




Board of Directors Meeting


October 24, 2023


2:15pm



695 Moores Creek Lane | Charlottesville, Virginia 22902-9016

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www.rivanna.org 

BOARD OF DIRECTORS

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

DATE: OCTOBER 24, 2023

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 SEPTEMBER 26, 2023*
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*

9. OTHER BUSINESS

- a. Presentation: Rivanna Conservation Alliance's Water Quality Monitoring and Related Activities*
Lisa Wittenborn, Ph.D., Executive Director
Claire Sanderson, Ph.D., Monitoring Program Manager
- b. Presentation: Value Engineering Program Review*
Jennifer Whitaker, P.E., Director of Engineering and Maintenance
- c. Presentation: Major Capital Projects Update*
Scott Schiller, P.E., Engineering Manager

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



RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
September 26, 2023

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, September 26, 2023 at 2:45 p.m. via Zoom.

Board Members Present: Mike Gaffney, Sam Sanders, Jeff Richardson, Brian Pinkston, Ann Mallek, Gary O’Connell, Lauren Hildebrand.

Board Members Absent: None.

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

Attorney(s) Present: Valerie Long.

1. CALL TO ORDER

Mr. Gaffney convened the September 26, 2023 regular meeting of the Board of Directors of the Rivanna Water and Sewer Authority at 2:45 p.m.

2. STATEMENT FROM THE CHAIR

Mr. Gaffney read the following statement aloud:

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

“I would like to call the September 26, 2023 meeting of the Board of Directors to order.

“This virtual meeting today is being held pursuant to and in compliance with Virginia Code 2.2-3708.3. The opportunities for the public to access and participate in the electronic meeting are posted on the Rivanna Authority's website. Participation will include the opportunity to comment on those matters not listed for public hearing on the agenda. All Board members are participating electronically. All Board members will identify themselves and state their physical location via electronic means during the roll call, which we will hold next.”

Ms. Anama called the roll.

Mr. Gaffney stated that he was at 3180 Dundee Road, Earlysville, Virginia.

Mr. Sanders stated that he was in City Hall, located at 605 East Main Street in the City of Charlottesville.

Mr. Richardson stated that he was at the Albemarle County Office Building located at 401 McIntyre Road in Charlottesville.

Ms. Mallek stated that she was at 4826 Advanced Mills Road, Earlysville.

Mr. Pinkston stated that he was at 575 Alderman Road in Charlottesville.

Mr. O'Connell stated that he was at 168 Spotnap Road, the ACSA Administration Building in Charlottesville.

Ms. Hildebrand stated that she was at 305 4th Street Northwest in Charlottesville.

3. AGENDA APPROVAL

There were no comments on or questions for the agenda.

Ms. Mallek moved to approve the agenda. Mr. Pinkston seconded the motion, which carried unanimously (7–0).

4. MINUTES OF PREVIOUS BOARD MEETING ON AUGUST 22, 2023.

There were no comments on or questions regarding the minutes.

Mr. O'Connell moved the Board to approve the minutes from the meeting held on August 22, 2023. Ms. Mallek seconded the motion, which passed unanimously (6–0). (Mr. Gaffney abstained.)

5. RECOGNITIONS

There were none.

6. EXECUTIVE DIRECTOR'S REPORT

Mr. Mawyer reported that one of their engineers, Dyon Vega, passed his state licensing exam for professional engineering. He stated that Mr. Vega was in the process of completing the paperwork and would soon be licensed as a professional engineer in the state of Virginia. He noted that they had eight engineers on their staff, including himself, all of whom were licensed as professional engineers in the state of Virginia. He congratulated Bonnie Eveleth, who is a Water Operator, for passing her Class 2 Water Operator license exam. Ms. Eveleth has been with Rivanna for about one year, operating the South Rivanna Water Treatment Plant.

Mr. Mawyer stated that September was "National Preparedness Month", and they conducted an emergency operations plan training with the staff last month. He stated that the Rivanna Emergency Operations Plan had checklists for what should be done in preparation for emergencies, including coordination, communications, and continuity of operations. He stated it provided plans if the Moore's Creek facility was not available, they would go to the South Rivanna Water Treatment Plant. He stated that they spent most of the day with management staff and trained on the procedures and protocols included in the emergency plan. He noted this was because of events like what happened in Hawaii, where there were issues with notifications, and the emergency response staff may not have been prepared. He stated they were trying to be as proactive and prepared as they can for any type of emergency.

Mr. Mawyer stated that they had their team building event with a "Breakfast at the Beach"

93 theme organized by Ms. Anama. He noted that it was good opportunity for staff to network with
94 other employees.

95
96 He stated that they applied for a safety grant from the Virginia Risk Sharing Association, who
97 was their insurance provider. He stated they received a \$4,000 grant which was used to buy gas
98 monitoring meters. He stated the equipment was necessary because if staff members were going
99 into confined spaces, like sewer manholes, they must monitor the gas to ensure there were no
100 methane gases present that could harm them. He stated they also acquired fall protection
101 equipment and a confined space blower system, which helped to remove harmful gases from
102 confined spaces. He stated that confined spaces and the gases they contain were potentially lethal
103 environments, and they worked hard to ensure staff was properly trained.

104
105 Mr. Mawyer stated they invited Virginia Senator Creigh Deeds and his legislative director, Tracy
106 Eppert, to visit our facilities. He stated that the visit included a presentation in their conference
107 room about all of the facilities. He stated they took them on a windshield tour of the South
108 Rivanna Water Treatment Plant, Observatory Treatment Plant, and the Ivy MUC. He stated
109 Senator Deeds talked about some of his duties and topics he worked on at the General Assembly.

110
111 Mr. Mawyer stated that they had applied for the 2022 “Larry Gordon Facility Safety Award” for
112 the Crozet Water Treatment Plant. He stated the Virginia AWWA sent a committee to tour the
113 facility and look at the administrative safety documents. He stated that they won the award for
114 the Crozet Water Treatment Plant. He stated they received a plaque at the Virginia joint annual
115 meeting that was held in Virginia Beach earlier in the month. He stated Tom Barger, Water
116 Operator, received the award for the Authority. He thanked Betsy Nemeth, Administration and
117 Communications Director, and Liz Coleman, Safety Manager, for their efforts to apply for and
118 win the award. He stated the Administration and Communications division was responsible for
119 all staff and contractor safety for Rivanna facilities.

120
121 Mr. Mawyer stated they were co-sponsoring with ACSA and the City the 2023 “Imagine a Day
122 Without Water” art program. He stated they sent a letter to all the principals in the City and
123 County public schools and private schools letting them know about this program and
124 encouraging their students to submit artwork. He stated they would have an awards ceremony
125 with ACSA and the City for the winning submittals. He stated the theme was, “Tell us Your
126 Action to Save Water.”

127
128 Mr. Mawyer reported that they had signed, recorded, and paid for the water line easements from
129 the UVA Foundation. He stated it included property and easements on the Westover farm, which
130 was to the north of Route 250 near Old Garth Road, as well as easements on the Foxhaven Farm,
131 which was off Reservoir Road and near the south end of Birdwood Golf Course. He stated they
132 had obtained all of the easements needed to build the pipeline from the South Rivanna Reservoir
133 and Water Treatment Plant to the Ragged Mountain Reservoir. He stated it was a critical element
134 of the 2012 community water supply plan, as it would enable them to keep Ragged Mountain
135 Reservoir full and refill it, which would be essential if they had back-to-back droughts.

136
137 Mr. Mawyer stated completion of the pipe from South Rivanna Reservoir to the Ragged Mtn
138 Reservoir would provide operational flexibility to the Observatory and South Rivanna water

139 treatment plants. He stated that they could treat water from Ragged Mountain Reservoir at the
140 South Rivanna Water Treatment Plant after the pipe was completed. He noted that it took six
141 years, and they dealt with over 19 property owners to be able to gain about nine miles of
142 easements. He stated that they also purchased a property from the UVA Foundation, 1.17 acres
143 near Reservoir Road. He stated that was where they will build the pump station that was going to
144 pump water from Rivanna Reservoir to Ragged Mountain, and from Ragged Mountain back to
145 the Rivanna Water Treatment Plant. He stated that it will also pump water from the Ragged
146 Mountain Reservoir to the Observatory Water Treatment Plant.

147
148 Mr. Mawyer stated for the pipeline from Ragged Mtn Reservoir to the Observatory WTP, they
149 expected to start the work next calendar year. He stated in 2026, they will begin work on a
150 pipeline project from Rivanna to Ragged reservoirs. He stated they aimed to complete all three
151 projects by 2030, including the central water line that would run along Jefferson Park Avenue
152 and Cherry Avenue. He stated that when completed, these projects will significantly increase the
153 practical yield of the water system and provide increased water storage for customers and the
154 community. He stated that they had already obtained all necessary easements for the pipe from
155 Ragged Mtn reservoir to the Observatory WTP, except for a small piece near the water treatment
156 plant. He stated they were continuing to work with UVA on this final easement.

157
158 Mr. Mawyer stated that he sent Tim Rose, the Executive Director of the UVA Foundation, a
159 letter to thank him because they were the largest single property owners that they had to work
160 with for this pipeline project including on Birdwood, Westover, and Foxhaven Farms.

161
162 Mr. Pinkston asked when the line would be installed.

163
164 Mr. Mawyer stated that from 2026 to 2030, the project known as Rivanna to Ragged pipeline
165 will be underway. He stated the Ragged to Observatory pipeline was scheduled for completion in
166 2024 through 2029. He stated the central water line was planned for next year, 2024 through
167 2028. He stated that they could expect a lot of piping activity over the next seven years within
168 the community. He stated the Ragged to Rivanna pipe was one of the projects supported by the
169 Board in the last CIP, which was why it had been accelerated to increase the area's water supply.

170
171 Mr. Mawyer stated that prior to Friday, drought was a concern in the area, and the South Rivanna
172 Reservoir had stopped spilling for the first time in six years. He stated that they switched
173 operations so that they can produce more water at the Observatory Treatment Plant and take less
174 water from the South Rivanna Reservoir while producing less drinking water at the South
175 Rivanna plant.

176
177 Mr. Mawyer stated that with this strategy, they wanted to save water in the South Rivanna and
178 Sugar Hollow reservoirs as long as possible. He stated that they needed production at the South
179 Rivanna Treatment Plant to serve the urban area until they got the Rivanna to Ragged pipeline
180 built, which was scheduled for 2030. He stated that they needed South Rivanna and Observatory
181 WTPs in operation and with enough water supply to serve the urban community. He stated that
182 the if the South Rivanna Reservoir were low, they could take water out of Ragged Mountain and
183 pump it to the South Rivanna Water Treatment Plant and treat it there after the Rivanna to
184 Ragged pipeline was completed. He stated that this would give them great operational flexibility

185 and a tremendous increase in the water supply and operational yield.

186
187 Mr. Gaffney asked how much rain they received over the weekend and whether South Fork was
188 spilling.

189
190 Mr. Mawyer stated that South Fork was full along with Totier Creek and Sugar Hollow
191 reservoirs. He stated that all three were completely full. He noted that Ragged Mountain was
192 down by about 3.3 feet, but it remained low unless they transferred water from Sugar Hollow. He
193 stated they can only get about 3 million gallons a day through the older pipeline from Sugar
194 Hollow to Ragged Mtn Reservoir. He stated that they had recovered from their water storage
195 concern. He stated that on Friday, South Rivanna was at 83% capacity, but now it was 100%. He
196 stated that Sugar Hollow was at 97%, and it was back to 100%. He stated that Beaver Creek went
197 up about 2% in its storage capacity from 93% to 95%. He stated that Totier had been full the
198 whole season.

199
200 Mr. Mawyer stated that the total urban capacity had increased from 87% on Friday to 93.5% to
201 date. He stated they had recovered and they kept their fingers crossed that they would continue to
202 have seasonal rain. He stated the consultants ran the drought model, which predicted whether
203 they would be in a drought and whether South Rivanna Reservoir would be below 75% capacity
204 in the next 12 weeks. He stated the model indicated that they will not.

205
206 Mr. Mawyer stated that the historical weather patterns over the last 100 years were used by the
207 model, and the data was projected forward. He noted that the information was good news, but it
208 did not guarantee that there would be no drought or water supply problems if drought conditions
209 were prevalent. He stated that they were living in uncertain times with changing climate
210 conditions, and it was only a matter of time before the next record-breaking drought occurred.
211 He stated that the Army Corps of Engineers had planned to ship 36 million gallons of drinking
212 water to New Orleans every day. He stated that was because the Mississippi River was so low
213 that the brackish water from the Gulf of Mexico was contaminating the potable water supply. He
214 stated that they were doing their best to prepare the community by investing in infrastructure
215 such as the pipeline to connect the Rivanna and Ragged Reservoirs.

216
217 Ms. Mallek stated that Mr. Mawyer and his team had done a great job moving critical
218 infrastructure projects forward, and while they were expensive, they were extremely important
219 for our community. She stated that her concern was that the groundwater recharge was going to
220 be so much longer than it normally would be because all of the feeder streams and rivers out in
221 the rural area were completely dry. She noted that a lot of places out in the County did not get
222 the three inches of rain that they got in town. She stated they got 1/10 of that. She stated she
223 hoped that people will always be thinking that they should never waste a drop no matter what.
224 She stated it took a long time for their community to act with a conservation mentality. She
225 stated she hoped that people would all pretend that they lived on a well and no one was coming
226 to their rescue if it ran dry.

227
228 Mr. Gaffney noted that there was a settlement reached between the company responsible for
229 causing PFAS contamination of a reservoir and the City of Roanoke. He stated that the amount
230 of the settlement was \$1 billion. He asked if Mr. Mawyer had any more information.

Mr. Mawyer stated that they were staying in touch with a class action lawsuit against several chemical companies, including 3M. He stated the professional organizations had Aqua Law as their attorney, and they provided a briefing on this settlement which would cover all utilities in the country unless they opted out. He stated the billions of dollars that 3M and possibly other chemical companies were proposing to settle the class action suit would be shared among the utilities. He stated they were monitoring the situation and what their share might be. He stated the National Association of Clean Water Agencies was having a briefing on PFAS settlements. He stated he was going to attend that virtually to see what they had to say about the settlements. He stated the best option seemed to be to stay involved in the class action and let the attorneys already involved represent them.

Mr. Gaffney stated that it was too soon to discuss the matter since it involved long-term consequences. He stated that they had no idea about the potential expenses related to utilities, communities, individuals, and other aspects.

Ms. Mallek stated that it was Chemours who had a direct settlement. She stated that they were based in Martinsburg, West Virginia, and they agreed to cover the expenditure of \$13.5 million that Roanoke had already spent. She stated that they were unsure about the future damage or what the next surprise may be around here. She stated that they must remain vigilant at all times.

7. ITEMS FROM THE PUBLIC

There were none.

8. RESPONSES TO PUBLIC COMMENTS

There were no comments from the public, therefore, there were no responses.

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 Communication

e. Staff Report on Wholesale Metering

f. Staff Report on Drought Monitoring

g. Waiver Extension for University of Virginia Rowing Programs and Rivanna Rowing Club

Ms. Mallek stated that with the rowing extension, they were still trying to electrify. She stated that it was a short-term extension. She stated she hoped they were keeping it on the shorter side because other agencies had shifted years ago.

277
278 Mr. Pinkston asked how long the extension was.

279
280 Mr. Mawyer clarified that the extension was for two years.

281
282 Mr. Pinkston stated that the current status of their progress was unclear, but it seemed like they
283 had at least two electrified boats.

284
285 Mr. Mawyer stated that they had installed electric engines in some of their boats, but they did not
286 work well, so they had to get the manufacturer to change them. He stated that now, two of the
287 boats were the ones they used gas motors on. He stated that they had made some progress in
288 getting electric motors for some of the boats, but they were not finished. He stated the first
289 extension or waiver was granted in 2019.

290
291 Mr. Pinkston asked if other gas vehicles were allowed on the reservoir.

292
293 Mr. Mawyer stated that they had their own boat with a gas motor, which was one of the only
294 other boats allowed.

295
296 Mr. Pinkston stated that it would be better to extend it on a year-by-year basis rather than for two
297 years.

298
299 Ms. Mallek stated that it would encourage them to keep working hard, because if there was no
300 incentive, they may be less apt to raise money and get this done.

301
302 Mr. Mawyer stated that they could change the timeline to one year if that was the Board's
303 pleasure. He stated that the letter from Coach Sauer stated that they had electric motors with
304 batteries on two of the coach boats. He stated they installed a charging station for both boats and
305 were in the process of upgrading the motors. He stated that the UVA Men's and Rivanna Rowing
306 Club were fundraising for their own upgrades as they witnessed the success of the UVA
307 Women's boat. He stated that Coach Sauer was applying for a waiver for both the men's and
308 women's teams. He stated that since 2019, they had been working on the project. He stated that
309 in 2022, they made some progress, and the collaboration with Pure Water resulted in better
310 progress.

311
312 Mr. Gaffney stated that he would like to suggest approving it for two years and request an update
313 on the progress next year.

314
315 Mr. Pinkston stated that it was acceptable.

316
317 Ms. Mallek stated that she valued the rowing program and had participated in the summer
318 program in the past. She stated they had been aware of the issue for twenty years. She noted that
319 at other places, the shift had been made 10 and 15 years ago. She stated that some places never
320 allowed gas on their reservoirs. She stated she wanted to encourage them as much as possible to
321 wrap up the issue.
322

Mr. Pinkston stated that if they did a year-by-year extension, it may provide more accountability and that they will be focused on moving this forward. He stated he could not imagine that they would not support the UVA team. He stated that it was unacceptable for this situation to still be ongoing.

Mr. Gaffney stated that he was not opposed to approving it for one year.

Mr. Pinkston stated that if they revisited it on a yearly basis, rather than every other year, it would force them to provide updates more frequently. He stated that having greater accountability to both the Board and the public would be beneficial.

Ms. Mallek requested to pull item 8-G.

Ms. Mallek moved to approve the Waiver Extension for the University of Virginia Rowing Programs and Rivanna Rowing Club for 1 year. Mr. Pinkston seconded the motion, which passed unanimously (7-0).

Ms. Mallek moved to approve the Consent Agenda as amended. Mr. Pinkston seconded the motion, which passed unanimously (7-0).

10. OTHER BUSINESS

a. Presentation and Vote to Consider Approval: Request for Disposition of FY 2023 Rate Center Results; Lonnie Wood, Director of Finance and Information Technology

Mr. Wood stated the agenda item was for the disposition of year-end results and review of the operating cash account. He stated that the end of every fiscal year and after the auditors have substantially finished their field work, they review the cash operating account and compared it to the policy limit. He stated they had about a \$2.4 million shortfall compared to the policy target. He stated the two main reasons that happened was because of a \$1.4 million deficit from year-end results for 2023. He stated that for 2024, there was an increase in the policy 60-day cash target of almost \$1 million. He stated the Authority exceeded the revenue targets by \$1.05 million. However, he stated that the operating expenses exceeded the budget estimates by \$2.5 million, resulting in a \$1.47 million year-end deficit.

Mr. Wood stated the operating working capital was a financial policy adopted by the Board many years ago, and it was a 60-day cash target for the operating account. He stated 60 days was a good measure because it mimicked their working capital business cycle of cash flow. He stated that in July, they had revenue that was billed at the end of July, and it did not get fully paid until the end of August. He stated that represented 60 days, and during that same 60-day cycle, they had to make two debt payments and four payrolls. He stated that before the first revenue for FY 2024 was available for expenses, they had two months' worth of business expenses.

Mr. Wood stated that the cash on hand on June 30 was \$5.4 million, and the target was computed at \$7.84 million. He stated the adopted budget was \$47.7 million. He stated if they compared that to the same calculation from FY 2023, it was \$6.9 million. He stated it was the change in their target of \$960,000. He stated they funded the operating account shortfall by pulling funds out of

the discretionary reserve accounts. He stated that each rate center had its own discretionary reserves for these purposes. He noted that in some years, they will have surpluses, and they will replenish those reserves. He noted that this year, they had a significant target increase and an operating deficit from the previous year. He stated they went from \$29.96 million to \$27.2 million, which was still a very robust reserve balance in the discretionary reserves. He stated that most of that deficit was a result of the operating expenses being over budget.

Mr. Wood stated that there were four main areas that contributed to the excess expenses. He stated the four main utility accounts at the larger plants had a 40% increase in their electric utilities, related to fuel charges from Dominion Energy. He stated that they bid out their chemical costs every year, and in 2022 to 2023, chemical costs and bids came in at an average of 60% increase, mainly from the uncertainty at the time of fuel costs. He stated that they followed the same process for 2024, and all of the bids came in with no increase. He stated that they did not anticipate an increase in the average chemical costs per unit price for this year.

Mr. Wood stated that if they increased their usage of GAC as a result of some of the PFAS concerns, it would increase actual chemical expenses. He stated that they had several assessments from the IT infrastructure and network architecture last year. He stated some of those that came were so important that they needed to immediately take action on them. He stated they included separating the network and addressing some of the cybersecurity concerns. He stated that some of the costs were one time in 2023, so they would not expect to see them recur in 2024.

Mr. Wood stated that they replaced one-third of their ultraviolet lamps used for wastewater disinfection, which was not budgeted last year. He stated it was budgeted for 2024 to continue the replacement of those lamps. He stated that to offset the overages, they performed a line-item budget review. He stated that they will optimize chemical usage through technological advancements. He stated they will use the asset management system to identify and prioritize maintenance projects. He stated they would have salary savings from strategic timing of recruitment and filling of vacancies. He stated they would reduce weekend testing time in the lab if it was approved by DEQ.

Mr. Wood stated that they would reduce their vehicle inventory in the future, which will have longer term cost savings. He stated they would change the chemical bidding schedule to gain better data for the budget timing. He stated they expected COVID testing for staff to decrease. He stated that they will have cost stabilizations through either the lack of growth or inflation stabilization. He stated that the \$20 million grant for the Beaver Creek Dam was already programmed into the debt service budgets. He stated if they were to obtain and get approval for grants requested for the central water line and the GAC facilities, those will greatly improve the rate setting posture. He noted they were not built into the debt service rates right now.

Mr. Wood stated that their expenses and costs had increased by an average of 5.4% per year over the past five years. He stated the debt service had gone up by 7.5%. He stated that debt service is growing at a faster rate than the operating budget. He stated the charges paid by the City and County were increasing, but the debt service charges were rising much faster. He stated, looking at the next five years, we will see debt service costs increasing at a faster pace than in the past,

414 nearly 100% faster. He stated they planned to use their reserves to balance the net deficit of
415 \$1.47 million to help them stay within the policy target. He stated the increase in debt service
416 funding was causing pressure on their operating budgets, making it difficult to keep charges low
417 while still meeting their targets. He stated that in the next five years, this pressure was expected
418 to grow even more.

419
420 Mr. Wood stated that the operating charges may be conservative compared to where they should
421 be. He noted that deficits may occur in times of average or low flow and estimated water and
422 wastewater. He stated that in years when there was a higher flow, those higher flows generated
423 excess revenues, which took care of the deficits. He stated that this year, they did not have that.
424 He stated they had excess wastewater over the estimate, but it was 6% over budget last year, and
425 it was not enough to make up the overages in our expenses. He stated that they had limited
426 discretionary expenses available for them to minimize. He stated they will put much of the effort
427 into looking at and optimizing operating expenses. He requested the Board to authorize the
428 transfer of the funds from the discretionary reserves to the operating account.

429
430 Mr. Gaffney stated that with the increase in Dominion's charges, the budget showed that it had
431 returned to the amount allocated for 2023. He asked if it was referring to fuel service charges.

432
433 Mr. Wood stated that most of the budget was for 2023. He stated they had likely underestimated
434 the utility line item again. He stated it was probably not decreasing. He stated they were working
435 with the consultant about the utility charges, and there would likely be another 4% to 6%
436 increase in the upcoming year.

