RIVANNA
WATER & SEWER AUTHORITY

Board of Directors Meeting

June 25, 2024

2:15pm

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

BOARD OF DIRECTORS

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

DATE: **JUNE 25, 2024**

LOCATION: **Rivanna Administration Building (2nd Floor Conference Room), 695 Moores Creek Lane, Charlottesville, VA 22902**

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

AGENDA

1. ***CALL TO ORDER***
2. ***AGENDA APPROVAL***
3. ***MINUTES OF PREVIOUS BOARD MEETING ON MAY 28, 2024***
4. ***RECOGNITION***
5. ***EXECUTIVE DIRECTOR'S REPORT***
6. ***ITEMS FROM THE PUBLIC***
   Matters Not Listed for Public Hearing on the Agenda
7. ***RESPONSES TO PUBLIC COMMENTS***
8. ***CONSENT AGENDA***
   a. *Staff Report on Finance*
   b. *Staff Report on Operations*
   c. *Staff Report on CIP Projects*
   d. *Staff Report on Administration and Communications*
   e. *Staff Report on Wholesale Metering*
   f. *Staff Report on Drought Monitoring*
   g. *Approval of FY 24-28 and FY 25-29 Capital Improvement Plan Amendment – Rivanna Pump Station Restoration*

h. *Approval to Amend Professional Engineering Services Work Authorization - Central Water Line Project - Michael Baker International*

9. OTHER BUSINESS

a. *Presentation: Sugar Hollow Reservoir Gate Restoration Update*
Victoria Fort, P.E., Senior Civil Engineer

b. *Presentation: Rivanna Pump Station Submergence: Causation Report*
Jennifer Whitaker, P.E., Director of Engineering and Maintenance

c. *Presentation: PFAS ~ Regulatory and Class-Action Litigation Update*
David Tungate, Director of Operations and Environmental Services

10. OTHER ITEMS FROM BOARD/STAFF NOT ON THE AGENDA

11. CLOSED MEETING

12. ADJOURNMENT

GUIDELINES FOR PUBLIC COMMENT AT RIVANNA BOARD OF DIRECTORS MEETINGS

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

Members of the public requesting to speak will be recognized during the specific time designated on the meeting agenda for "Items From The Public, 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.

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

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

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

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

Rev. September 7, 2022

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RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
May 28, 2024

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, May 28, 2024 at Rivanna Administration Building (2nd Floor Conference Room), 695 Moores Creek Lane, Charlottesville, VA 22902.

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

Board Members Absent: Gary O'Connell.

Rivanna Staff Present: Bill Mawyer, Lonnie Wood, Jennifer Whitaker, David Tungate, Betsy Nemeth, Jacob Woodson, Deborah Anama, Bethany Houchens.

Attorney(s) Present: Valerie Long.

1. *CALL TO ORDER*

Mr. Gaffney convened the May 28, 2024 regular meeting of the Board of Directors of the Rivanna Water and Sewer Authority at 2:44 p.m.

2. *AGENDA APPROVAL*

Ms. Mallek moved to approve the agenda. The motion was seconded by Mr. Pinkston and carried unanimously (6-0). (Mr. O'Connell was absent)

3. *MINUTES OF PREVIOUS BOARD MEETING ON APRIL 23, 2024*

Ms. Mallek moved to approve the minutes. The motion was seconded by Mr. Pinkston and carried unanimously (6-0). (Mr. O'Connell was absent)

4. *ELECTION OF CHAIR, VICE CHAIR, & SECRETARY-TREASURER*

Mr. Pinkston moved to elect Mr. Gaffney as Chair, Mr. Sanders as Secretary Treasurer and Mr. Richardson as Vice Chair. The motion was seconded by Ms. Mallek and carried unanimously (6-0). (Mr. O'Connell was absent)

5. *RECOGNITIONS*

a. *Resolution of Appreciation for Mr. David Ulan*

Mr. Gaffney read the resolution recognizing David Ulan into the record:

"*Whereas, Mr. Ulan has served the public for over 20 years including eight years as a Wastewater Operator for the Rivanna Water and Sewer Authority; and*

"Whereas, over the same eight-year period since 2016, Mr. Ulan has demonstrated leadership in his field and has been a valuable resource to the Authority and its employees; and

"Whereas Mr. Ulan's understanding of the Authority's operation and dedication and loyalty to the Authority has positively impacted the Authority, its customers, and its employees; and

"Whereas, the Rivanna Water and Sewer Authority Board of Directors is most grateful for the professional and personal contributions Mr. Ulan has provided to the Rivanna Water and Sewer Authority and to its customers and its employees; and

"Now therefore, be it resolved that the Rivanna Water and Sewer Authority Board of Directors recognizes, thanks, and commends Mr. Ulan for his distinguished service, efforts, and achievements as a member of the Rivanna Water and Sewer Authority, and presents this Resolution as a token of esteem, with its best wishes in his retirement.

"Be it further resolved that this Resolution be entered upon the permanent Minutes of the Rivanna Water and Sewer Authority."

Ms. Mallek moved to adopt the resolution. The motion was seconded by Mr. Sanders and carried unanimously (6-0). (Mr. O'Connell was absent)

6. *EXECUTIVE DIRECTOR'S REPORT*

Mr. Mawyer stated that he would like to congratulate Quin Lunsford on being selected as the next Executive Director of the Albemarle County Service Authority. He stated that he welcomed Mr. Lunsford to their group, and he will officially become a Board Member in July.

Mr. Mawyer stated that he wanted to acknowledge Robbie McMullen and Chris Ward for passing their Class 1 Wastewater Operator License. He stated that eight staff members in the Maintenance department had completed mechanic training courses recently. He stated he wanted to congratulate Jennifer Whittaker, the Director of Engineering and Maintenance, on becoming a 2024 graduate of the Charlottesville Regional Chamber of Commerce Leaders Lab of Greater Charlottesville.

Mr. Mawyer stated that May 31 was National Dam Safety Awareness Day and that their Senior Engineer, Ms. Fort, would provide information about our reservoir dam program in December. He stated that they manage six dams in the area - five for water supply and one for stormwater management at the Lickinghole basin near Crozet.

Mr. Mawyer stated that the work on the Rivanna Pump Station restoration was ongoing. He stated that the independent consultant had completed a draft causation report, which they had reviewed and provided comments. He stated that it would be forwarded to their property insurance the following week. He stated that the draft report provided data from SEH Engineering regarding the damage at the Rivanna Pump Station. He stated that they would provide a more detailed report to the Board next month. He stated that they would review the report with their property insurance company and confirm causation and coverage details. He

stated that the insurance document was extensive and required careful review to fully understand what was covered, as well as the amount of coverage involved.

Mr. Pinkston asked if there was a clear story that emerged from the events.

Mr. Mawyer stated that they had concluded their discussion with SEH and planned to meet with the insurance company to review it before delving into it in detail. He stated that they will do so as soon as they receive concurrence from VRSA, their property insurance carrier. He stated that a Technical Advisory Committee consisting of consultant engineers and contractors was convened to discuss how repairs to the pump station might proceed.

Mr. Mawyer stated that the group came up with some good ideas regarding the pumps. He stated that their plan was to reuse the submerged pumps, which will be rebuilt, while replacing the pump motors with new ones, the electrical driving portion of the pump. He stated that according to the manufacturer and their consultants' review, this was the current plan for the six pumps.

Mr. Mawyer stated that at the beginning of May, they experienced some misfortune at their two primary clarifiers. He stated that the primary clarifiers provide wastewater treatment by slowing the flow to allow solids to settle at the bottom of the clarifier basin. He stated the clarifiers were covered with aluminum to minimize odors in the area, and large pipes above the covers pull a vacuum under the cover to a silo, where they clean the air as part of their odor minimization program.

Mr. Mawyer stated that their contractor working on the major electrical project at Moores Creek made an error, causing the clarifiers to run backward. He stated that underneath the covers are arms that move sludge to the center of the clarifier before it is pumped over to their digesters. He stated that as a result, the clarifier arms ran backwards, causing damage to them. He stated that their consultant and contractors managed to get clarifier number one back into service. He stated that they expect clarifier number two to be operational in a couple of weeks.

Mr. Mawyer stated that these clarifiers remove nutrients, such as phosphorus and nitrogen, from the wastewater, and there are requirements in their VDEQ permit related to how much nitrogen and phosphorus they can discharge into Moores Creek. He stated that it was an annual permit that they calculate how many pounds they discharge at the end of the year. He stated that they initially had concerns that without the clarifiers in operation, they would be challenged to meet the permit requirements. He stated that due to the quick repairs implemented, they were now confident that their compliance with the permit will not be a problem.

Mr. Mawyer stated that no wastewater was discharged because of the clarifier issue. He stated that they have communicated with the VDEQ regulator and the community about potential odors. He stated that with a strategic plan priority on communications and collaborations, they will continue to engage in such activities. He stated that recently they gave an annual infrastructure update presentation to the Crozet Community Advisory Committee. He stated that students from St. Anne's Belfield helped them remove tree tubes from young trees at their mitigation site located at the front of Moores Creek, which was part of the mitigation for environmental impacts caused by building the Ragged Mountain Dam. He stated that they also

participated in the Rivanna River Fest.

Mr. Mawyer stated that the bladder deflation at Sugar Hollow occurred in January. Since then, they had continued meetings with a community group of Sugar Hollow residents. He stated that these residents discussed audible alarms that might be installed at Sugar Hollow to alert people if there was a sudden failure of their equipment. He stated that they also met with Jeremy Evans, the Emergency Management Coordinator with the City's Office of Emergency Management. He stated that Mr. Evans visited their facilities virtually to learn more about Rivanna and collaborate on emergency preparations.

Mr. Mawyer stated that they provided a windshield and virtual tour for Greene County Director of Utilities, Dave Hundelt, showcasing their facilities and discussing those operated by Greene County as a utility. He stated that they met with Senator Deeds at his request, who had concerns about the precipitate experienced in Glenmore and at least one house in Farmington. He stated that they provided an update on their research and investigation of this issue for the limited scope of affected houses. He stated that Senator Deeds seemed satisfied with the information they provided.

Mr. Gaffney asked if there was an update on the sediment in Glenmore.

Mr. Mawyer stated that they were conducting research in the laboratory with their consultant to determine the specific chemistry mix required for the precipitate sediment. He stated that they had changed the corrosion inhibitor a few years ago, which led to speculation that it may have caused the sediment. He stated that they have not yet established this as the reason. He stated that the consultant was working to identify the actual cause of the issue.

Mr. Mawyer stated that this problem had been limited to hot water systems. He stated that they are confident that water age played a role in this situation. He stated that Glenmore, located at the eastern end of the water distribution system was the farthest point from the South Rivanna Water Treatment Plant. He stated that the water travels through Pantops Tank and another tank near Glenmore before reaching residents via long water mains within the community.

Mr. Mawyer stated that one of the primary residence with concerns about sediment was located at the end of a cul-de-sac. He stated that factors such as water age, hot water heaters, and hot water recirculation continue to be common elements of this sediment issue. He stated that in about a month, they hoped to have a better answer regarding what may be causing the sediment.

7. *ITEMS FROM THE PUBLIC*

There were none.

8. *RESPONSES TO PUBLIC COMMENTS*

There were no items from the public, therefore, there was no response.

9. *CONSENT AGENDA*

a. Staff Report on Finance

b. Staff Report on Operations

c. *Staff Report on CIP Projects*

d. Staff Report on Administration and Communications

e. Staff Report on Wholesale Metering

f. Staff Report on Drought Monitoring

g. Approval of Fiscal Year 2024-2025 Pay Scale Adjustment

h. Approval of Personnel Management Plan Update

Ms. Mallek stated that in the past, suggestions had been made to use only Moormans River water for urban areas. She stated that it was impossible to meet that demand due to limited water supply and seasonal restrictions. She stated that they needed all parts of their system. She stated she appreciated learning about Rivanna's progress on cybersecurity, which might be discussed later under CIP. She stated that at the EPA meeting last Tuesday, cybersecurity was the main topic for local government advisory committees, focusing on behaviors that threaten over 70% of water utilities in the country.

Ms. Mallek stated that the most affordable preventions were also the greatest dangers. She stated that federal licensors were taking this seriously, mentioning SCADA as something necessary. She stated she was thankful for the well-updated training protocols and being part of a combined system with enough customers to afford these measures. She stated that in contrast, communities with fewer customers struggle with staffing and security. She stated that in the small utility organizations, one person may wear 16 hats and try to handle security too.

Ms. Mallek moved to approve the consent agenda. The motion was seconded by Mr. Pinkston and carried unanimously (6-0). (Mr. O'Connell was absent)

10. *OTHER BUSINESS*

a. Presentation and Vote to Consider Approval of the FY 2025-2029 Capital Improvement Plan

Jennifer Whitaker, Director of Engineering and Maintenance, stated that the six key goals of their Capital Improvement Program (CIP) for the next five years were as follows: 1) Reliability - ensuring compliance or exceeding regulatory mandates; 2) Addressing climate change by enhancing capacity, reliability, and resilience of drinking water infrastructure; 3) Improving critical drinking water infrastructure in areas like the northern end of the County; 4) Enhancing their ability to address emerging contaminants, such as PFAS; 5) Leveraging partnerships with other utilities, agencies, VDOT, UVA, City utilities, and the County; and 6) Completing the CIP in an environmentally protective and financially responsible manner.

Ms. Whitaker stated that the CIP consisted of 64 projects with a total cost of $371 million. She stated that about 60% of that was for urban water, which amounted to $223 million, and approximately 21% was for urban wastewater. She stated that around 19% of the total five-year plan was for non-urban projects as well as some shared projects like safety and security. She stated that the capital plan from the previous year was about $326 million. She stated that the team had completed projects valued at almost $45 million.

Ms. Whitaker stated that in FY 29, they added another $47 million in projects as well as seven new projects. She stated that although the value for these new projects was relatively low, it was due to early phase estimating for projects that could increase in upcoming years. She stated that they had accelerated the South Rivanna to Ragged pipeline project last year, but the full financial implications were reflected here. She stated that the inflation and scope addition was smaller than the previous years, amounting to approximately $25 million.

Ms. Whitaker stated that the first line on her slide showed the capital improvement five-year program's funding plan. She stated that they had already paid $14.4 million, and existing debt proceeds were $9.4 million. She stated that there was about $14 million in cash reserves. She stated that $25 million was expected from grants, but an extra $2.8 million in grant funds had been received since the chart was published. She stated that with the new position of grants and sustainability coordinator joining their team, they aimed to increase grant funding over time. She stated that this left them with about $308 million in new debt for future projects. She presented a payment plan chart showing their 15-year planning horizon.

Ms. Whitaker stated that there was a peak in expenses during FY 26, 27, and 28, which was mainly due to community water supply projects. She stated that there was a projection that the funding for these projects will taper off; however, this may change depending on regulatory mandates. She stated that these are the projects they will be working on, including those currently underway.

Ms. Whitaker stated that operation, maintenance, and safety needs involved addressing things like steel and concrete facilities that are 50 years old and require rehabilitation. She stated that painting was another significant area they needed to address. She stated that regulatory updates at Beaver Creek Dam, Buck Mountain property dam remediation, North Rivanna water treatment plant decommissioning were all regulatory driven. She stated that there were resiliency and redundancy projects.

Ms. Whitaker stated that some projects on the list had grant funding as part of their funding strategy. She stated that the goal was to have more projects with grant funding to offset costs. She stated that the community water supply plan was the largest component of the five-year CIP. She stated that many of the projects on this map were predominantly funded within that five-year period and were anticipated to bid and begin construction between late summer 2024 and fall of 2025.

Ms. Mallek acknowledged that the green spike within the 25-year funding chart was concerning. She stated that waiting until things were leveled out, as done 10 to 20 years ago, would have resulted in cost increases that could potentially consume all available resources. She stated she was grateful for the enthusiasm and readiness to proceed with this action. She stated that this decision would eliminate uncertainty regarding numerous aspects.

Mr. Gaffney stated that these initiatives had been part of the water supply plan for 20 years, and it was now time to complete them.

Mr. Pinkston moved to approve the FY 2025-2029 CIP, totaling $371,000,436. The motion was seconded by Ms. Mallek and passed unanimously (6-0). (Mr. O'Connell was absent)

b. Presentation, Public Hearing, and Vote to Consider Approval of the Resolution to Adopt the FY 2024- 2025 Rate Schedule, and Approval of the FY 2024-2025 Budget

Lonnie Wood, Director of Finance and Information Technology, stated that the main areas of focus for the budget were: fully funding the debt service charges driven by the five-year CIP; establishing a framework for resources to achieve their strategic goals and plan; fully funding certain operating costs which had been lagging behind budget estimates; and translating these objectives and priorities into reasonable charges for the City Utilities and the ACSA.

Mr. Wood stated that the budget was increasing by $7.4 million, or 15.6%, mainly due to debt service of $4.5 million and a roughly $3 million increase for operating charges. He stated that the budget was roughly split 50-50 between debt service and operations; however, this was the first year where debt service had surpassed the operating budget.

Mr. Wood stated that the largest of the revenue increases was the customer charges at $6.3 million. He stated that although the ACSA had a larger share in terms of dollars, their percentage increase was slightly smaller, at 13.7%. He stated that the overall increase was 14%, with the City's being 14.5%. He stated that estimates of interest had been factored in, as they had increased over the past year and should continue to do so unless rates change.

Mr. Wood stated that the charge given to the Solid Waste Authority for joint administrative support increased by approximately $124,000. He also stated that septage acceptance had a small increase of $50,000, while all other revenues decreased, mainly due to the use of reserves and a slight reduction in nutrient credit payments. He stated that debt service was the largest cost driver, accounting for 60% of the total increase, and personnel costs were the next largest.

Mr. Wood stated that utilities and chemicals were the two main areas of budget lag that were discussed in previous meetings; they had not been able to keep up with these expenses due to their unpredictability. He stated that the costs had now stabilized, and this represented the budget catching up to actual expenses for the past couple of years. He stated that the remaining 7% of the increase included IT system increases, lab testing for PFAS and other emerging contaminants, as well as insurance, professional services, and other changes.

Mr. Wood stated that their personnel costs were increasing by $1.2 million, and this was due to a 3% COLA and 2% merit increase, amounting to a $425,000 increase. He stated that there were four additional positions that were partially funded throughout the year at $205,000. He stated that fully funding of the positions approved last year for $163,000 was necessary. He stated that the four new positions in the budget included the Deputy Executive Director. He stated that this position has been contemplated and discussed several times in the succession management plan.

Mr. Wood stated that the Deputy Executive Director's role was to manage the Finance, Engineering, and Operating Division Directors. He stated that the Grants and Sustainability Coordinator will assist in acquiring funding sources from local, state, federal, or private sources.

He stated that the Outreach and Communications Coordinator will focus on marketing and public outreach, managing the website and social media pages. He stated that the Wastewater Operator will augment the current staff of 16.

Mr. Wood stated that the financial forecast for the next five years included figures for FY 2025, with estimates for FY 2026-29 provided to the City and ACSA annually as a benchmark. He stated that although increases were high, they remained fairly stable each year. He stated that the capital budget for next year will be $79 million, and the five-year CIP was $371 million. He stated that the new debt needed over the five-year period was $308 million.

Mr. Gaffney opened the public hearing for comments from the public.

Neil Williamson, Free Enterprise Forum, stated that although his organization did not have a position on this budget, they did have an opinion regarding Rivanna's approach to the community's Water Supply Plan. He stated that previously, the Piedmont Environmental Council, the Free Enterprise Forum, and the Chamber of Commerce all signed a letter in support of the plan, which was a hard-fought effort that ultimately gained community-wide approval. He stated that although governmental processes can be slow, this was often beneficial.

Mr. Williamson stated that currently, funding for the plan was being allocated with the peaks seen in the CIP indicating significant financial commitment. He stated that despite these challenges, the Free Enterprise Forum remained supportive of the plan. He stated that they appreciated the transparency demonstrated by both RWSA and ACSA as they anticipated these developments. He stated that the Water Supply Plan was essential for the community's needs. He stated that the Free Enterprise Forum endorsed the continued adaptation and progression of the community's Water Supply Plan.

There was no one else wishing to comment, either in person or remotely, so the public comment was closed and the matter brought back before the Board.

Ms. Mallek moved to adopt the FY 2024 – 2025 rate schedule and the FY 2024 – FY 2025 budget. The motion was seconded by Mr. Pinkston and passed unanimously (6-0). (Mr. O'Connell was absent)

c. Presentation and Roll Call Vote to Consider Issue of Revenue Bond

Mr. Wood stated that they had reached the point in the capital plan where they had to go to market and issue debt financing. He stated that the last debt financing was in 2021, with a $40 million bond issue, and there were approximately $6 million left in the proceeds account for that, restricted mainly to the Observatory Water Treatment Plant, Airport Road pump station and South Rivanna Water Treatment Plant improvements. He stated that these funds could not be used for any other projects.

Mr. Wood stated that they did not want to over-proceed themselves in bond issues because the IRS had a regulation requiring bond proceeds spend-down rules within a two-year period. He stated that this left them with $112.8 million in project costs addressed in this bond issue, with $20 million funded through cash reserves or other funding sources. He stated that they

anticipated receiving insurance proceeds for the Rivanna pump station restoration project. He stated that the City had signed an agreement to fund a portion of the Emmet Street Water Line betterment project.

Mr. Wood stated that in April, they applied to the VRA summer pool loan program, which was an efficient way to obtain bond proceeds. He stated that the VRA bundles bond requests from several localities which provides an economy of scale for underwriting fees and issuance costs. He stated that managing and administering the bond over its 30-year life was easier through this method. He stated that to determine the not-to-exceed amount of the bond, they worked backward by starting with the net proceeds needed, $92.8 million, adding the cost of issuance for local costs, $150,000, a $275,000 contribution to a reserve allowance for VRA deposits, and VRA's cost of issuance and underwriting fees, $850,000. He stated that this resulted in a total bond issue amount of $94 million.

Mr. Wood stated that VRA recommended adding a 5% allowance for discount pricing, which may affect bond prices based on market demands. He stated that currently, they operated in a premium market; however, this was merely a cautionary note. He stated that this indicated that a total not-to-exceed amount of $99.1 million was necessary.

Christopher Kulp, Bond Counsel from Hunton Andrews Kurth LLP, stated that the Resolution before the Board would approve the form of the basic financing documents. He stated that bonds were being issued pursuant to a master trust agreement, and they were currently on their 33rd supplement. He stated that each time a separate series of bonds was issued, a new supplemental agreement had to be entered, containing the basics for that particular bond issue. He stated that this fell within the context of the larger master trust agreement. He stated that VRA required a separate loan agreement, but most provisions and covenants in it refer to the master trust agreement.

