



Board of Directors Meeting

October 25, 2022

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 25, 2022

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

TIME: 2:15 p.m.

AGENDA

1. **CALL TO ORDER**
2. **AGENDA APPROVAL**
3. **MINUTES OF PREVIOUS BOARD MEETING ON SEPTEMBER 27, 2022**
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 Ongoing Projects*
 - d. *Staff Report on Wholesale Metering*
 - e. *Authorization to Increase Engineering Services Contract – Birdwood to Old Garth Raw Water Line Project – Kimley-Horn and Associates, Inc.*
 - f. *Authorization for an Amendment of Professional Services – Implementation of Computerized Maintenance Management System, GHD, Inc.*

9. OTHER BUSINESS

- a. *Presentation: Rivanna Conservation Alliance's Water Quality Monitoring and Restoration Efforts*
Lisa Wittenborn, Ph.D., Executive Director
Claire Sanderson, Ph.D., Monitoring Program Manager
- b. *Presentation: Major Capital Projects Construction 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 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 27, 2022

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, September 27, 2022 at 2:39 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia.

Board Members Present: Mike Gaffney, Jeff Richardson, Michael Rogers, Brian Pinkston, Ann Mallek, Lauren Hildebrand, Gary O'Connell.

Board Members Absent: None.

Rivanna Staff Present: Bill Mawyer, Jennifer Whitaker, David Tungate, Betsy Nemeth, Jeff Southworth, John Hull, Andrea Bowles, Dyon Vega, Scott Schiller, Michelle Simpson, Daniel Campbell, Santino Granato, Deborah Anama.

Attorney(s) Present: Carrie Stanton.

1. CALL TO ORDER

Mr. Gaffney convened the September 27, 2022 regular meeting of the Board of Directors of the Rivanna Water and Sewer Authority at 2:39 p.m.

2. AGENDA APPROVAL

There were no comments or questions for the agenda.

Ms. Mallek moved to approve the agenda. Ms. Hildebrand seconded the motion, which carried unanimously (7-0).

3. MINUTES OF PREVIOUS BOARD MEETING

a. Minutes of Regular Board Meeting on August 23, 2022

There were no comments or questions regarding the minutes of the meeting held on August 23, 2022.

Mr. Rogers moved the Board to approve the minutes from the RWSA Board's August 23, 2022 meeting. Ms. Mallek seconded the motion, which passed unanimously (7-0).

4. RECOGNITIONS

There were none.

5. EXECUTIVE DIRECTOR'S REPORT

Mr. Mawyer noted that it had been 30 months since the Board met in person. He asked staff to introduce themselves, including:

47 Ms. Jennifer Whitaker, Director of Engineering and Maintenance

49 Mr. Daniel Campbell, Water Department Manager

51 Mr. David Tungate, Director of Operations

53 Ms. Betsy Nemeth, Human Resources Manager

55 Mr. Jeff Southworth, Information Technology Manager

57 Mr. Santino Granato, Senior Civil Engineer

59 Mr. Dyon Vega, Engineer

61 Ms. Andrea Bowles, Water Resources Manager

63 Ms. Michelle Simpson, Senior Civil Engineer

65 Mr. Scott Schiller, Engineering Manager

67
68 Mr. Mawyer noted the emergency exits and restrooms for the building. He stated the meeting
69 was live to the public. The public could view and listen to the meeting, but they could not speak
70 at the meeting.

71
72 Mr. Mawyer explained that the General Assembly recently authorized the Authorities to hold
73 25% of their meetings in a virtual format. He stated they would draft an all-virtual public
74 meeting and remote participation policy for the Board to approve in November. He stated if
75 approved, they would schedule three virtual meetings for the Board next calendar year. He stated
76 a calendar would be presented at the November meeting of all the meetings in the coming
77 calendar year, and they would determine which to designate as virtual.

78
79 Mr. Mawyer reported that Daniel Campbell had provided a presentation at the Water and
80 Wastewater Joint Annual meeting in Virginia Beach. He stated the presentation covered how
81 they switched from a dry to a liquid lime product at the Crozet WTP as part of an optimization
82 strategy. He explained that the liquid product was safer, as the dry product generated dust which
83 could be explosive. He stated there was also an associated yearly savings of \$37K.

84
85 Mr. Mawyer explained that Ms. Betsy Nemeth was helping to sponsor, along with Augusta
86 Health, flu vaccinations at Moores Creek. He stated the ACSA invited the Authority to join them
87 in CPR training at Piedmont Virginia Community College. He noted that joint trainings were
88 now possible; before the pandemic, they always tried to have joint trainings.

89
90 Mr. Mawyer explained that the CodeRED alert system was used to notify staff of emergencies on
91 Rivanna properties.

93 Mr. Mawyer stated September was National Preparedness Month, and flooding was one of the
94 most common natural disasters in the country. He stated they were actively monitoring and
95 preparing for Hurricane Ian. He stated they had a Rivanna Emergency Operations Plan, which
96 included checklists for staff regarding filling fuel tanks and preparing equipment should there be
97 an emergency.
98

99 Mr. Mawyer stated under the strategic plan goal of infrastructure and master planning, work on
100 the Ragged Mountain to South Fork Rivanna pipeline continued. He stated the easement
101 acquisition map had been updated. He noted the areas where easements had been obtained. He
102 noted where they were working on acquiring easements. He noted the section where the pipe had
103 already been installed in 2018 and 2019 adjacent to the Birdwood property. He noted where a
104 section of the pipe would be installed to cross beneath Route 250 once the easement from the
105 UVA Foundation (UVAF) was obtained.
106

107 Mr. Mawyer noted where a pump station would be located on the UVAF property near the
108 Ragged Mountain Reservoir. He stated the station would pump water from the Ragged Mountain
109 Reservoir to Observatory WTP, and to the South Fork Rivanna WTP when needed. He stated
110 they considered the pump station as two projects—one from the South Fork Rivanna WTP to
111 Ragged Mountain, called the Rivanna to Ragged Reservoir Water Line, and one from Ragged
112 Mountain to Observatory. He stated they still needed to acquire easements from the University to
113 get from Fontaine Avenue to the OB WTP.
114

115 Mr. Gaffney asked what the schedules were for each of the projects.
116

117 Mr. Mawyer explained that the Rivanna to Ragged project was currently planned from 2027 to
118 2033, and the Ragged to Observatory project was planned for 2024 to 2026. He stated there may
119 be discussion in the budget and CIP review on whether to accelerate the Rivanna to Ragged
120 pipeline by a couple of years. He stated they were evaluating the financial impact of accelerating
121 the project. He noted the increasing occurrence of droughts across our country created a need to
122 increase our drinking water supply as soon as possible. He stated the community would have a
123 longer term water supply when the pipeline was installed.
124

125 Mr. Gaffney confirmed that in either case, the pump station would be built to completion.
126

127 Mr. Mawyer stated that was correct. He stated the pump station would be built with the Ragged
128 to Observatory project. He explained when the pipeline from Rivanna to Ragged was built, they
129 would add pumps to the pump station to convey water from Ragged to SR Water Treatment
130 Plant.
131

132 Mr. Mawyer stated they continued to maximize use of the South Fork Rivanna Reservoir for
133 water supply. He noted that recently, Sugar Hollow, Ragged Mountain, and Beaver Creek
134 stopped overflowing, but South Rivanna continued to overflow. He stated because it was
135 overflowing, they would continue to maximize use of the water from South Rivanna. He stated
136 they would switch the priority to the Ragged Mountain Reservoir once the water stopped
137 overflowing at South Rivanna.
138

Mr. Mawyer stated they calculated about 20 million gallons per day were flowing over the dam. He stated the pending storms should replenish any deficits, but they were in good shape.

Mr. Mawyer noted Ms. Mallek had asked the previous month about erosion at the Moores Creek outfall pipe. He explained that there was rip-rap stone at the end of the pipe so there was no erosion.

Mr. Mawyer noted Mr. Pinkston had asked how much water was returned to Moores Creek compared to what came to the WTP. He stated they returned about 95% of what came into the plant back to Moores Creek. He explained that there were some evaporation losses and possible metering calculation margins of error.

Mr. Mawyer noted Mr. Gaffney had requested information about the historical odor complaints at Moores Creek. He stated they provided a chart which indicated in 2016 there were 34 odor complaints at Moores Creek, one in 2017, and zero in 2018 and 2019. He stated there were three complaints in 2020, two in 2021, and two in 2022. He stated all of the complaints from 2020 onwards were from the recently completed and neighboring Willow Tree development. He explained that wastewater sometimes had to be stored in the equalization basins after storms, and those open-air basins could create odors.

Mr. Gaffney clarified that all seven complaints from 2020 onwards were from the same person.

Mr. Mawyer stated the complaints originated from the same development.

Mr. O'Connell asked if the development had residential uses.

Ms. Whitaker stated the development was all restaurant space and office space.

Mr. Mawyer noted the development included a wedding venue. He stated all the wastewater from Crozet was pumped to the Moores Creek plant. He stated there had been periodic odor concerns along Route 250 West. He stated they added a chemical to the wastewater to reduce the odors.

Ms. Mallek asked if hurricane preparations included the drawing down of tanks in preparation for a large inflow.

Mr. Mawyer responded that preparations mostly involved filling fuel tanks, emergency backup generators, tanks, and other items.

Mr. Tungate added that if they know it is going to be a significant storm, they will reduce the wastewater stored in the holding ponds.

Mr. Mawyer emphasized that they try to be proactive in the advance of a storm but not create operational and odor problems.

6. ITEMS FROM THE PUBLIC

There were none.

7. RESPONSES TO PUBLIC COMMENTS

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

8. CONSENT AGENDA

a. Staff Report on Finance

b. Staff Report on Operations

c. Staff Report on Ongoing Projects

d. Staff Report on Wholesale Metering

e. Staff Report on Drought Monitoring

f. Authorization to Increase Term Engineering Services Contract Contingency, South Fork Rivanna River Crossing Project – Michael Baker International

Mr. Pinkston requested an explanation be provided for Item F of the Consent Agenda.

Mr. Mawyer explained that they planned to install a second pipe under the Rivanna River from the South Rivanna WTP to north of the river. He explained that a second pipe was needed for redundancy and capacity. He stated that Michael Baker International Engineers were hired to design the project. He stated that they planned to use a horizontal direction drill under the river to bore a tunnel. He stated that they needed to complete additional subsurface soil borings to confirm how much rock they would encounter. He stated they had to increase the contingency to allow for the cost.

Mr. O'Connell stated that he noticed there had been meter issues. He asked that there be a follow-up in the upcoming reports about the status of the metering issues and the impacts on readings.

Mr. Mawyer stated they would include an update in the monthly report on past meter issues.

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

9. OTHER BUSINESS

a. Presentation, Public Hearing and Vote on Approval; Resolution to Amend FY 2022 - 2023 Water Rates and Charges

Mr. Mawyer explained that the Board approved the budgets and urban water rates and charges in May 2022. He stated that staff had worked with the ACSA and the City to draft a Northern Area Drinking Water Projects Agreement, which changed the debt service allocation for some of the capital projects, located north of the South Rivanna River.

Mr. Mawyer stated that the reallocation caused an adjustment in the budget and the debt service charges between the ACSA and the City, and the Board was requested to approve the new charges created by the Agreement. He stated the four projects primarily involved in the Agreement were the Airport Road Water Pump Station and Piping Project, the South Rivanna River Crossing, the North Rivanna River Crossing, and a Water Storage Tank at the Airport Road Water Pump Station site.

Mr. Mawyer explained that the new Agreement would pertain to all future capacity and non-capacity water facilities located north of the South Fork Rivanna River. He stated the Finance Director calculated it would cause a shift of about \$22,030 per month from the City to the ACSA to effect the change in debt service costs.

Mr. Mawyer explained that they advertised twice in the newspaper the change to the rates. He stated the prior month, the Board authorized advertisement of the rate change, and the public hearing was scheduled for the September meeting on the adjusted rates.

Mr. Gaffney opened the meeting for a public hearing. He stated for those who wished to speak to identify themselves for the record. He noted there were no public speakers. He closed the public hearing.

Mr. O'Connell moved to approve the amendments to the FY22–FY23 water rates and charges. Ms. Mallek seconded the motion.

Mr. O'Connell asked for an explanation about how the decommissioning of the North Fork Rivanna WTP fit into the aforementioned projects.

Mr. Mawyer explained that it was part of the Northern Area Drinking Water Projects Agreement. He stated the Board previously approved decommissioning the North Rivanna WTP in about 2025. He stated the existing 2003 South Rivanna Water Agreement allocated 52% of the cost to the ACSA and 48% to the City. He stated the City and ACSA agreed the ratio would remain despite the location of the project north of the South Rivanna River.

Mr. O'Connell asked for more information about how the South Fork Rivanna WTP would serve the northern parts of the County and the growth areas in that part. He stated it would put them in a better position for the growth occurring there.

Mr. Mawyer explained that the North Rivanna WTP required a \$12M project to provide necessary repairs. He stated the facility sourced water from the North Fork Rivanna River which tended to go dry when it was needed the most during times of minimal rainfall. He stated they did not feel it was a good investment to complete costly repairs to the North Rivanna WTP. The resources could be allocated to future improvements to the South Fork Rivanna WTP and to build a second pipe beneath the South Rivanna River.

Mr. Gaffney clarified there was no reservoir for water storage serving the North Rivanna WTP. Mr. Mawyer stated that was correct.

Mr. O'Connell clarified the projects to decommission the North Rivanna WTP and build the South Rivanna crossing pipe were currently in the CIP.

Mr. Mawyer stated that was correct. He stated they wanted to have the South Rivanna crossing built before the North Rivanna WTP was decommissioned to ensure redundancy within the northern area of the Urban Water System.

Mr. Richardson clarified whether there was a for-sure water tank to be constructed at Airport Road or if it was just a possibility.

Mr. Mawyer stated they were confident there would be a water tank, but it was based on growth and demand in the area. He stated their plan includes two ground level water storage tanks at the site. He stated they would start with a single tank when needed in the future and add a second tank also when needed.

The motion carried unanimously (7-0).

b. Presentation: Water Treatment Facilities Overview

Mr. Tungate showed a slide with a map of the County and the reservoirs and facilities, beginning in the northwest with Sugar Hollow Reservoir, a pipeline connecting it to Ragged Mountain Reservoir. He stated water from Sugar Hollow Reservoir flowed into the Moormans River and the South Rivanna Reservoir, which provided water at the South Rivanna Treatment Plant. He stated there was a reservoir in Crozet, Beaver Creek Reservoir, that supplied water to the Crozet Water Treatment Plant. He stated the Ragged Mountain Reservoir provided water to the Observatory Water Treatment Plant. He stated that the Red Hill Water Treatment Plant, south of Charlottesville, was the only groundwater plant in our system.

Mr. Tungate stated the urban water system includes production from the Observatory Treatment Plant, South Rivanna Treatment Plant, and the North Rivanna Treatment Plant. He stated at the south end of the County is a water treatment plant in Scottsville. The Scottsville Water Treatment Plant has two water intakes: one on Totier Creek and the other in the Totier Creek Reservoir.

Mr. Tungate stated that the South Rivanna Treatment had the largest permitted production capacity at 12 million gallons per day, and the average production in 2021 was 7.6 MGD. He stated that the Observatory Treatment Plant has a permitted capacity of 7.7 million gallons per day, and the average production at the Observatory was 1.6 MGD. He stated that North Rivanna was permitted for 2 million gallons per day, and the average production was 0.41 MGD. He stated that the total urban permitted capacity was 21.7 MGD, but the average for 2021 was 9.6 MGD.

Mr. Tungate stated that the Crozet facility had recently been renovated and had an increased treatment capacity to treat 1.6 MGD, and the average in 2021 was 0.68 MGD per day. He stated the Scottsville facility had a capacity of 0.25 MGD and the average production was 0.05 MGD or

53,000 gallons per day. He stated the smallest facility was Red Hill, which serviced about ten homes and a school on the system, permitted for 0.0068 or 6,800 gallons per day and the average production was about 0.002 MGD or 2,000 gallons.

Mr. Tungate stated that Hurricane Ian had been discussed internally since last Friday. He showed an image of the South Rivanna Dam as of last week, showing about six inches of flow over the dam. He stated there had not been recent storms so the water had low turbidity. He showed an image of the dam after a large rain event from May of 2018 and stated that the source water could look clean or very turbid. It just took more work for the water operators to clean the turbid water, and the finished water quality remains the same. The water customers never know that there is a change in raw water quality, so the effort stayed with the treatment plants to ensure the user side was never affected. He stated that certain water treatment chemicals can be in high demand during large weather events like a hurricane. The RWSA Water Department has all chemical supplies full going into a weather event, and they schedule the next chemical delivery. During a large weather event, many of the water utilities in the Mid-Atlantic region will do the same thing. If RWSA does not need the chemical, the chemical supplier will allocate their resources elsewhere.

Mr. Tungate stated that the slide shown had an image of a *Giardia* organism on the top, which was treated through the use of chemicals, and a *Cryptosporidium* organism, which was treated through filtration. He stated that RWSA operates five conventional surface water treatment plants. The five stages of a conventional water treatment plant are: Coagulation, Flocculation, Sedimentation, Filtration, and Disinfection. He stated that during coagulation, a coagulant is added to the water and rapidly mixed to ensure proper mixing. During flocculation, the water is slowly mixed and the small particles join together to make "floc". The next stage is sedimentation where the newly created floc particles settle. The solids that accumulate in the sedimentation basin are frequently removed and ultimately are dewatered and sent to Waverly, Virginia to be made into commercially available compost. The clear water from the sedimentation basins passes over a weir and on to the gravity filters. During filtration, the water passes through the gravity filters where small particles are trapped in the filter media. The filtered water is then disinfected to produce potable or finished drinking water.

Mr. Tungate stated that at the RWSA Water Treatment Plants, they add aluminum sulfate as the coagulant. He stated they used a liquid lime product to adjust the pH of the water to stay between 6.5 and 7. He stated they used sodium hypochlorite for disinfection and oxidation throughout the water treatment process. He stated RWSA uses an orthophosphate corrosion inhibitor product that prevents corrosion and leaching of lead and copper from the plumbing system. He stated they added hydrofluosilicic acid at all their facilities for dental health. He stated the finished water pH is adjusted to 7.5 before leaving the water treatment plants and entering the distribution system.

Mr. Tungate showed a slide of the South Rivanna raw water pump station and the four raw water pumps that convey raw water from the intake structure to the plant for treatment. He showed an aerial view of the South Rivanna facility that was taken in April. He showed where the mixing basins were located and where the coagulant is added as well as the three flocculators. The flocculators are where the destabilized particles in the water join to make larger floc particles.

369 The floc particles will settle in the sedimentation basins. Each of the sediment basins flowed
370 from right to left in the photograph and allowed the clean water to go through the filters. He
371 indicated the two filters were added to the plant during the current renovation project.

372
373 Mr. Pinkston asked where the GAC was.

374
375 Mr. Tungate stated he had a slide about the GAC that was upcoming. He showed an image of the
376 sedimentation basin and the flocculated particles falling out of the water. He then showed an
377 image of the two new filters at South Rivanna and stated they now had a total of six gravity
378 filters at the treatment plant.

379
380 Mr. Pinkston asked what the filter media was.

381
382 Mr. Tungate stated it is anthracite coal on top of a special sand. He stated in 2018 they went from
383 a gravel filter bed to a different kind of under drain system that does not use gravel. He showed a
384 photograph of the South Rivanna Treatment Plant and indicated the different buildings and
385 facilities. He stated they had a new chemical storage facility for aluminum sulfate (alum) and
386 fluoride. The new storage building has 24,000 gallons of alum storage, which was significantly
387 more than 9,000 gallons the plant had before the renovation project. This is important to the
388 community because the South Rivanna Water Treatment Plant (SR WTP) is more resilient with
389 the additional alum storage. He indicated the SR WTP GAC building has eight 40,000-pound
390 GAC vessels

391
392 Mr. Tungate stated that they had a series of vertical turbine motors and pumps that pumped out
393 the potable water into the water distribution system. He stated that relating to Hurricane Ian,
394 RWSA has emergency generators that are tested monthly and have a rigorous maintenance
395 program to ensure they have backup power to the water and wastewater facilities.

396
397 He continued that at SR WTP there were both granular activated carbon vessels and powder
398 activated carbon. He stated the powder activated carbon was a one-time use and cost about \$1
399 per pound, and the granular activated carbon had a bed life of one to two years at a cost of \$1.43
400 per pound. The GAC is contained in a pressure vessel and the water passed through it from top
401 to the bottom.

402
403 Mr. Pinkston asked what the PAC and GAC were.

404
405 Mr. Tungate stated that RWSA has fed powder activated carbon (PAC) in the WTP for years,
406 initially for taste and odor, and the issue was the product was a one-time use pass-through.

407
408 Mr. Tungate stated it took out taste and odors as well as disinfection by-products precursors or
409 Total Organic Carbon (TOC).

410
411 Mr. Pinkston asked what that was.

412
413 Mr. Tungate stated that the granular activated carbon was installed to remove the disinfection by-
414 product precursors or TOC. Disinfection by-products (DBPs) are formed during the disinfection

process. When chlorine is added to water with higher TOC concentrations, DBPs are undesirable chemicals formed. He stated that TOC is removed by the powder activated and granular activated carbon. He showed an image of where the PAC is added at the SR WTP.

Mr. Tungate showed an image of the eight GAC vessels at SR WTP. He stated that they ran in a parallel flow and the Empty Bed Contact Time (EBCT) is 15 minutes, which means the water takes 15 minutes to go from the top to the bottom of the vessel. He noted that they manage the flow through the GAC vessels to maintain a finished TOC target. The more water the GAC vessel processes, the less time the GAC media will last. The RWSA Water operations staff bypasses the GAC system to allow for better operational efficiency.

Mr. Tungate continued that the GAC building at the South Rivanna plant has eight vessels and holds 40,000 pounds of GAC in each vessel. Each 40,000-pound vessel can treat 1 million gallons per day. He stated that Observatory Treatment Plant had 2 GAC vessels with 80,000 pounds total, but they would be adding another 4 vessels to this facility with the current construction project that is underway. He stated at North Rivanna WTP, there is one vessel with 40,000 pounds of GAC, at Crozet WTP there are two GAC vessels for a total of 40,000 pounds, and at Scottsville there are two 6,000-pound vessels for a total of 12,000 pounds.

Mr. Tungate stated that in addition to meeting flow requirements in the City and County, they also had to submit monthly reports on the 10th of the month to the Virginia Department of Health, where they reported the daily volume of water pumped into the water plant and out into the distribution system, the amount of chemicals used to treat the water, the individual filter turbidities and backwashing frequency, raw water temperatures, and pH results. He stated that the proper amount of chlorine is added at the water treatment plants to maintain a chlorine residual in the distribution system to ensure proper water quality.

