RIVANNA
WATER & SEWER AUTHORITY

Board of Directors Meeting

June 28, 2022

2:15pm

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

BOARD OF DIRECTORS

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

DATE: **June 28, 2022**

LOCATION: **Virtually via ZOOM**

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

AGENDA

1. ***CALL TO ORDER***

2. ***STATEMENT FROM THE CHAIR***

3. ***AGENDA APPROVAL***

4. ***MINUTES OF PREVIOUS BOARD MEETING***
   a. *Minutes of Regular Board Meeting on May 24, 2022*

5. ***RECOGNITION***

6. ***EXECUTIVE DIRECTOR'S REPORT***

7. ***ITEMS FROM THE PUBLIC***
   For matters not listed on the agenda for public hearing

8. ***RESPONSES TO PUBLIC COMMENTS***

9. ***CONSENT AGENDA***

10. ***OTHER BUSINESS***
    a. *Presentation and Vote on Approval: Staff Report on Finance*
       Lonnie Wood, Director of Finance and Administration

    b. *Presentation and Vote on Approval:*
       Reimbursement Resolution – Capital Improvement Plan (CIP) Funding
       Lonnie Wood, Director of Finance and Administration

    c. *Presentation and Vote on Approval: Staff Report on Operations*
       David Tungate, Director of Operations

    d. *Presentation and Vote on Approval: Staff Report on Ongoing Projects*
       Jennifer Whitaker, Director of Engineering and Maintenance

e. *Presentation and Vote on Approval: Staff Report on Wholesale Metering*
Victoria Fort, Senior Civil Engineer

f. *Presentation and Vote on Approval: Staff Drought Monitoring Report*
Andrea Bowles, Water Resources Manager

g. *Presentation and Vote on Approval: Central Water Line Project*
Michelle Simpson, Senior Civil Engineer

11. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

12. CLOSED MEETING

13. ADJOURNMENT

GUIDELINES FOR PUBLIC COMMENT AT VIRTUAL RIVANNA BOARD OF DIRECTORS MEETINGS

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

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

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

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

- Submit your comment prior to the start of or during the "Items From The Public, Matters Not Listed for Public Hearing on the Agenda" section of the Agenda.
- In your comment, state your full name and address and your organizational affiliation if commenting for a group;
- Address your comments to the Board as a whole;
- State your position clearly and succinctly and give facts and data to support your position;
- Be respectful and civil in all interactions at Board meetings;
- The Board will have the opportunity to address public comments after the public comment session has been closed;
- At the request of the Chairman, the Executive Director may address public comments after the session has been closed as well; and
- As appropriate, staff will research questions by the public and respond through a report back to the Board at the next regular meeting of the full Board. It is suggested that commenters who have questions for the Board or staff submit those questions in advance of the meeting to permit the opportunity for some research before the meeting.

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

Rev. March 24, 2022

CALL TO ORDER

STATEMENT OF CHAIR TO OPEN MEETING

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

I would like to call the June 28, 2022 meeting of the Board of Directors to order.

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

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

ROLL CALL:

Ms. Hildebrand: Please state your full name and location.
Ms. Mallek: Please state your full name and location.
Mr. O'Connell: Please state your full name and location.
Mr. Pinkston: Please state your full name and location.
Mr. Richardson: Please state your full name and location.
Mr. Rogers: Please state your full name and location.

And I am Mike Gaffney, located at _____.

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

Bill Mawyer, Lonnie Wood, David Tungate, Jennifer Whitaker, John Hull, Jeff Southworth, Andrea Bowles, Victoria Fort, Deborah Anama, Michelle Simpson.

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

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RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
May 24, 2022

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, May 24, 2022 at 2:33 p.m. via Zoom.

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

Board Members Absent: None

Rivanna Staff Present: Bill Mawyer, Lonnie Wood, Jennifer Whitaker, David Tungate, Deborah Anama, John Hull, Jeff Southworth, Phil McKalips, Betsy Nemeth, Andrea Bowles, Michelle Simpson, Jennifer Whitaker.

Attorney(s) Present: Carrie Stanton and Valerie Long.

1. CALL TO ORDER

Mr. Gaffney convened the May 24, 2022 regular meeting of the Board of Directors of the Rivanna Water and Sewer Authority at 2:33 p.m.

2. STATEMENT FROM THE CHAIR

Mr. Gaffney read the following statement aloud:

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

"I would like to call the May 24, 2022 meeting of the Board of Directors to order.

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

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

Mr. Gaffney called the roll.

Ms. Lauren Hildebrand stated she was located at 305 Fourth Street NW, Charlottesville.

Ms. Ann Mallek stated she was located at 4826 Advance Mills Road, Earlysville.

Mr. Gary O'Connell stated he was located at 1720 Yorktown Drive, Charlottesville.