Mr. Kulp stated that the documents were not finalized and still needed to be reviewed. He stated that they will continue working with VRA to finalize the basic provisions in terms of the financing agreement. He stated that the resolution also included provisions approving the basic parameters of the bond issue and the principal amount not-to-exceed-figure. He stated that they could lower the amount and inform VRA that depending on certain project costs and insurance, some of the topics discussed earlier may be resolved.

Mr. Kulp stated that as a result, if they can decrease the required dollar amount to borrow, the loan amount will be reduced. He stated that they could request VRA to decrease the requested amount but would not issue more than $99.1 million with a maximum maturity parameter of 2054 and a true interest cost parameter of no more than 5.5%. He stated that as part of the resolution, they requested delegated authority to officers and administrative staff, executive staff to finalize, approve, and sign the documents.

Mr. Kulp stated that VRA issued bonds on a tax-exempt basis, benefiting all borrowers within the program with those rates. He stated that local borrowers issue taxable bonds technically, but VRA requested that local borrowers not to do anything affecting the tax status of the bonds. He stated that the basic arbitrage and private use covenants were the primary focus, and they were

not an issue for the Authority. He stated they were confident that the Authority can satisfy those covenants.

Mr. Kulp stated that the authority had carried out other financing through VRA. He stated that these documents were quite similar to others. He stated that in terms of substance, they were not doing anything different from what the Authority had previously agreed upon in past financings.

Mr. Wood stated that last month, they approved a reimbursement resolution related to this. He stated that VRA's timeline on this issue pushed them to address it earlier than anticipated, so they presented the bond documents this month. He stated that in terms of the reimbursement aspect of that matter, they had already spent $15.8 million of funds for these projects. He stated that upon closing the bond in August, they will reimburse themselves a significant portion of this cost, which will restore cash balances to the necessary levels.

Ms. Mallek moved to authorize the issuance, sale, and award of bonds by the Rivanna Water and Sewer Authority for its taxable regional water and sewer system revenue bond in a principal amount not to exceed $99,100,000, and providing for the form, details, and payment thereof. The motion was seconded by Mr. Pinkston and passed unanimously (6-0). (Mr. O'Connell was absent)

d. Presentation: Buck Mountain Property Update and Sale of 1706 Buck Mtn. Rd.

Bethany Houchens, Water Resources Coordinator, stated that this was an update on the Buck Mountain property. She stated that the Buck Mountain properties were purchased in the 1980s with the intention to build a water supply reservoir; however, due to unforeseen circumstances, they were unable to do so. She stated that the spiny mussel found on the property was protected by the EPA. She stated that there were approximately 1,300 acres, around 600 of which have deed restrictions, mostly stream buffers around the Piney River and Buck Mountain Creek. She stated that in total, there were 38 parcels.

Ms. Houchens stated that in 2019, it was decided that a master plan was needed to create a cohesive strategy for managing all these properties. She that the properties were added to the master plan in 2020 and included a list of the site's history regarding land use, constraints, and potential infrastructure opportunities. She stated that as of now, 21 of the parcels had been leased, totaling around 735 acres and generating approximately $11,000 in revenue annually for Rivanna.

Ms. Houchens stated that in April of 2022, the Board approved criteria for selling Buck Mountain properties. She stated that these included only selling properties above the elevation of 475 feet, which was the planned reservoir level plus 10 feet of buffer. She stated that they will offer the properties for sale to the public through a sealed bidding process at a minimum fair market value and conduct a public hearing by the Board before executing a contract with the highest responsive bidder.

Ms. Houchens stated that in 2022, they sold the 1880 Buck Mountain Road property. She stated that the property was nine acres, which was divided into a separate lot with 2.2 acres that included the house built in the late 1800s. She stated that the highest bid was $136,501. She

stated there was another house on a property that recently reverted back to Rivanna's stewardship following the owner's passing. She stated the Authority would like to subdivide and sell this property as they did with the Elliott house at 1880 Buck Mountain Road.

Ms. Houchens stated that they purchased the property and house in 1985 for $67,500 and now it consisted of a total of 6.88 acres. She stated that the 2024 land assessment was around $138,000, and the improvements were assessed at $156,000. She stated staff recommended subdividing the property with the house on it and offering it for sale to the public.

Ms. Mallek clarified that this was the house on the west side of the road on a crest. She stated she was surprised by how steeply the elevation changed to the northwest. She stated she now understood why they wanted to retain the rear of the parcel. She stated she was initially concerned about subdividing and adding another house, but this answered her question.

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

There were none.

12. ***CLOSED MEETING***

There was none.

13. ***ADJOURNMENT***

At 3:41 p.m., Mr. Pinkston moved to adjourn the meeting of the Rivanna Water and Sewer Authority. Ms. Hildebrand seconded the motion, which passed unanimously (6-0). (Mr. O'Connell was absent)

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: **JUNE 25, 2024**

STRATEGIC PLAN PRIORITY: EMPLOYEE DEVELOPMENT

New Credentials for Team Members

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

- David Heintges, Mechanic – Commercial Driver's License
- Garrett Carver, Mechanic – Commercial Driver's License

STRATEGIC PLAN PRIORITY: PLANNING AND INFRASTRUCTURE

Infrastructure Improvements

We plan to issue an Invitation for Bids (IFB) for 8 construction projects with a total budget of about $155 M by the end of December 2024. We expect construction to begin on site in about 4 – 6 months after the IFBs are issued to complete the administrative award and notice to proceed process. In calendar year 2025, we expect to issue IFBs for 5 additional major construction projects with a total budget of about $145 M. Completion of these significant projects will be a major focus of the Authority for the next 5 years.

Project	IFB	Budget ($M)
South Fork Crossing Pipe	August	$7.3
Baling Facility	August	$6.4
RMR to OBWTP Pipe	September	$46.0
Crozet PS Rehab	September	$10.4
MC Building Structural	October	$11.3
MC Building Upfits	October	$7.5
MC Admin Renovation	November	$20.0
Central Water Line	December	$47.0
Total:		$155

Primary Clarifiers at Moores Creek

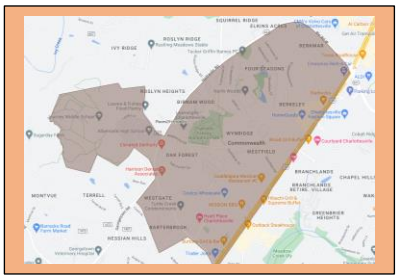
On May 8th, the contractor completing our major 5Kv electrical system replacement project at Moores Creek incorrectly modified the electrical system for our 2 primary clarifiers resulting in structural damage to the rake and scum arm connections in those basins. Through the efforts of staff and our consultant (Hazen) and contractor (MEB), repairs to one clarifier have been completed and the clarifier is back in operation. Repairs to clarifier #2 will be completed by August. Excess wastewater will be stored in the equalization basins until the repairs have been completed.

STRATEGIC PLAN PRIORITY: COMMUNICATION AND COLLABORATION

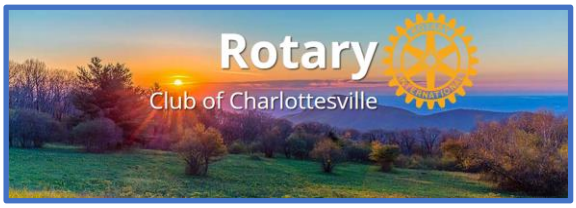
Community Outreach

Places 29 – Hydraulic Community Advisory Committee

Jennifer Whitaker, Director of Engineering and Maintenance gave a presentation to the Places 29 – Hydraulic Community Advisory Committe on June 10 and shared information about RWSA and area specific projects.



Rotary Club of Charlottesville



Jennifer Whitaker, Director of Engineering and Maintenance presented to the Rotary Club of Charlottesville on June 11th and discussed the Regional Water and Wastewater System, the community's Water Supply Plan and upcoming RWSA construction projects.

STRATEGIC PLAN PRIORITY: ENVIRONMENTAL STEWARDSHIP

Regional Hazard Mitigation Working Group

Thomas Jefferson Planning District Commission
Regional Vision • Collaborative Leadership • Professional Service

Staff participated in the Thomas Jefferson Planning District Commission's (TJPDC) Regional Hazard Mitigation Plan (HMP) Working Group annual meeting on May 29th. This meeting focused on updates to the Virginia HMP, review of major disasters and hazards that impacted our area over the past year, and provided updates to our Regional HMP. Our Board adopted the TJPDC Regional HMP on July 25, 2023, which is required for many of our grant applications.

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MEMORANDUM

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

FROM: **LONNIE WOOD, DIRECTOR OF FINANCE & INFORMATION TECHNOLOGY**

REVIEWED: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **APRIL MONTHLY FINANCIAL SUMMARY – FY 2024**

DATE: **JUNE 25, 2024**

Financial Snapshot

The Authority has an overall net deficit of $2,760,900 for the first ten months of this fiscal year due to unforeseen Urban Wastewater operations and maintenance expenses, mostly related to the Rivanna Pump Station restoration. Total revenues (operating and debt service) are $1,657,800 over budget estimates, which is helping to offset the overrun in expenses. Urban Water flows and operations rate revenue are 0.12% above budget estimates, and Urban Wastewater flows and operations rate revenue are 7.64% above budget estimates. Total expenses are $4,418,700 over budget estimates. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	$ 8,607,577	$ 9,580,668	$ 2,380,360	$ 20,568,605
Expenses	(8,909,415)	(12,212,229)	(2,412,648)	(23,534,292)
Surplus (deficit)	$ (301,838)	$ (2,631,561)	$ (32,288)	$ (2,965,687)
Debt Service				
Revenues	$ 9,268,015	$ 8,649,634	$ 2,251,075	$ 20,168,724
Expenses	(9,180,716)	(8,547,190)	(2,235,995)	(19,963,901)
Surplus (deficit)	$ 87,299	$ 102,444	$ 15,080	$ 204,823
Total				
Revenues	$ 17,875,592	$ 18,230,302	$ 4,631,435	$ 40,737,329

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 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 total operating revenues through April are $897,300 over the prorated annual budget estimates, and operating expenses are over budget by $3,863,000, resulting in a net operating deficit of $2,965,700. The following comments explain most of the other budget vs. actual variances.

A. Annual and Quarterly Transactions - Some revenues and expenses are over the prorated year-to-date budget due to one-time receipts of revenues for the year and quarterly or annual payments of expenses. These transactions appear to have significant impacts on the budget vs. actual monthly comparisons but usually even out as the year progresses. Septage receiving support revenue of $109,440 is billed to the County annually in July. Annual payments are made in the first quarter for certain maintenance agreements and for employer contributions to employees' health savings accounts. The annual payment to UVA ($175,000) for the Observatory WTP lease was made in September. Insurance premiums are paid at the beginning of each quarter.
B. Personnel Costs (Urban Water, Urban Wastewater, Maintenance – pages 2,5,9) – Some department's salaries are higher than budgeted due to pay increases for plant operators who achieved higher licenses. Urban Water also had some large final leave payouts this fiscal year. The Maintenance department has exceeded the annual budget for overtime and holiday pay due to emergency maintenance needs of the Rivanna Pump Station.
C. Other Services & Charges (Urban Water, Crozet Water, Scottsville Water, Urban Wastewater – pages 2 to 5) – Utility costs are running higher than originally estimated for Urban Wastewater and all Water departments. Urban Water incurred $43,900 in unbudgeted watershed management expenses, and Scottsville Water's laboratory analysis fees are running high due to PFAS testing. Urban Water, Crozet Water, and Urban Wastewater paid unbudgeted annual DEQ permit application fees of $25,000, $15,000, and $10,650, respectively.
D. Equipment Purchases (Urban Water – page 2) Urban Water incurred $12,700 unbudgeted equipment rental costs related to the water line break on Rt 29N.
E. Communications (Administration – page 8) – Telephone and data service costs for the Administration department are $24,800 over the annual budget.
F. Professional Services (Urban Wastewater, Administration – pages 5,8) - Urban Wastewater has spent $29,900 more than the annual budget on engineering and technical services costs related to a wastewater BOD sampling study. The Administration department $23,200 in unbudgeted subcontract SCADA services in this category.
G. Operations & Maintenance (Urban Water, Urban Wastewater – page 2,5) – Urban Wastewater has incurred unbudgeted emergency pipelines and appurtenances costs related to the mitigation and bypass pump installation and operations for the Rivanna Pump Station incident totaling $3 million through April. Chemical costs are exceeding the budget in the Urban Water and Urban Wastewater cost centers.
H. Information Technology (Scottsville Water – page 4) - Scottsville Water is over budget on SCADA costs related to upgrading PLC and communication hardware at the "795" water storage tank previously owned by ACSA.

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024
Fiscal Year 2024

Consolidated Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2024*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 22,727,003	$ 18,939,169	$ 19,579,746	$ 640,577	3.38%
Lease Revenue		124,000	103,333	116,750	13,417	12.98%
Admin., Maint. & Engineering Revenue		781,000	650,833	667,445	16,612	2.55%
Other Revenues		647,267	539,389	612,777	73,388	13.61%
Use of Reserves (Water Resources Fund)		80,000	66,667	80,000	13,333	20.00%
Interest Allocation		47,250	39,375	179,332	139,957	355.45%
Total Operating Revenues		**$ 24,406,520**	**$ 20,338,767**	**$ 21,236,051**	**$ 897,285**	**4.41%**
Expenses						
Personnel Cost	**B**	$ 11,625,091	$ 9,687,576	$ 9,809,906	$ (122,329)	-1.26%
Professional Services	**F**	467,850	389,875	356,737	33,138	8.50%
Other Services & Charges	**C**	3,479,955	2,899,963	3,642,800	(742,838)	-25.62%
Communications	**E**	221,440	184,533	228,736	(44,203)	-23.95%
Information Technology		1,269,575	1,057,979	922,906	135,073	12.77%
Supplies		46,300	38,583	43,187	(4,604)	-11.93%
Operations & Maintenance	**A, G**	6,035,808	5,029,840	8,188,479	(3,158,639)	-62.80%
Equipment Purchases	**D**	345,500	287,917	246,489	41,428	14.39%
Depreciation		915,000	762,500	762,500	-	0.00%
Total Operating Expenses		**$ 24,406,519**	**$ 20,338,766**	**$ 24,201,739**	**$ (3,862,973)**	**-18.99%**
Operating Surplus/(Deficit)		**$ 1**	**$ 0**	**$ (2,965,688)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 22,119,060	$ 18,432,550	$ 18,432,560	$ 10	0.00%
Septage Receiving Support - County		109,440	91,200	109,440	18,240	20.00%
Buck Mountain Lease Revenue		1,600	1,333	13,523	12,189	914.20%
Trust Fund Interest		179,830	149,858	324,254	174,396	116.37%
Reserve Fund Interest		879,900	733,250	1,288,946	555,696	75.79%
Total Debt Service Revenues		**$ 23,289,830**	**$ 19,408,192**	**$ 20,168,723**	**$ 760,531**	**3.92%**
Debt Service Costs						
Total Principal & Interest		$ 16,168,944	$ 13,474,120	$ 13,474,120	$ -	0.00%
Reserve Additions-Interest		879,900	733,250	1,288,946	(555,696)	-75.79%
Debt Service Ratio Charge		725,000	604,167	604,167	-	0.00%
Reserve Additions-CIP Growth		5,516,000	4,596,667	4,596,667	-	0.00%
Total Debt Service Costs		**$ 23,289,844**	**$ 19,408,203**	**$ 19,963,899**	**$ (555,696)**	**-2.86%**
Debt Service Surplus/(Deficit)		**$ (14)**	**$ (12)**	**$ 204,824**		

Summary

Total Revenues	$ 47,696,350	$ 39,746,958	$ 41,404,774	$ 1,657,816	4.17%
Total Expenses	47,696,363	39,746,970	44,165,639	(4,418,669)	-11.12%
Surplus/(Deficit)	**$ (13)**	**$ (11)**	**$ (2,760,864)**		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024

Urban Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2024*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 10,021,362	$ 8,351,135	$ 8,360,804	$ 9,669	0.12%
Lease Revenue		94,000	78,333	89,369	11,036	14.09%
Miscellaneous		-	-	829	829	
Use of Reserves (Water Resources Fund)		80,000	66,667	80,000	13,333	20.00%
Interest Allocation		34,200	28,500	76,575	48,075	168.68%
Total Operating Revenues		**$ 10,229,562**	**$ 8,524,635**	**$ 8,607,577**	**$ 82,942**	**0.97%**
Expenses						
Personnel Cost	**B**	$ 2,384,332	$ 1,986,943	$ 2,099,126	$ (112,183)	-5.65%
Professional Services		178,500	148,750	137,769	10,981	7.38%
Other Services & Charges	**C**	769,233	641,028	1,042,693	(401,665)	-62.66%
Communications		103,200	86,000	76,154	9,846	11.45%
Information Technology		127,650	106,375	74,750	31,625	29.73%
Supplies		7,000	5,833	12,588	(6,755)	-115.79%
Operations & Maintenance	**A, G**	2,905,068	2,420,890	2,465,519	(44,629)	-1.84%
Equipment Purchases	**D**	20,100	16,750	29,457	(12,707)	-75.86%
Depreciation		300,000	250,000	250,000	-	0.00%
Subtotal Before Allocations		$ 6,795,083	$ 5,662,569	$ 6,188,056	$ (525,486)	-9.28%
Allocation of Support Departments		3,434,478	2,862,065	2,721,359	140,706	4.92%
Total Operating Expenses		**$ 10,229,561**	**$ 8,524,634**	**$ 8,909,415**	**$ (384,780)**	**-4.51%**
Operating Surplus/(Deficit)		**$ 1**	**$ 1**	**$ (301,838)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 10,193,779	$ 8,494,816	$ 8,494,820	$ 4	0.00%
Trust Fund Interest		77,500	64,583	139,689	75,105	116.29%
Reserve Fund Interest		423,100	352,583	619,983	267,400	75.84%
Lease Revenue		1,600	1,333	13,523	12,189	914.20%
Total Debt Service Revenues		**$ 10,695,979**	**$ 8,913,316**	**$ 9,268,014**	**$ 354,699**	**3.98%**
Debt Service Costs						
Total Principal & Interest		$ 6,964,779	$ 5,803,983	$ 5,803,983	$ -	0.00%
Reserve Additions-Interest		423,100	352,583	619,983	(267,400)	-75.84%
Debt Service Ratio Charge		400,000	333,333	333,333	-	0.00%
Est. New Debt Service - CIP Growth		2,908,100	2,423,417	2,423,417	-	0.00%
Total Debt Service Costs		**$ 10,695,979**	**$ 8,913,316**	**$ 9,180,716**	**$ (267,400)**	**-3.00%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 87,299**		

Rate Center Summary

Total Revenues	$ 20,925,541	$ 17,437,951	$ 17,875,592	$ 437,641	2.51%
Total Expenses	20,925,540	17,437,950	18,090,130	(652,180)	-3.74%
Surplus/(Deficit)	**$ 1**	**$ 1**	**$ (214,539)**		
Costs per 1000 Gallons	$ 3.01		$ 3.14		
Operating and DS	$ 6.16		$ 6.38		
Thousand Gallons Treated	3,397,700	2,831,417	2,835,132	3,715	0.13%
or					
Flow (MGD)	9.309		9.296		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024

Crozet Water Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2024	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 1,234,752	$ 1,028,960	$ 1,028,960	$ -	0.00%
Lease Revenues		30,000	25,000	27,381	2,381	9.53%
Interest Allocation		4,600	3,833	10,222	6,389	166.66%
Total Operating Revenues		**$ 1,269,352**	**$ 1,057,793**	**$ 1,066,563**	**$ 8,770**	**0.83%**
Expenses						
Personnel Cost		$ 341,691	$ 284,742	$ 294,013	$ (9,271)	-3.26%
Professional Services		22,900	19,083	96	18,987	99.50%
Other Services & Charges	C	133,426	111,188	148,382	(37,194)	-33.45%
Communications		17,600	14,667	13,647	1,019	6.95%
Information Technology		32,400	27,000	14,127	12,873	47.68%
Supplies		1,500	1,250	1,179	71	5.65%
Operations & Maintenance		335,700	279,750	280,676	(926)	-0.33%
Equipment Purchases		3,200	2,667	3,396	(730)	-27.37%
Depreciation		60,000	50,000	50,000	-	0.00%
Subtotal Before Allocations		$ 948,417	$ 790,347	$ 805,518	$ (15,171)	-1.92%
Allocation of Support Departments		320,940	267,450	254,862	12,588	4.71%
Total Operating Expenses		**$ 1,269,357**	**$ 1,057,797**	**$ 1,060,380**	**$ (2,582)**	**-0.24%**
Operating Surplus/(Deficit)		**$ (5)**	**$ (4)**	**$ 6,184**		

Debt Service Budget vs. Actual

	Budget FY 2024	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues					
Debt Service Rate Revenue	$ 2,385,720	$ 1,988,100	$ 1,988,100	$ -	0.00%
Trust Fund Interest	13,500	11,250	24,416	13,166	117.03%
Reserve Fund Interest	34,500	28,750	50,269	21,519	74.85%
Total Debt Service Revenues	**$ 2,433,720**	**$ 2,028,100**	**$ 2,062,785**	**$ 34,685**	**1.71%**
Debt Service Costs					
Total Principal & Interest	$ 1,216,725	$ 1,013,938	$ 1,013,938	$ -	0.00%
Reserve Additions-Interest	34,500	28,750	50,269	(21,519)	-74.85%
Estimated New Principal & Interest	1,182,500	985,417	985,417	-	0.00%
Total Debt Service Costs	**$ 2,433,725**	**$ 2,028,104**	**$ 2,049,623**	**$ (21,519)**	**-1.06%**
Debt Service Surplus/(Deficit)	**$ (5)**	**$ (4)**	**$ 13,162**		

Rate Center Summary

	Budget FY 2024	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Total Revenues	$ 3,703,072	$ 3,085,893	$ 3,129,349	$ 43,455	1.41%
Total Expenses	3,703,082	3,085,901	3,110,003	(24,101)	-0.78%
Surplus/(Deficit)	**$ (10)**	**$ (8)**	**$ 19,346**		
Costs per 1000 Gallons	$ 6.26		$ 5.63		
Operating and DS	$ 18.27		$ 16.52		
Thousand Gallons Treated	202,697	168,914	188,236	19,322	11.44%
Flow (MGD)	0.555		0.617		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024