Mr. Tungate reported that they did 88 water samples per month in the Urban Water System for total coliform bacteria. Total coliform bacteria serve as indicator species for *Giardia* and *Cryptosporidium*. Total coliform samples are also collected in the Crozet, Scottsville, and Red Hill water systems. Safe Drinking Water Act compliance samples are collected on a schedule determined by the EPA and Virginia Department of Health. For example, disinfection by-product samples are collected once per calendar quarter, lead and copper samples are collected in residences in the City and County in the summer months only and sampling for other water quality parameters are completed daily in our distribution systems and water treatment plants. RWSA will start testing in accordance with the Unlisted Contaminant Monitoring Rule (UCMR 5), a federal rule for contaminant monitoring, looking for 30 types of chemical contaminants, in January 2023.

Mr. Tungate reported that they had 27 staff in the water department and listed the employee titles. He stated that the relief operators were paid a premium to operate the plant when conditions required them to. He stated the plants were staffed 365 days per year with varying hours at each plant. He stated the Red Hill facility was monitored 24 hours a day with the chemical levels and water quality data available online through the SCADA control system. He asked if there were any questions.

461 Ms. Mallek asked what the criteria were for bypassing the GAC. She stated that the community
462 was relying on that system to remove particles that the previous system was unable to.

463
464 Mr. Tungate responded that it was based on the total organic carbon concentration. He noted that
465 if 8 million gallons were going into the facility and they wanted to bypass 4 MGD and run 4
466 MGD through the facility, they could, as it was a matter of using the SCADA system.

467
468 Ms. Mallek asked what percentage of the volume of water was bypassed and not treated.

469
470 Mr. Tungate replied that it depended on the raw water quality. He stated they managed it by the
471 finished water total units of carbon, which was kept at about 0.75 mg/L, and they could do this at
472 all facilities but mainly at South Rivanna.

473
474 Ms. Mallek commented that there was more disturbance to the water at this location.

475
476 Mr. Tungate stated the turbidity was easily removed by our treatment process.

477
478 *c. Presentation and Work Session: 2023-2028 Strategic Plan Update*

479
480 Mr. Gaffney called the RSWA back to session.

481
482 Mr. Mawyer stated that Mr. Thomas would be presenting the review of the final update on the
483 strategic plan's progress before working with staff to finalize the plan to be implemented in
484 January.

485
486 Mr. Thomas explained that he would give both Boards an update on the progress of the strategic
487 plan. He stated he would talk about the mission and values as well as the goals, which in this
488 plan were called priorities, then a high-level overview of strategies and measures. He stated that
489 the Board members had draft strategic plans, and the design and feel were similar without
490 significant departure from the previous, but there were some changes. He noted that on June 9,
491 they met with the leadership team who provide staff-level make decision-making for the strategic
492 plan.

493
494 Mr. Thomas explained that they then engaged with stakeholders, which included the RWSA and
495 RSWA, and held an online survey. He stated that all input from stakeholders was then compiled
496 into digestible information that could be consumed in a workshop setting. He noted that they
497 took time to define success and came back prepared to engage with the core planning team to
498 create strategies and measures to advance specific goals. He stated the goal was to complete the
499 strategic plan before the end of the year and then be in a position for the plan to be implemented
500 in 2023.

501
502 Mr. Thomas stated the vision of the project referred to where they were going and required
503 working with staff. He stated the vision had not changed much and only had changes in phrasing,
504 but the overall desired future stayed the same. He stated the mission was their purpose and why
505 they existed, and there was only subtle change to this, so the organization recommended back to
506 the Board to not change the vision or mission based on what was last given. He stated values had

not changed, but the revised strategic plan now offered clarity about what specifically was meant by integrity, respect, teamwork, and quality.

Mr. Thomas stated that the last strategic plan had six goals, and in the new strategic plan, there were only five. He stated the specificity in the last strategic plan goal about solid waste services specifically had been removed because everything they were trying to accomplish in solid waste from an environmental services standpoint was similar at the strategy level to what they were attempting to accomplish at the water and wastewater side of the business. He stated the five priority areas were presented with statements of success.

Mr. Thomas stated there may be slight adjustments to how success was defined for the five priority areas, and each one was representative of some of the goals of the last strategic plan. He stated none of these things happen in a vacuum and were not mutually exclusive, so they tried to make it apparent that progress with one area would allow progress in another because they were connected.

Mr. Thomas stated the first priority was communication and collaboration, which had strategies supported by higher focus on public-facing activities with engagement and communication. He stated the second was environmental stewardship, which described the organization's willingness to lead, teach, and engage in strong stewardship of the environment. He stated there was also a focus on sustainability practices and equitable service delivery. He stated the third priority was workforce, which was focused on recruiting, developing, and maintaining, and in addition to these strategies was more focus on succession management.

Mr. Thomas stated that optimization and resiliency had strategies for efficiency, development of standard work practices, knowledge capture acknowledgment, and ensuring the organization was doing everything it could to be sustainable. He stated the final priority was planning and infrastructure. He stated this organization delivered large infrastructure, which required good planning. He stated that inside these strategies were effective asset management principles, nimbleness when delivering capital projects in changing conditions, and recognition and focus of the current situation while being proactive for the future.

Mr. Pinkston asked how many of the proposed measures included a target or a trend.

Mr. Thomas stated that the best practice oftentimes was to begin measuring and then reflect on whether the trend seen was acceptable performance, then set goals. He stated the other option was to benchmark some measures, but not all were able to be worked with in that regard. He stated that also ultimately working with leadership to ask if that was the target performance they wanted to achieve was an option.

Mr. Pinkston asked if this would be referred to as a Key Performance Indicator (KPI).

Mr. Thomas responded that they could. He stated that at the strategy level, this was a good place to think about the top-line outcome measures, but other measurements happened in organizations, so this should not represent the entirety of organizational KPIs, but really was how they were doing at the highest level strategically to achieve the success they sought.

Mr. Pinkston asked if the last plan included similar measures.

Mr. Thomas replied that it did, and the Director periodically reported on that information to the Board. He noted that there would be some same measures as well as some new ones.

Mr. Rogers stated that it was important to set goals, so they knew how to get there. He understood the broad statement, but they wanted to measure how they were progressing, particularly with climate change, as there was a level of accountability, they should feel about how they were progressing with the climate change goals they set.

Mr. Thomas stated they had a designed document with a recommended design that was near-final, pending any additional Board input. He stated that it was not a radical departure from the design they used the last time. He stated that the next steps were to complete and finalize the strategic plan by the end of the year and pivot to active implementation. He stated that he assumed Mr. Mawyer would present that as he had been doing against the progress of implementation and performance of implementation against the KPIs.

Mr. Stewart stated that he was supportive of this. He stated that one of the priorities was communication and collaboration, and collaboration among partners in the room was key, but there were no measures listed regarding collaboration. He asked if there was a reason for this.

Mr. Thomas stated that sometimes measuring outside collaboration was tricky. He stated that some measures included community service hours completed by employees, number of outreach events, and how many members of the public attended meetings. He commented that the measures were a good starting point, but there may be more powerful ways to measure in the future that they had yet to identify.

Mr. Stewart stated collaboration between organizations was difficult to measure, but there were also no strategies specific to that that he could find listed.

Mr. Pinkston stated it was quasi-internal collaboration if it was among various organizations.

Mr. Mawyer stated his performance goals included detailed specifics and metrics, however, more could be added to the strategic plan.

Mr. Andrews stated there were four bullets under strategies on page 11 for environmental stewardship, but only three were reflected on page 13.

Mr. Thomas stated that would be fixed.

Ms. Mallek stated related to public-facing success, returning paint cans at the new transfer station was a great change from when she had last done so. She stated it was very managed and professional.

Mr. Pinkston asked about the phrasing of “led” or “lead” on page 8.

599
600 Mr. Thomas stated they would correct it.

601
602 Mr. Gaffney stated some photographs had descriptions and others did not.

603
604 Mr. Pinkston asked about the asset management program.

605
606 Mr. Mawyer stated they were in the process of getting the program underway, and CityWorks
607 was the new program.

608
609 Mr. Thomas stated he lived in North Carolina and did not benefit from this organization, but he
610 had worked with many organizations across the country and could say this was a high-
611 functioning and well-led utility organization.

612
613 Mr. Gaffney asked if there were any other comments or questions.

614
615 Mr. Pinkston asked Mr. Mawyer if these were strategies that he and his leadership team wanted
616 to focus on.

617
618 Mr. Mawyer stated yes. He stated they worked fairly exclusively on those strategies and
619 measures.

620
621 Mr. Rogers stated he liked the framework, the approach, and the efficiency with which they put
622 the strategic plan together.

623
624 Mr. Pinkston asked if there was any action to be taken on this now.

625
626 Mr. Mawyer stated the Board could take action to approve the draft unless they wanted to bring
627 back a final version.

628
629 Mr. Gaffney asked if they would bring back a final version.

630
631 Mr. Mawyer stated they could bring it back for approval in November.

632
633 **10. OTHER ITEMS FROM BOARD/STAFF NOT ON THE AGENDA**

634 There were no items to discuss.

635
636 **11. CLOSED MEETING**

637 There was no reason for a closed meeting.

638
639 **12. ADJOURNMENT**

640
641 **At 3:57 p.m., Mr. Rogers moved to adjourn the meeting of the Rivanna Water and Sewer**
642 **Authority. Ms. Mallek 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 25, 2022

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

Recognitions

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

- Alison Henry – Class 3 Water Operator
- Cary Wingo - Class 1 Water Operator
- Jeremy Lawson – Class 1 Wastewater Operator

STRATEGIC PLAN GOAL: OPERATIONAL OPTIMIZATION

Safety Grant

Liz Coleman, Safety Manager, applied for and received a \$4000 safety grant from the Virginia Risk Sharing Association, which was used to purchase manhole guards for use by our Engineering, Maintenance, Water, and Wastewater Departments.



STRATEGIC PLAN GOAL: INFRASTRUCTURE AND MASTER PLANNING

S. Rivanna to Ragged Mtn Reservoir Water Pipe

We have obtained agreements with many private owners and VDOT for easements on much of the 8 mile long alignment required for the water pipe from the South Fork Rivanna Reservoir to the new raw water pump station located near the Ragged Mtn Reservoir. We continue to work with the UVA Foundation and 1 private owner for the remaining sections.

Ragged Mtn Reservoir to Observatory WTP Water Pipe and Pump Station

Discussions continue with UVA and the UVA Foundation for the last 2 sections of the easement along the 3 mile long alignment for the 36" raw water pipe and pumping station site.

STRATEGIC PLAN GOAL: COMMUNICATION & COLLABORATION

Rivanna River Conference

Andrea Bowles, our Water Resources Manager, attended the Rivanna River Basin Commission Annual Conference at the Lewis & Clark Exploratory Center. The Commission chair is our Board Member, Ms. Ann Mallek. RWSA, along with several participants, had a table at the event to share information about RWSA and RSWA. The theme of the conference was Solar Policy and Planning.

Regional Safety Meeting

Our Safety Manager, Liz Coleman, sponsored a virtual meeting with local safety professionals from ACSA, Charlottesville, and the Waynesboro School Division. The group discussed health and safety topics including COVID procedures and an emerging topic concerning polio virus in wastewater.

Clean Water Act of 1972

This year is the 50th anniversary of the Clean Water Act approved by Congress in 1972 to regulate the discharge of pollutants into waters of the U.S.. Years of dumping pollutants into the rivers and streams of our country were punctuated when the Cuyahoga River in Cleveland, Ohio caught on fire. In Virginia, many years of dumping Kepone into the James River and Chesapeake Bay ended as a result of this legislation.



**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 2023

DATE: OCTOBER 25, 2022

Financial Snapshot

August ended with an overall net surplus of \$366,800 due to operating rate revenue being above average and the annual payment from the County for the septage receiving support agreement. Total revenues were \$507,500 over budget estimates and expenses were \$239,500 over budget as well. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	\$ 1,665,175	\$ 1,831,731	\$ 434,342	\$ 3,931,248
Expenses	(1,642,975)	(1,634,802)	(388,749)	(3,666,526)
Surplus (deficit)	<u>\$ 22,200</u>	<u>\$ 196,929</u>	<u>\$ 45,593</u>	<u>\$ 264,722</u>
Debt Service				
Revenues	\$ 1,421,418	\$ 1,626,721	\$ 393,721	\$ 3,441,860
Expenses	(1,416,678)	(1,530,313)	(392,803)	(3,339,794)
Surplus (deficit)	<u>\$ 4,740</u>	<u>\$ 96,408</u>	<u>\$ 918</u>	<u>\$ 102,066</u>
Total				
Revenues	\$ 3,086,593	\$ 3,458,452	\$ 828,063	\$ 7,373,108
Expenses	(3,059,653)	(3,165,115)	(781,552)	(7,006,320)
Surplus (deficit)	<u><u>\$ 26,940</u></u>	<u><u>\$ 293,337</u></u>	<u><u>\$ 46,511</u></u>	<u><u>\$ 366,788</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 to the applicable line items in the financial statement for each rate center and each support department in the following pages. Please refer to the Budget vs Actual financial statements when reviewing these comments.

Detailed Financials

The Authority's actual operating revenues for August were \$349,000 over the prorated annual budget estimates, and operating expenses exceeded budget by \$183,000. The following comments help 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 be 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 for leases, health savings account contributions, and certain maintenance agreements. Insurance premiums are paid quarterly.
- B. Personnel Costs (Urban Water – page 2) – The Urban Water rate center salaries are higher than budget due to pay increases for plant operators who achieved higher licenses.
- C. Professional Services (Urban Water, Urban Wastewater – pages 2, 5) – Urban Water and Urban Wastewater are over the prorated budget for engineering and technical services for various surveys and studies.
- D. Other Services & Charges (Urban Wastewater – page 5) – Urban Wastewater's utility costs are higher than originally estimated.
- E. Information Technology (Urban Water, Administration – pages 2, 8) – Urban Water incurred some unbudgeted computer hardware and software purchases. The Administration department has spent \$54,000 of its \$60,000 annual budget for computer hardware purchases. There were also some annual maintenance and license fees paid in July similar to those noted in A. above.
- F. Communication (Administration – page 8) – The Administration department switched to a new telephone system which was not included in the budget.

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022
Fiscal Year 2023

Consolidated
Revenues and Expenses Summary

<i>Budget</i>	<i>Budget</i>	<i>Actual</i>	<i>Budget</i>	<i>Variance</i>
<i>FY 2023</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	\$	20,614,425	\$	3,435,738	\$	3,750,589	\$	314,852	9.16%
Lease Revenue		85,000		14,167		22,672		8,505	60.04%
Admin., Maint. & Engineering Revenue		656,000		109,333		109,487		154	0.14%
Other Revenues		639,036		106,506		145,617		39,111	36.72%
Use of Reserves-GAC		150,000		25,000		-		(25,000)	-100.00%
Interest Allocation		7,170		1,195		12,370		11,175	935.13%
Total Operating Revenues	\$	22,151,631	\$	3,691,939	\$	4,040,735	\$	348,796	9.45%

Expenses

Personnel Cost	A, B	\$	10,494,727	\$	1,650,342	\$	1,690,042	\$	(39,700)	-2.41%
Professional Services	C		629,900		104,983		121,301		(16,318)	-15.54%
Other Services & Charges	A, D		3,427,460		571,243		543,141		28,103	4.92%
Communications	F		200,342		33,390		42,967		(9,577)	-28.68%
Information Technology	A, E		816,626		136,104		262,552		(126,448)	-92.91%
Supplies			39,950		6,658		5,728		930	13.97%
Operations & Maintenance	A		5,222,531		870,422		919,594		(49,172)	-5.65%
Equipment Purchases			420,100		70,017		40,688		29,328	41.89%
Depreciation			900,000		150,000		150,000		-	0.00%
Total Operating Expenses		\$	22,151,636	\$	3,593,160	\$	3,776,013	\$	(182,853)	-5.09%
Operating Surplus/(Deficit)		\$	(5)	\$	98,778	\$	264,721			

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$	19,522,929	\$	3,253,822	\$	3,253,822	\$	1	0.00%
Septage Receiving Support - County		109,440		18,240		109,440		91,200	500.00%
Buck Mountain Lease Revenue		1,600		267		1,480		1,213	454.84%
Trust Fund Interest		990		165		9,818		9,653	5850.41%
Reserve Fund Interest		64,230		10,705		67,302		56,597	528.69%
Total Debt Service Revenues	\$	19,699,189	\$	3,283,198	\$	3,441,861	\$	158,663	4.83%

Debt Service Costs

Total Principal & Interest	\$	16,165,241	\$	2,694,207	\$	2,694,207	\$	-	0.00%
Reserve Additions-Interest		64,230		10,705		67,302		(56,597)	-528.69%
Debt Service Ratio Charge		725,000		120,833		120,833		-	0.00%
Reserve Additions-CIP Growth		2,744,717		457,453		457,453		-	0.00%
Total Debt Service Costs	\$	19,699,188	\$	3,283,198	\$	3,339,795	\$	(56,597)	-1.72%
Debt Service Surplus/(Deficit)	\$	1	\$	0	\$	102,067			

Summary

Total Revenues	\$	41,850,820	\$	6,975,137	\$	7,482,596	\$	507,459	7.28%
Total Expenses		41,850,824		6,876,358		7,115,808		(239,450)	-3.48%
Surplus/(Deficit)	\$	(4)	\$	98,779	\$	366,788			

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022

Urban Water Rate Center
Revenues and Expenses Summary

<i>Budget FY 2023</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	\$ 9,014,863	\$ 1,502,477	\$ 1,642,589	\$ 140,112	9.33%
Lease Revenue	60,000	10,000	17,465	7,465	74.65%
Miscellaneous	-	-	-	-	
Use of Reserves-GAC	150,000	25,000		(25,000)	-100.00%
Interest Allocation	3,000	500	5,121	4,621	924.22%
Total Operating Revenues	\$ 9,227,863	\$ 1,537,977	\$ 1,665,175	\$ 127,198	8.27%

Expenses

Personnel Cost	B	\$ 2,234,714	\$ 352,929	\$ 358,157	\$ (5,228)	-1.48%
Professional Services	C	222,000	37,000	74,992	(37,992)	-102.68%
Other Services & Charges		716,300	119,383	87,000	32,383	27.13%
Communications		100,920	16,820	13,576	3,244	19.28%
Information Technology	E	104,950	17,492	36,784	(19,292)	-110.29%
Supplies		5,400	900	1,735	(835)	-92.79%
Operations & Maintenance	A	2,511,396	418,566	515,181	(96,615)	-23.08%
Equipment Purchases		16,000	2,667	2,667	0	0.00%
Depreciation		300,000	50,000	50,000	-	0.00%
Subtotal Before Allocations		\$ 6,211,680	\$ 1,015,757	\$ 1,140,092	\$ (124,336)	-12.24%
Allocation of Support Departments		3,016,183	477,678	502,882	(25,204)	-5.28%
Total Operating Expenses		\$ 9,227,863	\$ 1,493,435	\$ 1,642,975	\$ (149,540)	-10.01%
Operating Surplus/(Deficit)		\$ (0)	\$ 44,543	\$ 22,200		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 8,302,224	\$ 1,383,704	\$ 1,383,704	\$ -	0.00%
Trust Fund Interest	400	67	3,593	3,527	5290.18%
Reserve Fund Interest	31,000	5,167	32,641	27,475	531.77%
Lease Revenue	1,600	267	1,480	1,213	454.84%
Total Debt Service Revenues	\$ 8,335,224	\$ 1,389,204	\$ 1,421,418	\$ 32,214	2.32%

Debt Service Costs

Total Principal & Interest	\$ 6,964,724	\$ 1,160,787	\$ 1,160,787	\$ -	0.00%
Reserve Additions-Interest	31,000	5,167	32,641	(27,475)	-531.77%
Debt Service Ratio Charge	400,000	66,667	66,667	-	0.00%
Reserve Additions-CIP Growth	939,500	156,583	156,583	-	0.00%
Total Debt Service Costs	\$ 8,335,224	\$ 1,389,204	\$ 1,416,679	\$ (27,475)	-1.98%
Debt Service Surplus/(Deficit)	\$ -	\$ -	\$ 4,740		

Rate Center Summary

Total Revenues	\$ 17,563,087	\$ 2,927,181	\$ 3,086,593	\$ 159,412	5.45%
Total Expenses	17,563,087	2,882,639	3,059,653	(177,015)	-6.14%
Surplus/(Deficit)	\$ (0)	\$ 44,543	\$ 26,940		
Costs per 1000 Gallons Operating and DS	\$ 2.72		\$ 2.65		
	\$ 5.17		\$ 4.94		
Thousand Gallons Treated or Flow (MGD)	3,397,700	566,283	619,144	52,861	9.33%
	9.309		9.986		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022

Crozet Water Rate Center
Revenues and Expenses Summary

<i>Budget FY 2023</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	\$ 1,197,084	\$ 199,514	\$ 199,514	\$ -	0.00%
Lease Revenues	25,000	4,167	5,207	1,040	24.97%
Interest Allocation	400	67	693	626	939.07%
Total Operating Revenues	\$ 1,222,484	\$ 203,747	\$ 205,414	\$ 1,666	0.82%

Expenses

Personnel Cost	\$ 352,559	\$ 55,664	\$ 56,850	\$ (1,185)	-2.13%
Professional Services	22,900	3,817	9	3,808	99.78%
Other Services & Charges	118,700	19,783	21,277	(1,493)	-7.55%
Communications	17,600	2,933	2,990	(56)	-1.92%
Information Technology	4,950	825	1,052	(227)	-27.57%
Supplies	1,500	250	483	(233)	-93.10%
Operations & Maintenance	358,500	59,750	32,261	27,489	46.01%
Equipment Purchases	3,000	500	500	-	0.00%
Depreciation	60,000	10,000	10,000	-	0.00%
Subtotal Before Allocations	\$ 939,709	\$ 153,523	\$ 125,420	\$ 28,102	18.30%
Allocation of Support Departments	282,780	44,798	47,102	(2,304)	-5.14%
Total Operating Expenses	\$ 1,222,489	\$ 198,320	\$ 172,523	\$ 25,798	13.01%
Operating Surplus/(Deficit)	\$ (5)	\$ 5,427	\$ 32,891		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 2,161,704	\$ 360,284	\$ 360,284	\$ -	0.00%
Trust Fund Interest	80	13	835	821	6159.05%
Reserve Fund Interest	1,200	200	1,279	1,079	539.36%
Total Debt Service Revenues	\$ 2,162,984	\$ 360,497	\$ 362,397	\$ 1,900	0.53%