437
438 Mr. Gaffney stated that it seemed like in the past month, fuel prices had gone up.

439
440 Mr. Wood stated that yes, they were going up again.

441
442 Mr. Gaffney stated that City and County debt service on an annual basis looked like the
443 operating charges were up about 6.2% per annum and the debt service was about 8%.

444
445 Mr. Pinkston stated that he would like to know more about the IT infrastructure requirements and
446 what prompted those requests.

447
448 Mr. Wood stated that during COVID-19, they had never allowed vendors or employees to access
449 the internal systems from outside our network. He stated when they started doing that, it opened
450 up some eyes to some of the security issues they had. He stated one of them was separating the
451 operating network, which controlled their plants, from the administrative network, which
452 included email systems and Teams communications. He stated another problem was that the
453 telephone system had to be replaced, but is a one-time cost.

454
455 Mr. Gaffney stated that it was gratifying to know that they had \$29.96 million in reserves to
456 cover shortfalls in an operating budget. He stated that it was unfortunate that they must transfer
457 \$2.4 million to do so. He noted that they would still have \$27.2 million in the future.

458
459 Mr. Wood stated that the reserves were built to handle years like this one. He stated that 2023

was the year when inflation came into play. He stated that the inflation for 2021 and 2022 scared vendors, causing pricing to rise in 2022 and 2023.

Mr. Richardson stated that COVID-19 really necessitated staff to look at IT and cybersecurity. He stated they had to examine how they do things differently. He stated there were some significant price tags to that infrastructure. He noted that Ms. Mallek pointed out the investments that were being made into the system itself, such as growing the water capacity and growing the reserves. He stated it enabled them to plan for the future 30 to 40 years out. He stated those investments would pay off quite handsomely over the next 20 to 30 years.

Mr. Richardson stated that in terms of the operating costs compared to inflation, it was not that much. He stated that in the County, they had to make some of the same investments, which were expensive, but they were foundational investments that needed to be made. He stated that what they were doing was setting themselves up to be able to serve their community in the future.

Mr. Pinkston moved to authorize the transfer of funds for FY23 as presented by staff. Ms. Mallek seconded the motion, which passed unanimously (7-0).

Ms. Mallek stated that it was essential to implement all fiscal management elements. She stated that when they talked about postponing hiring and other matters, her concern was that they were expecting current staff to work overtime or double time in those gaps. She stated she hoped this would not be the case because they had developed a strong team. She thanked the staff for their efficiencies.

11. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

There were no items.

12. CLOSED MEETING

There was no reason for a closed meeting.

13. ADJOURNMENT

At 3:39 p.m., Mr. Sanders moved to adjourn the meeting of the Rivanna Water and Sewer Authority. Mr. O'Connell seconded the motion, which passed unanimously (7-0).



MEMORANDUM

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

FROM: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: EXECUTIVE DIRECTOR'S REPORT

DATE: OCTOBER 24, 2023

STRATEGIC PLAN PRIORITY: EMPLOYEE DEVELOPMENT

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

- Mark Charron, Wastewater Operator - Class 1
- Drew Prothero, Wastewater Operator - Class 2

Fire Safety and Fire Extinguisher Training

Staff participated in an annual Fire Safety Training with Shawn Maddox, Captain II/Assistant Fire Marshal with Albemarle County Fire and Rescue. The training included information on how to identify different types of fires and the importance of selecting the appropriate extinguisher for the job. Shawn brought an electronic fire simulator for the hands-on Fire Extinguisher Training which allowed staff to practice in a safe and controlled environment.



STRATEGIC PLAN PRIORITY: COMMUNICATION AND COLLABORATION

UVA Civil Engineering

Ms. Jennifer Whitaker, Director of Engineering and Maintenance, spoke at the UVA Civil Engineering 4th Year Capstone class about Public Sector Engineering.

Resilient Together. One Climate. One Community.

Staff attended the “Resilient Together” project kick-off event at Cityspace. This project is a collaborative effort between Albemarle County, the City of Charlottesville, and the University of Virginia working toward a more resilient community in the face of a changing climate. Topics being explored include drought, flooding, extreme heat, as well as other local climate-related issues.

Rivanna River Basin Commission



Mr. Dave Tungate, Director of Operations and Environmental Services, presented information at the Rivanna River Basin Commission’s 8th Annual Conference. The Commission Chair is our Board Member, Ms. Ann Mallek. The theme of the conference was Per- and Polyfluoroalkyl Substances (PFAS), also known as “forever chemicals”, and efforts to study and mitigate their persistence in the environment.

Loudoun Water Education Center Tour

Staff visited Loudoun Water’s education center and outdoor “Aquary” to gain information about how another progressive Utility programmed and constructed it’s environmental education and community outreach facilities. The education center included 3500 sf of interactive displays about water and wastewater usage and treatment. The Aquary included over one mile of trails and interpretive stations to provide educational information about wetlands, bioretention basins, and treated wastewater outfalls. We appreciated the time and information Loudoun’s management and communication team provided, along with lunch, during our visit of the outstanding, interactive and well-designed education facilities as part of their Administration building.





City/County Updates

Quarterly update reports were provided to Charlottesville City Council and the Albemarle County Board of Supervisors this month.

STRATEGIC PLAN PRIORITY: ENVIRONMENTAL STEWARDSHIP

Imagine a Day Without Water 2023

October 19th was “Imagine a Day Without Water 2023” day. This 9th annual campaign is a National Day of Action to highlight the value of water and the importance of access to safe, clean, reliable water to all communities across the country. Artwork is being accepted until November 13th for the annual youth art contest and this year’s theme is: “Tell us your action to save water!”. Rivanna, along with the City and ACSA, is sponsoring this annual contest and prizes will be awarded in December.

Ms. Betsy Nemeth, Director of Administration and Communications, interviewed with radio personalities to share information with the community about the value of water and the youth art contest.



Drought Monitoring

Charlottesville and portions of Albemarle County are experiencing Moderate drought conditions, according to U. S. Drought Monitoring report. Area precipitation is 13 inches, or 41%, below normal for the year to date. As a result of recent rains, conditions have improved since September and the South Rivanna Reservoir is currently 100% full, Beaver Creek Reservoir (Crozet) is 92% full, and Totier Creek Reservoir (Scottsville) is 100% full.

MEMORANDUM

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

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

REVIEWED: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: AUGUST MONTHLY FINANCIAL SUMMARY – FY 2024

DATE: OCTOBER 24, 2023

Financial Snapshot

The Authority has an overall net surplus of \$598,300 for the first two months of this fiscal year due to operating rate revenue being above the prorated budget including receipt of the annual septage station support from the County (\$109,440). As shown on the “Consolidated Revenues and Expenses Summary” page, operating revenues have exceeded the budgeted amount by \$434,300, operating expenses were under budget by \$31,900, debt service revenues have exceeded the budgeted amount by \$250,200 while debt service costs have exceeded the budgeted amount by \$118,200. With these net results, total revenues were \$684,600 over prorated budget estimates and total expenses were \$86,300 over prorated budget estimates.

Urban Water flows and operations rate revenue is 14% above budget estimates, and Urban Wastewater flows and operations rate revenue is 9% over budget. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	\$ 1,934,298	\$ 1,961,681	\$ 475,394	\$ 4,371,373
Expenses	(1,599,601)	(1,856,849)	(448,650)	(3,905,100)
Surplus (deficit)	<u>\$ 334,697</u>	<u>\$ 104,832</u>	<u>\$ 26,744</u>	<u>\$ 466,273</u>
Debt Service				
Revenues	\$ 1,857,792	\$ 1,823,113	\$ 451,006	\$ 4,131,911
Expenses	(1,839,568)	(1,712,756)	(447,576)	(3,999,900)
Surplus (deficit)	<u>\$ 18,224</u>	<u>\$ 110,357</u>	<u>\$ 3,430</u>	<u>\$ 132,011</u>
Total				
Revenues	\$ 3,792,090	\$ 3,784,794	\$ 926,400	\$ 8,503,284
Expenses	(3,439,169)	(3,569,605)	(896,226)	(7,905,000)
Surplus (deficit)	<u><u>\$ 352,921</u></u>	<u><u>\$ 215,189</u></u>	<u><u>\$ 30,174</u></u>	<u><u>\$ 598,284</u></u>

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 August were \$434,300 over the prorated annual budget estimates, and operating expenses were under the prorated budget by \$31,900. 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 July for certain maintenance agreements and for employer contributions to employees' health savings accounts. The annual payment to UVA for the Observatory lease (\$175,000) is made in September. Insurance premiums are paid at the beginning of each quarter.
- B. Personnel Costs (Urban Water – page 2) – Urban Water salaries are higher than budgeted due to pay increases for plant operators who achieved higher licenses.
- C. Other Services & Charges (Urban Water, Urban Wastewater – pages 2, 5) – Urban Wastewater's utility costs are running higher than originally estimated. Urban Water is currently \$72,600 over the prorated budget in this category, including \$25,000 on utilities and \$47,000 for annual payments such as permit fees.
- D. Information Technology (Urban Water, Crozet Water, Administration – pages 2, 3, 8) – Urban Water and Crozet Water are over the prorated budget for SCADA Standard Graphics Rollout costs and on-call SCADA services. The Administration department is currently over the prorated budget on some annual and monthly I.T. maintenance and support costs.
- E. Operations & Maintenance (Urban Wastewater – page 5) – Urban Wastewater paid \$22,600 for an emergency breaker replacement. This department also renewed an annual service contract for maintenance of aeration basin blowers for \$86,200. (See item A).
- F. Professional Services (Administration – page 8) The Administration Department is over the prorated budget for engineering and technical services for an Information Technology strategic assessment and improvement plan update.

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023
Fiscal Year 2024

Consolidated
Revenues and Expenses Summary

<i>Budget</i>	<i>Budget</i>	<i>Actual</i>	<i>Budget</i>	<i>Variance</i>
<i>FY 2024</i>	<i>Year-to-Date</i>	<i>Year-to-Date</i>	<i>vs. Actual</i>	<i>Percentage</i>

Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$	22,727,003	\$	3,787,834	\$	4,166,195	\$	378,361	9.99%
Lease Revenue		124,000		20,667		23,144		2,477	11.99%
Admin., Maint. & Engineering Revenue		781,000		130,167		130,726		559	0.43%
Other Revenues		647,267		107,878		151,420		43,543	40.36%
Use of Reserves (Water Resources Fund)		80,000		13,333		-		(13,333)	-100.00%
Interest Allocation		47,250		7,875		30,613		22,738	288.74%
Total Operating Revenues	\$	24,406,520	\$	4,067,753	\$	4,502,098	\$	434,345	10.68%

Expenses

Personnel Cost	A, B	\$	11,625,091	\$	1,937,515	\$	1,906,367	\$	31,149	1.61%
Professional Services	B		467,850		77,975		67,322		10,653	13.66%
Other Services & Charges	A, C		3,479,955		579,993		714,374		(134,381)	-23.17%
Communications			221,440		36,907		54,605		(17,698)	-47.95%
Information Technology	A, D		1,269,575		211,596		254,416		(42,821)	-20.24%
Supplies			46,300		7,717		7,119		598	7.75%
Operations & Maintenance	A, E		6,035,808		1,005,968		823,457		182,511	18.14%
Equipment Purchases			345,500		57,583		55,666		1,918	3.33%
Depreciation			915,000		152,500		152,500		-	0.00%
Total Operating Expenses		\$	24,406,519	\$	4,067,753	\$	4,035,825	\$	31,929	0.78%
Operating Surplus/(Deficit)		\$	1	\$	0	\$	466,273			

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$	22,119,060	\$	3,686,510	\$	3,686,512	\$	2	0.00%
Septage Receiving Support - County		109,440		18,240		109,440		91,200	500.00%
Buck Mountain Lease Revenue		1,600		267		1,403		1,136	425.96%
Trust Fund Interest		179,830		29,972		69,647		39,675	132.38%
Reserve Fund Interest		879,900		146,650		264,910		118,260	80.64%
Total Debt Service Revenues	\$	23,289,830	\$	3,881,638	\$	4,131,911	\$	250,273	6.45%

Debt Service Costs

Total Principal & Interest	\$	16,168,944	\$	2,694,824	\$	2,694,824	\$	-	0.00%
Reserve Additions-Interest		879,900		146,650		264,910		(118,260)	-80.64%
Debt Service Ratio Charge		725,000		120,833		120,833		-	0.00%
Reserve Additions-CIP Growth		5,516,000		919,333		919,333		-	0.00%
Total Debt Service Costs	\$	23,289,844	\$	3,881,641	\$	3,999,900	\$	(118,260)	-3.05%
Debt Service Surplus/(Deficit)	\$	(14)	\$	(2)	\$	132,011			

Summary

Total Revenues	\$	47,696,350	\$	7,949,392	\$	8,634,009	\$	684,617	8.61%
Total Expenses		47,696,363		7,949,394		8,035,725		(86,331)	-1.09%
Surplus/(Deficit)	\$	(13)	\$	(2)	\$	598,284			

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023

Urban Water Rate Center
Revenues and Expenses Summary

Budget FY 2024	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
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Operating Budget vs. Actual

	Notes									
Revenues										
Operations Rate Revenue	\$	10,021,362	\$	1,670,227	\$	1,903,521	\$	233,294	13.97%	
Lease Revenue		94,000		15,667		17,705		2,039	13.01%	
Miscellaneous		-		-		-		-		
Use of Reserves (Water Resources Fund)		80,000		13,333				(13,333)	-100.00%	
Interest Allocation		34,200		5,700		13,072		7,372	129.33%	
Total Operating Revenues	\$	10,229,562	\$	1,704,927	\$	1,934,298	\$	229,371	13.45%	
Expenses										
Personnel Cost	B	\$	2,384,332	\$	397,389	\$	408,542	\$	(11,154)	-2.81%
Professional Services			178,500		29,750		5,712		24,039	80.80%
Other Services & Charges	C		769,233		128,206		200,856		(72,650)	-56.67%
Communications			103,200		17,200		18,503		(1,303)	-7.58%
Information Technology	D		127,650		21,275		44,699		(23,424)	-110.10%
Supplies			7,000		1,167		2,123		(957)	-82.01%
Operations & Maintenance			2,905,068		484,178		311,662		172,516	35.63%
Equipment Purchases			20,100		3,350		13,094		(9,744)	-290.86%
Depreciation			300,000		50,000		50,000		-	0.00%
Subtotal Before Allocations		\$	6,795,083	\$	1,132,514	\$	1,055,191	\$	77,323	6.83%
Allocation of Support Departments			3,434,478		572,413		544,409		28,004	4.89%
Total Operating Expenses		\$	10,229,561	\$	1,704,927	\$	1,599,600	\$	105,327	6.18%
Operating Surplus/(Deficit)		\$	1	\$	0	\$	334,698			

Debt Service Budget vs. Actual

Revenues										
Debt Service Rate Revenue	\$	10,193,779	\$	1,698,963	\$	1,698,964	\$	1	0.00%	
Trust Fund Interest		77,500		12,917		30,004		17,087	132.29%	
Reserve Fund Interest		423,100		70,517		127,421		56,905	80.70%	
Lease Revenue		1,600		267		1,403		1,136	425.96%	
Total Debt Service Revenues	\$	10,695,979	\$	1,782,663	\$	1,857,792	\$	75,129	4.21%	
Debt Service Costs										
Total Principal & Interest	\$	6,964,779	\$	1,160,797	\$	1,160,797	\$	-	0.00%	
Reserve Additions-Interest		423,100		70,517		127,421		(56,905)	-80.70%	
Debt Service Ratio Charge		400,000		66,667		66,667		-	0.00%	
Est. New Debt Service - CIP Growth		2,908,100		484,683		484,683		-	0.00%	
Total Debt Service Costs	\$	10,695,979	\$	1,782,663	\$	1,839,568	\$	(56,905)	-3.19%	
Debt Service Surplus/(Deficit)	\$	-	\$	-	\$	18,224				

Rate Center Summary

Total Revenues	\$	20,925,541	\$	3,487,590	\$	3,792,089	\$	304,499	8.73%
Total Expenses		20,925,540		3,487,590		3,439,168		48,422	1.39%
Surplus/(Deficit)	\$	1	\$	0	\$	352,922			
Costs per 1000 Gallons	\$	3.01			\$	2.48			
Operating and DS	\$	6.16			\$	5.33			
Thousand Gallons Treated		3,397,700		566,283		645,480		79,197	13.99%
or									
Flow (MGD)		9.309				10.411			

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023

Crozet Water Rate Center
Revenues and Expenses Summary

<i>Budget FY 2024</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$ 1,234,752	\$ 205,792	\$ 205,792	\$ -	0.00%
Lease Revenues	30,000	5,000	5,439	439	8.78%
Interest Allocation	4,600	767	1,745	978	127.60%
Total Operating Revenues	\$ 1,269,352	\$ 211,559	\$ 212,976	\$ 1,417	0.67%

Expenses

Personnel Cost	\$ 341,691	\$ 56,948	\$ 57,119	\$ (170)	-0.30%
Professional Services	22,900	3,817	-	3,817	100.00%
Other Services & Charges	133,426	22,238	29,430	(7,192)	-32.34%
Communications	17,600	2,933	3,113	(180)	-6.13%
Information Technology	32,400	5,400	21,075	(15,675)	-290.28%
Supplies	1,500	250	229	21	8.22%
Operations & Maintenance	335,700	55,950	39,884	16,066	28.71%
Equipment Purchases	3,200	533	533	(0)	0.00%
Depreciation	60,000	10,000	10,000	-	0.00%
Subtotal Before Allocations	\$ 948,417	\$ 158,069	\$ 161,385	\$ (3,315)	-2.10%
Allocation of Support Departments	320,940	53,490	50,729	2,761	5.16%
Total Operating Expenses	\$ 1,269,357	\$ 211,559	\$ 212,114	\$ (555)	-0.26%
Operating Surplus/(Deficit)	\$ (5)	\$ (1)	\$ 862		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 2,385,720	\$ 397,620	\$ 397,620	\$ -	0.00%
Trust Fund Interest	13,500	2,250	5,244	2,994	133.08%
Reserve Fund Interest	34,500	5,750	10,331	4,581	79.68%
Total Debt Service Revenues	\$ 2,433,720	\$ 405,620	\$ 413,196	\$ 7,576	1.87%

Debt Service Costs

Total Principal & Interest	\$ 1,216,725	\$ 202,788	\$ 202,788	\$ -	0.00%
Reserve Additions-Interest	34,500	5,750	10,331	(4,581)	-79.68%
Estimated New Principal & Interest	1,182,500	197,083	197,083	-	0.00%
Total Debt Service Costs	\$ 2,433,725	\$ 405,621	\$ 410,202	\$ (4,581)	-1.13%
Debt Service Surplus/(Deficit)	\$ (5)	\$ (1)	\$ 2,994		

Rate Center Summary

Total Revenues	\$ 3,703,072	\$ 617,179	\$ 626,172	\$ 8,993	1.46%
Total Expenses	3,703,082	617,180	622,316	(5,136)	-0.83%
Surplus/(Deficit)	\$ (10)	\$ (2)	\$ 3,855		
Costs per 1000 Gallons	\$ 6.26		\$ 5.10		
Operating and DS	\$ 18.27		\$ 14.97		
Thousand Gallons Treated	202,697	33,783	41,575	7,792	23.07%
Flow (MGD)	0.555		0.671		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023

Scottsville Water Rate Center
Revenues and Expenses Summary

<i>Budget FY 2024</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$ 656,460	\$ 109,410	\$ 109,410	\$ -	0.00%
Interest Allocation	2,150	358	827	468	130.67%
Total Operating Revenues	\$ 658,610	\$ 109,768	\$ 110,237	\$ 468	0.43%

Expenses

Personnel Cost	\$ 223,641	\$ 37,274	\$ 37,912	\$ (638)	-1.71%
Professional Services	5,000	833	-	833	100.00%
Other Services & Charges	31,800	5,300	5,181	119	2.24%
Communications	6,750	1,125	1,851	(726)	-64.56%
Information Technology	19,700	3,283	4,096	(813)	-24.75%
Supplies	100	17	63	(46)	-276.62%
Operations & Maintenance	134,800	22,467	13,074	9,392	41.81%
Equipment Purchases	2,000	333	505	(172)	-51.48%
Depreciation	40,000	6,667	6,667	0	0.00%
Subtotal Before Allocations	\$ 463,791	\$ 77,299	\$ 69,349	\$ 7,950	10.28%
Allocation of Support Departments	194,815	32,469	30,439	2,030	6.25%
Total Operating Expenses	\$ 658,606	\$ 109,768	\$ 99,788	\$ 9,980	9.09%
Operating Surplus/(Deficit)	\$ 4	\$ 1	\$ 10,449		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 158,736	\$ 26,456	\$ 26,456	\$ -	0.00%
Trust Fund Interest	1,650	275	641	366	133.00%
Reserve Fund Interest	10,300	1,717	3,179	1,462	85.18%
Total Debt Service Revenues	\$ 170,686	\$ 28,448	\$ 30,276	\$ 1,828	6.43%

Debt Service Costs

Total Principal & Interest	\$ 148,991	\$ 24,832	\$ 24,832	\$ -	0.00%
Reserve Additions-Interest	10,300	1,717	3,179	(1,462)	-85.18%
Estimated New Principal & Interest	11,400	1,900	1,900	-	0.00%
Total Debt Service Costs	\$ 170,691	\$ 28,449	\$ 29,911	\$ (1,462)	-5.14%
Debt Service Surplus/(Deficit)	\$ (5)	\$ (1)	\$ 365		

Rate Center Summary

Total Revenues	\$ 829,296	\$ 138,216	\$ 140,512	\$ 2,296	1.66%
Total Expenses	829,297	138,216	129,699	8,517	6.16%
Surplus/(Deficit)	\$ (1)	\$ (0)	\$ 10,814		
Costs per 1000 Gallons	\$ 38.22		\$ 27.08		
Operating and DS	\$ 48.13		\$ 35.20		
Thousand Gallons Treated or Flow (MGD)	17,230	2,872	3,685	813	28.32%
	0.047		0.059		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023

Urban Wastewater Rate Center
Revenues and Expenses Summary

<i>Budget FY 2024</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$ 9,908,321	\$ 1,651,387	\$ 1,796,454	\$ 145,068	8.78%
Stone Robinson WWTP	17,267	2,878	2,830	(48)	-1.67%
Septage Acceptance	550,000	91,667	98,675	7,009	7.65%
Nutrient Credits	80,000	13,333	49,915	36,582	274.36%
Miscellaneous Revenue	-	-	-	-	
Interest Allocation	3,300	550	13,807	13,257	2410.28%
Total Operating Revenues	\$ 10,558,888	\$ 1,759,815	\$ 1,961,681	\$ 201,867	11.47%

Expenses

Personnel Cost	A	\$ 1,458,300	\$ 243,050	\$ 254,953	\$ (11,903)	-4.90%
Professional Services		40,000	6,667	9,570	(2,903)	-43.55%
Other Services & Charges	A, C	2,271,556	378,593	440,151	(61,558)	-16.26%
Communications		11,600	1,933	3,953	(2,020)	-104.47%
Information Technology		110,600	18,433	22,688	(4,254)	-23.08%
Supplies		1,200	200	809	(609)	-304.41%
Operations & Maintenance	A, E	2,086,800	347,800	398,930	(51,130)	-14.70%
Equipment Purchases		73,500	12,250	12,250	-	0.00%
Depreciation		470,000	78,333	78,333	(0)	0.00%
Subtotal Before Allocations		\$ 6,523,556	\$ 1,087,259	\$ 1,221,636	\$ (134,377)	-12.36%
Allocation of Support Departments		4,035,331	672,555	635,213	37,342	5.55%
Total Operating Expenses		\$ 10,558,887	\$ 1,759,815	\$ 1,856,850	\$ (97,035)	-5.51%
Operating Surplus/(Deficit)		\$ 1	\$ 0	\$ 104,832		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	A	\$ 9,339,509	\$ 1,556,585	\$ 1,556,586	\$ 1	0.00%
Septage Receiving Support - County		109,440	18,240	109,440	91,200	500.00%
Trust Fund Interest		86,900	14,483	33,639	19,156	132.26%
Reserve Fund Interest		410,200	68,367	123,448	55,081	80.57%
Total Debt Service Revenues		\$ 9,946,049	\$ 1,657,675	\$ 1,823,113	\$ 165,438	9.98%