Scottsville Water Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2024*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 656,460	$ 547,050	$ 547,050	$ -	0.00%
Interest Allocation		2,150	1,792	4,842	3,050	170.25%
Total Operating Revenues		**$ 658,610**	**$ 548,842**	**$ 551,892**	**$ 3,050**	**0.56%**
Expenses						
Personnel Cost		$ 223,641	$ 186,368	$ 195,208	$ (8,840)	-4.74%
Professional Services		5,000	4,167	3,455	712	17.09%
Other Services & Charges	C	31,800	26,500	46,154	(19,654)	-74.17%
Communications		6,750	5,625	14,524	(8,899)	-158.20%
Information Technology	H	19,700	16,417	27,645	(11,228)	-68.39%
Supplies		100	83	572	(489)	-586.58%
Operations & Maintenance		134,800	112,333	112,648	(314)	-0.28%
Equipment Purchases		2,000	1,667	2,611	(944)	-56.63%
Depreciation		40,000	33,333	33,333	0	0.00%
Subtotal Before Allocations		$ 463,791	$ 386,493	$ 436,148	$ (49,656)	-12.85%
Allocation of Support Departments		194,815	162,346	155,585	6,761	4.16%
Total Operating Expenses		**$ 658,606**	**$ 548,838**	**$ 591,733**	**$ (42,895)**	**-7.82%**
Operating Surplus/(Deficit)		**$ 4**	**$ 3**	**$ (39,841)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 158,736	$ 132,280	$ 132,280	$ -	0.00%
Trust Fund Interest		1,650	1,375	2,983	1,608	116.96%
Reserve Fund Interest		10,300	8,583	15,467	6,884	80.20%
Total Debt Service Revenues		**$ 170,686**	**$ 142,238**	**$ 150,731**	**$ 8,492**	**5.97%**
Debt Service Costs						
Total Principal & Interest		$ 148,991	$ 124,159	$ 124,159	$ -	0.00%
Reserve Additions-Interest		10,300	8,583	15,467	(6,884)	-80.20%
Estimated New Principal & Interest		11,400	9,500	9,500	-	0.00%
Total Debt Service Costs		**$ 170,691**	**$ 142,243**	**$ 149,127**	**$ (6,884)**	**-4.84%**
Debt Service Surplus/(Deficit)		**$ (5)**	**$ (4)**	**$ 1,604**		

Rate Center Summary

Total Revenues	$ 829,296	$ 691,080	$ 702,622	$ 11,542	1.67%
Total Expenses	829,297	691,081	740,860	(49,779)	-7.20%
Surplus/(Deficit)	**$ (1)**	**$ (1)**	**$ (38,237)**		
Costs per 1000 Gallons	$ 38.22		$ 40.53		
Operating and DS	$ 48.13		$ 50.75		
Thousand Gallons Treated	17,230	14,358	14,599	241	1.68%
or					
Flow (MGD)	0.047		0.048		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024

Urban Wastewater Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2024*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 9,908,321	$ 8,256,934	$ 8,887,842	$ 630,907	7.64%
Stone Robinson WWTP		17,267	14,389	29,256	14,867	103.32%
Septage Acceptance		550,000	458,333	528,416	70,083	15.29%
Nutrient Credits		80,000	66,667	49,915	(16,752)	-25.13%
Miscellaneous Revenue		-	-	4,360	4,360	
Interest Allocation		3,300	2,750	80,879	78,129	2841.05%
Total Operating Revenues		**$ 10,558,888**	**$ 8,799,073**	**$ 9,580,668**	**$ 781,595**	**8.88%**
Expenses						
Personnel Cost	**B**	$ 1,458,300	$ 1,215,250	$ 1,282,471	$ (67,221)	-5.53%
Professional Services	**F**	40,000	33,333	67,612	(34,279)	-102.84%
Other Services & Charges	**C**	2,271,556	1,892,963	2,185,943	(292,979)	-15.48%
Communications		11,600	9,667	12,718	(3,052)	-31.57%
Information Technology		110,600	92,167	70,893	21,274	23.08%
Supplies		1,200	1,000	2,638	(1,638)	-163.80%
Operations & Maintenance	**G**	2,086,800	1,739,000	4,919,806	(3,180,806)	-182.91%
Equipment Purchases		73,500	61,250	64,411	(3,161)	-5.16%
Depreciation		470,000	391,667	391,667	(0)	0.00%
Subtotal Before Allocations		$ 6,523,556	$ 5,436,297	$ 8,998,158	$ (3,561,861)	-65.52%
Allocation of Support Departments		4,035,331	3,362,776	3,214,072	148,704	4.42%
Total Operating Expenses		**$ 10,558,887**	**$ 8,799,073**	**$ 12,212,230**	**$ (3,413,157)**	**-38.79%**
Operating Surplus/(Deficit)		**$ 1**	**$ 1**	**$ (2,631,561)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 9,339,509	$ 7,782,924	$ 7,782,930	$ 6	0.00%
Septage Receiving Support - County	**A**	109,440	91,200	109,440	18,240	20.00%
Trust Fund Interest		86,900	72,417	156,615	84,198	116.27%
Reserve Fund Interest		410,200	341,833	600,649	258,816	75.71%
Total Debt Service Revenues		**$ 9,946,049**	**$ 8,288,374**	**$ 8,649,634**	**$ 361,260**	**4.36%**
Debt Service Costs						
Total Principal & Interest		$ 7,812,249	$ 6,510,208	$ 6,510,208	$ -	0.00%
Reserve Additions-Interest		410,200	341,833	600,649	(258,816)	-75.71%
Debt Service Ratio Charge		325,000	270,833	270,833	-	0.00%
Est. New Debt Service - CIP Growth		1,398,600	1,165,500	1,165,500	-	0.00%
Total Debt Service Costs		**$ 9,946,049**	**$ 8,288,374**	**$ 8,547,190**	**$ (258,816)**	**-3.12%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 102,444**		
Rate Center Summary						
Total Revenues		$ 20,504,937	$ 17,087,448	$ 18,230,302	$ 1,142,855	6.69%
Total Expenses		20,504,936	17,087,447	20,759,420	(3,671,973)	-21.49%
Surplus/(Deficit)		**$ 1**	**$ 1**	**$ (2,529,117)**		
Costs per 1000 Gallons		$ 3.11		$ 4.01		
Operating and DS		$ 6.05		$ 6.82		
Thousand Gallons Treated		3,390,400	2,825,333	3,041,698	216,365	7.66%
or						
Flow (MGD)		9.289		9.973		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

	Budget FY 2024	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual					
Notes					
Revenues					
Operations Rate Revenue	$ 521,916	$ 434,930	$ 434,930	$ -	0.00%
Interest Allocation	1,700	1,417	3,766	2,349	165.83%
Total Operating Revenues	**$ 523,616**	**$ 436,347**	**$ 438,696**	**$ 2,349**	**0.54%**
Expenses					
Personnel Cost	$ 127,879	$ 106,565	$ 113,067	$ (6,502)	-6.10%
Professional Services	25,000	20,833	14,830	6,003	28.82%
Other Services & Charges	35,400	29,500	38,781	(9,281)	-31.46%
Communications	3,450	2,875	10,662	(7,787)	-270.84%
Information Technology	13,000	10,833	17,143	(6,310)	-58.24%
Supplies	-	-	35	(35)	
Operations & Maintenance	143,550	119,625	110,762	8,863	7.41%
Equipment Purchases	3,800	3,167	3,167	(0)	0.00%
Depreciation	25,000	20,833	20,833	0	0.00%
Subtotal Before Allocations	$ 377,079	$ 314,232	$ 329,280	$ (15,048)	-4.79%
Allocation of Support Departments	146,534	122,112	117,404	4,708	3.86%
Total Operating Expenses	**$ 523,613**	**$ 436,344**	**$ 446,684**	**$ (10,340)**	**-2.37%**
Operating Surplus/(Deficit)	**$ 3**	**$ 3**	**$ (7,988)**		
Debt Service Budget vs. Actual					
Revenues					
Debt Service Rate Revenue	$ 22,680	$ 18,900	$ 18,900	$ -	0.00%
Trust Fund Interest	200	167	389	222	133.46%
Reserve Fund Interest	-	-	-	-	
Total Debt Service Revenues	**$ 22,880**	**$ 19,067**	**$ 19,289**	**$ 222**	**1.17%**
Debt Service Costs					
Total Principal & Interest	$ 18,729	$ 15,608	$ 15,608	$ -	0.00%
Estimated New Principal & Interest	4,150	3,458	3,458	-	0.00%
Reserve Additions-Interest	-	-	-	-	
Total Debt Service Costs	**$ 22,879**	**$ 19,066**	**$ 19,066**	**$ -**	**0.00%**
Debt Service Surplus/(Deficit)	**$ 1**	**$ 1**	**$ 223**		

Rate Center Summary					
Total Revenues	$ 546,496	$ 455,413	$ 457,985	$ 2,572	0.56%
Total Expenses	546,492	455,410	465,750	(10,340)	-2.27%
Surplus/(Deficit)	**$ 4**	**$ 3**	**$ (7,765)**		
Costs per 1000 Gallons	$ 12.65		$ 10.88		
Operating and DS	$ 13.20		$ 11.35		
Thousand Gallons Treated	41,401	34,501	41,046	6,545	**18.97%**
or					
Flow (MGD)	0.113		0.135		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

	Budget FY 2024	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual					
Notes					
Revenues					
Operations Rate Revenue	$ 384,192	$ 320,160	$ 320,160	$ -	0.00%
Interest Allocation	1,300	1,083	3,049	1,965	181.42%
Total Operating Revenues	**$ 385,492**	**$ 321,243**	**$ 323,209**	**$ 1,965**	**0.61%**
Expenses					
Personnel Cost	$ 127,949	$ 106,624	$ 113,068	$ (6,444)	-6.04%
Professional Services	5,000	4,167	36	4,131	99.14%
Other Services & Charges	24,800	20,667	28,657	(7,991)	-38.67%
Communications	3,800	3,167	6,013	(2,846)	-89.87%
Information Technology	14,025	11,688	3,600	8,088	69.20%
Supplies	-	-	615	(615)	
Operations & Maintenance	49,500	41,250	32,754	8,496	20.60%
Equipment Purchases	3,700	3,083	3,083	0	0.00%
Depreciation	20,000	16,667	16,667	(0)	0.00%
Subtotal Before Allocations	$ 248,774	$ 207,311	$ 204,492	$ 2,819	1.36%
Allocation of Support Departments	136,722	113,935	109,360	4,575	4.02%
Total Operating Expenses	**$ 385,495**	**$ 321,246**	**$ 313,852**	**$ 7,394**	**2.30%**
Operating Surplus/(Deficit)	**$ (3)**	**$ (3)**	**$ 9,357**		
Debt Service Budget vs. Actual					
Revenues					
Debt Service Rate Revenue	$ 18,636	$ 15,530	$ 15,530	$ -	0.00%
Trust Fund Interest	80	67	162	95	143.17%
Reserve Fund Interest	1,800	1,500	2,578	1,078	71.86%
Total Debt Service Revenues	**$ 20,516**	**$ 17,097**	**$ 18,270**	**$ 1,173**	**6.86%**
Debt Service Costs					
Total Principal & Interest	$ 7,471	$ 6,226	$ 6,226	$ -	0.00%
Reserve Additions-Interest	1,800	1,500	2,578	(1,078)	-71.86%
Estimated New Principal & Interest	11,250	9,375	9,375	-	0.00%
Total Debt Service Costs	**$ 20,521**	**$ 17,101**	**$ 18,179**	**$ (1,078)**	**-6.30%**
Debt Service Surplus/(Deficit)	**$ (5)**	**$ (4)**	**$ 91**		
Rate Center Summary					
Total Revenues	$ 406,008	$ 338,340	$ 341,479	$ 3,139	0.93%
Total Expenses	406,016	338,347	332,030	6,316	1.87%
Surplus/(Deficit)	**$ (8)**	**$ (7)**	**$ 9,448**		
Costs per 1000 Gallons	$ 16.30		$ 15.51		
Operating and DS	$ 17.17		$ 16.41		
Thousand Gallons Treated	23,643	19,703	20,238	536	**2.72%**
or					
Flow (MGD)	0.065		0.066		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024

Administration

Operating Budget vs. Actual

	Notes	*Budget FY 2024*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ 781,000	$ 650,833	$ 650,833	$ 0	0.00%
Bond Proceeeds Funding Bond Issuance Costs		-	-	-	-	
Miscellaneous Revenue		-	-	6,850	6,850	
Total Operating Revenues		**$ 781,000**	**$ 650,833**	**$ 657,683**	**$ 6,850**	**1.05%**
Expenses						
Personnel Cost		$ 2,930,008	$ 2,441,674	$ 2,351,244	$ 90,430	3.70%
Professional Services	**F**	136,450	113,708	126,083	(12,374)	-10.88%
Other Services & Charges		140,760	117,300	107,284	10,016	8.54%
Communications	**E**	42,800	35,667	63,821	(28,154)	-78.94%
Information Technology		778,800	649,000	604,549	44,451	6.85%
Supplies		22,800	19,000	19,213	(213)	-1.12%
Operations & Maintenance		64,200	53,500	45,346	8,154	15.24%
Equipment Purchases		15,000	12,500	12,589	(89)	-0.71%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 4,130,818**	**$ 3,442,349**	**$ 3,330,128**	**$ 112,220**	**3.26%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (3,349,818)**	**$ (2,791,515)**	**$ (2,672,445)**	**$ (119,070)**	**4.27%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 1,473,920**	**$ 1,228,267**	**$ 1,175,876**	**$ 52,391**	
Crozet Water	4.00%	**$ 133,993**	**111,661**	**106,898**	**4,763**	
Scottsville Water	2.00%	**$ 66,996**	**55,830**	**53,449**	**2,381**	
Urban Wastewater	48.00%	**$ 1,607,913**	**1,339,927**	**1,282,774**	**57,154**	
Glenmore Wastewater	1.00%	**$ 33,498**	**27,915**	**26,724**	**1,191**	
Scottsville Wastewater	1.00%	**$ 33,498**	**27,915**	**26,724**	**1,191**	
	100.00%	**$ 3,349,818**	**$ 2,791,515**	**$ 2,672,445**	**$ 119,070**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024

Maintenance

Operating Budget vs. Actual

	Notes	*Budget FY 2024*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ -	$ -	
Miscellaneous Revenue		-	-	1,067	1,067	
Total Operating Revenues		**$ -**	**$ -**	**$ 1,067**	**$ 1,067**	
Expenses						
Personnel Cost	**B**	$ 1,553,212	$ 1,294,343	$ 1,357,240	$ (62,897)	-4.86%
Professional Services		25,000	20,833	-	20,833	100.00%
Other Services & Charges		36,400	30,333	18,663	11,670	38.47%
Communications		11,300	9,417	17,774	(8,357)	-88.75%
Information Technology		17,500	14,583	9,252	5,331	36.55%
Supplies		4,000	3,333	22	3,311	99.33%
Operations & Maintenance		114,150	95,125	98,605	(3,480)	-3.66%
Equipment Purchases		201,000	167,500	108,333	59,167	35.32%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 1,962,562**	**$ 1,635,468**	**$ 1,609,889**	**$ 25,579**	**1.56%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,962,562)**	**$ (1,635,468)**	**$ (1,608,822)**	**$ (24,511)**	**1.50%**
Allocations to the Rate Centers						
Urban Water	30.00%	**$ 588,768**	**$ 490,640**	**$ 482,647**	**$ 7,994**	
Crozet Water	3.50%	**68,690**	**57,241**	**56,309**	**933**	
Scottsville Water	3.50%	**68,690**	**57,241**	**56,309**	**933**	
Urban Wastewater	56.50%	**1,108,847**	**924,039**	**908,984**	**15,055**	
Glenmore Wastewater	3.50%	**68,690**	**57,241**	**56,309**	**933**	
Scottsville Wastewater	3.00%	**58,877**	**49,064**	**48,265**	**799**	
	100.00%	**$ 1,962,562**	**$ 1,635,468**	**$ 1,608,822**	**$ 26,646**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024

Laboratory

Operating Budget vs. Actual

	Notes	*Budget FY 2024*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
N/A						
Expenses						
Personnel Cost		$ 456,056	$ 380,047	$ 371,611	$ 8,436	2.22%
Professional Services		-	-	450	(450)	
Other Services & Charges		14,580	12,150	9,816	2,334	19.21%
Communications		1,400	1,167	585	582	49.86%
Information Technology		1,000	833	6,475	(5,642)	-677.00%
Supplies		1,200	1,000	2,343	(1,343)	-134.28%
Operations & Maintenance		115,300	96,083	77,496	18,587	19.34%
Equipment Purchases		1,700	1,417	1,524	(108)	-7.59%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 591,236**	**$ 492,697**	**$ 470,300**	**$ 22,397**	**4.55%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (591,236)**	**$ (492,697)**	**$ (470,300)**	**$ (22,397)**	**4.55%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 260,144**	**$ 216,787**	**$ 206,932**	**$ 9,855**	
Crozet Water	4.00%	**23,649**	**19,708**	**18,812**	**896**	
Scottsville Water	2.00%	**11,825**	**9,854**	**9,406**	**448**	
Urban Wastewater	47.00%	**277,881**	**231,567**	**221,041**	**10,527**	
Glenmore Wastewater	1.50%	**8,869**	**7,390**	**7,054**	**336**	
Scottsville Wastewater	1.50%	**8,869**	**7,390**	**7,054**	**336**	
	100.00%	**$ 591,236**	**$ 492,697**	**$ 470,300**	**$ 22,397**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2024

Engineering

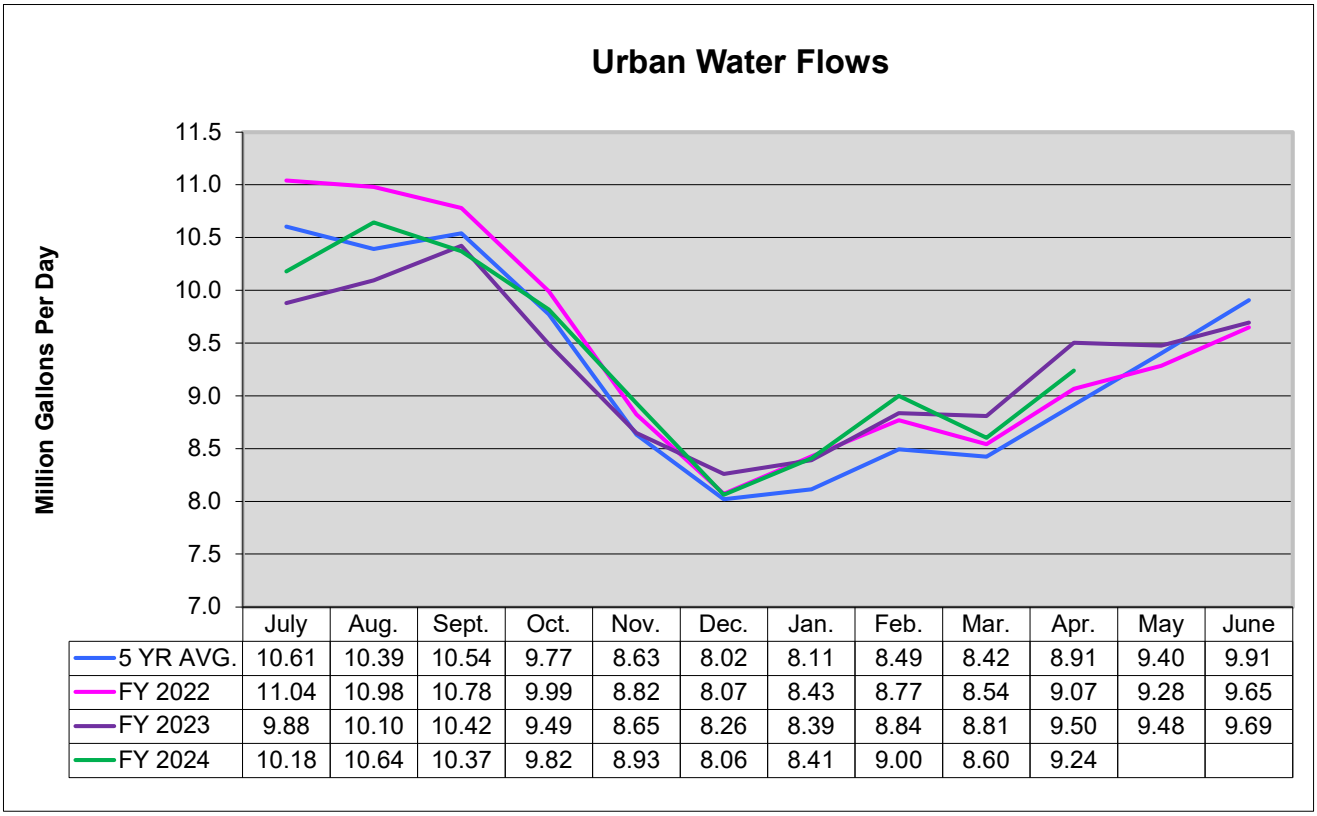
Operating Budget vs. Actual

	Notes	*Budget FY 2024*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ 8,695	$ 8,695	
Total Operating Revenues		**$ -**	**$ -**	**$ 8,695**	**$ 8,695**	
Expenses						
Personnel Cost		$ 2,022,024	$ 1,685,020	$ 1,632,859	$ 52,161	3.10%
Professional Services		30,000	25,000	6,406	18,594	74.38%
Other Services & Charges		22,000	18,333	16,428	1,905	10.39%
Communications		19,540	16,283	12,838	3,445	21.16%
Information Technology		154,900	129,083	94,472	34,612	26.81%
Supplies		8,500	7,083	3,982	3,101	43.78%
Operations & Maintenance		86,740	72,283	44,867	27,416	37.93%
Equipment Purchases		21,500	17,917	17,917	0	0.00%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 2,365,204**	**$ 1,971,004**	**$ 1,829,769**	**$ 141,235**	**7.17%**