Debt Service Costs

Total Principal & Interest	\$ 1,217,280	\$ 202,880	\$ 202,880	\$ -	0.00%
Reserve Additions-Interest	1,200	200	1,279	(1,079)	-539.36%
Reserve Additions-CIP Growth	944,500	157,417	157,417	-	0.00%
Total Debt Service Costs	\$ 2,162,980	\$ 360,497	\$ 361,575	\$ (1,079)	-0.30%
Debt Service Surplus/(Deficit)	\$ 4	\$ 1	\$ 822		

Rate Center Summary

Total Revenues	\$ 3,385,468	\$ 564,245	\$ 567,811	\$ 3,566	0.63%
Total Expenses	3,385,469	558,817	534,098	24,719	4.42%
Surplus/(Deficit)	\$ (1)	\$ 5,428	\$ 33,713		
Costs per 1000 Gallons	\$ 6.03		\$ 4.33		
Operating and DS	\$ 16.70		\$ 13.40		
Thousand Gallons Treated	202,697	33,783	39,860	6,077	17.99%
Flow (MGD)	0.555		0.643		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022

Scottsville Water Rate Center
Revenues and Expenses Summary

<i>Budget FY 2023</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	\$ 569,556	\$ 94,926	\$ 94,926	\$ -	0.00%
Interest Allocation	200	33	322	288	864.89%
Total Operating Revenues	\$ 569,756	\$ 94,959	\$ 95,248	\$ 288	0.30%

Expenses

Personnel Cost	\$ 212,797	\$ 33,564	\$ 34,637	\$ (1,073)	-3.20%
Professional Services	5,000	833	2,306	(1,473)	-176.72%
Other Services & Charges	27,100	4,517	3,724	793	17.56%
Communications	6,400	1,067	892	175	16.36%
Information Technology	4,400	733	526	207	28.24%
Supplies	100	17	138	(121)	-725.12%
Operations & Maintenance	97,925	16,321	13,242	3,079	18.86%
Equipment Purchases	1,600	267	438	(172)	-64.35%
Depreciation	40,000	6,667	6,667	0	0.00%
Subtotal Before Allocations	\$ 395,322	\$ 63,985	\$ 62,570	\$ 1,416	2.21%
Allocation of Support Departments	174,433	27,666	28,646	(980)	-3.54%
Total Operating Expenses	\$ 569,755	\$ 91,651	\$ 91,215	\$ 436	0.48%
Operating Surplus/(Deficit)	\$ 1	\$ 3,308	\$ 4,032		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 150,300	\$ 25,050	\$ 25,050	\$ -	0.00%
Trust Fund Interest	10	2	88	87	5202.20%
Reserve Fund Interest	850	142	875	733	517.58%
Total Debt Service Revenues	\$ 151,160	\$ 25,193	\$ 26,013	\$ 820	3.25%

Debt Service Costs

Total Principal & Interest	\$ 148,726	\$ 24,788	\$ 24,788	\$ -	0.00%
Reserve Additions-Interest	850	142	875	(733)	
Reserve Additions-CIP Growth	1,589	265	265	-	
Total Debt Service Costs	\$ 151,165	\$ 25,194	\$ 25,927	\$ (733)	-2.91%
Debt Service Surplus/(Deficit)	\$ (5)	\$ (1)	\$ 86		

Rate Center Summary

Total Revenues	\$ 720,916	\$ 120,153	\$ 121,261	\$ 1,108	0.92%
Total Expenses	720,920	116,845	117,143	(298)	-0.25%
Surplus/(Deficit)	\$ (4)	\$ 3,308	\$ 4,118		
Costs per 1000 Gallons	\$ 33.07		\$ 23.19		
Operating and DS	\$ 41.84		\$ 29.78		
Thousand Gallons Treated	17,230	2,872	3,933	1,061	36.96%
or					
Flow (MGD)	0.047		0.063		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022

Urban Wastewater Rate Center
Revenues and Expenses Summary

<i>Budget FY 2023</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	\$ 9,033,662	\$ 1,505,610	\$ 1,680,350	\$ 174,740	11.61%
Stone Robinson WWTP	39,036	6,506	3,065	(3,441)	-52.89%
Septage Acceptance	500,000	83,333	103,423	20,090	24.11%
Nutrient Credits	100,000	16,667	39,129	22,462	134.77%
Miscellaneous Revenue	-	-	-	-	
Interest Allocation	3,300	550	5,764	5,214	948.06%
Total Operating Revenues	\$ 9,675,998	\$ 1,612,666	\$ 1,831,731	\$ 219,065	13.58%

Expenses

Personnel Cost	A	\$ 1,325,384	\$ 208,788	\$ 229,997	\$ (21,209)	-10.16%
Professional Services	C	75,000	12,500	31,511	(19,011)	-152.09%
Other Services & Charges	A, D	2,276,980	379,497	395,476	(15,980)	-4.21%
Communications		1,900	317	2,022	(1,705)	-538.49%
Information Technology		110,400	18,400	11,605	6,795	36.93%
Supplies		1,200	200	106	94	46.89%
Operations & Maintenance		1,698,660	283,110	283,426	(316)	-0.11%
Equipment Purchases		143,000	23,833	8,333	15,500	65.03%
Depreciation		470,000	78,333	78,333	(0)	0.00%
Subtotal Before Allocations		\$ 6,102,524	\$ 1,004,978	\$ 1,040,810	\$ (35,832)	-3.57%
Allocation of Support Departments		3,573,476	566,353	593,992	(27,639)	-4.88%
Total Operating Expenses		\$ 9,675,999	\$ 1,571,331	\$ 1,634,802	\$ (63,471)	-4.04%
Operating Surplus/(Deficit)		\$ (1)	\$ 41,336	\$ 196,929		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 8,878,107	\$ 1,479,685	\$ 1,479,684	\$ (1)	0.00%
Septage Receiving Support - County	109,440	18,240	109,440	91,200	500.00%
Trust Fund Interest	500	83	5,292	5,209	6250.40%
Reserve Fund Interest	31,000	5,167	32,305	27,138	525.25%
Total Debt Service Revenues	\$ 9,019,047	\$ 1,503,175	\$ 1,626,721	\$ 123,546	8.22%

Debt Service Costs

Total Principal & Interest	\$ 7,808,347	\$ 1,301,391	\$ 1,301,391	\$ -	0.00%
Reserve Additions-Interest	31,000	5,167	32,305	(27,138)	-525.25%
Debt Service Ratio Charge	325,000	54,167	54,167	-	0.00%
Reserve Additions-CIP Growth	854,700	142,450	142,450	-	0.00%
Total Debt Service Costs	\$ 9,019,047	\$ 1,503,175	\$ 1,530,313	\$ (27,138)	-1.81%
Debt Service Surplus/(Deficit)	\$ -	\$ -	\$ 96,408		

Rate Center Summary

Total Revenues	\$ 18,695,045	\$ 3,115,841	\$ 3,458,452	\$ 342,611	11.00%
Total Expenses	18,695,046	3,074,505	3,165,114	(90,609)	-2.95%
Surplus/(Deficit)	\$ (1)	\$ 41,336	\$ 293,337		
Costs per 1000 Gallons	\$ 2.85		\$ 2.59		
Operating and DS	\$ 5.51		\$ 5.02		
Thousand Gallons Treated or Flow (MGD)	3,390,400	565,067	630,762	65,695	11.63%
	9.289		10.174		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

<i>Budget FY 2023</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	\$ 443,640	\$ 73,940	\$ 73,940	\$ -	0.00%
Interest Allocation	150	25	260	235	939.08%
<i>Total Operating Revenues</i>	\$ 443,790	\$ 73,965	\$ 74,200	\$ 235	0.32%

Expenses

Personnel Cost	\$ 115,815	\$ 18,238	\$ 20,233	\$ (1,994)	-10.93%
Professional Services	5,000	833	-	833	100.00%
Other Services & Charges	35,750	5,958	5,256	702	11.79%
Communications	-	-	564	(564)	
Information Technology	4,425	738	395	343	46.49%
Supplies	-	-	-	-	
Operations & Maintenance	134,950	22,492	13,618	8,874	39.46%
Equipment Purchases	3,800	633	633	(0)	0.00%
Depreciation	10,000	1,667	1,667	0	0.00%
<i>Subtotal Before Allocations</i>	\$ 309,740	\$ 50,559	\$ 42,365	\$ 8,195	16.21%
Allocation of Support Departments	134,045	21,288	21,388	(100)	-0.47%
<i>Total Operating Expenses</i>	\$ 443,785	\$ 71,848	\$ 63,752	\$ 8,095	11.27%
<i>Operating Surplus/(Deficit)</i>	\$ 5	\$ 2,117	\$ 10,447		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 20,484	\$ 3,414	\$ 3,414	\$ -	0.00%
Trust Fund Interest	-	-	-	-	
Reserve Fund Interest	80	13	67	54	404.68%
<i>Total Debt Service Revenues</i>	\$ 20,564	\$ 3,427	\$ 3,481	\$ -	0.00%

Debt Service Costs

Total Principal & Interest	\$ 18,717	\$ 3,120	\$ 3,120	\$ -	0.00%
Reserve Additions-CIP Growth	1,761	294	294	-	0.00%
Reserve Additions-Interest	80	13	67	(54)	-404.68%
<i>Total Debt Service Costs</i>	\$ 20,558	\$ 3,426	\$ 3,480	\$ (54)	-1.57%
<i>Debt Service Surplus/(Deficit)</i>	\$ 6	\$ 1	\$ 1		

Rate Center Summary

Total Revenues	\$ 464,354	\$ 77,392	\$ 77,681	\$ 289	0.37%
Total Expenses	464,343	75,274	67,233	8,041	10.68%
Surplus/(Deficit)	\$ 11	\$ 2,118	\$ 10,448		
Costs per 1000 Gallons	\$ 10.72		\$ 10.18		
Operating and DS	\$ 11.22		\$ 10.74		
Thousand Gallons Treated or Flow (MGD)	41,401	6,900	6,261	(639)	-9.26%
	0.113		0.101		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

<i>Budget FY 2023</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	\$ 355,620	\$ 59,270	\$ 59,270	\$ -	0.00%
Interest Allocation	120	20	210	190	951.35%
Total Operating Revenues	\$ 355,740	\$ 59,290	\$ 59,480	\$ 190	0.32%

Expenses

Personnel Cost	\$ 115,795	\$ 18,235	\$ 20,233	\$ (1,997)	-10.95%
Professional Services	5,000	833	23	811	97.28%
Other Services & Charges	26,650	4,442	2,806	1,635	36.82%
Communications	3,770	628	684	(56)	-8.87%
Information Technology	4,125	688	395	293	42.59%
Supplies	-	-	-	-	
Operations & Maintenance	52,000	8,667	13,220	(4,553)	-52.54%
Equipment Purchases	3,800	633	633	(0)	0.00%
Depreciation	20,000	3,333	3,333	(0)	0.00%
Subtotal Before Allocations	\$ 231,140	\$ 37,459	\$ 41,327	\$ (3,868)	-10.33%
Allocation of Support Departments	124,604	19,783	19,932	(149)	-0.75%
Total Operating Expenses	\$ 355,744	\$ 57,243	\$ 61,259	\$ (4,017)	-7.02%
Operating Surplus/(Deficit)	\$ (4)	\$ 2,047	\$ (1,779)		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 10,110	\$ 1,685	\$ 1,686	\$ 1	0.06%
Trust Fund Interest	-	-	10	10	
Reserve Fund Interest	100	17	135	118	707.90%
Total Debt Service Revenues	\$ 10,210	\$ 1,702	\$ 1,830	\$ 129	7.57%

Debt Service Costs

Total Principal & Interest	\$ 7,447	\$ 1,241	\$ 1,241	\$ -	0.00%
Reserve Additions-Interest	100	17	135	(118)	-707.90%
Estimated New Principal & Interest	2,667	445	445	-	0.00%
Total Debt Service Costs	\$ 10,214	\$ 1,702	\$ 1,820	\$ (118)	-6.93%
Debt Service Surplus/(Deficit)	\$ (4)	\$ (1)	\$ 10		

Rate Center Summary

Total Revenues	\$ 365,950	\$ 60,992	\$ 61,311	\$ 319	0.52%
Total Expenses	365,958	58,945	63,080	(4,135)	-7.01%
Surplus/(Deficit)	\$ (8)	\$ 2,047	\$ (1,769)		
Costs per 1000 Gallons	\$ 15.05		\$ 21.90		
Operating and DS	\$ 15.48		\$ 22.55		
Thousand Gallons Treated	23,643	3,941	2,797	(1,144)	-29.02%
or					
Flow (MGD)	0.065		0.045		

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022

Administration

<i>Budget FY 2023</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	\$ 654,000	\$ 109,000	\$ 109,000	\$ -	0.00%
Bond Proceeds Funding Bond Issuance Costs	-	-	-	-	
Miscellaneous Revenue	2,000	333	487	154	46.15%
<i>Total Operating Revenues</i>	\$ 656,000	\$ 109,333	\$ 109,487	\$ 154	0.14%

Expenses

Personnel Cost	A	\$ 2,450,092	\$ 383,835	\$ 386,771	\$ (2,936)	-0.76%
Professional Services		170,000	28,333	7,952	20,381	71.93%
Other Services & Charges		162,600	27,100	23,447	3,653	13.48%
Communications	F	24,780	4,130	17,495	(13,365)	-323.61%
Information Technology	A, E	404,876	67,479	190,996	(123,516)	-183.04%
Supplies		23,000	3,833	2,257	1,576	41.12%
Operations & Maintenance		67,850	11,308	7,107	4,201	37.15%
Equipment Purchases		13,100	2,183	2,183	(0)	0.00%
Depreciation		-	-	-	-	
<i>Total Operating Expenses</i>		\$ 3,316,298	\$ 528,203	\$ 638,210	\$ (110,007)	-20.83%

Department Summary

Net Costs Allocable to Rate Centers		\$ (2,660,298)	\$ (418,869)	\$ (528,722)	\$ 109,853	-26.23%
<u>Allocations to the Rate Centers</u>						
Urban Water	44.00%	\$ 1,170,531	\$ 184,302	\$ 232,638	\$ (48,335)	
Crozet Water	4.00%	\$ 106,412	\$ 16,755	\$ 21,149	\$ (4,394)	
Scottsville Water	2.00%	\$ 53,206	\$ 8,377	\$ 10,574	\$ (2,197)	
Urban Wastewater	48.00%	\$ 1,276,943	\$ 201,057	\$ 253,787	\$ (52,730)	
Glenmore Wastewater	1.00%	\$ 26,603	\$ 4,189	\$ 5,287	\$ (1,099)	
Scottsville Wastewater	1.00%	\$ 26,603	\$ 4,189	\$ 5,287	\$ (1,099)	
	100.00%	\$ 2,660,298	\$ 418,869	\$ 528,722	\$ (109,853)	

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022

Maintenance

<i>Budget FY 2023</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
Professional Services
Other Services & Charges
Communications
Information Technology
Supplies
Operations & Maintenance
Equipment Purchases
Depreciation

Total Operating Expenses

\$ 1,477,565	\$ 232,520	\$ 238,183	\$ (5,663)	-2.44%
-	-	-	-	-
33,600	5,600	2,662	2,938	52.46%
24,500	4,083	2,678	1,405	34.41%
32,500	5,417	-	5,417	100.00%
2,500	417	211	206	49.36%
104,900	17,483	25,954	(8,470)	-48.45%
212,600	35,433	21,433	14,000	39.51%
-	-	-	-	-
\$ 1,888,165	\$ 300,953	\$ 291,121	\$ 9,832	3.27%

Department Summary

Net Costs Allocable to Rate Centers

\$ (1,888,165)	\$ (300,953)	\$ (291,121)	\$ (9,832)	3.27%
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Allocations to the Rate Centers

Urban Water	30.00%	\$ 566,450	\$ 90,286	\$ 87,336	\$ 2,950
Crozet Water	3.50%	66,086	10,533	10,189	344
Scottsville Water	3.50%	66,086	10,533	10,189	344
Urban Wastewater	56.50%	1,066,814	170,038	164,483	5,555
Glenmore Wastewater	3.50%	66,086	10,533	10,189	344
Scottsville Wastewater	3.00%	56,645	9,029	8,734	295
	100.00%	\$ 1,888,165	\$ 300,953	\$ 291,121	\$ 9,832

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022

Laboratory

<i>Budget FY 2023</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

N/A

Expenses

Personnel Cost	\$ 415,324	\$ 65,246	\$ 67,013	\$ (1,767)	-2.71%
Professional Services	-	-	-	-	
Other Services & Charges	11,780	1,963	151	1,812	92.30%
Communications	1,700	283	117	166	
Information Technology	1,000	167	-	167	100.00%
Supplies	1,250	208	40	168	80.56%
Operations & Maintenance	121,050	20,175	9,668	10,507	52.08%
Equipment Purchases	1,700	283	283	(0)	0.00%
Depreciation	-	-	-	-	
Total Operating Expenses	\$ 553,804	\$ 88,326	\$ 77,274	\$ 11,052	12.51%

Department Summary

Net Costs Allocable to Rate Centers		\$ (553,804)	\$ (88,326)	\$ (77,274)	\$ (11,052)	12.51%
<u>Allocations to the Rate Centers</u>						
Urban Water	44.00%	\$ 243,674	\$ 38,863	\$ 34,001	\$ 4,863	
Crozet Water	4.00%	22,152	3,533	3,091	442	
Scottsville Water	2.00%	11,076	1,767	1,545	221	
Urban Wastewater	47.00%	260,288	41,513	36,319	5,194	
Glenmore Wastewater	1.50%	8,307	1,325	1,159	166	
Scottsville Wastewater	1.50%	8,307	1,325	1,159	166	
	100.00%	\$ 553,804	\$ 88,326	\$ 77,274	\$ 11,052	

Rivanna Water & Sewer Authority
Monthly Financial Statements - August 2022

Engineering

<i>Budget FY 2023</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

\$ 1,794,680	\$ 281,322	\$ 277,969	\$ 3,353	1.19%
125,000	20,833	4,508	16,325	78.36%
18,000	3,000	1,340	1,660	55.32%
18,772	3,129	1,949	1,180	37.72%
145,000	24,167	20,799	3,367	13.93%
5,000	833	758	75	9.05%
75,300	12,550	5,917	6,633	52.85%
21,500	3,583	3,583	0	0.00%
-	-	-	-	-
\$ 2,203,252	\$ 349,417	\$ 316,825	\$ 32,592	9.33%

Department Summary

Net Costs Allocable to Rate Centers

\$ (2,203,252)	\$ (349,417)	\$ (316,825)	\$ (32,592)	9.33%
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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

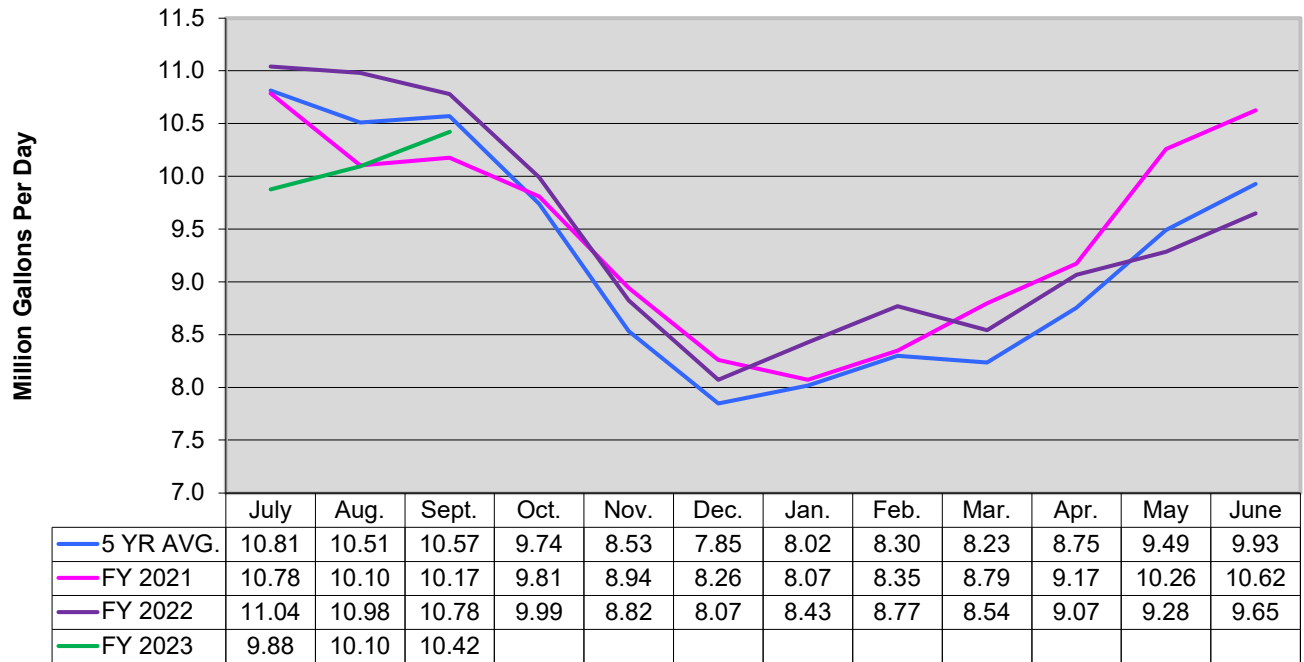
1.50%

100.00%

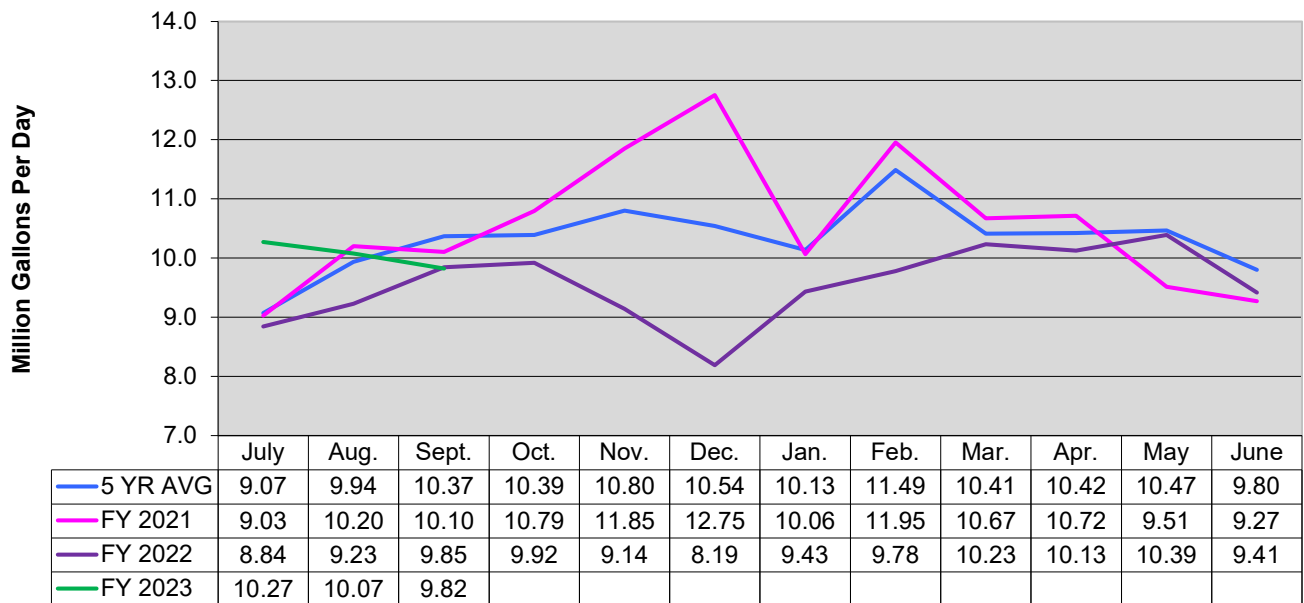
\$ 1,035,528	\$ 164,226	\$ 148,908	\$ 15,318
88,130	13,977	12,673	1,304
44,065	6,988	6,337	652
969,431	153,744	139,403	14,341
33,049	5,241	4,752	489
33,049	5,241	4,752	489
\$ 2,203,252	\$ 349,417	\$ 316,825	\$ 32,592

**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

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: OPERATIONS REPORT FOR SEPTEMBER 2022

DATE: OCTOBER 25, 2022

WATER OPERATIONS:

The average and maximum daily water volumes produced in September 2022 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	8.21	10.28 (9/2/2022)
Observatory	1.77	3.07 (9/8/2022)
North Rivanna	<u>0.50</u>	<u>0.57 (9/6/2022)</u>
<i>Urban Total</i>	10.48	12.26 (9/6/2022)
Crozet	0.65	0.84 (9/18/2022)
Scottsville	0.07	0.112 (9/30/2022)
Red Hill	<u>0.0021</u>	0.004 (9/21/2022)
<i>RWSA Total</i>	11.20	-

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

Status of Reservoirs (as of October 18, 2022):

- Urban Reservoirs are 98% of Total Useable Capacity
 - Ragged Mountain Reservoir is 96% full
 - Sugar Hollow Reservoir is 100% full
 - South Rivanna Reservoir is 100% full
- Beaver Creek Reservoir (Crozet) is 100% 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 2022. Performance of the WRRFs in August 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>
Moore's Creek	9.33	<QL	9	<QL	22	<QL	2.2
Glenmore	0.105	5.0	15	2.3	30	NR	NL
Scottsville	0.046	1.5	25	4.0	30	NR	NL
Stone Robinson	0.002	NR	30	NR	30	NR	NL

NR = Not Required

NL = No Limit

<QL: Less than analytical method quantitative level (2.0 ppm for CBOD, 1.0 ppm for TSS, and 0.1 ppm for Ammonia).

