RIVANNA
WATER & SEWER AUTHORITY

Board of Directors Meeting

January 24, 2023

2:15pm

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

BOARD OF DIRECTORS

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

DATE: **JANUARY 24, 2023**

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 DECEMBER 13, 2022***

4. ***RECOGNITION***
   a. *Resolution of Appreciation for Mr. Jene R. Phillips, Jr.*

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*

9. ***OTHER BUSINESS***

   a. *Presentation: Financial Update: Credit Rating, Financial Profile and Policies*
   Lonnie Wood, Director of Finance and Administration
   Ted Cole, Senior Vice President, Davenport Public Finance

b. *Presentation: History and Organizational Agreements of the RWSA*
Bill Mawyer, Executive Director

(Joint Session with the RSWA)

c. *Presentation: Sustainability and Climate Action Overview*
Jennifer Whitaker, P.E., Director of Engineering and Maintenance

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

11. CLOSED MEETING - PERSONNEL REVIEW

(Motion, second and roll call vote to enter into a joint session to discuss confidential performance evaluations, goals and objectives of specific personnel as permitted by the personnel exemption at Section 2.2-3711(A)(1) of the Code of Virginia)

Motion:

I move that the Rivanna Water & Sewer Authority enter into a joint closed session with the Rivanna Solid Waste Authority to discuss confidential performance evaluations, goals and objectives of specific personnel as permitted by the personnel exemption at Section 2.2-3711(A)(1) of the Code of Virginia.

(Motion, second and roll call vote to certify the closed session)

Motion:

The Rivanna Water and Sewer Authority hereby certifies by recorded vote that, to the best of each member's knowledge, only public business matters lawfully exempted from the open meeting requirements of the Virginia Freedom of Information Act and identified in the motion authorizing the closed meeting were heard, discussed or considered in the closed meeting to which this certification resolution applies.

(Complete and close the RWSA meeting, then complete and close the RSWA meeting)

12. *ADJOURNMENT*

GUIDELINES FOR PUBLIC COMMENT AT RIVANNA BOARD OF DIRECTORS MEETINGS

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

Members of the public requesting to speak will be recognized during the specific time designated on the meeting agenda for "Items From The Public, Matters Not Listed for Public Hearing on the Agenda." Each person will be allowed to speak for up to three minutes. When two or more individuals are present from the same group, it is recommended that the group designate a spokesperson to present its comments to the Board and the designated speaker can ask other members of the group to be recognized by raising their hand or standing. Each spokesperson for a group will be allowed to speak for up to five minutes.

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

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

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

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

Rev. September 7, 2022

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

RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
December 13, 2022

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, December 13, 2022 at 2:15 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia.

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

Board Members Absent: Jeff Richardson.

Rivanna Staff Present: Bill Mawyer, Lonnie Wood, Jennifer Whitaker, Deborah Anama, Victoria Fort, David Tungate.

Attorney(s) Present: Carrie Stanton.

1. *CALL TO ORDER*
Mr. Gaffney convened the December 13, 2022 regular meeting of the Board of Directors of the Rivanna Water and Sewer Authority at 2:15 p.m.

2. *AGENDA APPROVAL*
There were no comments on, changes to, or questions regarding the agenda.

Ms. Mallek moved to approve the agenda. Mr. O'Connell seconded the motion, which carried unanimously (6-0). (Mr. Richardson was absent)

3. *MINUTES OF PREVIOUS BOARD MEETING*
a. Minutes of Regular Board Meeting on November 15, 2022

There were no comments on, changes to, or questions regarding the minutes of the meeting held on November 15, 2022.

Ms. Mallek moved to approve the minutes from the meeting held on November 15, 2022. Mr. Pinkston seconded the motion, which passed unanimously (6-0). (Mr. Richardson was absent)

4. *RECOGNITIONS*
There were none.

5. *EXECUTIVE DIRECTOR'S REPORT*
Mr. Mawyer recognized that three of the Authority's water operators had passed state licensing exams and upgraded their licenses. He stated that Bridgett Deakin had worked with the Authority for two years, and she started work unlicensed. He stated that Ms. Deakin had progressed to Class 2 Water Operator. He stated that Daniel Hunter started working for the Authority one year

ago as an unlicensed operator, and he was now a Class 3 Wastewater Operator. He stated that Keith Covington recently joined the Authority from Baton Rouge, Louisiana, and he immediately passed the state exam to become a Class 2 Water Operator.

Mr. Mawyer stated that Ms. Jennifer Whitaker, Director of Engineering and Maintenance, recently provided a presentation to a UVA Civil Engineering class on careers working in the public sector as an engineer.

Mr. Mawyer stated that Mr. David Tungate, Director of Operations, was recently selected by the Virginia Association of Municipal Wastewater Agencies Committee to work with the state on wastewater operator licensing requirements. He stated that it was in response to the industry's workforce difficulties related to getting wastewater operators licensed. He stated that Mr. Tungate would work with a state-level group to get more operators into the market.

Mr. Mawyer stated that last month, the Board was informed that a major renovation would commence at the Observatory WTP on December 5, and that renovation had begun. He stated that they had ceased producing drinking water at the plant before December 1. He stated that the plant would be shut down through early March. He stated that for the duration of the plant shutdown, all of the drinking water for the urban area would be produced at the South Rivanna and the North Rivanna WTPs.

Mr. O'Connell asked if there were issues regarding the shutdown.

Mr. Mawyer stated that there were none so far. He explained that early on in the planning process, they realized that the contractor wanted to work at night. He stated that the treatment plant was adjacent to dormitories, and the construction was to coincide with exam and reading days. He stated that they consulted with UVA representatives, and they requested that construction not occur at night. He stated that they directed the contractor to not work at night from December 6 through December 16. He stated that exams would be over after December 16, and night construction could resume.

Mr. Mawyer explained that they planned to move piping and old materials out of the plant at night to free up space for the "new work" crew to come in during the day. He stated that they had to modify the plan slightly. He stated that otherwise, operations were going well.

Mr. Mawyer mentioned the South Rivanna to Ragged Mountain water pipeline project. He noted that there were still easements to acquire from UVA, the UVA Foundation, and one private property owner. He stated that a week ago, they had a meeting with the private property owner, and they came to a verbal agreement on the location and cost of the easement. He stated that it was the only remaining private easement for the 8 miles of piping. He stated that they were working with counsel to get the documents finalized and signed.

Mr. Mawyer stated that work continued on the Ragged Mountain to Observatory pipeline project. He stated that the work included efforts to gain easements from the UVA Foundation and UVA. He stated that they were coordinating with the County and Mr. Stewart on the Upper Schenks Branch Sewer Pipe project. He stated they were waiting to see whether the County

would allow an easement on County property to build the sewer.

Mr. Mawyer stated that they continued to work on the engineering and field investigations for the central waterline.

Mr. Pinkston asked Mr. Mawyer to describe the Schenks Branch sewer pipe project.

Mr. Mawyer responded that it was a long-standing project that began before he worked for the Authority. He stated that the sewer pipeline from the McIntire Recycling Center toward Preston Avenue had to be replaced because it was undersized. He stated that it connected to the City's sewer system around Preston Avenue. He explained that the Authority owned part of the pipe up to the County Office Building, and the City had a project to upgrade the connecting sewer system. He stated that they were working together with the City to replace the pipe.

Ms. Hildebrand responded that the City would take the project further under Preston Avenue to around McDonald's. She stated that the entire sewer line needed to be upgraded to 14th Street or 15th Street.

Mr. Mawyer stated that the project would replace the sewer pipe from the McDonald's at Preston Avenue to the McIntire Recycling Center. He stated that a new pipe had been constructed many years ago from the Rt. 250 Bypass bridge in the McIntire Road area to the McIntire Recycling Center. He stated that it was a sewer line replacement project, and the alternatives were to put the pipe in McIntire Road and shut the road down for months or lay pipe through the ball field and frontage to the County Office Building.

Ms. Mallek asked if they would revisit the arguments and processes from the beginning of the project proposal. She stated that they had already addressed the middle of the ball field and the tree.

Mr. Mawyer stated Mr. Stewart had all of the information, and he believed that Mr. Stewart and Mr. Richardson were working on it.

Ms. Mallek stated she believed the pipe would be located near the road the entire way.

Mr. Mawyer stated that it was adjacent to the road. He stated that it was close to the road, but it was not in the street. He stated that it was along the County frontage and into the ball field. He stated that it would bore under the big tree.

Ms. Mallek stated that it would not happen. She stated that the tree was a Virginia Heritage Tree, and they could not go into the root ball of the tree.

Mr. Mawyer stated that they were previously under a consent order from the state to replace the pipe because the sewer overflowed. He stated that the consent order had been removed a few years ago.

Mr. Mawyer stated that progress had been made, and the County and the City had discussions to

put the project on hold until certain positions were filled.

Mr. Gaffney explained that it was taken off of the consent order because there were no overflows in that section of pipe—those happened further down in the sections that had already been replaced.

Ms. Hildebrand responded that new overflows could happen in the City's section of the pipe.

Mr. Mawyer stated that they worked with the City and the ACSA on the "Imagine a Day Without Water" art contest. He stated that the contest was available to K-12 students in the City and the County. He noted that the contest was held every year. He displayed the winning submissions for that year. He stated the art pieces were displayed throughout the building and the water treatment plants.

Mr. Mawyer stated that Mr. O'Connell had invited him to participate in the Best Practices Review Panel for the ACSA. He stated that the panel opportunity allowed him to learn more about the ACSA. He noted that the panel provided a few suggestions for business process changes.

Mr. O'Connell stated the panel provided a good discussion.

Mr. Mawyer stated that Mr. Cole Hendricks recently died. He stated that Mr. Hendricks was a former City manager and a longtime Board member of the Authority. He stated that Mr. Hendricks was instrumental in the creation of the Authority in 1972 and the Rivanna Solid Waste Authority in 1994. He stated that they appreciated Mr. Hendricks' contribution to the Authorities.

Mr. Pinkston asked for more information about Sugar Hollow.

Mr. Mawyer stated that Sugar Hollow was a reservoir on City-owned property, but the Authority owned the water and the water facilities. He stated that there was a resident in the adjacent neighborhood who expressed concerns to the City about vandalism, littering, fires, traffic, and other issues at the reservoir. He stated that the County and the City were in the process of working out a plan to alleviate those concerns.

6. *ITEMS FROM THE PUBLIC*

For matters not listed on the agenda for public hearing

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. Approval of Updated Flexible Benefits Plan

Mr. Pinkston asked if the Authority managed the Flexible Benefits Plan itself or if the work was outsourced.

Mr. Lonnie Wood explained that any employer that had tax-free deductions withheld from a paycheck, such as a Flexible Benefits Plan, had to have an approved plan. He stated that they already had one, but it was being updated to reflect minor changes. He stated that it was a document that stated certain deductions could be made from employee paychecks pre-tax.

Mr. Pinkston clarified that the document was internal to the organization.

Mr. Wood stated that it was a document applicable to the Authorities that the Flexible Benefit Administrator would use.

Mr. Rogers moved to approve the Consent Agenda. Mr. O'Connell seconded the motion, which passed unanimously (6:0). (Mr. Richardson was absent)

9. *OTHER BUSINESS*

a. Presentation and Vote on Acceptance: FY22 Audit Report
Mathew McLearen, Robinson Farmer Cox Associates

Mr. McLearen stated that he would present the results of the audit procedure and a review of the key financial findings in the document. He stated that there were required communications between an auditor and a government body. He stated that the first was information related to responsibilities under the audit. He explained that the auditor tested documents and controls and opined on financial statements.

Mr. McLearen stated that management played a key role in the audit process. He stated that they maintained fiscal controls throughout the fiscal year to ensure the accuracy of financial reports. He mentioned the implementation of accounting standards. He stated that FY22 brought about the implementation of GASB Statement No. 87, a monumental reporting standard for most governmental agencies related to leases. He noted that the Authority had to implement the reporting, and Mr. Wood and his staff had implemented it.

Mr. Mawyer clarified that the Authority leased the Observatory WTP property, and that was the primary addition to the financial statement.

Mr. McLearen stated that was right. He stated that historically, leases that were not considered a capital lease, meaning there was no transfer of ownership, were not recorded in the financial statements. He stated that it was considered a known disclosure of a true operating cost. He

stated that the new standard required that the lease be recorded similarly to if it transferred ownership. He stated that during the period of the lease, there was a lease obligation recorded as a liability, and if the Authority leased a property, it was recorded as an asset.

Mr. McLearen stated that they were required to communicate any difficulties encountered during the audit. He stated those difficulties could include the inability to access necessary records to complete the audit process. He reported that there were no difficulties encountered during the audit process.

Mr. McLearen stated that they were required to communicate accounting estimates. He stated that most financial statements included accounting estimates. He stated that the two most significant accounting estimates in the report were estimates related to capital assets and how long they were expected to last, and estimates related to net pension liabilities. He stated that the estimates were determined by the actuary performing the computations.

Mr. McLearen stated they were required to communicate corrected and uncorrected misstatements. He stated that financial statements contained audit adjustments, and they were required to disclose any uncorrected misstatements. He reported that there were no uncorrected misstatements, and the audit adjustments were included in the report.

Mr. McLearen stated that they were required to disclose any disagreements with management in applying principles. He stated that there were no disagreements in applying the principles in FY22.

Mr. McLearen stated that there were two reports contained in the Board's packet. He stated that there were three core financial statements in the report. He stated that exhibit one was similar to a balance sheet that was a statement of net positions. He stated that the net position was approximately $164.8M for FY22.

Mr. McLearen stated that the second exhibit was the statement of revenues, expenses, and changes in the Authorities' net position. He stated that it was similar to a profit and loss statement, and it reported the increase or decrease in the net position. He stated that the Authority reported an increase of approximately $4.68M for FY22.

Mr. McLearen stated that the third financial statement was the statement of cashflow. He stated that the ending cash balance was included, and the statement reported solely the cash position of the Authority. He stated that it was approximately $75.7M at the end of FY22. He stated that the second report was similar to the internal control opinion, and it was the Independent Auditor's Report and Internal Controls over Financial Reporting.

Mr. McLearen stated that it was a document where the audit would disclose any significant deficiencies or material weaknesses disclosed during the audit process over the financial reporting and internal control processes that were in place. He reported that there were no significant deficiencies or material weaknesses discovered during the audit process over the internal controls for FY22.

Ms. Mallek noted the work staff did to prepare for the audit.

Mr. Mawyer clarified that the Authority had a ground lease for the Observatory WTP. He stated that they owned the building.

Ms. Mallek asked if it would be 50 years from when the improvements happened.

Mr. Mawyer explained that it was 49 years from 2021, and then they had the option for a second 49 years. He stated that they had a 99-year lease previously, but that expired in 2021. He stated that they negotiated a new lease with UVA for the ground.

Mr. Gaffney clarified that it was at both parties' option to renew the lease.

Mr. Mawyer stated that was correct, and either party could opt out.

Ms. Mallek moved to accept the FY22 Audit Report. Mr. Rogers seconded the motion, which passed unanimously (6:0). (Mr. Richardson was absent)

b. Presentation: Review of the Community's Water Supply Plan
Bill Mawyer, Executive Director

Mr. Mawyer stated that Authority's mission was to provide adequate amounts of quality drinking water to the customers of the City and the ACSA. He stated that he would discuss the topic more during the CIP budget discussions in February.

Mr. Mawyer stated that the Ragged Mountain Reservoir was the largest reservoir in the Authority's system. He stated that during 2002, there was a major drought in the area, and it was a drought of record. He stated that the drought extended from Virginia to Georgia, and the affected states had the driest July and Augusts on record. He stated that the state was under a state of emergency from a declaration from the governor.

Mr. Mawyer explained that the Community Water Supply Plan was an outcome from the 2002 drought. He stated that the plan was not contained within one single document—it was an accumulation of documents. He stated that the primary document was the Ragged Mountain Dam Agreement.

Mr. Mawyer stated that the drought of 2002 made the community realize it needed a greater water supply. He stated that they considered several alternatives, and one was to run a pipe to the James River near Scottsville. He stated that they made a decision to source water locally and to primarily source the water from the Rivanna River. He stated that the Community Water Supply Plan was approved in 2012 by City Council, and it was supported by the Albemarle Board and the ACSA.

Mr. Mawyer stated that the plan was to build a larger dam and reservoir at the Ragged Mountain Reservoir. He stated that the facility had two dams—the first was built in 1885, and the second was built in 1908. He stated that the existing dam was structurally deficient in many ways. He

stated that the reservoir was smaller and impounded about 500M gallons of water.

Mr. Mawyer stated that the pipe that filled Ragged Mountain Reservoir from Sugar Hollow was about 100 years old and needed to be replaced. He stated that the strategy of those in charge in 2012 was to build a new pipe and dam. He stated that the pipe from Sugar Hollow would be closed upon completion of the new pipe from the South Rivanna Reservoir.

Mr. Mawyer stated that they currently had to pipe water to the Ragged Mountain Reservoir. He stated that there was a tiny watershed which served the Ragged Mountain Reservoir, and it did not fill itself by natural stream flows and rain. He stated that the South Rivanna Reservoir received a significant amount of water flow and rainfall, so the community plan was to fill the new Ragged Mountain Reservoir from the South Rivanna Reservoir. He stated that the new pipe was planned to be constructed from the South Rivanna Reservoir to the Ragged Mountain Reservoir.

Mr. Mawyer stated that the watershed for Ragged Mountain Reservoir was two square miles, and the watershed for the South Fork Rivanna Reservoir was 259 square miles. He stated that much more water passed through the South Rivanna Reservoir than the Ragged Mountain Reservoir, and conversely, the new Ragged Mountain Reservoir would hold 1.4B gallons whereas the South Fork Rivanna Reservoir held about 900M gallons.

Mr. Pinkston asked when Sugar Hollow was built.

Ms. Whitaker responded that the Sugar Hollow Dam was built in 1920, and the present dam was built in 1948. She stated that the rubber bladder was added on top of the dam in 1999.

Mr. Pinkston clarified that the dam always held water for South Rivanna.

Ms. Whitaker explained that the water naturally flowed from Sugar Hollow to South Rivanna, but it was piped to Ragged Mountain, even in the 1920s.

Mr. Mawyer stated that the plan developed in 2012 was to stop flow through the older pipe from Sugar Hollow Reservoir and to start flow from the South Rivanna Reservoir to keep the Ragged Mountain Reservoir full. He stated that a new dam would be constructed at Ragged Mountain.

Mr. O'Connell asked how much capacity the additional 12 feet of water would add to the municipal capacity.

Mr. Mawyer responded that it would add 700M gallons. He stated that the total reservoir capacity would be over four times the original built capacity. He stated that it was originally 500M gallons, and it would now be 2.1B gallons. He stated that the reservoir currently had 1.4B gallons. He stated that the Authority was required to perform, every 10 years, a bathymetric study. He explained that a bathymetric study was an assessment of the urban reservoirs to measure how much water was in them and determine the usable quantity. He noted that sediment could and would, over time, decrease a reservoir's volume. He stated that large storms sometimes helped to wash sediment out of the reservoir. He stated that they worked with the

County, City and UVA planning departments to project growth and demand for water.

Mr. Gaffney asked what the current estimated cost was for the additional 12 feet of water to be added to the reservoir.

Mr. Mawyer responded that the 12-foot increase was $5M to perform the grading and adjust the intake tower to provide water from the South Fork Rivanna Reservoir. He stated that there was an $82M cost to build the pipe.

Mr. Mawyer stated that around 2006, the Authority applied to the regulatory agencies, the Army Corps of Engineers, and the Virginia DEQ for a permit to build a new dam and pipeline at Ragged Mountain Reservoir. He stated that the permit was granted by the agencies in 2008. He stated that the dam would be built with an additional 12 vertical feet, and the additional height would add 700M gallons of additional capacity.

Mr. Mawyer stated that the Army Corps of Engineer permits expired nearly five years ago, but had been renewed. He stated that the DEQ permit would expire in February 2023. He stated that they had applied for a new permit from DEQ, and they had received administrative approval to continue to operate and withdraw water. He stated that they had a permit until the new application was processed by DEQ.

Ms. Whitaker stated that the typical permit approval period from DEQ was 15 years.

Mr. Mawyer stated that the Community Water Supply Plan was really the Ragged Mountain Dam project agreement. He stated that the agreement was approved by the City, the ACSA, and the Authority in 2012. He stated that the plan included a new dam for Ragged Mountain, and it determined the ACSA would pay 85% and the City would pay 15%. He stated that the dam was completed in 2014 and filled in 2015.

Mr. Mawyer stated that the second component of the agreement was a pump station and the pipeline from the South Fork Rivanna Reservoir to the Ragged Mountain Reservoir. The agreement stated that the ACSA would pay 80% of the cost, and the City would pay 20% of the cost. He stated that the project was currently in the CIP to be built from 2027 through 2033. He stated that they had to modify the intake tower and perform grading around the reservoir. He stated that the agreement stated the work to add 700 MG to the reservoir could be done 10 years before the community demand equaled 85% of the safe yield—estimated to be around 2035.

Mr. Mawyer stated that the agreement required them to perform a bathymetric study and a safe yield study every 10 years. He noted that one was completed in 2020, and the next would be in 2030.

Mr. Pinkston asked if they would have to wait until the mid-2030s to add the additional 12 feet of water to the reservoir.

Mr. Mawyer stated that was what the Ragged Mountain Agreement required. He stated that it would be around 2035 before they could complete the work to increase the water level, in

accordance with their calculations.

Mr. Gaffney stated the Agreement could be amended.

Mr. Mawyer stated that when he joined the Authority in 2016, the timeline for building the pipeline from South Fork Rivanna Reservoir to the Ragged Mountain Reservoir was not defined in the CIP. He stated that he and staff proposed four different completion schedules for the pipeline to the Board in 2018. He stated that the early schedule, Schedule A, would go from 2022 through 2030; the near-term Schedule B would go from 2027 through 2035; Schedule C would be from 2032 through 2040; and the long-term Schedule D would be from 2042 through 2050.

