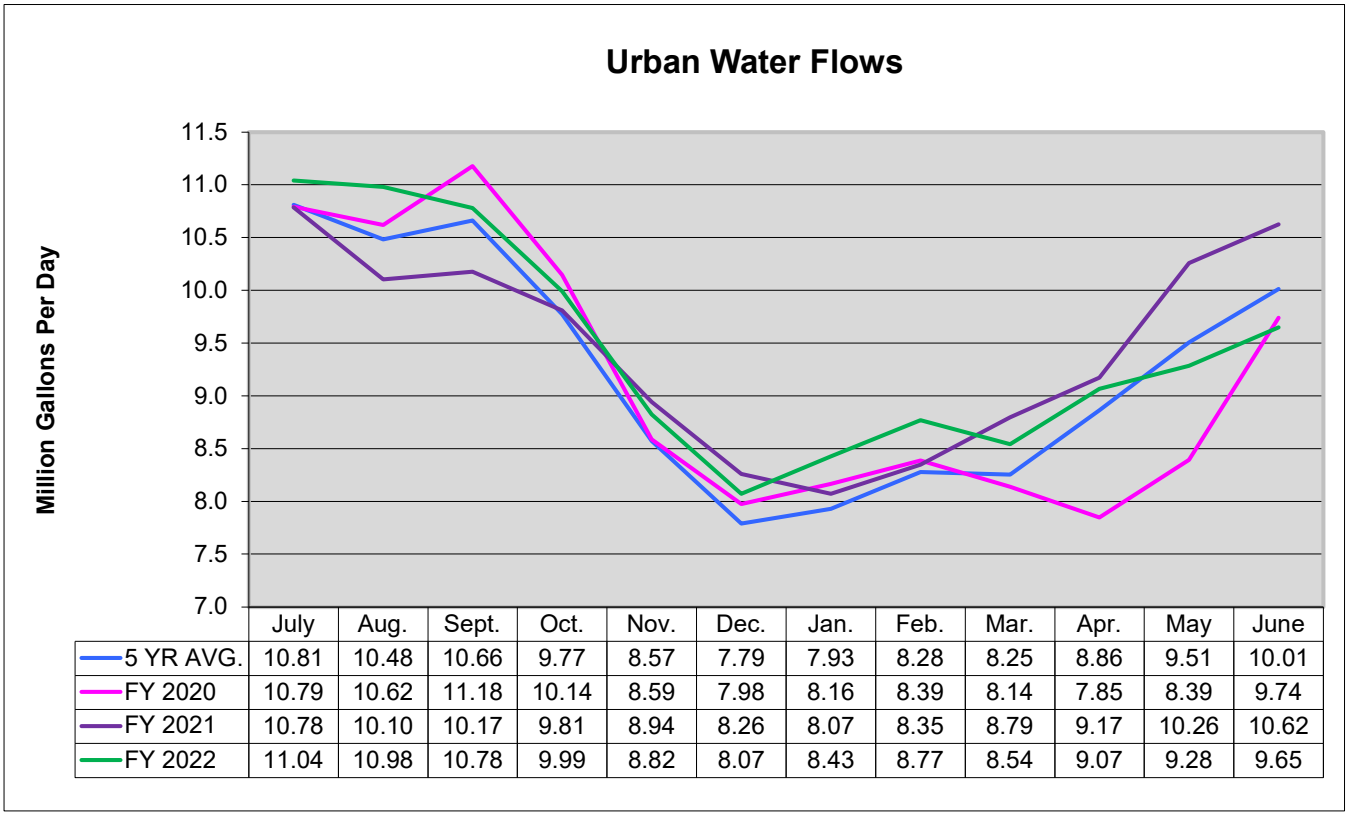
Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ 3,067	$ 3,067	
Total Operating Revenues		**$ -**	**$ -**	**$ 3,067**	**$ 3,067**	
Expenses						
Personnel Cost		$ 1,623,810	$ 1,623,810	$ 1,588,029	$ 35,781	2.20%
Professional Services	C	20,000	20,000	32,181	(12,181)	-60.90%
Other Services & Charges		21,600	21,600	13,149	8,451	39.13%
Communications		15,922	15,922	10,886	5,036	31.63%
Information Technology		118,500	118,500	113,629	4,871	4.11%
Supplies		8,790	8,790	4,401	4,389	49.93%
Operations & Maintenance		98,635	98,635	52,041	46,594	47.24%
Equipment Purchases		33,500	33,500	32,921	579	1.73%
Depreciation & Capital Reserve Transfers		-	-	-	-	
Total Operating Expenses		**$ 1,940,757**	**$ 1,940,757**	**$ 1,847,237**	**$ 93,521**	**4.82%**

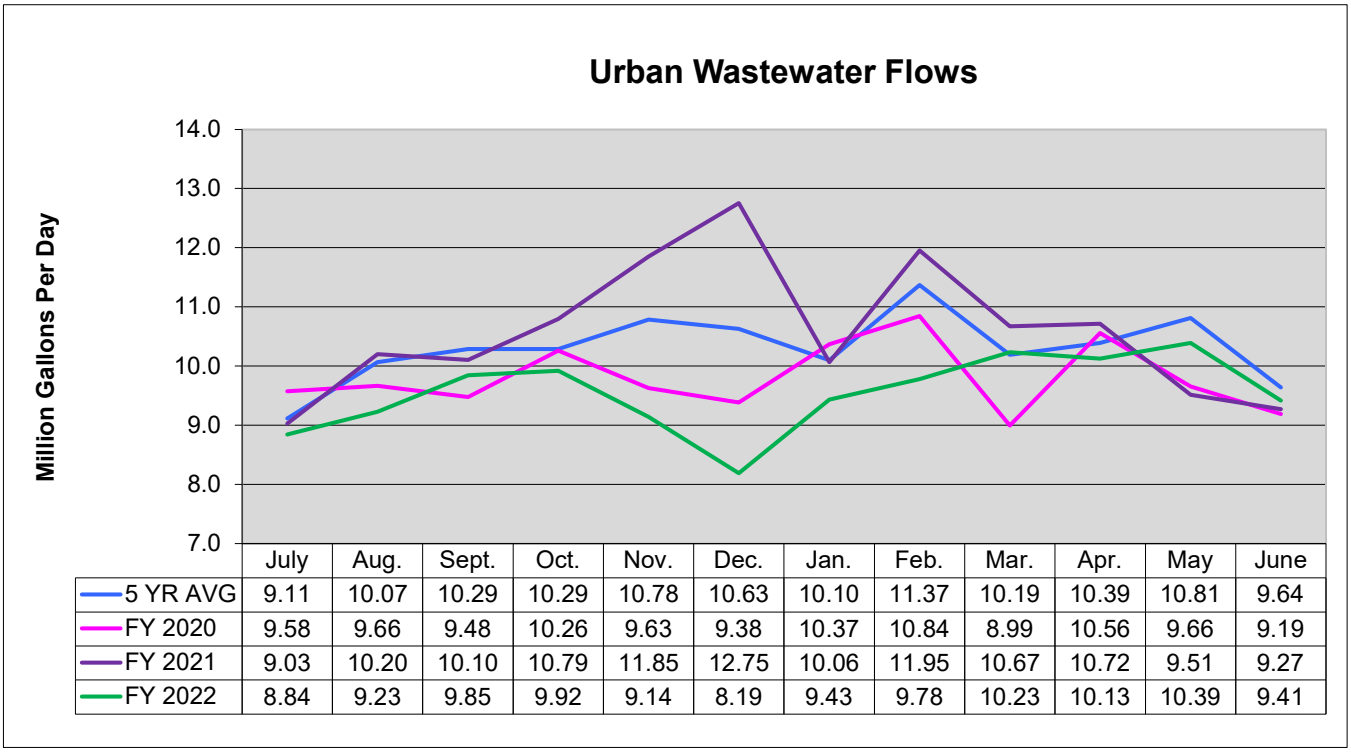
Department Summary

Net Costs Allocable to Rate Centers		**$ (1,940,757)**	**$ (1,940,757)**	**$ (1,844,170)**	**$ (90,454)**	**4.66%**
Allocations to the Rate Centers						
Urban Water	47.00%	**$ 912,156**	**$ 912,156**	**$ 866,760**	**$ 45,396**	
Crozet Water	4.00%	**77,630**	**77,630**	**73,767**	**3,863**	
Scottsville Water	2.00%	**38,815**	**38,815**	**36,883**	**1,932**	
Urban Wastewater	44.00%	**853,933**	**853,933**	**811,435**	**42,498**	
Glenmore Wastewater	1.50%	**29,111**	**29,111**	**27,663**	**1,449**	
Scottsville Wastewater	1.50%	**29,111**	**29,111**	**27,663**	**1,449**	
	100.00%	**$ 1,940,757**	**$ 1,940,757**	**$ 1,844,170**	**$ 96,587**	

Rivanna Water and Sewer Authority
Flow Graphs



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG.	10.81	10.48	10.66	9.77	8.57	7.79	7.93	8.28	8.25	8.86	9.51	10.01
FY 2020	10.79	10.62	11.18	10.14	8.59	7.98	8.16	8.39	8.14	7.85	8.39	9.74
FY 2021	10.78	10.10	10.17	9.81	8.94	8.26	8.07	8.35	8.79	9.17	10.26	10.62
FY 2022	11.04	10.98	10.78	9.99	8.82	8.07	8.43	8.77	8.54	9.07	9.28	9.65



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG	9.11	10.07	10.29	10.29	10.78	10.63	10.10	11.37	10.19	10.39	10.81	9.64
FY 2020	9.58	9.66	9.48	10.26	9.63	9.38	10.37	10.84	8.99	10.56	9.66	9.19
FY 2021	9.03	10.20	10.10	10.79	11.85	12.75	10.06	11.95	10.67	10.72	9.51	9.27
FY 2022	8.84	9.23	9.85	9.92	9.14	8.19	9.43	9.78	10.23	10.13	10.39	9.41

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 JUNE 2022**

DATE: **AUGUST 23, 2022**

WATER OPERATIONS:

The average and maximum daily water volumes produced in July 2022 were as follows:

Water Treatment Plant	*Average Daily Production (MGD)*	*Maximum Daily Production in the Month (MGD)*
South Rivanna	8.82	9.97 (7/14/2022)
Observatory	0.62	2.18 (7/11/2022)
North Rivanna	0.48	0.54 (7/5/2022)
Urban Total	9.92	11.08 (7/25/2022)
Crozet	0.64	0.80 (7/5/2022)
Scottsville	0.06	0.089 (7/14/2022)
Red Hill	0.0015	0.003 (7/12/2022)
RWSA Total	10.62	-

- All RWSA water treatment facilities were in regulatory compliance during the month of July.

Status of Reservoirs (as of August 16, 2022):

- Urban Reservoirs: 99.6% of Total Useable Capacity
- Ragged Mountain Reservoir is full (99.26%)
- Sugar Hollow Reservoir is full (100%)
- South Rivanna Reservoir is full (100%)
- Beaver Creek Reservoir is full (99.40%)
- 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 2022. 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	10.1	4.3	9	<QL	22	<QL	2.2
Glenmore	0.099	4.3	15	4.8	30	NR	NL
Scottsville	0.045	4.8	25	2.3	30	NR	NL
Stone Robinson	0.0005	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 2022.

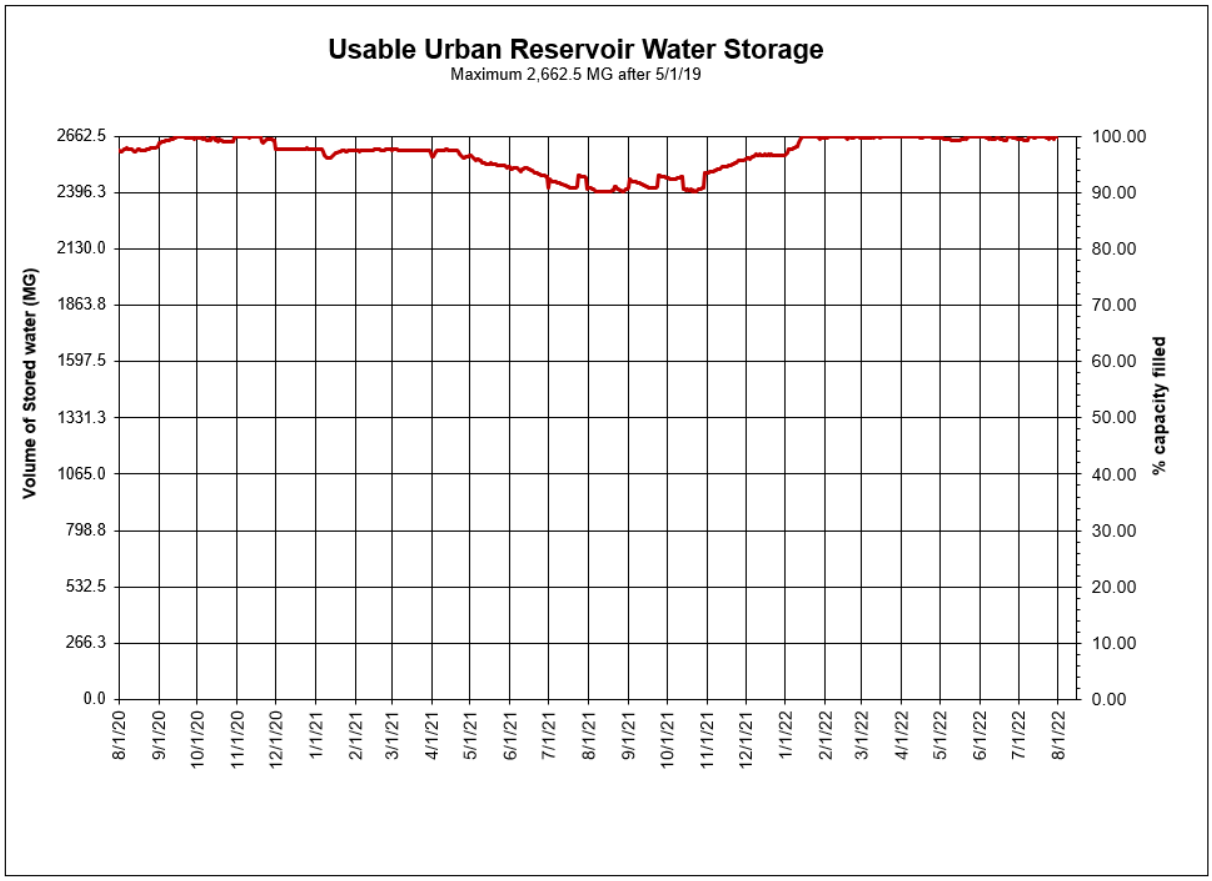
State Annual Allocation (lb./yr.) Permit		*Average Monthly Allocation (lb./mo.) **	*Moores Creek Discharge July (lb./mo.)*	*Performance as % of monthly average Allocation**	*Year to Date Performance as % of annual allocation*
Nitrogen	282,994	23,583	5,213	22%	19%
Phosphorous	18,525	1,544	1,352	88%	29%