Nutrient discharges at the Moore's Creek AWRRF were as follows for September 2022.

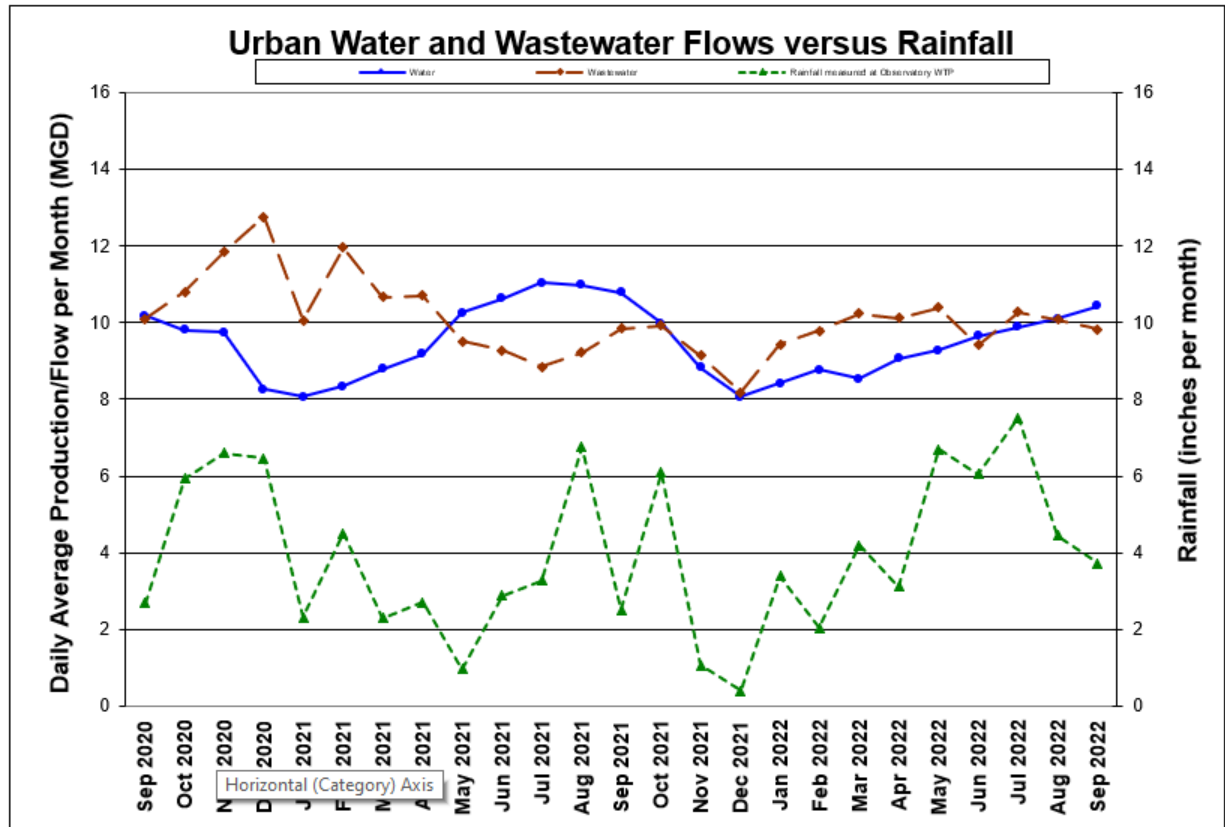
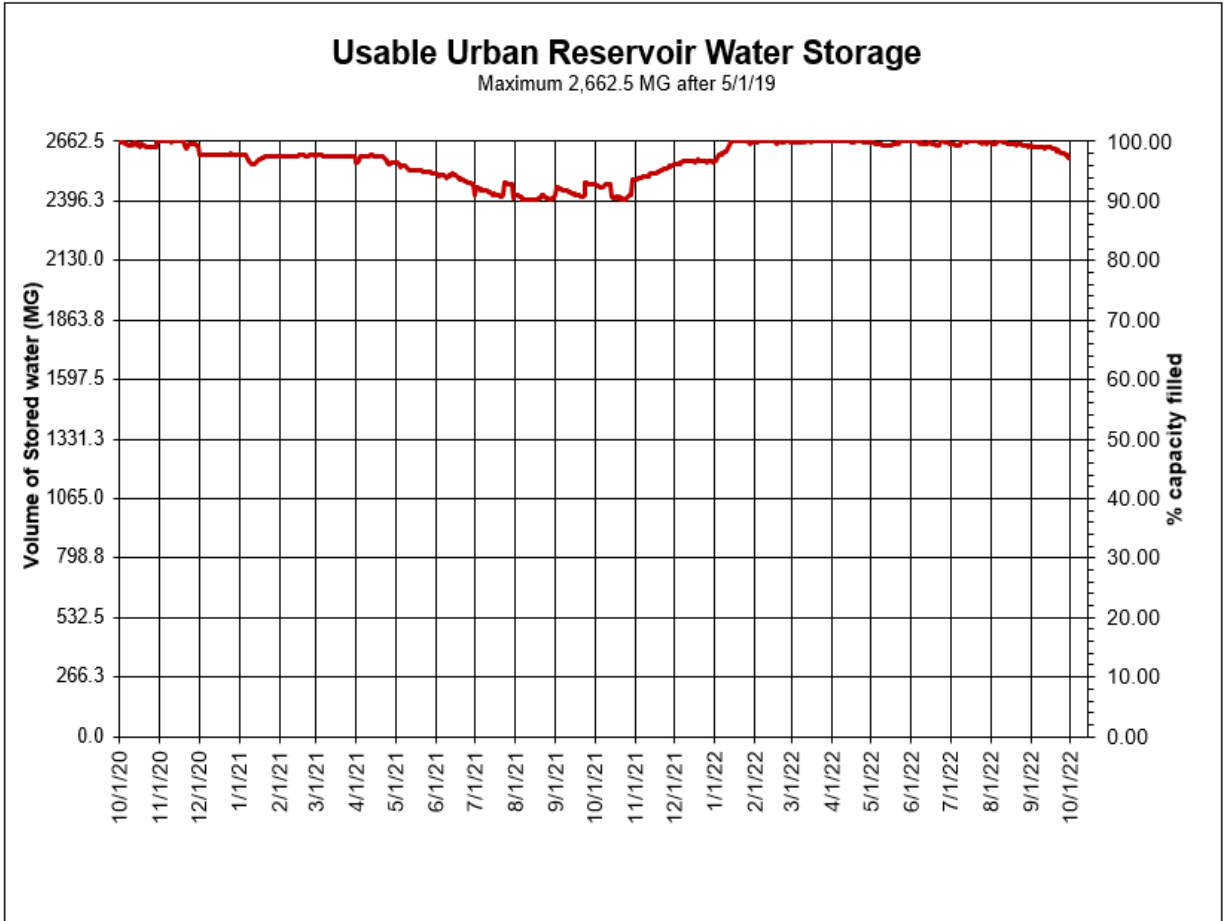
<i>State Annual Allocation (lb./yr.) Permit</i>		<i>Average Monthly Allocation (lb./mo.) *</i>	<i>Moore's Creek Discharge September (lb./mo.)</i>	<i>Performance as % of monthly average Allocation*</i>	<i>Year to Date Performance as % of annual allocation</i>
Nitrogen	282,994	23,583	6,542	28%	24%
Phosphorous	18,525	1,544	652	42%	37%

*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: STATUS REPORT: ONGOING PROJECTS

DATE: OCTOBER 25, 2022

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

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

Under Construction

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

Design and Bidding

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

Planning and Studies

16. South Rivanna Reservoir to Ragged Mtn Reservoir Water Line Right-of-Way
17. Asset Management Plan
18. SRR to RMR Pipeline – Pretreatment Pilot Study

19. Moores Creek Cogeneration Upgrades

Other Significant Projects

20. Urgent and Emergency Repairs

21. Security Enhancements

Under Construction

1. **South Rivanna and Observatory Water Treatment Plant Renovations**

Design Engineer:	Short Elliot Hendrickson, Inc. (SEH)
Construction Contractor:	English Construction Company (Lynchburg, VA)
Construction Start:	May 2020
Percent Complete:	70%
Base Construction Contract + Change Orders to Date = Current Value:	\$36,748,500 + \$718,669 = \$37,467,169
Completion:	May 2023
Budget:	\$43,000,000

Current Status: Improvements to the new Lab/Control Room in the Filter Building at SRWTP have been completed and lead abatement activities in the Filter Building began this month. Work at the OBWTP includes the new Chemical Storage Building, sedimentation basin improvements, foundation work for the GAC expansion, a large retaining wall and installation of a sludge control vault. Shutdown of the OBWTP is planned for December – February 2023.

2. **Airport Road Water Pump Station and Piping**

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Anderson Construction, Inc. (ACI) (Lynchburg, VA)
Construction Start:	December 2021
Percent Complete:	20%
Base Construction Contract + Change Order to Date = Current Value:	\$8,520,312
Completion:	December 2023
Budget:	\$10,000,000

Current Status: The contractor has completed trench paving and cleanup at the Kohl's site and has demobilized from this area of the project for the winter since our easement does not allow work during their corporate "holiday blackout period" from October 15th - January 15th. Final water line interconnections, testing, and site restoration at Kohl's will resume next year. Excavation for the base slab at the pump station site is complete and the contractor will begin rebar and concrete work once the building permit is approved.

3. **MC 5kV Electrical System Upgrades**

Design Engineer:	Hazen and Sawyer (Hazen)
Construction Contractor:	Pyramid Electrical Contractors (Richmond, VA)

Construction Start:	May 2022
Percent Complete:	7%
Base Construction Contract +	
Change Order to Date = Current Value:	\$5,180,000 - \$970,000 = \$4,210,000
Completion:	June 2024
Budget:	\$5,050,000

Current Status: The Contractor is mobilizing to the site this month and has installed erosion and sedimentation control measures where general site disturbance will take place. Ductbank and equipment pad work will likely begin in November, following the Contractor's acquisition of applicable County building and electrical permits.

Design and Bidding

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

Design Engineer:	Michael Baker International (Baker) (Right of Way)
Design Engineer:	Kimley-Horn (Design)
Project Start:	August 2018
Project Status:	Easement Acquisition & Design (30%)
Construction Start:	2025
Completion:	2028
Budget:	\$44,000,000

Current Status: Preparation of engineering plans and specifications continues. Easement negotiations with UVA and the UVA Foundation continue. Staff is coordinating with VDOT on Rt. 29 Bypass and Fontaine Avenue crossing locations, and the Consultant has started design for the pump station.

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

Design Engineer:	Kimley-Horn
Project Start:	June 2021
Project Status:	90% Design
Construction Start:	January 2023
Completion:	December 2023
Budget:	\$4,000,000

Current Status: Engineering plans and specifications are substantially complete for a 0.25-mile section of this 36" raw water pipe from Birdwood to Old Garth Road. One remaining easement is under negotiation with the UVA Foundation for this phase of the project.

6. Beaver Creek Dam, Pump Station and Piping Improvements

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

Construction Start:	2024
Completion:	2027
Budget:	\$43,000,000

Current Status: A Joint Permit Application and supporting documents were submitted to VDEQ last month and the review process has begun. Remaining NRCS requirements, including review and approval of the planning study, are scheduled for completion this winter. The revised Plan Environmental Assessment was submitted to the NRCS on August 15, 2022 and we are preparing for the public comment period. An NRCS construction grant will be requested for this project.

7. South Rivanna River Crossing

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2020
Project Status:	55% Design
Construction Start:	Spring 2023
Completion:	April 2024
Budget:	\$7,000,000

Current Status: Geotechnical investigation to determine rock depths for the trenchless crossing of the river has been completed. Easement acquisition will include County of Albemarle property in Brook Hill River Park along Rio Mills Road.

8. Central Water Line

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2021
Project Status:	10% Design
Construction Start:	2024
Completion:	2028
Budget:	\$41,000,000

Current Status: Detailed field investigation and design are underway.

9. Upper Schenks Branch Interceptor, Phase II

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

Current Status: RWSA has prepared project, easement and valuation information for the County's review.

10. Red Hill Water Treatment Plant Upgrades

Design Engineer:	Short Elliot Hendrickson (SEH)
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Project Start:	July 2022
Project Status:	60% Design
Construction Start:	April 2023
Completion:	December 2023
Budget:	\$450,000

Current Status: Design work continues following completion of the geotechnical evaluation. This project was selected by Albemarle County to receive ARPA grant funding.

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 – In Construction Emmet Streetscape – Preliminary Design Hydraulic/29 – Preliminary Scoping
Completion:	2030
Budget:	\$2,900,000

Current Status: Upgrading a section of 16” water main in Emmet Street to 30” as part of the UVA Ivy Corridor Public Realm project is complete. Upgrading a section of 16” water main adjacent to the Dell Pond to 30” as part of the UVA Contemplative Commons project started on September 6, 2022 and is expected to be completed during the week of October 17th. WRA and RWSA are developing a scope of work for design of a 24-30” water main in Emmet Street as part of the City’s Emmet Streetscape Phase I project. RWSA has initiated discussion with VDOT on potential pipe routing in the upcoming design-build Hydraulic/29 project.

12. Scottsville WRRF Whole Plant Generator and ATS

Design Engineer:	Wiley Wilson
Project Start:	December 2021
Project Status:	40% Design
Completion:	Summer 2023
Budget:	\$200,000

Current Status: The current back-up power generator at the Scottsville WRRF has reached the end of its service life, does not power the entire plant, and needs to be replaced. The generator at the treatment plant site will also be sized to provide backup power for the nearby wastewater influent pump station.

13. Crozet Pump Station Rehabilitation

Design Engineer:	Wiley Wilson
Project Start:	Fall 2022
Project Status:	Pre-Design Investigation
Completion:	2025
Budget:	\$590,000

Current Status: New wells have been installed at pump stations 3 and 4. Consultant is developing a scope of work to fully rehabilitate and replace components that have reached their useful life. This design effort will be initiated following an assessment of the existing pumps at Crozet Pump Station No. 2 which will occur this Fall.

14. Moores Creek Concrete Repairs

Design Engineer:	Hazen and Sawyer (Hazen)
Project Start:	November 2022
Project Status:	Design
Completion:	Winter 2024
Budget:	\$2,650,000

Current Status: Design is underway and will include additional structural improvements at the aeration basins and the Rivanna Wastewater Pump Station.

15. Moores Creek Compost Shed Roof Rehabilitation

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

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

Planning and Studies

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

Design Engineer:	Michael Baker International (Baker)
Project Start:	October 2017
Project Status:	Easement Acquisition
Completion:	2022
Budget:	\$2,295,000

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

17. Asset Management Plan

Design Engineer:	GHD, Inc.
Project Start:	July 2018
Project Status:	CMMS Implementation – 95% Complete AMP Implementation – 0% Complete
Completion:	CMMS Implementation – October 2022

Budget: AMP Implementation – 2024
\$1,180,000

Current Status: For implementation of the new Computerized Maintenance Management System (CMMS), GHD has completed updates to our facility geodatabase and is continuing the software configuration process. A recent software update has complicated the process and GHD and RWSA staff are working with Cityworks to resolve. Work has begun to fully implement the program across all applicable Authority facilities.

18. SRR to RMR Pipeline – Pretreatment Pilot Study

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

Current Status: Final efforts by the consultant are underway to better clarify operations of the raw water transfer system and associated reservoir levels during drought conditions.

19. Moore's Creek Cogeneration Upgrades

Design Engineer: SEH
Project Start: October 2021
Project Status: Preliminary Engineering/Study (95%)
Completion: June 2024
Budget: \$2,145,000

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

Other Significant Projects

20. Urgent and Emergency Repairs

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

Project No.	Project Description	Approx. Cost
2021-01/2022-03	WBI and RVI Erosion	\$50,000
2022-09	CZI Force Main ARV Replacements	\$200,000
2022-02/05/12	Miscellaneous MCI/PCI/RVI MH Repairs	\$70,000
2022-10	MCAWRRF Primary Clarifier Building 36" Sanitary Sewer Leak	\$5,000
2022-13	SRW-ARV-09 Failure	\$75,000

- WBI and RVI Erosion: In February 2022, RWSA Maintenance staff notified Engineering staff of some ditch lines along the Rivanna Interceptor that are in need of repair. In addition, during the previous round of manhole inspections on the Woodbrook Interceptor, there was one small ditch identified to be in need of repairs there as well. Staff visited these sites in August and will be issuing the work to its On-Call Maintenance Contractors for repairs. The scope of work is likely to include installation of erosion control at the ditch crossings over the various sewer lines.
- CZI Force Main ARV Replacements: Over the past several years, staff have been monitoring the condition of the air release valves (ARVs) up and down the force main portions of the Crozet Interceptor, as they have been continuing to degrade. These valves are 1980s-vintage, and while they have been serviced and partially rebuilt over the years by the RWSA Maintenance Department, replacement of the tapping saddle and corporation stop has not been possible, since shutdown of the force main is required. Historically, it has taken several hours to drain the force main to allow for the work to take place, and by the time that has occurred, the upstream pump stations need to turn on to prevent overflow. Now with the Flow Equalization Tank nearing completion, this work can take place with the force main offline for up to a 24-hr period. Staff is waiting for the required materials to arrive, as well as a Construction Estimate from RWSA's On-Call Maintenance Contractor, Faulconer Construction, and is coordinating with VDOT on necessary permitting requirements. The work is anticipated to start in November, pending crew availability, completion of permitting, and arrival of the required materials.
- 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 work will likely be completed in the fall, pending crew availability.
- MCAWRRF Primary Clarifier Building 36" Sanitary Sewer Leak: On July 7th, RWSA Engineering Staff was made aware of a small leak through the wall in the basement of the Primary Clarifier Building at MCAWRRF. An inspection was performed by Hazen & Sawyer on August 3rd, and a report with repair recommendations has been prepared. The repairs will include specialty grouting work to plug the voids discovered in the field in order to stop the leak, as well as possible installation of a coating system for further protection of the concrete. During the week of September 26th, RWSA Maintenance staff performed the required grouting work on the inside of the splitter box to stop the leak. Some further grouting work on the building side of the wall will be completed to ensure that the repair holds long-term, and then a coating system will be applied inside of the splitter box in the affected areas during the MCAWRRF Concrete Repairs Project discussed above.
- SRW-ARV-09 Failure: Around 2:30 AM on Wednesday, September 28th, a line break was reported along Route 29, near the intersection with Seminole Court, just across from the Northrup Grumman Building. Staff quickly responded to the site and found that the issue resulted from a failure of a 1960s-vintage manual air release valve (ARV), SRW-ARV-09. Upon reviewing the relevant site conditions (depth, traffic, etc.), the decision was made to utilize RWSA's On-Call Contractor, Digs, for this repair. An emergency water main shutdown was coordinated with ACSA and the City, and once Digs had mobilized, the 18" South Rivanna Waterline (SRW) was shut

down to allow for the ARV to be abandoned, as it is no longer utilized. The main was shut down around 12:00 PM, and repairs were completed around 5:00 PM. The water main was placed fully back into service by 6:30 PM. Site restoration efforts continued into the evening hours, and Route 29 was fully reopened to traffic by 10:00 PM.

21. Security Enhancements

Design Engineer:	N/A
Construction Contractor:	Security 101 (Richmond, VA)
Construction Start:	March 2020
Percent Complete:	50% (WA5), 0% (WA6)
Based Construction Contract + Change Orders to Date = Current Value:	\$718,428 (WA1) + \$91,130 (WA2) + \$128,166 (WA3) + \$189,698 (WA4) + \$76,920 (WA5) + \$120,994 (WA6) + \$4,853 (WA7) = \$1,330,192 (Total)
Completion:	October 2022 (WA5), May 2023 (WA6)
Budget:	\$2,810,000

Current Status: WA5, which authorizes card access installation at Glenmore Water Resource Recovery Facility (GWRRF), Scottsville Water Resource Recovery Facility (SVWRRF), and Red Hill Water Treatment Plant (RHWTP), began during the week of June 20th. Conduit and cable pulling is complete at all facilities covered in the WA, and the only work that remains is wiring and programming by Security 101, likely to be completed this Fall. WA6 will include card access installation at RWSA's remote sites, including all dams and pump stations. This work was authorized in early August, with completion scheduled for May 2023. WA7, which includes a pilot of a program that will test electronic padlocks at several RWSA facilities, has been authorized. 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.