Debt Service Costs

Total Principal & Interest		\$ 7,812,249	\$ 1,302,042	\$ 1,302,042	\$ -	0.00%
Reserve Additions-Interest		410,200	68,367	123,448	(55,081)	-80.57%
Debt Service Ratio Charge		325,000	54,167	54,167	-	0.00%
Est. New Debt Service - CIP Growth		1,398,600	233,100	233,100	-	0.00%
Total Debt Service Costs		\$ 9,946,049	\$ 1,657,675	\$ 1,712,756	\$ (55,081)	-3.32%
Debt Service Surplus/(Deficit)		\$ -	\$ -	\$ 110,357		

Rate Center Summary

Total Revenues	\$ 20,504,937	\$ 3,417,490	\$ 3,784,794	\$ 367,305	10.75%
Total Expenses	20,504,936	3,417,489	3,569,606	(152,116)	-4.45%
Surplus/(Deficit)	\$ 1	\$ 0	\$ 215,189		
Costs per 1000 Gallons	\$ 3.11		\$ 3.02		
Operating and DS	\$ 6.05		\$ 5.81		
Thousand Gallons Treated or Flow (MGD)	3,390,400	565,067	614,803	49,736	8.80%
	9.289		9.916		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

<i>Budget FY 2024</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$ 521,916	\$ 86,986	\$ 86,986	\$ -	0.00%
Interest Allocation	1,700	283	643	360	126.90%
Total Operating Revenues	\$ 523,616	\$ 87,269	\$ 87,629	\$ 360	0.41%

Expenses

Personnel Cost	\$ 127,879	\$ 21,313	\$ 22,304	\$ (991)	-4.65%
Professional Services	25,000	4,167	150	4,017	96.40%
Other Services & Charges	35,400	5,900	9,043	(3,143)	-53.27%
Communications	3,450	575	727	(152)	-26.49%
Information Technology	13,000	2,167	413	1,754	80.95%
Supplies	-	-	-	-	
Operations & Maintenance	143,550	23,925	19,061	4,864	20.33%
Equipment Purchases	3,800	633	633	(0)	0.00%
Depreciation	25,000	4,167	4,167	0	0.00%
Subtotal Before Allocations	\$ 377,079	\$ 62,846	\$ 56,498	\$ 6,348	10.10%
Allocation of Support Departments	146,534	24,422	22,571	1,851	7.58%
Total Operating Expenses	\$ 523,613	\$ 87,269	\$ 79,069	\$ 8,200	9.40%
Operating Surplus/(Deficit)	\$ 3	\$ 1	\$ 8,560		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 22,680	\$ 3,780	\$ 3,780	\$ -	0.00%
Trust Fund Interest	200	33	84	50	150.71%
Reserve Fund Interest	-	-	-	-	
Total Debt Service Revenues	\$ 22,880	\$ 3,813	\$ 3,864	\$ 50	1.32%

Debt Service Costs

Total Principal & Interest	\$ 18,729	\$ 3,122	\$ 3,122	\$ -	0.00%
Estimated New Principal & Interest	4,150	692	692	-	0.00%
Reserve Additions-Interest	-	-	-	-	
Total Debt Service Costs	\$ 22,879	\$ 3,813	\$ 3,813	\$ -	0.00%
Debt Service Surplus/(Deficit)	\$ 1	\$ 0	\$ 50		

Rate Center Summary

Total Revenues	\$ 546,496	\$ 91,083	\$ 91,492	\$ 410	0.45%
Total Expenses	546,492	91,082	82,882	8,200	9.00%
Surplus/(Deficit)	\$ 4	\$ 1	\$ 8,610		
Costs per 1000 Gallons	\$ 12.65		\$ 10.16		
Operating and DS	\$ 13.20		\$ 10.65		
Thousand Gallons Treated or Flow (MGD)	41,401	6,900	7,785	885	12.82%
	0.113		0.126		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

<i>Budget FY 2024</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$ 384,192	\$ 64,032	\$ 64,032	\$ -	0.00%
Interest Allocation	1,300	217	520	304	140.20%
Total Operating Revenues	\$ 385,492	\$ 64,249	\$ 64,552	\$ 304	0.47%

Expenses

Personnel Cost	\$ 127,949	\$ 21,325	\$ 22,304	\$ (979)	-4.59%
Professional Services	5,000	833	-	833	100.00%
Other Services & Charges	24,800	4,133	4,950	(816)	-19.75%
Communications	3,800	633	1,151	(517)	-81.67%
Information Technology	14,025	2,338	413	1,925	82.34%
Supplies	-	-	220	(220)	
Operations & Maintenance	49,500	8,250	3,571	4,679	56.72%
Equipment Purchases	3,700	617	617	0	0.00%
Depreciation	20,000	3,333	3,333	(0)	0.00%
Subtotal Before Allocations	\$ 248,774	\$ 41,462	\$ 36,558	\$ 4,904	11.83%
Allocation of Support Departments	136,722	22,787	21,121	1,666	7.31%
Total Operating Expenses	\$ 385,495	\$ 64,249	\$ 57,679	\$ 6,570	10.23%
Operating Surplus/(Deficit)	\$ (3)	\$ (1)	\$ 6,874		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 18,636	\$ 3,106	\$ 3,106	\$ -	0.00%
Trust Fund Interest	80	13	35	21	161.15%
Reserve Fund Interest	1,800	300	530	230	76.61%
Total Debt Service Revenues	\$ 20,516	\$ 3,419	\$ 3,671	\$ 251	7.35%

Debt Service Costs

Total Principal & Interest	\$ 7,471	\$ 1,245	\$ 1,245	\$ -	0.00%
Reserve Additions-Interest	1,800	300	530	(230)	-76.61%
Estimated New Principal & Interest	11,250	1,875	1,875	-	0.00%
Total Debt Service Costs	\$ 20,521	\$ 3,420	\$ 3,650	\$ (230)	-6.72%
Debt Service Surplus/(Deficit)	\$ (5)	\$ (1)	\$ 21		

Rate Center Summary

Total Revenues	\$ 406,008	\$ 67,668	\$ 68,223	\$ 555	0.82%
Total Expenses	406,016	67,669	61,329	6,340	9.37%
Surplus/(Deficit)	\$ (8)	\$ (1)	\$ 6,894		
Costs per 1000 Gallons	\$ 16.30		\$ 14.95		
Operating and DS	\$ 17.17		\$ 15.90		
Thousand Gallons Treated	23,643	3,941	3,858	(83)	-2.09%
or					
Flow (MGD)	0.065		0.062		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023

Administration

<i>Budget FY 2024</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

		Notes								
Revenues										
Payment for Services SWA		\$	781,000	\$	130,167	\$	130,167	\$	0	0.00%
Bond Proceeds Funding Bond Issuance Costs			-		-		-		-	
Miscellaneous Revenue			-		-		559		559	
	<i>Total Operating Revenues</i>	\$	781,000	\$	130,167	\$	130,726	\$	559	0.43%
Expenses										
Personnel Cost		\$	2,930,008	\$	488,335	\$	445,987	\$	42,347	8.67%
Professional Services	E		136,450		22,742		50,015		(27,274)	-119.93%
Other Services & Charges			140,760		23,460		19,971		3,489	14.87%
Communications			42,800		7,133		13,833		(6,700)	-93.92%
Information Technology	A, D		778,800		129,800		147,096		(17,296)	-13.33%
Supplies			22,800		3,800		2,563		1,238	32.57%
Operations & Maintenance			64,200		10,700		7,956		2,744	25.65%
Equipment Purchases			15,000		2,500		2,500		-	0.00%
Depreciation			-		-		-		-	
	<i>Total Operating Expenses</i>	\$	4,130,818	\$	688,470	\$	689,922	\$	(1,452)	-0.21%

Department Summary

Net Costs Allocable to Rate Centers		\$ (3,349,818)	\$ (558,303)	\$ (559,196)	\$ 893	-0.16%
<u>Allocations to the Rate Centers</u>						
Urban Water	44.00%	\$ 1,473,920	\$ 245,653	\$ 246,046	\$ (393)	
Crozet Water	4.00%	\$ 133,993	22,332	22,368	(36)	
Scottsville Water	2.00%	\$ 66,996	11,166	11,184	(18)	
Urban Wastewater	48.00%	\$ 1,607,913	267,985	268,414	(429)	
Glenmore Wastewater	1.00%	\$ 33,498	5,583	5,592	(9)	
Scottsville Wastewater	1.00%	\$ 33,498	5,583	5,592	(9)	
	100.00%	\$ 3,349,818	\$ 558,303	\$ 559,196	\$ (893)	

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023

Maintenance

<i>Budget FY 2024</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Payment for Services SWA	\$	-	\$	-	\$	-	\$	-
Miscellaneous Revenue		-		-		-		-
Total Operating Revenues	\$	-	\$	-	\$	-	\$	-

Expenses

Personnel Cost	\$	1,553,212	\$	258,869	\$	242,497	\$	16,371	6.32%
Professional Services		25,000		4,167		-		4,167	100.00%
Other Services & Charges		36,400		6,067		2,929		3,138	51.73%
Communications		11,300		1,883		6,748		(4,865)	-258.30%
Information Technology		17,500		2,917		226		2,691	92.26%
Supplies		4,000		667		-		667	100.00%
Operations & Maintenance		114,150		19,025		15,917		3,108	16.34%
Equipment Purchases		201,000		33,500		21,667		11,833	35.32%
Depreciation		-		-		-		-	
Total Operating Expenses	\$	1,962,562	\$	327,094	\$	289,983	\$	37,110	11.35%

Department Summary

Net Costs Allocable to Rate Centers		\$	(1,962,562)	\$	(327,094)	\$	(289,983)	\$	(37,110)	11.35%
<u>Allocations to the Rate Centers</u>										
Urban Water	30.00%	\$	588,768	\$	98,128	\$	86,995	\$	11,133	
Crozet Water	3.50%		68,690		11,448		10,149		1,299	
Scottsville Water	3.50%		68,690		11,448		10,149		1,299	
Urban Wastewater	56.50%		1,108,847		184,808		163,840		20,967	
Glenmore Wastewater	3.50%		68,690		11,448		10,149		1,299	
Scottsville Wastewater	3.00%		58,877		9,813		8,699		1,113	
	100.00%	\$	1,962,562	\$	327,094	\$	289,983	\$	37,110	

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023

Laboratory

<i>Budget FY 2024</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Revenues Notes

N/A

Expenses

Personnel Cost	\$ 456,056	\$ 76,009	\$ 79,628	\$ (3,618)	-4.76%
Professional Services	-	-	-	-	
Other Services & Charges	14,580	2,430	159	2,271	93.45%
Communications	1,400	233	117	117	49.93%
Information Technology	1,000	167	-	167	100.00%
Supplies	1,200	200	-	200	100.00%
Operations & Maintenance	115,300	19,217	7,320	11,897	61.91%
Equipment Purchases	1,700	283	283	(0)	0.00%
Depreciation	-	-	-	-	
Total Operating Expenses	\$ 591,236	\$ 98,539	\$ 87,507	\$ 11,033	11.20%

Department Summary

Net Costs Allocable to Rate Centers		\$ (591,236)	\$ (98,539)	\$ (87,507)	\$ (11,033)	11.20%
<u>Allocations to the Rate Centers</u>						
Urban Water	44.00%	\$ 260,144	\$ 43,357	\$ 38,503	\$ 4,854	
Crozet Water	4.00%	23,649	3,942	3,500	441	
Scottsville Water	2.00%	11,825	1,971	1,750	221	
Urban Wastewater	47.00%	277,881	46,313	41,128	5,185	
Glenmore Wastewater	1.50%	8,869	1,478	1,313	165	
Scottsville Wastewater	1.50%	8,869	1,478	1,313	165	
	100.00%	\$ 591,236	\$ 98,539	\$ 87,507	\$ 11,033	

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2023

Engineering

<i>Budget FY 2024</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Payment for Services SWA

Total Operating Revenues

\$ -	\$ -	\$ -	\$ -	-
\$ -	\$ -	\$ -	\$ -	-

Expenses

Personnel Cost

Professional Services

Other Services & Charges

Communications

Information Technology

Supplies

Operations & Maintenance

Equipment Purchases

Depreciation

Total Operating Expenses

\$ 2,022,024	\$ 337,004	\$ 335,122	\$ 1,882	0.56%
30,000	5,000	1,875	3,125	62.50%
22,000	3,667	1,705	1,962	53.50%
19,540	3,257	4,608	(1,351)	-41.50%
154,900	25,817	13,710	12,107	46.89%
8,500	1,417	1,112	305	21.53%
86,740	14,457	6,082	8,375	57.93%
21,500	3,583	3,583	0	0.00%
-	-	-	-	-
\$ 2,365,204	\$ 394,201	\$ 367,796	\$ 26,404	6.70%

Department Summary

Net Costs Allocable to Rate Centers

\$ (2,365,204)	\$ (394,201)	\$ (367,796)	\$ (26,404)	6.70%
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Allocations to the Rate Centers

Urban Water

47.00%

Crozet Water

4.00%

Scottsville Water

2.00%

Urban Wastewater

44.00%

Glenmore Wastewater

1.50%

Scottsville Wastewater

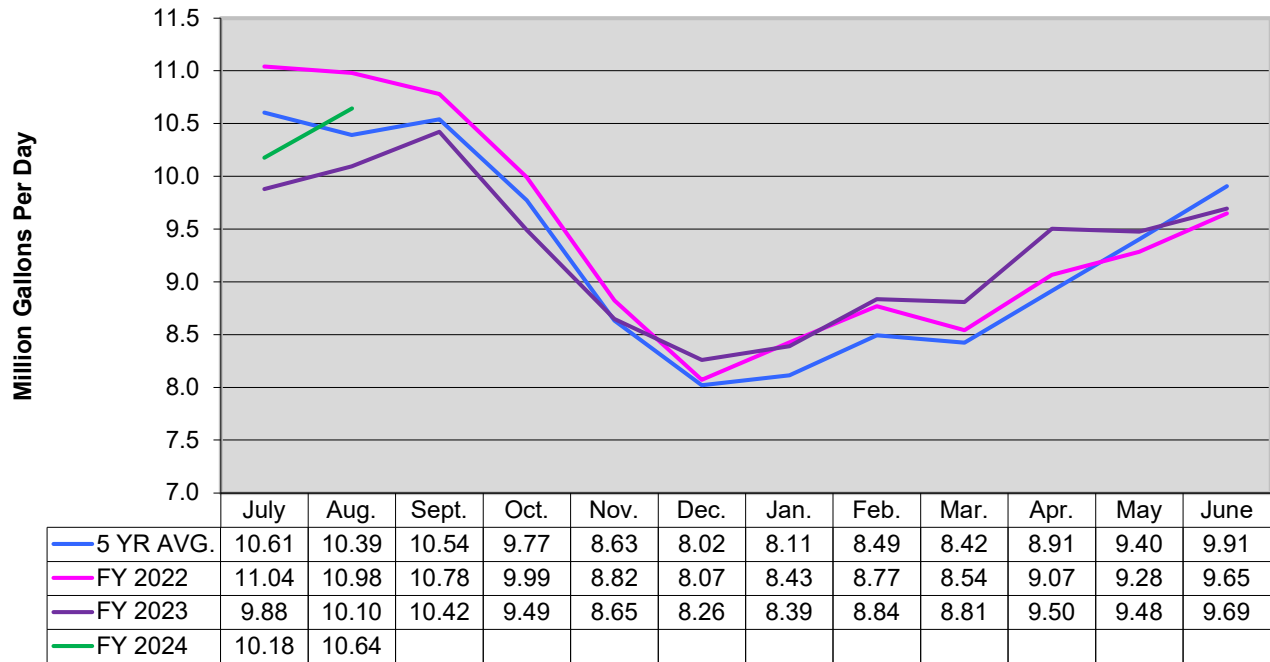
1.50%

100.00%

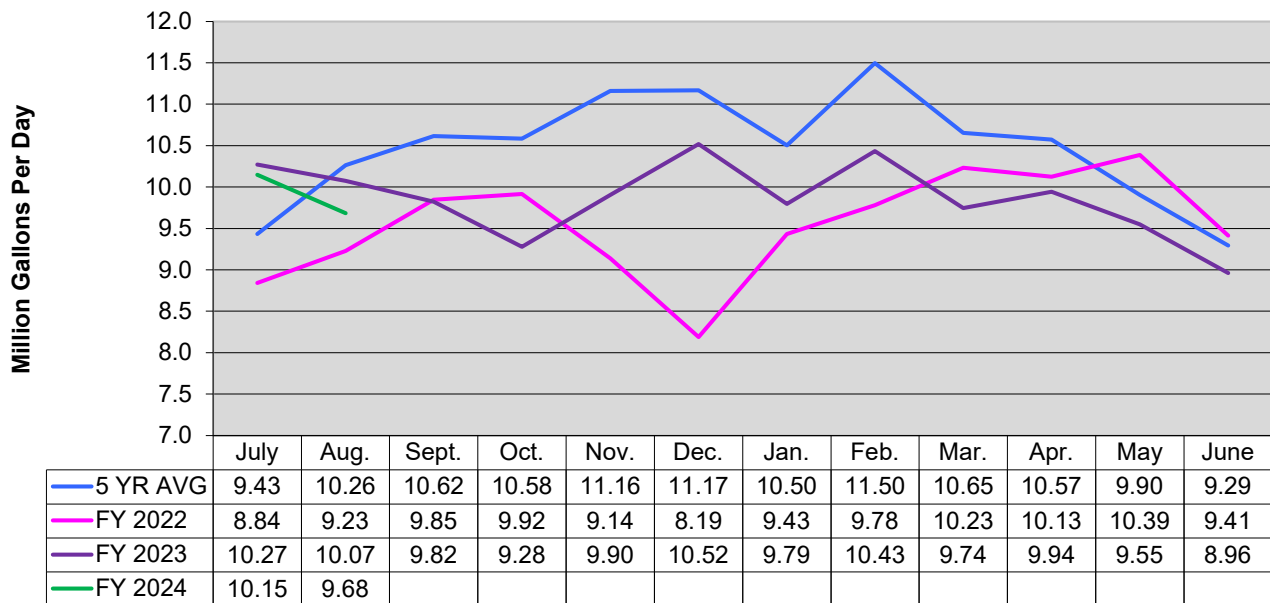
\$ 1,111,646	\$ 185,274	\$ 172,864	\$ 12,410
94,608	15,768	14,712	1,056
47,304	7,884	7,356	528
1,040,690	173,448	161,830	11,618
35,478	5,913	5,517	396
35,478	5,913	5,517	396
\$ 2,365,204	\$ 394,201	\$ 367,796	\$ 26,404

**Rivanna Water and Sewer Authority
Flow Graphs**

Urban Water Flows



Urban Wastewater Flows



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 SEPTEMBER 2023

DATE: OCTOBER 24, 2023

WATER OPERATIONS:

The average and maximum daily water volumes produced in September 2023 were as follows:

<i>Water Treatment Plant</i>	<i>Average Daily Production (MGD)</i>	<i>Maximum Daily Production in the Month (MGD)</i>
South Rivanna	7.67	9.65 (9/7/2023)
Observatory	2.13	4.16 (9/20/2023)
North Rivanna	<u>0.53</u>	<u>0.70 (9/7/2023)</u>
<i>Urban Total</i>	10.33	12.36 (9/7/2023)
Crozet	0.74	0.99 (9/5/2023)
Scottsville	0.06	0.068 (9/14/2023)
Red Hill	<u>0.0025</u>	0.004 (9/3/2023)
<i>RWSA Total</i>	11.13	-

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

Status of Reservoirs (as of October 17, 2023):

- Urban Reservoirs are 92% of Total Useable Capacity
 - South Rivanna Reservoir is full
 - Ragged Mountain Reservoir is 85% full
 - Sugar Hollow Reservoir is 98% full
- Beaver Creek Reservoir (Crozet) is 92% full
- Totier Creek Reservoir (Scottsville) is 100% full

WASTEWATER OPERATIONS:

All RWSA Water Resource Recovery Facilities (WRRFs) were in regulatory compliance with their effluent limitations during September 2023. Performance of the WRRFs in September was as follows compared to the respective VDEQ permit limits:

<i>WRRF</i>	<i>Average Daily Effluent Flow (MGD)</i>	<i>Average CBOD₅ (ppm)</i>		<i>Average Total Suspended Solids (ppm)</i>		<i>Average Ammonia (ppm)</i>	
		<i>RESULT</i>	<i>LIMIT</i>	<i>RESULT</i>	<i>LIMIT</i>	<i>RESULT</i>	<i>LIMIT</i>
Moores Creek	8.96	1.0	9	<QL	22	0.12	2.2
Glenmore	0.121	<QL	15	1.2	30	NR	NL
Scottsville	0.05	1.0	25	8.0	30	NR	NL
Stone Robinson	0.002	3.0	30	4.2	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 September 2023.