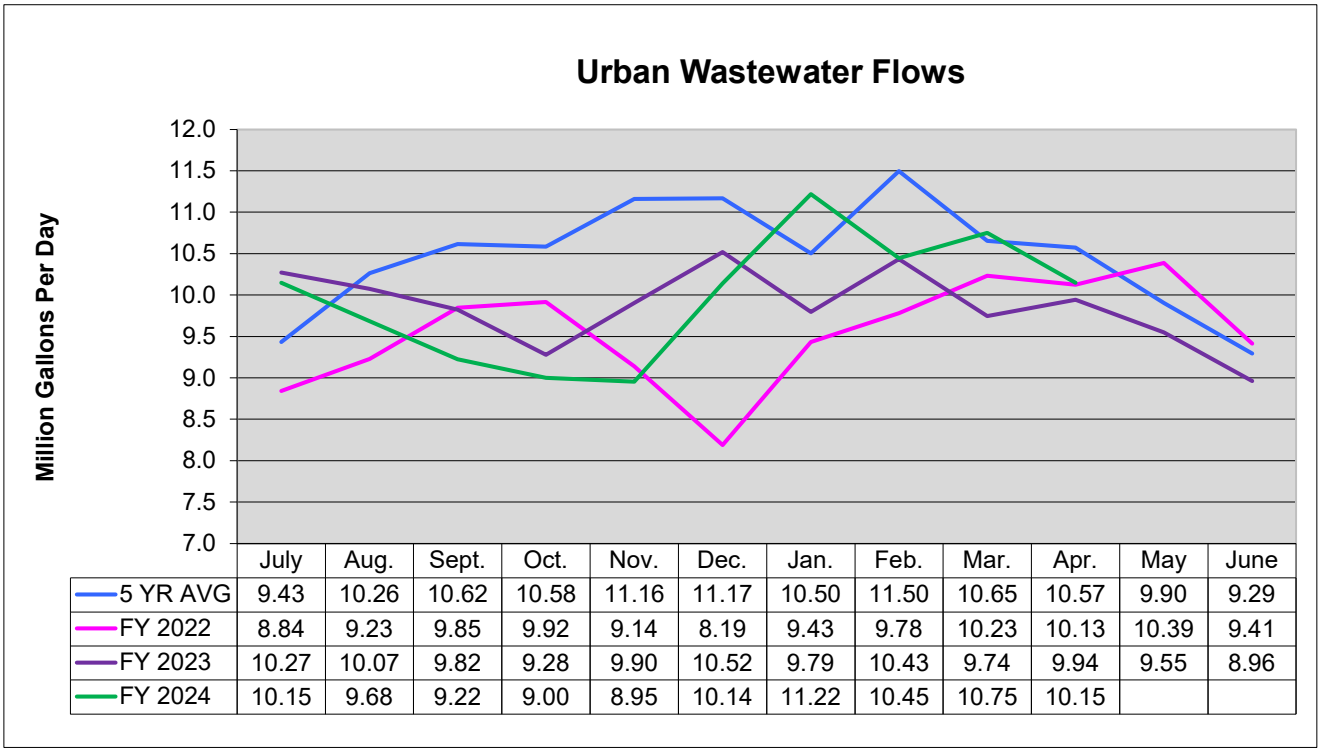
Department Summary

Net Costs Allocable to Rate Centers		**$ (2,365,204)**	**$ (1,971,004)**	**$ (1,821,074)**	**$ (132,540)**	**6.72%**
Allocations to the Rate Centers						
Urban Water	47.00%	**$ 1,111,646**	**$ 926,372**	**$ 855,905**	**$ 70,467**	
Crozet Water	4.00%	**94,608**	**78,840**	**72,843**	**5,997**	
Scottsville Water	2.00%	**47,304**	**39,420**	**36,421**	**2,999**	
Urban Wastewater	44.00%	**1,040,690**	**867,242**	**801,273**	**65,969**	
Glenmore Wastewater	1.50%	**35,478**	**29,565**	**27,316**	**2,249**	
Scottsville Wastewater	1.50%	**35,478**	**29,565**	**27,316**	**2,249**	
	100.00%	**$ 2,365,204**	**$ 1,971,004**	**$ 1,821,074**	**$ 149,929**	

Rivanna Water and Sewer Authority
Flow Graphs



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG.	10.61	10.39	10.54	9.77	8.63	8.02	8.11	8.49	8.42	8.91	9.40	9.91
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
FY 2023	9.88	10.10	10.42	9.49	8.65	8.26	8.39	8.84	8.81	9.50	9.48	9.69
FY 2024	10.18	10.64	10.37	9.82	8.93	8.06	8.41	9.00	8.60	9.24		



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG	9.43	10.26	10.62	10.58	11.16	11.17	10.50	11.50	10.65	10.57	9.90	9.29
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
FY 2023	10.27	10.07	9.82	9.28	9.90	10.52	9.79	10.43	9.74	9.94	9.55	8.96
FY 2024	10.15	9.68	9.22	9.00	8.95	10.14	11.22	10.45	10.75	10.15		

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 & ENVIRONMENTAL SERVICES**

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

SUBJECT: **OPERATIONS REPORT FOR MAY 2024**

DATE: **JUNE 25, 2024**

WATER OPERATIONS:

The average and maximum daily water volumes produced in May 2024 were as follows:

Water Treatment Plant	***Average Daily Production (MGD)***	***Maximum Daily Production in the Month (MGD)***
South Rivanna	8.52	9.87 (5/2/2024)
Observatory	0.60	0.93 (5/3/2024)
North Rivanna	0.49	0.69 (5/8/2024)
Urban Total	9.61	11.22 (5/2/2024)
Crozet	0.65	0.83 (5/9/2024)
Scottsville	0.05	0.067 (5/22/2024)
Red Hill	0.0027	0.004 (5/1/2024)
RWSA Total	10.31	-

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

Status of Reservoirs (as of June 18, 2024):

- Urban Reservoirs are 98.9% of Total Useable Capacity
  - South Rivanna Reservoir is 100% full
  - Ragged Mountain Reservoir is 98 % full
  - Sugar Hollow Reservoir is 99% full
- Beaver Creek Reservoir (Crozet) is full
- Totier Creek Reservoir (Scottsville) is full

WASTEWATER OPERATIONS:

All RWSA Water Resource Recovery Facilities (WRRFs) were in regulatory compliance with their effluent limitations during May 2024. Performance of the WRRFs in May was as follows compared to the respective VDEQ permit limits:

WRRF	*Average Daily Effluent Flow (MGD)*	*Average $CBOD_5$ (ppm)*		*Average Total Suspended Solids (ppm)*		*Average Ammonia (ppm)*	
		RESULT	*LIMIT*	*RESULT*	*LIMIT*	*RESULT*	*LIMIT*
Moores Creek	9.9	<QL	9	<QL	22	<QL	2.2
Glenmore	0.127	1.5	15	3.8	30	NR	NL
Scottsville	0.07	1.3	25	7.3	30	NR	NL
Stone Robinson	0.002	3.0	30	7.8	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 May 2024.

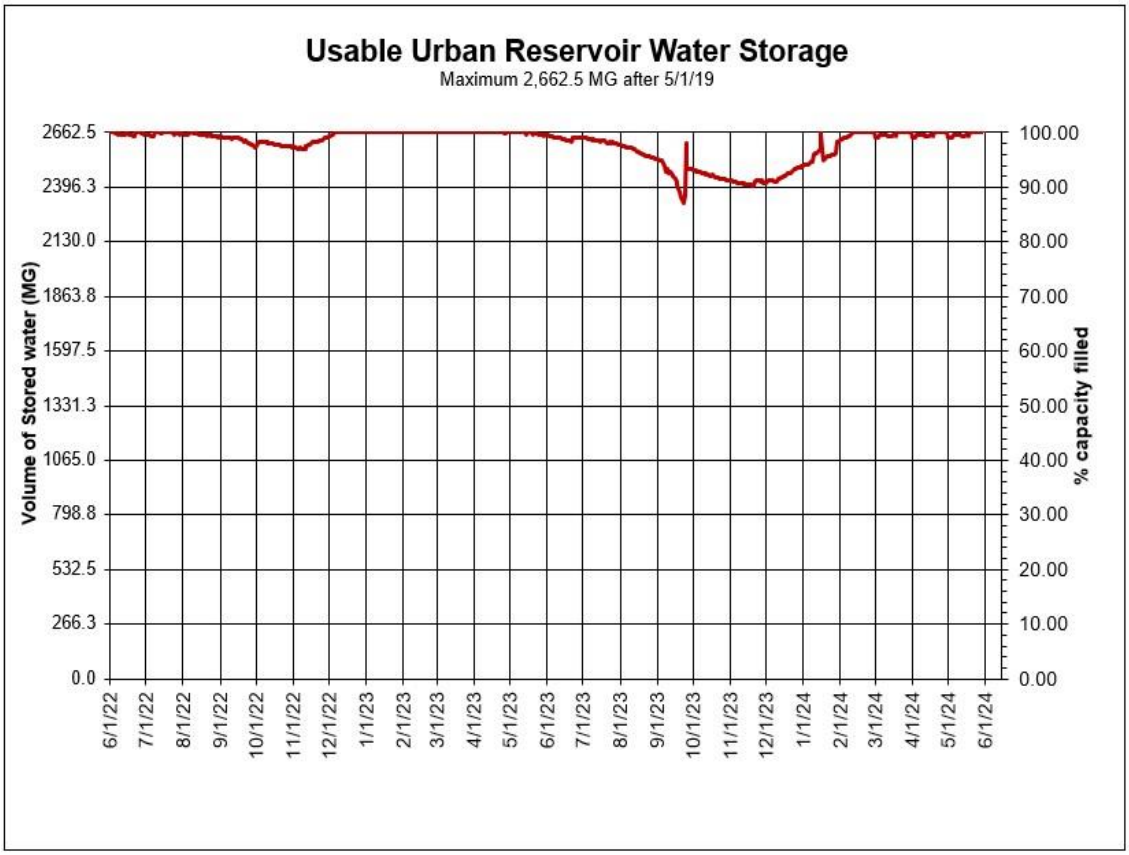
State Annual Allocation (lb./yr.) Permit		*Average Monthly Allocation (lb./mo.) **	*Moores Creek Discharge May (lb./mo.)*	*Performance as % of monthly average Allocation**	*Year to Date Performance as % of annual allocation*
Nitrogen	282,994	23,583	9,491	40%	18%
Phosphorous	18,525	1,636	451	28%	7%

*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
6/1/22
7/1/22
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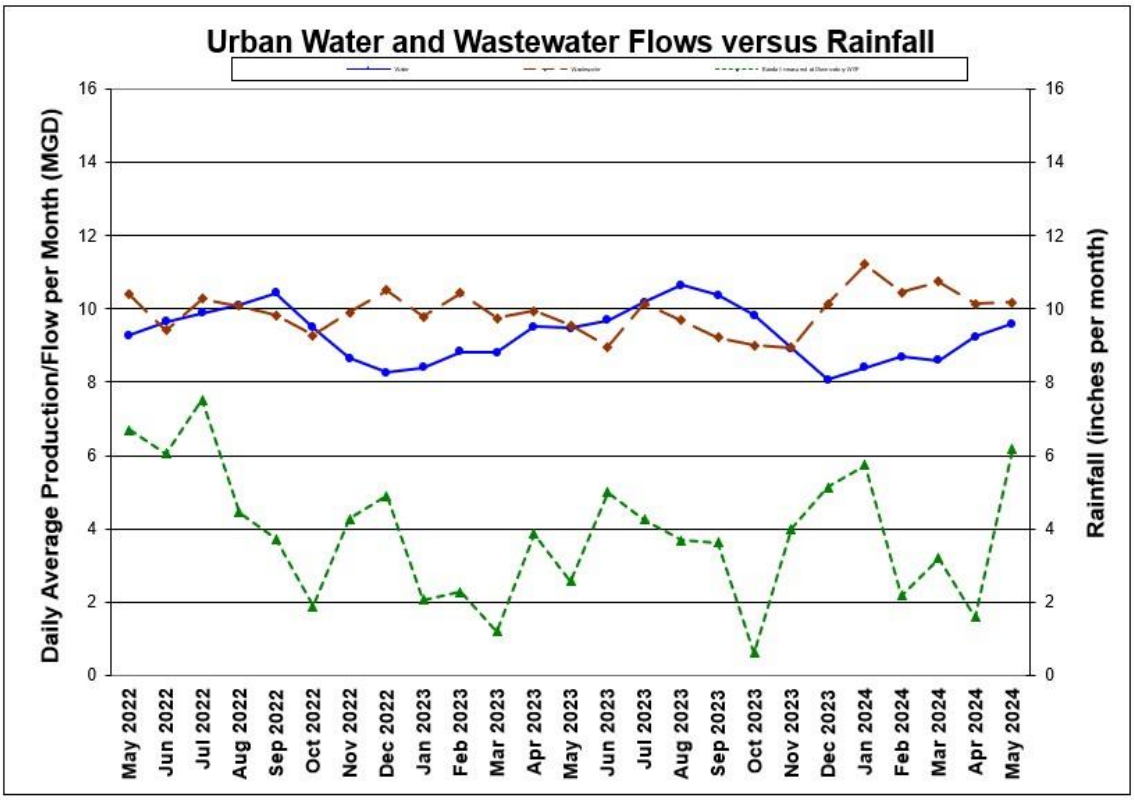
Urban Water and Wastewater Flows versus Rainfall
Daily Average Production/Flow per Month (MGD)
Rainfall (inches per month)
16
14
12
10
8
6
4
2
0
May 2022
Jun 2022
Jul 2022
Aug 2022
Sep 2022
Oct 2022
Nov 2022
Dec 2022
Jan 2023
Feb 2023
Mar 2023
Apr 2023
May 2023
Jun 2023
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Oct 2023
Nov 2023
Dec 2023
Jan 2024
Feb 2024
Mar 2024
Apr 2024
May 2024

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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: **CIP PROJECTS REPORT**

DATE: **JUNE 25, 2024**

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

For the current CIP and additional project information, please visit: https://www.rivanna.org/wp-content/uploads/2023/06/2024-2028-CIP-FINAL-DRAFT-1.pdf

Summary

	Project	Construction Start Date	Construction Completion Date
1	MC 5kV Electrical System Upgrades	May 2022	December 2024
2	Red Hill Water Treatment Plant Upgrades	September 2024	March 2026
3	RMR to OBWTP Raw Water Line and Pump Station	January 2025	June 2029
4	MC Building Upfits and Gravity Thickener Improvements	February 2025	December 2026
5	MC Structural and Concrete Rehabilitation	February 2025	May 2027
6	Crozet Pump Stations Rehabilitation	April 2025	December 2026
7	South Fork Rivanna River Crossing	April 2025	January 2027
8	MC Administration Building Renovation and Addition	April 2025	December 2027
9	Central Water Line	May 2025	March 2029
10	Crozet WTP GAC Expansion – Phase I	August 2025	March 2027
11	RMR Pool Raise	October 2025	September 2026
12	SFRR to RMR Pipeline, Intake, and Facilities	March 2026	December 2030
13	Beaver Creek Dam, Pump Station, and Piping	May 2026	January 2030
14	Upper Schenks Branch Interceptor, Phase II	TBD	TBD

Under Construction

1. MC 5kV Electrical System Upgrades
2. Red Hill Water Treatment Plant Upgrades

Design and Bidding

3. RMR to OBWTP Raw Water Line and Pump Station
4. MC Building Upfits and Gravity Thickener Improvements
5. MC Structural and Concrete Rehabilitation
6. Crozet Pump Stations Rehabilitation
7. South Fork Rivanna River Crossing
8. MC Administration Building Renovation and Addition
9. Central Water Line
10. Crozet WTP GAC Expansion – Phase I
11. RMR Pool Raise
12. SFRR to RMR Pipeline, Intake, and Facilities
13. Beaver Creek Dam, Pump Station, and Piping
14. Upper Schenks Branch Interceptor, Phase II

Planning and Studies

15. MCAWRRF Biogas Upgrades

Other Significant Projects

16. Rivanna Pump Station Restoration
17. Urgent and Emergency Repairs
18. Security Enhancements

Under Construction

1. MCAWRRF 5kV Electrical System Upgrades

Design Engineer:	Hazen and Sawyer (Hazen)
Construction Contractor:	Pyramid Electrical Contractors (Richmond, VA)
Construction Start:	May 2022
Percent Complete:	60%
Base Construction Contract + Change Order to Date = Current Value:	$5,180,000 - $848,368 = $4,331,632
Completion:	December 2024
Budget:	$5,635,000

Current Status: Two motor control center replacements have been completed, with a third to start later this month. The Contractor is wiring the new switchgear facility and beginning the commissioning process. 5kV cable replacement will start soon. The Contractor continues to remedy the situation

associated with the damaged primary clarifiers, caused by improper wiring of a new Motor Control Center.

2. Red Hill Water Treatment Plant Upgrades

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Anderson Construction (Lynchburg)
Construction Start:	September 2024
Percent Complete:	Award, 0%
Completion:	March 2026
Budget:	$2,050,000

Current Status: A pre-construction meeting will be held mid-July. This project received partial grant funding from Albemarle County.

Design and Bidding

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

Design Engineer:	Kimley-Horn
Project Start:	August 2018
Project Status:	97% Design
Construction Start:	January 2025
Completion:	June 2029
Budget:	$46,000,000

Current Status: Staff continue to work with UVA on the final easement.

4. MCAWRRF Building Upfits and Gravity Thickener Improvements

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	March 2023
Project Status:	60% Design
Construction Start:	February 2025
Completion:	December 2026
Budget:	$7,500,000

Current Status: A Value Engineering workshop will be completed in July.

5. MCAWRRF Structural and Concrete Rehabilitation

Design Engineer:	Hazen and Sawyer (Hazen)
Project Start:	April 2023
Project Status:	80% Design
Construction Start:	February 2025
Completion:	May 2027

Budget: $11,300,000

Current Status: 90% design will be completed this month.

6. Crozet Pump Stations Rehabilitation

Design Engineer:	Wiley | Wilson
Project Start:	July 2023
Project Status:	90% Design
Construction Start:	April 2025
Completion:	December 2026
Budget:	$10,350,000

Current Status: Wiley | Wilson is incorporating accepted recommendations from the value engineering workshop into the 90% design documents.

7. South Fork Rivanna River Crossing

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2020
Project Status:	95% Design
Construction Start:	April 2025
Completion:	January 2027
Budget:	$7,300,000

Current Status: All easements have been acquired, so the Water Protection permit can be resubmitted to the County for approval. The VDOT Land Use permit was submitted in May.

8. Moores Creek Administration Building Renovation and Addition

Design Engineer:	SEH
Project Start:	October 2022
Project Status:	60% Design
Construction Start:	April 2025
Completion:	December 2027
Budget:	$20,000,000

Current Status: A revised concept design to incorporate the expanded ~1,500 sq ft exhibit space is being presented to the senior leadership team at the end of June.

9. Central Water Line

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2021
Project Status:	90% Design
Construction Start:	May 2025
Completion:	March 2029

Budget: $47,000,000

Current Status: The acquisition process for two private easements has been initiated with our real estate consultant. RWSA will negotiate the third easement with UVA along Hereford Drive. Railroad permits were submitted in February 2024. Additional design work associated with a partial reroute of the water line in the East High Street area is necessary as there was not enough subsurface space to install this large 24" water pipe in the intended E. High St. location.

10. Crozet GAC Expansion – Phase I

Design Engineer:	SEH
Project Start:	July 2023
Project Status:	30% Design
Construction Start:	August 2025
Completion:	March 2027
Budget:	$6,550,000

Current Status: Final PER review meeting is scheduled for mid-June. Detailed design is anticipated to begin by the end of June. The DEQ FCAP Environmental Review has been completed and an exemption waiver has been granted for the project. $6.24 M in grant funds from VDH have been awarded for this project.

11. RMR Pool Raise

Design Engineer:	Schnabel
Project Start:	April 2024
Project Status:	10% Design
Construction Start:	October 2025
Completion:	September 2026
Budget:	$5,000,000

Current Status: This project will include clearing around the reservoir and minor modifications to the intake tower as necessary to allow an increase in the normal pool elevation from 671' to 683'. The Design Engineer has started preliminary design with geotechnical investigations scheduled for July.

12. SFRR to RMR Pipeline, Intake, and Facilities

Design Engineer:	Kimley Horn/SEH
Project Start:	July 2023
Project Status:	30% Design
Construction Start:	March 2026
Completion:	December 2030
Budget:	$79,000,000

Current Status: The Design Engineer continues to work on both the new reservoir intake and the pipe between SFRR and RMR. Installation of a nutrient analyzer at SFRR has been completed and was successfully started up. This is the last step of the water quality study, and a final report is anticipated by September.

13. 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:	30% Design
Construction Start:	May 2026
Completion:	January 2030
Budget:	$47,100,000

Current Status: Design work is underway by Hazen for the new raw water pump station, intake, raw water main, and hypolimnetic oxygenation system, and by Schnabel Engineering for final design of the dam spillway upgrades, temporary detour, and spillway bridge. Geological, survey, and other field investigative work for the dam design are underway.

14. Upper Schenks Branch Interceptor, Phase II

Design Engineer:	CHA Consulting
Project Start:	July 2021
Project Status:	Design
Construction Start:	TBD
Completion:	TBD
Budget:	$4,725,000

Current Status: The design team has provided additional information to assist the County with easement acquisition considerations.

Planning and Studies

15. MCAWRRF Biogas Upgrades

Design Engineer:	SEH
Project Start:	October 2021
Project Status:	Preliminary Engineering/Study (99%)
Completion:	December 2024
Budget:	$2,145,000

Current Status: This project now includes the Methane Sphere Rehabilitation, in addition to possible Cogeneration upgrades. RWSA and City staff continue to discuss all available options to reuse the biogas.

Other Significant Projects

16. Rivanna Pump Station Restoration

Design Engineer:	Hazen/SEH
Project Start:	March 2024
Project Status:	Design & Material Acquisition
Completion:	January - June 2025
Budget:	$21,750,000

Current Status: The inflow control gate replacement selection has been completed and placed on order. The pump & motor workshop selected replacement of all pump motors and rebuild of all pump mechanical sections. Two workshops are scheduled in June to decide on resiliency of components to be replaced/repaired as well as modifications and improvements to the pump stations. Scoping discussions have been completed with SEH to perform programming and instrumentation modifications and upgrades to the pump station. Two workshops will be held in July to complete the preliminary engineering on this effort. Hazen Engineering will be leading the rebuild and improvements design on all facets external to programming and instrumentation modifications. A term contract is being finalized with MEB General Contractors to utilize their services throughout the station re-construction. Completion dates referenced in this section account for when we anticipate the pump station will be taken off bypass (January 2025) and when all improvements will be completed (June 2025).