*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
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
8/1/20
9/1/20
10/1/20
11/1/20
12/1/20
1/1/21
2/1/21
3/1/21
4/1/21
5/1/21
6/1/21
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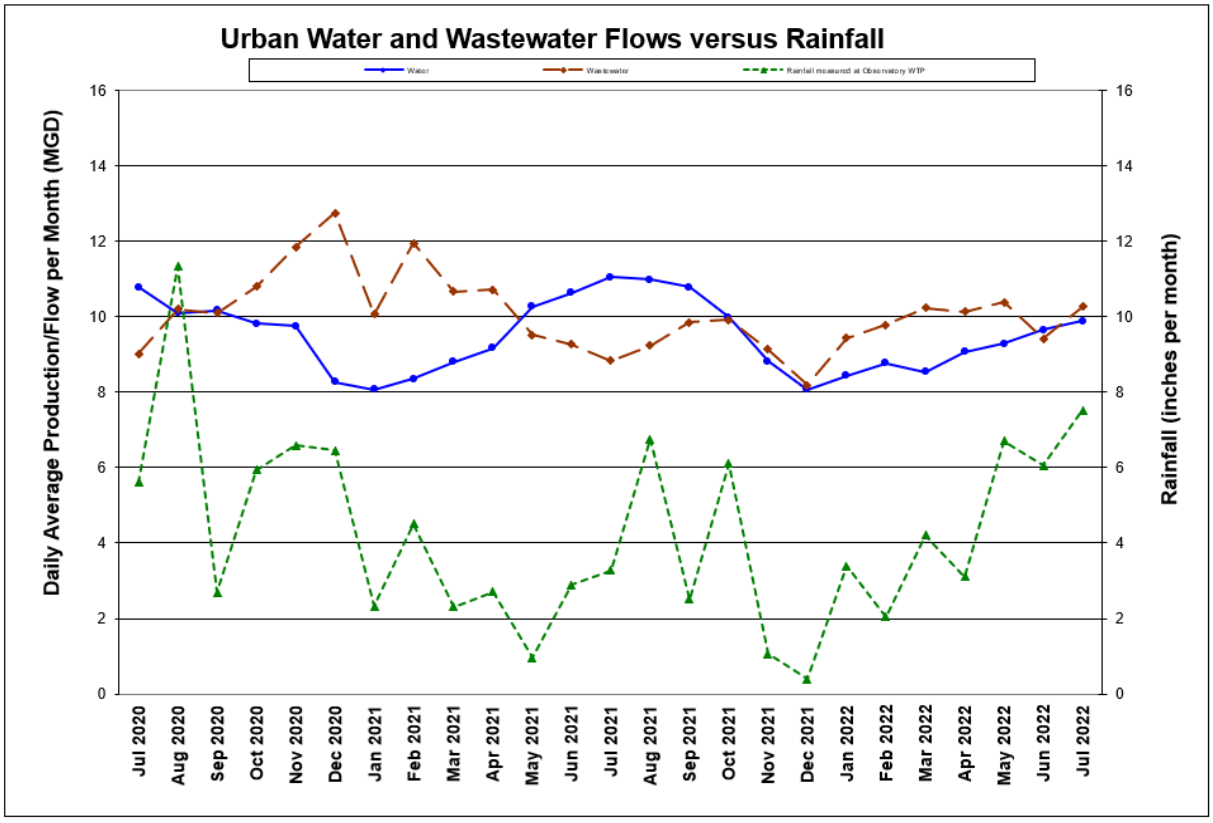
8/1/22


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 2020
Aug 2020
Sep 2020
Oct 2020
Nov 2020
Dec 2020
Jan 2021
Feb 2021
Mar 2021
Apr 2021
May 2021
Jun 2021
Jul 2021
Aug 2021
Sep 2021
Oct 2021
Nov 2021
Dec 2021
Jan 2022
Feb 2022
Mar 2022
Apr 2022
May 2022
Jun 2022
Jul 2022

RIVANNA WATER & SEWER AUTHORITY
695 Moores Creek Lane | Charlottesville, Virginia 22902-9016
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434.293.8858
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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 23, 2022**

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

For the current, approved CIP, please visit: https://www.rivanna.org/wp-content/uploads/2022/06/Final-2023-2027-CIP.pdf

Under Construction

1. South Rivanna and Observatory Water Treatment Plant Renovations
2. Airport Road Water Pump Station and Piping
3. MC 5kV Electrical System Upgrades

Design and Bidding

4. Ragged Mtn Reservoir to Observatory WTP Raw Water Line and Pump Station
5. South Rivanna to Ragged Mtn. Raw Water Line – Birdwood to Old Garth
6. Beaver Creek Dam, Pump Station and Piping Improvements
7. South Rivanna River Crossing
8. Central Water Line
9. Upper Schenks Branch Interceptor, Phase II
10. Red Hill Water Treatment Plant Upgrades
11. Emmet Street Water Line Betterment
12. Scottsville WRRF Whole Plant Generator and ATS
13. Crozet Pump Station Rehabilitation
14. Moores Creek AWRRF Concrete Repairs
15. Moores Creek AWRRF Compost Shed Roof Rehabilitation

Planning and Studies

16. South Rivanna Reservoir to Ragged Mtn Reservoir Water Line Right-of-Way
17. Asset Management Plan

18. SRR to RMR Pipeline – Pretreatment Pilot Study
19. Moores Creek AWRRF Cogeneration Upgrades

Other Significant Projects

20. Urgent and Emergency Repairs
21. Security Enhancements

Under Construction

1. South Rivanna and Observatory Water Treatment Plant Renovations

Design Engineer:	Short Elliot Hendrickson, Inc. (SEH)
Construction Contractor:	English Construction Company (Lynchburg, VA)
Construction Start:	May 2020
Percent Complete:	67%
Base Construction Contract + Change Orders to Date = Current Value:	$36,748,500 + $718,669 = $37,467,169
Completion:	May 2023
Budget:	$43,000,000

Current Status: The new Administration Building has been completed at the SRWTP. Improvements to the new Lab/Control Room in the Filter Building and final modifications to various chemical feed processes continues. Work at the OBWTP includes the new Chemical Storage Building, sedimentation basin improvements, foundation work for the GAC expansion and a large retaining wall. Shutdown of the OBWTP is planned for December – February 2023.

2. Airport Road Water Pump Station and Piping

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Anderson Construction, Inc. (ACI) (Lynchburg, VA)
Construction Start:	December 2021
Percent Complete:	15%
Base Construction Contract + Change Order to Date = Current Value:	$8,520,312
Completion:	December 2023
Budget:	$10,000,000

Current Status: 1,100 feet of pipe has been installed at the Kohl's site. Clearing and grubbing of the pump station site is complete and grading will begin this month.

3. MC 5kV Electrical System Upgrades

Design Engineer:	Hazen and Sawyer (Hazen)
Construction Contractor:	Pyramid Electrical Contractors (Richmond, VA)
Construction Start:	May 2022
Percent Complete:	6%
Base Construction Contract +	

Change Order to Date = Current Value:	$5,180,000 - $970,000 = $4,210,000
Completion:	June 2024
Budget:	$5,050,000

Current Status: Work will begin in the fall 2022 due to long lead times to receive the electrical equipment. The initial work will generally include ductbank and equipment pad installation to complete the bulk of land disturbance prior to the arrival of electrical equipment.

Design and Bidding

4. Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line and Pump Station

Design Engineer:	Michael Baker International (Baker) (Right of Way)
Design Engineer:	Kimley-Horn (Design)
Project Start:	August 2018
Project Status:	Easement Acquisition & Design (20%)
Construction Start:	2025
Completion:	2028
Budget:	$29,375,000

Current Status: Preparation of engineering plans and specifications is underway. Topographic survey work to the East of the proposed pump station site has been completed, with efforts at the proposed PS site underway as well. Easement negotiations with one private owner, UVA, and the UVA Foundation continue. In a follow-up from staff's meeting with the UVA Foundation on Foxhaven Farm in June, discussion continues on a portion of the proposed pipe alignment on the farm, just South of the Birdwood Golf Course.

5. South Rivanna Reservoir to Ragged Mtn. Reservoir Raw Water Line – Birdwood to Old Garth

Design Engineer:	Kimley-Horn
Project Start:	June 2021
Project Status:	90% Design
Construction Start:	January 2023
Completion:	December 2023
Budget:	$1,980,000

Current Status: Preparation of engineering plans and specifications is substantially complete for a 0.25-mile section of this 36" raw water pipe from Birdwood to Old Garth Road. One remaining easement is under negotiation with the UVA Foundation for this phase of the project. A railroad permit has been submitted and County permitting can begin once all easements are finalized.

6. Beaver Creek Dam, Pump Station and Piping Improvements

Design Engineer:	Schnabel Engineering (Dam)
Design Engineer:	Hazen & Sawyer (Pump Station)
Project Start:	February 2018
Project Status:	85% NRCS Planning Process

Construction Start:	2024
Completion:	2027
Budget:	$30,870,000

Current Status: A Joint Permit Application and supporting documents will be submitted to VDEQ this month. Remaining NRCS requirements, including review and approval of the planning study, are scheduled for completion this winter with submission of the revised Plan Environmental Assessment to the NRCS this month. An application for design funding from NRCS will be submitted in 2022.

7. South Rivanna River Crossing

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2020
Project Status:	50% Design
Construction Start:	Spring 2023
Completion:	April 2024
Budget:	$5,850,000

Current Status: Baker has recommended a water line route that will include a trenchless crossing under the river parallel to the west side of the Berkmar Bridge and follow Rio Mills Road until it intersects the new 24" water line in Route 29. Easement work will begin soon and will include a water line easement on County of Albemarle property for Brook Hill River Park along Rio Mills Road.

8. Central Water Line

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2021
Project Status:	7% Design
Construction Start:	2024
Completion:	2028
Budget:	$41,000,000

Current Status: Detailed field investigation and design are underway. The RWSA Board approved the Southern (Cherry) Route in June 2022.

9. Upper Schenks Branch Interceptor, Phase II

Design Engineer:	Frazier Engineering, P.A.
Project Start:	July 2021
Project Status:	Design
Construction Start:	TBD
Completion:	TBD
Budget:	$4,725,000

Current Status: After a recent meeting with City and County staff, RWSA is preparing project summary information and an easement on County property with a valuation estimate for the County's review.

10. Red Hill Water Treatment Plant Upgrades

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	July 2022
Project Status:	10% Design
Construction Start:	January 2023
Completion:	December 2023
Budget:	$410,000

Current Status: Design work continues following completion of the geotechnical evaluation. This project was selected by Albemarle County to received ARPA grant funding. Reimbursement requests will be submitted this fall.

11. Emmet Street Water Line Betterment

Design Engineer:	Whitman, Requardt & Associates (WRA)
Project Start:	September 2021
Project Status:	Ivy Corridor Public Realm - Complete Contemplative Commons – Preconstruction Emmet Streetscape – Preliminary Design Hydraulic/29 – Preliminary Scoping
Completion:	2030
Budget:	$2,900,000

Current Status: Upgrading a section of 16" water main in Emmet Street to 30" as part of the UVA Ivy Corridor Public Realm project is complete. Upgrading a section of 16" water main adjacent to the Dell Pond to 30" as part of the UVA Contemplative Commons project is expected to start in September 2022. WRA and RWSA are developing a scope of work for design of a 24-30" water main in Emmet Street as part of the City's Emmet Streetscape Phase I project. RWSA has initiated discussion with VDOT on potential pipe routing in the upcoming design-build Hydraulic/29 project.

12. Scottsville WRRF Whole Plant Generator and ATS

Design Engineer:	Wiley|Wilson
Project Start:	December 2021
Project Status	35% Design
Completion:	Summer 2023
Budget:	$200,000

Current Status: The current back-up power generator at the Scottsville WRRF has reached the end of its service life (22 years), does not power the entire plant, serves only the facilities needed to send flow to the lagoons, and needs to be replaced. A site plan is being prepared for review by the Town of Scottsville.

13. Crozet Pump Station Rehabilitation

Design Engineer:	Wiley | Wilson
Project Start:	Fall 2022

Project Status:	0% Design
Completion:	2025
Budget:	$590,000

Current Status: New wells have been installed at pump stations 3 and 4. Consultant is developing a Work Authorization that will fully rehabilitate and replace components that have reached or passed their useful life. An assessment of the existing pumps at Crozet Pump Station No. 2 is currently being performed.

14. Moores Creek AWRRF Concrete Repairs

Design Engineer:	Hazen and Sawyer (Hazen)
Project Start:	Summer 2022
Project Status:	Design
Completion:	TBD
Budget:	$2,650,000

Current Status: The design to complete repairs in the two holding ponds and two equalization basins is underway

15. Moores Creek Compost Shed Roof Rehabilitation

Design Engineer:	TBD
Project Start:	Summer 2022
Project Status:	Design
Completion:	TBD
Budget:	$1,360,000

Current Status: The shed roof rafters are deteriorated and may need to be replaced. A consultant is being selected and work authorization development will follow. This work is being initiated following completion of the MCAWRRF Master Plan.

Planning and Studies

16. 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
Completion:	2022
Budget:	$2,295,000

Current Status: Progress continues in our efforts to acquire the 8 miles of easements and agreements (with VDOT) for this 36” water line. Discussions continue for remaining easements with the UVA Foundation and one final private property owner.

17. Asset Management Plan

Design Engineer:	GHD, Inc. (GHD)
Project Start:	July 2018
Project Status:	CMMS Implementation – 89% Complete AMP Implementation – 0% Complete
Completion:	CMMS Implementation – October 2022 AMP Implementation – 2024
Budget:	$1,180,000

Current Status: For implementation of the new CMMS, GHD has completed updates to our facility geodatabase and is continuing the software configuration process. A work authorization for the next phase of RWSA's overall Asset Management Program has been finalized and work is anticipated to begin this month.