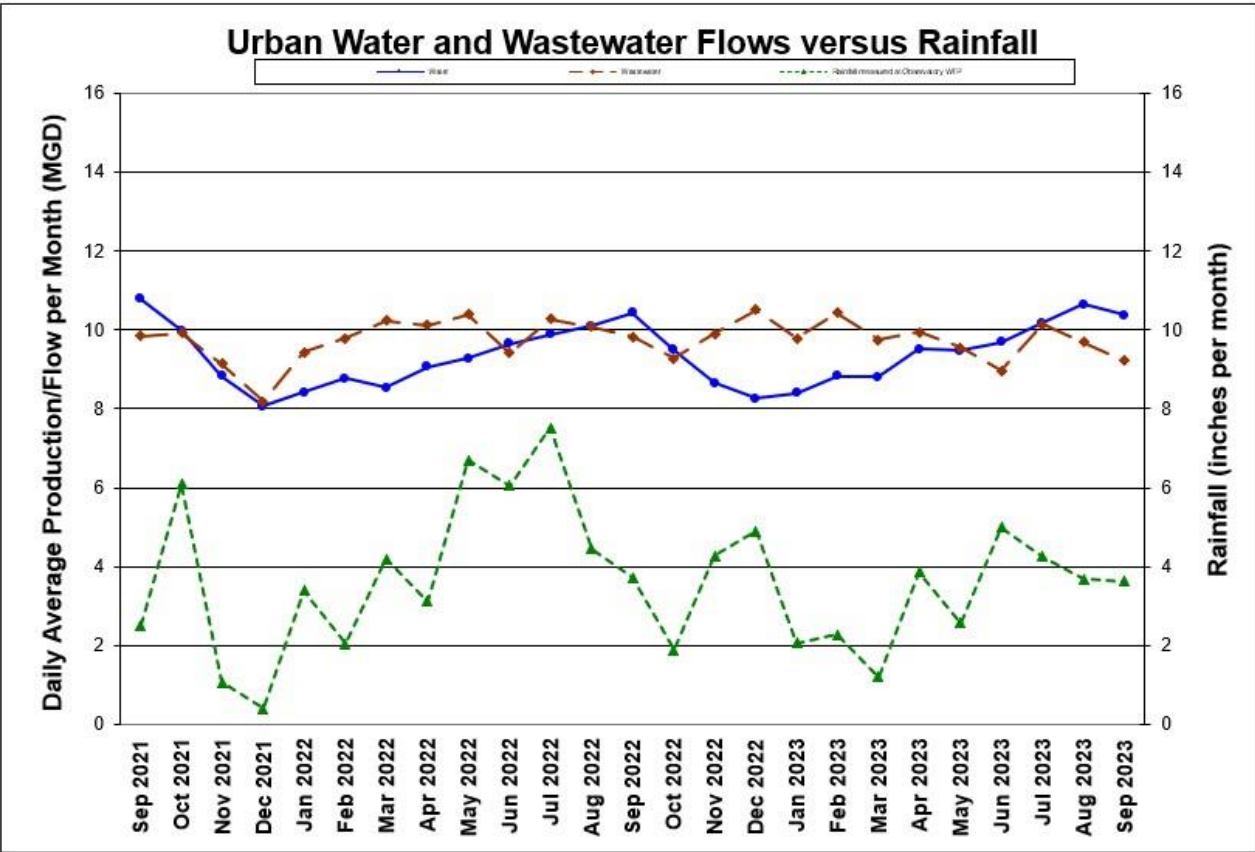
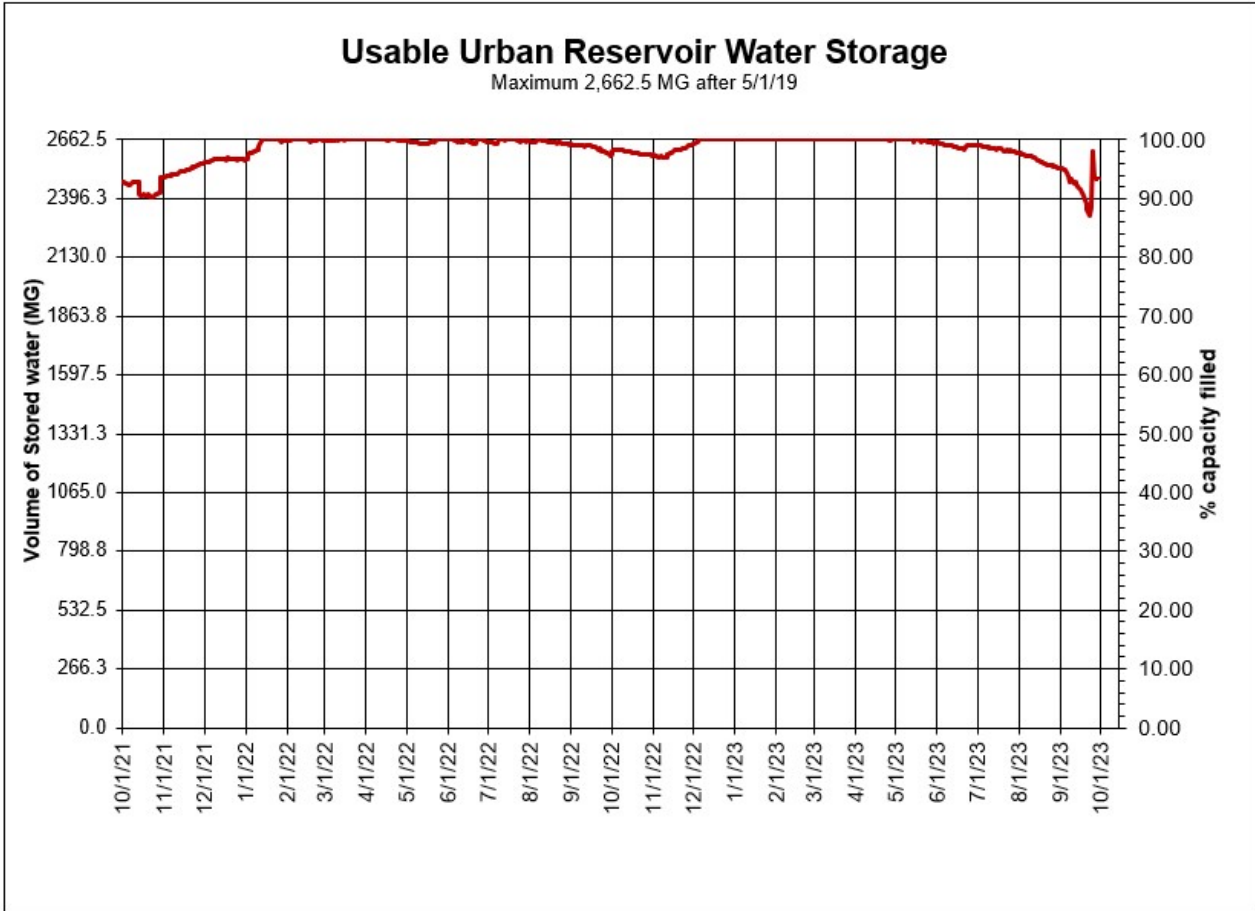
<i>State Annual Allocation (lb./yr.) Permit</i>		<i>Average Monthly Allocation (lb./mo.) *</i>	<i>Moores Creek Discharge September (lb./mo.)</i>	<i>Performance as % of monthly average Allocation*</i>	<i>Year to Date Performance as % of annual allocation</i>
Nitrogen	282,994	23,583	11,302	48%	31%
Phosphorous	18,525	1,636	420	27%	21%

*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



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: OCTOBER 24, 2023

This memorandum reports on the status of the following 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	Bid Advertise Date	Construction Completion Date
1	SRWTP and OBWTP Renovations	November 2019	March 2024
2	Airport Rd. Water Pump Station and Piping	September 2021	September 2024
3	MC 5kV Electrical System Upgrades	December 2021	December 2024
4	South Fork Rivanna River Crossing	December 2023	December 2025
5	Red Hill Water Treatment Plant Upgrades	October 2023	February 2025
6	Central Water Line	March 2024	December 2028
7	Scottsville WRRF Whole Plant Generator and ATS	TBD	TBD
8	MC Administration Building Renovation and Addition	March 2024	December 2026
9	RMR to OBWTP Raw Water Line and Pump Station	April 2024	December 2028
10	MC Building Upfits and Gravity Thickener Improvements	April 2024	December 2025
11	Emmet Street Water Line Betterment	January 2024	July 2026
12	MC Structural and Concrete Rehabilitation	September 2024	June 2026
13	Crozet Pump Stations Rehabilitation	November 2024	December 2026
14	Crozet WTP GAC Expansion – Phase I	December 2024	May 2026
15	Beaver Creek Dam, Pump Station and Piping	December 2025	January 2029
16	SFRR to RMR Pipeline, Intake, and Facilities	December 2025	December 2030
17	Upper Schenks Branch Interceptor, Phase II	TBD	TBD

Under Construction

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

Design and Bidding

4. South Fork Rivanna River Crossing
5. Red Hill Water Treatment Plant Upgrades
6. Central Water Line
7. Scottsville WRRF Whole Plant Generator and ATS
8. MC Administration Building Renovation and Addition
9. RMR to OBWTP Raw Water Line and Pump Station
10. MC Building Upfits and Gravity Thickener Improvements
11. Emmet Street Water Line Betterment
12. MC Structural and Concrete Rehabilitation
13. Crozet Pump Stations Rehabilitation
14. Crozet WTP GAC Expansion – Phase I
15. Beaver Creek Dam, Pump Station, and Piping
16. SFRR to RMR Pipeline, Intake, and Facilities
17. Upper Schenks Branch Interceptor, Phase II

Planning and Studies

18. Asset Management Plan
19. MCAWRRF Biogas Upgrades
20. North Rivanna Water Treatment Plant Decommissioning

Other Significant Projects

21. Urgent and Emergency Repairs
22. Security Enhancements

Under Construction

1. South Rivanna and Observatory Water Treatment Plant Renovations

Design Engineer:	Short Elliot Hendrickson, Inc. (SEH)
Construction Contractor:	English Construction Company (Lynchburg, VA)
Construction Start:	May 2020
Percent Complete:	93%
Base Construction Contract +	
Change Orders to Date = Current Value:	\$36,748,500 + \$1,329,762 = \$38,078,262
Completion:	March 2024
Budget:	\$43,000,000

Current Status: Improvements continue at the OBWTP including completion of the new Chemical Building and general site improvements. At the SRWTP, sludge pump improvements, general site

improvements and final instrumentation programming work continues.

2. Airport Road Water Pump Station and Piping

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Anderson Construction, Inc. (ACI) (Lynchburg, VA)
Construction Start:	December 2021
Percent Complete:	65%
Base Construction Contract + Change Order to Date = Current Value:	\$8,520,312
Completion:	September 2024
Budget:	\$10,000,000

Current Status: Water line testing and disinfection is on-going at Kohl's and between Timberwood Blvd and the pump station. Water line installation is on-going between the Town Center and Timberwood Blvd. traffic circles. The pump station is dried-in and the electrical and plumbing work is underway.

3. MCAWRRF 5kV Electrical System Upgrades

Design Engineer:	Hazen and Sawyer (Hazen)
Construction Contractor:	Pyramid Electrical Contractors (Richmond, VA)
Construction Start:	May 2022
Percent Complete:	20%
Base Construction Contract + Change Order to Date = Current Value:	\$5,180,000 - \$863,247 = \$4,316,753
Completion:	December 2024
Budget:	\$5,635,000

Current Status: All major site-related work, including underground electrical ductbank, equipment pads, and curb and gutter replacements, is now complete. Electrical equipment for this project has begun to arrive at the site, with the majority of the equipment scheduled to arrive this Winter.

Design and Bidding

4. South Fork Rivanna River Crossing

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2020
Project Status:	90% Design
Construction Start:	May 2024
Completion:	December 2025
Budget:	\$7,000,000

Current Status: Easement acquisition work is on-going. A required easement on the south side of the river is on a remnant property from the VDOT Berkmar Bridge project, and we cannot finalize that easement until the property transfer back to the original property owner is complete. Another outstanding easement is on a Virginia Dominion Power parcel for which we completed a Phase 1 Environmental Survey because Virginia Dominion Power prefers that we purchase the small parcel

instead of acquiring an easement. Water Protection Ordinance (WPO) plans were submitted to the County for review in May and comments were received on July 10th. The County cannot approve the WPO until all easements have been finalized.

5. Red Hill Water Treatment Plant Upgrades

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	July 2022
Project Status:	Bidding
Construction Start:	February 2024
Completion:	February 2025
Budget:	\$800,000

Current Status: Project has been advertised for construction bids. This project received ARPA grant funding from Albemarle County.

6. Central Water Line

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2021
Project Status:	60% Design
Construction Start:	December 2024
Completion:	December 2028
Budget:	\$41,000,000

Current Status: Design of 90% construction documents and easement acquisitions are underway. Soil borings are complete and utility test pits along the alignment will be completed in October and November.

7. Scottsville WRRF Whole Plant Generator and ATS

Design Engineer:	Wiley Wilson
Project Start:	December 2021
Project Status:	100% Design
Construction Start:	TBD
Completion:	TBD
Budget:	\$520,000

Current Status: A recent update from VDEM indicated that the grant approval and funding process may continue until Summer 2024. As a result, the overall project schedule is uncertain.

8. Moore's Creek Administration Building Renovation and Addition

Design Engineer:	SEH
Project Start:	October 2022
Project Status:	60% Design
Construction Start:	July 2024
Completion:	December 2026
Budget:	\$20,000,000

Current Status: Design of 60% construction documents continues. A Value Engineering workshop has been coordinated for November 7-9th. The Furnishings & Finishes team is making selections.

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

Design Engineer:	Kimley-Horn
Project Start:	August 2018
Project Status:	80% Design
Construction Start:	September 2024
Completion:	December 2028
Budget:	\$44,000,000

Current Status: The Design Engineer is proceeding towards 75% design of the pump station. Waterline design has reached 90% completion between the Ragged Mountain Reservoir and Fontaine Avenue. Staff are working with UVA on the alignment between Fontaine Avenue and the Observatory WTP, as well as with VDOT on the alignment crossing Fontaine Avenue. A Value Engineering workshop was held in September, and the Design Engineer is evaluating VE identified changes.

10. MCAWRRF Building Upfits and Gravity Thickener Improvements

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	March 2023
Project Status:	Preliminary Engineering
Construction Start:	August 2024
Completion:	December 2025
Budget:	\$5,000,000

Current Status: The preliminary design submission and review has been completed for the building renovations.

11. Emmet Street Water Line Betterment

Design Engineer:	Whitman, Requardt & Associates (WRA)
Project Start:	September 2021
Project Status:	Ivy Corridor Public Realm – Complete Contemplative Commons – Complete Emmet Streetscape –Design Hydraulic/29 – Preliminary Design
Completion:	2024 - 2026, Phase I
Budget:	\$2,900,000

Current Status: RWSA is coordinating with the City for design of a 24-30” water main in Emmet Street from Ivy Road to Arlington Boulevard as part of the City’s Emmet Streetscape Phase I project. A Betterment Agreement is under review with the City for the additional design work by its consultant, Clark-Nexsen, and the cost of the betterment construction for the Streetscape Project. WRA has begun work on the final design and permitting of the water main.

RWSA is reviewing possible water main alignments along the Emmet Street Corridor between Morton Drive and Hydraulic Road and has initiated discussion with VDOT on potential pipe routing in the upcoming design-build Hydraulic/29 project.

12. MCAWRRF Structural and Concrete Rehabilitation

Design Engineer:	Hazen and Sawyer (Hazen)
Project Start:	April 2023
Project Status:	Preliminary Engineering
Construction Start:	September 2024
Completion:	June 2026
Budget:	\$13,550,000

Current Status: Preliminary engineering work is continuing. Conceptual designs have been completed for both the NRCY pump removal system and Rivanna PS valve access. A submittal for addressing the digester issues is anticipated this month and CCTV work is commencing in October for the stormwater system at the compost yard.

13. Crozet Pump Stations Rehabilitation

Design Engineer:	Wiley Wilson
Project Start:	July 2023
Project Status:	30% Design
Construction Start:	January 2025
Completion:	December 2026
Budget:	\$10,350,000

Current Status: 30% design documents have been submitted for review.

14. Crozet GAC Expansion – Phase I

Design Engineer:	SEH
Project Start:	July 2023
Project Status:	Preliminary Engineering
Construction Start:	April 2025
Completion:	October 2026
Budget:	\$6,550,000

Current Status: A preliminary submission and review has been completed by Cornwell regarding viable media for treatment use and is being finalized based on comments received. SEH is beginning the preliminary engineering evaluations and coordination with regulatory authorities.

15. 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:	5% Design
Construction Start:	April 2026
Completion:	January 2029
Budget:	\$43,000,000

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.

16. SFRR to RMR Pipeline, Intake, and Facilities

Design Engineer:	Kimley Horn/SEH
Project Start:	July 2023
Project Status:	6% Design
Construction Start:	June 2025
Completion:	December 2030
Budget:	\$79,700,000

Current Status: CSX Railroad permitting documents for the Old Garth Road crossing have been finalized and are awaiting signature from the railroad. A topographic survey for the pipeline alignment has been completed, and topographic survey of the remaining project locations is under way. A geotechnical investigation along the alignment will be completed this Fall/Winter. Staff are working on the final phases of the SFRR-RMR Nutrient Analysis, with the necessary equipment needed to complete study efforts scheduled to arrive in the Fall, and a final report published in the Winter. The SFRR Intake and Pump Station Project will require closure of the public boat ramp at the site once construction begins. Modifications to the Ragged Mtn Reservoir intake tower and perimeter grading will be included in this project.

17. Upper Schenks Branch Interceptor, Phase II

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

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

Planning and Studies

18. Asset Management Plan

Design Engineer:	GHD, Inc.
Project Start:	July 2018
Project Status:	CMMS Implementation – 100% Complete AMP Implementation – 70% Complete
Completion:	AMP Implementation – 2024

Budget: \$1,180,000

Current Status: Assistance with Cityworks implementation is complete with the software now in place and work orders being generated. Work continues to fully implement the Asset Management program across all applicable Authority facilities with refinement of a linear asset Excel model and preparation for condition assessments and consequence of failure determination workshops.

19. 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 the Cogeneration Upgrades. RWSA and City staff continue to discuss all available options to reuse the biogas, with further investigation and analysis ongoing.

20. North Rivanna Water Treatment Plant Decommissioning

Design Engineer: SEH
Project Start: July 2019
Project Status: Work Authorization Development
Completion: March 2027
Budget: \$2,425,000

Current Status: SEH is preparing a scope of work for design of the plant decommissioning. Staff are also pursuing funding and administrative assistance for removal of the North Fork Rivanna low head dam from the U.S. Fish and Wildlife Service through their Partners for Fish and Wildlife Program.

Other Significant Projects

21. 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
2022-02/05/12	Miscellaneous MCI/PCI/RVI MH Repairs	\$70,000
2023-01	Finished Water System ARV Repairs	\$150,000
2023-02	WWM 32-02 Valve Replacement	\$50,000
2022-03	RVI Erosion	TBD

- Miscellaneous MCI/PCI/RVI MH Repairs: Over the past several months, staff have identified issues with various manholes on the Moores Creek, Powell Creek, and Rivanna Interceptors (MCI,

PCI, and RVI, respectively). These include one manhole on MCI that needs to be raised, as it was historically buried but found in Summer 2021 by the RWSA Maintenance & Engineering Departments, one manhole on RVI that needs a failing HDPE liner to be removed and cementitious mortar to be installed, and one manhole each on PCI and MCI that need to be coated with cementitious mortar due to root intrusion and groundwater infiltration. This work will be performed through the On-Call Maintenance contract with Digs, and staff visited the site with the Contractor on July 15th. The appropriate MH on MCI was raised on November 1st, 2022. The remaining coating efforts were completed during the week of January 30th. One additional manhole was raised on October 3rd, leaving just one manhole left to be coated.

- 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 Fall. The Contractor is currently working on acquiring applicable VDOT permits for the work.
- WWM 32-02 Replacement: An 8” gate valve at RWSA’s Wholesale Water Meter site 32 was identified as defective during a recent meter calibration effort. Due to the amount and critical nature of customers that would be impacted in a potential shutdown, RWSA planned for the utilization of an insertion valve in this location. The valve was installed on September 19th, 2023, with no impacts to City or ACSA customers.
- RVI Erosion: RWSA’s Rivanna Interceptor (RVI) traverses a large river bottom in the Still Meadow Community. As this river bottom is down slope of a large development, excess drainage has caused a small washout area over the interceptor. Staff is investigating the area with its On-Call Maintenance Contractor, Faulconer Construction, and intends to install armament in the area to protect the sewer line. Work is anticipated to be completed later this Fall/Winter, as site conditions allow.

22. Security Enhancements

Design Engineer:	Hazen & Sawyer
Construction Contractor:	Security 101 (Richmond, VA)
Construction Start:	March 2020
Percent Complete:	60% (WA6), 50% (WA7), 0% (WA9)
Based Construction Contract +	
Change Orders to Date = Current Value:	\$718,428 (WA1) + \$814,420 (WA2-9)
Completion:	December 2023 (WA6), October 2023 (WA7)
Budget:	\$2,810,000

Current Status: WA6 includes card access installation at RWSA’s remote sites, including all dams and pump stations. Conduit work has been completed as each site, with device installation and programming ongoing. WA7, which includes a pilot of a program that will test electronic padlocks at several RWSA facilities, has begun. These electronic padlocks have the potential to add an extra layer of security to unmanned facilities such as tanks, dams, and other facilities. If the pilot is successful, wide scale implementation of this technology is possible. WA9 will include installation of card access

on all exterior doors at the South Rivanna WTP. This work was recently authorized, and materials are being procured. Design of MCAWRRF entrance modifications with Hazen & Sawyer also 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 permitting 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 is working on appropriate permitting submittals with Albemarle County.



MEMORANDUM

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

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

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

**SUBJECT: ADMINISTRATION AND COMMUNICATIONS REPORT FOR SEPTEMBER
2023**

DATE: OCTOBER 24, 2023

Human Resources

Our Leadership Development Group, which includes our Division Directors, completed their fourth training session, which was about Visionary Leadership. This group will meet in December to present individual Capstone Projects.

We will be holding our annual Employee Appreciation Day on Thursday, November 2, 2023. During this luncheon we will be giving out service awards to several of our employees:

Greg Marrs, Maintenance Manager – 40 years
Steve Minnis, Maintenance Assistant Manager - 30 years
Jennifer Whitaker, Director of Engineering & Maintenance – 20 years
Kathy Ware, Senior Accountant – 20 years
Jay Young, Assistant IT Administrator – 15 years
Mark Charron, Class 1 Wastewater Operator – 10 years
Duane Houchens, Class 1 Wastewater Operator – 5 years
Austin Marrs, Senior Civil Engineer - 5 years
George Cheape, Engineering Inspector - 5 years
Teresa Napier, Receptionist – 5 years
Maurice Whitlow, Mechanic 1 – 5 years
Robbie McMullen, Class 2 Wastewater Operator - 5 years
Elizabeth Coleman, Safety Manager - 5 years
Daniel Campbell, Water Manager - 5 years
Robert Woodside, GIS Coordinator - 5 years
Alisa Cooper, Payroll & Benefits Coordinator - 5 years

Safety

We are working on a project that makes all of our Lock-Out / Tag-Out procedures accessible to our team through the Cityworks asset management system. Our team will be able to view these procedures on their mobile tablets as they are working on the equipment, and will no longer need to access them on our network drives.

Community Outreach

On Friday, October 13, 2023, several staff members visited with staff from Loudoun Water. They took us on a tour of their Education Center and Aquary. They shared their community outreach program and gave us great information to consider for our program.