History

Under Construction

1. South Rivanna and Observatory Water Treatment Plant Renovations

An informational meeting with prospective contractors was held on September 26, 2019 to maximize interest in the project. A project kickoff meeting with staff was held on November 14, 2018 and 30% design documents were provided in February. A Value Engineering Workshop took place the week of April 8, 2019, and a memo summarizing the results has been completed. Agreed upon results were incorporated into the project. The project was advertised, and bids were received. English Construction was awarded the contract and a Notice to Proceed was issued on May 18, 2020. Coordination with UVA and Dominion on a new electrical easement at the plant has been completed and documents are being finalized.

Observatory: This project will upgrade the plant from 7.7 to 10 MGD capacity. Costs to upgrade the plant to 12 MGD were determined to be too high at this time. Much of the Observatory Water Treatment Plant is original to the 1953 construction. A Condition Assessment Report was completed by SEH in October of 2013. The approved Capital Improvement Plan project was based on the findings from this report. The flocculator systems were replaced and upgraded as part of the Drinking

Water Activated Carbon and WTP Improvements project (GAC). Four additional GAC contactors will be included in the design.

South Rivanna: The work herein includes expansion of the coagulant storage facilities; installation of additional filters to meet firm capacity needs; the addition of a second variable frequency drive at the Raw Water Pump Station; the relocation for the electrical gear from a sub terrain location at the Sludge Pumping Station; a new building on site for additional office, lab, control room and storage space; improvements to storm sewers to accept allowable WTP discharges; of new metal building to cover the existing liquid lime feed piping and tanks. The scope of this project will not increase the 12 MGD plant treatment capacity.

2. Airport Road Water Pump Station and Piping

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

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

3. MC 5 kV Electrical System Upgrades

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

A Design Kickoff Meeting was held virtually on October 20, 2020. A site visit was attended on November 5, 2020 by Hazen & Sawyer staff, as well as RWSA Maintenance and Engineering

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

A Request for Bids (RFB) was issued on December 22, 2021, and bids were submitted on February 3, 2022. A Construction Contract Award for Pyramid Electrical Contractors was approved by the RWSA Board of Directors on February 22, 2022, and a Notice of Award (NOA) was provided to Pyramid on March 4, 2022. Notice to Proceed (NTP) was issued on May 17, 2022.

4. Scottsville WTP Lagoon Liners Replacement

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

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

Design and Bidding

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

A Work Authorization was executed in December 2018 with Michael Baker International for the raw water line routing study, preliminary design, plat creation and the easement acquisition process for this portion of the project. Raw water is transferred from the Ragged Mountain Reservoir (RMR) to the Observatory Water Treatment Plant (WTP) by way of two 18-inch cast iron pipelines, which have been in service for more than 110 and 70 years, respectively. The increased frequency of emergency repairs and expanded maintenance requirements are one impetus for replacing these pipelines. The proposed water line will be able to reliably transfer water to the expanded Observatory plant. The new pipeline will be constructed of 36-inch ductile iron and will be approximately 2.6 miles feet in length. The segment of the project immediately east of the RMR will constitute a portion of the proposed South Rivanna Reservoir to RMR raw water main project as part of the approved 50-year Community Water Supply Plan.

The RMR to Observatory WTP raw water pump station is planned to replace the existing Stadium Road and Royal pump stations, which have exceeded their design lives or will require significant upgrades with the Observatory WTP expansion. The pump station will pump up to 10 million gallons

per day (MGD) of raw water to the Observatory WTP. The new pump station site selection and design are being conducted in coordination with the South Rivanna Reservoir to RMR pipeline in the interest of improved operational and cost efficiencies. An integrated pump station would also include the capacity to transfer up to 16 MGD of raw water from RMR back to the SR WTP.

Both Design Work Authorizations received Board of Directors approval on July 27, 2021. A kickoff meeting was held on September 17, 2021, and a meeting to begin establishing boundary conditions for the RMR Pump Station was held on October 25, 2021. An internal RMR Pump Station Operations workshop was held on February 23, 2022 to set the boundary conditions for the facility, and this information was provided promptly to the Design Consultant to allow design efforts to continue progressing.

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

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

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

Dam: A spillway upgrade alternative for the dam has been selected and was presented in a public meeting on October 6, 2021. A new raw water pump station site and pipe access route were selected and approved by the Board in August 2021. RWSA operates the Beaver Creek Dam and reservoir as the sole raw water supply for the Crozet Area. In 2011, an analysis of the Dam Breach inundation areas and changes to Virginia Department of Conservation and Recreation (DCR) *Impounding Structures Regulations* prompted a change in hazard classification of the dam from Significant to High Hazard. This change in hazard classification requires that the capacity of the spillway be increased. This CIP project includes investigation, preliminary design, public outreach, permitting, easement acquisition, final design, and construction of the anticipated modifications. Work for this project will be coordinated with the new relocated raw water pump station and intake and a reservoir oxygenation system project.

Schnabel Engineering developed three alternatives for upgrading the capacity of the Beaver Creek Dam Spillway in 2012. Following the adoption of a new Probable Maximum Precipitation (PMP) Study on December 9, 2015 and the release of DCR guidelines for implementing the PMP study in March of 2016, RWSA determined it would proceed with an updated alternatives analysis and Preliminary Engineering Report for upgrading the dam spillway. Following the completion of an updated alternatives analysis by Schnabel Engineering, staff met with members of Albemarle County and ACSA staff to discuss the preferred alternative. It was determined that staff would proceed with design of a labyrinth spillway and chute through the existing dam with a bridge to allow Browns Gap Turnpike to cross over the new spillway.

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

Pump Station: The Drinking Water Infrastructure Plan for the Crozet water service area, developed by Hazen and Sawyer, recommends installation of a new Raw Water Pump Station and Intake at the

Beaver Creek Dam in order to meet new minimum instream flow requirements and provide adequate raw water pumping capacity to serve the growing Crozet community for the next 50 years. The pump station will be moved out of its existing location at the toe of the dam to a new location, to be determined during design. The new intake structure will include enhanced controls to allow for access to the best quality water at any given time.

8. South Rivanna River Crossing

RWSA has previously identified through master planning that a 24-inch water main will be needed from the South Rivanna Water Treatment Plant (SRWTP) to Hollymead Town Center to meet future water demands. Two segments of this water main were constructed as part of the VDOT Rt. 29 Solutions projects, including approximately 10,000 LF of 24-inch water main along Rt. 29 and 600 LF of 24-inch water main along the new Berkmar Drive Extension, behind the Kohl's department store. To complete the connection between the SRWTP and the new 24-inch water main in Rt. 29, there is a need to construct a new river crossing at the South Fork Rivanna River. Acquisition of right-of-way will be required at the river crossing.

9. Central Water Line

Route alignment determination, hydraulic modeling, and preliminary design were underway in 2017. Due to the complicated nature of our finished water systems, it was decided at the August 2018 Board meeting that a more comprehensive approach was warranted, and we should complete the Finished Water Master Plan prior to moving forward with final design and construction of the Central Water Line (formerly referred to as the Avon to Pantops Water Main). The focus of this project was on the southern half of the urban area water system which is currently served predominantly by the Avon Street and Pantops water storage tanks. The Avon Street tank is hydraulically well connected to the Observatory Water Treatment Plant, while the Pantops tank is well connected to the South Rivanna Water Treatment Plant. The hydraulic connectivity between the two tanks, however, is less than desired, creating operational challenges and reduced system flexibility. In 1987, the City and ACSA developed the Southern Loop Agreement which laid out two key phases (with the first being built at the time). The 1987 Agreement and planning efforts were a starting point for this current project. An engineering contract was approved by the Board of Directors in July 2017. Recent efforts and modeling for the Urban Finished Water Infrastructure Master Plan have determined that a central water line corridor through the City is the best option to hydraulically connect the Observatory Water Treatment Plant to the Pantops area, with connections to City water lines to support the water distribution system in the City and County. The RWSA Board approved the Southern (Cherry Ave) Route in June 2022.

10. Upper Schenks Branch Interceptor, Phase II

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

The remaining sections, which are considered the Upper Schenks Branch Interceptor, were split into

2 phases. The first phase has been completed and is located within City-owned Schenks Greenway adjacent to McIntire Road, and the second phase is being evaluated to determine whether it will be installed in an easement on County property (baseball field and County Office Building) adjacent to McIntire Road or in McIntire Road itself.

12. Red Hill Water Treatment Plant – Upgrades

The Red Hill WTP was constructed in a joint effort of ACSA and RWSA in 2009 and consists of a well, a pneumatic tank and pump house that provides treated water to the Red Hill Elementary School and adjoining neighborhood. The project was constructed in response to groundwater contamination as a result of a nearby leak of underground fuel storage tanks. Originally the facility was operated primarily as a well head and pump house. More recently the facility has operated more as a water treatment facility with a well as source water. As such, there have been several chemical process additions, automation, online monitoring and an increase in operator wet chemistry testing. The current building is well beyond its physical capacity and this project will serve to expand the building and improve the configuration of the process and laboratory needs of the WTP.

13. Emmet Street Water Line Betterment

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

14. Crozet Pump Station Rehabilitation

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

15. Moores Creek AWRRF Concrete Repairs

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

16. Moores Creek AWRRF Compost Shed Roof Rehabilitation

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

17. Scottsville WRRF Whole Plant Generator and ATS

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

Planning and Studies

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

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

Baker has completed the routing study. Preliminary design, plat creation and the acquisition of easements are underway. Property owners were contacted to request permission to access properties for topographical surveying. A community information meeting was held in June 2018.

19. Asset Management Plan

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

20. SRR to RMR Pipeline – Pretreatment Pilot Study

As part of the SRR to RMR Pipeline project, the impact of sending raw water from the SRR to RMR has been previously studied and a significant amount of pretreatment was initially identified as being needed to avoid reducing the quality of the raw water contained within the RMR. With the pipeline easement

acquisition process well underway and additional information now available associated with the proposed timing of this overall project based on water demand projections, the intent of this project is to update the pretreatment needs anticipated.

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

21. MCAWRRF Cogeneration Upgrades

The MCAWRRF has an existing cogeneration facility that was constructed in 2011. The purpose of the facility was to provide a beneficial use of the methane gas produced by the digester process at the plant, and in doing so, provide both digester heating and energy to the plant's electrical distribution system. Unfortunately, the existing cogeneration facility requires expensive recurring maintenance services, has proprietary equipment which further complicates servicing needs, and has had a number of operational issues that have impeded the benefit this facility was intended to provide. As a result, a Cogeneration System Analysis was performed to determine a recommended approach for proceeding with improvements to the existing facility, installation of a new cogeneration facility without the issues of the previous facility or removing the cogeneration facility altogether and providing a backup boiler. This project includes costs for installation of a new cogeneration facility as described in the Cogeneration System Analysis.

Other Significant Projects

22. Urgent and Emergency Repairs

- **South Rivanna Dam Apron and Riverbank Repairs**

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

- **Urban Water Line Valve and Blow-off Repair**

During its routine inspections of the Water System, the Maintenance Department discovered a blowoff (drain) valve along the Urban Waterline (UWL-017) that had significant leakage. In addition, during one of the numerous heavy rain events received in 2018, the water in the creek adjacent to the drain line rose, eroding the area around the drain line and causing the headwall to become disconnected from the end of the pipe. Staff will be coordinating internally to confirm the overall scope of the project, including whether the drain line will need to be further reinforced or restrained.

23. Security Enhancements

As required by the Federal Bioterrorism Act of 2002 and the American Water Infrastructure Act of 2018, water utilities must conduct Vulnerability Assessments and have Emergency Response Plans. RWSA recently completed an updated Risk Assessment of its water system in collaboration with the Albemarle County Service Authority (ACSA), City of Charlottesville (City), and University of Virginia (UVA). A number of security improvements that could be applied to both the water and wastewater systems were identified. The purpose of this project will be to install security improvements at RWSA facilities including additional security gate and fencing components, vehicle bollards, facility signage, camera system enhancements, additional security lighting, intrusion detection systems, door and window hardening, installation of industrial strength locks, communication technology and cable hardening, and an enhanced access control program.

RWSA Engineering staff held a meeting with Operations staff to discuss overall project needs and priorities in October 2018. Meetings with ACSA and City staff were held in Fall/Winter 2018-2019 to discuss how access control and intrusion detection systems have been implemented into the day-to-day operations of the two utilities. A Request for Proposal (RFP) for an Implementer to facilitate selection of an access control system, confirmation of design requirements based upon RWSA's facilities and project goals, and installation of the selected system was issued on June 6, 2019. RWSA conducted a Pre-Proposal Meeting on June 14, 2019, and proposals were opened on June 27, 2019. Interviews were conducted on July 15-16, 2019, and a Contract Award Recommendation was approved by the Board on July 23, 2019. Access Control System Installation at MCAWRRF began in March 2020. Access Control System Installation was completed in the Administration and Engineering Buildings by the week of November 30, 2020, completing installation of the physical access control system across the MCAWRRF site. Training for staff was completed on November 10, 2020. RWSA authorized improvements to locks and doors across the MCAWRRF site on May 4, 2021, in order to improve the condition of the hardware and subsequently, operations of the access control system. In addition, installation of the card access system on all exterior doors at the Scottsville and Crozet Water Treatment Plants (SVWTP and CZWTP, respectively) was authorized shortly thereafter. RWSA also authorized installation of security conduits not already included at SRWTP and OBWTP under the Improvements Project in August 2021.

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

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 2022

DATE: OCTOBER 25, 2022

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

	<i>Month</i>	<i>Daily Average</i>	
City Usage (gal)	157,379,952	5,245,998	50.3%
ACSA Usage (gal)	155,265,927	5,175,531	49.7%
Total (gal)	312,645,879	10,421,529	

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

Note:

- Staff detected a read issue with Meter Site 24 – Greenbrier Terrace in late July. The meter issue has been resolved.
- Staff detected a read issue with Meter Site 15 – Ivy Road at Colonnade Drive in March. The meter issue has been resolved as of August 15, 2022.

- Staff detected a read issue with Meter Site 32 – Fontaine Ave in July and has determined that the meter needs to be repaired. Maintenance received parts and has repaired the meter as of September 7th 2022. As a result of data not being available for September, an average of the last 3 months' worth of data was used to calculate the percentages above.

Figure 1: City of Charlottesville Monthly Water Usage and Allocation

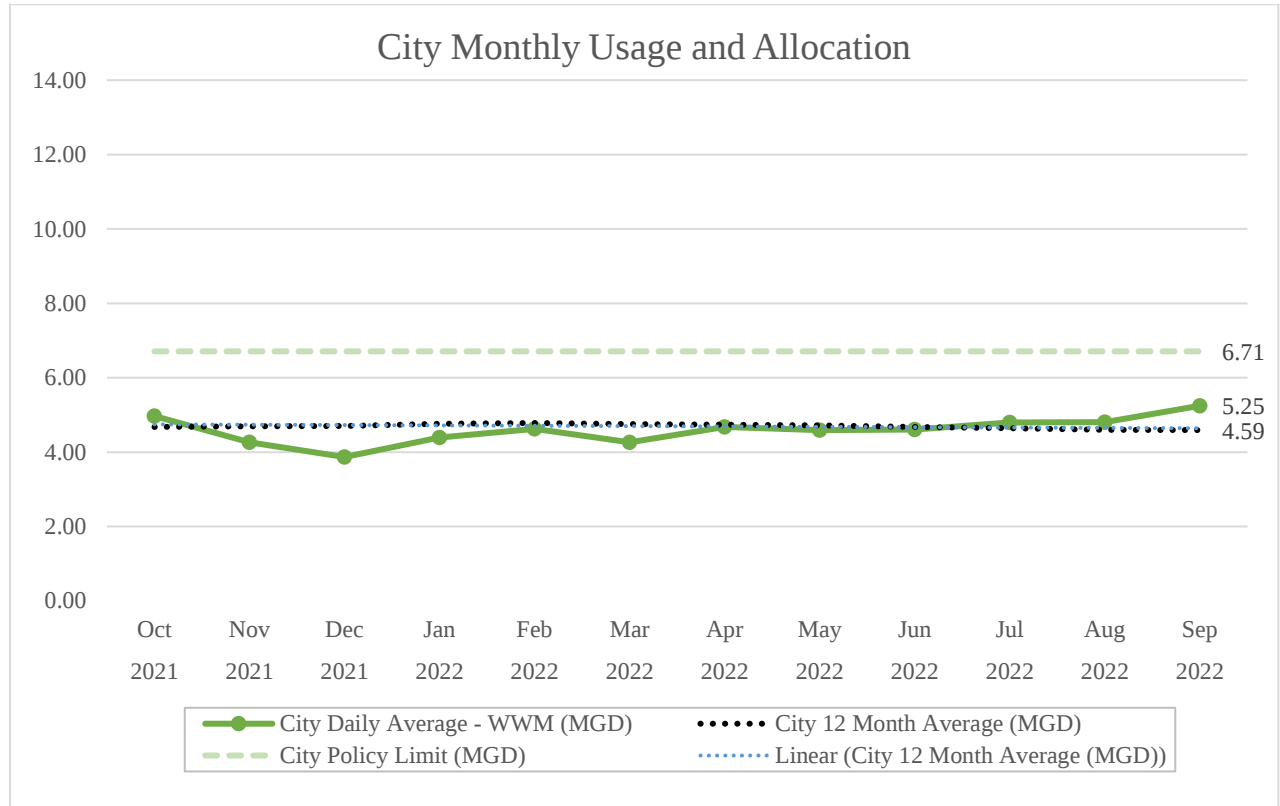
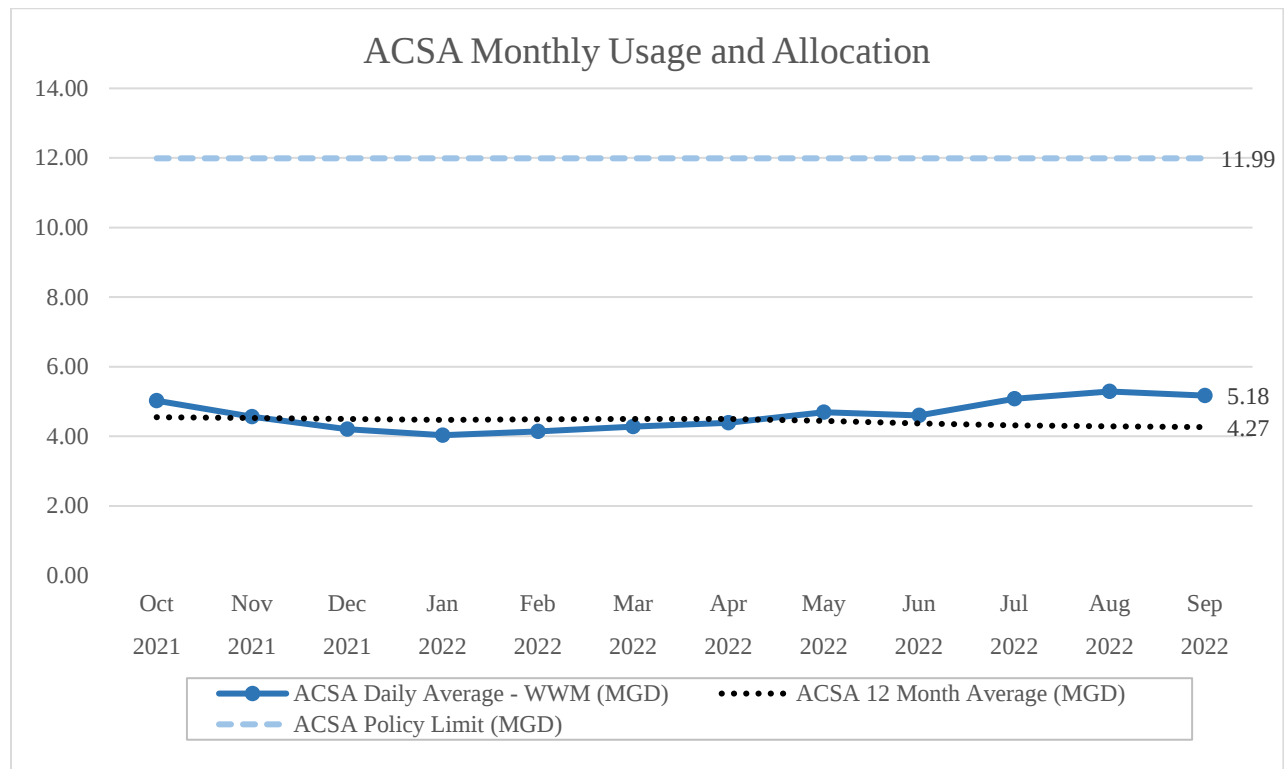
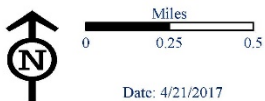
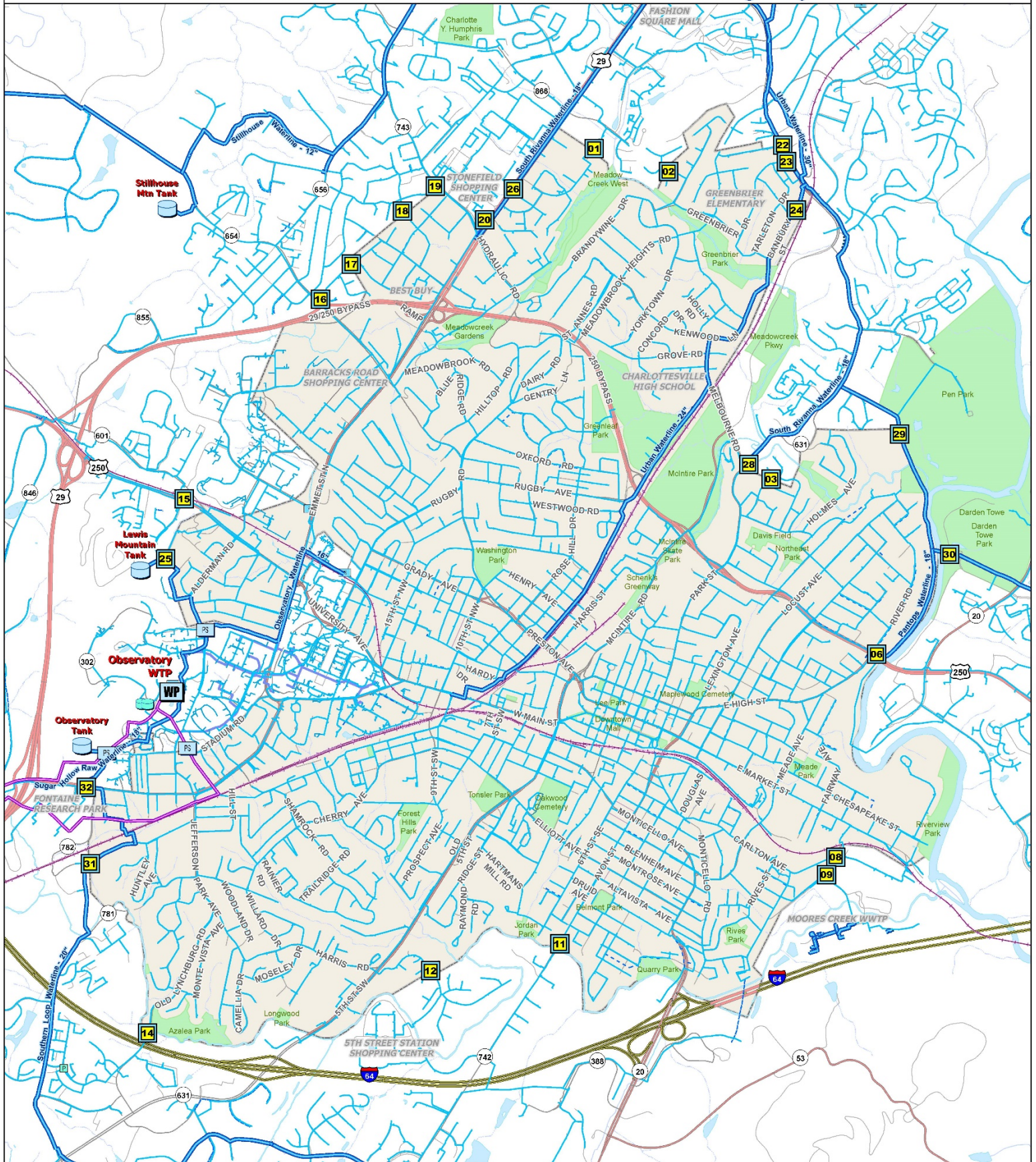


Figure 2: Albemarle County Service Authority Monthly Water Usage and Allocation



Meter Locations for the Wholesale Water Metering Project



Date: 4/21/2017



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

Meter Site Locations - WWMP

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

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

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

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

- 30, Darden Towle Park
- 31, Stribling Ave
- 32, Fontaine Ave



MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY
BOARD OF DIRECTORS

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

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: AUTHORIZATION TO INCREASE ENGINEERING SERVICES
CONTRACT – BIRDWOOD TO OLD GARTH RAW WATER LINE
PROJECT – KIMLEY-HORN AND ASSOCIATES, INC.