Mr. Mawyer stated that the Board, the City, and the ACSA supported Schedule B, which was to complete the pipeline from 2027 through 2035. He stated that the debt curve allowed for additional debt capacity around 2032, and that was a significant factor in deciding to implement Schedule B. He stated that the major funds would be spent in the later part of the eight years because of construction.

Mr. Mawyer stated that in 2018, the City, the ACSA, and the Authority approved Schedule B for the project. He stated that the ACSA recommended that as soon as the pipeline was constructed, they add 12 feet to the normal water level in the Ragged Mountain Reservoir.

Mr. O'Connell stated that it was based upon the completion of the pipeline.

Mr. Mawyer stated that was correct. He stated that they would complete the pipe and move forward with the grading to eventually raise the water level.

Mr. Gaffney asked if that was approved with the project schedule approval.

Mr. O'Connell responded that it had been built into the CIP.

Mr. Gaffney clarified that it was not approved with that agreement.

Mr. O'Connell responded that the original agreement had a formula to determine when the water level would be increased.

Mr. Mawyer stated that the pipe construction project was initially considered to take eight years, but now they believed it would take six years. He stated that they shortened the timeline by two years.

Mr. Mawyer stated that the presentation had been given to the Board almost five years ago. He stated that there were higher temperatures, changing weather patterns, and drought conditions across the country. He stated that part of their mission was to be prepared to provide an adequate water supply to all of the customers.

Mr. Mawyer stated that the South Rivanna and the Observatory WTP renovations should be completed in the next calendar year. He stated the cost was about $43M. He stated that there is a

project to replace and build a new pipe from the Ragged Mountain Reservoir to the Observatory WTP. He stated that it included a pump station at the midpoint which would be a central pump station to pump water from Ragged Mountain to the Observatory WTP and to the South Rivanna WTP. He stated the pump station would increase the flexibility of the system, and connect the reservoirs and water treatment plants.

Mr. Mawyer stated that if they were in a drought stage, and the South Rivanna reservoir was really low, they would rely substantially on the Ragged Mountain Reservoir as the largest reservoir. He stated that water would be able to be pumped to both the South Rivanna and Observatory WTPs after the new pipeline was completed.

Mr. Mawyer stated there was an important Central Water Line project to distribute water throughout the Urban Area.

Mr. Mawyer stated that the total cost for the local water supply plan was about $215M. He stated that $79M would be allocated to the City, and about $136M would be allocated to the ACSA because of the funding formulas in the Ragged Mountain agreement.

Mr. Mawyer summarized that there was a drought in 2002, and the plan to increase the local water supply was completed 10 years later. He stated that the new Ragged Mountain Dam was completed in 2014. He stated that they had to get new permits in 2023, and the timeline was to finish the pipeline and the reservoir expansion around 2033. He stated that it will have been a 31-year process from the drought to the completion of the infrastructure to increase our water supply capacity and be best prepared for future droughts.

Mr. Mawyer mentioned the drought occurring in 2022 in California, Arizona, and Mississippi. He mentioned that in Virginia, staff discussed the “La Niña Winter.” He explained that the state had three winters in a row where temperatures had been higher than normal and rainfall had been lower than normal. He stated that the same was predicted for the coming winter. He stated that a drought could be imminent. He mentioned that the drought of record lasted for 18 months—from June 2001 through November 2002.

Mr. Mawyer stated that there was concern because of the changing weather patterns. He stated that rainfall intensity would be greater, but periods of drought would be longer because of the global rising temperatures. He stated that they expected the same amount of rainfall, but it would rain intensely. He stated that the solution was to store the rain in the reservoirs, so they needed to build enough capacity to get the community through another extended drought period.

Mr. Mawyer stated that they looked to the strategic plan for guidance, and in the 2023 plan, they included the word, “evolving.” He stated that they developed a plan and a schedule for the completion of the pipe in 2018. He stated that circumstances may have changed, and they may need to reconsider the schedule.

Mr. Mawyer stated that the community had a drought of record in 2002, and it completed a plan in 2012. He stated that they had all made significant investments in water supply and treatment facilities since 2012. He stated that there had been about $85M of improvements for the dam and

treatment plant renovations. He stated that part of the Rivanna to Ragged Mountain pipeline had been built near the Birdwood property. He stated that they had to finish the pipeline project to fully maximize and optimize the use of the infrastructure at the Ragged Mountain Reservoir. He stated that 12 additional feet of water could be added.

Mr. Mawyer stated that the Board was not requested to take any action. He stated that the draft CIP would be presented in February, and they would discuss accelerating the Ragged Mountain to Rivanna pipeline by three years. He stated that they would assess the cost of the accelerated schedule, and they would bring the information to the Board in February. He stated that the City Council, the ACSA, and the Board may need to support the change.

Mr. Pinkston noted the rising costs of construction.

Mr. Mawyer stated that the longer they waited, the more the project would cost.

Mr. Pinkston noted that the main concern was stabilizing the debt curve.

Mr. Mawyer stated that it was a big impact to the City's and the ACSA's customers because they paid the debt service for the funds borrowed by the Authority to pay for the project.

Mr. O'Connell noted that Observatory WTP could take advantage of the increased capacity at Ragged Mountain. He noted that the central water line was important to the whole plan.

Mr. Mawyer stated that the central water line was a distribution pipeline. He noted that water supply was a three-legged stool—they had to have enough storage capacity, enough treatment capacity, and enough distribution capacity. He stated that the central waterline would help them distribute water through the City and the urban areas of the County.

Mr. Mawyer stated that the Observatory WTP was upgraded from 7.7M gallons to 10M gallons, an increase of 2.3M gallons. He explained that Observatory WTP was built in the 1950s, and it was able to originally produce 4M to 5M gallons per day. He stated that in practice, the community used about 10M gallons per day in the urban area. He stated that if South Rivanna WTP was to become unusable, or the South Rivanna Reservoir was unavailable, then they could supply the entire urban community from the Observatory WTP once the central water line was built.

Mr. Mawyer stated that connecting the reservoirs with the pipe and improving the treatment capacity gave them much more capacity and flexibility to withstand environmental or manmade issues.

Mr. O'Connell stated that the WTP projects and central waterline were not originally part of the water plan.

Ms. Mallek asked if it would be possible for staff to provide an estimate of potential cost savings by accelerating the construction of the pipeline before February. She noted that VDOT had drastically increased the price of highway and bridge projects.

Mr. Mawyer stated that they would estimate it.

Ms. Mallek stated that there had been a lot of discussion about using the County's local water supply because of upstream pollution and sewer overflow systems in the James River. She stated that thousands of staff hours had been spent on the project. She noted that the southern part of the City had been without water for some time, and that was part of the inspiration for the central waterline. She noted that they had affordable water compared to other localities.

Mr. Stewart clarified that accelerating the Ragged Mountain Reservoir renovations would require an amendment to the Agreement.

Mr. Mawyer stated yes.

Mr. Stewart asked if the item would be brought forward in the near term.

Mr. Mawyer stated that they were determining the cost estimates, and they would likely provide a recommendation to the Board in February. He stated that there were two items—the Ragged Mountain Agreement which stated that they had to wait until 85% of the community demand for safe yield water was met and the adopted schedule which determined the project would be constructed between 2027 and 2035. He stated that they would need to work within both documents to change the plan.

Ms. Mallek clarified that the DEQ permit impacted each of the other plans. She stated that the water supply plan was fulfilling an order from the DEQ. She asked if they would have to gain additional permission from DEQ.

Ms. Whitaker stated no. She stated that there was local control.

Ms. Mallek asked if they could be provided a summary of the 2020 bathymetric study.

Mr. Mawyer stated that they had found little change in the South Rivanna Reservoir from 10 years prior. He stated that they believed a large storm helped wash out the sediment.

Ms. Mallek asked if sediment washout happened at the dam.

Ms. Whitaker explained that what typically happened at a dam like South Rivanna was that sediment built up against the dam, and that was why the dam had mud gates. She stated that mud gates were low-level gates that were opened during certain times of operation with the intention of trying to keep the material from building up. She stated that they had found that prior to the 2018 storm, they were losing about 15M gallons of storage a year due to sediment. She stated that they believed the large storm in 2018 helped to remove 20 to 30 years of sediment buildup from the reservoir.

Mr. Gaffney stated that they had to consider what the reaction would be in 20 to 30 years. He stated that there was a drought of record in 2002. He stated they had to ask whether they were

ready for another drought of record. He stated that they were probably not as prepared as they should be.

c. Presentation: Dam Safety Program Overview
Victoria Fort, P.E., Senior Civil Engineer

Ms. Fort stated she would provide the annual dam safety program overview. She stated that in the state, the regulating body for dam safety was the Department of Conservation and Recreation (DCR). She stated that every dam in the state was subject to the regulations from the DCR with the exception of any dams owned or licensed by the federal government, dams under a certain size, or dams that impounded under a certain volume of water. She stated that any dams operated for mining, agricultural, or canal purposes may be subject to different regulations.

Ms. Fort mentioned the Edenville and Sanford Dam emergency from May 2020 in Michigan. She stated that on May 19, the Edenville Dam failed following heavy rains and flash flood conditions. She stated that the Sanford Dam, which was downstream, was then overtopped. She stated that as a result, over 2,500 properties were destroyed or damaged, and there was an estimated $250M in damages. She stated that during the emergency, over 11,000 residents had to be evacuated which prevented a loss of life.

Ms. Fort mentioned that the College Lake Dam overtopped in Lynchburg, Virginia. She stated that they experienced over six inches of rain in two hours in August 2018. She stated that the rainfall caused the water level in the lake to rise rapidly, and it overtopped the dam. She stated that damage was caused to the road and the embankment, but they were rapidly able to open a valve, de-water it, and avoid a catastrophic dam failure. She stated that over 150 residents were evacuated during the emergency. She stated that they had since determined to remove the dam and restore the stream bed at a cost of $20M. She stated the restoration would begin next year.

Ms. Fort stated that dam emergencies were costly and impactful to the communities. She stated that the dam safety program was a broad program that involved staff time and effort. She stated that it involved a lot of permitting and regulatory compliance, submission of operation certificates, annual inspection reports, studies, and other requirements.

She stated that the dam safety program also involved the development of emergency action plans, training, and exercises at regular intervals. She stated that it involved regular maintenance and vegetation control at all of the faculties, and regular repairs and upgrades. She stated that it included the installation and maintenance of public safety features, including signage, fencing, and cameras. She stated that it also included the completion of studies and reports for compliance with the regulations and the completion of regular inspections and surveys of the facilities. She mentioned around-the-clock monitoring, particularly of the high-hazard dams by the Operations Department.

Ms. Fort stated that included in the high-hazard dams were the South Fork Rivanna Dam, the Ragged Mountain Dam, the Sugar Hollow Dam, and the Beaver Creek Dam. She stated that there were two low-hazard dams—the Totier Creek Dam and the Lickinghole Dam. She stated that there were unpermitted dams, including the North Fork Rivanna low-head dam, the Buck

Mountain pond dam, the Mechums River low-head dam, and the Ivy MUC pond dam.

Ms. Fort stated that the South Fork Rivanna Dam was regulated by the Federal Energy Regulatory Commission (FERC). She stated that FERC regulated the dam because in 1987, a small hydropower facility was built at the site. She stated that the original dam was built in 1965. She stated that the hydropower facility was defunct and planned to be decommissioned in 2023, and at that time, they would surrender the exemption that placed them under federal regulation. She explained that after they surrendered the exemption, the dam would be regulated by DCR. She explained that the South Fork Rivanna Dam was a concrete gravity dam that was 700 feet long and 54 feet tall.

Ms. Fort stated that the Ragged Mountain Dam was regulated by DCR and completed in 2014. She stated that it was an earth-filled dam that was 785 feet long and 125 feet tall. She stated that it would eventually impound an additional 700M gallons of water once the water level was raised by 12 feet.

Ms. Fort stated that Sugar Hollow Dam was a state-regulated dam. She stated that it was located in the northwest part of the County in the Whitehall district. She stated that it was built in 1948 following a mudslide during which the dam sustained significant damage. She stated that it was upgraded, and the crest gates were replaced with an inflatable crest gate. She stated that the crest gate had been replaced the year before because it had reached the end of its useful life. She stated that the dam was 480 feet long and 96 feet tall.

Ms. Fort stated that the Beaver Creek Dam was located in Crozet, and it was state regulated. She stated that it was the sole water supply for Crozet, and it was built in 1963 for water supply and flood control. She stated that it was built in partnership with the Soil Conservation Service which was now the National Resources Conservation Service (NRCS). She explained that it was a 530-foot-long, earth-filled dam that was 60 feet tall. She stated that the dam was a popular County park, so they worked with County Parks and Recreation on the maintenance of the grassy areas of the dam. She stated that Brown's Gap Turnpike ran along the crest of the dam.

Ms. Fort stated that the Beaver Creek Dam was undergoing a planning and environmental assessment study funded by NRCS. She stated that it would require a spillway upgrade. She stated that they were completing the study, and it was expected to be done the next year. She stated that the design phase of the project would follow.

Ms. Fort stated that Totier Creek Dam and Lickinghole Creek Dam were low-hazard dams regulated by the state. She stated that Totier Creek Dam was located in Scottsville, and it was an earth-filled dam built in 1971. She stated that there was a rock-cut spillway. She stated that the dam was 277 feet long and 35 feet tall. She stated that it was a County park. She stated that the Lickinghole Creek Dam was located in Crozet south of Beaver Creek Reservoir. She stated that it was built in 1995 as a sediment storage basin. She stated that the property was managed and owned by the Authority. She stated that it was a concrete, gravity-fed dam that was 458 feet long and 42 feet tall.

Ms. Fort stated that dam safety emergencies were low-probability events, but they had the

potential for extremely high impact to the community. She stated that potential causes for dam emergencies included rainfall exceeding the designed level, material failure, vandalism, and public safety emergencies occurring at the dam.

Ms. Fort stated that the hazard level classification was created to convey the severity of the consequences of the dam's failure or misoperation. She stated that it did not reflect the condition of the dam. She stated that a high-hazard dam meant that if it were to fail, it would cause likely or probable loss of life and significant economic damage. She stated that if a low-hazard dam were to fail, they would expect no loss of life and no significant economic impacts.

Ms. Fort stated that the hazard potential dictated the design criteria for the dam and its spillway. She stated that the probable maximum precipitation (PMP) was the theoretical greatest depth of precipitation for a given duration that was physically possible over a particular drainage area at a certain time of the year. She stated that it was the most possible amount of precipitation that could be expected at a location. She stated that there was a different PMP for different dams.

Ms. Fort stated that dams with a high-hazard potential had to be designed to pass the flood that resulted from the PMP. She stated that the resulting flood from the PMP was called the probable maximum flood (PMF). She stated that for the Sugar Hollow Reservoir, a two-year storm would see about 3.5 inches of rain over a 24-hour period, and a 100-year storm would result in 9 inches of rain over 24 hours. She stated that the Sugar Hollow PMP was 34 inches of rain over 24 hours.

Ms. Fort stated that the South Fork Reservoir PMP was 23.7 inches of rain over 24 hours. She stated that Hurricane Camille brought over 27 inches of rain in an overnight period, and that was about 81% of the PMP. She stated that in Madison County in 1995, there was a storm that damaged the Sugar Hollow Dam, and they saw 25 to 30 inches of rain in a 16-hour period.

Ms. Fort stated that internally, they had the Owner's Dam Safety Program. She stated that it was a requirement of FERC that they develop the program, and it was applied to all of the facilities. She stated that the program includes a dam safety policy, internal training requirements and procedures, requirements for safe dam design and quality construction, and requirements for dam maintenance and monitoring.

Ms. Fort stated that they developed emergency action plans or emergency preparedness plans for the low-hazard dams. She stated that they were documents allowing coordination with emergency planning agencies during dam emergencies. She stated that the emergency plan was updated annually and distributed to plan holders. She stated that they annually performed training and drills for the emergency action plan.

Ms. Fort stated that they had signage, alarms, and plans for notification to downstream property owners to help with emergency response. She stated that Emergency Action Plans outlined how the Authority would coordinate with the Virginia Department of Emergency Management, the Emergency Communications Center, local police, fire and rescue, VDOT, media, local government, and other parties.

Ms. Fort stated that the Emergency Action Plans defined emergency responsibilities. She stated that in an emergency, the Authority was responsible for verifying and assessing the emergency conditions of the dam. She stated that they would then notify the participating emergency management agencies, and they would take any corrective actions at the facility. She stated that they would issue condition status reports to the community, and they would be the ones to declare the end of the emergency.

Ms. Fort stated that outside plan-holder agencies, including the Emergency Communication Center, County and City government, and fire and rescue, would receive condition status reports from the Authority and would notify the public. She stated that they would coordinate and conduct the evacuation from any inundation areas if required.

Ms. Fort stated the governments were required to provide mutual aid if requested and able, and they were required to declare an emergency which would provide more resources to respond to the emergency.

Ms. Fort stated that the failure scenarios and notification charts were an important part of the Emergency Action Plans. She stated that they prepared for three dam failure emergency scenarios. She stated that they prepared for if dam failure was imminent or had already occurred. She stated they would conduct immediate evacuations. She stated that the second scenario was if a potential failure scenario was developing. She stated that the most common scenario was for a non-failure emergency which was generally used in the case of heavy rainfall. She stated that each scenario had its own notification chart.

Mr. Mawyer noted that a non-failure emergency notification had been recently issued.

Ms. Fort stated that it had been issued for Sugar Hollow Dam.

Mr. Mawyer stated that he forwarded the notification to Mr. Richardson and Mr. Rogers and the other parties he was supposed to notify.

Ms. Fort stated that the dam breach inundation map was a part of the emergency action plans. She stated that the maps displayed three different scenarios for dam breaches and which structures would be inundated. She stated that it identified major intersections which may be affected. She stated that the map stated how long it would take after a failure for the flood wave to reach a certain location, the height of the water, and the maximum discharge.

Ms. Fort stated that the scenarios displayed included a sunny-day breach and the PMF under a dam failure and non-failure situation.

Ms. Fort stated that she would lastly review dam projects that were either in the planning phase or were completed. She stated that this year, drainage improvements were completed at the Lickinghole Creek Dam and Ragged Mountain Dam. She stated that last year, they replaced the rubber crest gate at the Sugar Hollow Dam, alterations to the Ivy MUC irrigation pond dam to lower the effective height of the dam and spillway so that it would fall below the requirements for state regulation. She stated that a number of repairs were completed as one major project at

South Rivanna Dam, including repairs of the two mud gates, grouting repairs at the raw water pump station, and safety improvements to create safer access to facilities.

Ms. Fort stated that in planning and design, study and inspections were being done on the Buck Mountain Pond Dam, which was the dam acquired upon purchase of the Buck Mountain property and required rehabilitation. She stated that work was being done to determine its hazard classification and the subsequent repairs needed for that location. She stated that they also were performing a planning study for eventual spillway upgrades at the Beaver Creek Dam, which was expected to be completed in early 2023 and would then move into the design phase.

Ms. Fort stated that at the South Fork Rivanna Dam, the hydropower facility was being decommissioned, the work had been approved by FERC, awarded to a contractor, and the work was expected to start in the winter of 2023. She stated that monthly tree and brush clearing was performed at all the dams, seasonal tree removal was performed when needed, installation and maintenance of new public safety measures, and other small repairs.

Ms. Mallek asked if decommissioning was an option for the Buck Mountain Dam.

Ms. Fort stated that it was one of several options available, rehabilitation being another one.

Ms. Mallek stated that the maps of the flood zones were intriguing. She stated that she was most reassured by, out of the improvements made at Ragged Mountain, the safety improvements made for all of the downstream areas that were in danger due to the original 15-foot spillway for such a large reservoir. She asked if there was an audible alarm for those who were so close in proximity along the creek.

Ms. Fort stated that there was no audible alarm located at that facility.

Mr. Mawyer stated that staff would notify him, and he in turn would call the City Manager and the County Executive to activate public safety personnel to evacuate certain areas and those residents.

Ms. Whitaker stated that they had cameras at all of their dam facilities so that operators could see the facility 24/7, and there were water level sensors, so an alarm would be set off if the elevation changed a certain level in a certain amount of time, and operators then knew to respond.

Ms. Fort stated that there was a lot of monitoring at the facilities, particularly at Ragged Mountain, where there were seepage monitors and piezometers, and if those readings changed dramatically, there would be SCADA alarms received. She stated that they recently activated the emergency action plan for Sugar Hollow. She stated that they generally were very conservative, and if rain was coming, they were already watching the data, and when certain thresholds were hit, they tried to be prepared to make notifications as early as possible.

Mr. Rogers stated that they should think about how to ensure their emergency action plans included the possible overflow of these dams. He stated that he would check and make sure that when the notification happened, they had some indication of how much time they had and

evacuation procedures. He stated that they had just approved an emergency manager several weeks ago and were writing an emergency management plan, so this should be included for consideration.

Ms. Fort stated that a state and federal requirement was for tabletop exercises to be conducted with the community at intervals, and they planned to have a large community training exercise event sometime in 2023, but it was early in the planning phases.

Mr. Mawyer stated that this program was not often discussed but related to an issue that could greatly affect the community and came with a huge responsibility. He stated that Ms. Fort and Ms. Whitaker were the limited staff who worked on this program, and they did so excellently, but if it went poorly, it would be very drastic, so they must be practiced on how to deal with dam safety.

Ms. Fort stated that the water operators did their jobs well and efficiently.

Ms. Mallek asked if there was an ability to electronically open the gates. She stated that it was dangerous for people to do so by hand.