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 SEPTEMBER 2023

DATE: OCTOBER 24, 2023

The monthly and average daily Urban water system usages by the City and the ACSA for September 2023 were as follows:

	<i>Month</i>	<i>Daily Average</i>	
City Usage (gal)	152,597,369	5,086,579	49.0%
ACSA Usage (gal)	158,524,316	5,284,144	51.0%
Total (gal)	311,121,685	10,370,723	

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 October 2022), 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

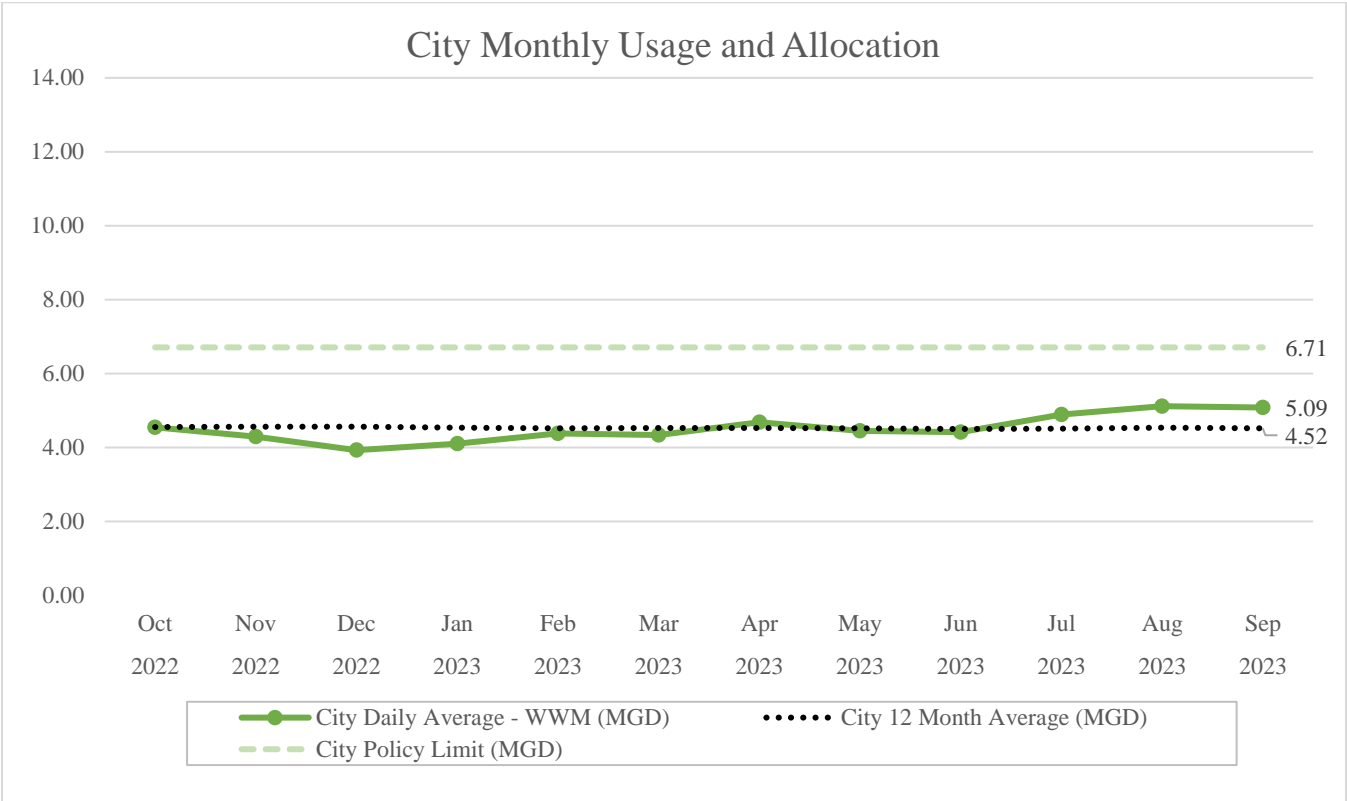
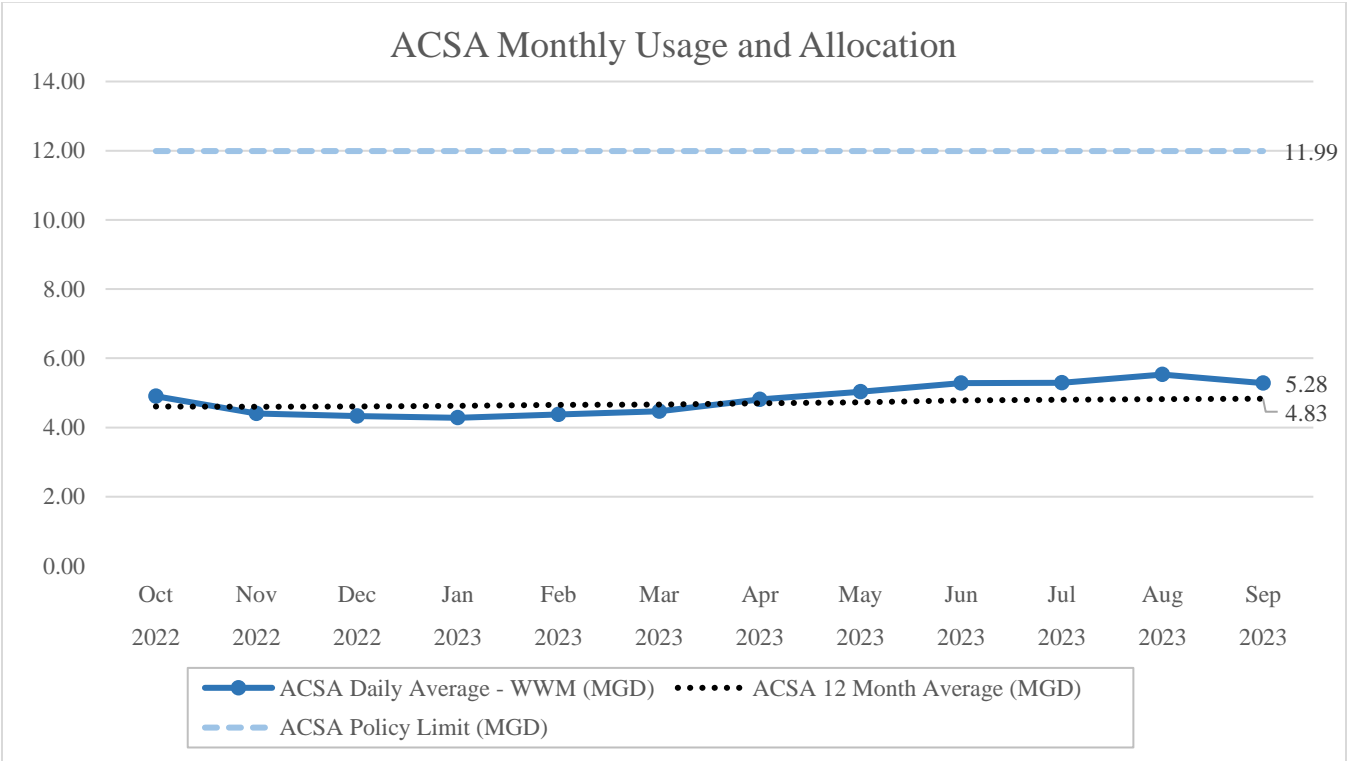


Figure 2: Albemarle County Service Authority Monthly Water Usage and Allocation



Meter Locations for the Wholesale Water Metering Project



Miles

Date: 4/21/2017



RIVANNA
WATER & SEWER AUTHORITY

695 Moores Creek Lane
Charlottesville, VA 22902
p.434-977-2970
www.rivanna.org
www.rivannagis.org

 Meter Site Locations - W&MP

01, Pepsi Place
02, Michael Pl / Wilson Ct
03, Wilder Dr
06, Long St / River Rd

08, Franklin St / Carlton Ave / Broadway St
09, Moores Creek Ln
11, Avon St
12, Loma Ln / Harris Rd
14, Old Lynchburg Rd
15, Ivy Rd / Colonnade Dr

16, Ricky Rd / Barracks Rd
17, Ricky Rd (near Wayne Ave)
18, North Berkshire Rd
19, Hydraulic Rd / Inglewood Dr
20, Trader Joes
22, Rio Rd @ Church of Our Sav

23, Greenbrier Dr / Rio Rd
24, Greenbrier Ter
25, University Heights Apts
26, Seminole Trl
28, Rio Rd / Melbourne Rd
29, Pen Park Ln

30, Darden Towe Park
31, Stribling Ave
32, Fontaine Ave

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

**FROM: ANDREA BOWLES, WATER RESOURCES MANAGER
JENNIFER WHITAKER, DIRECTOR OF ENGINEERING &
MAINTENANCE**

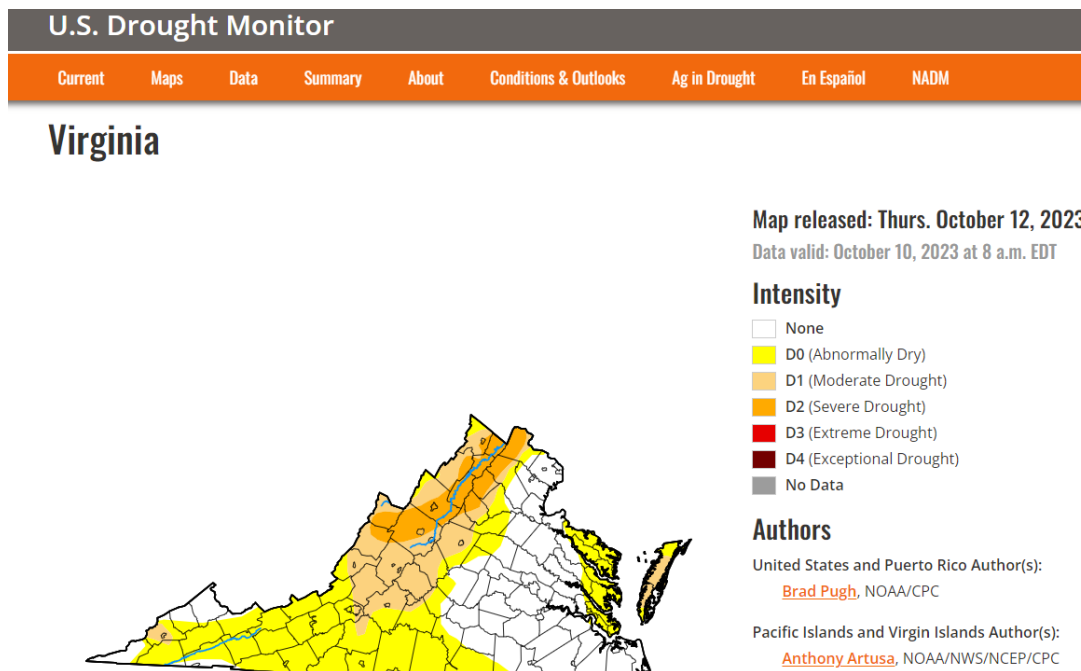
REVIEWED: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: DROUGHT MONITORING REPORT

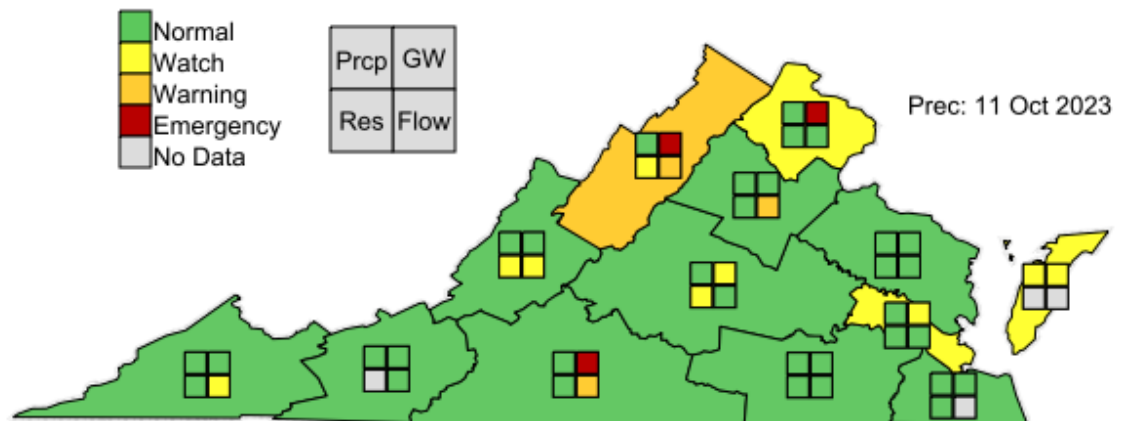
DATE: OCTOBER 24, 2023

State and Federal Drought Monitoring, as of October 12, 2023:

- U.S. Drought Monitoring Report: Indicates Charlottesville and a large portion of Albemarle County are experiencing Moderate drought conditions. A portion of the County south and east of Charlottesville is listed as Abnormally Dry.



- VDEQ Drought Status Report: Our region is listed as being in a “Watch” level for groundwater and reservoir levels. The remaining indicators are listed as “Normal.”



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 – Sept	18.83	31.90	-13.07	-41
Precipitation over past 33 months is 16 % below normal					
Source: National Weather Service, National Climatic Data Center					

USGS Stream Gaging Station Near the Urban Area (October 5-11)				
Gage Name	Rolling 7-day Avg. Stream Flow		Median Daily Streamflow	
	cfs	mgd	cfs	mgd
Mechums River	13.1	8.4	36	23.3
Moormans River	4.7	3.0	14	9.1
NF Rivanna River	6.0	3.9	23	14.9
SF Rivanna River	18.0	11.6	73	47.2

Median daily flow: October 11th for the period of record (approx. 30 - 80 years)

Status of Reservoirs (as of October 17, 2023):

- Urban Reservoirs are 92% of Total Useable Capacity
 - South Rivanna Reservoir is full
 - Ragged Mountain Reservoir is 85% full
 - Sugar Hollow Reservoir is 98% full

- Beaver Creek Reservoir (Crozet) is 92% full
- Totier Creek Reservoir (Scottsville) is 100% full

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



RIVANNA
CONSERVATION ALLIANCE

Water Quality Monitoring and Related Activities

Presentation to the Rivanna Water & Sewer
Authority Board of Directors

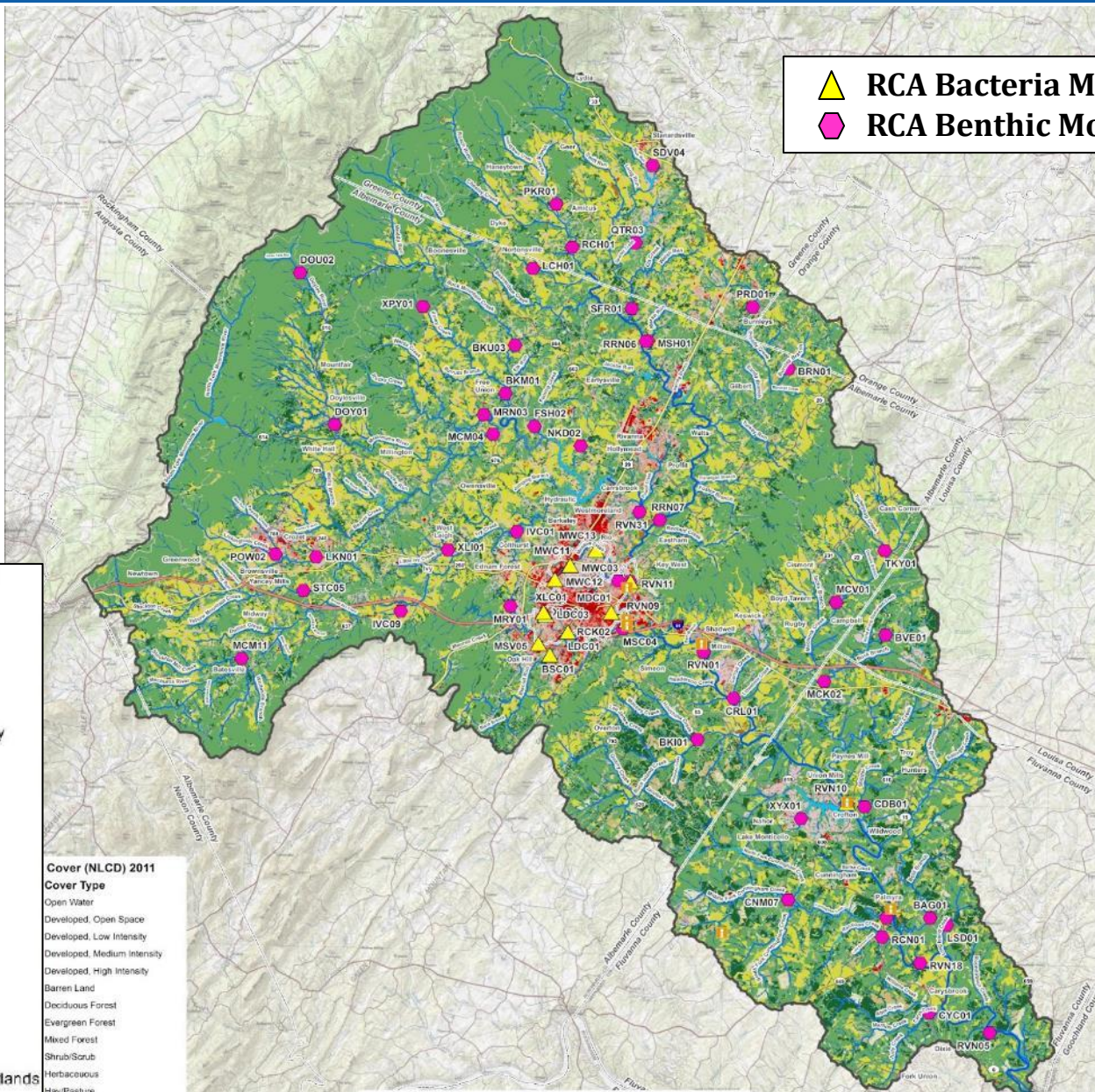
October 24, 2023



Rivanna Conservation Alliance Background

- RCA formed in 2016 by merger of Rivanna Conservation Society (RCS) and StreamWatch
- **Mission:** Working with the community to conserve the Rivanna River and its tributaries through monitoring, restoration, education, and advocacy



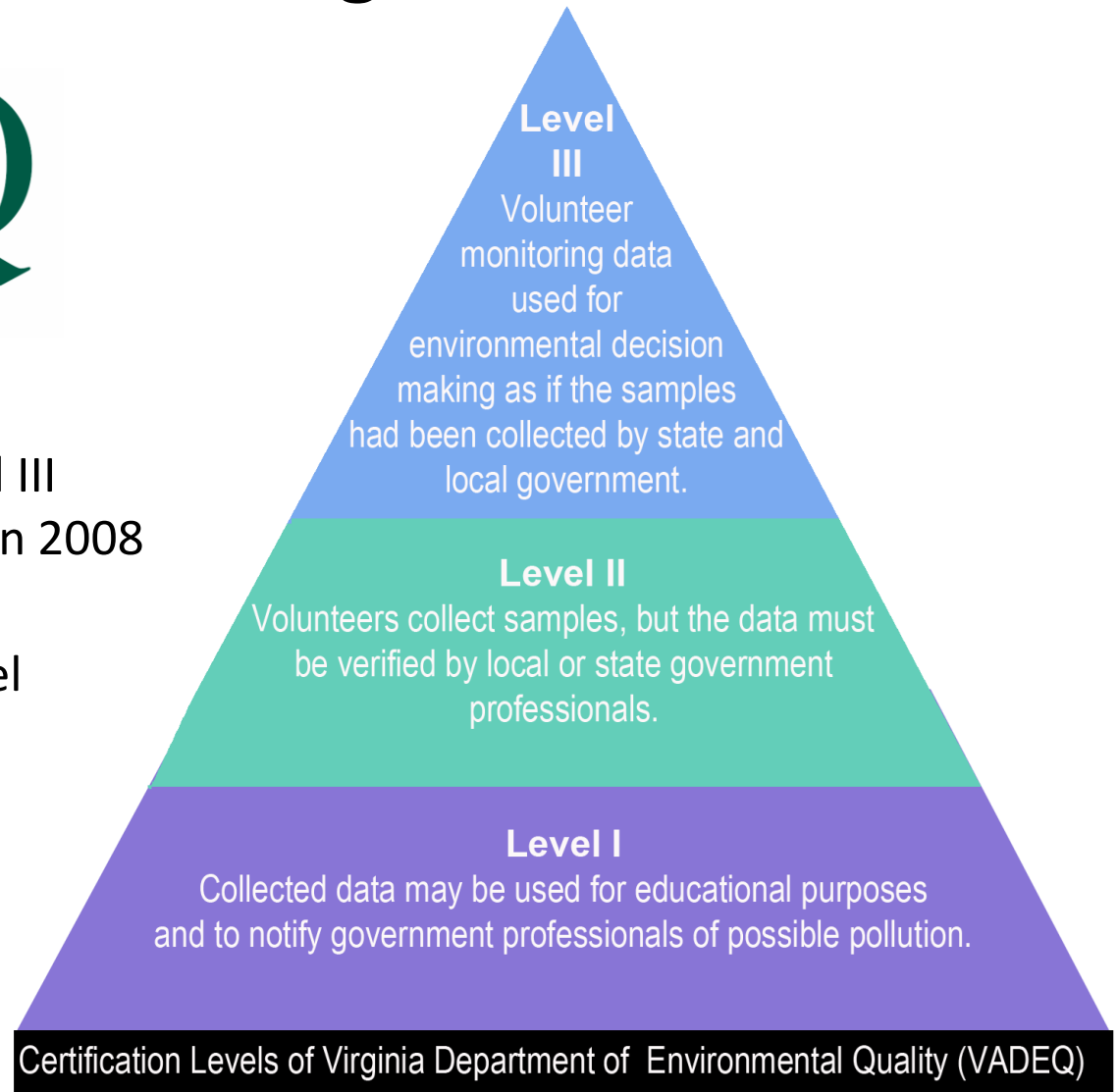


VA DEQ's Citizen Monitoring Data Levels



Benthic program achieved Level III certification (as StreamWatch) in 2008

Bacteria program achieved Level III certification in 2017



RCA's Bacteria Monitoring Program

- Volunteers collect water samples to test for *E. coli* levels and turbidity
- 19 urban sites sampled monthly
- 9 potential recreational sites sampled weekly in spring (to meet revised VA water quality standard)
- 3 high recreational sites tested weekly in summer (Darden Towe Park, Riverview Park, Palmyra boat launch)
- Add on source tracking for sites with unusually high *E. coli* levels



RCA's Biological Monitoring Program

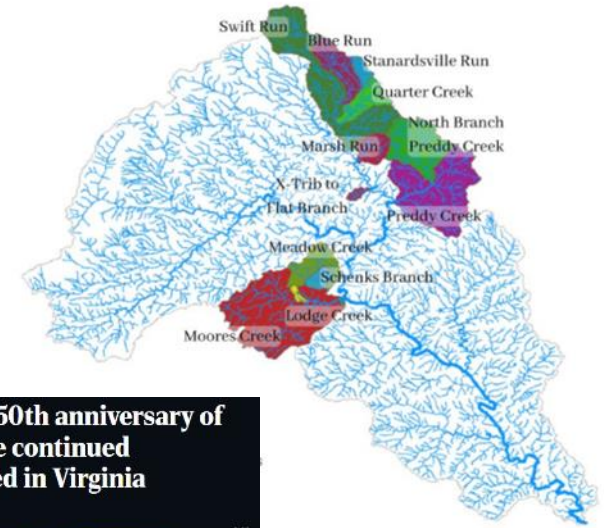
- Volunteers sample benthic macroinvertebrates and identify to the family level
- Number and diversity indicate water quality
- 50 sites monitored twice per year
- Identify unknown benthic macroinvertebrates in the lab under microscope
- Quality check data sheets and enter data



How are RCA's Data Used?