17. 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
2023-01	Finished Water System ARV Repairs	$150,000
2024-03	MCAWRRF Secondary Clarifier #4 Equipment Failure	$150,000

- RWSA Finished Water ARV Repairs: RWSA Engineering staff recently met with Maintenance staff to identify a list of Air Release Valves (ARVs) that need to be repaired, replaced, or abandoned. Several of these locations will require assistance from RWSA On-Call Maintenance Contractors, due to the complexity of the sites (proximity to roadways, depth, etc.). The initial round will include six (6) sites, all along the South Rivanna Waterline, and will be completed starting this Summer
- MCAWRRF Secondary Clarifier #4 Equipment Failure: On Sunday Evening, March 3rd, RWSA Wastewater Department staff identified that Secondary Clarifier #4 at MCAWRRF appeared to have a significant mechanical malfunction. Upon further review by staff, the rotating arm of the clarifier mechanism caught the stationary arm, wrapping it around the center of the clarifier. Staff mobilized MEB General Contractors under its On-Call Maintenance Construction Services Contract with Faulconer, and the clarifier was back up and operational with just one stationary arm on Friday, March 8th. Staff are waiting on the necessary parts to complete repairs to the clarifier arms, but in the meantime, the clarifier is operational should it be needed for wet weather events. The remaining repairs will be completed by the RWSA Maintenance Department.

18. Security Enhancements

Design Engineer:	Hazen & Sawyer
Construction Contractor:	Security 101 (Richmond, VA)
Construction Start:	March 2020
Percent Complete:	80% (WA9), 80% (WA10)
Based Construction Contract + Change Orders to Date = Current Value:	$718,428 (WA1) + $834,742 (WA2-10)
Completion:	June 2024 (WA9), August 2024 (WA10)
Budget:	$2,810,000

Current Status: WA9 will include installation of card access on all exterior doors at the South Rivanna WTP. WA10 will include installation of card access on the exterior doors of the finished water pump station and "795" tank buildings in Scottsville. Device installation is complete here as well, with only startup and programming remaining. Design of MCAWRRF entrance modifications with Hazen & Sawyer continues, with discussions with Dominion Energy also ongoing, as relocation of existing electrical infrastructure will be required. This relocation process will need to be finalized prior to the project proceeding to the bidding phase. Relocation of existing electrical infrastructure will require coordination with the adjacent landowner, as the infrastructure must be completely relocated from the entrance area. As these discussions are ongoing, staff have submitted appropriate permitting documents to Albemarle County.

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MEMORANDUM

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

FROM: **BETSY NEMETH, DIRECTOR OF ADMINISTATION AND COMMUNICATIONS**

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

SUBJECT: **ADMINISTRATION AND COMMUNICATIONS REPORT**

DATE: **JUNE 25, 2024**

Human Resources

Annual turnover for the Rivanna Water and Sewer Authority for the fiscal year beginning on July 1, 2023, is 13.0% through June 6, 2024.

Our summer interns have started working with us. Jenny Little, who is attending William and Mary, is working in the Wastewater and Administration departments. Sofia Beard, who is attending Catawba College, is working with the Water department and Laboratory. Benjamin Stevens, who is attending Virginia Tech, is working in the IT department. Florence Pinkston, who has an associate's degree from Piedmont Virginia Community College, is working in the Wastewater department. We also welcomed a new Wastewater Operator Trainee, Sam Marshall. We are happy to have all of them join our team.

We recently completed Open Enrollment in our health insurance and benefit programs for all employees for the fiscal year beginning July 1, 2024. We have changed our dental and vision insurer to Principal, and we are excited to work with them. We have also contracted with OneDigital to manage our Health Reimbursement Arrangements, Flexible Spending accounts and COBRA administration.

Safety

Our Safety Manager Worked with his counterpart at the University of Virginia to put together the electrical safety chapter for our Safety Manual. The draft is now being reviewed by our Maintenance Department.

Our Safety Manager also continues to attend construction progress meetings and to inspect our construction sites.

Community Outreach

We were pleased to have several groups tour our facilities in May. On May 16th and 17th, we had all of the first graders from Woodbrook Elementary come for a tour of the Ivy Materials Utilization Center. We also had another Ivy MUC tour on May 23, 2024 with our interns and a resident of Charlottesville.

We have chosen RedOrange Studios out of Richmond, VA to help us with the redesign of our website and that work is beginning.

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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: **WHOLESALE METERING REPORT FOR MAY 2024**

DATE: **JUNE 25, 2024**

The monthly and average daily Urban water system usages by the City and the ACSA for May 2024 were as follows:

		Month	***Daily Average***	
City Usage (gal)		139,772,980	4,508,806	**47.0%**
ACSA Usage (gal)		157,694,718	5,086,926	**53.0%**
Total (gal)		**297,467,698**	**9,595,732**	

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 June 2023), 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.

Figure 1: City of Charlottesville Monthly Water Usage and Allocation

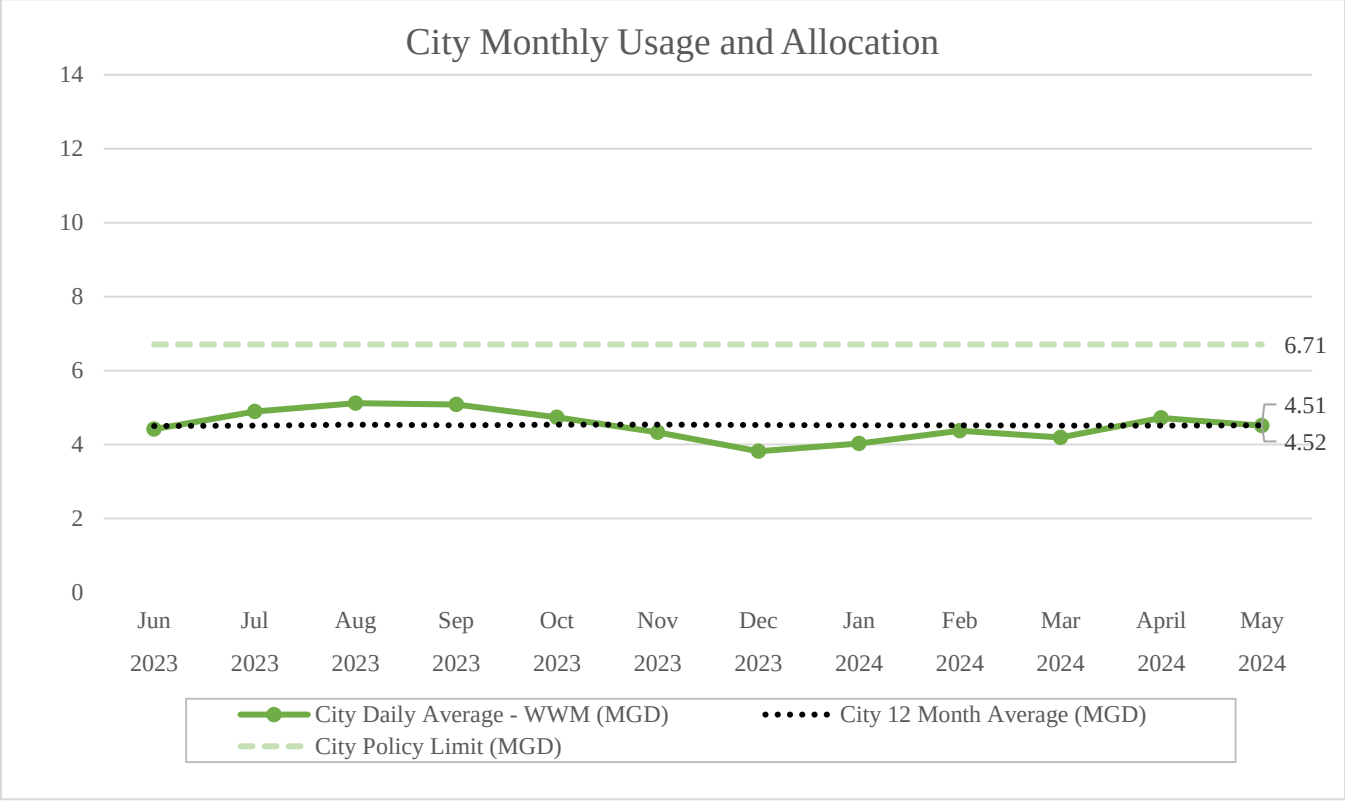
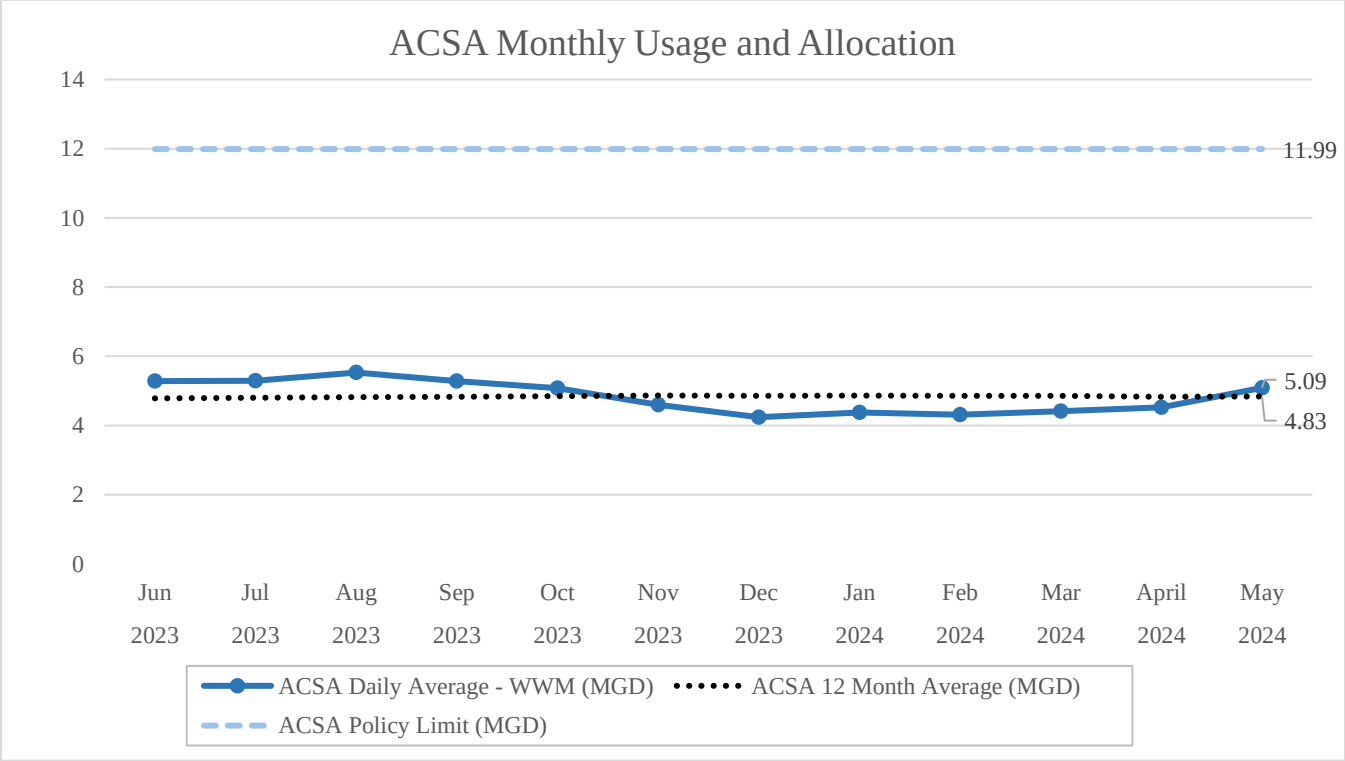


Figure 2: Albemarle County Service Authority Monthly Water Usage and Allocation



Meter Locations for the Wholesale Water Metering Project

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

FROM: **BETHANY HOUCHENS, WATER RESOURCES COORDINATOR**
DAVE TUNGATE, DIRECTOR OF OPERATIONS & ENVIRONMENTAL SERVICES

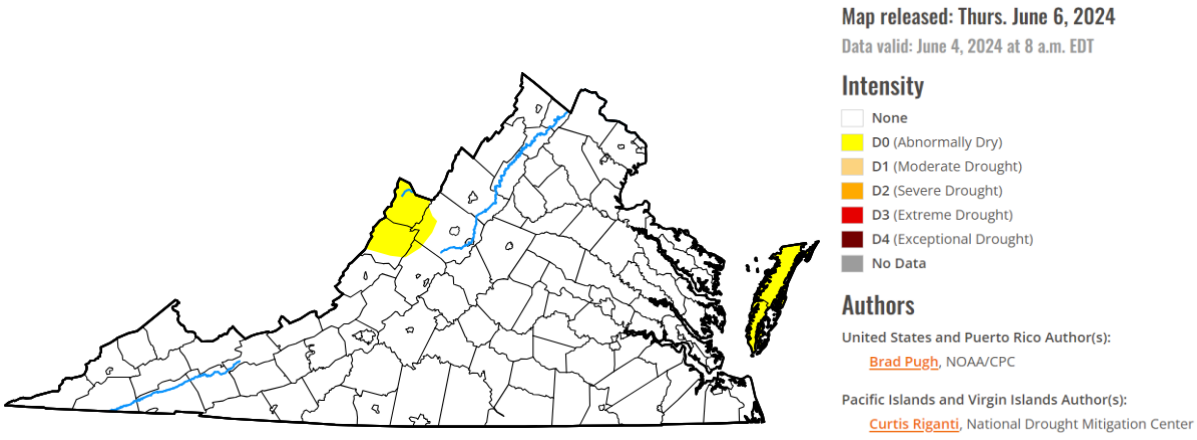
REVIEWED: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **DROUGHT MONITORING REPORT**

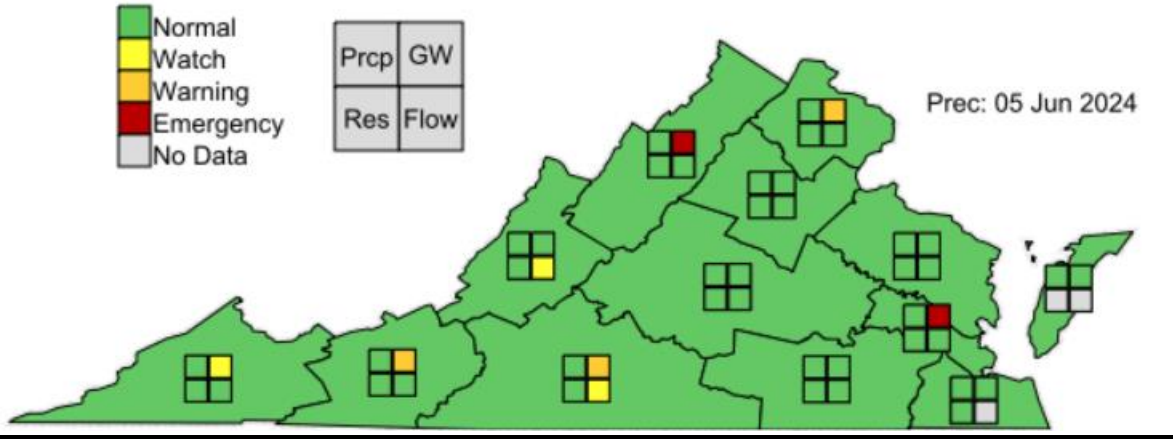
DATE: **JUNE 25, 2024**

State and Federal Drought Monitoring as of June 10, 2024:

- U.S. Drought Monitoring Report: Indicates there are no drought conditions in Albemarle County.



- VDEQ Drought Status Report: Our region is listed as being in a "Normal" level for all indicators.



Precipitation & Stream Flows

Charlottesville Precipitation					
Year	Month	Observed (in.)	Normal (in.)	Departure (in.)	Comparison to Normal (%)
2021	Jan - Dec	33.82	41.61	-7.79	-19
2022	Jan - Dec	43.53	41.61	+1.92	+5
2023	Jan – Dec	26.95	41.61	-15.98	-35
2024	Jan - May	16.07	16.5	-0.43	-2.6

Source: National Weather Service, National Climatic Data Center, Climate Summary for Charlottesville, Charlottesville Albemarle Airport station

USGS Stream Gaging Station Near the Urban Area (June 4 – June 10)				
Gage Name	Rolling 7-day Avg. Stream Flow		Median Daily Streamflow	
	cfs	mgd	cfs	mgd
Mechums River	46.4	30	69	44.6
Moormans River	31.3	20.2	39	25.2
NF Rivanna River	46.9	30.3	52	33.6
SF Rivanna River	79.6	51.4	170	109.9

Median daily flow: June 10th for the period of record (approx. 30 - 80 years)

Status of Reservoirs as of June 18, 2024

- Urban Reservoirs are 98.9 % of Total Useable Capacity
- Beaver Creek Reservoir (Crozet) is 100% of Total Useable Capacity
- Totier Creek Reservoir (Scottsville) is 100% of Total Useable Capacity

Drought History in Central Virginia

- Severe: 1930, 1966, 1982, 2002
- Longest: May 2007 - April 2009; 103 weeks
- Significant: every 10 -15 years
- Drought of Record: 2001- 2002; 18 months

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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: **APPROVAL OF FY24-28 and FY 25-29 CAPITAL IMPROVEMENT PLAN AMENDMENT – RIVANNA PUMP STATION RESTORATION**

DATE: **JUNE 25, 2024**

This request is to authorize a project addition to the FY 2024-2028 and FY 2025-2029 Capital Improvement Plans for the Rivanna Pump Station Restoration with a total project budget of $22,000,000.

Background:
On January 9th, 2024, during a wet weather event, the Rivanna Pump Station experienced a malfunction, causing the wet well level to rise above normal operating levels and ultimately water entered the dry pit pumping rooms. The submergence of the pumps and motors caused catastrophic failure of the station. Between January 9th and 26th, staff constructed a 10mgd bypass (Phase 1) operation diverting flow into other areas of the wastewater treatment plant. From January 10th to February 14th, a 55 mgd bypass (Phase 2) was constructed allowing the full capacity of the pump station to be replaced temporarily. In February and March, the pump station was dewatered, cleaned and inspected. Upon safe entry, our third-party inspection team began the Root Cause Analysis Investigation. The investigation was completed in early June and the findings report has since been forwarded to our insurance carrier.

Concurrent with investigations, staff have secured an emergency contract with MEB Construction to assist with all aspects of the inspection and rebuild efforts. Staff have worked with our design and construction team to remove and ship all pumps and motors for factory testing and inspection. Additionally, work is underway to identify and procure long lead item components. Numerous design workshops are scheduled for June and July to detail rehabilitation efforts as well as station enhancement to prevent future failures.

The most recent total project cost estimate, including emergency response, investigation, and reconstruction is approximately $22 M. Of that, $3.6 M has been paid to date through operating accounts. Establishment of a CIP project will allow for the reimbursement of the operating accounts and the use of bond proceeds for the remaining work.

Board Action Requested:

Approval of an amendment to the FY 2024-2028 and FY 2025-2029 Capital Improvement Plan to create a new project with a budget of $22 M for the Rivanna Pump Station Restoration.

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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: **APPROVAL TO AMEND PROFESSIONAL ENGINEERING SERVICES WORK AUTHORIZATION - CENTRAL WATER LINE PROJECT - MICHAEL BAKER INTERNATIONAL**

DATE: **JUNE 25, 2024**

This request is to authorize the Executive Director to execute a Work Authorization with Michael Baker International (Baker) and it's subconsultants totaling $450,600 to provide additional design services to revise design of about 5000 LF of the RWSA water line alignment from Little High Street to Long Street for the Central Water Line project and to increase the project contingency.

Background

Early phases of this project (initially referred to as the Avon to Pantops Water Main) began in 2017. Due to the complicated nature of the finished water system, and several outstanding hydraulic considerations, the water line project was placed on hold while a comprehensive Urban Finished Water Master Plan was completed. 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 to connect and strengthen the urban water system in 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 negotiated with Baker and approved by the Board of Directors in July 2017. Results from the Urban Finished Water Master Plan and the Central Water Line Routing Study were discussed in multiple workshops with the City and ACSA staff, and it was determined during these meetings that a central water line corridor through the City was the best option to hydraulically interconnect the southern half of the urban area water system, meeting the intent of the original Avon to Pantops Water Main concept.

At the June 2021 Board meeting, the Board of Directors approved a work authorization to take the Central Water Line project from the routing study phase through the bidding phase. The scope of work included performing preliminary engineering, geotechnical investigations, subsurface utility engineering (SUE), survey, final design, permitting, plat preparation, public outreach, and bidding services for approximately five miles of new water line associated with the Central Water Line Project. RWSA staff also brought project presentations to the Board at meetings in January and June of 2022 to provide updates on the evaluation of the alignment routes through the City. At the June 2022 Board of Directors meeting, a resolution was approved to accept the Southern (Cherry Ave) Alignment for final design which included approximately 3,500 feet of 24" water line in the East High St. corridor.

Following the 90% design workshop held with the City and ACSA in March 2024, it was determined that there was not enough right-of-way in E. High St. to provide adequate horizontal clearance and accommodate both the RWSA Central Water Line and the City's proposed 12" water line. The City requested that RWSA acquire additional easement or re-design in another alignment. Due to the tight E. High St. corridor, RWSA will pursue an alternative alignment from 11th Street to Little High St. to Meade Ave. to Fairway Ave. to Caroline Ave. and then through a City parcel adjacent to the Rivanna River, totaling about 5000 LF. Re-design in this corridor will require additional geotechnical investigations, subsurface utility engineering, survey, preliminary and final design, and plat preparation for new easements. This re-design provides an opportunity for ACSA to abandon an old water line on the City parcel so this work authorization will include a re-location of one of the wholesale water meters for the ACSA. As the City and RWSA will not be both constructing water lines in E. High St., the City's 12" water line design in E. High St. will be de-coupled from the Central Water Line project.

The original Board authorization for the design and bidding services totaled $1,488,000 with a 25% contingency for any potential future amendments needed to complete the work. Previous amendments totaled $158,926 for additional City water line design, additional asphalt patching in City streets from the SUE work, and additional modeling. The requested work authorization totals $450,600 which exceeds the original 25% design contingency authorized by the Board. With the increased contingency, there will be approximately $60K remaining in contingency for any future amendments through bidding.

Board Action Requested:

Authorize the Executive Director to execute a Work Authorization totaling $450,600 with Michael Baker International for additional professional services to complete the Central Water Line project, and any further amendments needed to complete the project not to exceed 45% of the original contract amount of $1,488,000, provided the resulting total cost is within the approved CIP project budget.