18. SRR to RMR Pipeline – Pretreatment Pilot Study

Design Consultant:	SEH/DiNatale
Project Start:	August 2020
Project Status:	100% Complete (Phase 1), 90% Complete (Phase 2)
Completion:	December 2022
Budget:	$22,969 (Phase 1), $116,401 (Phase 2)

Current Status: Phase 2 of the study continues with detailed reservoir water quality modeling performed by DiNatale Water Consultants. The more detailed modeling work has been completed, and staff has a meeting with the Consultant to review findings and determine overall next steps for the project.

19. Moores Creek AWRRF Cogeneration Upgrades

Design Engineer:	SEH
Project Start:	October 2021
Project Status:	Preliminary Engineering/Study (90%)
Completion:	June 2024
Budget:	$2,145,000

Current Status: Manufacturers in the Cogeneration Industry are being interviewed and additional information is being gathered to determine acceptable providers before engineering plans and specifications are completed.

Other Significant Projects

20. Urgent and Emergency Repairs

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

Project No.	Project Description	Approx. Cost
2020-21	PCI Erosion and Access Improvements	$80,000
2021-01/2022-03	WBI and RVI Erosion	TBD

2022-09	CZI Force Main ARV Replacements	$200,000
2022-02/05/12	Miscellaneous MCI/PCI/RVI MH Repairs	$60,000
2022-10	MCAWRRF Primary Clarifier Building 36" Sanitary Sewer Leak	TBD

- PCI Erosion and Access Improvements: In October 2020, the RWSA Maintenance Department raised concerns about several creek crossings and ditch lines along the Powell Creek Interceptor (PCI). Through the On-Call Maintenance Contract, two of the worst ditch lines were addressed in November 2020, including the installation of culverts and erosion control as appropriate. In June 2022, staff will address the remaining 5 areas of concern along the interceptor, mostly focused to smaller creek crossings where access is particularly challenging. The scope of work will be to install vehicular rip-rap crossings, which will allow for much improved access for staff performing maintenance and inspections on the sewer, as well as emergency access for small-mid size construction equipment. This work began on June 13th, and was completed during the week of June 20th.
- WBI and RVI Erosion: In February 2022, RWSA Maintenance staff notified Engineering staff of some ditch lines along the Rivanna Interceptor that are in need of repair. In addition, during the previous round of manhole inspections on the Woodbrook Interceptor, there was one small ditch identified to be in need of repairs there as well. Staff will be visiting these sites in August, and then likely issuing to its On-Call Maintenance Contractor, Digs, for repairs. The scope of work is likely to include installation of erosion control at the ditch crossings over the various sewer lines.
- CZI Force Main ARV Replacements: Over the past several years, staff has been monitoring the condition of the air release valves (ARVs) up and down the force main portions of the Crozet Interceptor, as they have been continuing to degrade. These valves are 1980s-vintage, and while they have been serviced and partially rebuilt over the years by the RWSA Maintenance Department, replacement of the tapping saddle and corporation stop has not been possible, since shutdown of the force main is required. Historically, it has taken several hours to drain the force main to allow for the work to take place, and by the time that has occurred, the upstream pump stations need to turn on to prevent overflow. Now with the Flow Equalization Tank nearing completion, this work can take place with the force main offline for up to a 24-hr period. Staff has begun the procurement of the materials needed for the job, and the site was visited with RWSA's On-Call Maintenance Contractor, Faulconer Construction. The work is anticipated to be completed this fall, pending crew availability.
- Miscellaneous MCI/PCI/RVI MH Repairs: Over the past several months, staff have identified issues with various manholes on the Moores Creek, Powell Creek, and Rivanna Interceptors (MCI, PCI, and RVI, respectively). These include one manhole on MCI that needs to be raised, as it was historically buried but found in Summer 2021 by the RWSA Maintenance & Engineering Departments, one manhole on RVI that needs a failing HDPE liner to be removed and cementitious mortar to be installed, and one manhole each on PCI and MCI that need to be coated with cementitious mortar due to root intrusion and groundwater infiltration. This work is likely to be performed through the On-Call Maintenance contract with Digs, and staff visited the site with the Contractor on July 15th. The work will likely be completed in the fall, pending crew availability.
- MCAWRRF Primary Clarifier Building 36" Sanitary Sewer Leak: On July 7th, RWSA Engineering Staff was made aware of a small leak through the wall in the basement of the Primary Clarifier Building at MCAWRRF. An inspection was performed by Hazen & Sawyer on August 3rd, and a report with repair recommendations is being prepared. The repairs will likely include specialty grouting work to plug the voids discovered in the field in order to stop the leak.

21. Security Enhancements

Design Engineer:	N/A
Construction Contractor:	Security 101 (Richmond, VA)
Construction Start:	March 2020
Percent Complete:	50% (WA5), 0% (WA6)
Based Construction Contract + Change Orders to Date = Current Value:	$718,428 (WA1) + $91,130 (WA2) + $128,166 (WA3) + $189,698 (WA4) + $76,920 (WA5) + $120,994 (WA6) = $1,325,339 (Total)
Completion:	October 2022 (WA5), May 2023 (WA6)
Budget:	$2,810,000

Current Status: WA5, which authorizes card access installation at Glenmore Water Resource Recovery Facility (GWRRF), Scottsville Water Resource Recovery Facility (SVWRRF), and Red Hill Water Treatment Plant (RHWTP), began during the week of June 20th. Conduit and cable pulling is complete at all facilities covered in the WA, and the only work that remains is wiring and programming by Security 101. WA6 will include card access installation at RWSA's remote sites, including all dams and pump stations. This work was authorized in early August, with completion scheduled for May 2023.

History

Under Construction

1. South Rivanna and Observatory Water Treatment Plant Renovations

An informational meeting with prospective contractors was held on September 26, 2019 to maximize interest in the project. 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 8, 2019, and a memo summarizing the results has been completed. Agreed upon results were incorporated into the project. The project was advertised, and bids were received. English Construction was awarded the contract and a Notice to Proceed was issued on May 18, 2020. Coordination with UVA and Dominion on a new electrical easement at the plant has been completed and documents are being finalized.

Observatory: This project will upgrade the plant from 7.7 to 10 MGD capacity. Costs to upgrade the plant to 12 MGD were determined to be too high at this time. Much of the Observatory Water Treatment Plant is original to the 1953 construction. 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. The flocculator systems were replaced and upgraded as part of the Drinking Water Activated Carbon and WTP Improvements project (GAC). Four additional GAC contactors will be included in the design.

South Rivanna: The work herein includes 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; of new metal building to

cover the existing liquid lime feed piping and tanks. The scope of this project will not increase the 12 MGD plant treatment capacity.

2. Airport Road Water Pump Station and Piping

The Rt. 29 Pump Station and Pipeline 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. The North Rivanna Transmission Main improvements included under a separate CIP project have been added to this project to allow connection of the pump station to the distribution system.

Bids were opened on October 7, 2021 and this work was awarded at the October 2021 Board of Directors meeting. The contract was signed, and the pre-construction conference was held on December 9, 2021.

3. MC 5 kV Electrical System Upgrades

After discussions through the Moores Creek Facilities Master Plan, it was identified that several areas of the MCAWRRF, including the Blower Building, Sludge Pumping Building, Grit Removal Building, Moores Creek Pumping Station, and the Administration Building are all still connected to the original 5kV switchgear in the Blower Building. This equipment, including the associated cabling, switchgear, transformers, and motor control centers (MCCs), has a useful life expectancy of 20-30 years. Most of this equipment was installed around 1980. With the equipment having well exceeded its useful life expectancy at this point, safety is a concern given the large electric loads that the cabling and other equipment are handling on a day-to-day basis. Failure of the existing 5kV infrastructure could also result in temporary outages of certain treatment processes, and repairs could take weeks to months given the lead times associated with equipment of this age. A technical memo was provided in July 2020 by Hazen & Sawyer, which recommended that a CIP Project be added immediately to encompass replacement of the original 1980s-vintage 5kV cables, switchgear, transformers, and MCCs. A CIP Amendment Recommendation and Engineering Services Work Authorization was approved during the August 2020 Board of Directors Meeting. The Design Work Authorization was executed on October 6, 2020.

A Design Kickoff Meeting was held virtually on October 20, 2020. A site visit was attended on November 5, 2020 by Hazen & Sawyer staff, as well as RWSA Maintenance and Engineering Department staff. 50% Design Documents were provided in Spring 2021, with staff feedback provided soon thereafter. A follow-up site visit by Hazen was performed in July 2021, in order to confirm the availability of spare conduits across the site and plan for the associated cable replacements. 95% Design Documents were provided by Hazen in September 2021, and staff returned comments in October 2021. Field work was conducted in Fall 2021 to evaluate the condition of conduits within the existing duct bank network, as well as verify pathways and connectivity within the network.

A Request for Bids (RFB) was issued on December 22, 2021, and bids were submitted on February 3,

2022. A Construction Contract Award for Pyramid Electrical Contractors was approved by the RWSA Board of Directors on February 22, 2022, and a Notice of Award (NOA) was provided to Pyramid on March 4, 2022. Notice to Proceed (NTP) was issued on May 17, 2022.

4. Scottsville WTP Lagoon Liners Replacement

The Scottville Water Treatment Plant (WTP) has two lined lagoons that receive filter backwash water, filter-to-waste water, and flow from the sedimentation basin sludge collectors. The lagoons are regulated under the Virginia DEQ VPDES permit program. The earthen lagoons are original to the plant and were lined at the request of DEQ in 2007 to prevent water infiltration out of the lagoons.

Recently, the lagoon liners have shown signs of degradation from ultraviolent sunlight. As such, a liner replacement project was added to the FY 22-26 CIP to begin in FY23 and be completed in FY24. Unfortunately, in early June '21, the liner in one of the lagoons failed during a high flow event. DEQ has been notified and the lagoon taken out of service, leaving the plant with only one remaining lagoon. In order to advance replacement of the liners, bid documents were developed, a Request for Bids was issued on January 4, 2022, and bids were received on February 1, 2022. A Notice of Award was provided to Haren Construction on March 4, 2022 and a Notice to Proceed was issued on May 2, 2022.

Design and Bidding

5. Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line and Raw Water Pump Station

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 (RMR) to the Observatory Water Treatment Plant (WTP) 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. The new pipeline will be constructed of 36-inch ductile iron and will be approximately 2.6 miles feet in length. The segment of the project immediately east of the RMR will constitute a portion of the proposed South Rivanna Reservoir to RMR raw water main project 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. The new pump station site selection and design are being conducted in coordination with the South Rivanna Reservoir to RMR pipeline 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 SR WTP.

Both Design Work Authorizations received Board of Directors approval on July 27, 2021. A kickoff meeting was held on September 17, 2021, and a meeting to begin establishing boundary conditions for the RMR Pump Station was held on October 25, 2021. An internal RMR Pump Station Operations

workshop was held on February 23, 2022 to set the boundary conditions for the facility, and this information was provided promptly to the Design Consultant to allow design efforts to continue progressing.

6. **South Rivanna Reservoir to Ragged Mtn. Reservoir Raw Water Line -Birdwood to Old Garth**

This project is the continuation of the SRR to RMR 36" raw water pipeline built on the Birdwood Golf Course. Design efforts were authorized in June 2021 with construction anticipated in Summer 2022.

7. **Beaver Creek Dam and Pump Station Improvements**

Dam: A spillway upgrade alternative for the dam has been selected and was presented in a public meeting on October 6, 2021. A new raw water pump station site and pipe access route were selected and approved by the Board in August 2021. 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. 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.

In 2020, staff received grant funding for a planning and environmental study from the Natural Resources Conservation Service (NRCS). The project kicked off in August 2020 and is expected to be completed in July 2022. Following completion of the study and acceptance of the Plan-Environmental document by NRCS, staff will pursue additional grant funding through NRCS that, if available, could cover up to 65% of final design and construction costs.

Pump Station: 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.

8. **South Rivanna River Crossing**

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. 29 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 new 24-inch water main in Rt. 29, there is a need to construct a new river crossing at the South Fork Rivanna River. Acquisition of right-of-way will be required at the river crossing.

9. Central Water Line

Route alignment determination, hydraulic modeling, and preliminary design were underway in 2017. Due to the complicated nature of our finished water systems, it was decided at the August 2018 Board meeting that a more comprehensive approach was warranted, and we should complete the Finished Water Master Plan prior to moving forward with final design and construction of the Central Water Line (formerly referred to as the Avon to Pantops Water Main). The focus of this project was 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 were a starting point for this current project. An engineering contract was approved by the Board of Directors in July 2017. Recent efforts and modeling for the Urban Finished Water Infrastructure Master Plan have determined that a central water line corridor through the City is the best option to hydraulically connect the Observatory Water Treatment Plant to the Pantops area, with connections to City water lines to support the water distribution system in the City and County.

10. Upper Schenks Branch Interceptor, Phase II

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 being evaluated to determine whether it will be installed in an easement on County property (baseball field and County Office Building) adjacent to McIntire Road or in McIntire Road itself.

12. Red Hill Water Treatment Plant – Upgrades

The Red Hill WTP was constructed in a joint effort of ACSA and RWSA in 2009 and consists of a well, a pneumatic tank and pump house that provides treated water to the Red Hill Elementary School and adjoining neighborhood. The project was constructed in response to groundwater contamination as a result of a nearby leak of underground fuel storage tanks. Originally the facility was operated

primarily as a well head and pump house. More recently the facility has operated more as a water treatment facility with a well as source water. As such, there have been several chemical process additions, automation, online monitoring and an increase in operator wet chemistry testing. The current building is well beyond its physical capacity and this project will serve to expand the building and improve the configuration of the process and laboratory needs of the WTP.

13. Emmet Street Water Line Betterment

The Urban Finished Water Master Plan identified several necessary upgrades to the urban water distribution system to improve system performance and reliability. One of the identified improvements is an upgrade and extension of the existing RWSA water main along the Emmet Street corridor from the University of Virginia to Hydraulic Road. This project will utilize planned road, streetscape, utility, and development projects along the Emmet Street corridor to complete portions of the Emmet Street water main improvements as betterment, with the goal of completing the water main improvements by 2030. The project scope includes planning and coordination between RWSA, UVA, the City of Charlottesville, and VDOT, design services for the betterment and "gap" sections of water line, construction funding, and construction management services. Current identified projects with betterment opportunities include: the UVA Ivy Corridor Redevelopment, UVA Contemplative Commons, the City of Charlottesville Emmet Streetscape Projects (multiple phases), and VDOT intersection improvements at Barracks Road, the US-250/Emmet Street Interchange, and Hydraulic Road.