DATE: OCTOBER 25, 2022

This request is to authorize an increase in the Work Authorization from \$199,900 to a not-to-exceed amount of \$230,000 for our design engineer to complete additional subsurface geotechnical investigations. Our procurement policies require Board approval of consultant contracts and Work Authorizations which exceed \$200,000.

Background

On February 23, 2021, the Board of Directors approved a professional engineering services term agreement with Kimley-Horn and Associates, Inc. (Kimley-Horn). In June 2021, RWSA executed a work authorization for \$186,182 with Kimley-Horn for design, bidding, and construction administration services associated with the South Rivanna Reservoir to Ragged Mountain Reservoir (SRR to RMR) Raw Water Line from Birdwood Golf Course to Old Garth Road. Subsequently, one amendment to the work authorization has been issued which brought the total authorization to \$199,000. To finalize our CSX railroad permit application, additional soil borings are needed as we plan to install the water line in a casing pipe beneath the railroad track.

Board Action Requested:

Authorize an increase in engineering services to \$230,000 for the SRR to RMR Raw Water Line - Birdwood Golf Course to Old Garth Road project and a 15% contingency above the revised Work Authorization amount.



MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY
BOARD OF DIRECTORS

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

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: AUTHORIZATION FOR AN AMENDMENT OF PROFESSIONAL
SERVICES – IMPLEMENTATION OF COMPUTERIZED
MAINTENANCE MANAGEMENT SYSTEM, GHD, INC.

DATE: OCTOBER 25, 2022

This request is to authorize an increase totaling \$57,363 to the Work Authorization for additional upgrades to several existing software systems, as well as for identification of additional existing assets, to complete implementation of the Cityworks asset management software. The additional cost is within the total CIP budget.

Background

Asset management is the practice of managing our infrastructure to minimize the total cost of owning and operating assets while providing desired levels of service. The system is used to ensure planned maintenance activities take place and capital assets are replaced, repaired, or upgraded at the appropriate time. RWSA has some components of an asset management program in place (i.e. GIS, existing work order system), but has identified the need to further develop the program as part of our Strategic Plan. To continue to build the program, GHD, Inc. was procured to assist with a four-phase process that included development of an asset management strategic plan, development and management of a pilot study, implementation of a computerized maintenance management system (CMMS), and assistance with full implementation of the asset management program throughout the Authority.

As identified during development of the Strategic Asset Management Plan, and anticipated during the procurement of GHD, Inc.'s services, incorporation of a complete and fully utilized CMMS is an essential framework element for the successful implementation of the full asset management program. While RWSA currently utilizes a computerized work order system (Antero), it had several shortcomings that did not meet the needs of the asset management program. Through a competitive solicitation process and product demonstrations, "Cityworks" was selected as the Authority's CMMS in September 2020. The Board approved Work Authorization #4 in November 2020 for a total of \$345,000 to have GHD implement the Cityworks software.

The scope of the original work authorization included implementation planning, process mapping, data migration, software installation, configuration planning, system configuration and integration, system testing, training, deployment, and support. However, unanticipated upgrades to several systems integral to this project, identification of additional assets, and the standardization of naming conventions throughout the Authority have led to increased efforts for GHD, Inc.

Board Action Requested:

Authorize the Executive Director to execute Amendment #1 to Work Authorization #4 with GHD, Inc. for Computerized Maintenance Management System Implementation Services, for an additional amount of \$57,363 to complete implementation of the software. The additional cost is within the total CIP budget.



Water Quality Monitoring and Restoration Efforts

Presentation to the
Rivanna Water & Sewer
Board of Directors

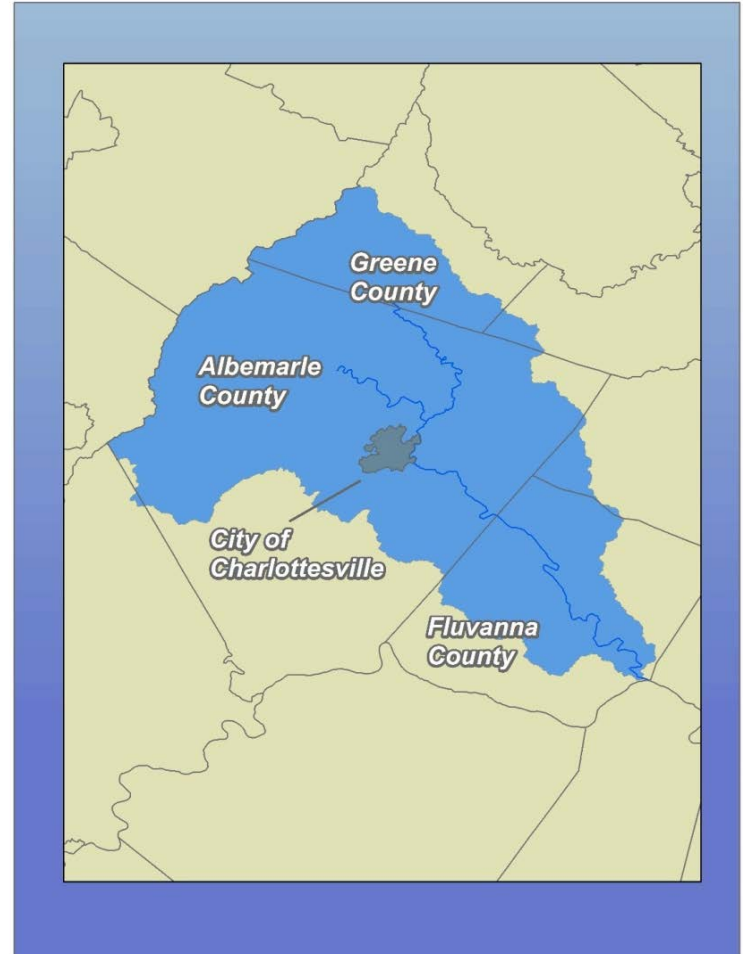
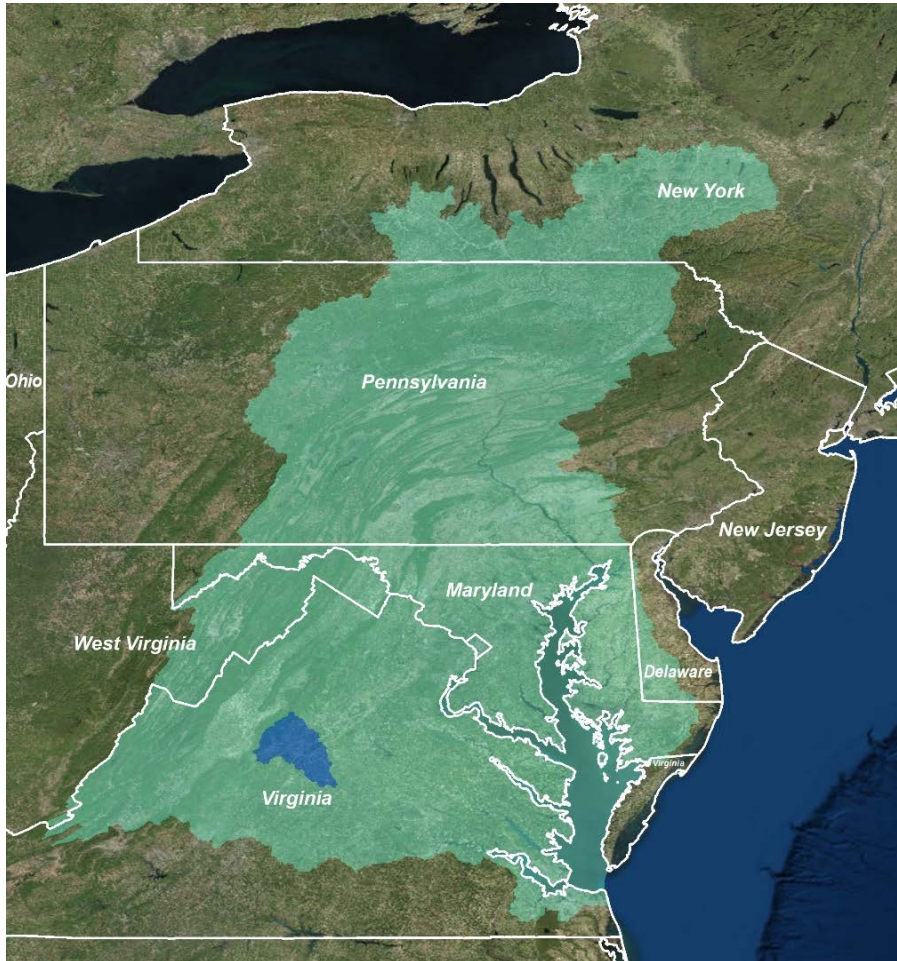
October 25, 2022



RCA Background

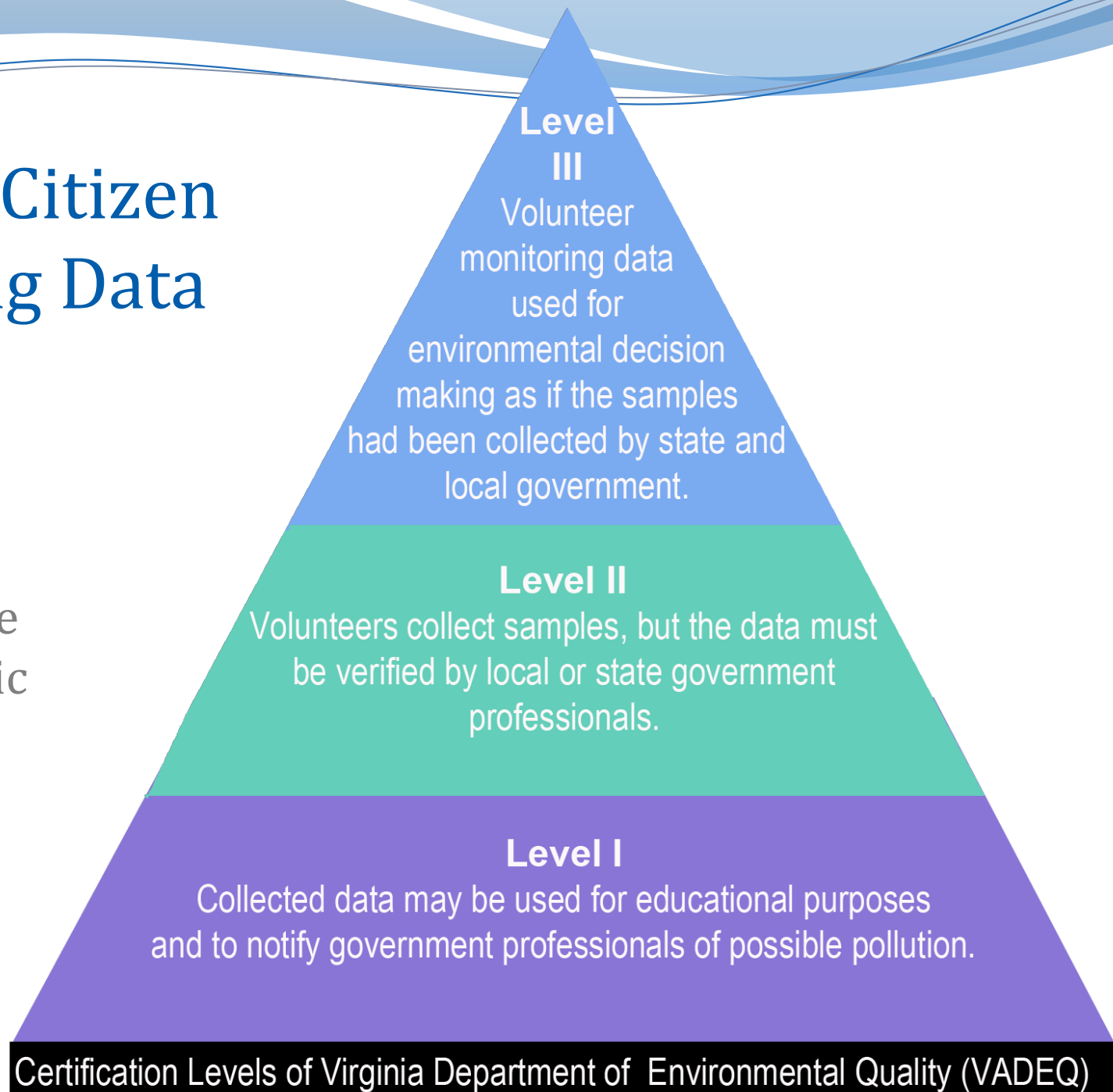
- RCA formed in 2016 by merger of Rivanna Conservation Society (RCS) and StreamWatch
- **Vision**: We envision a healthy Rivanna River and watershed that benefits an engaged community
- **Mission**: Working with the community to conserve the Rivanna River and its tributaries through monitoring, restoration, education, and advocacy

Rivanna River Watershed



VA DEQ's Citizen Monitoring Data Levels

RCA is only nonprofit in Virginia to have Level III benthic and bacteria programs

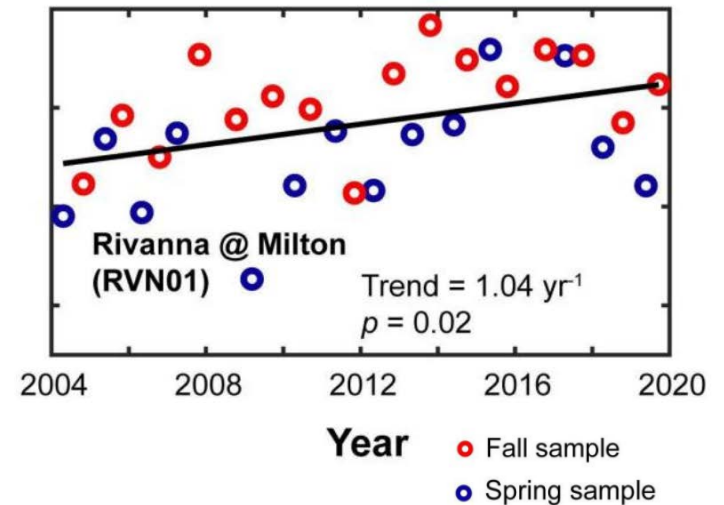
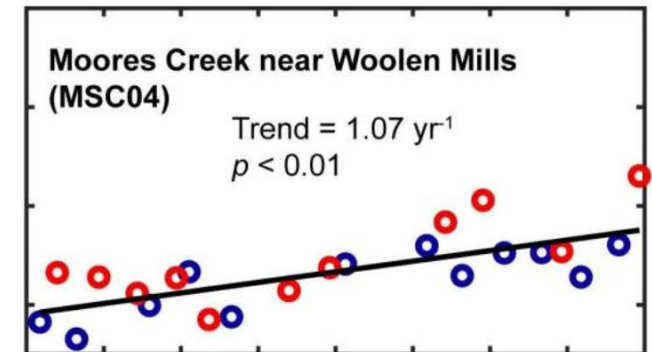
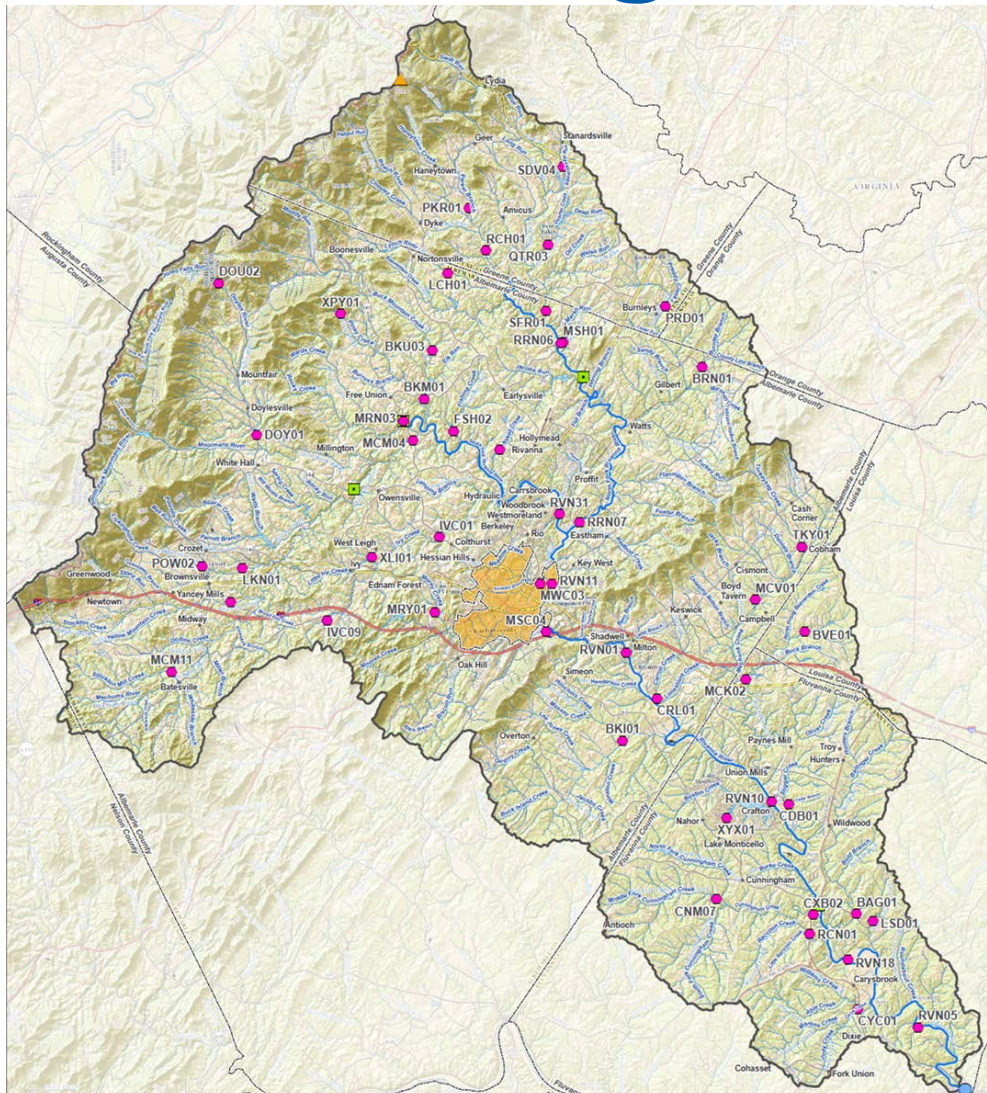


RCA Biological Monitoring



- Volunteers sample benthic macroinvertebrates (small organisms that live at bottom of streams)
- Number/diversity indicate water quality
- 50 sites sampled each spring and fall

RCA Biological Monitoring



Pence, R., Riscassi, A., Scanlon, T., Murphy, J., and Richter, B. (2021). Analysis of Long-term Benthic Trends in the Rivanna Watershed. Rivanna Conservation Alliance.
<https://www.rivannariver.org/powerpoints-pdfs/>

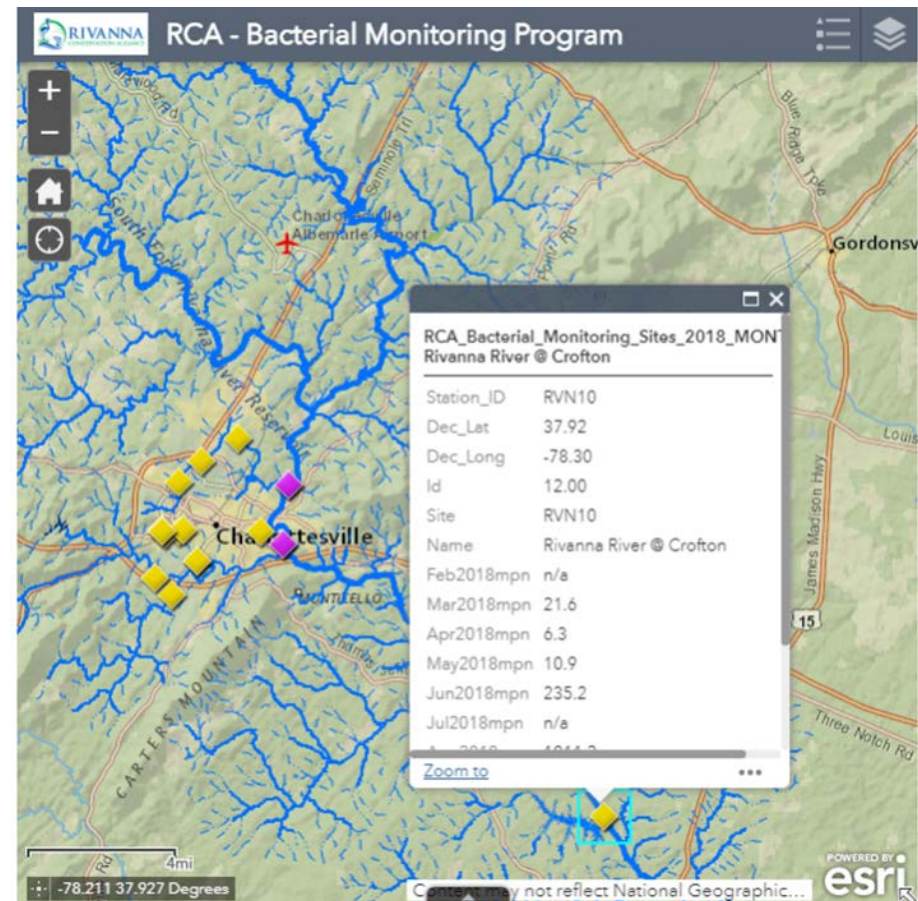
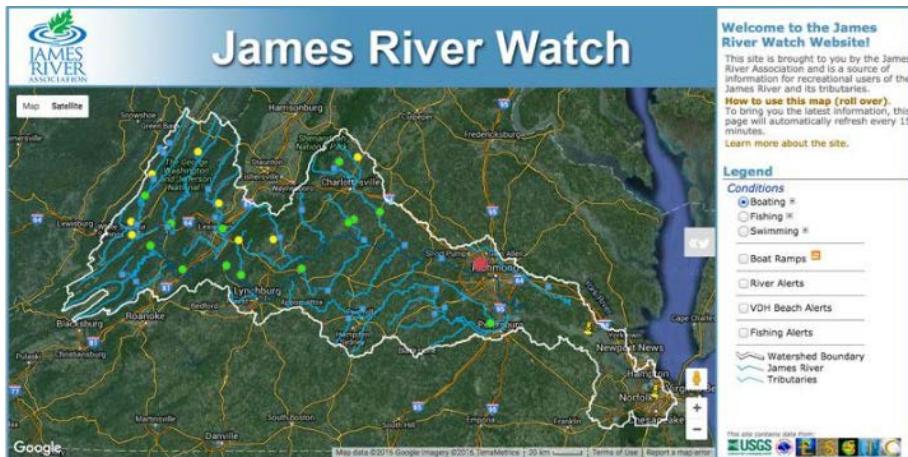
RCA Bacteria Monitoring

- Volunteers test for *E. coli* bacteria levels
- 19 urban sites sampled monthly
- 8 potential recreation sites tested weekly in spring (to meet revised VA water quality standard)
- 3 high recreation sites tested weekly in summer



RCA Bacteria Monitoring

- Results reported to the public via:
 - RCA website (all sites)
 - James River Watch and SwimGuide websites (3 summer recreational sites)



How is Monitoring Data Used?