Ms. Fort stated that they could remotely operate some of the raw water valves at Sugar Hollow, but did not have remote operation of all the dam gates.

Ms. Whitaker stated that the rubber gate at Sugar Hollow was fully automated, so it was programmed to move appropriately, with staff oversight and a manual release valve. She stated that other facilities that were difficult to get to had some level of automation, sometimes local and sometimes remote automation.

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

Mr. Gaffney asked if they had closed on the property of Buck Mountain.

Mr. Mawyer stated that no, January 10 was the planned closing date. He stated that the attorneys had been processing the paperwork, and things were proceeding as planned.

11. *CLOSED MEETING*

There was no reason for a closed meeting.

12. *ADJOURNMENT*

At 3:50 p.m., Mr. O'Connell moved to adjourn the meeting of the Rivanna Water and Sewer Authority. Mr. Pinkston seconded the motion, which passed unanimously (6-0). (Mr. Richardson was absent)

RIVANNA WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS

Resolution of Appreciation for Jene R. Phillips, Jr.

WHEREAS, Mr. Phillips has served the Rivanna Water and Sewer Authority since May of 1982 in a number of positions, most recently as a Wastewater Operator; and

WHEREAS, over the same period in excess of 40 years, Mr. Phillips has been a valuable resource and has positively impacted the Authority, its customers and its employees; and

WHEREAS, the Rivanna Water and Sewer Authority Board of Directors is most grateful for the professional and personal contributions Mr. Phillips has provided to the Rivanna Water and Sewer Authority; and

NOW, THEREFORE, BE IT RESOLVED that the Rivanna Water and Sewer Authority Board of Directors recognizes and thanks Mr. Phillips for his distinguished service, efforts and achievements as a member of the Rivanna Water and Sewer Authority, and presents this Resolution as a token of esteem, with its best wishes in his retirement.

BE IT FURTHER RESOLVED that this Resolution be entered upon the permanent Minutes of the Rivanna Water and Sewer Authority.

Michael Gaffney, Chairman
Lauren Hildebrand
Ann Mallek
Gary O'Connell
Brian Pinkston
Jeff Richardson
Michael C. Rogers

MEMORANDUM

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

FROM: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **EXECUTIVE DIRECTOR'S REPORT**

DATE: **JANUARY 24, 2023**

STRATEGIC PLAN GOAL: COMMUNICATION AND COLLABORATION

Board Chair Mike Gaffney Reappointed

We were very pleased that Mike Gaffney was reappointed to the RWSA Board by the Albemarle Board of Supervisors and the Charlottesville City Council as the joint City/County representative. This is Mr. Gaffney's 11th term (21st year) with our Board and his service is greatly appreciated.

City/County Updates

Quarterly update reports to Charlottesville City Council and the Albemarle County Board of Supervisors were provided this month, along with a presentation to the City Council.

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

Recognitions

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

- Travis Granger – Class 2 Water Operator

Staff Apprenticeship Program

The Maintenance Department, with support from the Human Resources Manager, provides a Maintenance Mechanic and HVAC Mechanic education and certification program through the Virginia Department of Labor & Industry's Registered Apprenticeship Program. This program allows employees to improve their skills and advance professionally. The program ultimately provides cost savings to the Authority as outside contracting for these advanced skill sets is very costly. While RWSA pays for the educational classes listed below, the mechanics attend the classes on their own time.

The following staff are currently enrolled in the Apprenticeship Program:

- Josh Powell (Maintenance Mechanic program) – currently taking Basic Machine Shop
- Tyrone Hughes (HVAC Mechanic program) – currently taking Refrigeration 4

- David Jefferies (HVAC Mechanic program)
- Matt Walker (Maintenance Mechanic program) - currently taking Industrial Drive Components
- Blake Shifflett (HVAC Mechanic program) – currently taking Basic Machine Shop
- Steve Minnis (Maintenance Mechanic program) – currently taking Industrial Drive Components
- Tony Fusco (Maintenance Mechanic program)
- Richard McElfresh (Maintenance Mechanic program) – currently taking Basic Auto Mechanics

Additionally, Kenny Lawhorne and Maurice Whitlow are Journeyman Maintenance Mechanics.

Overview of Program:

An apprenticeship lasts for 4 years. Once all requirements of the apprenticeship are fulfilled by the employee, they are certified as a Journeyman. The requirements of the apprenticeship program include:

1. **8,000 hours of on-the-job training** –Each year of employment counts for 2000 hours.
2. **576 hours of classroom time** or related training instruction (144 hours per year). This can be courses at a variety of schools like Valley VoTech, CATEC, PVCC, etc.

STRATEGIC PLAN GOAL: PLANNING AND INFRASTRUCTURE

South Rivanna River Crossing

The Virginia Marine Resources Commission has issued RWSA a permit for installation of a 24-inch water transmission line to be located beneath the South Rivanna River, north of Charlottesville. Once completed, the water line will provide an essential second crossing pipe under the South Rivanna River for reliability and to meet future water demands.

Observatory WTP Renovation

No drinking water will be produced at the Observatory WTP from December 5 – March 15, 2023 to complete the renovation and treatment capacity increase from 7.7 to 10 mgd. The South Rivanna and North Rivanna WTPs will serve the Urban Water System (City and adjacent areas of the County) during this period.

Other Major Projects

1. We continue to work with UVA and UVAF to acquire final easements on the following major water piping projects:

- S. Rivanna to Ragged Mtn Reservoir Water Pipe: 8 miles of 36" pipe

- Ragged Mtn Reservoir to Observatory WTP Water Pipe and Pump Station: 5 miles of 36" pipe

2. Engineering design and field investigations continue for the Central Water Line project to be constructed along Cherry Avenue.

STRATEGIC PLAN GOAL: ENVIRONMENTAL STEWARDSHIP

Buck Mountain – Elliot House

Sale of the Elliot House and 2.2 acres on Buck Mountain Road was completed on January 10th with a final sales price of $136,501. Proceeds from the sale have been received, and will support our Buck Mountain property management program.

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

MEMORANDUM

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

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

REVIEWED: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **NOVEMBER MONTHLY FINANCIAL SUMMARY – FY 2023**

DATE: **JANUARY 24, 2023**

Financial Snapshot

November ended with an overall net deficit of $6,400. Operating rate revenues for the first five months of the fiscal year are above average, and we received the annual payment from the County for the septage receiving support agreement. However, operating expenses are currently over the prorated annual budget. Total revenues are $902,400 over budget estimates, and total expenses are $908,800 over budget. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	$ 4,103,206	$ 4,340,087	$ 1,086,359	$ 9,529,652
Expenses	(4,168,902)	(4,425,061)	(1,059,054)	(9,653,017)
Surplus (deficit)	$ (65,696)	$ (84,974)	$ 27,305	$ (123,365)
Debt Service				
Revenues	$ 3,590,157	$ 3,946,053	$ 989,040	$ 8,525,250
Expenses	(3,570,215)	(3,854,006)	(984,067)	(8,408,288)
Surplus (deficit)	$ 19,942	$ 92,047	$ 4,973	$ 116,962
Total				
Revenues	$ 7,693,363	$ 8,286,140	$ 2,075,399	$ 18,054,902
Expenses	(7,739,117)	(8,279,067)	(2,043,121)	(18,061,305)
Surplus (deficit)	$ (45,754)	$ 7,073	$ 32,278	$ (6,403)

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

Detailed Financials

The Authority's actual operating revenues through November are $585,200 over the prorated annual budget estimates, and operating expenses exceed budget by $708,500. 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, Urban Wastewater, Maintenance, Engineering – pages 2, 5, 9, 11) – The Urban Water and Wastewater rate center salaries are higher than budget due to pay increases for plant operators who achieved higher licenses. The prorated budget amounts through November are calculated as 5/12 of the annual budget. Actual payroll is paid biweekly for a total of 26 pay periods annually. There have been 11 pay periods instead of 10 in the first 5 months of this fiscal year, which affects the comparison of budget vs. actual payroll costs.

C. Professional Services (Urban Water, Urban Wastewater, Administration – pages 2, 5, 8) – Urban Water and Urban Wastewater are over the prorated budget for engineering and technical services for various surveys and studies. The Administration department incurred $71,000 of unbudgeted engineering and technical services for grant program strategy and application development.

D. Other Services & Charges (Urban Water, Urban Wastewater, Administration – pages 2, 5, 8) – Urban Water paid some annual watershed management costs, as budgeted. Some of Urban Wastewater's costs in this category are running higher than originally estimated, such as odor control chemical costs for the Crozet Pump Station, the cost of sludge hauling for composting, permit costs, and utilities. The Administration department is currently over the prorated budget for bond trustee fees and safety training.

E. Information Technology (Urban Water, Administration, Engineering – pages 2, 8, 11) – Urban Water incurred some unbudgeted computer hardware purchases. The Administration department has spent $28,700 more than its annual budget for computer hardware. The Engineering and Administration departments paid some annual software maintenance and license fees similar to those noted in Note A. above.

F. Communication (Administration – page 8) – The Administration department switched to a new telephone system which was not included in the budget.

G. Operations and Maintenance (Urban Water, Urban Wastewater, Maintenance – pages 2, 5, 9) – Urban Water is $110,500 over the prorated annual budget for chemical costs, which was primarily due to the purchase of a carbon exchange in September for $102,400, but that was funded by GAC Reserves, as budgeted. Urban Water made its $175,000 annual lease payment to UVA for the Observatory facility in August. (See Note A.) Urban Wastewater paid $86,000 for an annual equipment maintenance contract, and its chemical costs are running higher than originally estimated. The Maintenance department is slightly over the prorated budget on supplies.

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

Consolidated Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2023	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 20,614,425	$ 8,589,344	$ 9,033,087	$ 443,743	5.17%
Lease Revenue		85,000	35,417	50,276	14,860	41.96%
Admin., Maint. & Engineering Revenue		656,000	273,333	285,367	12,033	4.40%
Other Revenues		639,036	266,265	310,387	44,122	16.57%
Use of Reserves-GAC	G	150,000	62,500	102,400	39,900	63.84%
Interest Allocation		7,170	2,988	33,501	30,513	1021.36%
Total Operating Revenues		**$ 22,151,631**	**$ 9,229,846**	**$ 9,815,018**	**$ 585,171**	**6.34%**
Expenses						
Personnel Cost	A, B	$ 10,494,727	$ 4,372,803	$ 4,432,397	$ (59,595)	-1.36%
Professional Services	C	629,900	262,458	341,857	(79,399)	-30.25%
Other Services & Charges	A, D	3,427,460	1,428,108	1,539,812	(111,704)	-7.82%
Communications	F	200,342	83,476	107,032	(23,556)	-28.22%
Information Technology	A, E	816,626	340,261	567,516	(227,255)	-66.79%
Supplies		39,950	16,646	20,347	(3,701)	-22.24%
Operations & Maintenance	A, G	5,222,531	2,176,055	2,450,609	(274,554)	-12.62%
Equipment Purchases		420,100	175,042	103,813	71,229	40.69%
Depreciation		900,000	375,000	375,000	-	0.00%
Total Operating Expenses		**$ 22,151,636**	**$ 9,229,848**	**$ 9,938,383**	**$ (708,535)**	**-7.68%**
Operating Surplus/(Deficit)		**$ (5)**	**$ (2)**	**$ (123,366)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 19,522,929	$ 8,134,554	$ 8,134,555	$ 1	0.00%
Septage Receiving Support - County	A	109,440	45,600	109,440	63,840	140.00%
Buck Mountain Lease Revenue		1,600	667	1,480	813	121.93%
Trust Fund Interest		990	413	52,721	52,308	12680.75%
Reserve Fund Interest		64,230	26,763	227,055	200,292	748.41%
Total Debt Service Revenues		**$ 19,699,189**	**$ 8,207,995**	**$ 8,525,250**	**$ 317,255**	**3.87%**
Debt Service Costs						
Total Principal & Interest		$ 16,165,241	$ 6,735,517	$ 6,735,517	$ -	0.00%
Reserve Additions-Interest		64,230	26,763	227,055	(200,292)	-748.41%
Debt Service Ratio Charge		725,000	302,083	302,083	-	0.00%
Reserve Additions-CIP Growth		2,744,717	1,143,632	1,143,632	-	0.00%
Total Debt Service Costs		**$ 19,699,188**	**$ 8,207,995**	**$ 8,408,287**	**$ (200,292)**	**-2.44%**
Debt Service Surplus/(Deficit)		**$ 1**	**$ 0**	**$ 116,963**		

Summary

Total Revenues	$ 41,850,820	$ 17,437,842	$ 18,340,268	$ 902,426	5.18%
Total Expenses	41,850,824	17,437,843	18,346,671	(908,827)	-5.21%
Surplus/(Deficit)	**$ (4)**	**$ (2)**	**$ (6,403)**		

Rivanna Water & Sewer Authority
Monthly Financial Statements - November 2022

Urban Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2023*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 9,014,863	$ 3,756,193	$ 3,940,968	$ 184,775	4.92%
Lease Revenue		60,000	25,000	37,064	12,064	48.25%
Miscellaneous		-	-	8,905	8,905	
Use of Reserves-GAC	G	150,000	62,500	102,400	39,900	63.84%
Interest Allocation		3,000	1,250	13,869	12,619	1009.54%
Total Operating Revenues		**$ 9,227,863**	**$ 3,844,943**	**$ 4,103,206**	**$ 258,263**	**6.72%**
Expenses						
Personnel Cost	B	$ 2,234,714	$ 931,131	$ 924,072	$ 7,059	0.76%
Professional Services	C	222,000	92,500	136,702	(44,202)	-47.79%
Other Services & Charges	A, D	716,300	298,458	345,169	(46,710)	-15.65%
Communications		100,920	42,050	42,231	(181)	-0.43%
Information Technology	A, E	104,950	43,729	65,997	(22,268)	-50.92%
Supplies		5,400	2,250	3,173	(923)	-41.02%
Operations & Maintenance	A, G	2,511,396	1,046,415	1,183,019	(136,604)	-13.05%
Equipment Purchases		16,000	6,667	8,285	(1,618)	-24.27%
Depreciation		300,000	125,000	125,000	-	0.00%
Subtotal Before Allocations		$ 6,211,680	$ 2,588,200	$ 2,833,648	$ (245,448)	-9.48%
Allocation of Support Departments		3,016,183	1,256,743	1,335,254	(78,511)	-6.25%
Total Operating Expenses		**$ 9,227,863**	**$ 3,844,943**	**$ 4,168,902**	**$ (323,959)**	**-8.43%**
Operating Surplus/(Deficit)		**$ (0)**	**$ (0)**	**$ (65,696)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 8,302,224	$ 3,459,260	$ 3,459,260	$ -	0.00%
Trust Fund Interest		400	167	19,296	19,129	11477.44%
Reserve Fund Interest		31,000	12,917	110,122	97,205	752.55%
Lease Revenue		1,600	667	1,480	813	121.93%
Total Debt Service Revenues		**$ 8,335,224**	**$ 3,473,010**	**$ 3,590,157**	**$ 117,147**	**3.37%**
Debt Service Costs						
Total Principal & Interest		$ 6,964,724	$ 2,901,968	$ 2,901,968	$ -	0.00%
Reserve Additions-Interest		31,000	12,917	110,122	(97,205)	-752.55%
Debt Service Ratio Charge		400,000	166,667	166,667	-	0.00%
Reserve Additions-CIP Growth		939,500	391,458	391,458	-	0.00%
Total Debt Service Costs		**$ 8,335,224**	**$ 3,473,010**	**$ 3,570,215**	**$ (97,205)**	**-2.80%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 19,942**		
Rate Center Summary						
Total Revenues		$ 17,563,087	$ 7,317,953	$ 7,693,363	$ 375,410	5.13%
Total Expenses		17,563,087	7,317,953	7,739,117	(421,164)	-5.76%
Surplus/(Deficit)		**$ (0)**	**$ (0)**	**$ (45,754)**		
Costs per 1000 Gallons		$ 2.72		$ 2.81		
Operating and DS		$ 5.17		$ 5.21		
Thousand Gallons Treated		3,397,700	1,415,708	1,485,476	69,768	4.93%
or						
Flow (MGD)		9.309		9.709		

Rivanna Water & Sewer Authority
Monthly Financial Statements - November 2022

Crozet Water Rate Center
Revenues and Expenses Summary

	Budget FY 2023	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Notes					
Revenues					
Operations Rate Revenue	$ 1,197,084	$ 498,785	$ 498,785	$ -	0.00%
Lease Revenues	25,000	10,417	13,213	2,796	26.84%
Interest Allocation	400	167	1,876	1,709	1025.62%
Total Operating Revenues	**$ 1,222,484**	**$ 509,368**	**$ 513,874**	**$ 4,505**	**0.88%**
Expenses					
Personnel Cost	$ 352,559	$ 146,900	$ 146,904	$ (4)	0.00%
Professional Services	22,900	9,542	2,698	6,843	71.72%
Other Services & Charges	118,700	49,458	52,962	(3,504)	-7.08%
Communications	17,600	7,333	6,392	942	12.84%
Information Technology	4,950	2,063	4,474	(2,411)	-116.91%
Supplies	1,500	625	572	53	8.41%
Operations & Maintenance	358,500	149,375	122,462	26,913	18.02%
Equipment Purchases	3,000	1,250	1,250	-	0.00%
Depreciation	60,000	25,000	25,000	-	0.00%
Subtotal Before Allocations	$ 939,709	$ 391,546	$ 362,713	$ 28,832	7.36%
Allocation of Support Departments	282,780	117,825	124,752	(6,927)	-5.88%
Total Operating Expenses	**$ 1,222,489**	**$ 509,371**	**$ 487,465**	**$ 21,906**	**4.30%**
Operating Surplus/(Deficit)	**$ (5)**	**$ (2)**	**$ 26,409**		

Operating Budget vs. Actual

Debt Service Budget vs. Actual

Revenues					
Debt Service Rate Revenue	$ 2,161,704	$ 900,710	$ 900,710	$ -	0.00%
Trust Fund Interest	80	33	4,481	4,448	13343.72%
Reserve Fund Interest	1,200	500	4,314	3,814	762.80%
Total Debt Service Revenues	**$ 2,162,984**	**$ 901,243**	**$ 909,505**	**$ 8,262**	**0.92%**
Debt Service Costs					
Total Principal & Interest	$ 1,217,280	$ 507,200	$ 507,200	$ -	0.00%
Reserve Additions-Interest	1,200	500	4,314	(3,814)	-762.80%
Reserve Additions-CIP Growth	944,500	393,542	393,542	-	0.00%
Total Debt Service Costs	**$ 2,162,980**	**$ 901,242**	**$ 905,056**	**$ (3,814)**	**-0.42%**
Debt Service Surplus/(Deficit)	**$ 4**	**$ 2**	**$ 4,450**		

Rate Center Summary

Total Revenues	$ 3,385,468	$ 1,410,612	$ 1,423,379	$ 12,767	0.91%
Total Expenses	3,385,469	1,410,612	1,392,521	18,092	1.28%
Surplus/(Deficit)	**$ (1)**	**$ (1)**	**$ 30,858**		
Costs per 1000 Gallons	$ 6.03		$ 5.10		
Operating and DS	$ 16.70		$ 14.58		
Thousand Gallons Treated	202,697	84,457	95,500	11,043	13.08%
Flow (MGD)	0.555		0.624		

Rivanna Water & Sewer Authority
Monthly Financial Statements - November 2022

Scottsville Water Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2023*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 569,556	$ 237,315	$ 237,315	$ -	0.00%
Interest Allocation		200	83	871	788	945.24%
Total Operating Revenues		**$ 569,756**	**$ 237,398**	**$ 238,186**	**$ 788**	**0.33%**
Expenses						
Personnel Cost		$ 212,797	$ 88,666	$ 89,522	$ (857)	-0.97%
Professional Services		5,000	2,083	5,153	(3,070)	-147.34%
Other Services & Charges		27,100	11,292	13,566	(2,274)	-20.14%
Communications		6,400	2,667	2,756	(89)	-3.33%
Information Technology		4,400	1,833	570	1,263	68.92%
Supplies		100	42	138	(96)	-230.05%
Operations & Maintenance		97,925	40,802	32,964	7,838	19.21%
Equipment Purchases		1,600	667	1,570	(903)	-135.47%
Depreciation		40,000	16,667	16,667	0	0.00%
Subtotal Before Allocations		$ 395,322	$ 164,718	$ 162,904	$ 1,814	1.10%
Allocation of Support Departments		174,433	72,680	75,503	(2,822)	-3.88%
Total Operating Expenses		**$ 569,755**	**$ 237,398**	**$ 238,407**	**$ (1,009)**	**-0.42%**
Operating Surplus/(Deficit)		**$ 1**	**$ 0**	**$ (221)**		

Debt Service Budget vs. Actual

	Budget FY 2023	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues					
Debt Service Rate Revenue	$ 150,300	$ 62,625	$ 62,625	$ -	0.00%
Trust Fund Interest	10	4	474	470	11287.52%
Reserve Fund Interest	850	354	2,952	2,598	733.42%
Total Debt Service Revenues	**$ 151,160**	**$ 62,983**	**$ 66,051**	**$ 3,068**	**4.87%**
Debt Service Costs					
Total Principal & Interest	$ 148,726	$ 61,969	$ 61,969	$ -	0.00%
Reserve Additions-Interest	850	354	2,952	(2,598)	
Reserve Additions-CIP Growth	1,589	662	662	-	
Total Debt Service Costs	**$ 151,165**	**$ 62,985**	**$ 65,583**	**$ (2,598)**	**-4.12%**
Debt Service Surplus/(Deficit)	**$ (5)**	**$ (2)**	**$ 468**		