UPDATE ON SUGAR HOLLOW DAM RUBBER CREST GATE MALFUNCTION & ALARM SYSTEM IMPLEMENTATION

PRESENTED TO THE BOARD OF DIRECTORS

BY VICTORIA FORT, P.E., RWSA SENIOR CIVIL ENGINEER

JUNE 25, 2024

RIVANNA WATER & SEWER AUTHORITY

Agenda

- Overview of Sugar Hollow Dam Rubber Crest Gate
- Review of January 17, 2024 Incident
- Summary of Post Event Actions
- Discussion of Siren System Design Status and Considerations
- Questions?

Sugar Hollow Dam Rubber Crest Gate Overview

- The Sugar Hollow Dam (SHD) is equipped with a 5’ tall inflatable rubber crest gate (“bladder”) that controls the water level in the reservoir.
- The original bladder was installed in 1999 to replace metal crest gates damaged in a 1995 storm and was replaced in-kind in 2021.
- When inflated, the gate impounds about 69 of the 367 million gallons of drinking water stored in the reservoir (about 19%).
- The gate is operated via automated controls and monitored remotely 24/7 by RWSA staff.

January 17, 2024 Crest Gate Malfunction

- Around 7:00 am on January 17, 2024, the Sugar Hollow Dam rubber crest gate malfunctioned and began to deflate, releasing ~69 MG water downstream in under an hour.
- RWSA staff and Albemarle County Fire Rescue (ACFR) arrived on site around 8:25 am to determine the cause of the issue and any remaining hazards to the public.
- RWSA staff quickly determined that the cause was a coupling on the pneumatic piping that had become detached (likely due to sub-freezing temperatures).
- Repairs were completed within a few minutes, and the bladder was put back in operation by 9:00 am.

Post Event Actions

- Information Gathering:
  - Documented the event and follow up actions in an After-Action Report
- Mechanical Evaluation & Improvements:
  - Installed additional Pipe Supports immediately after the event
  - Engaged the services of dam engineering consultant to inspect the air piping and make recommendations for modifications
  - Staff is proceeding with these modifications (anticipated summer 2024)
- Alarms & Programming:
  - Replaced camera for improved nighttime visibility
  - Reviewed existing SCADA alarms
  - Created additional alarms for improved detection of system issues
  - Installing additional monitoring equipment in fall of 2024 (tailwater sensor)

RWSA staff repairing the air line coupling

Post Event Actions, cont.

- Emergency Response & Public Notification:
  - Meetings with Charlottesville-University-Albemarle Emergency Communications Center (CUAECC) and National Weather Service (NWS) to improve emergency response & coordination
  - Tabletop Exercise Planned for October 2024
  - Encouraging residents to opt-in to CUA-911 emergency notification system
  - Developing audible warning (siren) system for immediate notification in downstream areas
  - Coordinating with VDOT on high water/flashing signs at bridges and roads prone to flooding
  - Evaluating educational signage for the Sugar Hollow valley
- Community Engagement:
  - Conducted community meetings on February 1 and March 14 and met with community representatives on May 8
  - Coordinating with other community groups, including Trout Unlimited and Camp Sugar Hollow

CUAECC

High Water road sign example

Audible Warning (Siren) System Planning

- Met with Fairfax Water and Howard County, MD on May 20, 2024 to discuss their implementation of siren systems.
  - Fairfax Water has a siren system to warn residents of a sunny day breach of the Occoquan Dam.
  - Ellicott City has developed a comprehensive flood warning and resiliency plan in response to fatal flood events in 2016 and 2018.
- Developing initial cost information for siren system downstream of SHD
- Developing operational parameters for siren system at SHD as a possible model for other RWSA high hazard dam facilities (Ragged Mountain, South Rivanna, and Beaver Creek).
- Study to begin in second half of 2024 with implementation in early 2025.

Audible warning siren example

Siren System Considerations

- Under what scenarios will a siren system be employed? Sunny Day failure/malfunction ONLY or include a failure during a heavy rain event?
- Will the siren be triggered automatically (not preferred by most municipalities) or require manual trigger by Operations staff?
- How much of the inundation area will be covered by audible alarms (only areas immediately downstream or all affected areas)?
- Outreach - How will the siren system affect the community? How will RWSA and community partners educate the public on appropriate actions if the siren sounds?
- Should systems be installed at all RWSA high hazard facilities? Includes Sugar Hollow Dam, Ragged Mountain Dam, South Rivanna Dam, and Beaver Creek Dam.
- Is there grant funding available?

Questions?

Rivanna Pump Station Submergence:

Causation Report

RWSA BOARD OF DIRECTORS

JUNE 25, 2024

BY: JENNIFER WHITAKER, DIRECTOR OF ENGINEERING & MAINTENANCE

RIVANNA
WATER & SEWER AUTHORITY

Pump Station Data

- Constructed in 2017
- Has a Wet side and a Dry side
- Dry Side has two pump rooms, each with 3 pumps
  - 4 large pumps each at 13 mgd
  - 2 smaller pumps each at 7 mgd
  - Firm Total Pumping Capacity 53 mgd
- Receives approximately 66% of the Urban System Wastewater
- Lifts Water 110 feet to the Plant Headworks


Rivanna PS

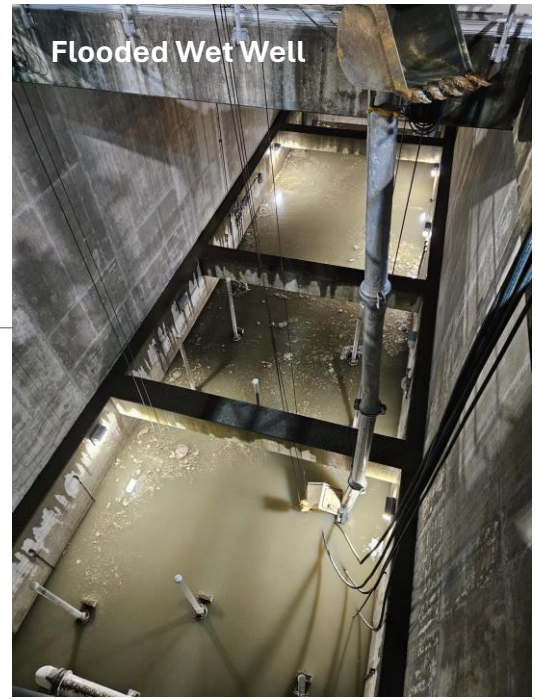
Wet Well

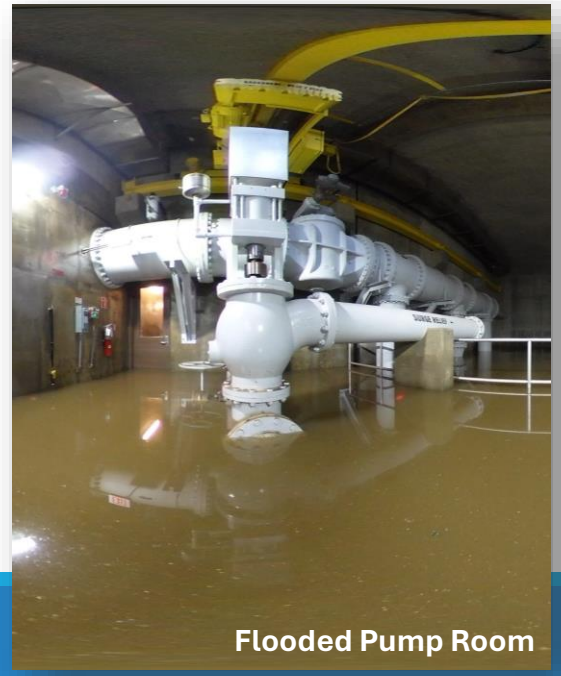

Pump Room

Event Summary

January 9, 2024

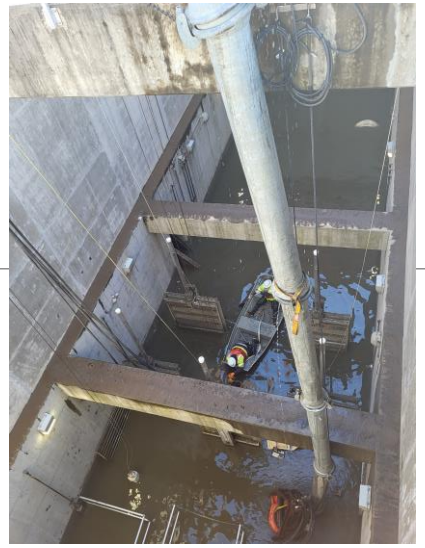
Time	Event
6:00 am	Rainfall Begins (3.46” between 6am -7:30pm)
10:00 am	Pumping increases to meet rising wastewater flows
3:30 pm	Excess storage in the collection system is full Pump station wet well exceeded 15’ of depth (2.5’ below covers)
3:45 pm	Several Pumps fault & Operators reset pumps No visible surcharging over the wet well covers
4:58 pm	Sump High Level Alarm in Pump Room 1 Pressure likely pushed off the manhole top at MH-2
5:37pm	SCADA alarm prompts operators to visit all site pump stations
6:00 pm	Operators discover water 16’ above the wet well covers & 5’ in the pump rooms Water rising rapidly in the pump room and stairways
6:10 pm	Additional staff begin arriving to facilitate emergency response Wet well and pump room water levels equalize
11:45 pm	Staff observe flooding in Riverview Park

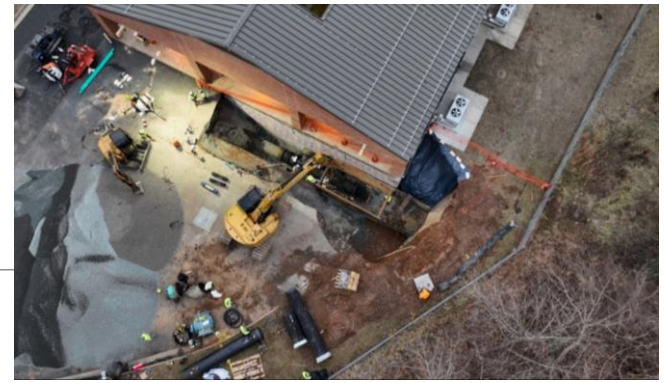


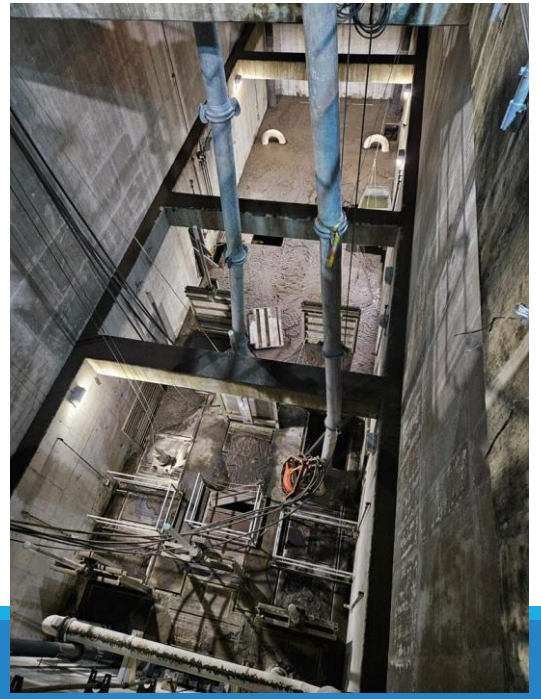


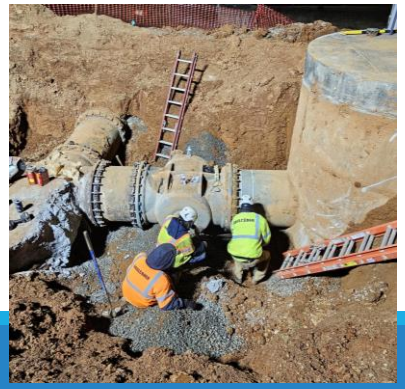
Phase 1 – 10 mgd Bypass

- January 9-26th
  - Installed 36” Force Main Interconnection
  - Constructed multiple Bypass Pumps
  - Diverted partial flow to the Moores Creek PS
  - Addressed Collection System Overflows
  - Gained access to the Wet Well Covers and below
  - Removed Broken Headworks Valve
  - Constructed 10mgd Bypass Operation
  - Began Construction of the full 55mgd Bypass



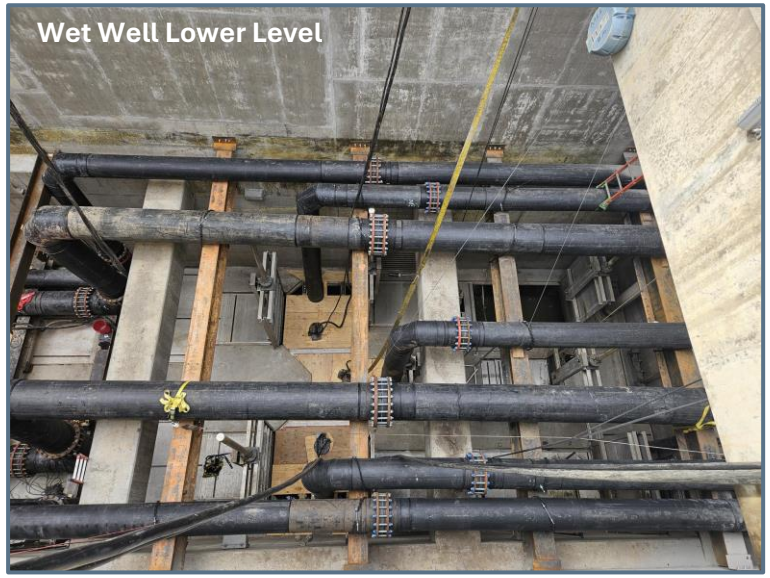






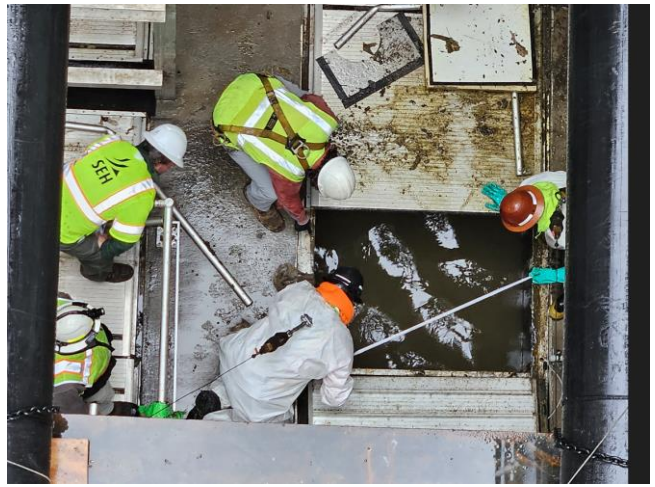
Phase 2 – 55 mgd Bypass

- January 9-February 14th
  - Installed two 36” Force Main Headers
  - Modified the Connection Structure
  - Added Work Site Fall Protection
  - Cleaned Wet Well and Installed Structural Beams
  - Installed 7 Bypass Pumps
  - Constructed full 55mgd Bypass



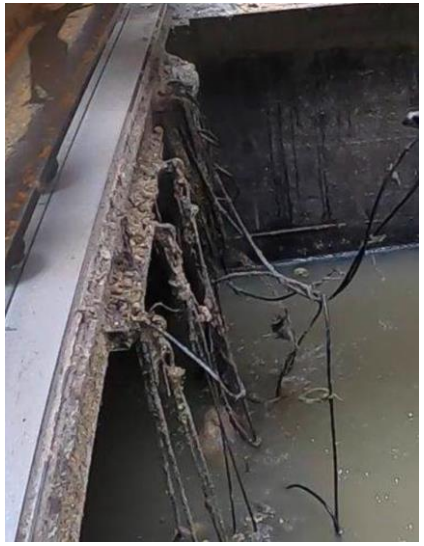
Phase 3 – Investigation

- Jan 30 Dry well fully pumped down
- Feb 8 First Entry into the Dry Side by SCUBA certified contractor-documented internal site conditions; Testing of internal piping integrity
- Feb 12 Start Wet Well, Control Systems, Sluice Gate Inspection & Pump Control Panel and Control Instrument Testing
- Feb 20 Contractor Cleaning and Disinfection of Interior begins
- Mar 12 Interior Pipe Draining in Preparation for Disassembly begins
- Mar 18 Pump and Motor Disassembly, Disinfection and shipping for Manufacturer inspection and Testing begins
- Mar 19 Detailed Inflow Control Gate Inspection
- Mar 20 Check Valve Inspection
- Feb-Jun Interview Staff, Model Sewer System and River System, Detailed Review of Controls and Pump Operations
- June 5 Submitted Final Root Cause Analysis to Insurance Carrier



Phase 4 - Restoration

- February – June 2024
  - Investigated Long Lead Item Components with Supplier
  - Developed a Strategy to Execute Design and Reconstruction
  - Developed Plan to Access Condition of Remaining Equipment
  - Removed Pumps and Motors and shipped for Inspection
  - Condition Assessment of Motors and Pumps
  - Hired MEB for Emergency Construction Services
  - Held Pump Selection Design Workshop
  - Reviewed Sluice Gate Rehab & Ordered new Gate
  - Placed Order for Pump Rehabilitation and new Motors
  - Scheduled Resiliency Items Design Workshop
  - Scheduled Instrumentation and Controls Design Workshop



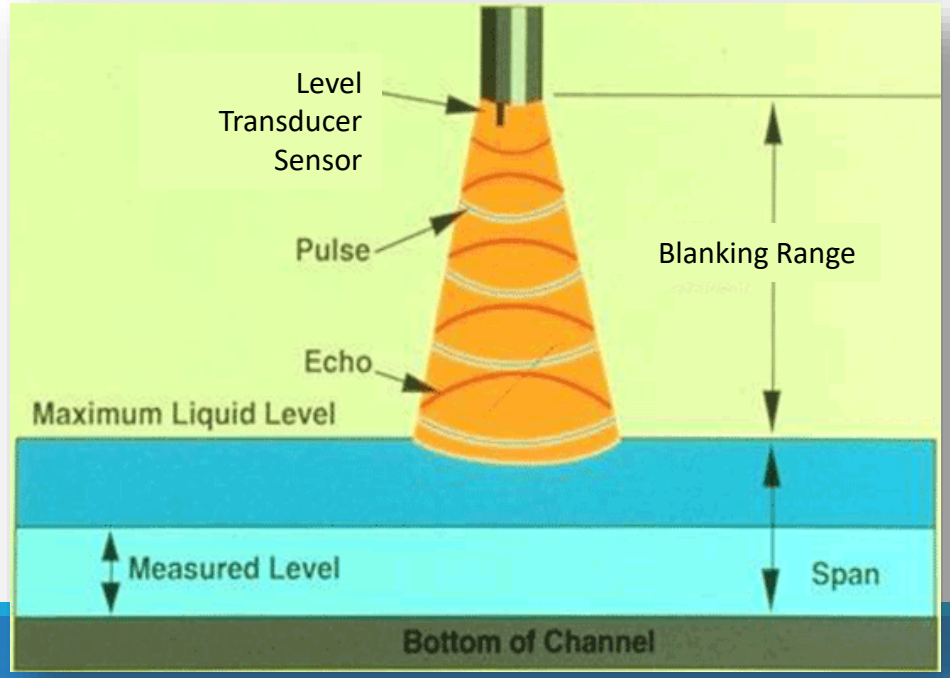
Root Cause Analysis

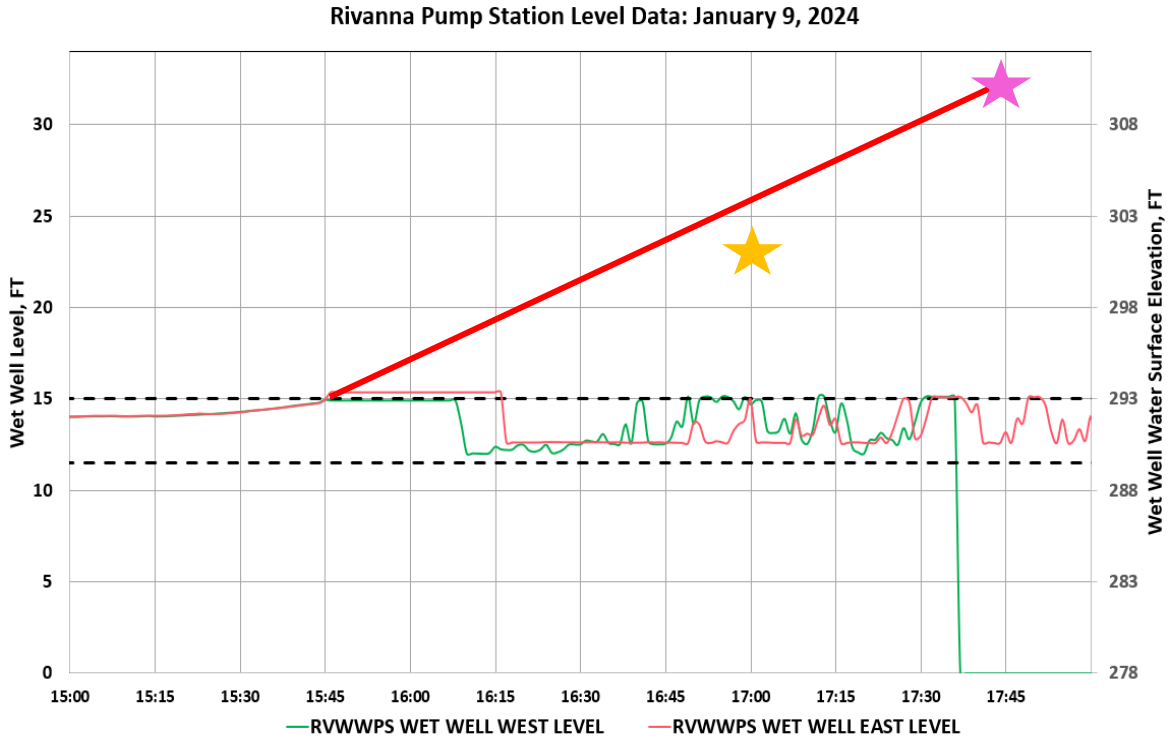
Findings:

1. Complex Pump Control System Malfunction
2. Water Levels in the Wet Well and the Collection System Rose Quickly once Storage Capacity was Full
3. Wastewater Entered the Pump Room 2 via an HVAC Duct that Connected the Wet Well and Stairs to the Pump Rooms
4. Wastewater Inundated the Pump Rooms and Submerged the Pumps