- 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
- Evaluate impact of water quality improvement efforts

What Else Does RCA Do?

- Education Programs
- Scheier Natural Area
- River Stewards
- River Cleanups
- Restoration



Volunteers removing tires from the Rivanna River, south of Palmyra during the Rivanna River Round-Up

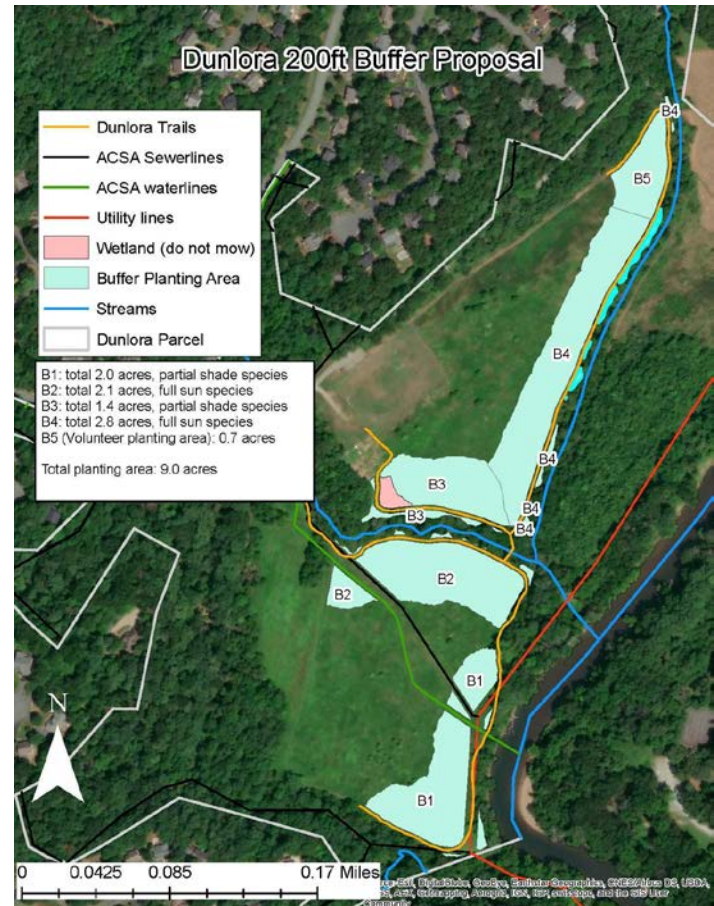
Rivanna River Round-Up 2022

- River-wide cleanup event in 21 locations
- Overall:
 - Engaged 243 volunteers
 - Covered 27+ miles of river and trail
 - Removed 173 tires, 148 bags of trash and lots of bulky debris



Riparian Forest Planting

- RCA partnering with the James River Buffer Program to plant riparian forest buffers in the Rivanna watershed
- In 2021, RCA led effort to plant 9 acres of native trees and shrubs in Dunlora along the Rivanna River
- VADOF is using natural regeneration to restore four more acres adjacent to the planting



Rivanna Restoration at Riverview Park

- Proposing to restore ~600' of Rivanna Riverbank and ~200' of eroding stormwater outfall
- Outfall is cutting rapidly back toward RWSA 60" line
- Engaging public on design plans in fall 2022 and applying for full design and construction funding in 2022/2023



Thank you for your ongoing support of clean water and RCA's Monitoring Program

www.rivannariver.org



Major Capital Projects Construction Update



Presented By:

Scott Schiller, Engineering Manager

October 25, 2022

Recently Completed Projects

Crozet Wastewater Flow Equalization Tank and Pumping Station Upgrade

- Store wet-weather flow to minimize impact on downstream sewer capacity
- 1 MG Capacity and improvements to existing Crozet Pump Station No. 4
- Completed: October 2020 - October 2022
- Cost: \$5.4M



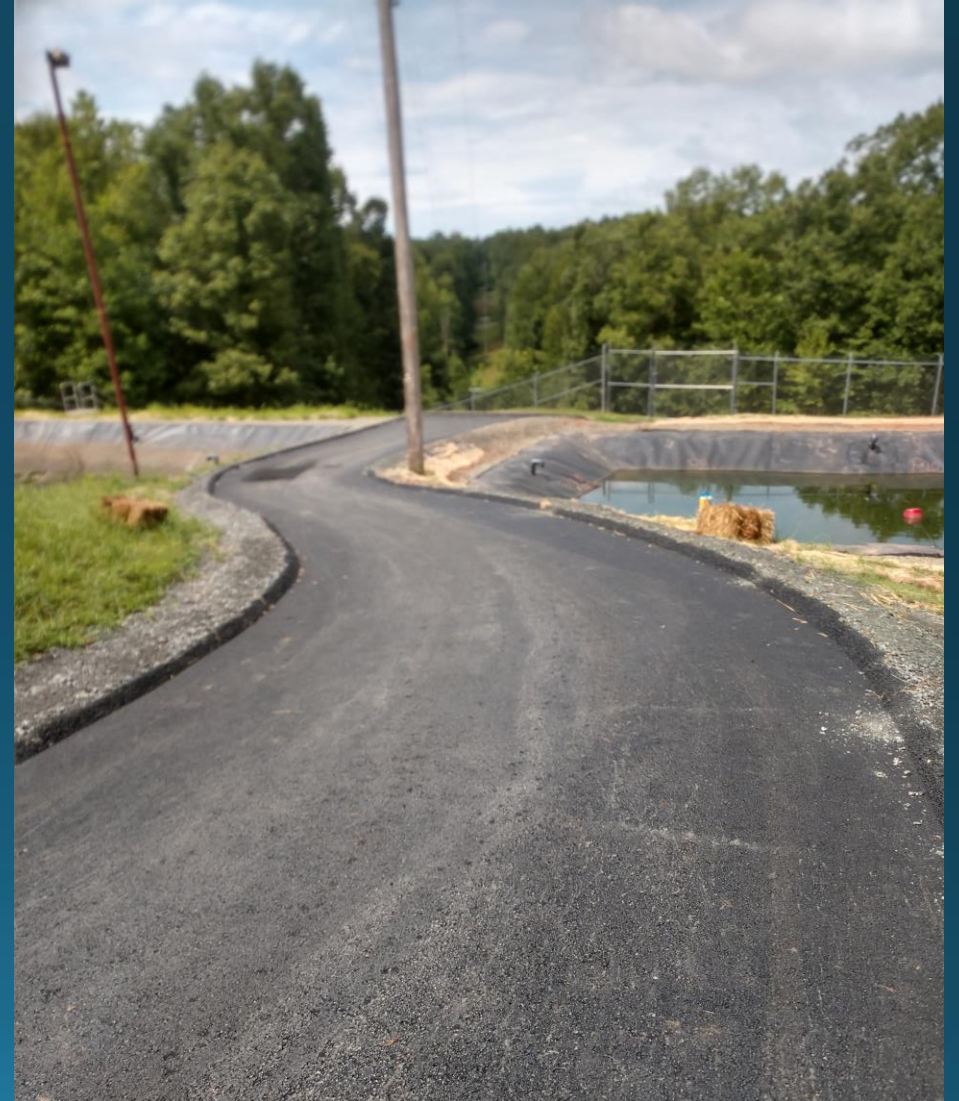
Crozet Wastewater Flow Equalization Tank and Pumping Station Upgrade

– Tank Flushing Process



Scottsville WTP Lagoon Liners Replacement

- Replacement of liners in both lagoons
- New draining devices, lagoon access walkways and access road improvements
- Completed : May - August 2022
- Cost: \$540,000 (\$350k in ARPA funds from County)



MC Lighting Improvements

- Updated site lighting to improve safety and meet Albemarle County requirements
- Completed : April 2021 - June 2022
- Cost: \$575,000



MC Clarifiers and Lime Silo Demolition

- Demolished 2 clarifiers to remove safety concerns and create space for future plant expansion
- Removed lime silo and the electrical enclosure
- Completed – September 2021 - July 2022
- Cost: \$790,000



Glenmore WRRF Influent Pump and VFD Addition

- New influent pump and VFD
- New exhaust fan for the wet well
- Completed – September 2021 - September 2022
- Cost: \$370,000



Currently Under Construction

Observatory and South Rivanna WTPs – Rehabilitation and Expansion Project



- Increases OBWTP capacity from 7.7 to 10 MGD and increases SRWTP reliability at 12 MGD
- Includes plate settlers and new chemical building at OBWTP, new Alum, Fluoride and Admin Buildings +2 new filters at SRWTP
- OBWTP shutdown this winter (Dec – Feb)
- Completion - May 2020 - May 2023
- Budget \$43M

Observatory WTP – Rehabilitation and Expansion Project



Airport Road Pump Station and Piping

- Will reliably connect Piney Mountain and Urban pressure zones
- Will feed the Piney Mountain Tank and will be part of future Airport pressure zone
- Completion – December 2021 - December 2023
- Budget \$10 M



MC 5kv Electrical System Upgrade

- Replacement of major electrical components that are at the end of their useful lives
- Includes MCCs, transformers, new switchgear building
- Completion: May 2022 – June 2024
- Budget \$5M

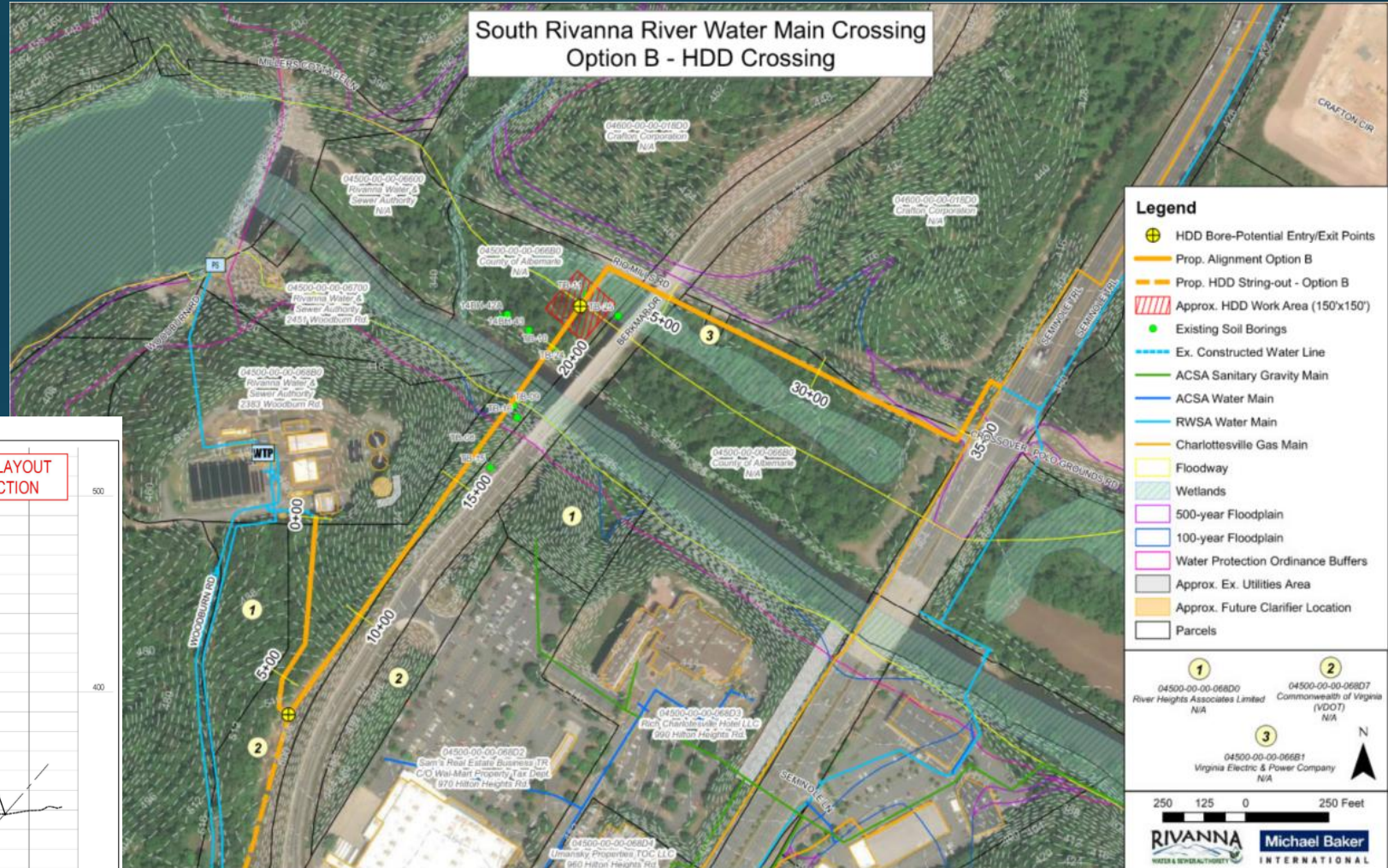
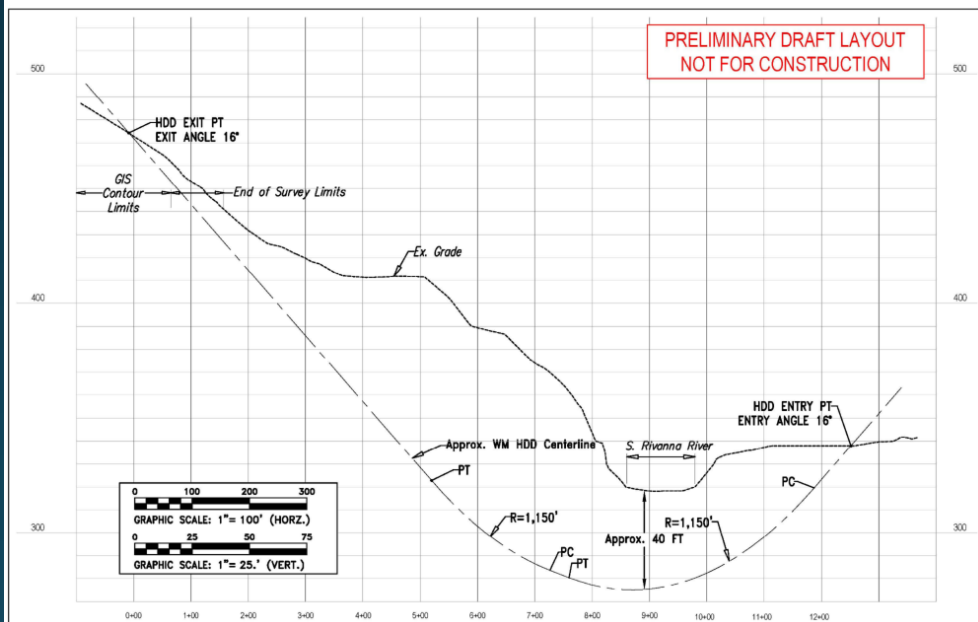


Design Phase and Upcoming Construction Projects

South Rivanna River Crossing

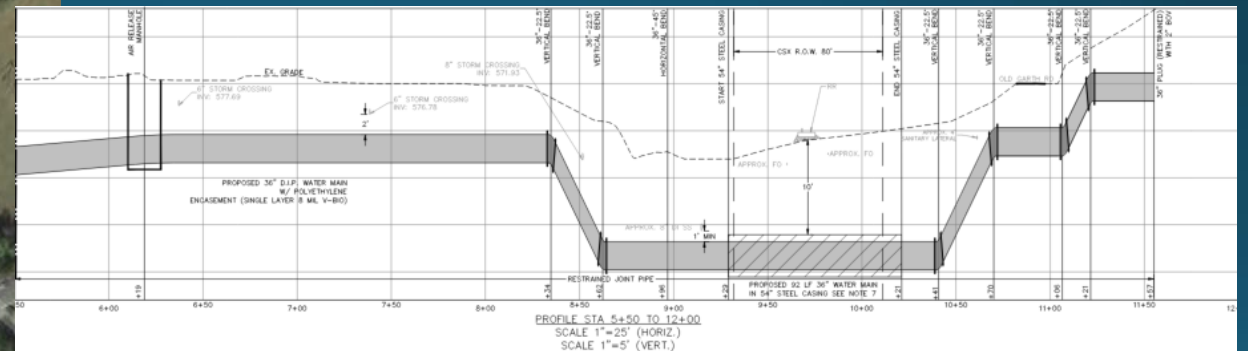
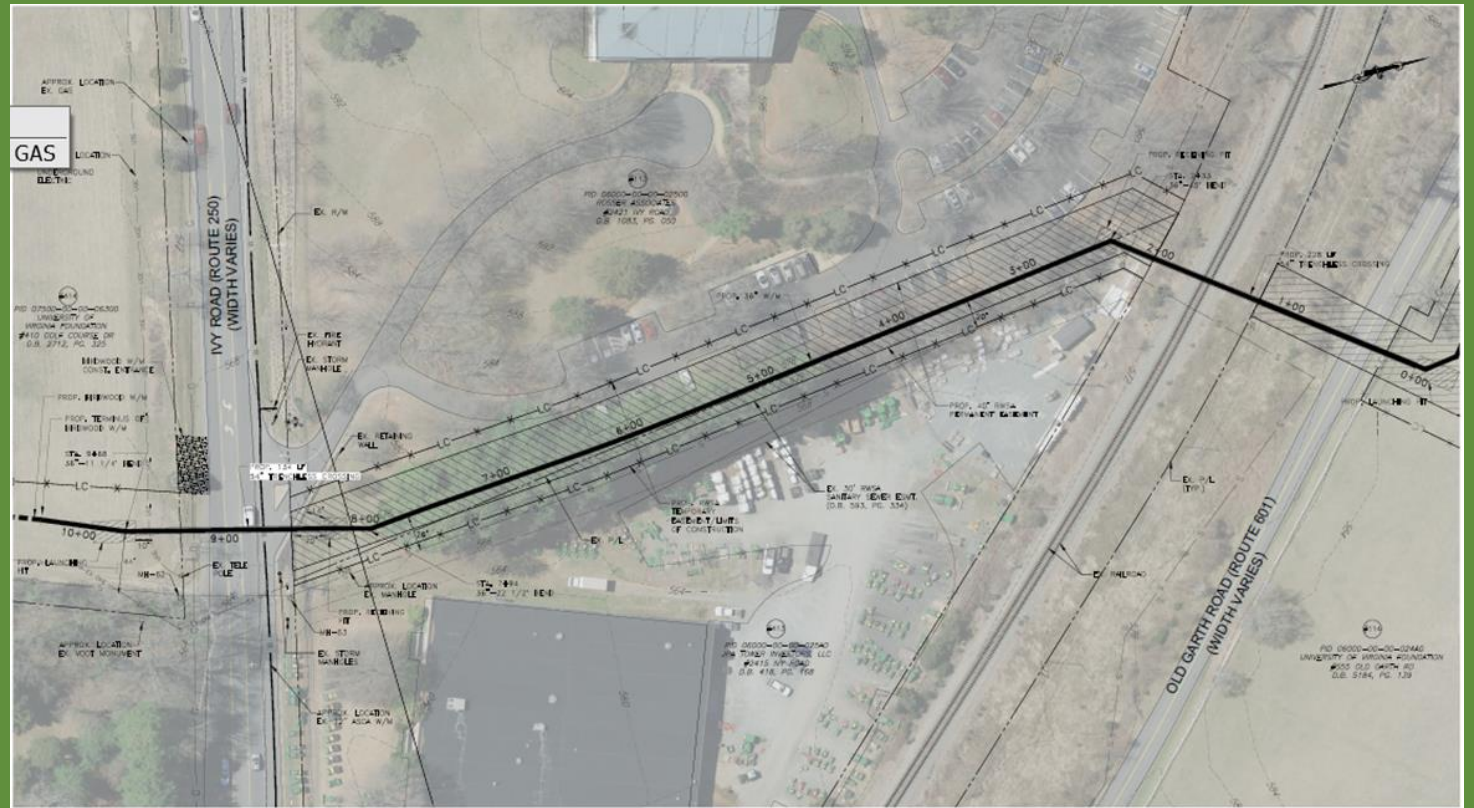
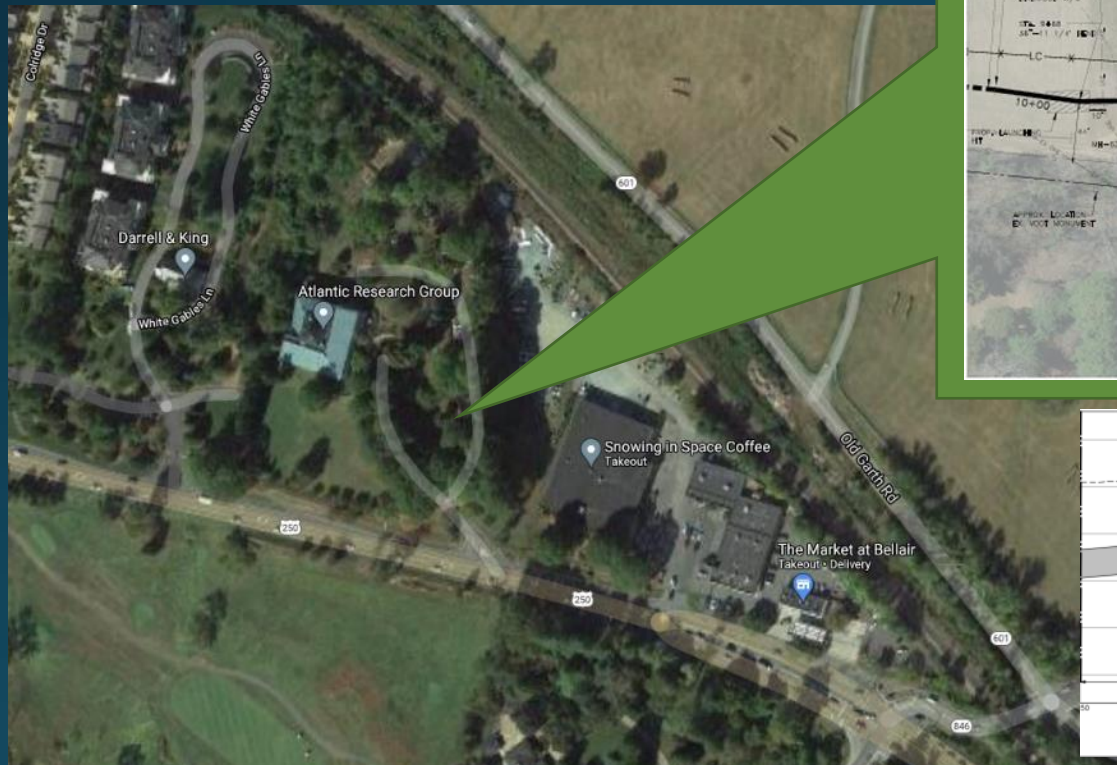
- Second crossing under the South Rivanna River
- Selected Option B – HDD Crossing
- Completion - 2023 - 2024
- Budget \$7 M