Rate Center Summary

	Budget FY 2023	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Total Revenues	$ 720,916	$ 300,382	$ 304,237	$ 3,856	1.28%
Total Expenses	720,920	300,383	303,990	(3,606)	-1.20%
Surplus/(Deficit)	**$ (4)**	**$ (2)**	**$ 248**		
Costs per 1000 Gallons	$ 33.07		$ 24.68		
Operating and DS	$ 41.84		$ 31.48		
Thousand Gallons Treated	17,230	7,179	9,658	2,479	34.53%
or					
Flow (MGD)	0.047		0.063		

Rivanna Water & Sewer Authority
Monthly Financial Statements - November 2022

Urban Wastewater Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2023*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 9,033,662	$ 3,764,026	$ 4,022,994	$ 258,968	6.88%
Stone Robinson WWTP		39,036	16,265	7,663	(8,602)	-52.89%
Septage Acceptance		500,000	208,333	254,690	46,357	22.25%
Nutrient Credits		100,000	41,667	39,129	(2,538)	-6.09%
Miscellaneous Revenue		-	-	-	-	
Interest Allocation		3,300	1,375	15,611	14,236	1035.37%
Total Operating Revenues		**$ 9,675,998**	**$ 4,031,666**	**$ 4,340,087**	**$ 308,422**	**7.65%**
Expenses						
Personnel Cost	**B**	$ 1,325,384	$ 552,243	$ 611,521	$ (59,277)	-10.73%
Professional Services	**C**	75,000	31,250	76,701	(45,451)	-145.44%
Other Services & Charges	**A, D**	2,276,980	948,742	1,004,526	(55,784)	-5.88%
Communications		1,900	792	4,425	(3,634)	-458.98%
Information Technology		110,400	46,000	38,352	7,648	16.63%
Supplies		1,200	500	217	283	56.55%
Operations & Maintenance	**A, G**	1,698,660	707,775	904,767	(196,992)	-27.83%
Equipment Purchases		143,000	59,583	20,833	38,750	65.03%
Depreciation		470,000	195,833	195,833	(0)	0.00%
Subtotal Before Allocations		$ 6,102,524	$ 2,542,718	$ 2,857,175	$ (314,457)	-12.37%
Allocation of Support Departments		3,573,476	1,488,948	1,567,886	(78,938)	-5.30%
Total Operating Expenses		**$ 9,675,999**	**$ 4,031,666**	**$ 4,425,062**	**$ (393,395)**	**-9.76%**
Operating Surplus/(Deficit)		**$ (1)**	**$ (0)**	**$ (84,974)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 8,878,107	$ 3,699,211	$ 3,699,210	$ (1)	0.00%
Septage Receiving Support - County	**A**	109,440	45,600	109,440	63,840	140.00%
Trust Fund Interest		500	208	28,416	28,208	13539.87%
Reserve Fund Interest		31,000	12,917	108,986	96,070	743.76%
Total Debt Service Revenues		**$ 9,019,047**	**$ 3,757,936**	**$ 3,946,053**	**$ 188,116**	**5.01%**
Debt Service Costs						
Total Principal & Interest		$ 7,808,347	$ 3,253,478	$ 3,253,478	$ -	0.00%
Reserve Additions-Interest		31,000	12,917	108,986	(96,070)	-743.76%
Debt Service Ratio Charge		325,000	135,417	135,417	-	0.00%
Reserve Additions-CIP Growth		854,700	356,125	356,125	-	0.00%
Total Debt Service Costs		**$ 9,019,047**	**$ 3,757,936**	**$ 3,854,006**	**$ (96,070)**	**-2.56%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 92,047**		
Rate Center Summary						
Total Revenues		$ 18,695,045	$ 7,789,602	$ 8,286,140	$ 496,538	6.37%
Total Expenses		18,695,046	7,789,603	8,279,068	(489,465)	-6.28%
Surplus/(Deficit)		**$ (1)**	**$ (0)**	**$ 7,073**		
Costs per 1000 Gallons		$ 2.85		$ 2.93		
Operating and DS		$ 5.51		$ 5.48		
Thousand Gallons Treated		3,390,400	1,412,667	1,510,133	97,466	6.90%
or						
Flow (MGD)		9.289		9.870		

Rivanna Water & Sewer Authority
Monthly Financial Statements - November 2022

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

	Budget FY 2023	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual					
Notes					
Revenues					
Operations Rate Revenue	$ 443,640	$ 184,850	$ 184,850	$ -	0.00%
Interest Allocation	150	63	704	641	1025.63%
Total Operating Revenues	**$ 443,790**	**$ 184,913**	**$ 185,554**	**$ 641**	**0.35%**
Expenses					
Personnel Cost	$ 115,815	$ 48,256	$ 53,582	$ (5,325)	-11.04%
Professional Services	5,000	2,083	7,772	(5,688)	-273.03%
Other Services & Charges	35,750	14,896	18,399	(3,503)	-23.52%
Communications	-	-	1,374	(1,374)	
Information Technology	4,425	1,844	1,446	398	21.59%
Supplies	-	-	-	-	
Operations & Maintenance	134,950	56,229	36,889	19,340	34.39%
Equipment Purchases	3,800	1,583	1,583	(0)	0.00%
Depreciation	10,000	4,167	4,167	0	0.00%
Subtotal Before Allocations	$ 309,740	$ 129,058	$ 125,211	$ 3,847	2.98%
Allocation of Support Departments	134,045	55,852	56,455	(603)	-1.08%
Total Operating Expenses	**$ 443,785**	**$ 184,910**	**$ 181,667**	**$ 3,244**	**1.75%**
Operating Surplus/(Deficit)	**$ 5**	**$ 2**	**$ 3,887**		
Debt Service Budget vs. Actual					
Revenues					
Debt Service Rate Revenue	$ 20,484	$ 8,535	$ 8,535	$ -	0.00%
Trust Fund Interest	-	-	-	-	
Reserve Fund Interest	80	33	227	194	581.09%
Total Debt Service Revenues	**$ 20,564**	**$ 8,568**	**$ 8,762**	**$ -**	**0.00%**
Debt Service Costs					
Total Principal & Interest	$ 18,717	$ 7,799	$ 7,799	$ -	0.00%
Reserve Additions-CIP Growth	1,761	734	734	-	0.00%
Reserve Additions-Interest	80	33	227	(194)	-581.09%
Total Debt Service Costs	**$ 20,558**	**$ 8,566**	**$ 8,760**	**$ (194)**	**-2.26%**
Debt Service Surplus/(Deficit)	**$ 6**	**$ 3**	**$ 3**		

Rate Center Summary

Total Revenues	$ 464,354	$ 193,481	$ 194,316	$ 835	0.43%
Total Expenses	464,343	193,476	190,426	3,050	1.58%
Surplus/(Deficit)	**$ 11**	**$ 5**	**$ 3,889**		
Costs per 1000 Gallons	$ 10.72		$ 11.62		
Operating and DS	$ 11.22		$ 12.18		
Thousand Gallons Treated	41,401	17,250	15,638	(1,612)	**-9.35%**
or					
Flow (MGD)	0.113		0.102		

Rivanna Water & Sewer Authority
Monthly Financial Statements - November 2022

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2023*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 355,620	$ 148,175	$ 148,175	$ -	0.00%
Interest Allocation		120	50	570	520	1039.02%
Total Operating Revenues		**$ 355,740**	**$ 148,225**	**$ 148,745**	**$ 520**	**0.35%**
Expenses						
Personnel Cost		$ 115,795	$ 48,248	$ 53,582	$ (5,334)	-11.05%
Professional Services		5,000	2,083	930	1,153	55.35%
Other Services & Charges		26,650	11,104	12,128	(1,023)	-9.22%
Communications		3,770	1,571	1,566	4	0.28%
Information Technology		4,125	1,719	427	1,291	75.13%
Supplies		-	-	-	-	
Operations & Maintenance		52,000	21,667	20,260	1,407	6.49%
Equipment Purchases		3,800	1,583	1,583	(0)	0.00%
Depreciation		20,000	8,333	8,333	(0)	0.00%
Subtotal Before Allocations		$ 231,140	$ 96,308	$ 98,810	$ (2,501)	-2.60%
Allocation of Support Departments		124,604	51,918	52,705	(787)	-1.52%
Total Operating Expenses		**$ 355,744**	**$ 148,227**	**$ 151,515**	**$ (3,288)**	**-2.22%**
Operating Surplus/(Deficit)		**$ (4)**	**$ (2)**	**$ (2,770)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 10,110	$ 4,213	$ 4,215	$ 3	0.06%
Trust Fund Interest		-	-	53	53	
Reserve Fund Interest		100	42	454	413	990.08%
Total Debt Service Revenues		**$ 10,210**	**$ 4,254**	**$ 4,722**	**$ 468**	**11.00%**
Debt Service Costs						
Total Principal & Interest		$ 7,447	$ 3,103	$ 3,103	$ -	0.00%
Reserve Additions-Interest		100	42	454	(413)	-990.08%
Estimated New Principal & Interest		2,667	1,111	1,111	-	0.00%
Total Debt Service Costs		**$ 10,214**	**$ 4,256**	**$ 4,668**	**$ (413)**	**-9.69%**
Debt Service Surplus/(Deficit)		**$ (4)**	**$ (2)**	**$ 54**		

Rate Center Summary

Total Revenues	$ 365,950	$ 152,479	$ 153,466	$ 987	0.65%
Total Expenses	365,958	152,483	156,183	(3,700)	-2.43%
Surplus/(Deficit)	**$ (8)**	**$ (3)**	**$ (2,717)**		
Costs per 1000 Gallons	$ 15.05		$ 21.52		
Operating and DS	$ 15.48		$ 22.18		
Thousand Gallons Treated	23,643	9,851	7,042	(2,809)	**-28.52%**
or					
Flow (MGD)	0.065		0.046		

Rivanna Water & Sewer Authority
Monthly Financial Statements - November 2022

Administration

Operating Budget vs. Actual

	Notes	*Budget FY 2023*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ 654,000	$ 272,500	$ 272,500	$ -	0.00%
Bond Proceeeds Funding Bond Issuance Costs		-	-	-	-	
Miscellaneous Revenue		2,000	833	8,619	7,786	934.27%
Total Operating Revenues		**$ 656,000**	**$ 273,333**	**$ 281,119**	**$ 7,786**	**2.85%**
Expenses						
Personnel Cost		$ 2,450,092	$ 1,020,872	$ 1,006,788	$ 14,083	1.38%
Professional Services	**C**	170,000	70,833	85,392	(14,558)	-20.55%
Other Services & Charges	**D**	162,600	67,750	82,937	(15,187)	-22.42%
Communications	**F**	24,780	10,325	38,254	(27,929)	-270.50%
Information Technology	**A, E**	404,876	168,698	369,904	(201,205)	-119.27%
Supplies		23,000	9,583	12,876	(3,293)	-34.36%
Operations & Maintenance		67,850	28,271	26,489	1,782	6.30%
Equipment Purchases		13,100	5,458	5,458	(0)	0.00%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 3,316,298**	**$ 1,381,791**	**$ 1,628,098**	**$ (246,307)**	**-17.83%**

Department Summary

Net Costs Allocable to Rate Centers	**$ (2,660,298)**	**$ (1,108,458)**	**$ (1,346,979)**	**$ 238,521**	**-21.52%**
Allocations to the Rate Centers					
Urban Water	44.00% **$ 1,170,531**	**$ 487,721**	**$ 592,671**	**$ (104,949)**	
Crozet Water	4.00% **$ 106,412**	**44,338**	**53,879**	**(9,541)**	
Scottsville Water	2.00% **$ 53,206**	**22,169**	**26,940**	**(4,770)**	
Urban Wastewater	48.00% **$ 1,276,943**	**532,060**	**646,550**	**(114,490)**	
Glenmore Wastewater	1.00% **$ 26,603**	**11,085**	**13,470**	**(2,385)**	
Scottsville Wastewater	1.00% **$ 26,603**	**11,085**	**13,470**	**(2,385)**	
	100.00% **$ 2,660,298**	**$ 1,108,458**	**$ 1,346,979**	**$ (238,521)**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - November 2022

Maintenance

Operating Budget vs. Actual

	Notes	*Budget FY 2023*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ -	$ -	
Miscellaneous Revenue		-	-	-	-	
Total Operating Revenues		**$ -**	**$ -**	**$ -**	**$ -**	
Expenses						
Personnel Cost	**B**	$ 1,477,565	$ 615,652	$ 613,327	$ 2,325	0.38%
Professional Services		-	-	414	(414)	
Other Services & Charges		33,600	14,000	6,239	7,761	55.43%
Communications		24,500	10,208	5,482	4,727	46.30%
Information Technology		32,500	13,542	10,370	3,172	23.42%
Supplies		2,500	1,042	657	384	36.88%
Operations & Maintenance	**G**	104,900	43,708	60,025	(16,317)	-37.33%
Equipment Purchases		212,600	88,583	53,583	35,000	39.51%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 1,888,165**	**$ 786,736**	**$ 750,098**	**$ 36,638**	**4.66%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,888,165)**	**$ (786,736)**	**$ (750,098)**	**$ (36,638)**	**4.66%**
Allocations to the Rate Centers						
Urban Water	30.00%	**$ 566,450**	**$ 236,021**	**$ 225,029**	**$ 10,991**	
Crozet Water	3.50%	**66,086**	**27,536**	**26,253**	**1,282**	
Scottsville Water	3.50%	**66,086**	**27,536**	**26,253**	**1,282**	
Urban Wastewater	56.50%	**1,066,814**	**444,506**	**423,805**	**20,700**	
Glenmore Wastewater	3.50%	**66,086**	**27,536**	**26,253**	**1,282**	
Scottsville Wastewater	3.00%	**56,645**	**23,602**	**22,503**	**1,099**	
	100.00%	**$ 1,888,165**	**$ 786,736**	**$ 750,098**	**$ 36,638**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - November 2022

Laboratory

Operating Budget vs. Actual

	Notes	*Budget FY 2023*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
	N/A					
Expenses						
Personnel Cost		$ 415,324	$ 173,052	$ 174,237	$ (1,185)	-0.68%
Professional Services		-	-	-	-	
Other Services & Charges		11,780	4,908	297	4,611	93.94%
Communications		1,700	708	468	240	33.92%
Information Technology		1,000	417	-	417	100.00%
Supplies		1,250	521	1,004	(483)	-92.67%
Operations & Maintenance		121,050	50,438	47,318	3,120	6.19%
Equipment Purchases		1,700	708	708	(0)	0.00%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 553,804**	**$ 230,752**	**$ 224,032**	**$ 6,720**	**2.91%**

Department Summary

Net Costs Allocable to Rate Centers	**$ (553,804)**	**$ (230,752)**	**$ (224,032)**	**$ (6,720)**	**2.91%**
Allocations to the Rate Centers					
Urban Water 44.00%	**$ 243,674**	**$ 101,531**	**$ 98,574**	**$ 2,957**	
Crozet Water 4.00%	**22,152**	**9,230**	**8,961**	**269**	
Scottsville Water 2.00%	**11,076**	**4,615**	**4,481**	**134**	
Urban Wastewater 47.00%	**260,288**	**108,453**	**105,295**	**3,158**	
Glenmore Wastewater 1.50%	**8,307**	**3,461**	**3,360**	**101**	
Scottsville Wastewater 1.50%	**8,307**	**3,461**	**3,360**	**101**	
100.00%	**$ 553,804**	**$ 230,752**	**$ 224,032**	**$ 6,720**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - November 2022

Engineering

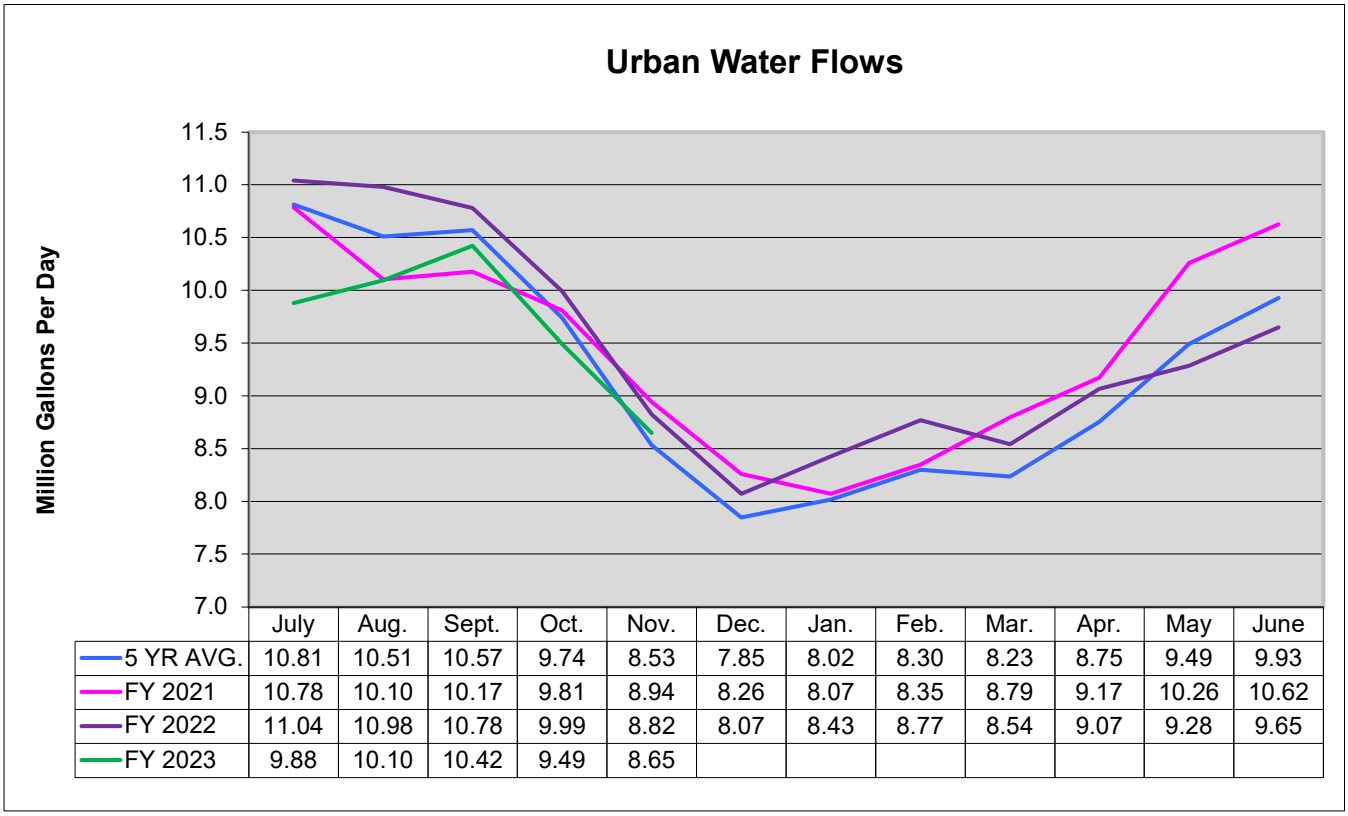
Operating Budget vs. Actual

	Notes	*Budget FY 2023*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ 4,248	$ 4,248	
Total Operating Revenues		**$ -**	**$ -**	**$ 4,248**	**$ 4,248**	
Expenses						
Personnel Cost	**B**	$ 1,794,680	$ 747,783	$ 758,863	$ (11,080)	-1.48%
Professional Services		125,000	52,083	26,096	25,988	49.90%
Other Services & Charges		18,000	7,500	3,589	3,911	52.15%
Communications		18,772	7,822	4,085	3,737	47.78%
Information Technology	**A, E**	145,000	60,417	75,976	(15,559)	-25.75%
Supplies		5,000	2,083	1,710	373	17.91%
Operations & Maintenance		75,300	31,375	16,417	14,958	47.68%
Equipment Purchases		21,500	8,958	8,958	0	0.00%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 2,203,252**	**$ 918,022**	**$ 895,693**	**$ 22,328**	**2.43%**