14. Crozet Pump Station Rehabilitation

The Crozet Pump Stations were constructed in the 1980's and many of the components are original. This project includes the replacement of pump and valves and other components at Pump Station 2 to improve pumping capabilities at this location, as well as Pump Stations 1 and 3 as the pumps are reaching the end of their useful life. It also includes roof replacements at all four pump stations, siding replacement for the wet well enclosure at Pump Station 3, and installation of new wells at pump stations 3 and 4. This project also now intends to include new back-up generators at Pump Stations 1 through 3 as the generators have also reached the end of their useful life.

15. Moores Creek AWRRF Concrete Repairs

The two Holding Ponds and the two Equalization Basins were built with the 1977 Moores Creek Upgrades and are critical to the plant infrastructure to contain wet weather flows. The 40 year old concrete is showing signs of degradation. Following inspections in the Fall 2020, Hazen recommended we implement concrete repairs soon to extend the life of the concrete basins. Work will include crack repair, spalling repair, joint repair, and coating of miscellaneous metals and valves in the basins.

16. Moores Creek AWRRF Compost Shed Roof Rehabilitation

In the early 1980's a large metal-framed shed roof was constructed to house the biosolids composting operations. Subsequent to stopping composting at Moores Creek AWRRF, the shed serves as an equipment maintenance yard, solids handling facility and material storage lock-up. The shed roof is showing signs of rafter deterioration and ongoing drainage issues. This project will evaluate and perform remediation needs at this facility.

17. Scottsville WRRF Whole Plant Generator and ATS

The current back-up power generator at the Scottsville Water Treatment Plant does not power the entire plant, serving only the facilities needed to send flow to the lagoons. This project will offer greater treatment flexibility and monitoring capability for the operations staff, particularly when the

plant is unmanned and monitored remotely.

Planning and Studies

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

The approved 50-year Community Water Supply Plan includes the construction of a raw water line from the South Rivanna Reservoir to the Ragged Mountain Reservoir. This water line will replace the existing Upper Sugar Hollow Pipeline and 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 has completed the routing study. Preliminary design, plat creation and the acquisition of easements are underway. Property owners were contacted to request permission to access properties for topographical surveying. A community information meeting was held in June 2018.

19. Asset Management Plan

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 also assisted RWSA with the procurement of a new CMMS software package to facilitate the overall program. Cityworks was selected and implementation has begun.

20. SRR to RMR Pipeline – Pretreatment Pilot Study

As part of the SRR to RMR Pipeline project, the impact of sending raw water from the SRR to RMR has been previously studied and a significant amount of pretreatment was initially identified as being needed to avoid reducing the quality of the raw water contained within the RMR. With the pipeline easement acquisition process well underway and additional information now available associated with the proposed timing of this overall project based on water demand projections, the intent of this project is to update the pretreatment needs anticipated.

The study is anticipated to be completed in 4 phases: 1. Analysis and Correlation of Existing Water Quality and Seasonal Weather Data 2. Enhanced Water Quality Sampling 3. Pretreatment Piloting 4. Level Setting for the Final Pretreatment Solution. Phase 1 commenced in January 2021 and was completed in July 2021. Phase 2 began in June 2021. The Excel Desktop Modeling portion of the analysis was completed in February 2022.

21. MCAWRRF Cogeneration Upgrades

The MCAWRRF has an existing cogeneration facility that was constructed in 2011. The purpose of the

facility was to provide a beneficial use of the methane gas produced by the digester process at the plant, and in doing so, provide both digester heating and energy to the plant's electrical distribution system. Unfortunately, the existing cogeneration facility requires expensive recurring maintenance services, has proprietary equipment which further complicates servicing needs, and has had a number of operational issues that have impeded the benefit this facility was intended to provide. As a result, a Cogeneration System Analysis was performed to determine a recommended approach for proceeding with improvements to the existing facility, installation of a new cogeneration facility without the issues of the previous facility or removing the cogeneration facility altogether and providing a backup boiler. This project includes costs for installation of a new cogeneration facility as described in the Cogeneration System Analysis.

Other Significant Projects

22. Urgent and Emergency Repairs

- South Rivanna Dam Apron and Riverbank 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 riverbank 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 riverbank and removal of the rock dam were completed June 3-7, 2019 under RWSA's on-call construction contract.

- Urban Water Line Valve and Blow-off Repair

  During its routine inspections of the Water System, the 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 the drain line will need to be further reinforced or restrained.

23. Security Enhancements

As required by the Federal Bioterrorism Act of 2002 and the American Water Infrastructure Act of 2018, 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 approved by the Board on July 23, 2019. Access Control System Installation at MCAWRRF began in March 2020. Access Control System Installation was completed in the Administration and Engineering Buildings by the week of November 30, 2020, completing installation of the physical access control system across the MCAWRRF site. Training for staff was completed on November 10, 2020. RWSA authorized improvements to locks and doors across the MCAWRRF site on May 4, 2021, in order to improve the condition of the hardware and subsequently, operations of the access control system. In addition, installation of the card access system on all exterior doors at the Scottsville and Crozet Water Treatment Plants (SVWTP and CZWTP, respectively) was authorized shortly thereafter. RWSA also authorized installation of security conduits not already included at SRWTP and OBWTP under the Improvements Project in August 2021.

Access Control on exterior doors at the CZWTP and SVWTP was substantially completed in November 2021. Conduit work at SRWTP and OBWTP was substantially complete in May 2022.

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: **WHOLESALE METERING REPORT FOR JULY 2022**

DATE: **AUGUST 23, 2022**

The monthly and average daily Urban water system usages by the City and the ACSA for July 2022 were as follows:

	Month	***Daily Average***	
City Usage (gal)	148,779,466	4,799,388	**48.6%**
ACSA Usage (gal)	157,417,994	5,078,000	**51.4%**
Total (gal)	**306,197,460**	**9,877,337**	

The *RWSA Wholesale Metering Administrative and Implementation Policy* requires that water use be measured based upon the annual average daily water demand of the City and ACSA over the trailing twelve (12) consecutive month period. The *Water Cost Allocation Agreement (2012)* established a maximum water allocation for each party. If the annual average water usage of either party exceeds this value, a financial true-up would be required for the debt service charges related to the Ragged Mountain Dam and the SRR-RMR Pipeline projects. Below are graphs showing the calculated monthly water usage by each party, the trailing twelve-month average (extended back to July 2021), and that usage relative to the maximum allocation for each party (6.71 MGD for the City and 11.99 MGD for ACSA). Completed in 2019 for a cost of about $3.2 M, our Wholesale Metering Program consists of 25 remote meter locations around the City boundary and 3 finished water flow meters at treatment plants.

Note: Staff detected a read issue with Meter Site 15 – Ivy Road at Colonnade Drive in March and has determined that the meter's register will require replacement. Staff will report a flow estimate for this site using available data until the issue is resolved. Staff ordered a new register and meter but has not received them due to supply chain issues.

Note: Staff detected a read issue with Meter Site 9 – Moores Creek Lane in June and has resolved the issue with the meter. RWSA will begin using data form the meter for next month.

++Note: Staff detected a read issue with Meter Site 24 – Greenbrier Terrace in late July and staff has resolved the issue. Staff reported a flow estimate for this site using available data from the current month and an average, and will use actual data from the date of repair.

Note: Staff detected a read issue with Meter Site 32 – Fontaine Ave in July and has determined that the meters register needs to be replaced. Staff ordered a new register and meter but has not received them due to supply chain issues. Staff will report a flow estimate for this site using available data from the current month and an average until the issue is resolved.

Figure 1: City of Charlottesville Monthly Water Usage and Allocation

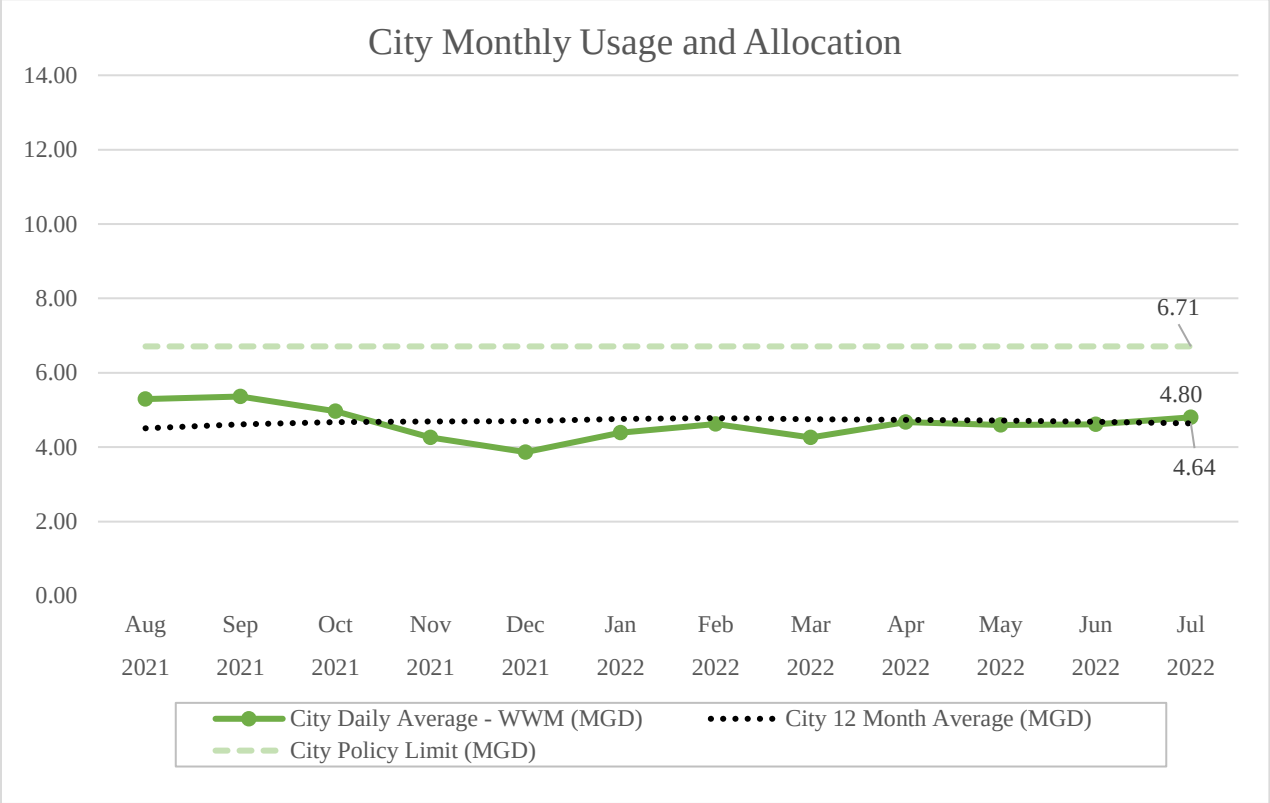
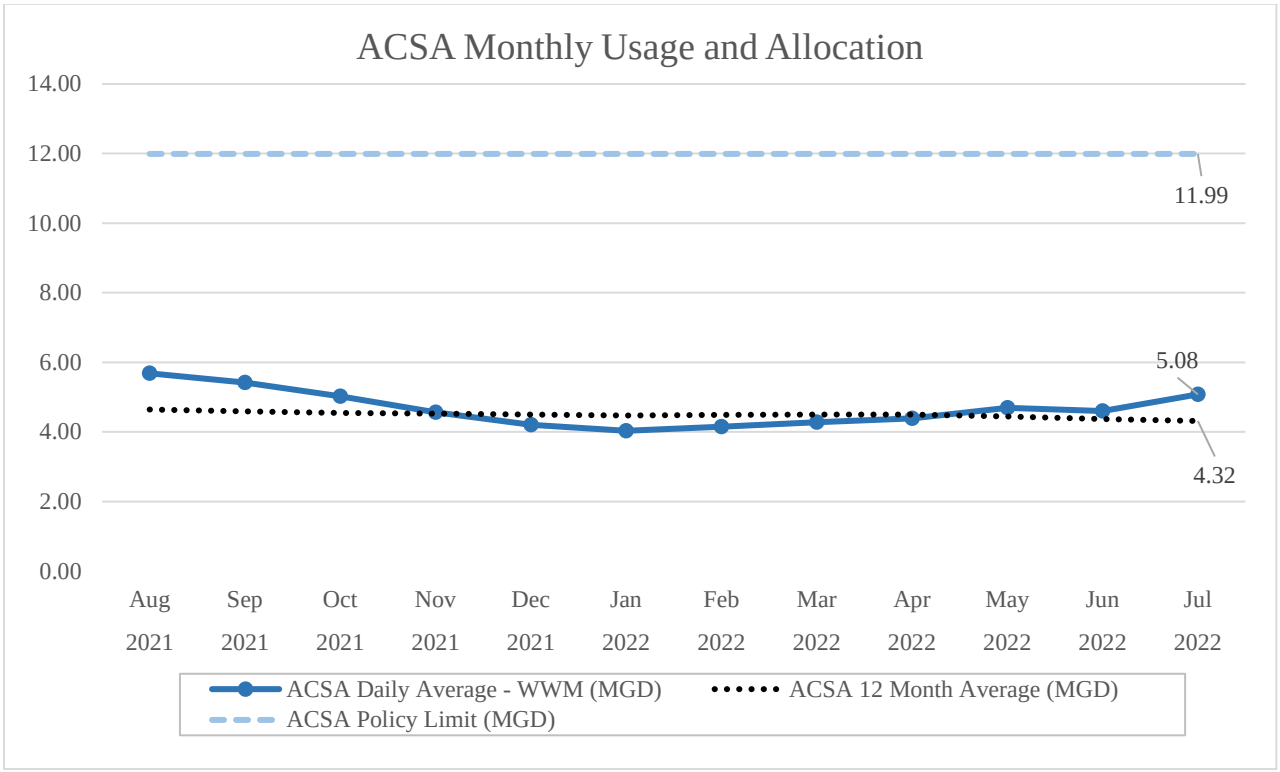
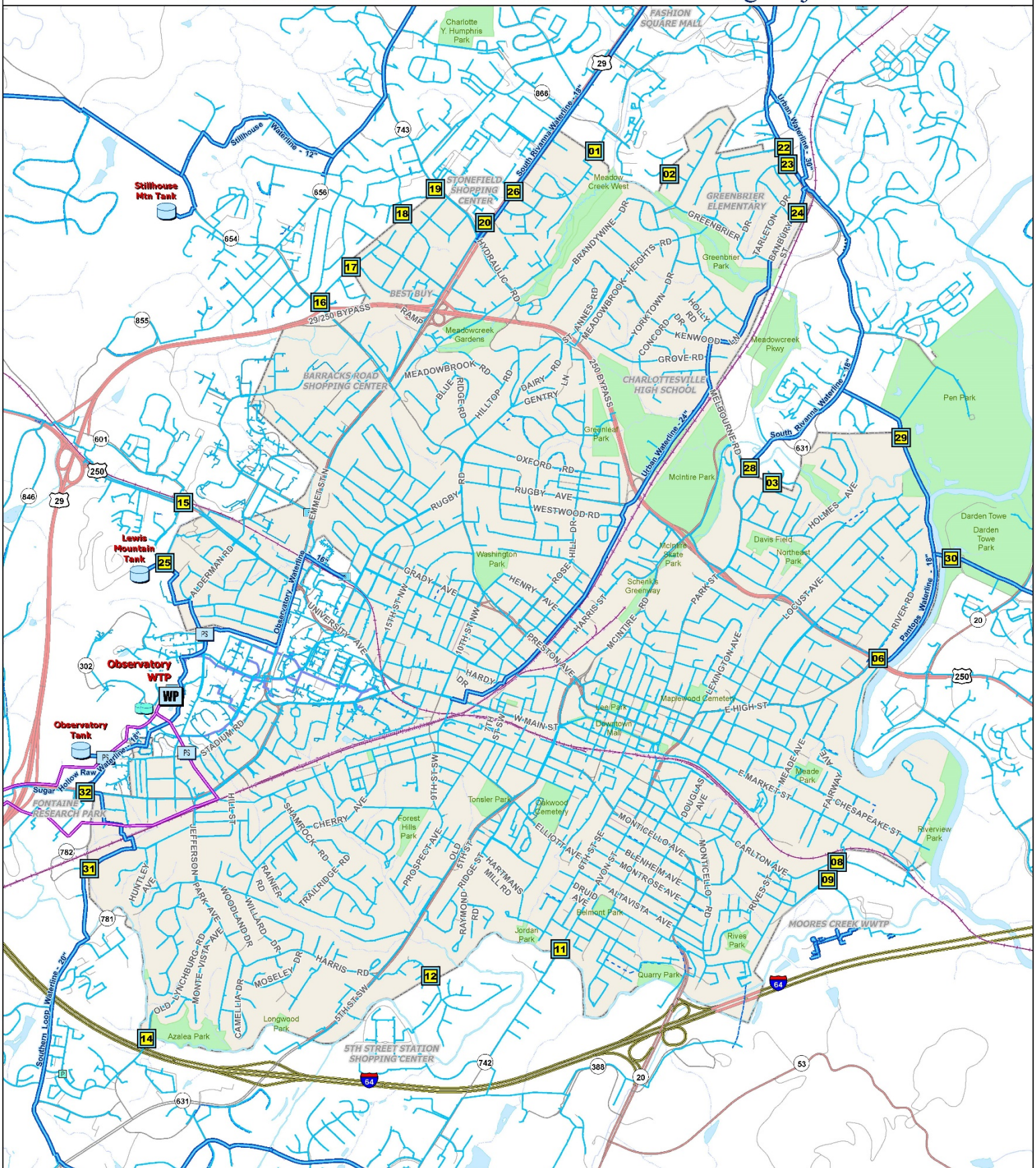