Root Cause Analysis - Findings

1. **Complex Pump Control System Malfunction**
   - A. The Ultrasonic Transducer Inaccurately Measured the Wet Well Level

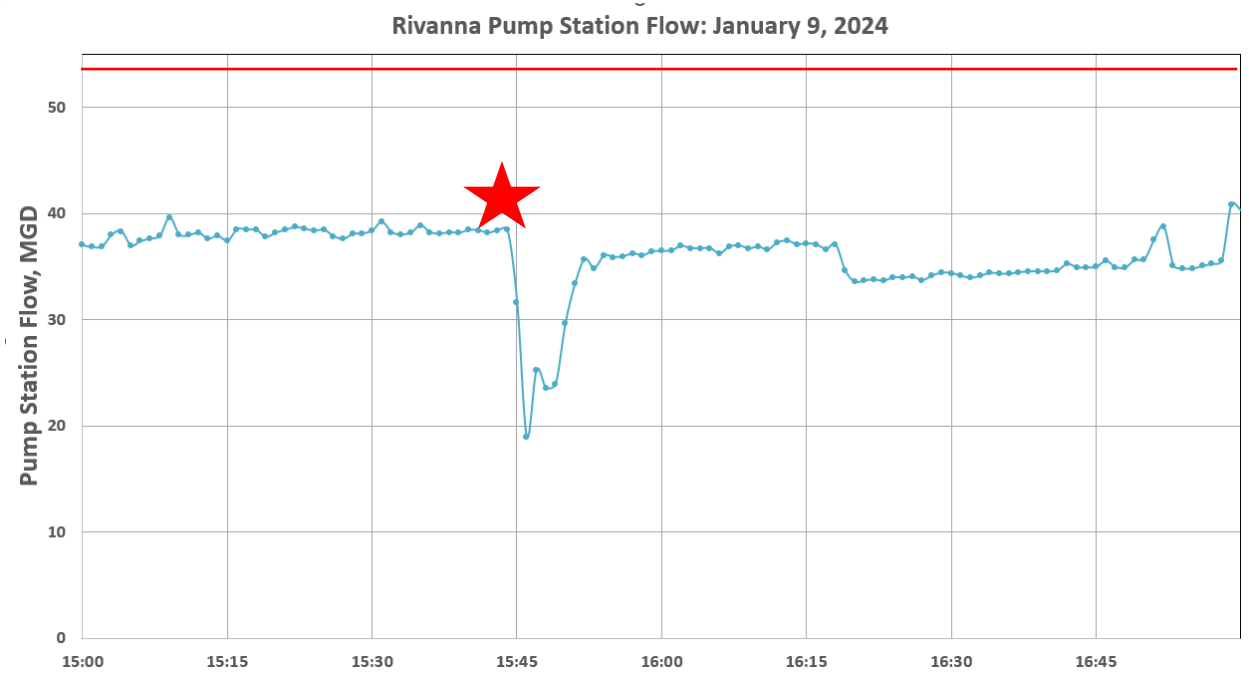




- **Water Level Entered the Blanking Range**
- **Water Then Submerged Transducer**

Root Cause Analysis - Findings

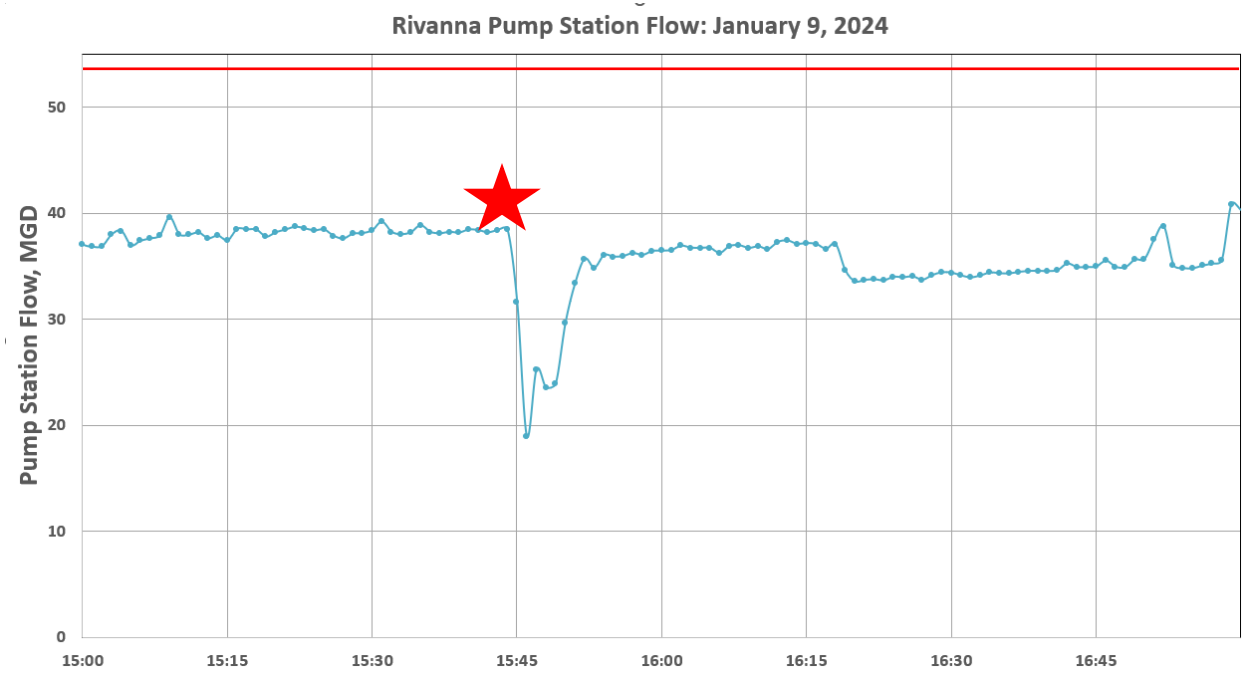
1. **Complex Pump Control System Malfunction**
   - A. Ultrasonic transducer inaccurately measured the wet well level
   - B. Some pumps did not automatically transfer from SCADA control to Emergency Float Control
   - C. SCADA set point for 2 of the pumps was limited to 75% when all 5 pumps were activated



- **Pump 3 running**
- **Pumps 1, 2 & 5 shut down**
- **Only Pumps 2 & 5 restarted**
- **Pumps 4 & 6 Slowed Down to 75% speed**

Root Cause Analysis - Findings

1. **Complex Pump Control System Malfunction**
   - A. Ultrasonic transducer inaccurately measured the wet well level
   - B. Some pumps did not automatically transfer from SCADA control to Emergency Float Control
   - C. SCADA set point for 2 of the pumps, when all 5 pumps were called for, was limited to 75%
   - D. Collection system capacity filled at the same time pumping capacity was reduced



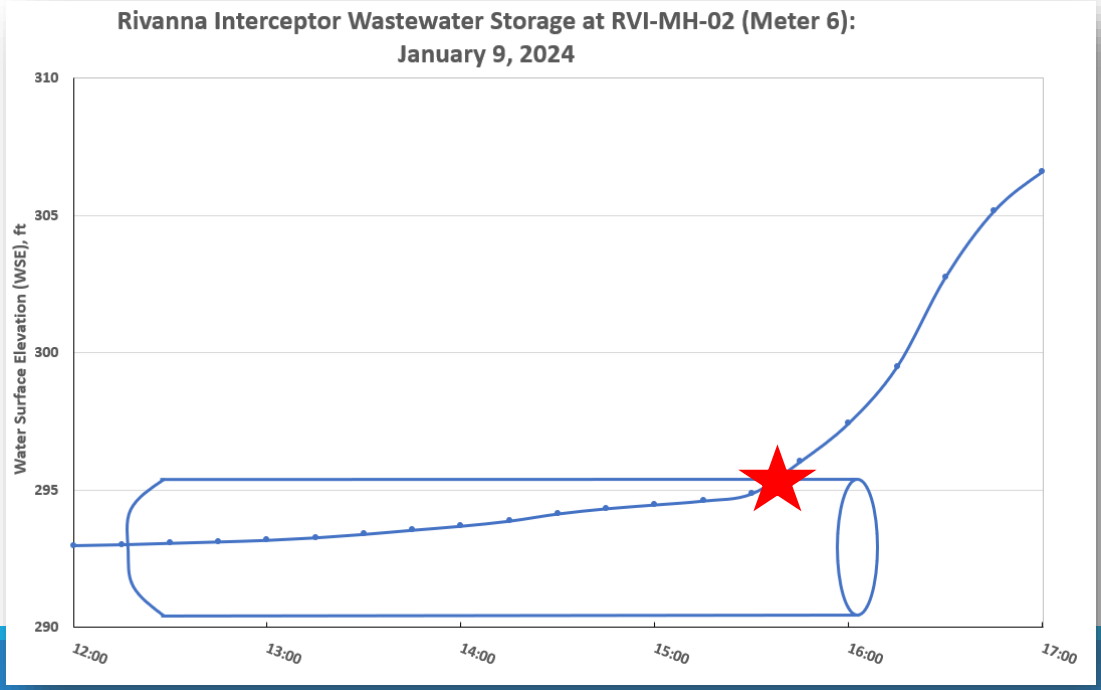
- **Triggers Multiple Control Changes Simultaneously**
- **Wet Well Level Enters the Blanking Range**
- **Limits System Reaction Time**

- **Pump 3 running**
- **Pumps 1, 2 & 5 shut down**
- **Only Pumps 2 & 5 restarted**
- **Pumps 4 & 6 Slowed Down to 75% speed**

Root Cause Analysis - Findings

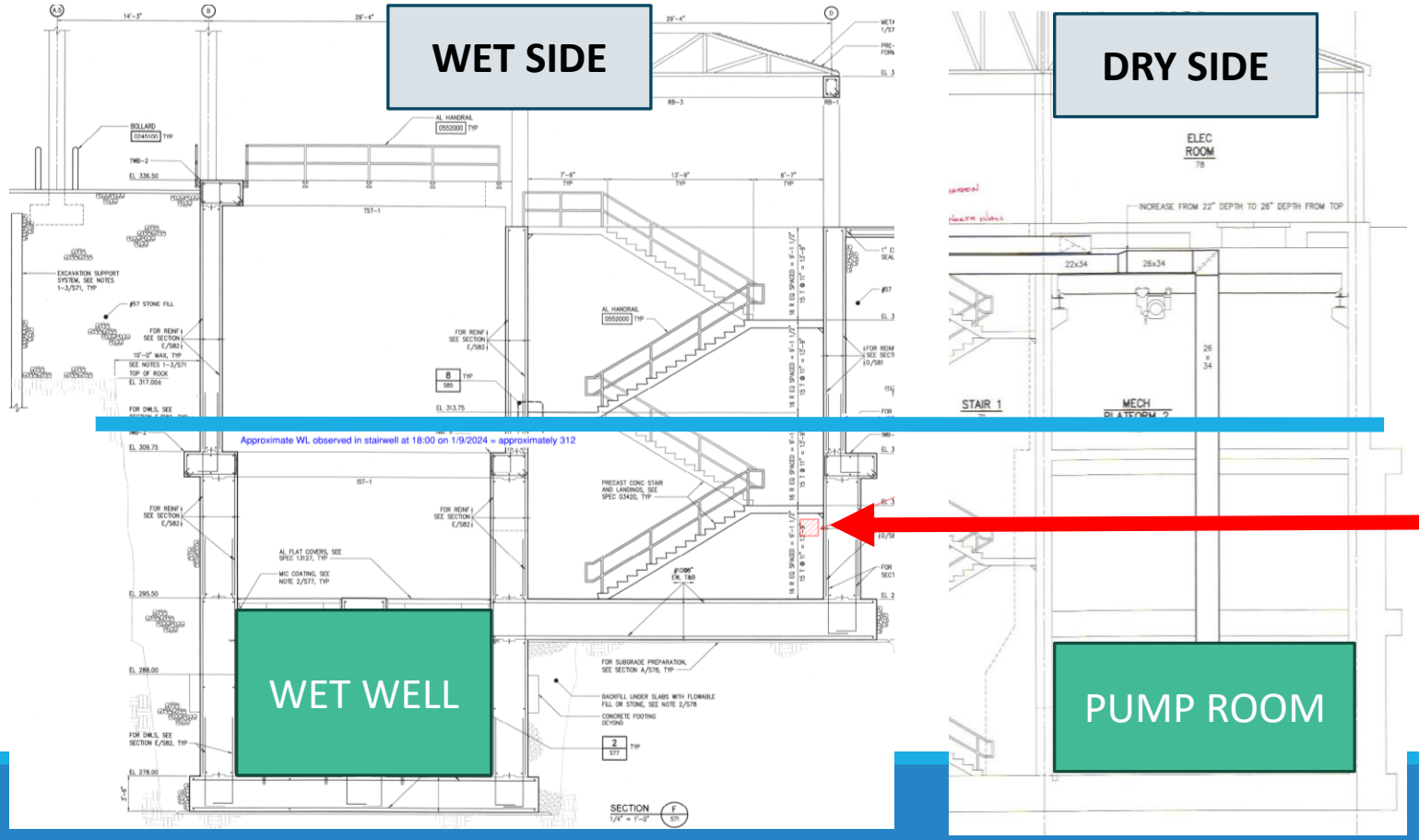
2. **Water Levels in the Wet Well and the Collection System Rose Quickly once Storage Capacity was Full**

- **System Buffer is Gone**
- **Rapid Elevation Rise in Wet Well**
- **Reduced Reaction Time**



Root Cause Analysis - Findings

3. **Wastewater Entered Pump Room 2 via an HVAC Duct that Connected the Wet Well and Stairs to the Pump Rooms**



Root Cause Analysis - Findings

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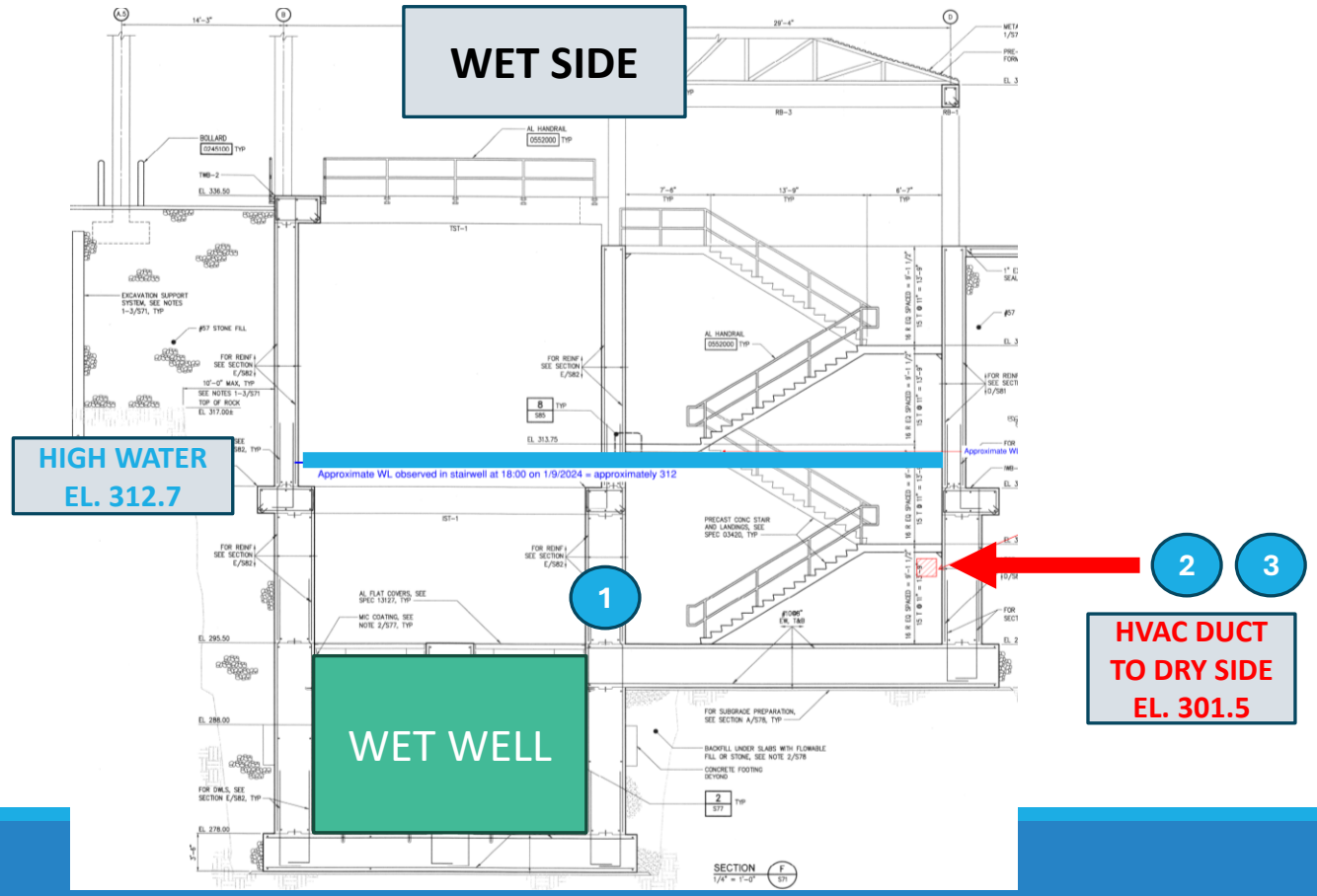
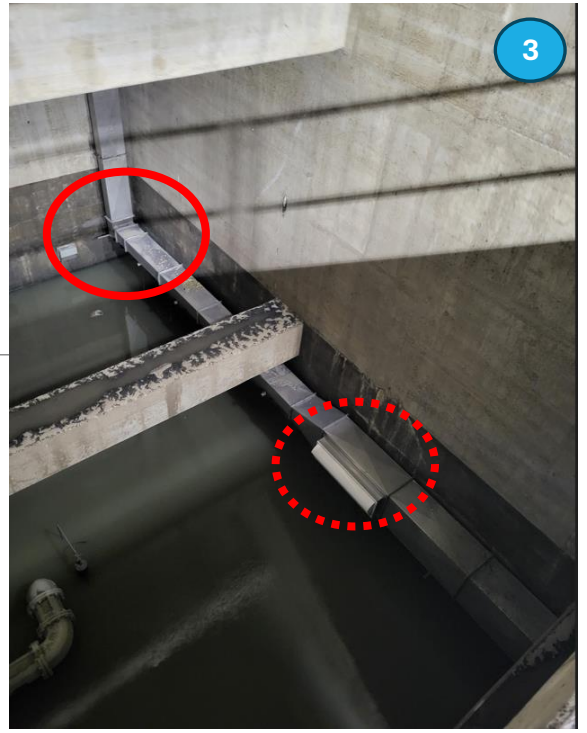
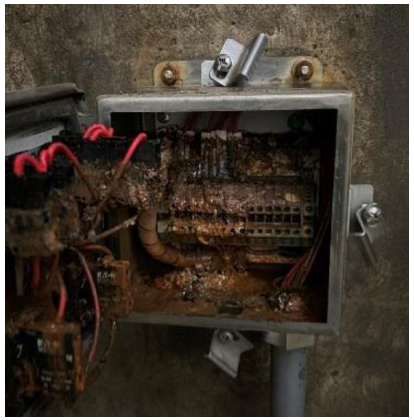


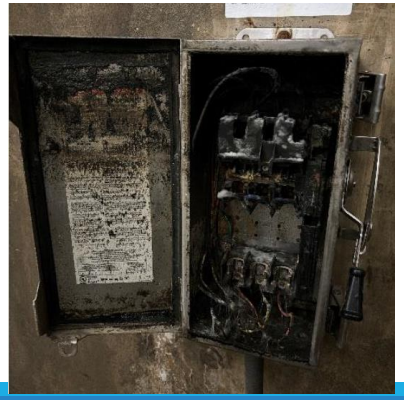


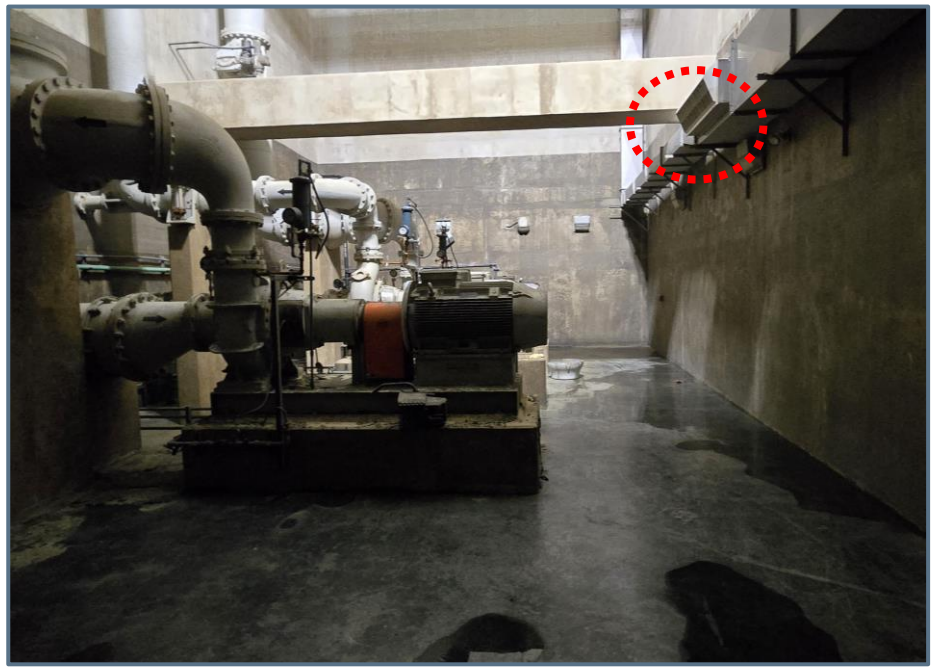
Root Cause Analysis - Findings

4. **Wastewater Inundated the Pump Rooms and Submerged the Wastewater Pumps**

- **35 feet of Water in the Pump Rooms**
- **Motors are not rated for Immersion**
- **Partial operation of equipment for several days submerged**
- **Electrical and Mechanical failure**