- Inform and educate the public
- Identify pollution hotspots
- Guide local water resource planning/ protection efforts
- Assist DEQ and EPA with assessing water quality and identifying impaired waters
- Inform Total Maximum Daily Load (TMDL) assessments
- Evaluating impact of water quality improvement efforts

Sub-watershed Benthic TMDL Areas



Education Programs

- Expanded 6th grade Watershed Field Trip Program to all public schools in Albemarle County (1,000 students)
 - Thanks to all of the RWSA and RSWA volunteers!
- Working with 275 Buford Middle 7th graders this week
- Hosted 2 Starr Hill Pathways camp groups (with RWSA visit)
- Offer education activities at events (Rivanna RiverFest) and parks



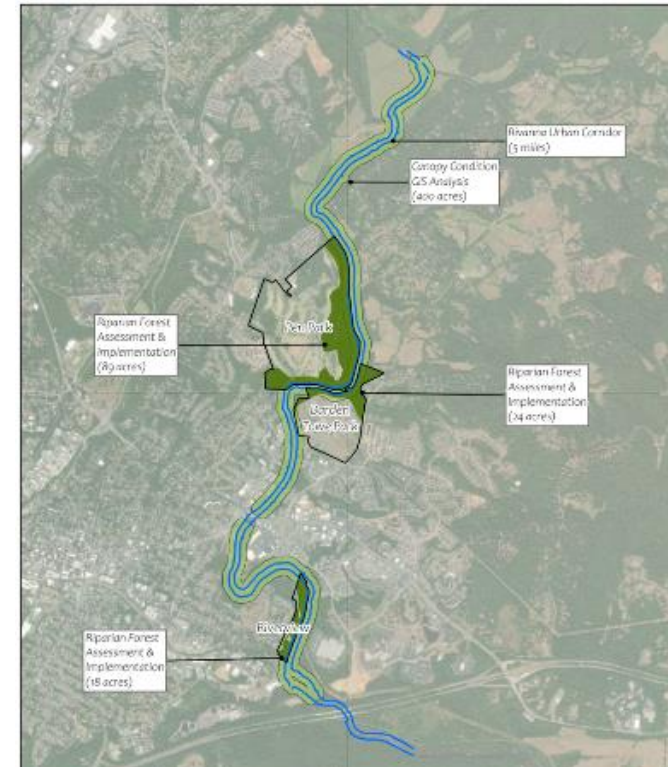
Rivanna Restoration at Riverview Park Project



WOLF JOSEY
landscape architects
DRAFT CONCEPT

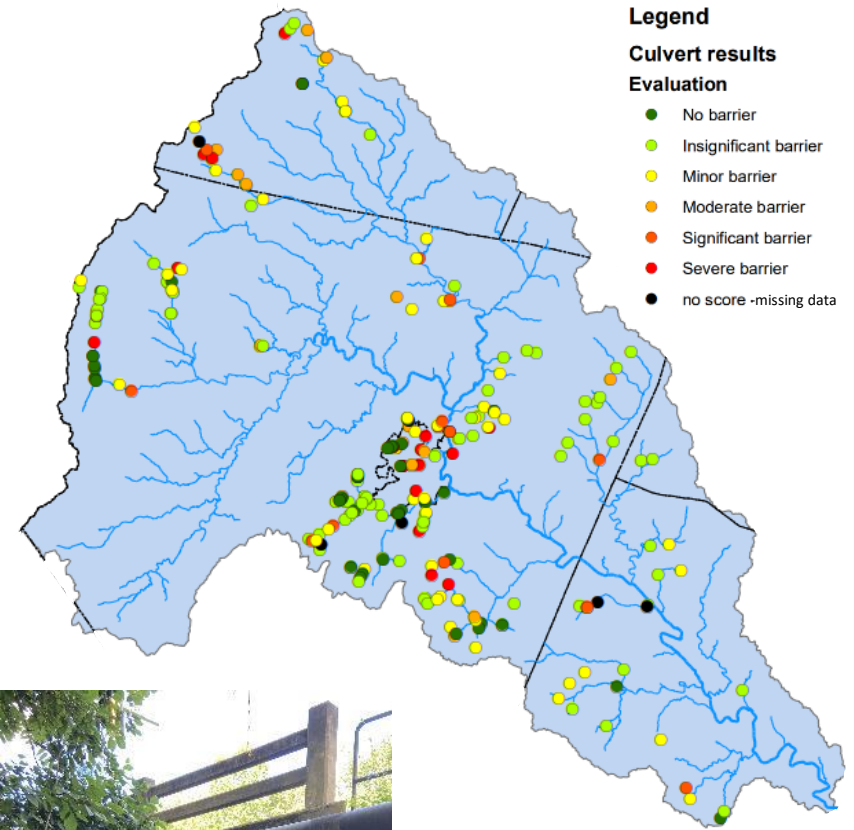
Rivanna River Resilience Partnership

- Long-term collaborative effort to manage at-risk native riparian forests
- Larger scale planning, outreach, and partnership development (5 mile urban corridor)
- Finer scale on-the ground work in three riverside parks (130 acres):
 - Invasive vine/tree assessments and prioritization of treatment areas
 - Contractor-led, volunteer-supported treatment of high-priority areas
 - Workforce training
 - Long-term maintenance by community partners



Rivanna Road-Stream Crossings Assessments

- In 2021 and 2022, with support from USFWS, RCA conducted 248 high priority crossing assessments
- Focused on potential/actual trout habitat areas and lower reaches, where migratory fish might first encounter barriers
- 32 crossings identified as significant or severe barriers to fish passage
- Data are publicly available and will inform future restoration projects



Thank you for everything you do
to support RCA's work!



Value Engineering Program Review

PRESENTED TO THE RWSA BOARD OF DIRECTORS BY:
JENNIFER WHITAKER, DIRECTOR OF ENGINEERING & MAINTENANCE
OCTOBER 24, 2023



Ragged Mtn. Reservoir

Definitions

Value Engineering (VE) is

a process to review project elements during the design phase to reduce costs and/or increase functionality to increase the value of the project

Value

the most cost-effective way of producing a project without taking away from its purpose

Value Engineering is not...

reducing costs at the expense of quality or simply cost-cutting

History

Value Engineering Process

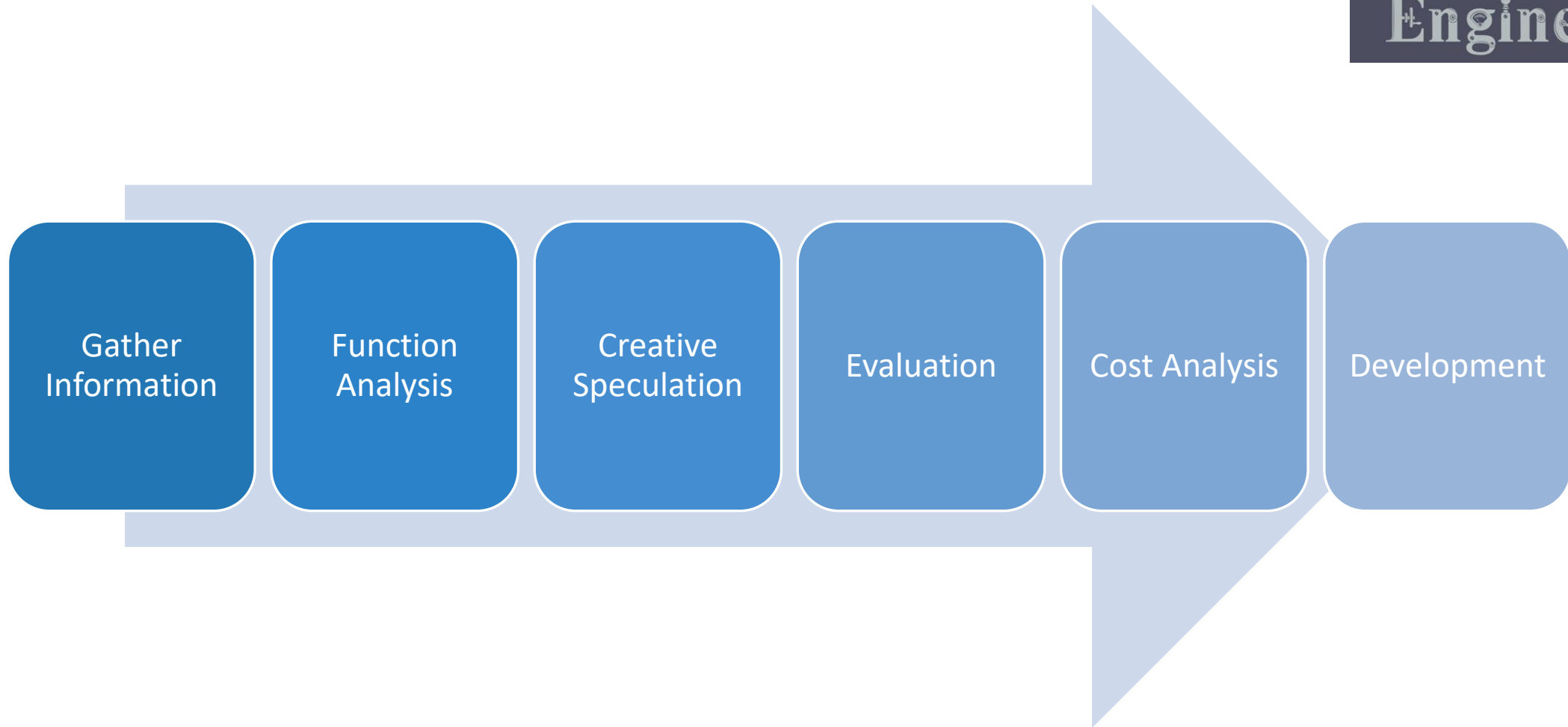
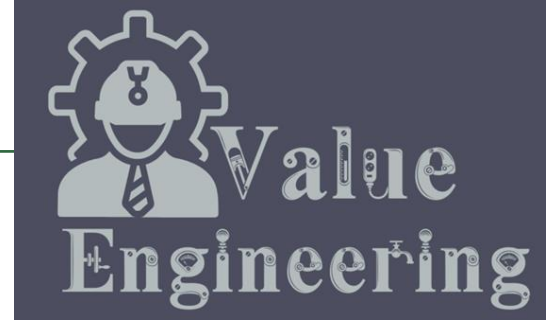
- Developed during World War II by Engineers at General Electric Co.
- Severe Material Shortages > Worked to identify substitutes
- Developed a Systematic Process to Balance Function and Cost

RWSA Value Engineering Program

- 2014 – the RWSA Board Adopted a Value Engineering Policy
- 2019 – Staff Presentation to the Board
- 2022 – Staff Developed a General Admin. Procedure (GAP 19)



Methodology

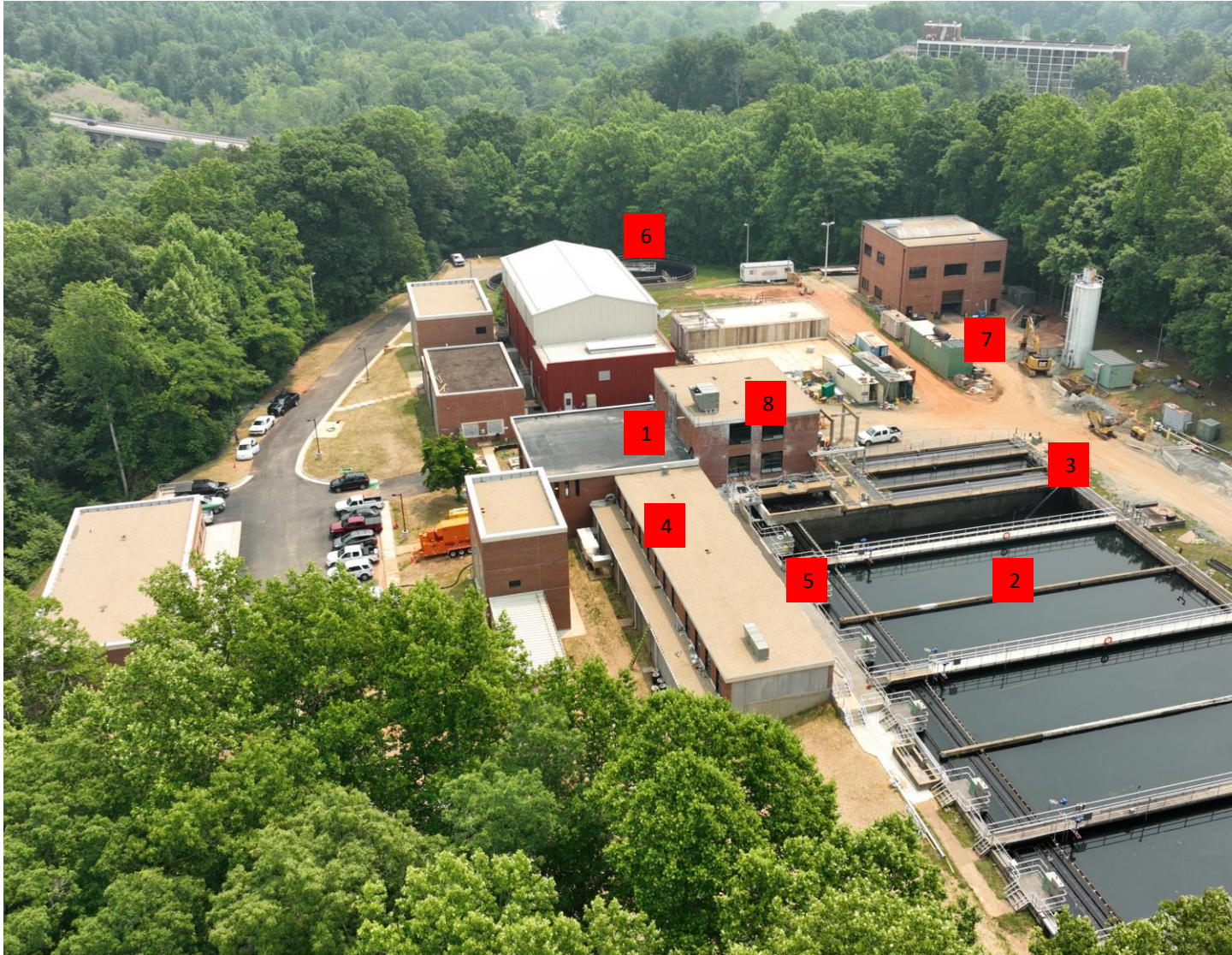


RWSA Value Engineering Practices

- Value Engineering (VE) considered for all projects over **\$5 M**
 - Can be considered for other projects if potential benefits warrant
 - If VE unlikely to yield results because of project constraints, can be waived
- Incorporate independent, technical expertise along with the design team and staff reviewers
- Conduct during 30-60% design phase, with option of more than one VE Workshop
- Conduct workshops off-site or out-of-workday process fostering formal and informal interactions and brainstorming
- Focus on key ideas with high likelihood of success
- Outcomes will be documented, and recommendations incorporated into the project



Airport Road Pump Station



Example of VE Findings

Project - South Rivanna WTP:

1. Extensive review of Existing and Future Raw and Finished Pumps and VFD's – eliminated one pump
2. Detailed review of state-of-the-art sludge collection
3. Reviewed Flocculated Flume sizing – grandfathered standards allowed for cost savings, no loss of performance
4. Detailed Review of HVAC zones – elimination of one zone
5. Detailed Review of Ex. gate and valve Performance – eliminated some replacements
6. Detailed Review of Sludge PS Building – replaced brick enclosure with pre-fab building
7. Detailed Review of Generator – replaced switch with Closed-transition transfer switch – better operation
8. Review of Safe Access throughout the plant – added roof access and davit receivers

Total Impact:

Total Project Cost reduced by \$800,000 (~5.5%)

Several Key Items Added to the Project

Recent and Upcoming VE Studies

Project	VE Workshop Date
Ragged Mtn. Reservoir to Observatory WTP Pipeline and Pump Station	September 2023
Administration and Engineering Building	November 2023
Crozet WW Pump Stations 1-4 Rehabilitation	TBD
Beaver Creek Raw Water Dam and Pump Station	TBD
Crozet WTP – Full GAC Treatment	TBD
South Rivanna Res. – Ragged Mtn. Res. Pipeline, Intake and Facilities	TBD
MCAWRRF Structural and Concrete Rehabilitation	TBD
MCAWRRF Building Upfits	TBD
RSWA Baling Facility	TBD



Questions?

Observatory WTP

Major Capital Projects Update



Observatory WTP

Presented to the Board of Directors
By Scott Schiller, Engineering Manager
October 24, 2023

Currently Under Construction

Observatory and South Rivanna WTPs Rehabilitation and Expansion



South Rivanna WTP

- Increases OBWTP capacity from 7.7 to 10 MGD and increases SRWTP reliability at 12 MGD capacity
- Includes plate settlers and new chemical building at OBWTP; new Alum, Fluoride and Admin Buildings +2 new filters at SRWTP
- Completion - March 2024
- Budget \$43M



Liquid Lime Storage Tanks at Observatory WTP

Observatory WTP Rehabilitation and Expansion



Airport Road Pump Station and Piping

- Will reliably connect Piney Mountain and Urban water pressure zones
- Will supply treated water to the Piney Mountain Tank and be part of future Airport water pressure zone
- Completion – Sept 2024
- Budget \$10 M



MC 5kv Electrical System Upgrade

- Replacement of major electrical components at the end of their service lives
- Includes motor control centers, transformers, switchgear building
- Significant equipment delivery delays
- Completion: December 2024
- Budget \$5.6 M

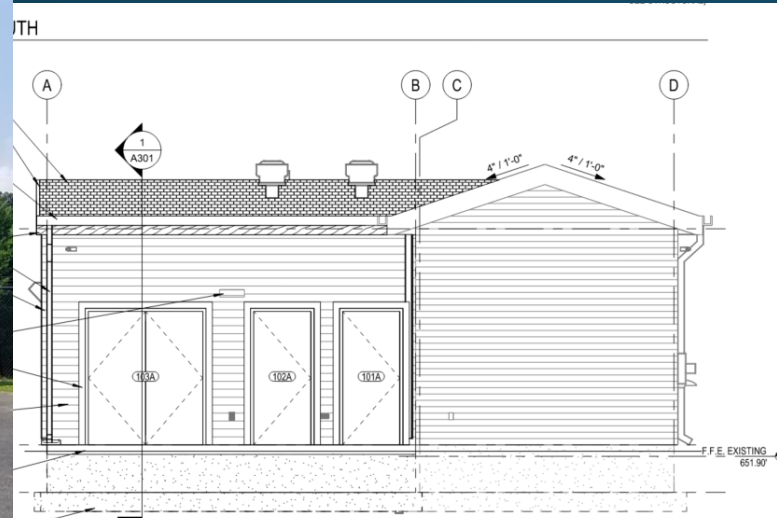


Red Hill WTP Upgrades

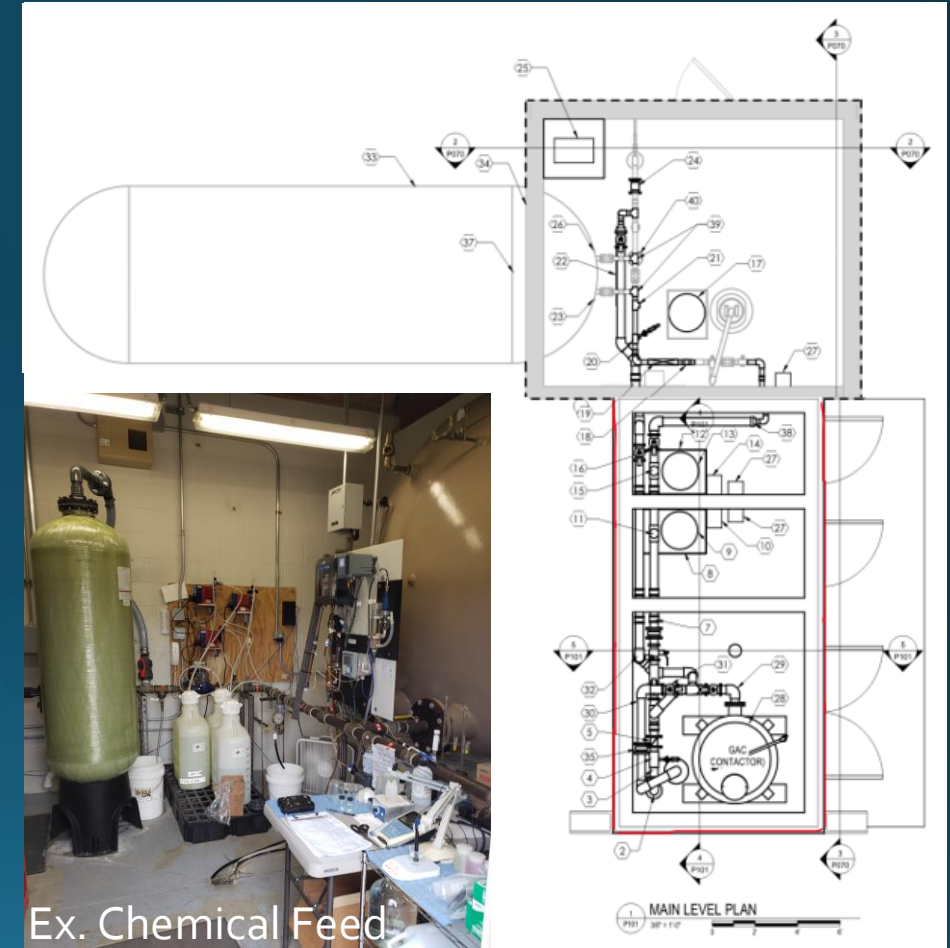
- Operated as a comprehensive water treatment facility, as opposed to only a well system
- Space for additional chemical storage, monitoring and automation
- Granular Activated Carbon treatment will be added
- Construction bids to be received in November
- Construction: Feb 2024 – Feb 2025
- Budget \$800k (\$400k in funding from County)



Current Red Hill WTP



CONCRETE FOOTING AND FOUNDATIONS (SHOWN DASHED - SEE STRUCTURAL)

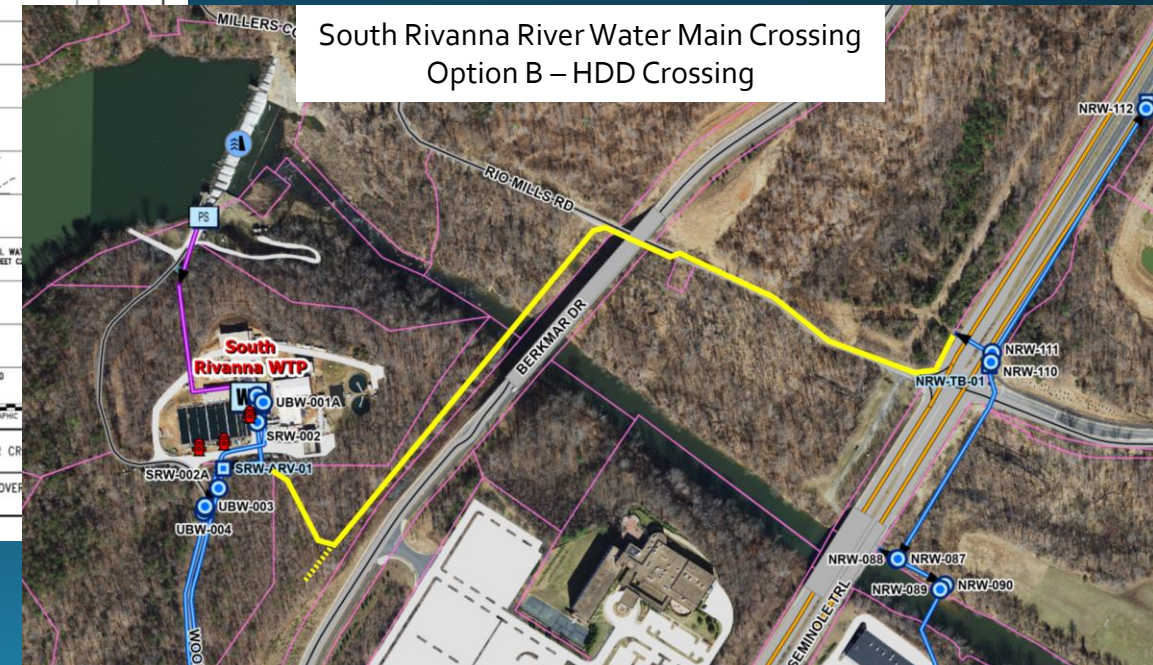
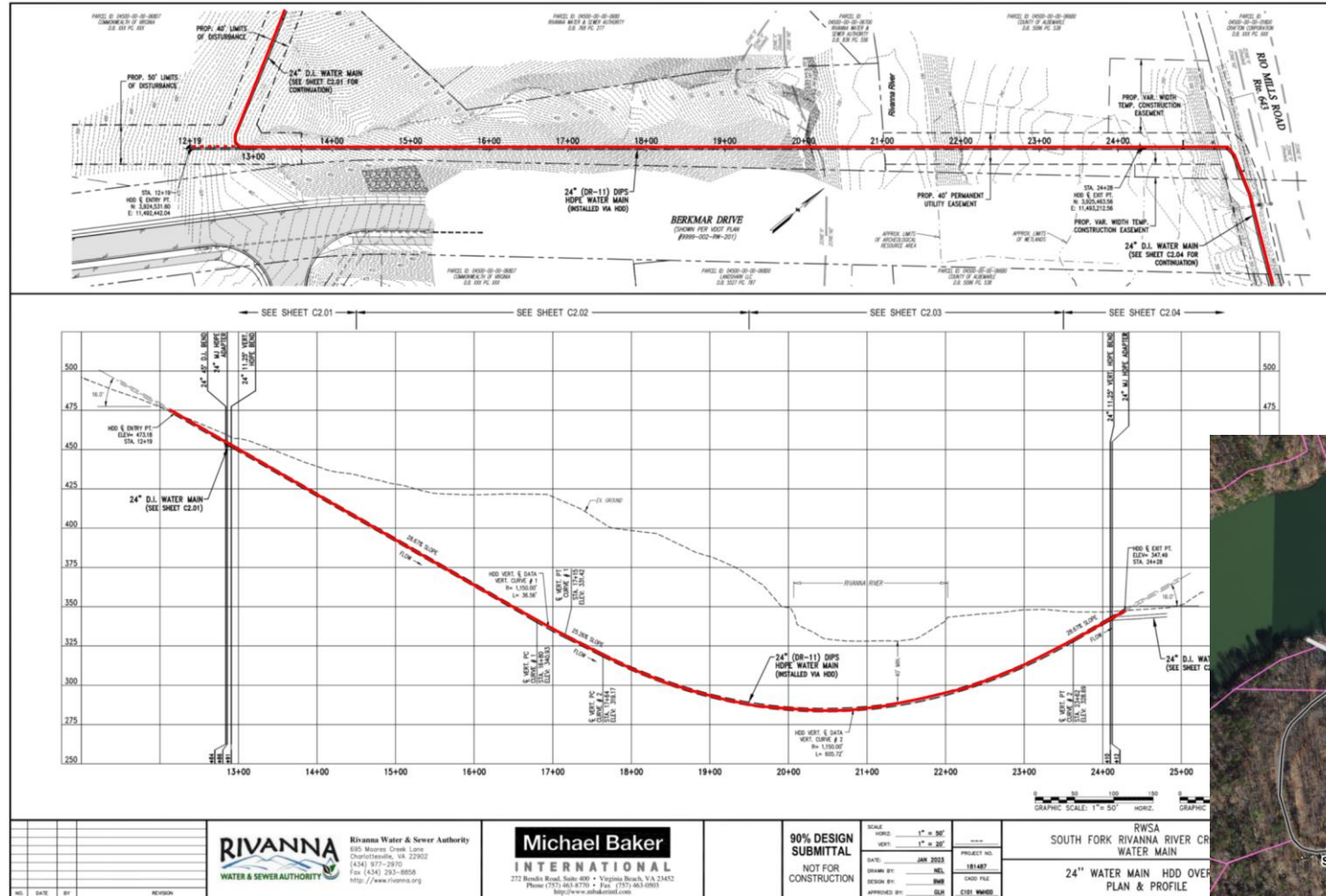