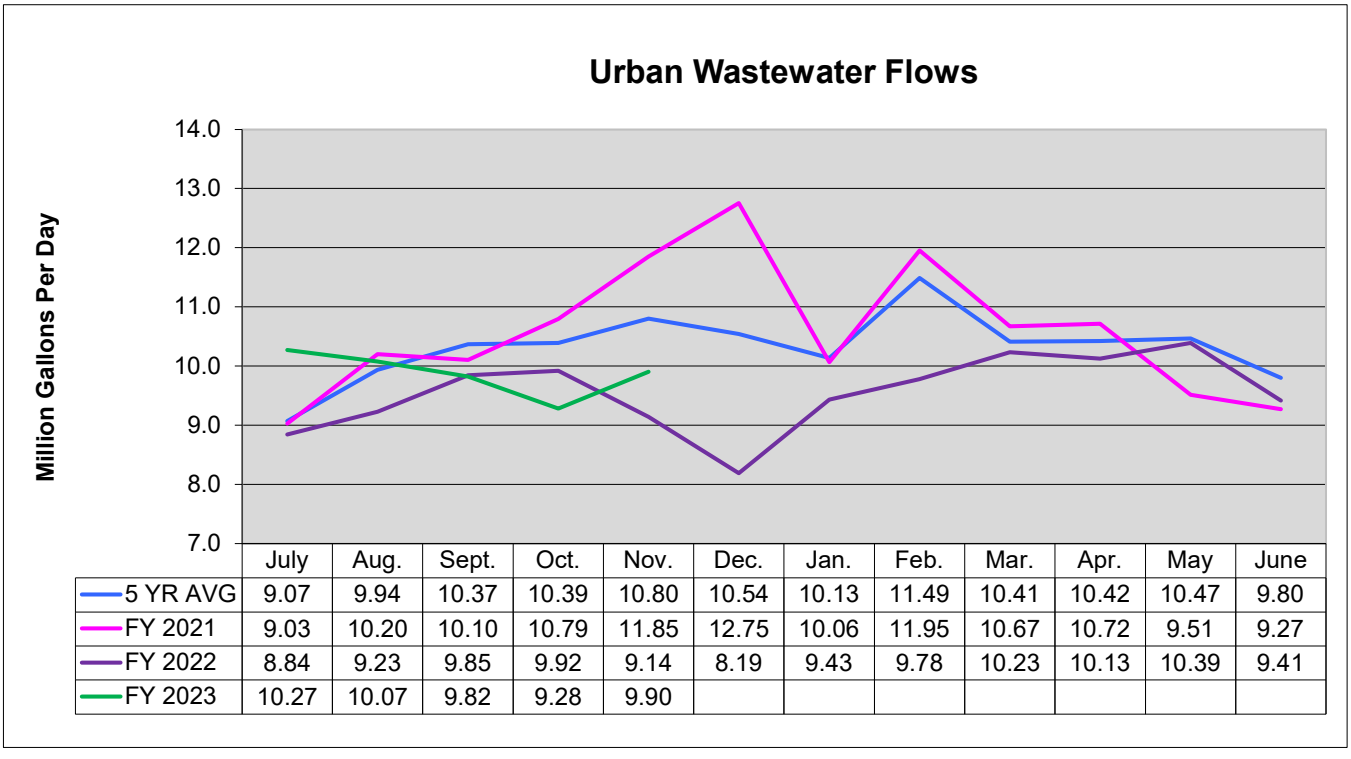
Department Summary

Net Costs Allocable to Rate Centers		**$ (2,203,252)**	**$ (918,022)**	**$ (891,446)**	**$ (18,081)**	**1.97%**
Allocations to the Rate Centers						
Urban Water	47.00%	**$ 1,035,528**	**$ 431,470**	**$ 418,979**	**$ 12,491**	
Crozet Water	4.00%	**88,130**	**36,721**	**35,658**	**1,063**	
Scottsville Water	2.00%	**44,065**	**18,360**	**17,829**	**532**	
Urban Wastewater	44.00%	**969,431**	**403,930**	**392,236**	**11,694**	
Glenmore Wastewater	1.50%	**33,049**	**13,770**	**13,372**	**399**	
Scottsville Wastewater	1.50%	**33,049**	**13,770**	**13,372**	**399**	
	100.00%	**$ 2,203,252**	**$ 918,022**	**$ 891,446**	**$ 26,576**	

Rivanna Water and Sewer Authority
Flow Graphs



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG.	10.81	10.51	10.57	9.74	8.53	7.85	8.02	8.30	8.23	8.75	9.49	9.93
FY 2021	10.78	10.10	10.17	9.81	8.94	8.26	8.07	8.35	8.79	9.17	10.26	10.62
FY 2022	11.04	10.98	10.78	9.99	8.82	8.07	8.43	8.77	8.54	9.07	9.28	9.65
FY 2023	9.88	10.10	10.42	9.49	8.65							



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG	9.07	9.94	10.37	10.39	10.80	10.54	10.13	11.49	10.41	10.42	10.47	9.80
FY 2021	9.03	10.20	10.10	10.79	11.85	12.75	10.06	11.95	10.67	10.72	9.51	9.27
FY 2022	8.84	9.23	9.85	9.92	9.14	8.19	9.43	9.78	10.23	10.13	10.39	9.41
FY 2023	10.27	10.07	9.82	9.28	9.90							

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

MEMORANDUM

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

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

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

SUBJECT: **OPERATIONS REPORT FOR DECEMBER 2022**

DATE: **JANUARY 24, 2023**

WATER OPERATIONS:

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

Water Treatment Plant	***Average Daily Production (MGD)***	***Maximum Daily Production in the Month (MGD)***
South Rivanna	7.85	8.85 (12/5/2022)
Observatory	0.02	0.67 (12/1/2022)
North Rivanna	0.40	0.46 (12/23/2022)
Urban Total	8.27	9.23 (12/5/2022)
Crozet	0.56	0.68 (12/25/2022)
Scottsville	0.05	0.077 (12/4/2022)
Red Hill	0.0016	0.002 (12/5/2022)
RWSA Total	8.88	-

- All RWSA water treatment facilities were in regulatory compliance during the month of December.
- Observatory Water Treatment Plant has been off-line for the renovation project since 12/01/2022.

Status of Reservoirs (as of January 18, 2023):

- Urban Reservoirs are 100% of Total Useable Capacity
  - Ragged Mountain Reservoir is 100% 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 December 2022. Performance of the WRRFs in December was as follows compared to the respective VDEQ permit limits:

WRRF	*Average Daily Effluent Flow (MGD)*	*Average $CBOD_5$ (ppm)*		*Average Total Suspended Solids (ppm)*		*Average Ammonia (ppm)*	
		RESULT	*LIMIT*	*RESULT*	*LIMIT*	*RESULT*	*LIMIT*
Moores Creek	10.3	<QL	9	0.68	22	<QL	2.2
Glenmore	0.127	2.6	15	3.6	30	NR	NL
Scottsville	0.06	8.0	25	4.5	30	NR	NL
Stone Robinson	0.001	NR	30	NR	30	NR	NL

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

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

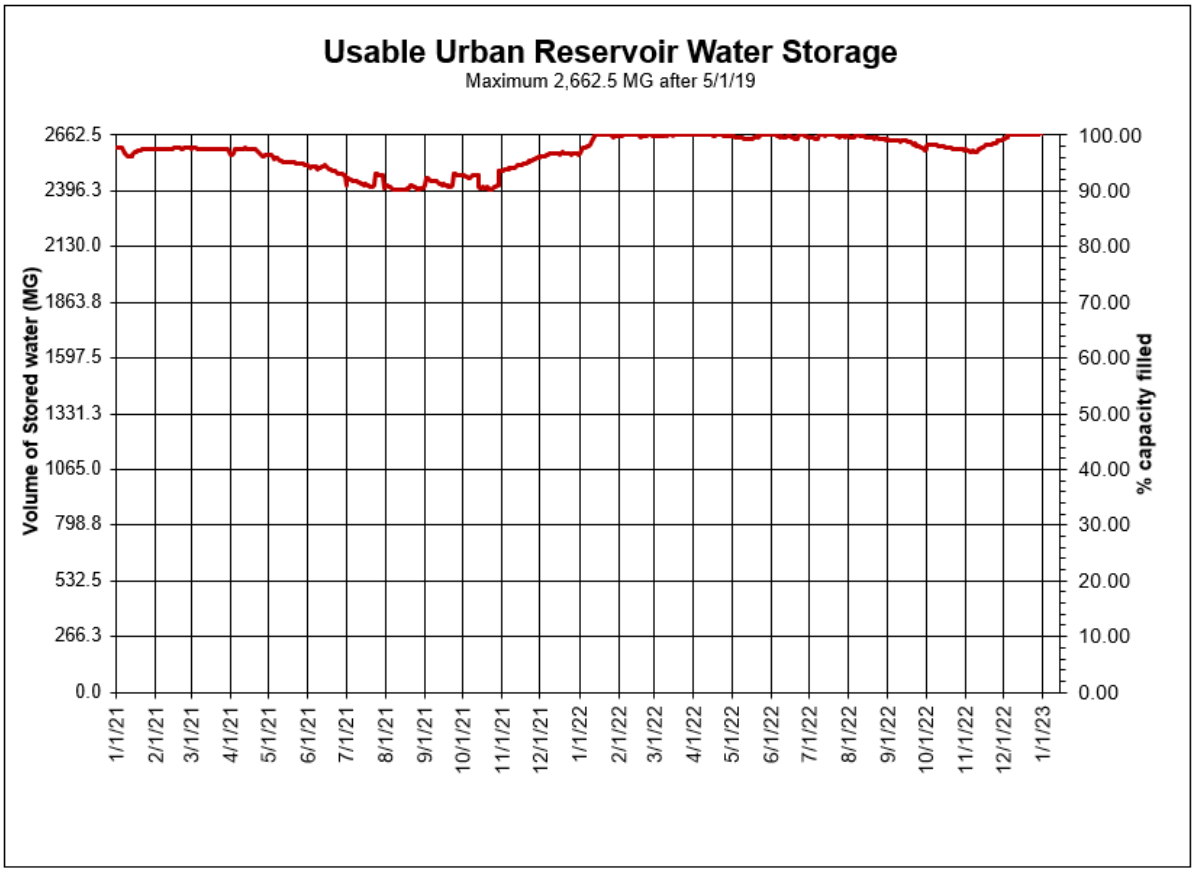
State Annual Allocation (lb./yr.) Permit		*Average Monthly Allocation (lb./mo.) **	*Moores Creek Discharge December (lb./mo.)*	*Performance as % of monthly average Allocation**	*Year to Date Performance as % of annual allocation*
Nitrogen	282,994	23,583	7,954	34%	33%
Phosphorous	18,525	1,544	416	27%	47%

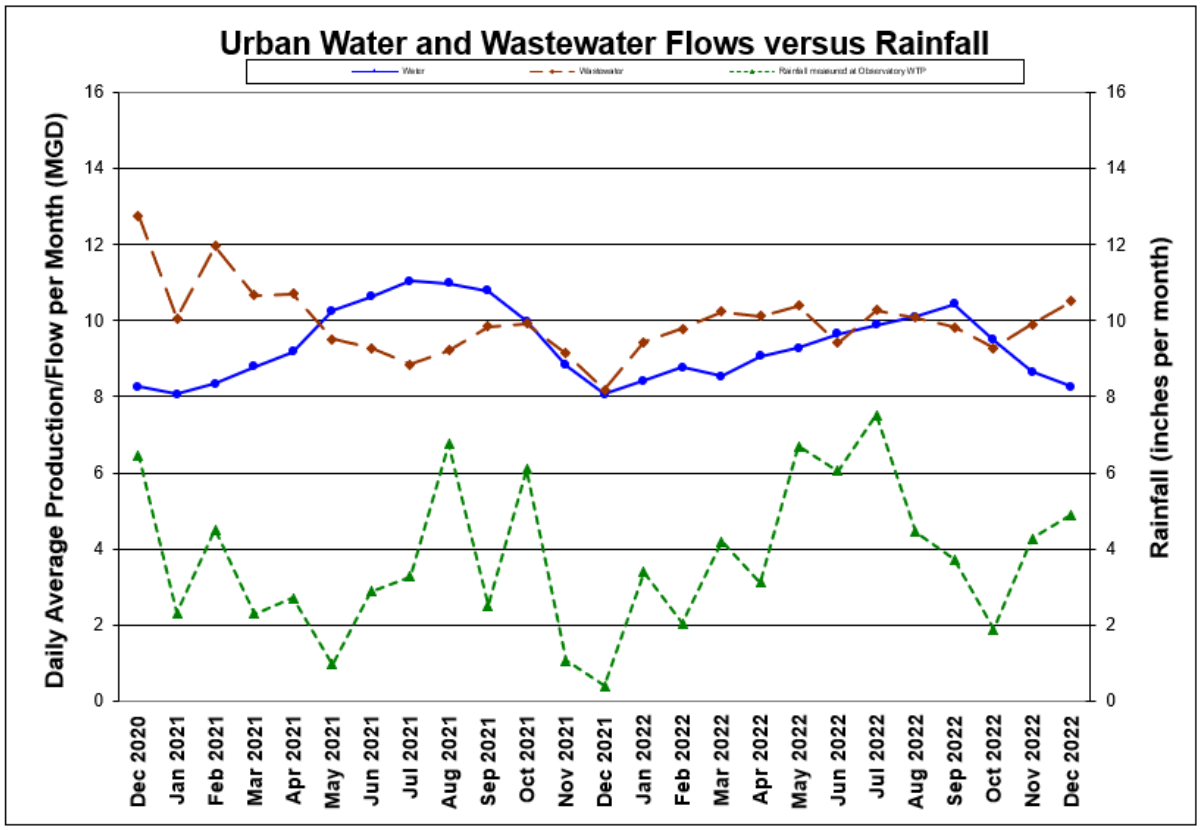
*State allocations are expressed as annual amounts. One-twelfth of that allocation is an internal monthly benchmark for comparative purposes only.

WATER AND WASTEWATER DATA:

The following graphs are provided for review:

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


Usable Urban Reservoir Water Storage
Maximum 2,662.5 MG after 5/1/19
Volume of Stored water (MG)
% capacity filled
2662.5
2396.3
2130.0
1863.8
1597.5
1331.3
1065.0
798.8
532.5
266.3
0.0
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
1/1/21
2/1/21
3/1/21
4/1/21
5/1/21
6/1/21
7/1/21
8/1/21
9/1/21
10/1/21
11/1/21
12/1/21
1/1/22
2/1/22
3/1/22
4/1/22
5/1/22
6/1/22
7/1/22
8/1/22
9/1/22
10/1/22
11/1/22
12/1/22
1/1/23


Urban Water and Wastewater Flows versus Rainfall
Water
Wastewater
Rainfall measured at Observatory WTP
Daily Average Production/Flow per Month (MGD)
Rainfall (inches per month)
16
14
12
10
8
6
4
2
0
Dec 2020
Jan 2021
Feb 2021
Mar 2021
Apr 2021
May 2021
Jun 2021
Jul 2021
Aug 2021
Sep 2021
Oct 2021
Nov 2021
Dec 2021
Jan 2022
Feb 2022
Mar 2022
Apr 2022
May 2022
Jun 2022
Jul 2022
Aug 2022
Sep 2022
Oct 2022
Nov 2022
Dec 2022

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

MEMORANDUM

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

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

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

SUBJECT: **STATUS REPORT: ONGOING PROJECTS**

DATE: **JANUARY 24, 2023**

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

For the current, 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. Moores Creek Administration Building Renovation and Addition
10. Upper Schenks Branch Interceptor, Phase II
11. Red Hill Water Treatment Plant Upgrades
12. Emmet Street Water Line Betterment
13. Scottsville WRRF Whole Plant Generator and ATS
14. Crozet Pump Station Rehabilitation
15. Moores Creek Structural and Concrete 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:	76%
Base Construction Contract + Change Orders to Date = Current Value:	$36,748,500 + $1,141,441 = $37,889,941
Completion:	May 2023
Budget:	$43,000,000

Current Status: Lead paint abatement activities in the SR Filter Building continue. Work at the OBWTP includes the new Chemical Storage Building, GAC Building expansion, a large retaining wall, Intermediate Pump Station improvements, installation of a new settled water flume, filter rebuilds and installation of a sludge control vault. Shutdown of the OBWTP is planned for December 5, 2022 – March 15, 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:	35%
Base Construction Contract + Change Order to Date = Current Value:	$8,520,312
Completion:	March 2024
Budget:	$10,000,000

Current Status: The pump cans have been installed and the contractor is bringing backfill up to grade so they can begin work on the building foundation. Installation of two parallel water lines is on-going along Berkmar Drive between the pump station site and Timberwood Blvd, however, production has been slow due to the amount of rock encountered.

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:	13%

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: Ductbank installation continues at the site. This portion of the work will connect the new switchgear to the existing ductbank network, allowing the necessary cable replacements to take place later in the project. This portion of the work will likely continue throughout the winter months, into the spring.

Design and Bidding

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

Design Engineer:	Kimley-Horn
Project Start:	August 2018
Project Status:	Design (45%)
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 also continue. The Design Engineer is currently focusing on the pump station, with a design workshop scheduled for later this month.

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:	June 2023
Completion:	June 2024
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. The railroad permit application was finalized with information from the remaining soil boring on the UVAF property which was completed in December 2022. Design meetings are anticipated with UVAF and the Weedon Center this month to go over the final plans.

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:	91% 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 in October 2022, and are under review. The revised Plan-Environmental Assessment was approved by the NRCS National Water Management Center on October 18, 2022, and the Draft Report was posted for public comment from November 4-December 19, 2022. The final report is being compiled and will be completed in spring 2023. An NRCS funding request for final design of the spillway upgrades will be submitted in January 2023. Construction funds will be requested near the end of the design phase.

7. South Rivanna River Crossing

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2020
Project Status:	65% Design
Construction Start:	Summer 2023
Completion:	Summer 2024
Budget:	$7,000,000

Current Status: Easement acquisition has begun and will include County of Albemarle property in Brook Hill River Park along Rio Mills Road. A required easement on the south side of the river is on a remnant property from the VDOT Berkmar Bridge project and we cannot finalize that easement until the property transfer back to the original property owner is complete. Submission of the Joint Permit Application (JPA) was completed prior to Thanksgiving and RWSA was issued a VMRC permit at the end of December 2022.

8. Central Water Line

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2021
Project Status:	25% Design
Construction Start:	2024
Completion:	2028
Budget:	$41,000,000

Current Status: Baker is preparing the 30% design submittal for submission this month which will require review and utility coordination with stakeholders. A grant application has been submitted to FEMA.

9. Moores Creek Administration Building Renovation and Addition

Design Engineer:	SEH
Project Start:	October 2022
Project Status:	10% Design
Completion:	June 2026
Budget:	$10,000,000

Current Status: The Building Program is currently being developed to finalize office spacing, personnel locations and grouping, and overall personnel count for both present and future needs. The executive leadership team will review the draft building program in January.

10. 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: Project, easement and valuation information has been submitted to the County and is currently under review.

11. Red Hill Water Treatment Plant Upgrades

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	July 2022
Project Status:	95% Design
Construction Start:	April 2023
Completion:	December 2023
Budget:	$450,000

Current Status: The design engineer submitted a draft final design package at the end of December and a review meeting is set for mid-January. This project was selected by Albemarle County to receive ARPA grant funding.

12. Emmet Street Water Line Betterment

Design Engineer:	Whitman, Requardt & Associates (WRA)
Project Start:	September 2021
Project Status:	Ivy Corridor Public Realm – Complete Contemplative Commons – Complete Emmet Streetscape – 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 was completed December 1, 2022. WRA and RWSA are developing a scope of work for design of a 24-30" water main in Emmet Street as part of the City's Emmet Streetscape Phase I project. RWSA has initiated discussion with VDOT on potential pipe routing in the upcoming design-build Hydraulic/29 project.

13. Scottsville WRRF Whole Plant Generator and ATS

Design Engineer:	Wiley|Wilson
Project Start:	December 2021
Project Status	65% Design
Completion:	December 2023
Budget:	$520,000

Current Status: Survey work is ongoing, however 90% design submittal is still anticipated toward the end of January 2023. A grant application has been submitted to VDEM.

14. Crozet Pump Station Rehabilitation

Design Engineer:	Wiley | Wilson
Project Start:	Fall 2022
Project Status:	Work Authorization Development
Completion:	2025
Budget:	$1,004,400

Current Status: A work authorization is under review and following completion, design will begin.

15. Moores Creek Structural and Concrete Rehabilitation

Design Engineer:	Hazen and Sawyer (Hazen)
Project Start:	Spring 2023
Project Status:	Work Authorization Development
Completion:	Spring 2026
Budget:	$13,550,000

Current Status: This project has been created to combine the following projects at the MCAWRRF into one bid package for efficiency and coordination purposes: Digester Repair, Compost Shed Roof Rehabilitation, Miscellaneous Concrete Repair, Structural Modifications and Primary Clarifier Rehabilitation.. A work authorization is being developed with Hazen.

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:	2023
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.

17. Asset Management Plan

Design Engineer:	GHD, Inc.
Project Start:	July 2018
Project Status:	CMMS Implementation – 88% Complete AMP Implementation – 20% Complete
Completion:	CMMS Implementation – October 2022 AMP Implementation – 2024
Budget:	$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, but GHD and RWSA staff worked with Cityworks to resolve it. In order to account for this additional work, the completion percentage noted above has been adjusted down to account for a more accurate indication of the project status. Work continues to fully implement the Asset Management program across all applicable Authority facilities with a detailed review of our asset register and continued development of default asset attributes which will be used to evaluate asset condition and lifespan.

18. SRR to RMR Pipeline – Pretreatment Pilot Study

Design Consultant:	SEH/DiNatale
Project Start:	August 2020
Project Status:	100% Complete (Phase 1), 99% Complete (Phase 2)
Completion:	December 2022
Budget:	$22,969 (Phase 1), $116,401 (Phase 2)

Current Status: Final efforts by the consultant to better clarify operations of the raw water transfer system and associated reservoir levels during drought conditions have been completed. This is currently under review by staff. The next phase of the study is being planned, which will likely include drought yield modeling associated with observed nutrient levels, and evaluation/installation of nutrient modeling equipment.

19. Moores Creek Cogeneration Upgrades

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

Current Status: Manufacturers and stakeholders 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	$300,000
2022-02/05/12	Miscellaneous MCI/PCI/RVI MH Repairs	$70,000
2023-01	Finished Water System ARV Repairs	TBD

- 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 complete, this work can take place with the force main offline for up to a 24-hr period. Staff is waiting for the final few required materials to arrive and is coordinating with VDOT on necessary permitting requirements. The work was anticipated to start in December, however, the air valves required for this work have not yet arrived due to supply chain issues. They are anticipated to arrive in January, and the Contractor will start thereafter.
- Miscellaneous MCI/PCI/RVI MH Repairs: Over the past several months, staff have identified issues with various manholes on the Moores Creek, Powell Creek, and Rivanna Interceptors (MCI, PCI, and RVI, respectively). These include one manhole on MCI that needs to be raised, as it was historically buried but found in Summer 2021 by the RWSA Maintenance & Engineering Departments, one manhole on RVI that needs a failing HDPE liner to be removed and cementitious mortar to be installed, and one manhole each on PCI and MCI that need to be coated with cementitious mortar due to root intrusion and groundwater infiltration. This work will be performed through the On-Call Maintenance contract with Digs, and staff visited the site with the Contractor on July 15th. The appropriate MH on MCI was raised on November 1st, 2022. The remaining coating efforts will take place in January 2023.
- RWSA Finished Water ARV Repairs: RWSA Engineering staff recently met with Maintenance staff, to identify a list of Air Release Valves (ARVs) that need to be repaired, replaced, or abandoned. Several of these locations will require involvements of RWSA On-Call Maintenance Contractors, due to the complexity of the sites (proximity to roadways, depth, etc.). The initial round will include six (6) sites, all along the South Rivanna Waterline, and will be completed starting in April, following the Observatory Shutdown.