Figure 2: Albemarle County Service Authority Monthly Water Usage and Allocation



Meter Locations for the Wholesale Water Metering Project



Miles
0 0.25 0.5

Date: 4/21/2017

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Meter Site Locations - WWMP

01, Pepsi Place
02, Michael Pl / Wilson Ct
03, Wilder Dr
06, Long St / River Rd
08, Franklin St / Carlton Ave / Broadway St
09, Moores Creek Ln
11, Avon St
12, Loma Ln / Harris Rd
14, Old Lynchburg Rd
15, Ivy Rd / Colonnade Dr
16, Ricky Rd / Barracks Rd
17, Ricky Rd (near Wayne Ave)
18, North Berkshire Rd
19, Hydraulic Rd / Inglewood Dr
20, Trader Joes
22, Rio Rd @ Church of Our Savior
23, Greenbrier Dr / Rio Rd
24, Greenbrier Ter
25, University Heights Apts
26, Seminole Trl
28, Rio Rd / Melbourne Rd
29, Pen Park Ln
30, Darden Towe Park
31, Stribling Ave
32, Fontaine Ave

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

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

REVIEWED: **BILL MAWYER, EXECUTIVE DIRECTOR**

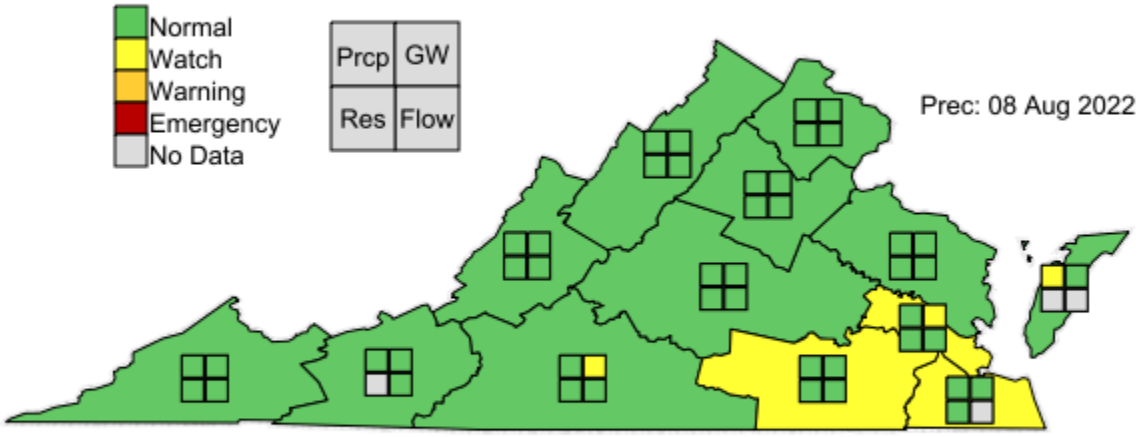
SUBJECT: **DROUGHT MONITORING REPORT**

DATE: **AUGUST 23, 2022**

Drinking Water Supply and Drought Monitoring, as of August 11, 2022:

A. U.S. Drought Monitoring Report:
   - No drought phases have been initiated. Albemarle County is noted to be normal.

B. VDEQ Drought Status Report:
   - Our region is at normal for all indicators.



C. Urban Reservoirs Status (Sugar Hollow, South Rivanna, Ragged Mountain):
   - 100 % full.

Precipitation

Charlottesville Precipitation				
Year	**Month**	**Observed (in.)**	**Normal (in.)**	**Departure (in.)**
2021	**Total: Jan - Dec**	**33.82**	**41.61**	**-7.79**
2022	January	3.79	2.96	0.83
	February	1.48	2.35	-0.87
	March	3.19	3.54	-0.35
	April	3.05	3.17	-0.12
	May	6.17	4.17	2.00
	June	3.66	4.38	-0.72
	July	6.35	3.37	2.98
	Total: Jan - July	**27.69**	**23.94**	**+3.75**

Source: National Weather Service, National Climatic Data Center.

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MEMORANDUM

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

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

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

SUBJECT: **AWARD CONSTRUCTION CONTRACT AND AMEND CAPITAL IMPROVEMENT PLAN – SOUTH RIVANNA HYDROPOWER PLANT DECOMMISSIONING PROJECT – ENGLISH CONSTRUCTION COMPANY, INC.**

DATE: **AUGUST 23, 2022**

This recommendation is to award a construction contract to English Construction Company totaling $706,916 to decommission the existing South Rivanna dam hydropower plant, and to increase the FY 2023 Capital Budget by $285,000 to a total project budget of $1,010,000.

Background:

RWSA constructed a hydropower plant with a 954 KW capacity at the South Fork Rivanna Dam in 1987 to provide electric power for the S. Rivanna Water Treatment Plant. Power generation was limited for several years due to various mechanical issues, and the unit has been completely offline since 2013 following a flood event which impacted the mechanical and electrical equipment. An economic analysis was performed to determine whether it was financially beneficial to rehabilitate the plant. The results of the analysis determined there were limited scenarios where a positive return on investment would be expected. Based on this analysis, the Board of Directors approved decommissioning the plant in October 2016, and authorized staff to petition the Federal Energy Regulatory Commission (FERC) to surrender our Exemption from licensing and decommission the facility. FERC approved the surrender application and the accompanying decommissioning plan, which included removal of damaged electrical and mechanical equipment and reinstituting the 72-inch diameter penstock for the turbine back into a low-level reservoir drain.

This construction project was advertised for bids on September 29, 2021 (RFB No. 384). One bid of $973,916 was received on November 2, 2021 by English Construction Company, Inc. from Lynchburg, VA. Since this bid value exceeded the total Capital Budget for the project, negotiations to reduce the scope of work were initiated with the contractor. Through a review of the contract documents and the costs associated with the various project elements, it was determined that the planned replacement of a 72-inch sluice gate was found to be more complex than intended. As a result, an inspection was performed on the gate to better determine whether full replacement was needed or if repairs were sufficient. The inspection determined that repairs were suitable and this modification to the decommissioning process was then submitted to and

approved by the Federal Energy Regulatory Commission. Based on this revision, English Construction Company, Inc. was able to identify a cost reduction of $267,000. While this cost reduction does not bring the overall bid value to within the total Capital Budget for the project, it was determined that the resulting cost was competitive and reasonable in this current market. This cost reduction will be included in Change Order No. 1. After reviewing the bid documents, our design engineering consultant, Gomez and Sullivan, determined the bidder was responsive and responsible and recommended award of the contract to English Construction Company, Inc.

The current Capital Improvement Plan (CIP) budget for this project is $725,000. Based on the value of the bid received and the resulting cost reductions that were negotiated, Gomez and Sullivan and staff believe the pricing provided is in accordance with the current market value for the work. Incorporating English Construction Company, Inc.'s modified bid value of $706,916 represents an increase to the CIP Budget of $285,000 and a total revised project budget of $1,010,000.

Board Action Requested:

1. Authorize the Executive Director to execute a construction contract with English Construction Company, Inc. for a total value of $706,916, inclusive of Change Order No. 1 in the value of ($267,000 credit), for the South Rivanna Hydropower Plant Decommissioning Project (RFB No. 384), and any other change orders not to exceed 10% of the original contract amount.

2. Amend the FY 2023 Capital Improvement Plan to increase the project budget by $285,000 to a total project budget of $1,010,000.

RIVANNA WATER & SEWER AUTHORITY
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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: **AWARD PROFESSIONAL ENGINEERING SERVICES AGREEMENT – MOORES CREEK AWRRF ENGINEERING AND ADMINISTRATION BUILDING ADDITION AND RENOVATION PROJECT– SHORT ELLIOT HENDRICKSON INC.**

DATE: **AUGUST 23, 2022**

This request is to authorize the Executive Director to execute an Engineering Services Agreement and Work Authorization #1 with Short Elliot Hendrickson Inc. totaling $1,053,688 to provide full design and construction administration services to complete the Engineering and Administration Building Addition and Renovation project.

Background

RWSA currently has its administrative headquarters in two buildings on the grounds of the Moores Creek Advanced Water Resource Recovery Facility. The two-story, 12,260 SF Administration Building was constructed in the early 1980's and houses offices, IT server space, meeting space and a full-service laboratory. The second building is a series of four trailers installed between 2003 and 2010 that house the Engineering department. Based on the growth of our programs and the population to be served in our community, there is a need to provide about 14,000 SF of additional office and meeting spaces for the Finance, IT, Purchasing, Human Resources, Executive Director and Administrative staff, along with relocation of the Engineering group into the building to eliminate the trailers. The renovation will modernize the IT server workrooms, Laboratory, and Board meeting room, while also providing space for environmental educational and community outreach. This project was coordinated with the MCAWRRF Master Plan to ensure there would be no conflicts with future expansions of our infrastructure, as the building addition will extend into the lower parking area of the Administration Building.

A Request for Proposals (RFP) was developed and advertised on May 4, 2022. Four proposals were received on June 9, 2022. The selection committee decided to interview all four firms on June 27 and 29, 2022. Based upon the qualifications provided in the RFP, the quality of previous professional services provided, and the inclusion of a local prominent architectural firm on the project team, the selection committee found that Short Elliot and Hendrickson Inc. was best qualified to provide these services.

Engineering staff has negotiated an initial scope of work to include:

- Site survey and geotechnical investigation
- A programming review of space needs and sustainable building strategies
- Schematic design to confirm floor plan options and site layout
- Detailed design and regulatory permitting
- Site plan development and assistance through Albemarle County approval
- Development of construction documents and bidding assistance
- Construction administration services

Board Action Requested:

Authorize the Executive Director to execute an Engineering Services Agreement and Work Authorization #1 with Short Elliot Hendrickson Inc. for professional services to complete the Engineering and Administration Building Addition and Renovation project totaling $1,053,688, and any amendments needed to complete the tasks identified above, not to exceed 25% of the original contract amount, provided the resulting total cost is within the approved CIP project budget.

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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: **AUTHORIZATION OF PROFESSIONAL ENGINEERING SERVICES; SCADA STANDARDS PROJECT – SHORT ELLIOT HENDRICKSON INC.**

DATE: **AUGUST 23, 2022**

This request is to authorize a Work Authorization totaling $480,000 with the firm Short Elliot Hendrickson Inc. to update and standardized our SCADA systems at our water and wastewater treatment plants and facilities. Our SCADA/IT team has identified several system wide improvements that will help enhance efficiency and effectiveness in the operation of these systems.

Background

The Authority over the past 20 years has implemented and operated Supervisory Control and Data Acquisition (SCADA) systems at all treatment plants. The use and installation of such equipment and related systems involves IT servers, PC-workstations, programmable logic controllers (PLC's), sensors, network routers and switched and other appurtenances. This system is used in the 24/7 operation of all the Authority's plants, pump stations and storage tanks. Operators use an HMI (human machine interface) at specific workstations to monitor and adjust (control) chemical feed levels, address alarms, monitor tank levels, pressure rates, pump run times, power-up equipment, reservoir levels/controls, etc.

The first SCADA components were installed in 2001 for the Urban Water plants through a capital project. As new capital projects were initiated, new components of SCADA were installed at these facilities. Urban Wastewater didn't have a significant SCADA system until the Enhanced Nutrient Removal project was initiated in 2009. Because the SCADA systems were installed over many different capital projects with many difference design firms using multiple implementation contractors, the system has become inconsistent in relation to the Operator interface via the HMI. Alarms are also inconsistently maintained as work has progressed over the past 20 years.