Figure 9 – Alignment Option B HDD Profile



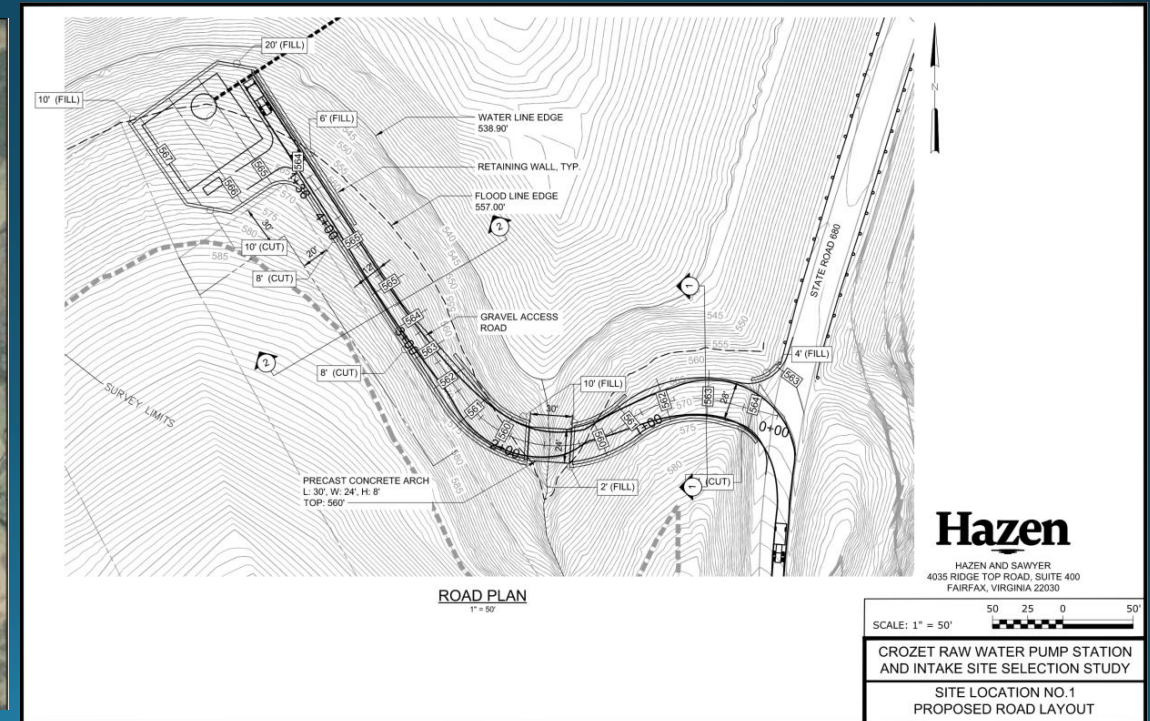
SRR to RMR – Birdwood to Old Garth

- Installation of a section of the 36" SRR to RMR transfer pipeline to precede private development and avoid costs
- Finalizing easements and permitting
- Completion 2023 - 2024
- Budget \$4 M



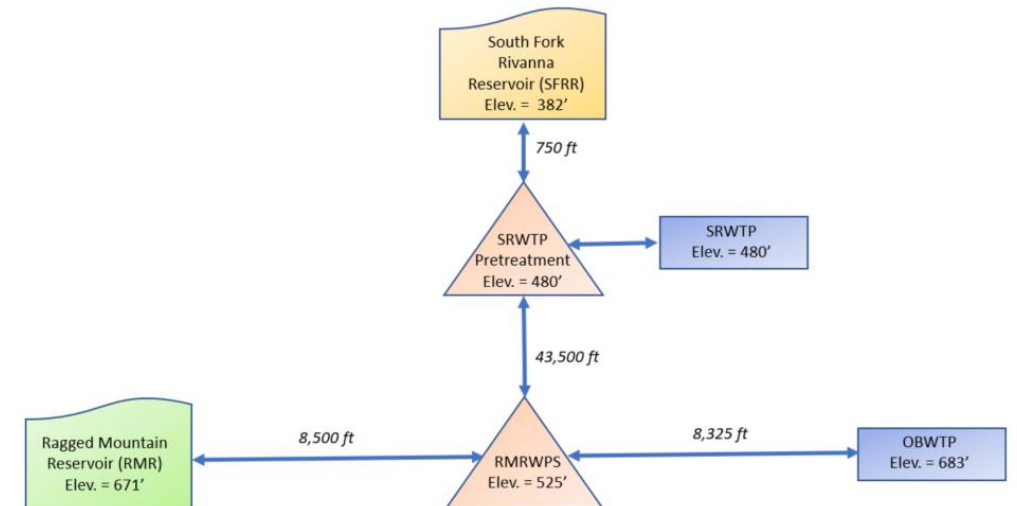
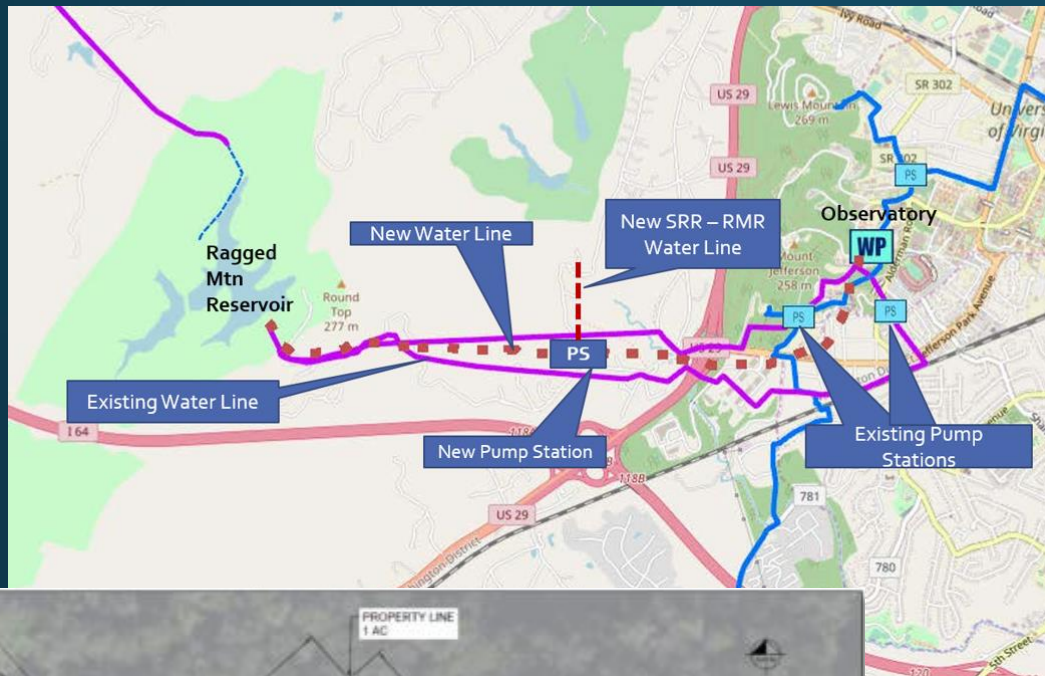
Beaver Creek Dam, Pump Station & Piping Modifications

- Upgrade the spillway to meet DCR dam safety standards
- Replace the raw water pump station, intake, and pipe to the Crozet WTP
- Working through NRCS funding process
- Completion 2024 - 2027
- Budget \$43 M



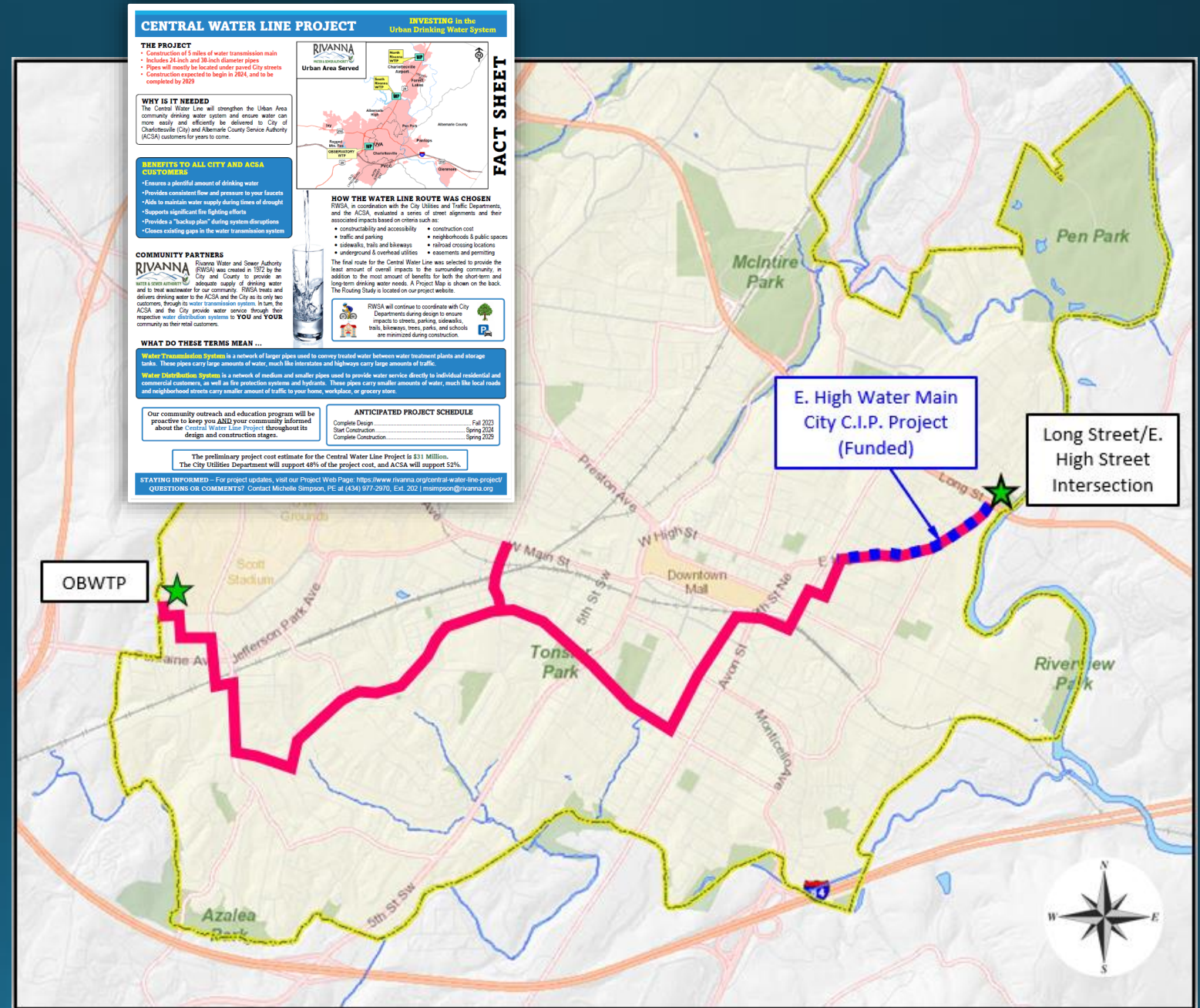
RMR to OBWTP – Pump Station and Water Line

- Improves raw water conveyance capacity to OBWTP
- Replaces outdated infrastructure - 40 and 70 year old pump stations and 70 - 110 year old water lines
- Working through pump station site acquisition with UVAF and final water line easements
- Refining pump station design
- Completion 2025 - 2028
- Budget \$44 M



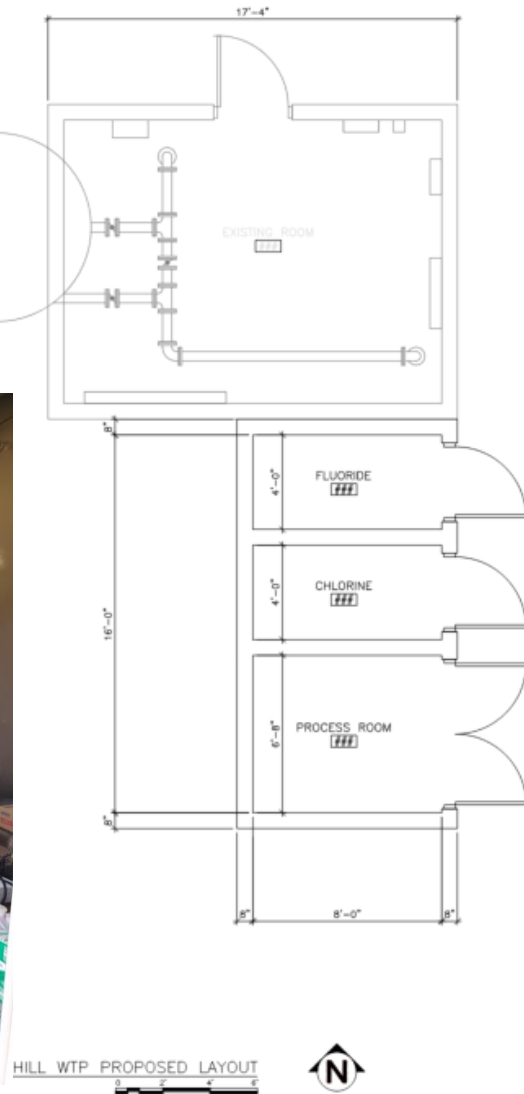
Central Water Line

- 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
- Selected Alignment #4 – Southern (Cherry)
- Survey work and design are underway
- Completion 2024 - 2028
- Budget \$41 M



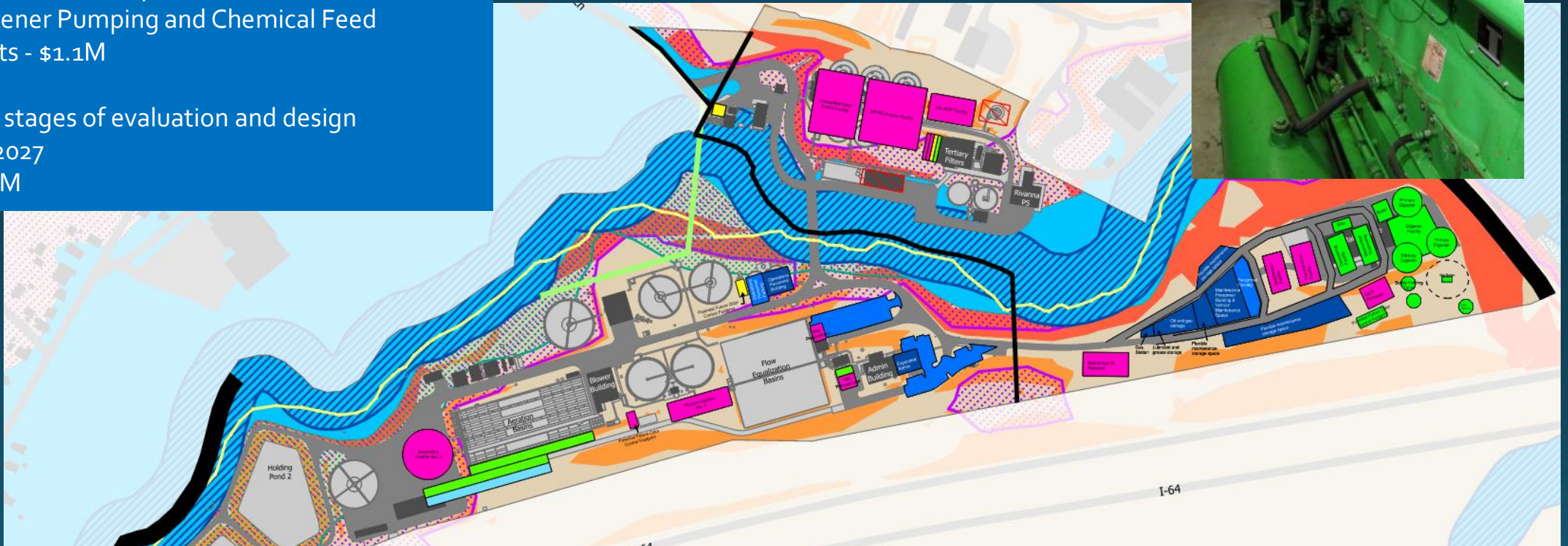
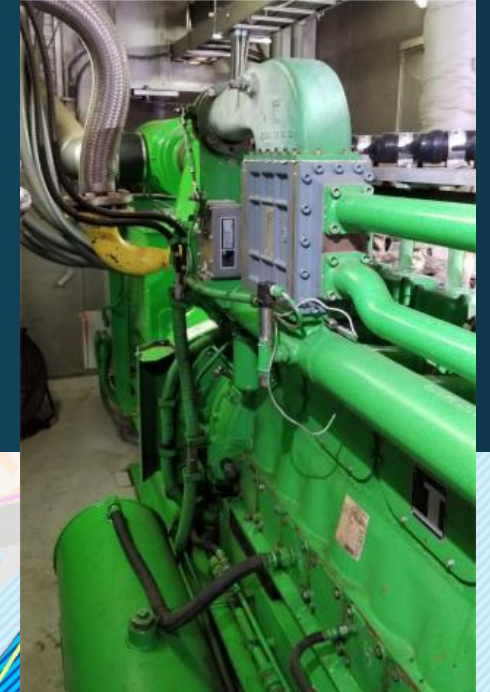
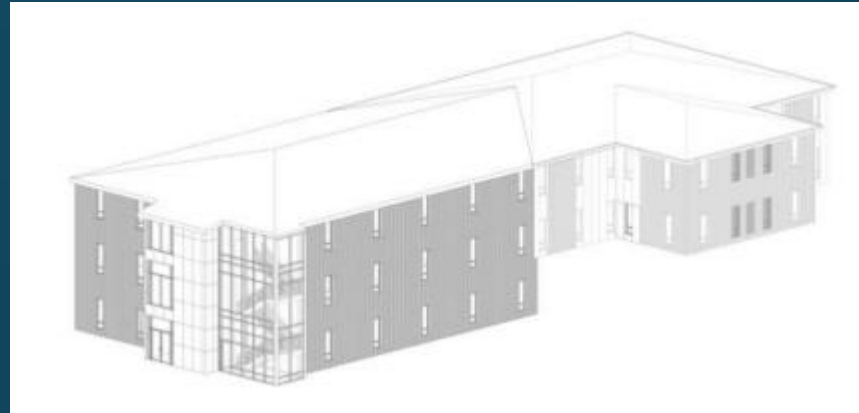
Red Hill WTP Upgrades

- Operated more as a water treatment facility as opposed to a well system
- Will provide for additional chemical storage, monitoring and automation
- Needs assessment completed and design is underway
- Completion 2023
- Budget \$450 k (\$400k in ARPA funding from County)



Moore's Creek AWRRF – Various Projects

- Engineering and Administration Building - \$10.5M
 - Gas Sphere Rehabilitation - \$995k
 - Aluminum Slide Gate Replacements - \$1.35M
 - Compost Shed Roof Rehabilitation - \$1.5M
 - Operations and Maintenance Building Upfits - \$3.4M
 - Cogeneration Upgrades - \$2.6M
 - Structural Modifications and Miscellaneous Concrete Repair - \$5.05M
 - Meter and Valve Replacements - \$775k
 - Digester Replacement/Repair - \$4M
 - Gravity Thickener Pumping and Chemical Feed Improvements - \$1.1M
-
- All at various stages of evaluation and design
 - Completion 2027
 - Budget \$31.3M



Questions?