21. Security Enhancements

Design Engineer:	Hazen & Sawyer
Construction Contractor:	Security 101 (Richmond, VA)
Construction Start:	March 2020
Percent Complete:	90% (WA5), 0% (WA6), 0% (WA7)
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 programming work at each site, likely to be completed this winter. 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. Staff has also kicked off final design of a project with Hazen & Sawyer to improve the front entrance of MCAWRRF and install additional fencing, gates, and card access. This will allow staff to better control access to the facility and provide staff with the means to vet access by visitors, vendors, consultants, and contractors. Design is underway, with submittal of permitting documents anticipated in the next several weeks. Staff is also meeting with Dominion Energy, as relocation of existing electrical infrastructure will likely be required.

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.

Design and Bidding

4. 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. The waterline was the primary focus throughout the Spring and Summer months. A subsequent workshop was held on November 1, 2022, in which pump type and other internal staff preferences were confirmed.

5. 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 2023.

6. 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 early 2023. 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.

7. 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.

8. 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.

9. Moores Creek Administration Building Renovation and Addition

RWSA currently has its administrative headquarters in two buildings on the grounds of the Moores Creek Advanced Water Resource Recovery Facility. The two-story Administration Building was constructed in the early 1980's and houses offices, IT server space, meeting space and a full-service laboratory. The second building is a series of four trailers installed between 2003-2010 that house the Engineering department. There is currently a need to house additional staff; increase office and meeting space; plan for the replacement of the trailers; bring the IT server workrooms to modern standards; and provide classroom space for educational outreach. This project was coordinated with the recent MCAWRRF Master Plan and expansion of the building will take place in the lower parking lot adjacent to the existing building.

10. Upper Schenks Branch Interceptor, Phase II

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

The remaining sections, which are considered the Upper Schenks Branch Interceptor, were split into 2 phases. The first phase has been completed and is located within City-owned Schenks Greenway

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

11. 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.

12. 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.

13. 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.

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 Structural and Concrete Rehabilitation

This project includes work associated with the following CIP projects: Digester Repair, Compost Shed

Roof Rehabilitation, Miscellaneous Concrete Repair, Structural Modifications, and Primary Clarifier Rehabilitation. For the Digester Repair work, the facility has a total of five digester vessels. The two smaller digesters were part of the original 1958 plant construction. The three larger digesters were part of the 1979 plant upgrades following construction of the bridge over Moores Creek and the south side of the plant. Although numerous upgrades have been constructed at the digester complex over the last 11 years (including heating, mixing, gas compression, and roof repairs), the overall condition of the concrete and complex is reaching its useful life. Furthermore, through the Moores Creek master planning process, Hazen has identified future plant improvements which will need to be installed in this area. This project includes addressing remaining repairs to the existing digester complex, including safety repairs, to extend the useful life approximately 10-15 years while RWSA plans, designs, and constructs a new digester complex at another location on the Moores Creek site.

For the Compost Shed Roof work, 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.

For the miscellaneous concrete repair work, 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.

For the structural modifications work, the aeration basins located at Moores Creek are a series of chambers that each have uniquely controlled oxygen and nutrient loading conditions. Mid-way thru the basins are ten nitrogen recycle (NRCY) pumps. Due to the corrosive atmosphere, these submersed pumps require being pulled and rebuilt frequently. To remove the pumps, staff must currently hire a long boom crane. This project will provide the permanent means to pull, move, and load the pumps during maintenance activities. Also, two of the six pumps in the Rivanna Pump Station are smaller and were designed to be replaced if future average day flows warrant increased capacity. The current configuration resulted in several valves being located approximately 40 feet above the pump floor level. Valve maintenance activities have been challenging due to their height. This project will install a catwalk from the upper mezzanine level to each valve to provide a safer, walkable access to each valve.

For the Primary Clarifier rehabilitation work, in September 2021, an inspection was performed on the two existing Primary Clarifiers at MCAWRRF, in which several deficiencies were noted. Most notably, both clarifier drives had structural and mechanical components in need of repair or replacement, and due to advanced corrosion of metal components within the clarifiers, coatings were recommended to avoid additional deterioration. This project will utilize consultant assistance to provide design services for the project, develop bidding documents, assist with the administration of the contract and provide specialty inspections as needed.

Planning and Studies

16. 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.

17. 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.

18. 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. The more detailed nutrient model development began in March 2022.

19. 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.

A state of the industry study was initiated, to confirm the appropriate manufacturers of such cogeneration units and to determine how the unit would be procured. This study began in December 2021.

Other Significant Projects

20. Urgent and Emergency Repairs

- 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 was completed on October 31st 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 CIP Project.

21. 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.

Access Control on Exterior doors at RHWTP, SVWRRF, and GWRRF was authorized in March 2022, and Access Control on Exterior Doors at remaining dams, pump stations, and other remote facilities (twelve total) was authorized in August 2022. A pilot program for electronic padlocks, utilized at remote facilities where traditional padlocks would normally be used, was authorized in September 2022.

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

MEMORANDUM

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

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

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

SUBJECT: **WHOLESALE METERING REPORT FOR DECEMBER 2022**

DATE: **JANUARY 24, 2023**

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

	Month	***Daily Average***	
City Usage (gal)	121,804,522	3,929,178	**47.6%**
ACSA Usage (gal)	134,309,256	4,332,557	**52.4%**
Total (gal)	**256,113,778**	**8,261,735**	

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.

Figure 1: City of Charlottesville Monthly Water Usage and Allocation

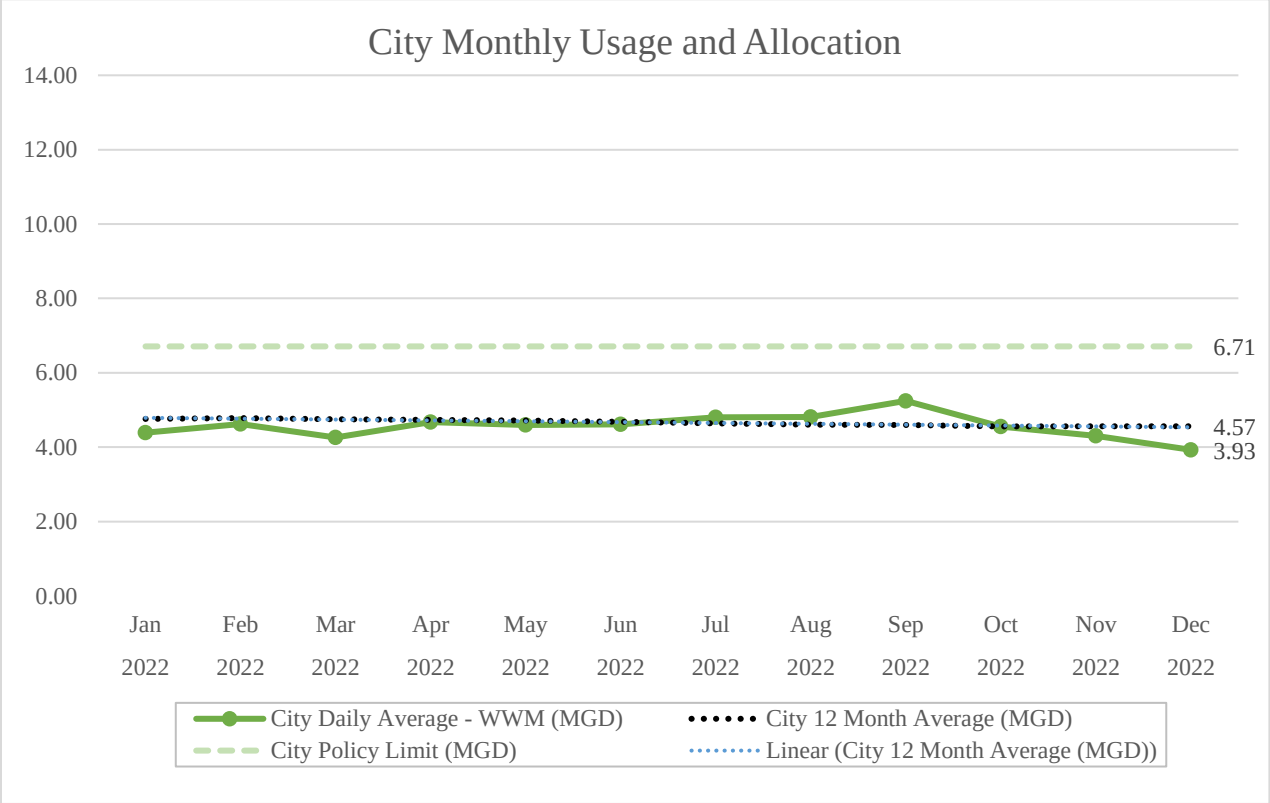
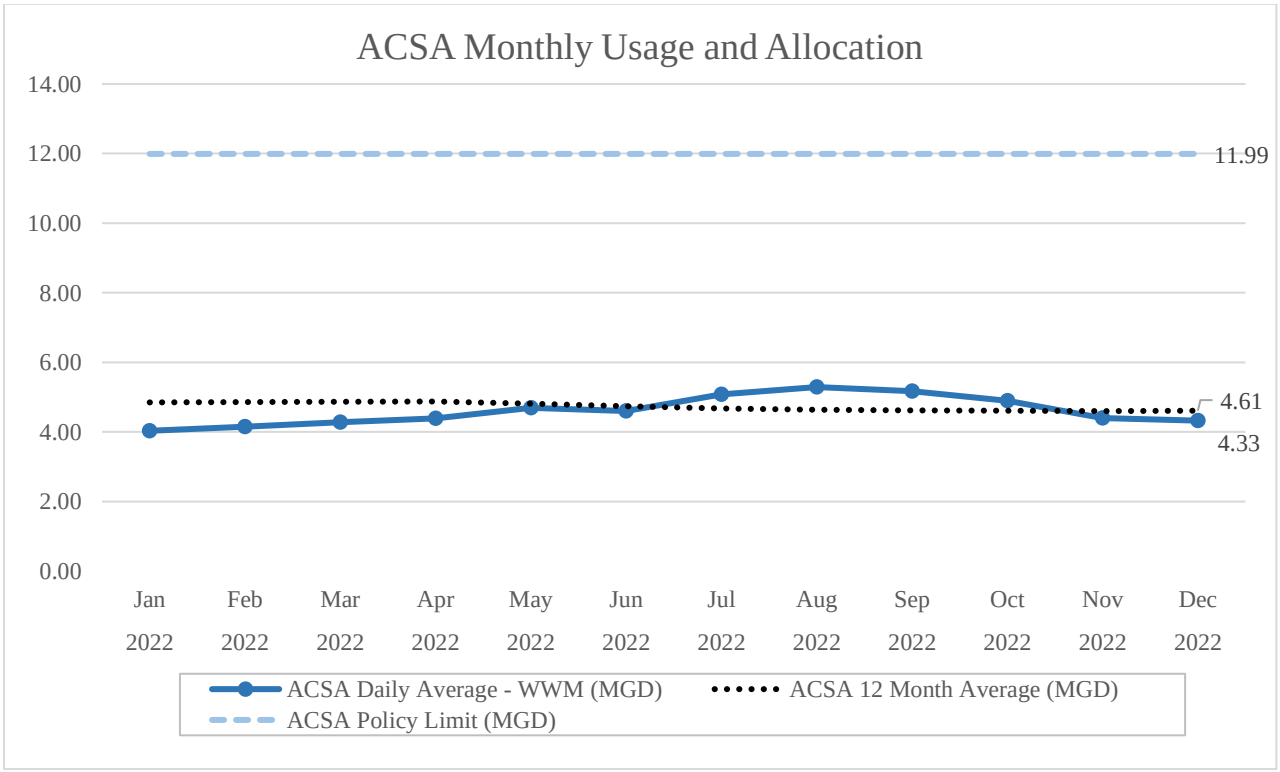
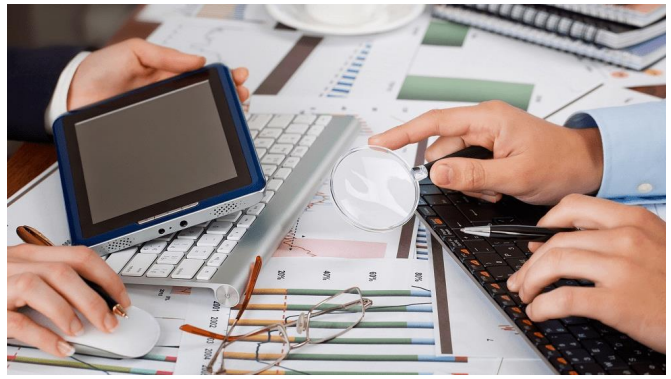


Figure 2: Albemarle County Service Authority Monthly Water Usage and Allocation



Meter Locations for the Wholesale Water Metering Project



RIVANNA
WATER & SEWER AUTHORITY

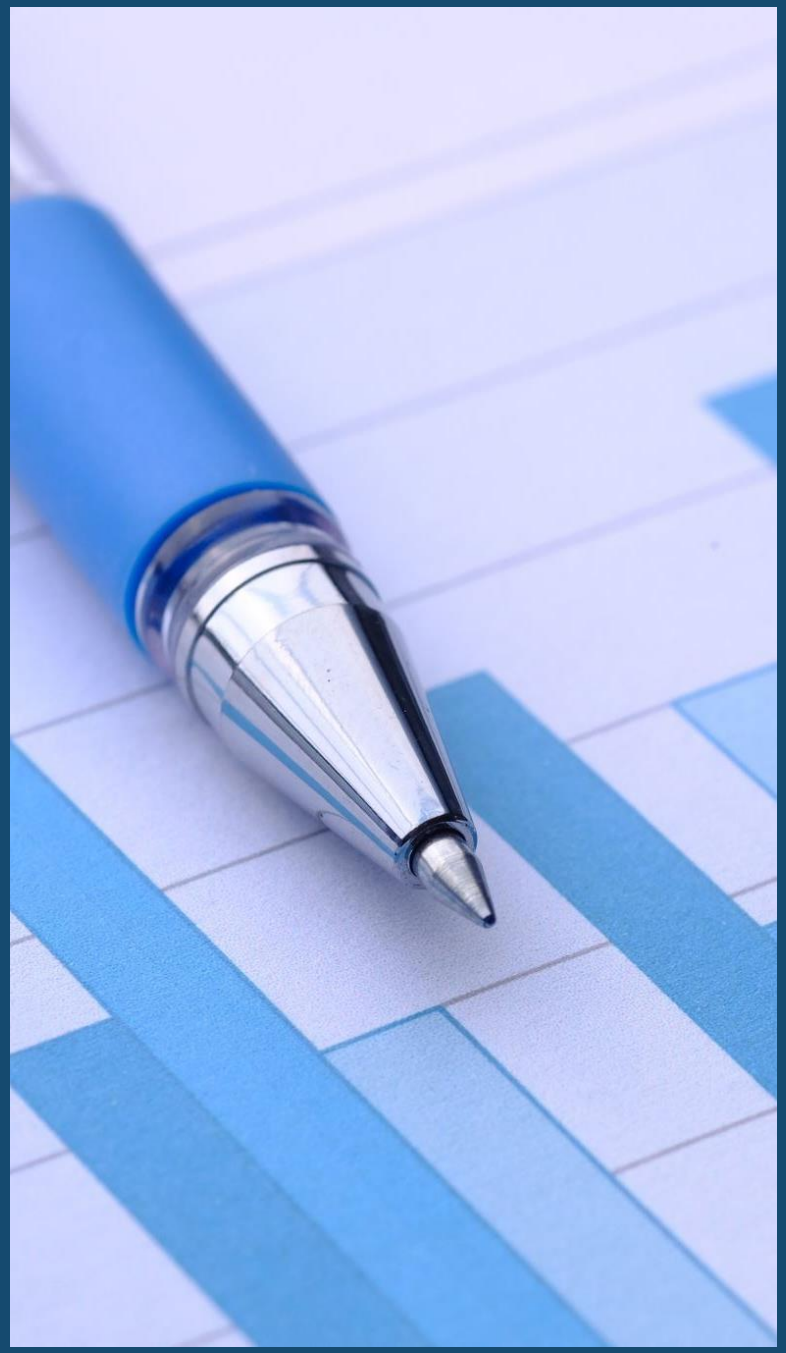
FINANCIAL UPDATE

FOR THE BOARD OF DIRECTORS

BY LONNIE WOOD

Director of Finance and Administration

1/24/2023

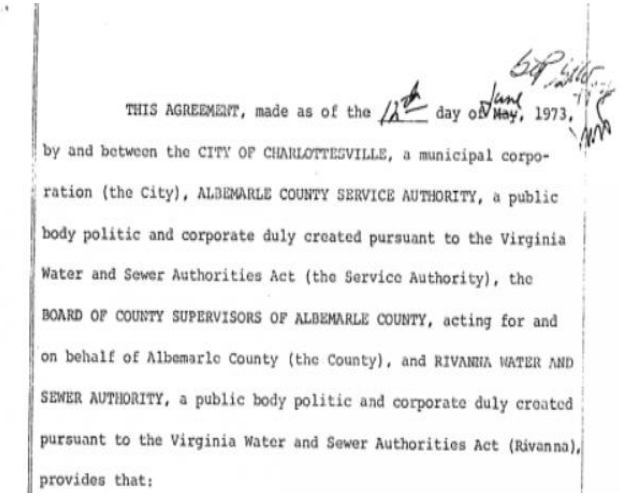


Topics for today:

- Policy Structure that guides the Authority
- Reserves
- Financial Profile / Bond Rating

Policy Guidance

- Four-Party Agreement (a.k.a Service Agreement)
  - Create "Rate Centers"
    - Rates to be charged - Operating and Debt Service
  - Budget/Payment Authorization
  - Initial Capital Improvements
    - Debt responsibility – Revenue Bonds



THIS AGREEMENT, made as of the 12th day of June, 1973, by and between the CITY OF CHARLOTTESVILLE, a municipal corporation (the City), ALBEMARLE COUNTY SERVICE AUTHORITY, a public body politic and corporate duly created pursuant to the Virginia Water and Sewer Authorities Act (the Service Authority), the BOARD OF COUNTY SUPERVISORS OF ALBEMARLE COUNTY, acting for and on behalf of Albemarle County (the County), and RIVANNA WATER AND SEWER AUTHORITY, a public body politic and corporate duly created pursuant to the Virginia Water and Sewer Authorities Act (Rivanna), provides that:

Policy Guidance
Bond Indenture (Trust Agreement)
Established in 1979

- Creates certain restricted funds (Held by Trustee):

  Construction Fund – Proceeds/Reimbursement

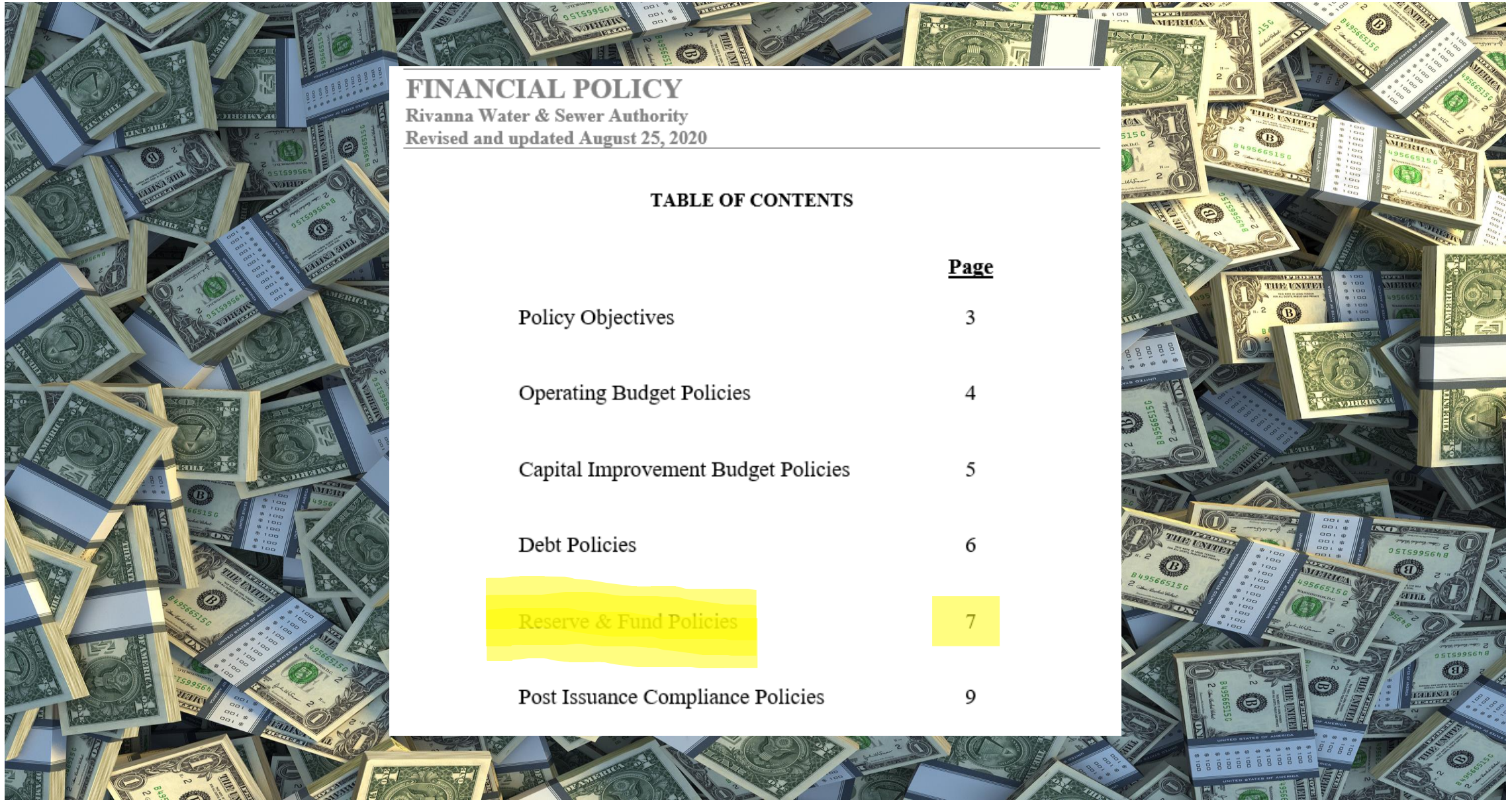
  Debt Service Reserve Fund

  Principal and Interest Accounts

- Unrestricted - creates the general Operating Account, Rate Stabilization Funds and Improvement Fund.