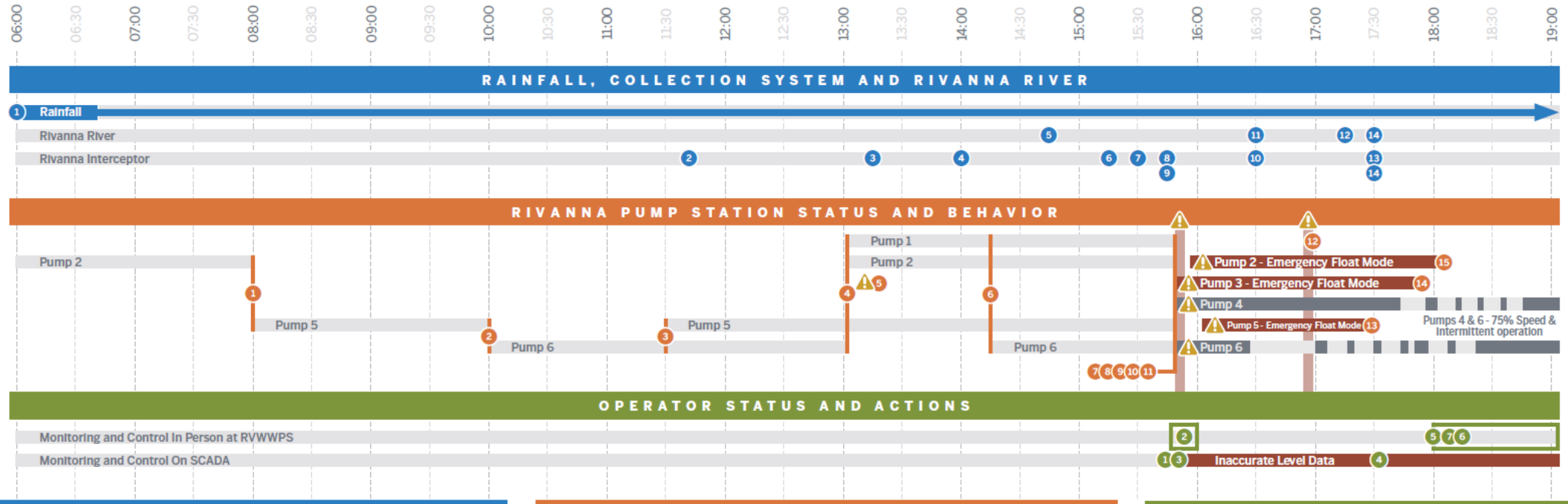






Summary

- The January 9th storm was 3.46” of rain over 14 hours. It was a 2–5-yr. storm for rainfall and a 10-yr. storm for river flows
- The wastewater inflow at the time of pump station failure (~43 mgd) was less than the rated capacity of the station 53 mgd
- Once the excess capacity of the collection system was full, the wet well level rose rapidly
- The rapid rise triggered a series of nearly simultaneous pump control changes, which resulted in several pumps faulting. One pump shut down and never restarted
- After the operators restarted the faulted pumps, the station ran at a reduced output (between 20 - 41 mgd due to a limiting set point and inaccurate transducer level readings).
- The low pump station output and high inflow resulted in:
  - The wet well rising over the covers, into the stairwell and through an HVAC penetration, flooding Pump Room 2. Wastewater then moved from Pump Room 2 through the access stairway and Flooded Pump Room 1
  - Inundation of the Pump Rooms caused electrical and mechanical failure of the pumping equipment
  - Surcharging pressure in the collection system forced manhole lids off in 4 locations.
- Operators attempted to close the Wet Well Influent Sluice Gate but could not close it due to corrosion and grit in the tracks
- Subsequently, the Rivanna River rose over its banks and connected with the open manholes, thereby connecting the river to the submerged pump station



RAINFALL, COLLECTION SYSTEM AND RIVANNA RIVER

1. **06:00** Rainfall began in Charlottesville area and continued until 19:30.
2. **11:45** Rivanna Interceptor backwatered up to Meter 6 (RVI-MH-02).
3. **13:15** Rivanna Interceptor flow exceeded 20 mgd.
4. **14:00** Rivanna Interceptor flow exceeded 30 mgd.
5. **14:45** Earliest reasonable estimate of when upstream manhole RVI-MH-21 was overtopped by the river. The most reasonable estimate was the river overtopping the manhole at 16:45. The manhole was equipped with a gasketed bolt-on cover.
6. **15:15** Rivanna Interceptor flow exceeded 40 mgd.
7. **15:30 – 15:45** Rivanna Interceptor storage capacity between the pump station and Meter 6 filled up. Flows to the pump station were no longer equalized by storage in the interceptor.
8. **15:45** At the last timestep when influent flow to the pump station could be estimated, it was estimated to be approximately 43 mgd.
9. **15:45** The hydraulic grade in the interceptor began rising rapidly due to the lower portion of the interceptor becoming full, and the reduced pump station capacity.
10. **16:30 – 16:45** The hydraulic grade in the interceptor had backed up beyond the confluence of the Rivanna and Meadowcreek Interceptors.
11. **16:30 – 21:15** The Rivanna River came out of its banks in the area between Darden Towe Park and Riverview Park.
12. **17:15 – 21:45** Time range for when the Rivanna River overtopped the downstream manholes RVI-MH-02, -04, -09.
13. **17:30** Hydraulic gradeline in Rivanna Interceptor rose above RVI-MH-02 rim elevation and pushed off concrete flattop and manhole cover. Manhole covers at RVI-MH-04, -09, and -21 were pushed off some time afterward 17:30.
14. **After 17:30** once the manhole covers at RVI-MH-02, -04, -09, and -21 were pushed off and the Rivanna River rose above these manholes, the interceptor and river were hydraulically connected.

RIVANNA PUMP STATION STATUS AND BEHAVIOR

1. **08:01** Low flow pumps rotated on a timer
2. **09:54** Pump level controller staged up to 1HI
3. **11:30** Pump level controller staged up to 1LO 1HI
4. **13:02** Pump level controller staged up to 2LO 1HI
5. **13:13** Pump 3 transitioned from scada control to emergency float control but does not start.
6. **14:16** Pump level controller staged up to 2LO 2HI
7. **15:44** Pump 5 switched to emergency float mode. The transition caused a VFD fault which locked out the pump until reset and started by the operators at 15:51.
8. **15:45** Wetwell level rose to 15 feet. Pump level controller staged up to 2LO 3HI with the following effects:
   1) Pump 4 turned on
   2) Pump 4 & Pump 6 speed reduced to 75% due to speed setpoint limitations
9. **15:46** Pump 2 switched to emergency float mode. The transition caused a VFD fault which locked out the pump until reset and started by the operators at 15:49.
10. **15:46** Pump 1 switched to emergency float mode, but did not begin running or generate an alarm due to a controls malfunction.
11. **15:46** Pump 3 was started by a float switch in emergency float mode, it had previously switched to emergency float mode at 13:13. Pump 3 running at 100% speed. Pumps 4 & 6 running at 75% speed.
12. **16:58** RVWWPS Pump Room 1 high sump alarm triggers. Indicating water has infiltrated from the wetwell into the pump room.
13. **17:28** The vibration sensor faults out. Faults are reset indicating operators attempted to reset from SCADA.
14. **17:55** Pump 3 faults out.
15. **18:04** Pump 2 faults out.
16. **After 18:04** Pump station is operated locally and not enough information is available to to determine pump station behavior from the alarm and SCADA record, except for Pumps 4 & 6.

OPERATOR STATUS AND ACTIONS

1. **15:44** Operators recieved an alarm indicating Pump 2 and Pump 5 faulted.
2. **15:49** Operators visited the pump station and reset Pump 2 and Pump 5. Then confirmed that five pumps were running. Pumps 2, 3, and 5 running at 100% speed. Pumps 4 & 6 running at 75% speed.
3. **After 15:45** SCADA displayed inaccurate wetwell level data to the operators due to behavior when the sensors were in the blanking range and submerged. SCADA inaccurately showed the wetwell levels to be in the normal control range.
4. **17:36** One level transducer value went to zero which alerted the operators that there may be an issue with the level instruments. The operators began a round of in-person checks to each of the pump stations, Moores Creek WWPS, Effluent PS, and Rivanna WWPS.
5. **18:00** Operators visit the Rivanna WWPS. Observe water level to be approximately 312 in wetwell stair. Observe water level to be below motors in Pump Room 1 and above motors in Pump Room 2. Water was observed coming out of the ductwork in Pump Room 2.
6. **18:10** Operators attempted to close 60" RVWWPS influent gate. Actuator exceeded torque limits and faulted out. Attempt to manually crank hand wheel bent the gate stem but did not close the gate.
7. **After 18:04** Operators attempted to maintain station capacity by resetting pumps that faulted out.

Timeline Summary from Root Cause Analysis Report

Next Steps

- Discussions with VRSA Insurance Carrier about Coverage (June – October 2024)
  - Review of VRSA Policy with our Attorneys
- Design Workshops to Address Resiliency & Pump Control Systems (June – July 2024)
  - Flood Proofing, HVAC Relocation, Pump Room Isolation,
  - Level Sensing Modification; Pump Controls and Programming Modification
  - Emergency Bypass Pumping Connections
- Design & Construction of Restoration, Resiliency Items, and Controls (June 2024 – Mar 2025)
- Removal of Bypass Pumping System (January 2025)
- Close Out and Return to Normal Operation (May 2025)

Budget Estimate

Work Item	Estimated Cost
Emergency Response & Bypass Rental	$ 7.3M
Investigations	$ 0.3M
Design & Construction	$ 12.1M
Subtotal	$ 19.7M
Contingency (10%)	$ 1.97M
Total	$ 21.7M
CIP Project Budget	$ 22.0M


Questions?

PFAS Regulatory and Class Action Litigation Update

PRESENTED BY:

DAVE TUNGATE, DIRECTOR OF OPERATIONS AND ENVIRONMENTAL SERVICES

BOARD OF DIRECTORS MEETING

JUNE 25, 2024

RIVANNA WATER & SEWER AUTHORITY

New EPA PFAS Regulations*

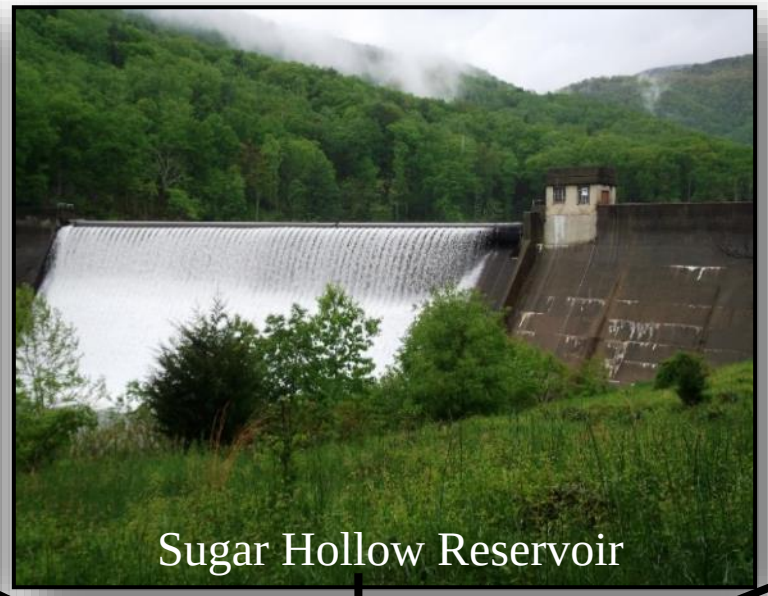
PFAS Compound	MCLG	MCL (ppt or ng/L)#
PFOA	0	4.0
PFOS	0	4.0
PFHxS	10	10
HFPO-DA (Gen X chemicals)	10	10
PFNA	10	10
Mixture of two or more PFHxS, PFNA, HFPO-DA, and PFBS	Hazard Index 1 (unitless)	Hazard Index 1 (unitless)

part per trillion is the same as :

- 1 inch in 16 million miles
- 1 penny in $10 B
- 1 second in 32,000 years

*** As of April 10, 2024**


South Fork Rivanna Reservoir


Sugar Hollow Reservoir


Ragged Mountain Reservoir

Urban
Area

3.3 Billion Gallons

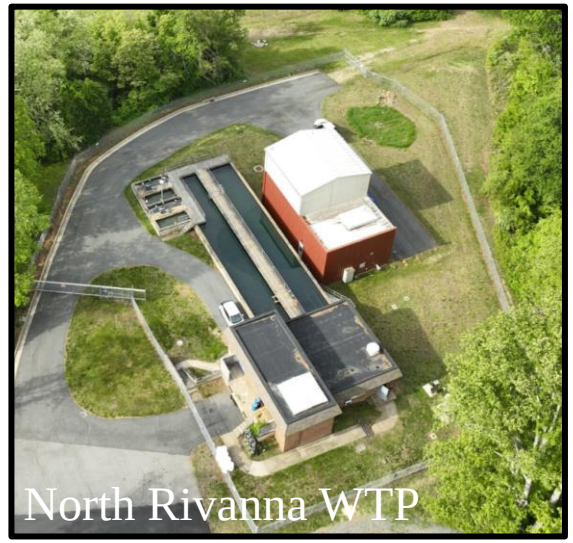

Beaver Creek Reservoir - Crozet


Totier Creek Reservoir - Scottsville

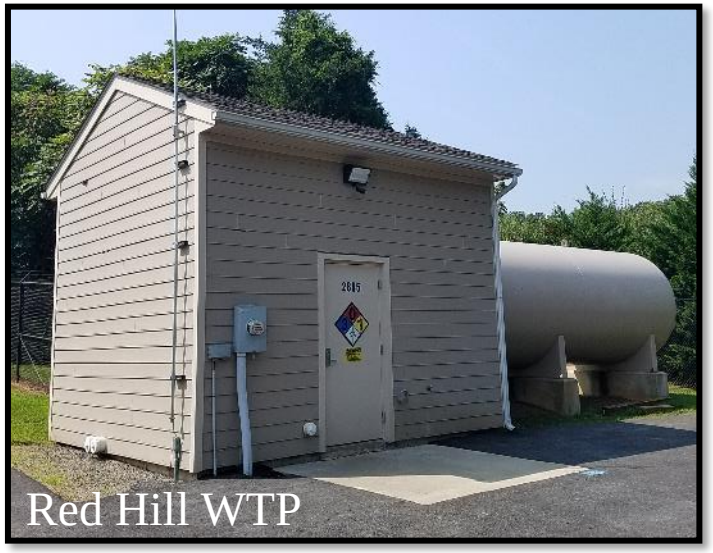
5 Water Supply Reservoirs


South Rivanna WTP


Observatory WTP


North Rivanna WTP


Crozet WTP


Red Hill WTP


Scottsville WTP

6 Water Treatment Plants

Definitions

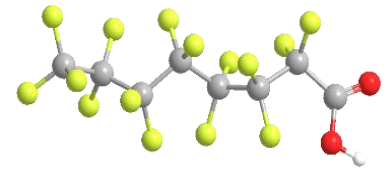
- Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology and taking cost into consideration. *MCLs are enforceable standards.*

- Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water **below which** there is no known or expected risk to health. *MCLGs allow for a margin of safety and are non-enforceable public health goals.*

PFAS abbreviations

PFAS chemical abbreviation	PFAS chemical name
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PFHxS	Perfluorohexanesulfonic Acid
HFPO-DA (Gen X chemicals)	Hexafluoropropylene oxide dimer acid
PFNA	Perfluorononanoic Acid
PFBS	Perfluorobutanesulfonic Acid

PFAS



PFAS Explained:

EPA

Where are PFAS found?

Most people in the United States have been exposed to some PFAS. People can be exposed to PFAS by touching, drinking, eating, or breathing in materials containing PFAS. PFAS may be present in:

Drinking Water
An important potential source of PFAS exposure.

Waste Sites
Soil and water at or near landfills, disposal sites, and hazardous waste sites.

Fire Extinguishing Foam
Used in training and emergency response events at airports and firefighting training facilities.

Facilities
Chrome plating, electronics, and certain textile and paper manufacturers that produce or use PFAS.

Consumer Products
Stain- or water-repellent, or non-stick products, paints, sealants, and some personal care products.

Food Packaging
Grease-resistant paper, microwave popcorn bags, pizza boxes, and candy wrappers.

Biosolids
Fertilizer from wastewater treatment plants used on agricultural lands can affect ground and surface water.

Food
Fish caught from water contaminated by PFAS and dairy products from livestock exposed to PFAS.

Very little of the PFAS in water can get into your body through your skin, so, showering, bathing, and washing dishes in water containing PFAS are unlikely to significantly increase your risk.

RWSA PFAS drinking water sampling history

- 2014 - First PFAS samples were collected as a part of UCMR 3. Minimal detections at very low levels.
- Collected PFAS samples more than 20 times at the five surface water treatment plants and 16 times at Red Hill WTP (ground water system)
- Each sample kit requires sampler to fill approx. 20 containers for each sample location: $395 per sample

Minimal PFAS detections in Raw and Treated Water

PFAS Compound	MCL (ppt)	Highest concentration detected (ppt)	Location Date
PFOA	4.0	23	North Rivanna 05/24/2023
PFOS	4.0	6.5	North Rivanna 05/24/2023
PFHxS	10	5.2	North Rivanna 05/24/2023
HFPO-DA (Gen X chemicals)	10	0	-
PFNA	10	0	-
Mixture of two or more PFHxS, PFNA, HFPO-DA, and PFBS	Hazard Index 1 (unitless)	0.58	North Rivanna 05/24/2023

RIVANNA AUTHORITIES

Hazard Index Calculation

How do I calculate the Hazard Index?

The Hazard Index is made up of a sum of fractions. Each fraction compares the level of each PFAS measured in the water to the highest level below which there is no risk of health effects. EPA is currently developing an online calculator to assist water systems in determining their Hazard Index result. The online calculator will perform the calculation explained in this fact sheet.

Step 1. Divide the measured concentration of Gen X by its health-based value of 10 ppt.

Step 2. Divide the measured concentration of PFBS by its health- based value of 2000 ppt.

Step 3. Divide the measured concentration of PFNA by its health-based value of 10 ppt.

Step 4. Divide the measured concentration of PFHxS by its health-based value of 10 ppt.

Step 5. Add the ratios from steps 1, 2, 3 and 4 together.

Equation:

$$\text{Hazard Index (1 unitless)} = \left(\frac{[\text{HFPO} - \text{DA}_{\text{ppt}}]}{[10\ \text{ppt}]}\right) + \left(\frac{[\text{PFBS}_{\text{ppt}}]}{[2000\ \text{ppt}]}\right) + \left(\frac{[\text{PFNA}_{\text{ppt}}]}{[10\ \text{ppt}]}\right) + \left(\frac{[\text{PFHxS}_{\text{ppt}}]}{[10\ \text{ppt}]}\right)$$

Step 6. Compliance with the Hazard Index MCL is determined by a running annual average. To determine the running annual average, repeat

South Rivanna WTP
8 Contactors
320,000 pounds of GAC
8 MGD Capacity

Observatory WTP
6 Contactors
240,000 pounds of GAC
6 MGD Capacity

North Rivanna WTP
1 Contactor
40,000 pounds of GAC
1 MGD Capacity

Crozet WTP
2 Contactors
40,000 pounds of GAC
1 MGD Capacity

Scottsville WTP
2 Contactors
12,000 pounds of GAC
0.25 MGD Capacity

PFAS Compliance Timeline

WITHIN 3 YEARS
(By 2027)

- Initial quarterly monitoring must be conducted at all entry points to the water distribution system.

AT 3 YEARS
(Starting 2027)

- Monitoring results in annual Consumer Confidence Report. Public notification for monitoring and testing violations.

AT 5 YEARS
(Starting 2029)

- Compliance with new regulation if the running annual average is < MCL for each regulated PFAS compound. Quarterly compliance samples start in 2028 for a RAA in 2029.

Compliance calculation

If the PFAS concentration is < MCL, then 0.0 is used for the Running Annual Average (RAA) calculation.

For example:

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	RAA
PFOA	2.0	3.0	5.0	2.0	1.3

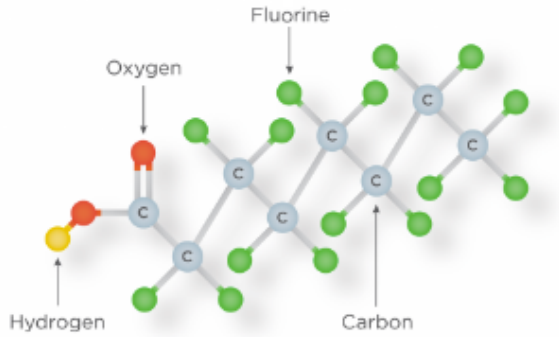
RAA = 0 + 0 + 5 + 0 = 1.3

For more information refer to EPA website:
https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas

EPA PFAS Drinking Water Standards

- The US EPA estimates that over many years the PFAS MCLs will prevent PFAS exposure in drinking water for approximately 100 million people, prevent thousands of deaths, and reduce tens of thousands of PFAS-attributable illnesses.

AWWA/AMWA file petition for review of new PFAS rule



AWWA and the Association of Metropolitan Water Agencies (AMWA) on June 7 filed a petition with the U.S. Court of Appeals for the District of Columbia Circuit to review U.S. EPA's Final PFAS Drinking Water Rule.

AWWA and AMWA share EPA's goal of protecting public health. The associations are concerned, however, that EPA did not rely on the best available science and the most recent occurrence data and used novel approaches as the basis for portions of the rule. The petitioners believe the rule underestimates nationwide costs and adds to affordability challenges without achieving the public health outcomes we all seek.

American Water Works Association

ASSOCIATION OF METROPOLITAN WATER AGENCIES

Reference - PFAS | American Water Works Association (awwa.org)

Class action lawsuits have four defendants

- 3M ($10.5 B)
- Dupont ($1.18 B)
- Tyco ($0.75 B)
- BASF ($0.31 B)

Settlement Benefit

- **Payments:** Made to each Class Member (who has not excluded itself) based on Allocation Procedures detailed in the *Estimated Allocation Range Tables (not available for Tyco and BASF as of 6/12/2024)*

- **Allocation Procedures:** Reflects factors used in designing a water treatment system in connection with contamination levels
  - Key Factors: Volume of impacted water (Flow Rate) and Degree of impact (Contamination Levels)
  - Formulaic approach applied pro-rata to eligible Claimants

Approximate Settlement Amounts *

Water Treatment Plant	3 M	Dupont
North Rivanna	$300,000	$40,000
South Rivanna	$300,000	$30,000
Observatory	$200,000	$20,000
Scottsville	$20,000	$1,000
Red Hill	$0	$0
Crozet	$50,000	$1,000
Total	**$870,000**	**$92,000**

*- Settlement tables not yet available for Tyco and BASF

South Rivanna Reservoir on May 3, 2024

Questions?