The Authority has been increasing its IT/SCADA support resource recently (we had zero SCADA/IT staff 5 to 6 years ago). Our SCADA/IT team has now identified several system wide improvements that will help improve efficiency and effectiveness in the operations of the overall systems. Staff conducted a pilot review of the SCADA systems at the Glenmore and Scottsville WTP facilities to verify the inconsistencies mentioned before. The pilot found that there were dissimilar developments of the HMI, equipment removed by operations/maintenance/contractors

but not in SCADA (i.e., data points/tags going to nowhere), unused alarms and artifact screens, and general inconsistencies as the systems have developed over a long period of time. The pilot included correction at these plants and development of SCADA Standards to be used as new capital projects are executed in the future.

The pilot project gave the team a good baseline to work from as we rollout the SCADA standardizations to the rest of our production, storage and transmission facilities. The system has over 1,100 graphical screens and has a total count of 23,600 data points/tags. This project will take several years to execute. The Moores Creek AWRRF will be the next plant to address. Total project costs are estimated to be roughly $480,000 over the next two plus fiscal years for all the work needed at all plants/facilities. A portion of this work was anticipated in the FY 2023 budget and will continue to be budgeted for in the FY 2024 budget.

Board Requested Action:

Authorize the Executive Director to execute a Work Authorization for an amount up to $480,000 with the firm Short Elliot Hendrickson Inc. for professional services to update and standardize our SCADA systems, and any amendments needed to complete the tasks identified above not to exceed 25% of the original contract amount, provided the resulting total cost is within the approved CIP project budget.

RIVANNA WATER & SEWER AUTHORITY
695 Moores Creek Lane | Charlottesville, Virginia 22902-9016
434.977.2970
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MEMORANDUM

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

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

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

SUBJECT: **RESOLUTION TO AMEND FY 2022 - 2023 WATER RATES AND CHARGES; AUTHORIZATION TO SCHEDULE A PUBLIC HEARING**

DATE: **AUGUST 23, 2022**

This recommendation is to approve the Preliminary Rate Schedule and authorize a Public Hearing during the September Board meeting to consider changes to the debt service charges for drinking water in the Urban area in FY 2022 - 2023. Charges will increase $22,000 per month for the Albemarle County Service Authority (ACSA) and decrease by the same amount for the City.

Background

The City, ACSA and the Authority entered into a "Northern Area Drinking Water Projects Agreement" in June 2022 to allocate the debt service costs for four new drinking water infrastructure projects and all future capacity and non-capacity water facilities located north of the South Fork Rivanna River. As part of this Agreement, debt service costs for these projects were shifted from the City to the ACSA, resulting in a change in the charges for FY 2022 – 2023.

The Authority is required to hold a public hearing after adopting a preliminary rate schedule to make this change. This rate schedule will then be published twice at least 14 days before the Public Hearing and at least 6 days apart. The attached Preliminary Rate Schedule includes all of the proposed rates and charges, with only the water debt service charges being different than the charges adopted in May 2022. It is proposed that the Public Hearing be held on September 27, 2022, with the charges to be retroactively effective on July 1, 2022. Additionally, since the monthly invoices for July, August and September 2022 will have already been posted and paid, there will be a retroactive adjustment occurring in the October invoice to the ACSA and to the City.

Board Action Requested:

Approve the Preliminary Rate Schedule and authorize a Public Hearing to be held during the September 27, 2022 regular meeting of the Board of Directors to set the Urban Water rates and charges for FY 2022 - 2023 to be retroactively effective on July 1, 2022.

Attached: Preliminary Rate Schedule
Public Notice

RIVANNA WATER & SEWER AUTHORITY
695 Moores Creek Lane | Charlottesville, Virginia 22902-9016
434.977.2970
434.293.8858
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R E S O L U T I O N

PRELIMINARY RATE SCHEDULE

WHEREAS, the Rivanna Water and Sewer Authority Board of Directors has reviewed the proposed budget and associated water rates and charges for Fiscal Year 2022-2023; and

WHEREAS, Section 15.2-5136 (G) of the Code of Virginia requires the adoption of the preliminary rate schedule for notification of a public hearing prior to fixing rates for water charges; of which there is at least a 14 day requirement between the date of the last of two public notices and the actual date fixed for the public hearing;

NOW, THEREFORE, BE IT RESOLVED that the Rivanna Water and Sewer Authority hereby approves the preliminary rate schedule for purposes of notification of a public hearing to be held on September 27, 2022 at 2:15 p.m. during the regularly scheduled Board of Directors meeting, with charges to be retroactively effective July 1, 2022.

Preliminary Rate Schedule

Water Rates and Charges

		Adjusted*	As Adopted			
Urban Area		**FY 2023**	**FY 2023**	**$ Change**	**% Change**	
ACSA & City	Operating	$ 2.653	$ 2.653	No Change	No change	Per 1,000 gallons
City	Debt Service	$ 249,497	$ 271,527	$ (22,030)	-8.1%	Per month
ACSA	Debt Service	$ 442,355	$ 420,325	$ 22,030	5.2%	Per month

* - adjusted for Northern Area Cost Agreement

Crozet

ACSA	Operating	$	99,757	Per month
ACSA	Debt Service	$	180,142	Per month

Scottsville

ACSA	Operating	$	47,463	Per month
ACSA	Debt Service	$	12,525	Per month

Public Notice

RIVANNA WATER & SEWER AUTHORITY
PUBLIC HEARING CONCERNING THE
PRELIMINARY RATE SCHEDULE FOR FY 2022 – 2023
RETROACTIVELY EFFECTIVE ON JULY 1, 2022

Public Hearing:
Rivanna Water & Sewer Authority will hold a public hearing on Tuesday, September 27, 2022, at 2:15 p.m. during the regular Rivanna Water & Sewer Authority Board of Directors meeting. The purpose of the public hearing is to consider the following wholesale water rates and charges to the City of Charlottesville and the Albemarle County Service Authority, to be retroactively effective July 1, 2022. Adopted rates may or may not be what are advertised.

Preliminary Rate Schedule

Water Rates and Charges

		Adjusted*	As Adopted			
Urban Area		FY 2023	FY 2023	$ Change	% Change	
ACSA & City	Operating	$ 2.653	$ 2.653	No Change	No change	Per 1,000 gallons
City	Debt Service	$ 249,497	$ 271,527	$ (22,030)	-8.1%	Per month
ACSA	Debt Service	$ 442,355	$ 420,325	$ 22,030	5.2%	Per month

* - adjusted for Northern Area Cost Agreement

Crozet

ACSA	Operating	$	99,757	Per month
ACSA	Debt Service	$	180,142	Per month

Scottsville

ACSA	Operating	$	47,463	Per month
ACSA	Debt Service	$	12,525	Per month

The Rivanna Water & Sewer Authority (Rivanna) was created by the City of Charlottesville (City) and the County of Albemarle to supply and treat water for drinking and to provide wastewater treatment. The above fees represent Rivanna's fees and charges to the City and the Albemarle County Service Authority (ACSA) for these services and are not the same as the City and ACSA charges to individual residents and businesses. Debt Service covers capital related project costs and are different for the City and ACSA reflecting terms of contractual agreements.

The City and the ACSA distribute drinking water and collect wastewater from individual residents and businesses and charge retail rates that combine charges from the above schedule to reflect their service costs, including Rivanna's costs.

Information about the proposed budget may be obtained on the Rivanna website at www.rivanna.org. Please call 977-2970 ext. 0 or send e-mail to info@rivanna.org with any questions you may have.

Moores Creek Advanced Water Resource Recovery Facility

Wastewater Program Review

PRESENTED BY:

DAVE TUNGATE, DIRECTOR OF OPERATIONS

BOARD OF DIRECTORS MEETING

AUGUST 23, 2022

RIVANNA WATER & SEWER AUTHORITY

4 Wastewater Facilities


Moores Creek


Stone Robinson


Scottsville


Glenmore

WWTP

WWTP

WWTP

WWTP

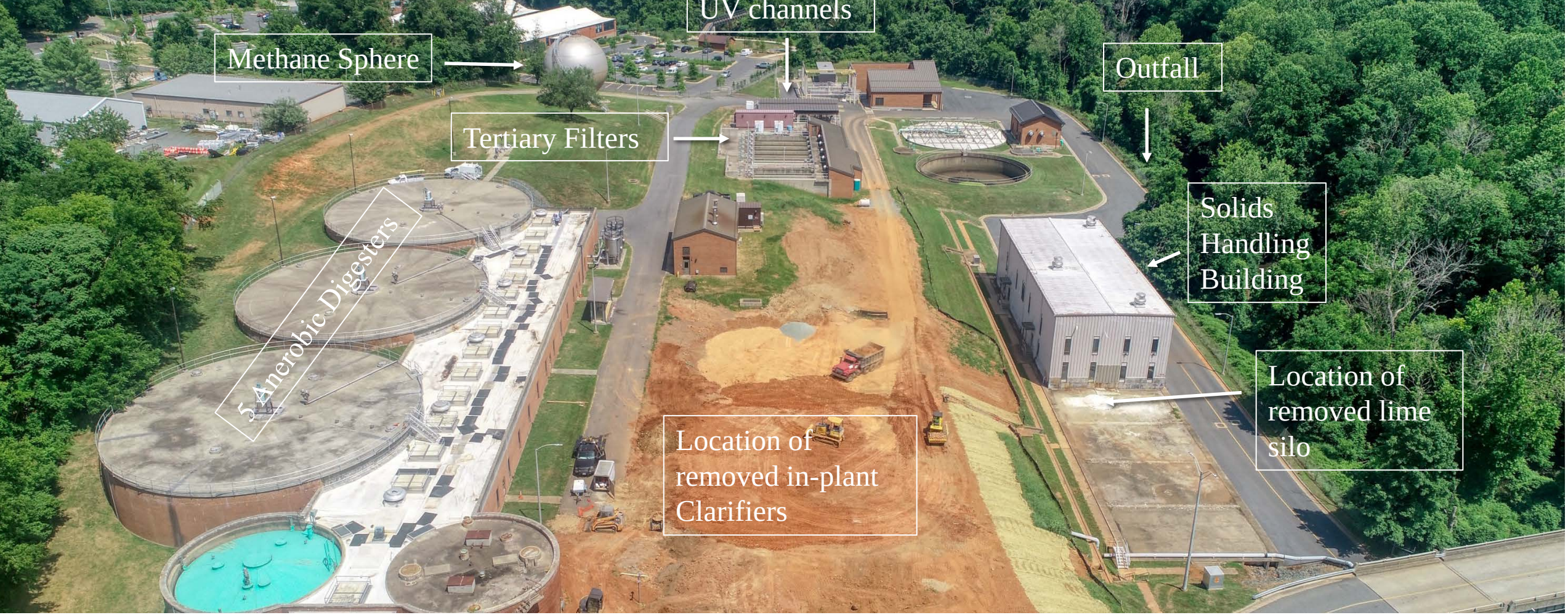
Earlysville
Ivy Creek
Charlottesville
CHARLOTTESVILLE (CITY)
Biscuit Run State Park
1587 ft
North Garden
Walnut Creek Park
South Fork Hardware River
Covesville
Keene
Esmont
Scottsville Rd
W River Rd

Moores Creek "Wet Side"

looking west

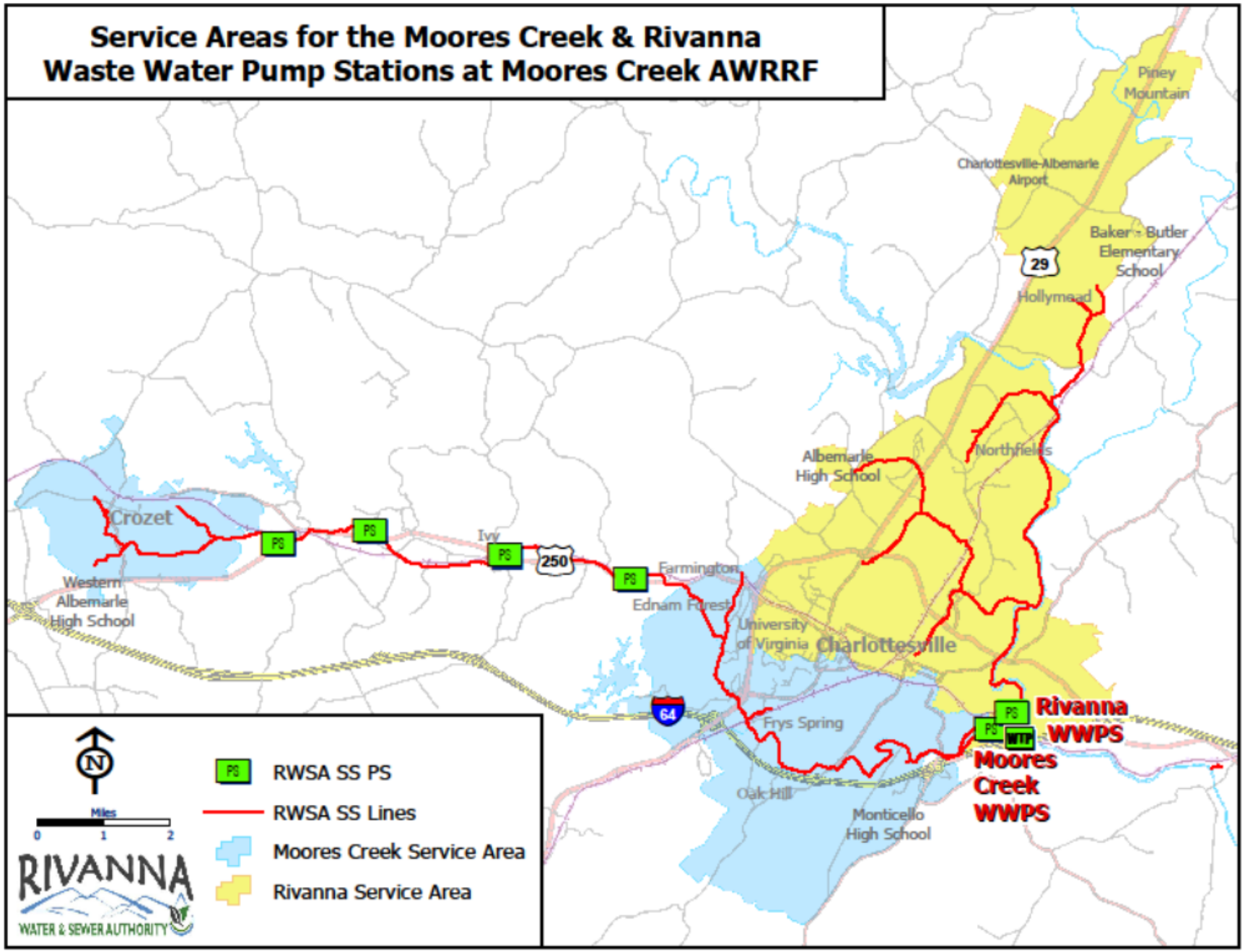
Moores Creek "Wet Side"

looking east



Moores Creek “Dry Side”