Policy Guidance
Internal Financial Policy

- Board adopted policies August 2011
- Guidance, goals and targets for management
- Crucial for outside financial assessments & bond ratings



FINANCIAL POLICY

Rivanna Water & Sewer Authority
Revised and updated August 25, 2020

TABLE OF CONTENTS

Third tier reserves are those reserves internally restricted by the Authority. Those include Discretionary Rate Center reserves for each rate center, a Capital Fund, Watershed Management Reserves and a Vehicle replacement reserve. Although the Rate Stabilization reserves are mentioned in tier of reserves, they are controlled and fund reserves are defined as follows:

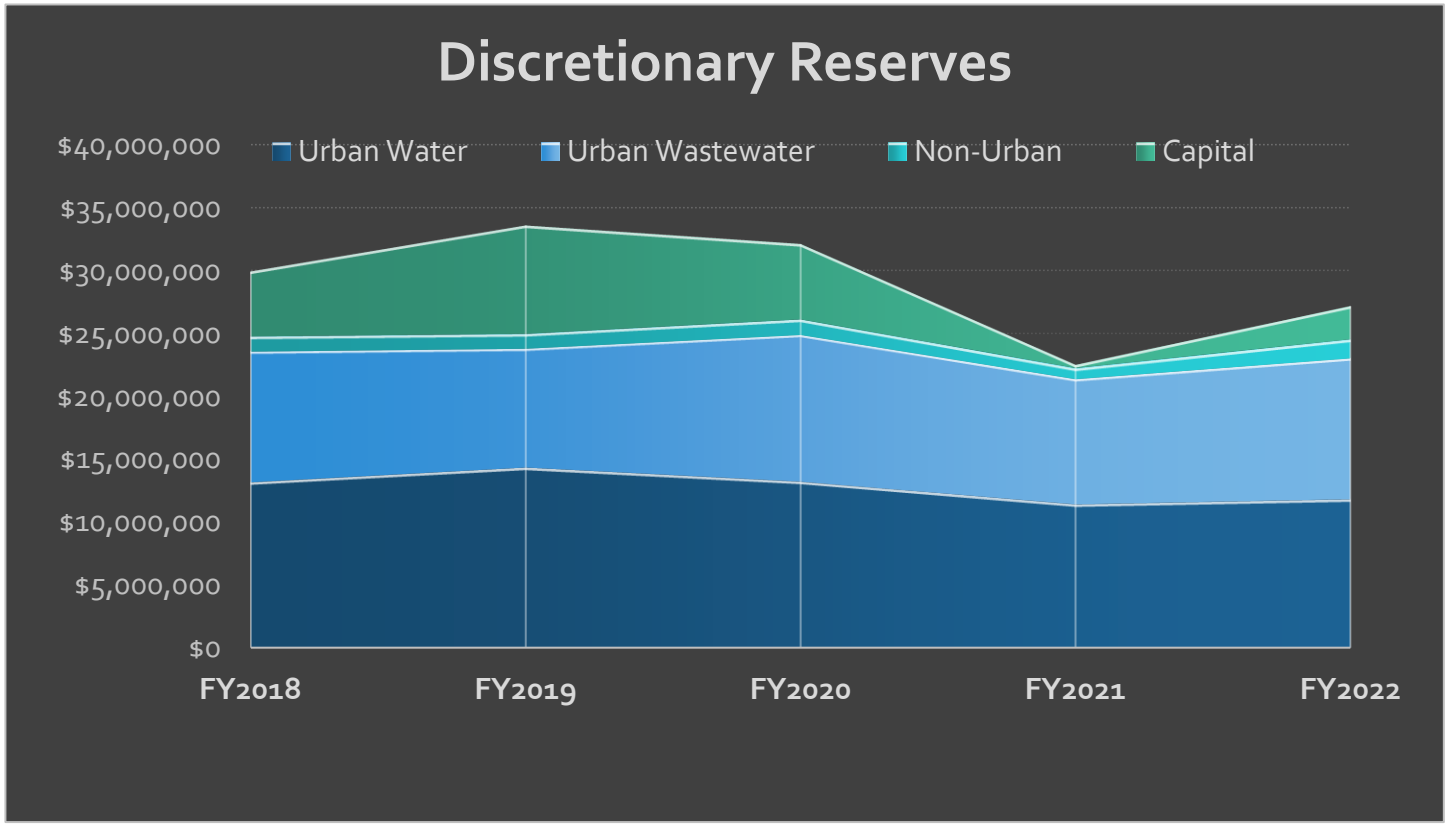
Discretionary Reserves – These reserves are center and the Capital Fund. Planned depre surpluses and planned excess rate revenues f the reserves. Yearly deficits, if they occur, a replenish the operating account. There is on six reserves. Uses of these reserves are restr normal rate stabilization to fund those years planned transfers and significant repairs or c require a rate increase to fund them.

Rate Stabilization Reserves – The Urban W each have a rate stabilization reserve. In reco associated with demand for its services, the A Reserve for the purposes of providing adequ periods of mandatory restrictions from sever $1,000,000 placed in it for use during extrem required mandatory restrictions enacted by o This provides for a more consistent rate stru addition to funds in the Discretionary Reserv year rate increases during severe drought conditions are undesirable.

Watershed/Water Quality Reserves – These reserves were set up in FY 2004 and were funded from the Urban Water rate center and will be

Discretionary Reserves - these reserves are central reserve depository for each rate center and the Capital Fund. Planned depreciation from the operating budgets, yearly surpluses and planned excess rate revenues from the CIP Growth Rate are deposited in the reserves. Yearly deficits if they occur are also funded from these reserves to replenish the operating account. There is one reserve for each rate center, or a total of six reserves. Uses of these reserves are restricted to Board action for such items as normal rate stabilization to fund those years when deficits occur, Capital Fund yearly planned transfers, and significant repairs or changes in operations that otherwise would require a rate increase to fund them.

Below is a snapshot of the reserve levels at year end for the past five years:



Reserves - Sound Financial Planning

- Flexibility for the Board to solve utility issues
- Covid response in FY2021 & 2022
  - Used $2.4 million in reserves
- Composting – odor control issues
  - $900,000 net impact to annual Wastewater Budget

Reserves are used for operational needs and unexpected repairs.

Avoids mid-year rate increases (sometimes multiple)

BONDS & FINANCIAL CONDITION ASSESSMENT

Ted Cole, Senior Vice President

Davenport Public Finance

Credit Rating & Financial Profile Update

Rivanna Water & Sewer Authority

January 24, 2023

Credit Rating Overview

Current Bond Ratings

Current Bond Ratings

- The Authority is currently rated:
  - Aa2 by Moody's
    - Most Recent Rating Change: Upgraded to Aa2 (10/4/2012)
    - Last Rating Report: 10/4/2012
    - Last Annual Comment: 6/21/2021
  - AA+ by Standard and Poor's
    - Most Recent Rating Change: Upgraded to AA+ (3/9/2011)
    - Last Rating Report: 4/8/2019
- The Authority regularly updates the Rating Agencies on a wide variety of topics relevant to financial performance and prospects. This takes place at the time of each new debt issuance or roughly every other year under each rating agency's surveillance program. The goal being to maintain or enhance the Authority's bond rating.
  - This rating process may result in the affirmation of the Authority's existing ratings, an upgrade, or a downgrade.
- Maintaining and/or enhancing the Authority's credit rating is a key driver to obtaining the lowest cost of funds.

Rating Scale

Moody's Investors Service	Standard & Poor's	Fitch Ratings
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-
Non Investment Grade		

Source: Moody's, S&P.

Rating Agency Methodology Updates

Moody's

Category	Rating Percentage	Short Term Control	Long Term Control
System Characteristics	30%		✓
Financial Strength	40%	✓	✓
Management	20%	✓	✓
Debt Legal Provisions	10%	✓	✓

- The information shown above outlines the *Quantitative* elements of the rating methodology. In addition to these factors, other *Qualitative* elements are considered in the ultimate rating outcome.

S&P

Category	Rating Percentage	Short Term Control	Long Term Control
Enterprise Risk Profile Assessment			
Economic Fundamentals	45%		✓
Industry Risk	20%		✓
Market Position	25%	✓	✓
Operational Management	10%	✓	✓
Financial Risk Profile Assessment			
All-In Coverage	40%	✓	✓
Liquidity and Reserves	40%	✓	✓
Debt and Liabilities	10%	✓	✓
Financial Management	10%	✓	✓

- The information shown above outlines the *Quantitative* elements of the rating methodology. In addition to these factors, other *Qualitative* elements are considered in the ultimate rating outcome.

Source: Moody's, S&P.

Credit Overview: Key Ratios

- Debt Service Coverage – Ratio of Net Operating Revenues available to pay Debt Service needs to meet minimum targets.
  - Net Operating Revenues [Operating and Non-Operating Revenues minus Operating Expenditures (excluding Depreciation)] divided by Debt Service.
  - Parity Requirement 1.00x – For every $1.00 of Parity Debt Service, the Authority must have $1.00 of Net Revenues available to pay.
  - Adopted Policy: "The Authority will set rates and charges so as to target a minimum debt service coverage on all parity indebtedness of 1.50 times."

- System Reserves – Cumulative Funds available after Operations and Debt Service needs to be established at a minimum acceptable level.
  - Often referred to as "liquidity" and measured as a percentage of Operations & Maintenance, or Days Cash on Hand.
  - Adopted Policy: "It is recommended that the Authority target a combined total of all Tier 2 and Tier 3 operating account and reserve funds equal to 150% of the Authority's Operating and Maintenance budget (not including annual Debt Service budgets) or the equivalent of 548 days operating cash on hand."

Source: Rivanna Water & Sewer Authority Financial Policy, Revised and Updated August 25, 2020.

Financial Profile

Peer Group

- In order to provide perspective on the Authority's historical and projected performance in relation to the Key Credit Ratios previously discussed, Davenport has developed various Peer Groups for comparative purposes.

- Throughout this presentation, the following group of Utility providers will be used in peer comparatives:

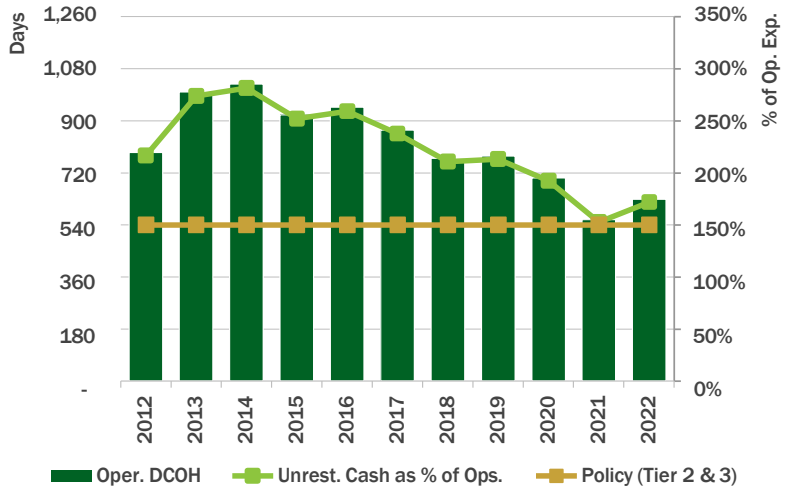
National Water and Sewer Authority/Enterprise Medians:
Moody's 'Aaa' Rated
Moody's 'Aa1' Rated
Moody's 'Aa2' Rated

Select Virginia Water Only or Sewer Only Authorities/Enterprises:	
Fairfax Water (Aaa / AAA / AAA)	Newport News Water (Aa1 / AAA / NR)
Fairfax Sewer (Aaa / AAA / AAA)	Norfolk Water (Aa2 / AA+ / AA+)
Hampton Roads Sanitation District (Aa1 / AA+ / AA+)	Upper Occoquan Service Authority ("UOSA") (Aa1 / AAA / AAA)

Moody's 'Aa' or Higher Rated Virginia Water and Sewer Authorities/Enterprises:	
City of Chesapeake Water and Sewer Enterprise	Loudoun Water
Chesterfield County Water and Sewer Enterprise	Prince William County Service Authority ("PWCSA")
Henrico County Water and Sewer Enterprise	Spotsylvania County Water and Sewer Enterprise
James City Service Authority ("JCSA")	City of Virginia Beach Water and Sewer Enterprise

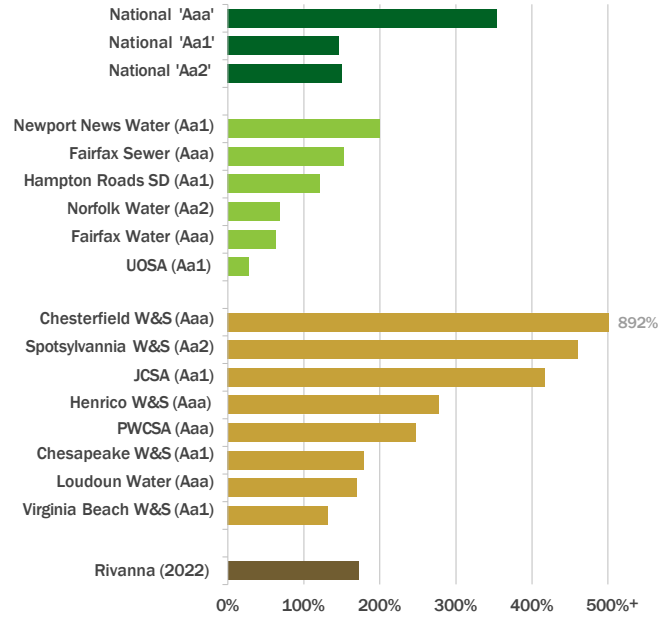
Liquidity

Liquidity



- Cumulative Funds available after Operations and Debt Service needs.
- Days Cash on Hand (DCOH) = Unrestricted Cash ÷ (Operating Expenditures ÷ 365)
- Unrestricted Cash as % of O&M = Unrestricted Cash ÷ Operating Expenditures
- Standard and Poor's criteria for Water and Sewer Credit defines categories of Days Cash on Hand as:
  - <30 days: Low
  - 30 - 60 days: Adequate
  - 60 - 120 days: Good
  - > 120 days: Strong

Peer Comparative: Unrestricted Cash as a % of O&M

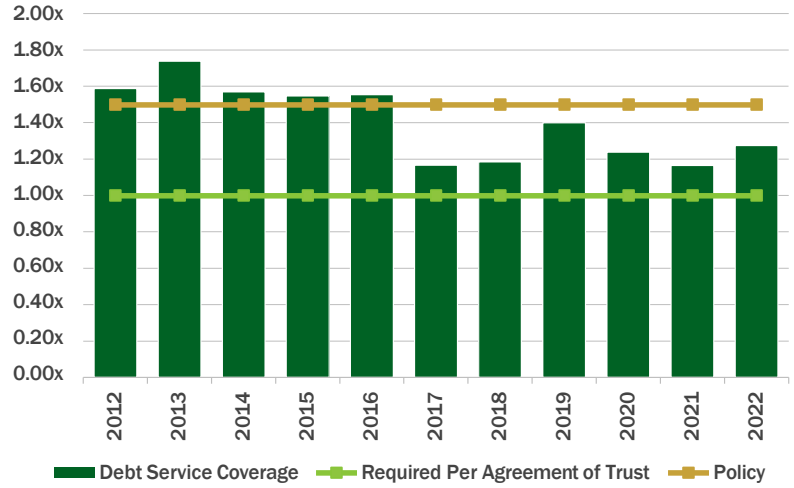


- The Authority has adopted a Liquidity policy stating:
  - *It is recommended that the Authority target a combined total of all Tier 2 and Tier 3 operating account and reserve funds equal to 150% of the Authority's Operating and Maintenance budget or the equivalent of 548 days operating cash on hand.*

Source: Authority Audits, Moody's MFRA

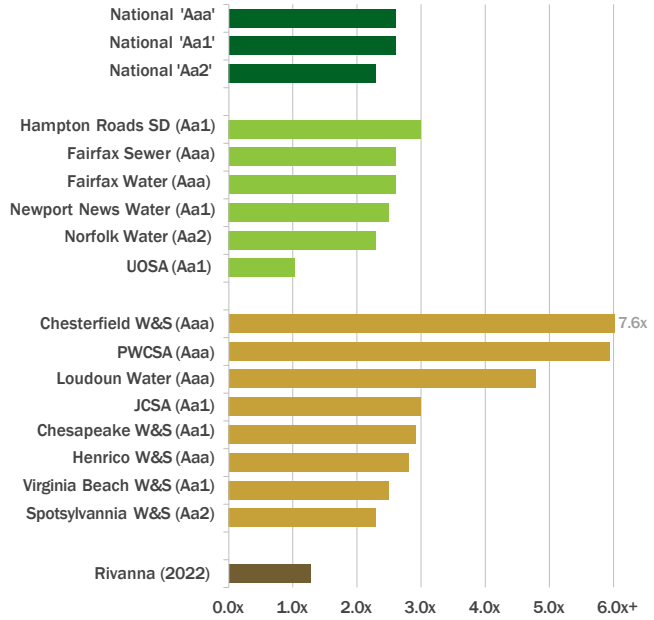
Debt Service Coverage Ratio ("DSCR")

Debt Service Coverage Ratio



- Measure of ability to meet operating and debt service obligations.
- DSCR = Net Revenue Available for Debt service ÷ Annual Debt Service
- Standard and Poor's criteria for Water and Sewer Credit defines categories of Debt Service Coverage Ratio as:
  - <1.0x: Insufficient
  - 1.0x-1.25x: Adequate
  - 1.26x-1.50x: Good
  - >1.50x: Strong

Peer Comparative: Debt Service Coverage Ratio



- The Authority has adopted a Debt Service Coverage Ratio Policy, stating:
  - *The Authority will set rates and charges so as to target a minimum debt service coverage on all parity indebtedness of 1.50 times.*

Source: Authority Audits, Moody's MFRA

Municipal Advisor Disclosure

The U.S. Securities and Exchange Commission (the "SEC") has clarified that a broker, dealer or municipal securities dealer engaging in municipal advisory activities outside the scope of underwriting a particular issuance of municipal securities should be subject to municipal advisor registration. Davenport & Company LLC ("Davenport") has registered as a municipal advisor with the SEC. As a registered municipal advisor Davenport may provide advice to a municipal entity or obligated person. An obligated person is an entity other than a municipal entity, such as a not for profit corporation, that has commenced an application or negotiation with an entity to issue municipal securities on its behalf and for which it will provide support. If and when an issuer engages Davenport to provide financial advisory or consultant services with respect to the issuance of municipal securities, Davenport is obligated to evidence such a financial advisory relationship with a written agreement.

When acting as a registered municipal advisor Davenport is a fiduciary required by federal law to act in the best interest of a municipal entity without regard to its own financial or other interests. Davenport is not a fiduciary
when it acts as a registered investment advisor, when advising an obligated person, or when acting as an underwriter, though it is required to deal fairly with such persons.

This material was prepared by public finance, or other non-research personnel of Davenport. This material was not produced by a research analyst, although it may refer to a Davenport research analyst or research report. Unless otherwise indicated, these views (if any) are the author's and may differ from those of the Davenport fixed income or research department or others in the firm. Davenport may perform or seek to perform financial advisory services for the issuers of the securities and instruments mentioned herein.

This material has been prepared for information purposes only and is not a solicitation of any offer to buy or sell any security/instrument or to participate in any trading strategy. Any such offer would be made only after a prospective participant had completed its own independent investigation of the securities, instruments or transactions and received all information it required to make its own investment decision, including, where applicable, a review of any offering circular or memorandum describing such security or instrument. That information would contain material information not contained herein and to which prospective participants are referred. This material is based on public information as of the specified date, and may be stale thereafter. We have no obligation to tell you when information herein may change. We make no representation or warranty with respect to the completeness of this material. Davenport has no obligation to continue to publish information on the securities/instruments mentioned herein. Recipients are required to comply with any legal or contractual restrictions on their purchase, holding, sale, exercise of rights or performance of obligations under any securities/instruments transaction.

The securities/instruments discussed in this material may not be suitable for all investors or issuers. Recipients should seek independent financial advice prior to making any investment decision based on this material. This material does not provide individually tailored investment advice or offer tax, regulatory, accounting or legal advice. Prior to entering into any proposed transaction, recipients should determine, in consultation with their own investment, legal, tax, regulatory and accounting advisors, the economic risks and merits, as well as the legal, tax, regulatory and accounting characteristics and consequences, of the transaction. You should consider this material as only a single factor in making an investment decision.