Ex. Chemical Feed

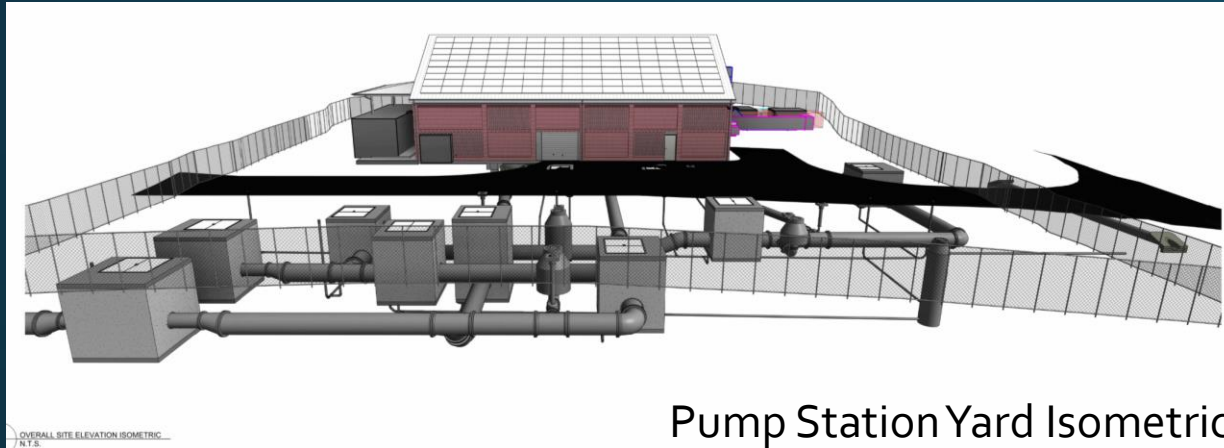
Design Phase and Upcoming Construction Projects

South Fork Rivanna River Crossing

- Second pipe, high density polyethylene, drilled under the South Rivanna River
- 90% design, acquiring easements
- Construction: May 2024 - Dec 2025
- Budget \$7 M

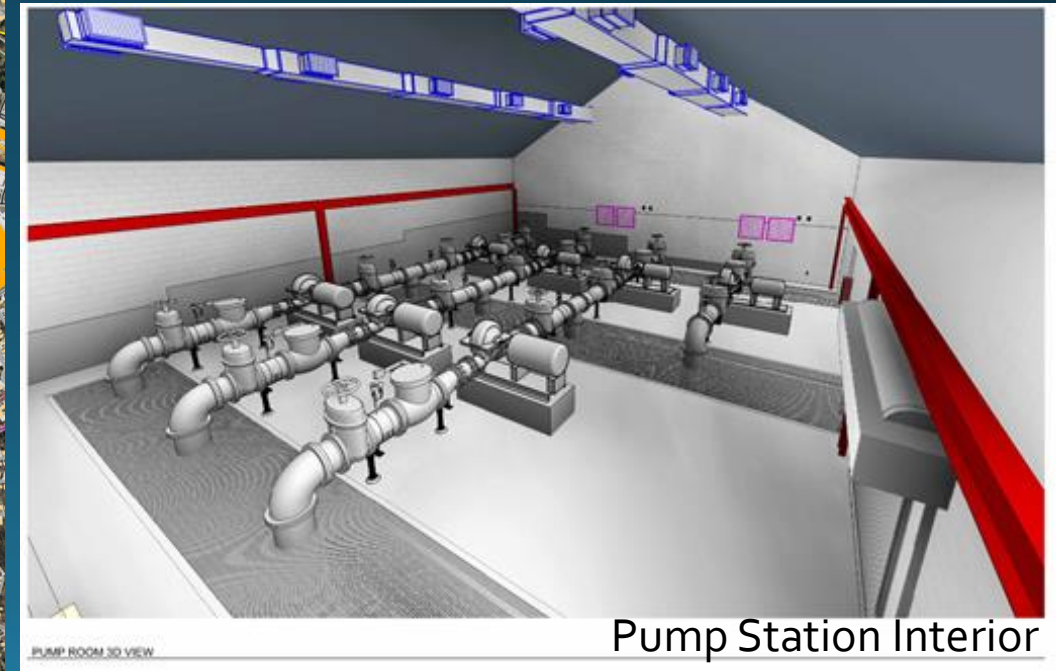
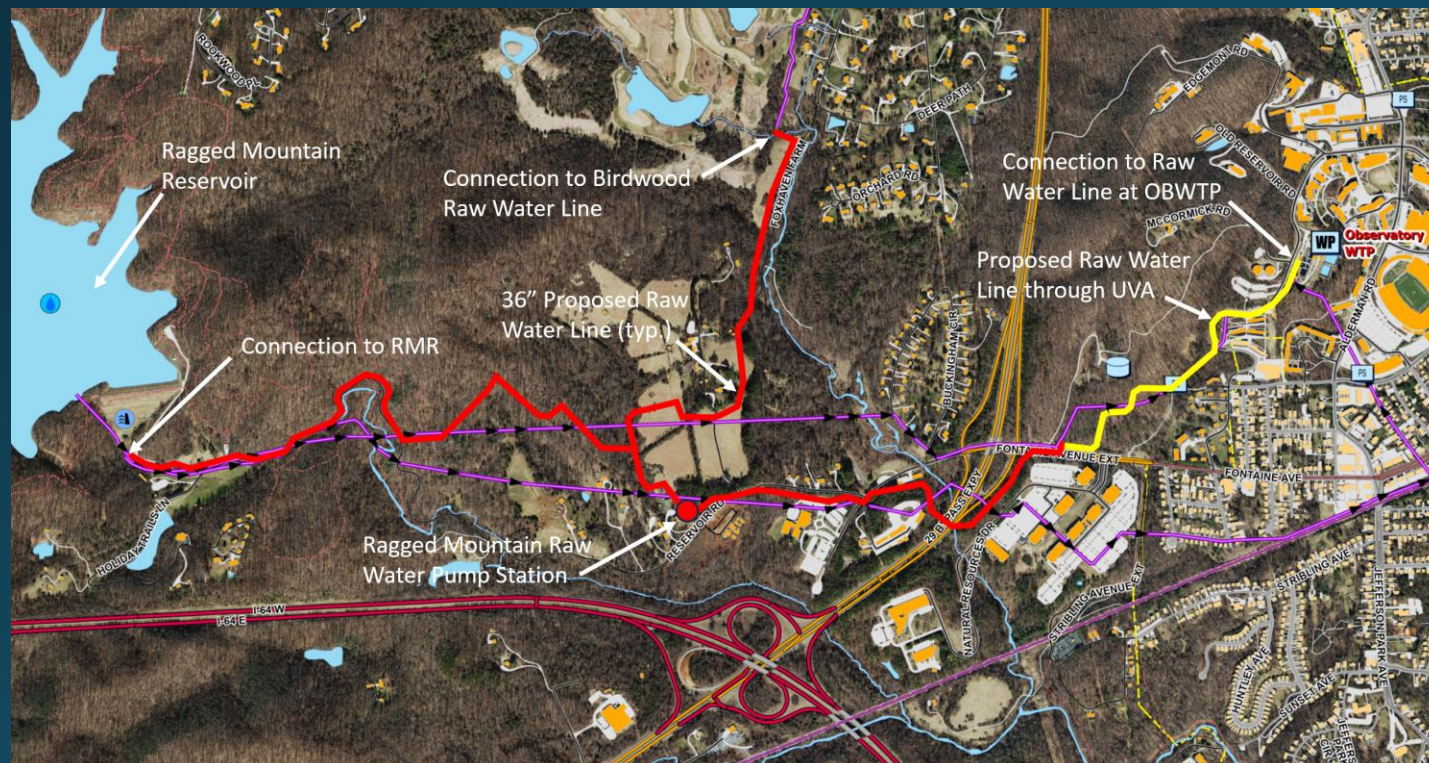


Ragged Mtn Reservoir to OBWTP – Water Line and Pump Station



Pump Station Yard Isometric

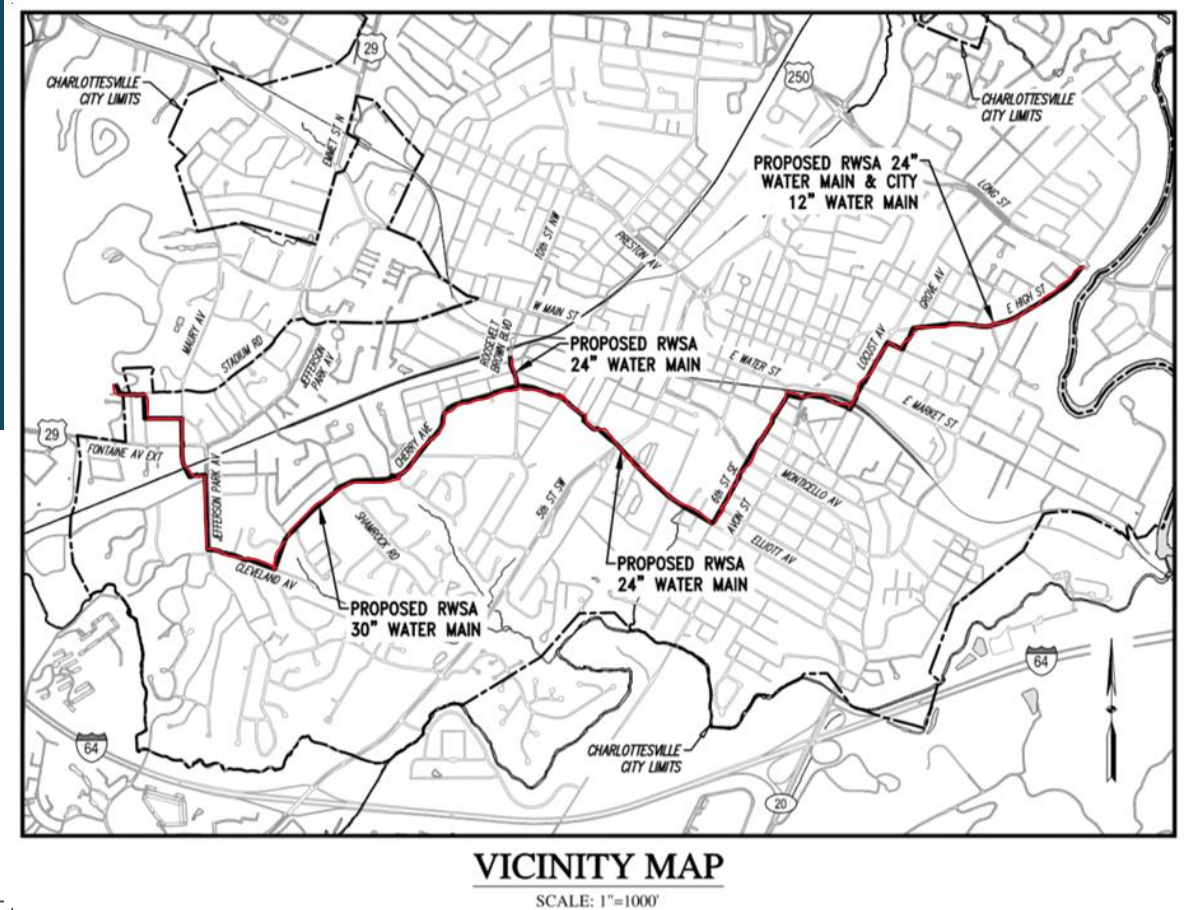
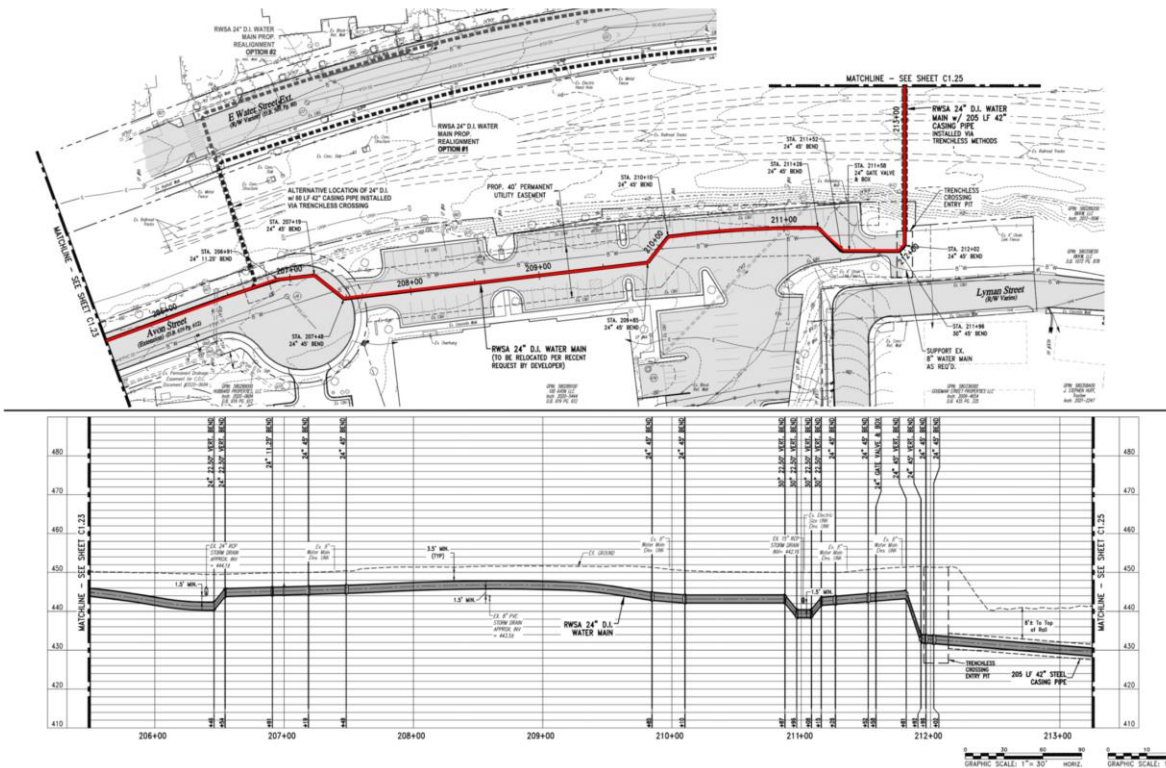
- Replaces outdated infrastructure – 40- and 70-year-old pump stations and 70–110-year-old water lines
- Improves raw water conveyance capacity to OBWTP
- All easements and property acquisitions are complete, other than from UVA between Fontaine and OBWTP
- Performed VE workshop on 60% design documents in Sept 2023
- Construction: Sept 2024 – Dec 2028
- Budget \$44 M



Pump Station Interior

Central Water Line

- Improve water flow, pressure, redundancy in Urban System
- Hydraulically connect the OBWTP to our transmission mains in the center and eastern parts of the City
- 60% design documents have been completed
- Construction: Dec 2024 – Dec 2028
- Budget \$41 M



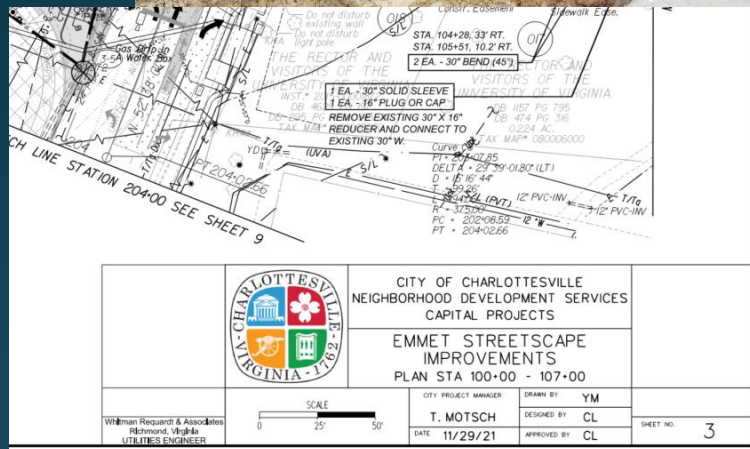
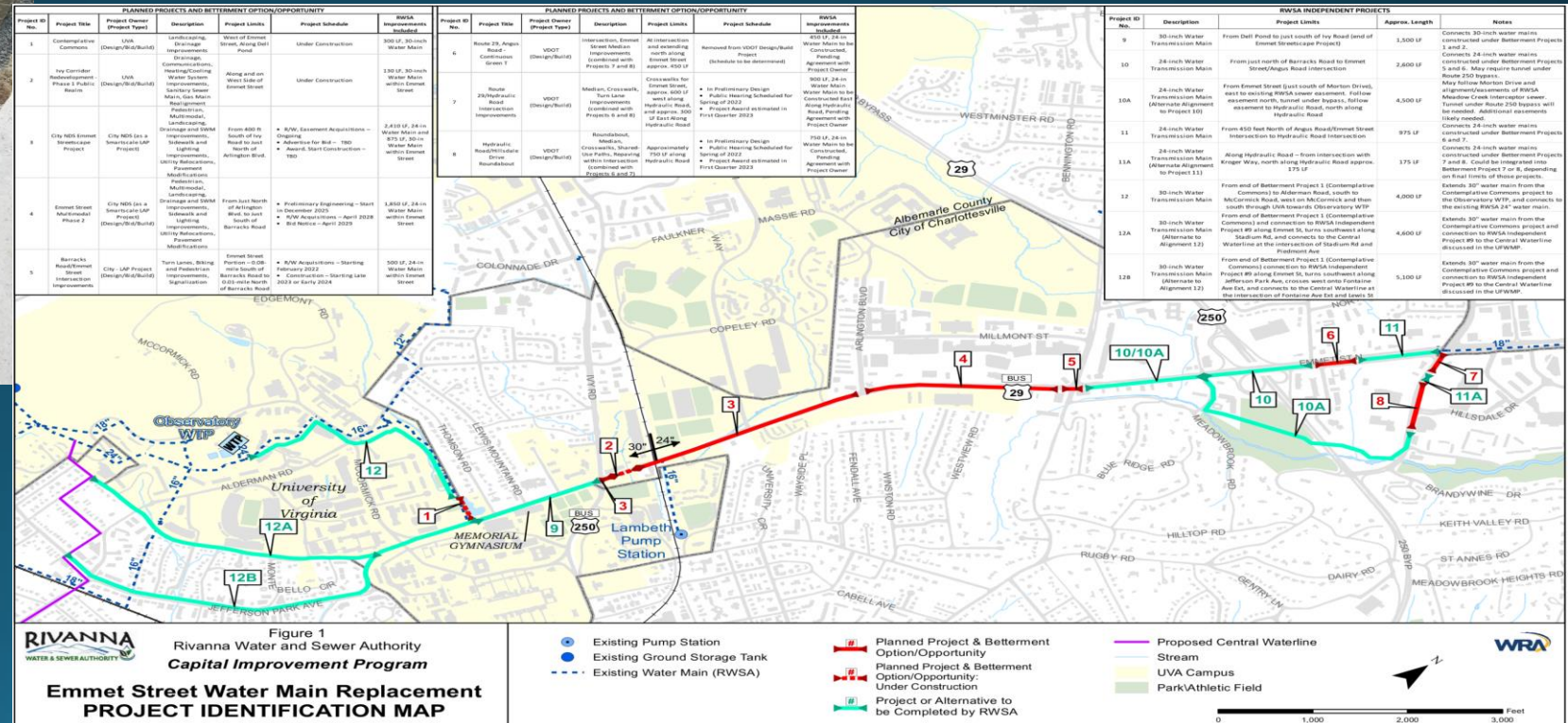
Emmet Street Water Line Betterment



Contemplative Commons Betterment

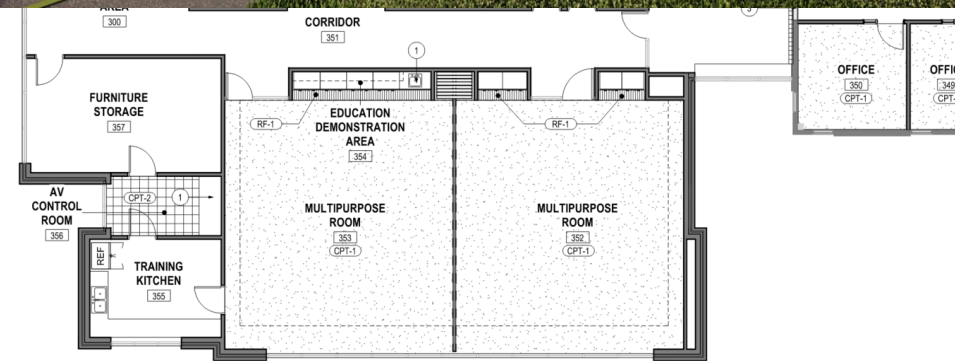
- Upgrade and extension of water line along Emmet was identified in the Urban Finished Water Master Plan – UVA Dell Pond to Hydraulic Road
- Utilizes other planned projects in area to minimize cost and disturbance
- UVA Contemplative Commons, City of Charlottesville Streetscape Projects (multiple phases), VDOT projects
- Working with City on streetscape design and VDOT around Hydraulic Road
- Construction: 2024 – 2026 (Phase 1)
- Budget \$2.9 M