Sewer Pump Stations at Moores Creek


Service Areas for the Moores Creek & Rivanna Waste Water Pump Stations at Moores Creek AWRRF
Piney Mountain
Charlottesville-Albemarle Airport
Baker - Butler Elementary School
29
Hollymead
Albemarle High School
Northfields
Crozet
Western Albemarle High School
Ivy
250
Farmington
Ednam Forest
University of Virginia
Charlottesville
64
Frys Spring
Rivanna WWPS
Moores Creek WWPS
Oak Hill
Monticello High School
PS
WTP
N
Miles
0
1
2
RIVANNA
WATER & SEWER AUTHORITY
RWSA SS PS
RWSA SS Lines
Moores Creek Service Area
Rivanna Service Area

Band Screens

remove debris from wastewater after the pump stations

Debris

removed by the band screens

Grit Removal System

Grit removed

Primary Clarifiers

sludge removal by settling and removal of floating grease/oils

Odor Control Filter

removes odors from gases under primary clarifier covers

- *Odor control in sewer line from Crozet costs approx. $390,000/year*

Biological Treatment

enhanced nutrient removal by microbes

Secondary Clarifiers

second stage of sludge removal

Sand Filters

remove small particles prior to disinfection

Ultraviolet light channels

disinfects wastewater outflow

Outfall to Moores Creek

Centrifuge

dewaters sludge

Dewatered solids

from the centrifuge into the trailer

Moores Creek Nutrients

Nutrient discharges at the Moores Creek AWRRF were as follows for June 2022.

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	5,850	25%	17%
Phosphorous	18,525	1,544	1,008	65%	22%

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

Wastewater Plant Performance Testing

Monthly compliance reports are sent to VDEQ

- Moores Creek
  - Dissolved oxygen — daily
  - pH — daily
  - Total Suspended Solids — 5 times a week
  - Ammonia — 5 times a week
  - Escherichia coli bacteria — 4 times a week
  - Total Phosphorus — 2 times a week
  - Total Nitrogen — 2 times a week
  - Chemical Biological Oxygen Demand — 1 time a week

Moores Creek septic receiving station

Septic Receiving

	Fiscal Year		
	2020	**2021**	**2022**
Individual Transactions	6,515	7,816	6,914
Total Gallons (million)	7.2	8.9	7.8

Numbers do not include Authority use

Wastewater Treatment Plants

Moores Creek Advanced Water Resource Recovery Facility

Facility Class I

Treats all WW from City of Charlottesville and Albemarle County

15 MGD Capacity

Staffed 24 hours/365

2 Operators per shift

4 shifts per week

- Class 1 Operator
- Class 1 Operator
- Class 1 or Less Operator
- Class 1 or Less Operator
- Class 1 or Less Operator
- Class 1 or Less Operator
- Class 1 or Less Operator
- Class 1 or Less Operator
- Class 1 or Less Operator

9 Total Operators

Glenmore Wastewater Treatment Plant

Facility Class III

Treats all WW from Glenmore Subdivision and Adjacent Sewered Areas

0.581 MGD Capacity

Staffed 4 hours/365

1 Operator per shift

2 shifts per week

Scottsville Wastewater Treatment Plant

Facility Class III

Treats all WW from Town of Scottsville and Adjacent Sewered Areas

2 MGD Capacity

Staffed 4 hours/365

1 Operator per shift

2 shifts per week

Stone Robinson Wastewater Plant

Treats all WW from Stone Robinson School

7,000 Gallons/day Capacity

Staffed 1 hour/365

1 Operator per shift

2 shifts per week

- Operator
- Operator

2 Total Operators

Total Wastewater Operators: 16

Relief Operators

- Class 1 or Less Operator
- Class 1 or Less Operator

2 Total Operators

Management Staff

- Class 1 Operator
- Class 1 Operator
- Class 1 Operator

3 Total

Wastewater Staff Licenses

Wastewater License	Number of Operators
Class 1	6
Class 2	5*
Class 3	2
Class 4	-
Unlicensed Trainee	3
Total Wastewater Operators	16

* - most Class 2 Licenses in recent history

Industrial Waste Pre-Treatment Program

Purpose of the program

- Protect the sewer system and the processes in the wastewater treatment plants by having discharge limits

- Required by Environmental Protection Agency and Virginia Department of Environmental Quality

Virginia Pollutant Discharge Elimination System

- VDEQ Requirements:
  - Implement a pretreatment program that complies with the EPA's Clean Water Act of 1972
  - Submit an annual report on the pretreatment program by January 31st of each year

Discharge limits

- Pretreatment program looks at the following constituents:
  - Fats Oils and Greases (FOG)
  - Metals (Manganese, Copper, Lead, heavy metals)
  - Nutrients (Nitrogen and Phosphorus)
  - pH (discharge must be between 6.0 and 9.0)
  - Biochemical Oxygen Demand

Identifying Industrial Users

- Significant Industrial User (SIU)
  - Categorical (metal finishing, semiconductor manufacturing, etc.)
  - Non-categorical (discharges more than 25,000 gal/day or has potential to adversely affect our treatment process)

- Businesses with processes that discharge pollutants of concern to the sewer system
  - Restaurants
  - Breweries, Wineries
  - Dentists
  - Dry Cleaners

Current Industrial Permits

- We have 3 SIUs we are monitoring in the pretreatment program:

- New permits were issued for all 3 on July 1, 2022 and will expire on June 30, 2025.
- Each industry is required to submit a semi-annual report for the periods ending in June and December of each year.

Questions?

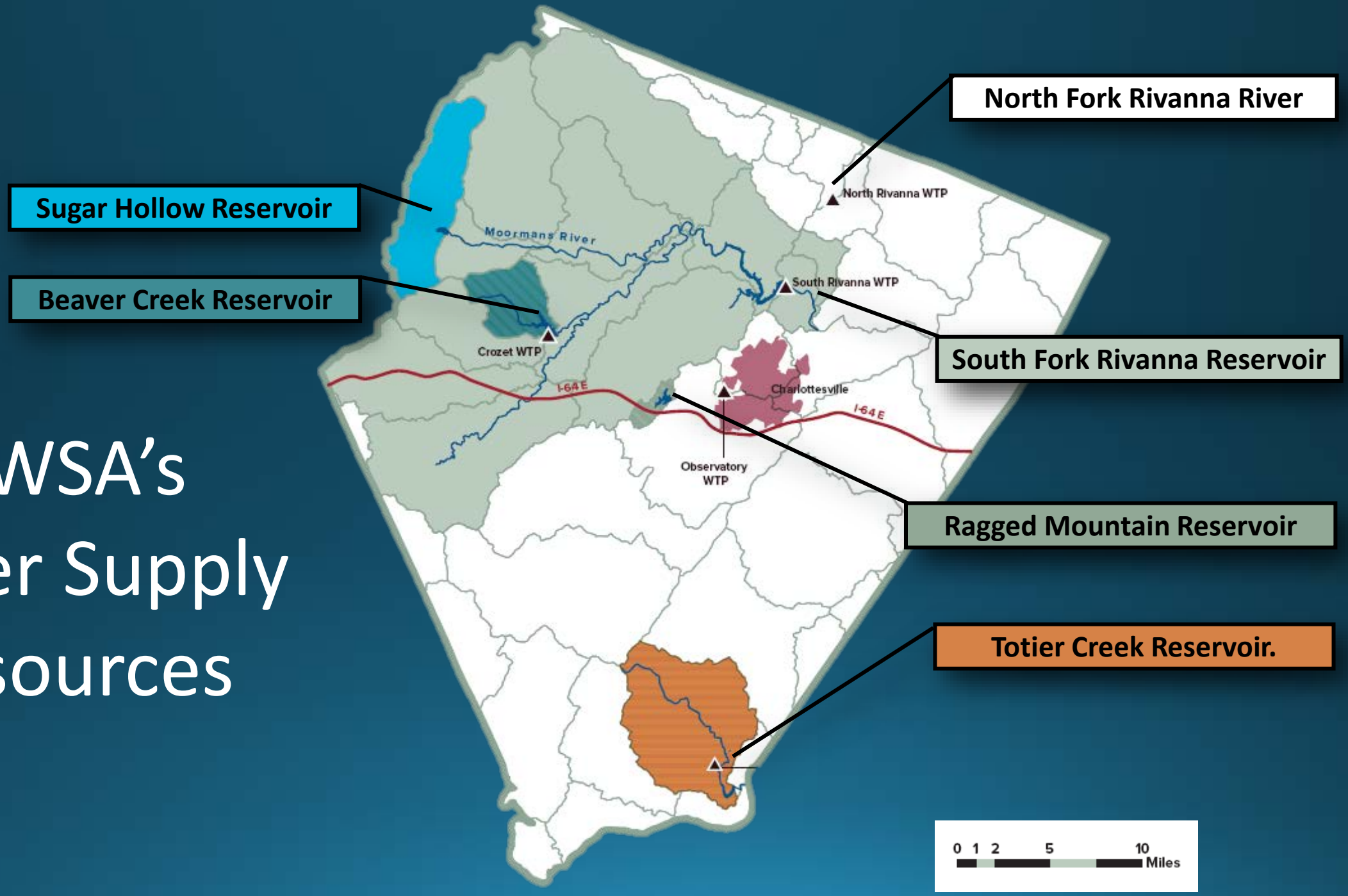
Annual Reservoir Report

Results from 2021

RIVANNA
WATER & SEWER AUTHORITY

- **Presented by:**
- **Andrea Bowles**
  Water Resources Manager
- **August 23, 2022**

RWSA's Water Supply Resources



Reservoir Characteristics

Reservoir	Volume* (MG)	Surface Area (Acres)	Watershed (Sq Miles)
South Fork Rivanna	885	366	259
Ragged Mountain	1,441	170	2
Sugar Hollow	339	47	18
Beaver Creek	500	104	10
Totier Creek	155	66	29

* Data Sources

- South Rivanna 2018 bathymetry
- Ragged Mountain 2018 bathymetry
- Sugar Hollow 2015 bathymetry
- Beaver Creek Reservoir 2016 Bathymetry

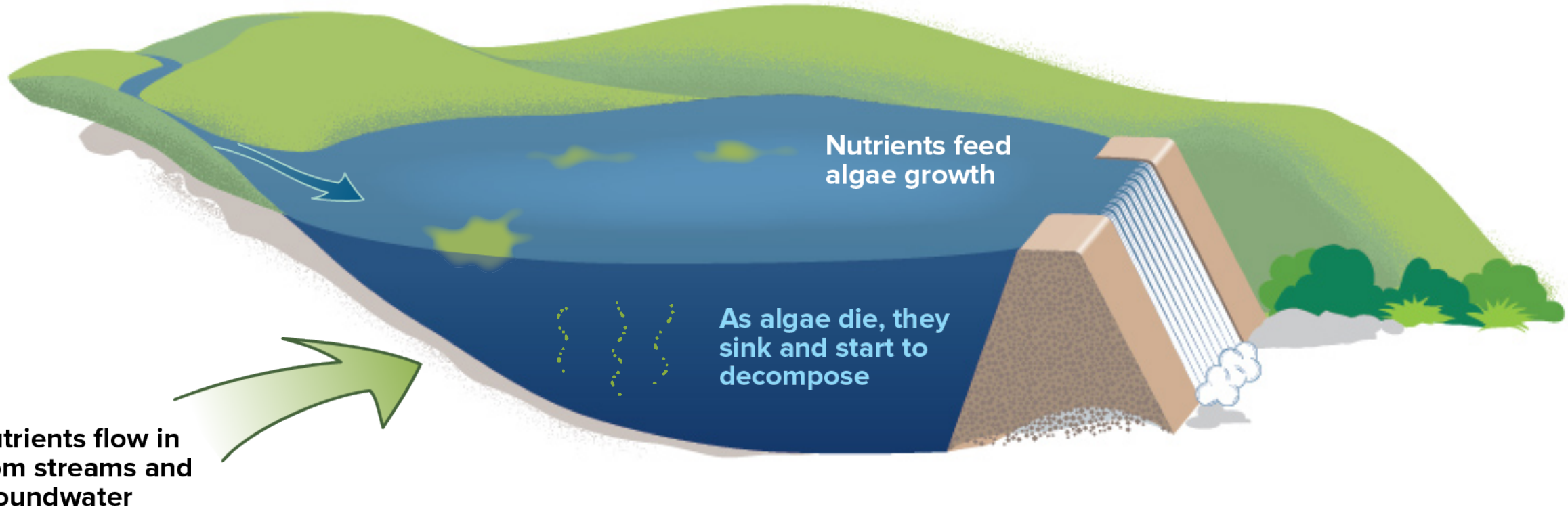
Reservoir Monitoring Program

Program Goal: To collect data to understand the biological processes in our reservoirs and inform water treatment decision-making.