The value of and income from investments and the cost of borrowing may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions or companies or other factors. There may be time limitations on the exercise of options or other rights in securities/instruments transactions. Past performance is not necessarily a guide to future performance and estimates of future performance are based on assumptions that may not be realized. Actual events may differ from those assumed and changes to any assumptions may have a material impact on any projections or estimates. Other events not taken into account may occur and may significantly affect the projections or estimates. Certain assumptions may have been made for modeling purposes or to simplify the presentation and/or calculation of any projections or estimates, and Davenport does not represent that any such assumptions will reflect actual future events. Accordingly, there can be no assurance that estimated returns or projections will be realized or that actual returns or performance results will not materially differ from those estimated herein. This material may not be sold or redistributed without the prior written consent of Davenport. Version 1.13.14 | BW | MB | TC |

QUESTIONS?

History and Organizational Agreements of the RWSA


Moores Creek WWTP

PRESENTED TO THE BOARD OF DIRECTORS

BY BILL MAWYER, EXECUTIVE DIRECTOR

JANUARY 24, 2023

RIVANNA WATER & SEWER AUTHORITY

Foundation Documents

1. Articles of Incorporation, 1972:

- The State Water Control Board notified the City and County about the availability of $13 M in Federal and State grants conditioned that the City and County must designate a single political entity to represent both localities.
- By Concurrent Resolution of City Council and the Albemarle Board of Supervisors, the State Corporation Commission was notified of the intention to create the Rivanna Water Sewer Authority pursuant to the Virginia Water and Sewer Authorities Act (1950). RWSA was incorporated as a public body politic and corporate on June 7, 1972.
- For the purpose of acquiring, financing, constructing and maintaining facilities for a potable water supply and for abatement of pollution resulting from sewage from the City and the County.
- 5 Board Members: 2 from City, 2 from County and 1 jointly appointed.
- Prohibited RWSA from contracting with any other party in the City or County for water or sewer services.

2. Service Agreement, 1973 (aka "Four Party Agreement") City, County, ACSA and RWSA, included:

- Acquisition of existing water and wastewater facilities from the City and ACSA by RWSA.
- Construction and payment (bonds) for new facilities.
- RWSA to be sole producer of potable water and treatment of wastewater.
- Rates and Charges
  - RWSA water rates shall be uniform for the Urban area.
  - Wastewater rates shall not be uniform. Wastewater operation and maintenance costs shall be uniform, but the City will pay one-half the debt service costs as the ACSA.
- Term: June 30, 2012, or until bonds have been paid, with 2 years written notice of termination.

3. By-Laws of RWSA, 1973

Revisions to the Articles of Incorporation


SR WTP


MC WWTP

4. Amended and Restated Articles of Incorporation, 1985:

- Limited RWSA to serve only the City and ACSA for the treatment and transmission of potable water and the treatment and disposal of sewage.

5. Second Restated Articles of Incorporation, 1986:

- Placed the Executive Director of the ACSA, or such Albemarle County Department Head as the Board of Supervisors may appoint, on the Board of the RWSA in lieu of the County Engineer of Albemarle County.

6. Third Restated Articles of Incorporation, 2009:

- Increased the number of members of the RWSA Board from 5 to 7 through the addition of 1 member of City Council and 1 member of the Albemarle Board of Supervisors.

7. Forth Restated Articles of Incorporation, 2017:

- Placed the City Director of Utilities, or such Department Head as City Council may appoint, on the Board of the RWSA in lieu of the City Director of Public Works.

Revisions to the By – Laws


Mike Gaffney
Chair


Michael Rogers
Vice-Chair


Jeff Richardson
Secretary-Treasurer


Lauren Hildebrand


Gary O'Connell


Brian Pinkston


Ann Mallek

RWSA Board of Directors

8. **By- Laws, 1973;** Amendments:

- 1975: Established the Officers of the Board of Directors, an Executive Director position, schedule of meetings (3rd Monday at 403 Eighth St), agenda order of business for public Board meetings, all members must be present to amend the By-Laws.
- 1983: Allowed a designated Alternate to attend meetings, but not vote.
- 1986: Changed meetings from third Monday to fourth Monday.
- 2010: Included a requirement to have a Board of Directors; changed meetings from 4th Monday to 4th Tuesday.
- 2014: Allowed Board members to participate remotely in Board meetings through electronic communications, a quorum (4) must be physically present at the meeting.
- 2016: Authorized the Executive Director to sign contracts ≤ $100k.
- 2020 : Authorized Executive Director to sign contracts ≤ $200k.
- 2022: Adopted a "Remote Participation Policy" which also allows virtual Board meetings.

Major Facilities


SR Reservoir


Buck Mtn

9. Working Agreement on Urban Area Wholesale Flow Allocation and Billing Methodology, 1983:

- Water and Wastewater treatment charges determined by applying RWSA rates to the total amount of water produced, with the total cost proportionally allocated to the City and ACSA based on their usage as obtained from their customer meter readings.

10. Joint Resolution, 1983:

- Purchased Buck Mtn property (1314 acres) for a drinking water supply reservoir; created Buck Mtn Surcharge on new public water connections in the City and County.

11. Southern Loop Agreement, 1987:

- Plan and cost allocation for water lines and storage tanks from OBWTP to Avon St (Western Branch; completed), and from Avon St to E. High St. (Eastern Branch; replanned in 2022 to a southern/Cherry Ave corridor closer to the center of the City; “Central Water Line”).

12. Moore’s Creek Relief Sewer Project, 1990:

- New sewer line to parallel the existing Moore’s Creek Interceptor Line from Quarry Road to the MCAWRRF.

13. Urban Water Line, 1993:

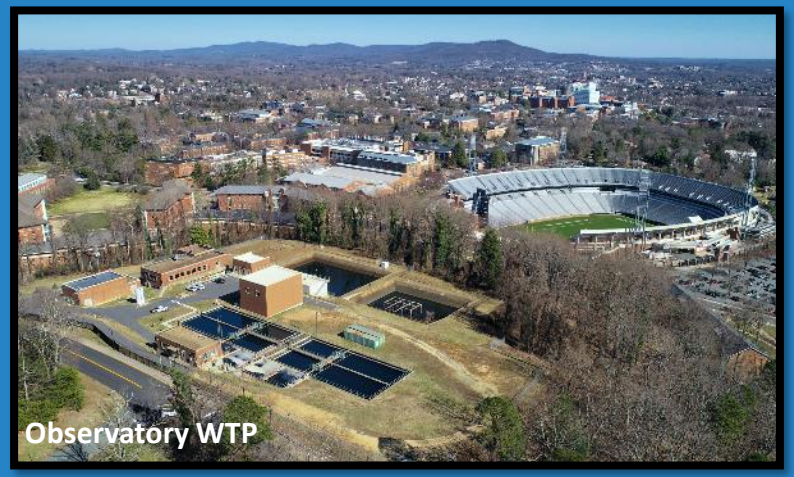
- Funding formula for a water line along Berkmar Drive (52% City/48% ACSA).

14. South Rivanna WTP Expansion Agreement, 2003:

- Allocated capacity and cost of 4 mgd expansion of SRWTP: 100% ACSA
- Allocated non-capacity CIP costs for Urban Water System: 48% City / 52% ACSA.
- Allocated Urban plants capacity and South Fork Rivanna Reservoir safe yield.

Major Facilities


Ragged Mtn Reservoir


Observatory WTP

15. Ragged Mtn Dam Project Agreement, 2012:

- RWSA to design and build new Ragged Mtn Dam and pipeline from SFRR to RMR.
- Water Supply and Demand studies every decade beginning 2020.
- Wholesale Meter system to be constructed, maintained and reported monthly.
- RMR leased from City for 40 years (2052).

16. Water Cost Allocation Agreement, 2012:

- Allocated cost of RMR dam (85% ACSA/15% City) and pipeline (80% ACSA/20% City).
- Allocated Urban Water System supply (safe yield), to be monitored by Wholesale Meter System.

17. Wastewater Projects Cost Agreement, 2014:

- Allocated cost of new Rivanna Pump Station and future capacity and non-capacity wastewater CIP projects, based on actual wastewater flows updated every 5 years.

18. Amendment to the "4 Party Agreement", 2015:

- Debt service charges to be computed as a monthly charge, rather than included in the Water and Wastewater Rates.

19. Joint Resolution, 2019:

- Ended the Buck Mtn surcharge.

20. Observatory WTP, Raw Water Pumping and Piping Upgrade Cost Allocation Agreement, 2020:

- Allocated costs for additional capacity in these facilities.
- Commitment to construct the Central Water Line centrally thru the City

21. Observatory WTP Ground Lease; 2020:

- 49-year lease with UVA. $175k / year with annual CPI-U increase updated every 10 years.

22. Northern Area Drinking Water Projects Agreement; 2022:

- Allocated costs to the ACSA for new drinking water facilities to be constructed north of the South Fork Rivanna River.

Summary

- Foundation documents of the RWSA include the Articles of Incorporation and the By-Laws.
- Since RWSA was created 50 years ago, a large number of Agreements have been established to allocate assets and costs.
- Staff must accurately administer these Agreements to properly manage our resources, budgets, and charges to the City and ACSA.

Questions?

Ivy MUC & Transfer Station

Sustainability and Climate Action Overview

RIVANNA WATER AND SEWER AUTHORITY & RIVANNA SOLID WASTE AUTHORITY

BOARD OF DIRECTORS MEETING

BY JENNIFER WHITAKER, P.E.; DIRECTOR OF ENGINEERING & MAINTENANCE

JANUARY 24, 2023

RIVANNA AUTHORITIES

RWSA and RSWA Mission

Sustainability and environmental protection is fundamental to:

1. Why we were formed,
2. What we do, and
3. Who we are.

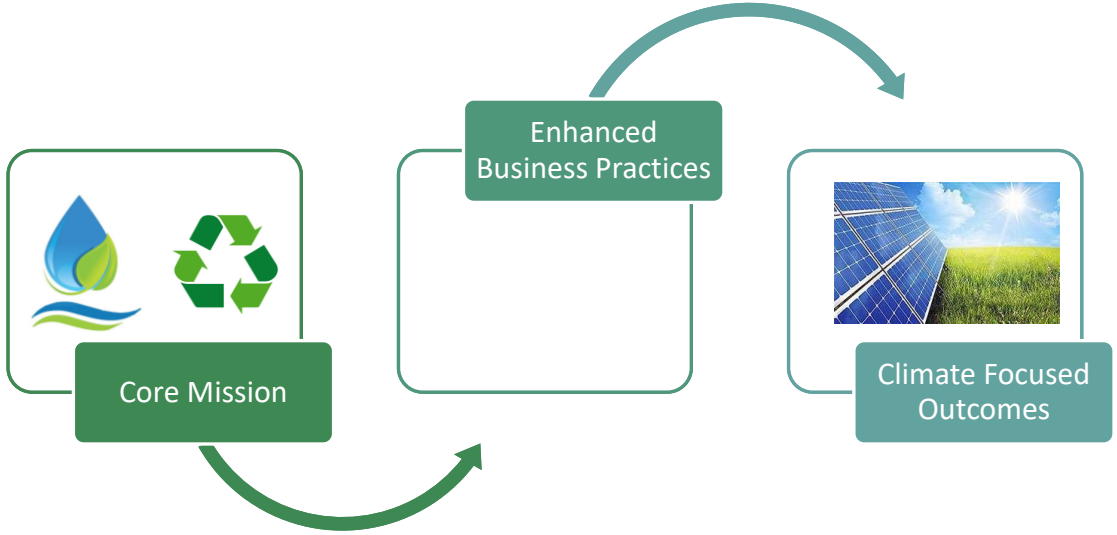
- 1972 Clean Water Act
- 1974 Safe Drinking Water Act
- 1976 Resource Conservation and Recovery Act

2023 Strategic Plan

RWSA and RSWA Mission

Going forward, our focus is on:

4. Adjusting how we provide services,
5. Understanding our footprint, and
6. Reducing our impacts.




South Rivanna WTP


Moores Creek AWRRF

Strategic Plan

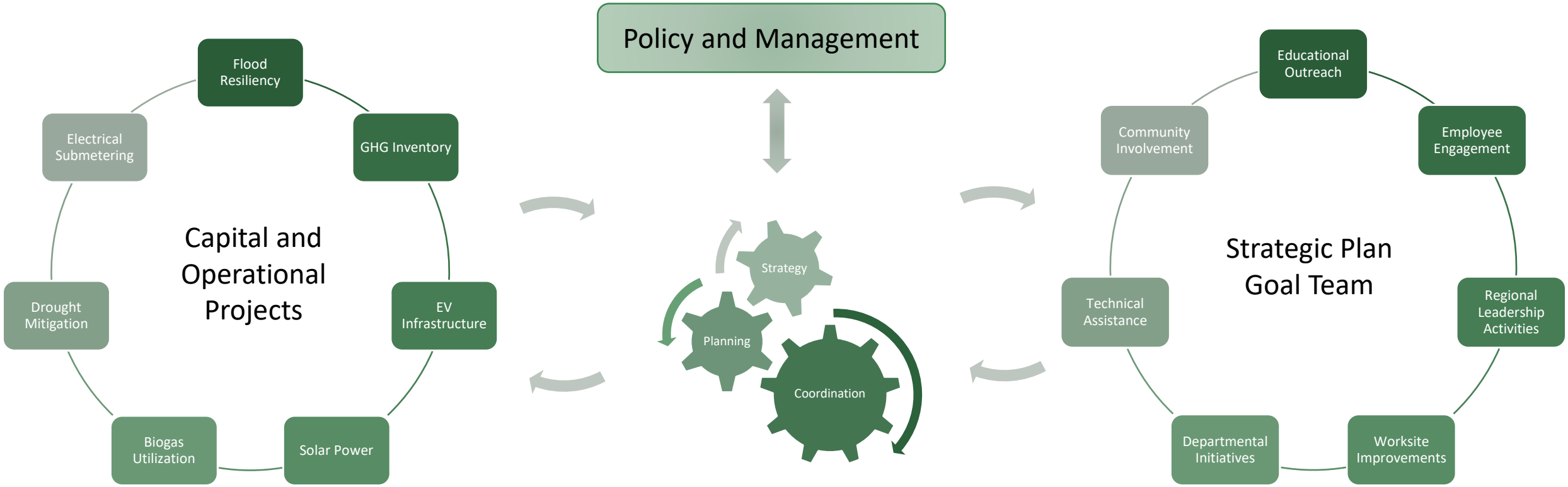
Environmental Stewardship

To demonstrate and promote best practices in sustainability, resources conservation, and environmental education

Strategies

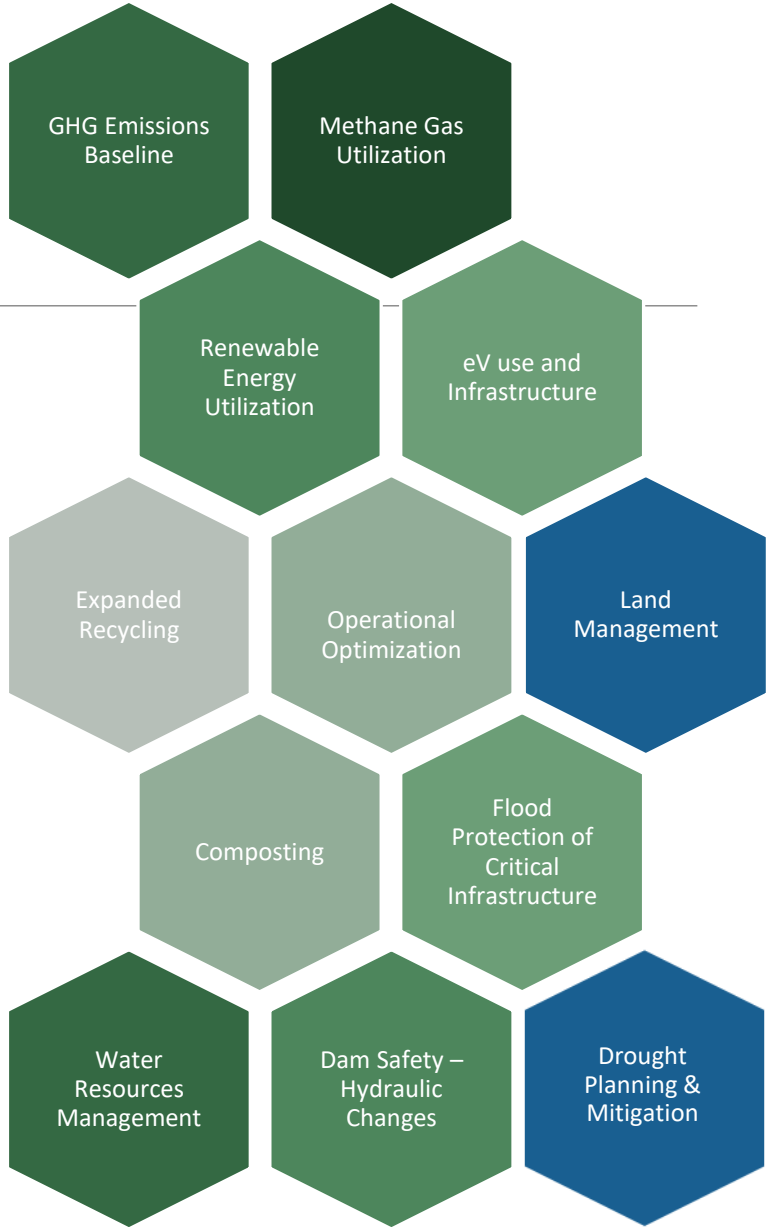
- *Strengthen and broaden involvements with regional environmental groups, task forces, and committees.*
- *Identify, Implement, and strengthen internal sustainability initiatives to address climate action goals; protect the environment and public health, and optimize resource use.*
- *Enhance and maintain business practices to ensure equitable services provision, including the same tipping fees, for all solid waste customers.*

Our Approach

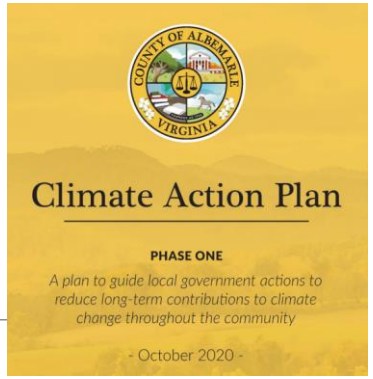


Key Program Areas

- Climate Action GHG Emissions
- Natural Resource Protection
- Climate Change Resiliency



Climate Action



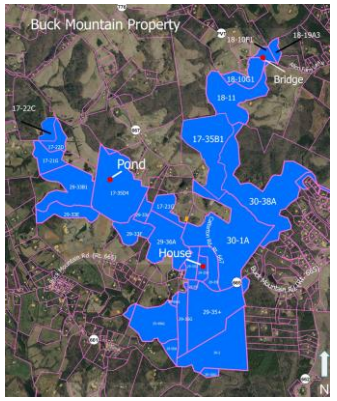
- Establish Baseline GHG Emissions for Major Facilities
  - Pilot Project at Moores Creek Advanced Water Resource Recovery Facility
  - Expand to all Major Facilities
  - Power submetering to be integrated into all Capital Projects
- Establish Goals and Targets
  - Integrate with City and County Goals
- Methane Gas Utilization
  - Investigating additional Cogeneration, Microturbines and Pipeline Use
- Renewable Energy Projects
  - Solar installations and EVs
- Operational Optimization
  - Chemical and electrical use reduction
  - Based on integrated finer process control
  - Regeneration of GAC media

Charlottesville and Albemarle GHG Emission Targets

- 2030 – 45% Reduction
- 2060 – net zero

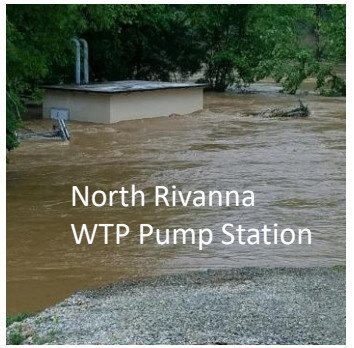
Natural Resources Protection

- Wastewater Discharge Nutrient Reduction
- Reservoir Water Quality and Instream Flow
  - Reservoir Nutrient and Algae monitoring program
  - Dynamic instream flow program
  - Future removal of North Rivanna Dam
- Land Management Practices
  - Forestry Management at Ivy MUC
  - Invasive Species Control and riparian stream protection at Buck Mountain
- Recycling & Composting
  - Construction of the Ivy and Southern Albemarle Convenance Centers
  - Regional cardboard baling and glass recycling
  - Compost : Household drop-off at Convenance Centers and UVA Dining facilities
  - E-Waste and Hazardous waste disposal



Climate Change Resiliency

- Building Flood Resilience Evaluation
  - Evaluation of all potential threats within the 100-year, 100-year+ 2 feet and 500-year flood plain
  - Construction of Building flood mitigation measures
- Capital Projects
  - Construct redundant water supply pipes at critical river crossings
- Decommissioning of the North Rivanna WTP
  - Removal of Low Head dam and return of flow to the River
- Design Policies
  - Pump Stations – install exterior bypass connections in addition to emergency power generation
- Dam Safety
  - RWSA designs for 100% Probable Maximum Flood for all High Hazard Dams (90% required)
  - Investigating National and Regional Technical Guidance for extreme precipitation events



North Rivanna
WTP Pump Station

May 2018 Flood – South Rivanna Dam

Regional Coordination

- Rivanna Conservation Alliance – Science Advisory Committee
- Rivanna Riverfest
- Albemarle Co. Stream Health Initiative Working Group
- TJPDC – Regional Natural Hazard Mitigation Planning Group
- City of Charlottesville - Climate Action Liaison Committee
- Albemarle Co. – Solid Waste Alternatives Advisory Committee
- Albemarle Co. - Climate Risk Assessment Stakeholder
- Upper & Middle James Riparian Consortium
- Land Use & Environmental Planning Committee

Questions?