PLANNED PROJECTS AND DISPERSED OPPORTUNITY					
Project ID	Project Title	Project Owner (Project Name)	Project Location	Project Schedule	RWIA Improvement Potential
1	Commutative Corridors	CMAA (Design/Build/Operate)	Landscaping, lighting, and drainage improvements West of Emerald Water Main	Under Construction	300 ft. x 30 ft. Water Main within Emerald Street
2	Key Corridor Rehabilitation Project 1 - 2nd Street	CMAA (Design/Build/Operate)	Commutative Corridors, StreetCaster, Water System Improvements, Sanitary Sewer Main, Gas Main, Pedestrian, and Bicyclist	Under Construction	1,300 ft. x 30 ft. Water Main within Emerald Street
3	City NEH Street Enhancement Project	City NEH (as a Design/Build/Operate Project)	Streetscape and drainage improvements, lighting, and drainage improvements From 400 E to South of 1st Street of Arlington Street	• A/RW Assessment Acquisitions – Ongoing • Assessment for NEH – 1800 • Aerial, Start Construction – 1900	2,810 ft. x 24 in. Water Main within Emerald Street
4	Emerald Street Enhancement Project 2	City NEH (as a Design/Build/Operate Project)	Streetscape and drainage improvements, lighting, and drainage improvements From 1st Street to 2nd Street of Arlington Street	• Preliminary Engineering – Start in December 2019 • A/RW Assessment – April 2020 • NEH – April 2020 – April 2021 • NEH – April 2021 – April 2022	1,600 ft. Water Main within Emerald Street
5	Networks Road/Street Enhancement Project 3	City LAP Project (Design/Build/Operate)	Streetscape and drainage improvements, lighting, and drainage improvements From 2nd Street to 3rd Street of Arlington Street	• Preliminary Engineering – Starting February 2021 • A/RW Assessment – Starting Late 2021 or Early 2024	500 ft. x 24 in. Water Main within Emerald Street

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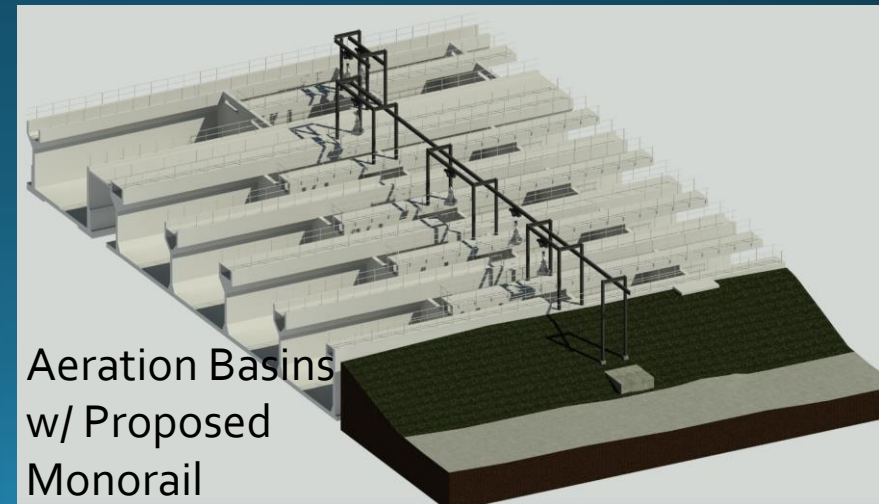
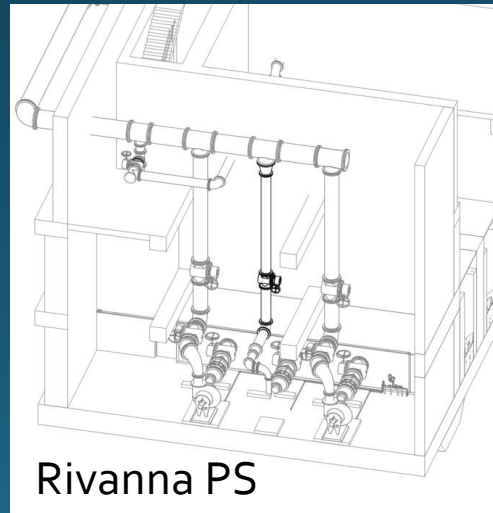
MC Administration Building Renovation and Addition

- Original building constructed in 1980's
- Renovate interior and expand
- Includes new board room, education center, and updated lab space
- 60% design documents completed
- Construction: July 2024 - December 2026
- Budget \$20 M



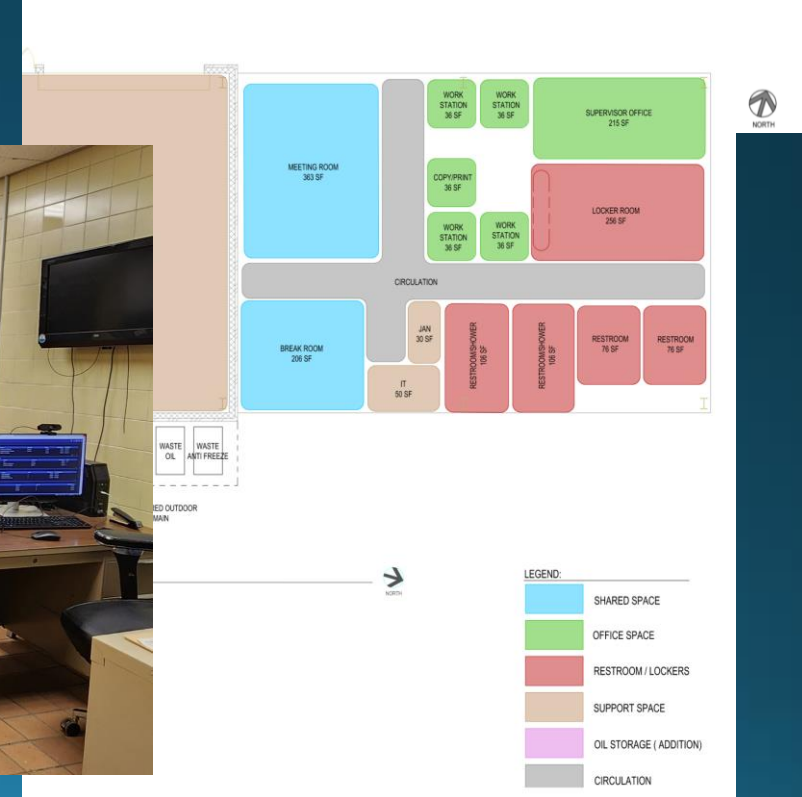
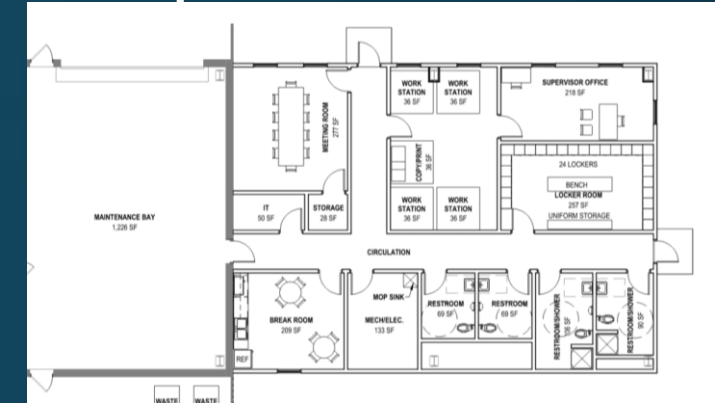
MC Structural and Concrete Rehabilitation

- Repairs throughout plant including holding ponds, EQ basins, primary clarifiers, digesters, and equipment shed roof and drainage
- Improves valve access and pump removal
- Preliminary design
- Construction: Sept 2024 – June 2026
- Budget \$13.5 M

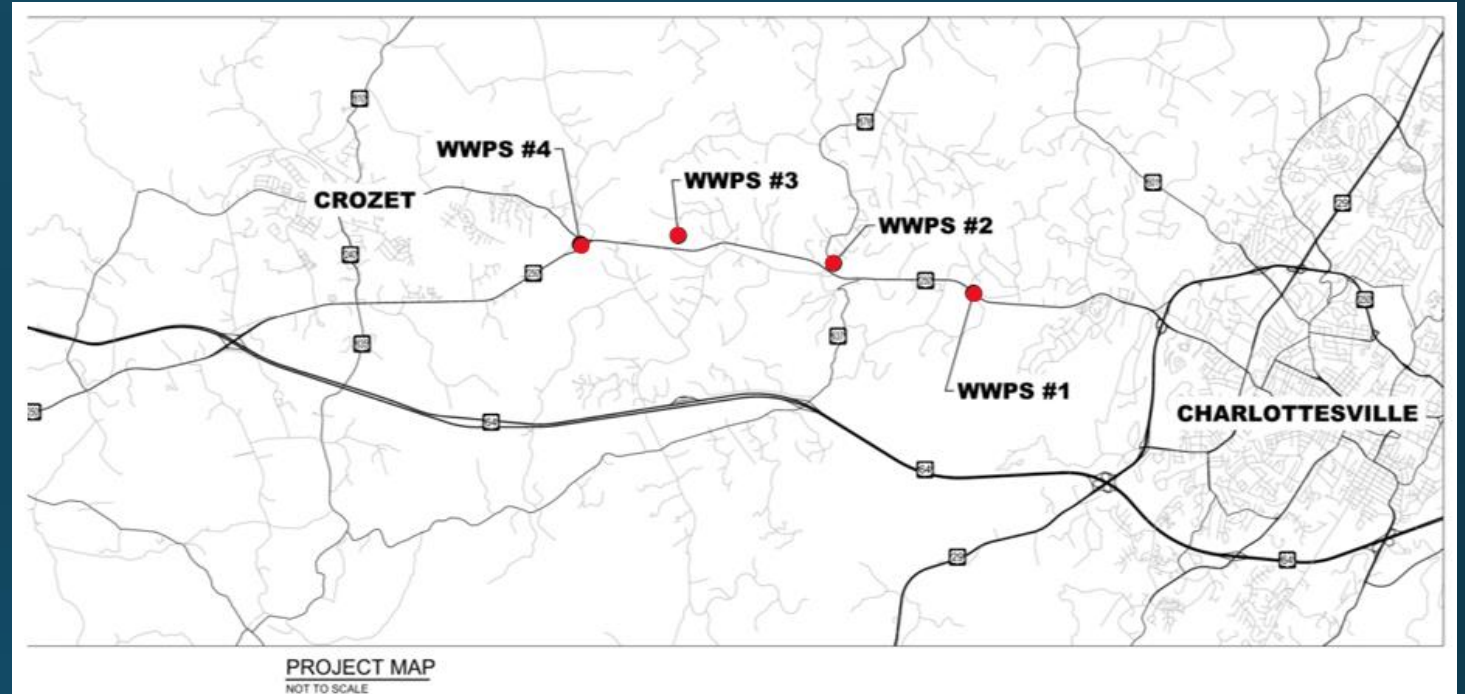


MC Building Upfits and Gravity Thickener Improvements

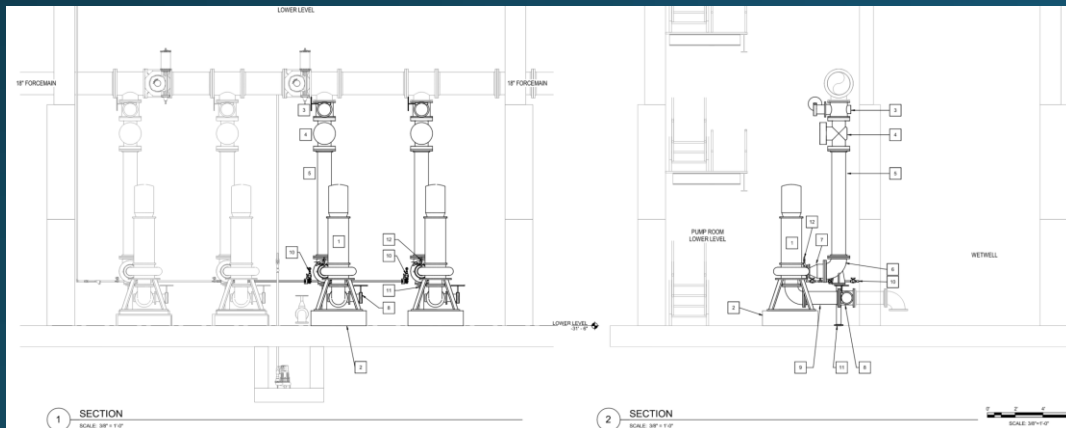
- Renovation of current WW Operations and Maintenance buildings
- Original structures are 40 years old and no longer meet current staffing and operational needs
- Includes gravity thickener improvements – chemical feed and sludge line clean-outs
- Finalizing needs assessment and concept plans
- Construction: Aug 2024 – Dec 2025
- Budget \$5 M



Crozet Pump Stations Rehabilitation



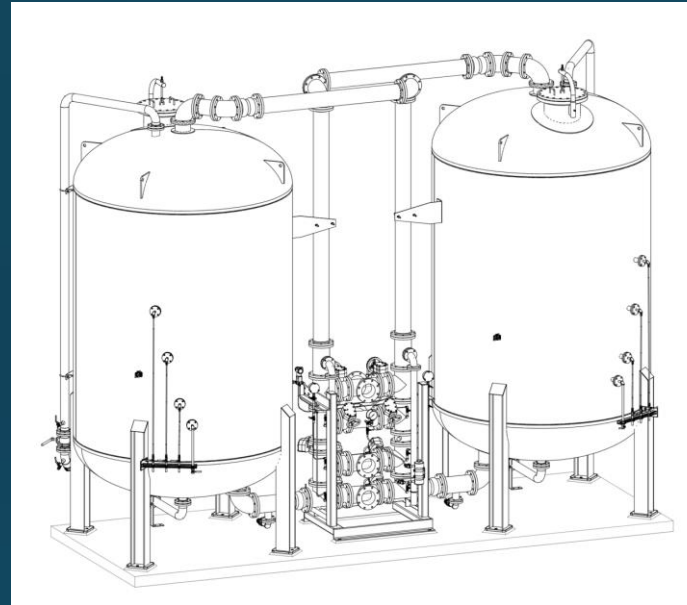
- Repair of 4 wastewater pump stations constructed in 1980's
- Includes replacement of pumps and valves, roofs, motor control centers, generators, automatic transfer switches, and other architectural improvements
- 30% design stage
- Construction: January 2025 – December 2026
- Budget \$10.4 M



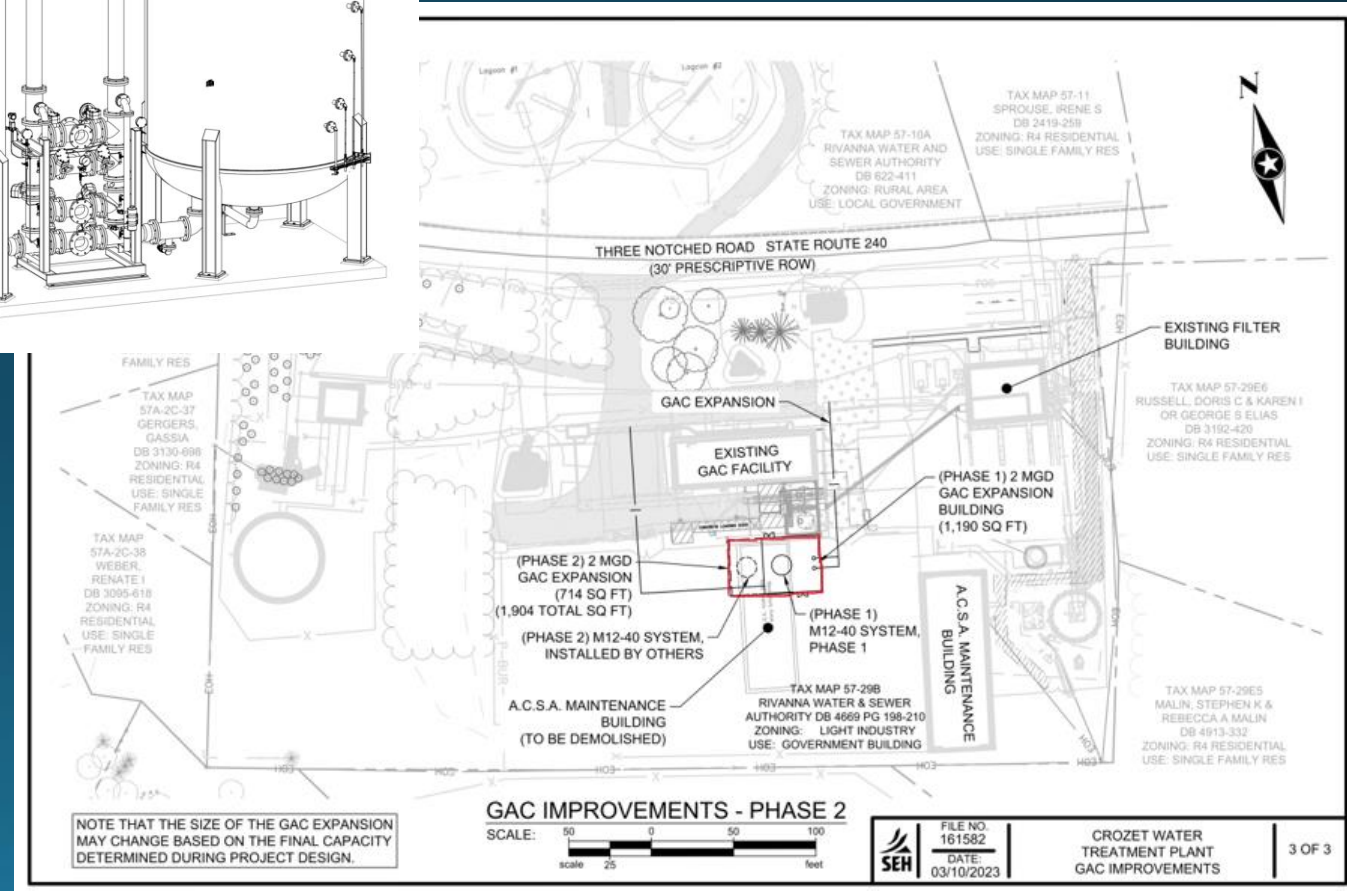
Granular Activated Carbon Expansion Crozet WTP



GAC Vessels at Crozet WTP

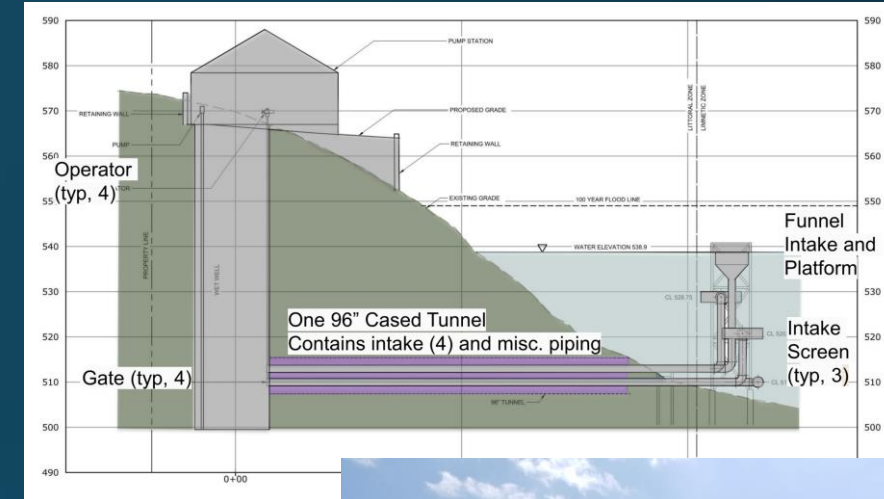


- Additional building and GAC system to provide 2 MGD treatment capacity
- Finalizing GAC media evaluation and beginning preliminary design work
- Construction: April 2025 – Oct 2026
- Received \$3.17 M grant from VDH
- Budget \$6.6 M

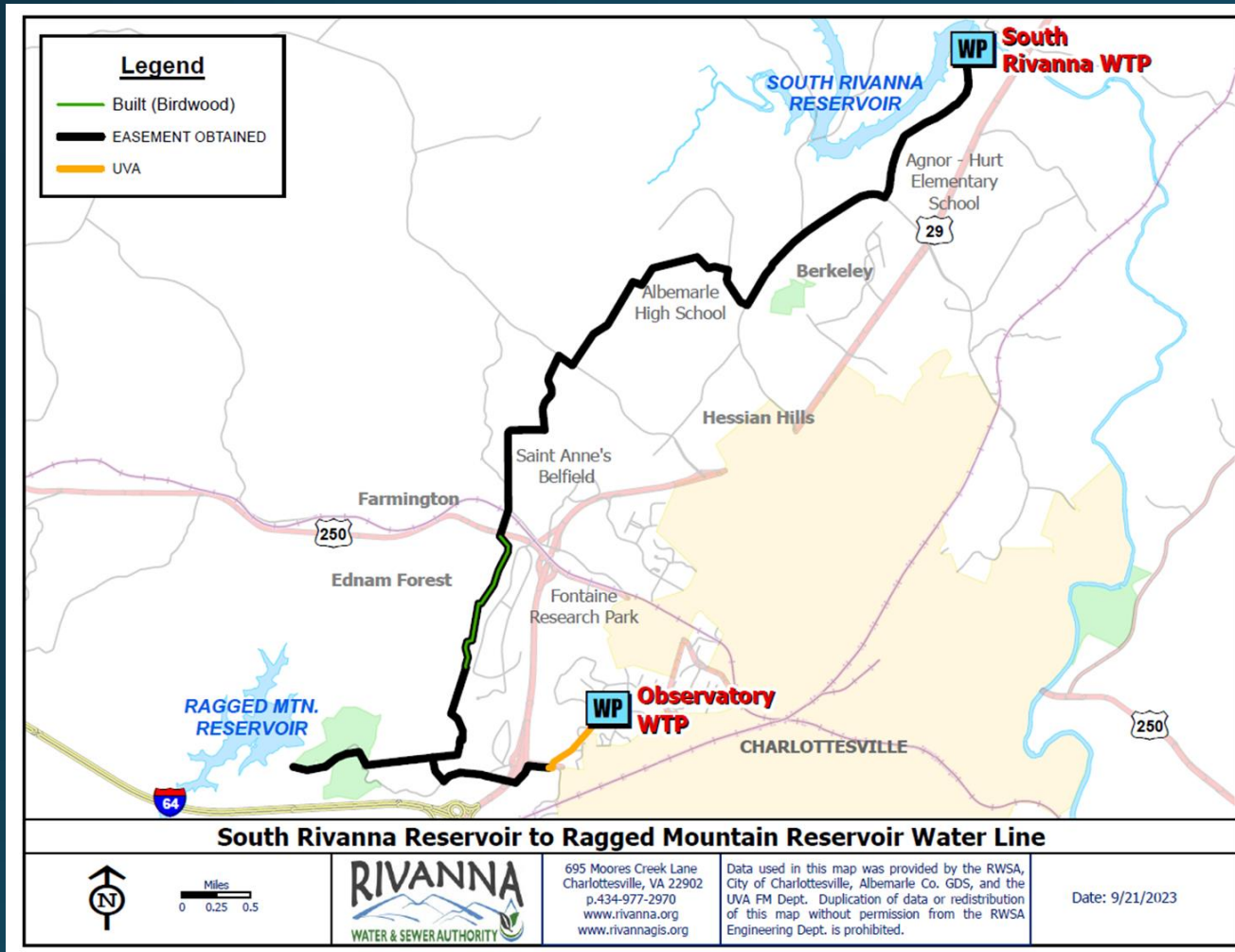


Beaver Creek Dam, Pump Station & Piping Modifications

- Upgrade the spillway to meet DCR dam safety standards
- Replace the raw water pump station, intake, and pipe to the Crozet WTP
- Survey work starting this fall
- Construction: April 2026 – January 2029
- Anticipating federal NRCS grant
- Budget \$43 M



SFRR to RMR Pipeline, Intake, and Facilities



- 36" raw water transfer pipeline from SFRR to Birdwood
- Raw water pump station and intake on SFRR
- Modifications to the RMR intake tower and perimeter grading
- Easements have been obtained
- Construction: June 2025 – Dec 2030
- Budget \$80 M



South Rivanna WTP and Reservoir

Questions?