- Established baseline data in 2014
- Annual review of data and program by expert
- Bi-weekly sampling at Urban reservoirs (April-Nov)
- Monthly sampling at SHR and TCR (excluding 2020)
- Valuable information collected which provides a better understanding of each reservoir and in-lake processes
- Currently doing enhanced TP and TN sampling for RM and SFRR
- Use these data to make operational and capital decisions

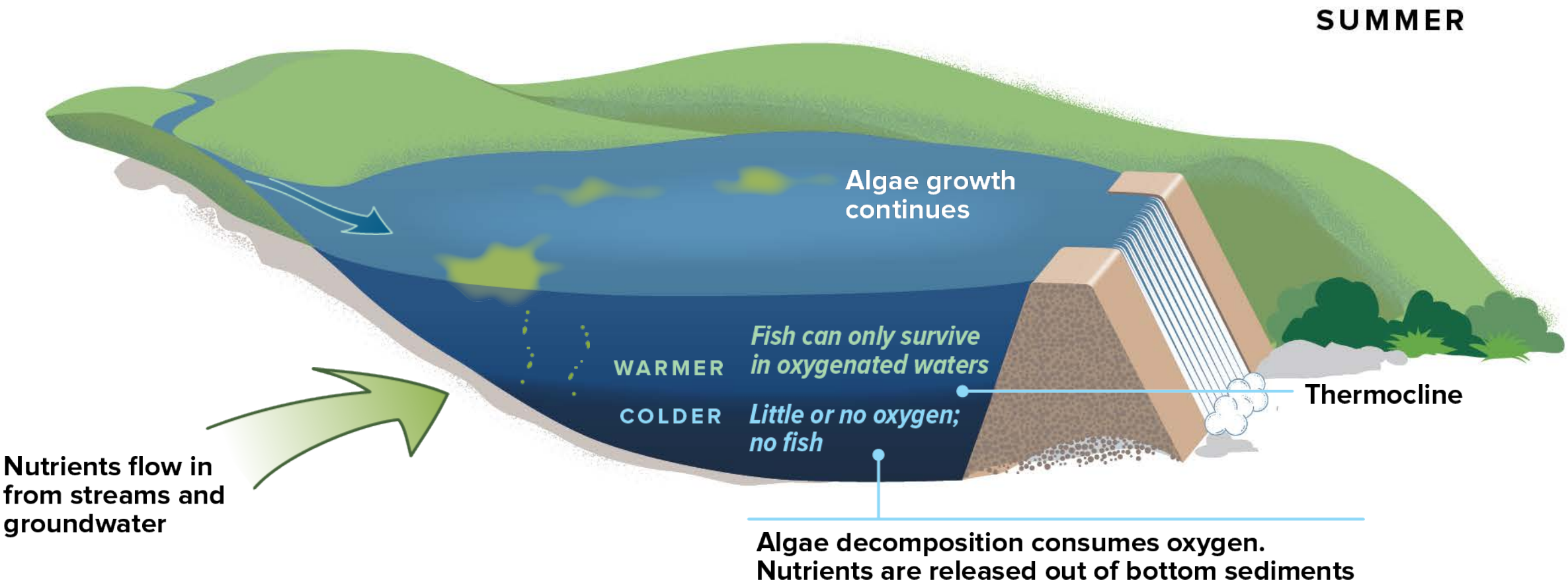
HOW A RESERVOIR CHANGES THROUGH THE SEASONS

SPRING



DiNatale WATER CONSULTANTS

HOW A RESERVOIR CHANGES THROUGH THE SEASONS



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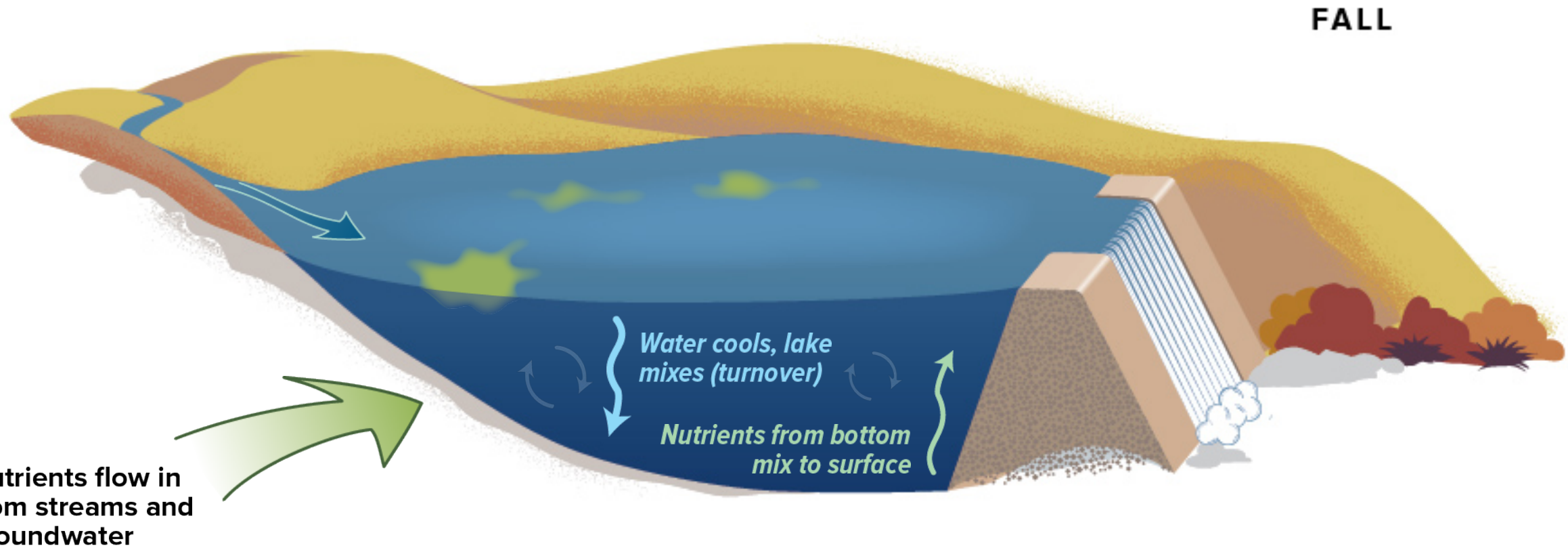

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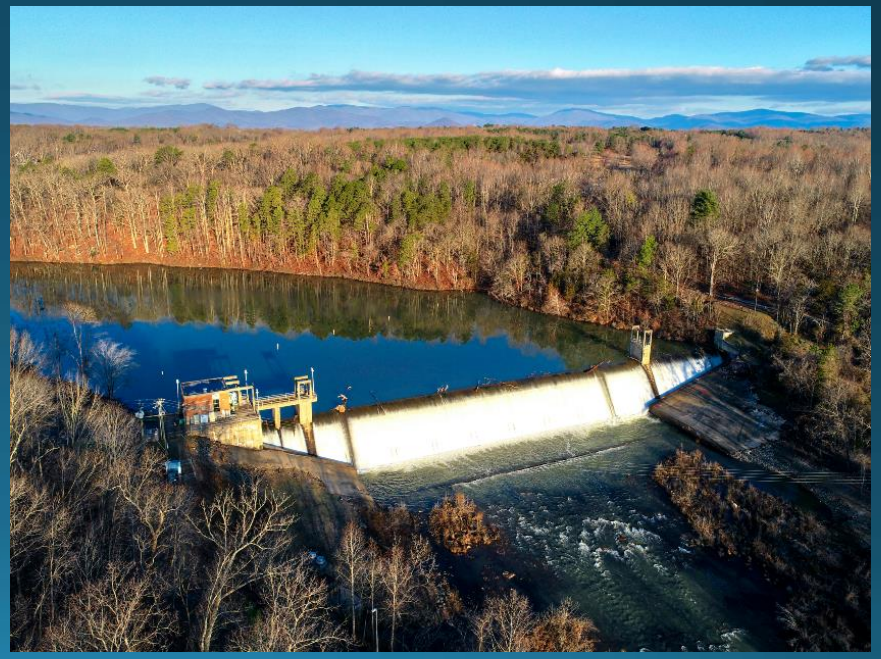
Monitoring Trends

- Beaver Creek Reservoir
  - Stratification - early May at depth of 3m
  - Turnover – early November
  - Reservoir anoxic at depths mid-late May
  - Continued to have abundant nutrients warranting algae treatments. Recommend hypolimnetic oxygenation system.

- South Fork Rivanna Reservoir
  - Run-of-the-River Reservoir
  - Stratification variable each year – May
  - Turnover - early October
  - Largest algae concentrations seen to date requiring treatment
  - Hypolimnion preserved through the year below 6 m.

- Ragged Mountain Reservoir
  - Stratification – May
  - Turnover – late November
  - Water quality improved compared to 2020, greater volume of oxygenated water
  - Recommended taking additional algae samples at 5-6 mm



Number of Algaecide Applications for Control of Blue-green Algae

Year	SR	BC	RM	SH	TC
2014	0	5	2*	0	0
2015	2	4	3*	1	1
2016	1	8	0	0	0
2017	2	5	0	0	0
2018	0	7	0	0	0
2019	2	6	0	0	0
2020	0	5	1	0**	0**
2021	1	8	1	0	0

* Treatments at RM 2014 and 2015 were for green algae blooms

** Not sampled in 2020

2022 Algae Applications

Year	SR	BC	RM	SH	TC
2022	0	5	1*	0	0

* Treatment at RM was for Dinobryon which is a taste and odor producer.
Not a blue green algae

Reservoir Surveillance

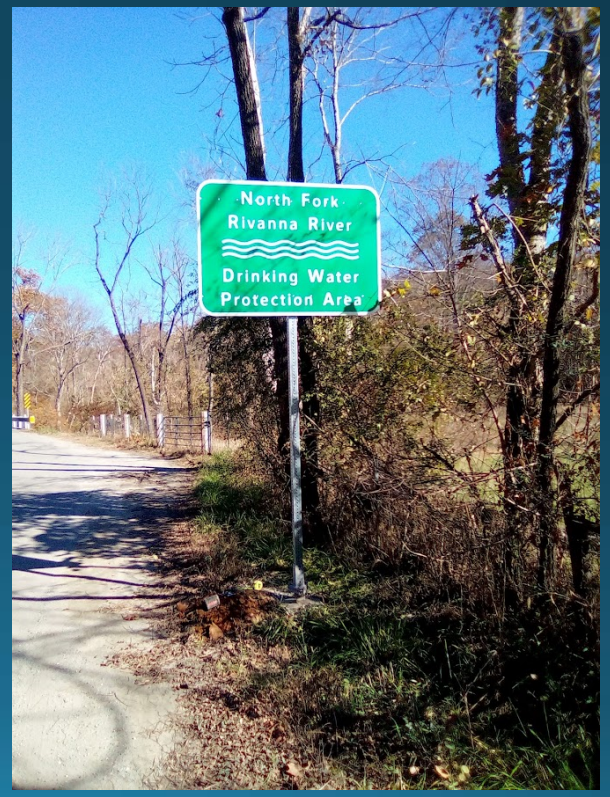
- RWSA conducts boat surveys of our reservoirs
  - BC, SR, RM – twice a year
  - SH, TC – once a year
- Inspecting for:
  - Trash
  - Dump sites
  - Illicit discharges
  - Unauthorized withdrawals
  - Invasive aquatic weeds (hydrilla)
  - Potential Water Protection Ordinance violations

Land Use Management

- Coordinate with City and County on land management around reservoirs
  - Recreational access / boat docks
  - Law enforcement
  - Safety
- Drafted MOU outlining reservoir responsibilities for discussion between City, County and RWSA

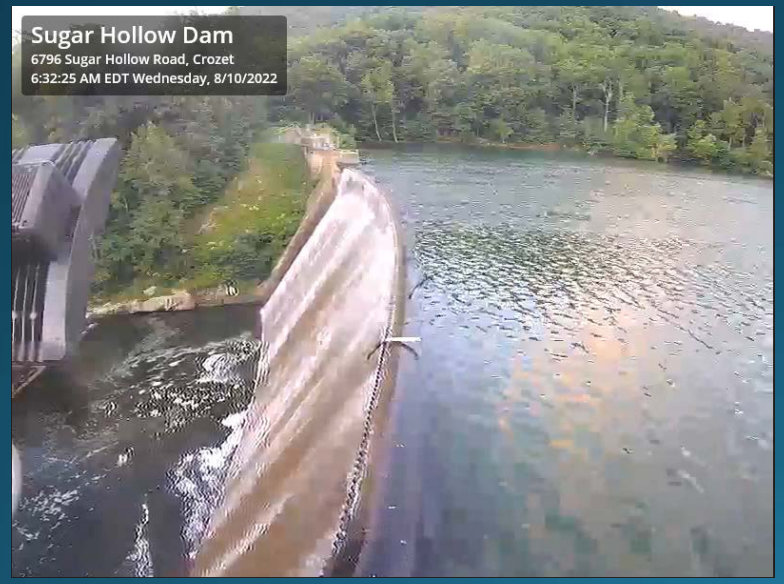
Source Water Protection Initiatives

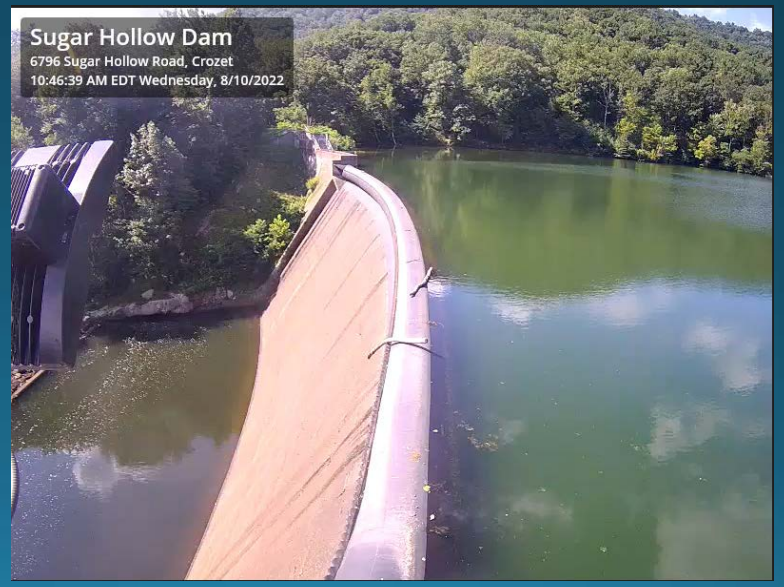
- Placed 6 source water protection signs in three watersheds
- Participate in Rivanna Riverfest with partner organizations
- Participate on City of Charlottesville Climate Action Liaison Committee
- Participate on Rivanna Conservation Alliance Science Advisory Committee
- Participated in County Stream Health Initiative



Sugar Hollow Reservoir MIF

- Minimum Instream Flow (MIF) requirements specify that RWSA monitor the overflows and make changes to the release twice a week. RWSA must begin flow releases the third day after the reservoir has stopped spilling.
- MIF requirements were developed in 2008 in coordination with The Nature Conservancy, state and federal regulatory agencies, interested stakeholders and are designed to mimic natural streamflow conditions. These requirements consider the ecological needs of the Moormans River below the dam.
- The rubber bladder expands and contracts due to sun, air temperature, and water temperature causing it to spill intermittently during the day.





Takeaways

- RWSA has a robust reservoir monitoring program that informs water treatment decision-making, and
- An active Source Water Protection program and collaboration with partners

Questions?