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

Mr. Jeff Richardson stated he was located at the County Office Building, 401 McIntire Road, Charlottesville.

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

Mr. Mike Gaffney stated he was located at 3180 Dundee Road, Earlysville.

Mr. Gaffney stated the following Authority staff members were joining the meeting electronically: Bill Mawyer, Lonnie Wood, David Tungate, Betsy Nemeth, John Hull, Jeff Southworth, Andrea Bowles, Michelle Simpson, Deborah Anama, and Attorney Valerie Long of Williams Mullen.

Mr. Gaffney stated they were also joined electronically by Carrie Stanton, Counsel to the Authority.

3. MINUTES OF PREVIOUS BOARD MEETING

a. Minutes of Regular Board Meeting on April 26, 2022

Mr. Gaffney asked if there were comments or changes to the minutes before they were approved.

Ms. Stanton stated she noticed two points—on line 430 and 467—statements were attributed to herself when she believed the statements were made by either Andrea Bowles or Valerie Long.

She stated they would have to confirm to correct the minutes.

Mr. Gaffney asked what the lines were.

Ms. Stanton stated it was lines 430 and 467, with respect to the leased parcel and the Catterton Road border.

Mr. Gaffney asked if either Ms. Bowles or Ms. Long knew who made the statements.

Ms. Bowles stated she believed there was a comment made regarding the Elliott House parcel and whether it was directly adjacent to Catterton.

Mr. O'Connell moved the Board to approve the April 26, 2022 meeting minutes as

amended. The motion was seconded by Ms. Mallek and passed unanimously (7-0).

4. RECOGNITIONS

There were no recognitions.

5. EXECUTIVE DIRECTOR'S REPORT

Mr. Mawyer recognized one of the water operators, Seth Marshall, who had passed the Class III water operating license. He stated Mr. Marshall had been with the Authority for less than a year and worked at the South Rivanna WTP.

Mr. Mawyer reported that new Board member tours of the water facilities had restarted. He stated Mr. Rogers, Mr. Pinkston, Mr. Gaffney, Ms. Mallek, and Mr. O'Connell had visited the major urban water treatment plants and reservoirs. He stated Ms. Jennifer Whitaker, Director of Engineering, served as a judge for the energy and environment track of the Institute of Electrical and Electronic Engineers, which worked on sustainability for the benefit of humanity. He stated a tour was hosted for UVA students of the water treatment plants. He stated that NBC29 had a news story regarding testing wastewater for COVID-19, Mr. Tungate provided an interview, and there was good footage of the plant. He mentioned that Ms. Bowles and Ms. Anama had participated in the annual Rivanna River Festival on May 1.

Mr. Mawyer stated that he was invited by DEQ to serve on a regulatory advisory panel that would review amending the regulations and requiring every applicant for a surface water or groundwater withdrawal permit to also complete a water auditing plan and a leak detection and repair plan. He explained that a water audit plan compared how much water was produced to how much had been sold; if water was being lost, then a leak detection and repair plan was implemented. He noted that it was a new initiative.

Mr. Mawyer stated there would be a strategic plan update started soon, and the Authority had contracted again with Raftelis Consultants, who did the original strategic plan. He stated they would be in contact with the Board regarding input for the update.

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

Mr. O'Connell commented that the tours were informative.

6. ITEMS FROM THE PUBLIC

Mr. Gaffney stated that later in the meeting, there would be a public hearing on the rate schedule and operating budget. He stated that this agenda item was for anything not involving the rate schedule or operating budget, and asked if there were comments from the public.

Mr. Hull stated there was one speaker.

Ms. Dede Smith stated that she is a Charlottesville resident, and she was pleased to see the final version of the Urban Finished Water Master Plan on the agenda. She commented that parts of the plan had moved ahead despite the fact the plan was not finalized. She stated this was relevant because one of the two goals for the plan was to plan, deliver, and maintain dependable infrastructure in a financially responsible manner—which you can't do without looking at the big

picture.

Ms. Smith stated she had sent an email to the Board regarding the plan but would spend her time on Slide 4, “Water Systems Analysis,” which was another way of saying water demand projections. She stated the community water plan was also based on an exaggerated prediction of future water demand, and that is no longer debatable. She stated this pattern seems to be repeating, as the Urban Finished Water Plan looked like it provided a similar projection.

Ms. Smith asked the Board to envision what would happen if those millions of dollars could be instead invested in cutting the current demand in half, which she stated could likely be done simply with toilets and washing machines. She stated it would likely happen because the western part of the country could not sustain flushing their toilets and washing their clothes with chlorinated, fluorinated drinking water. She noted that for those who grew up in a certain era, tearing up streets and laying down pipes is still considered progress—but some younger generations would not agree with the project yet and would still have to pay for it.

Mr. Gaffney asked if there were other comments from the public.

Mr. Hull stated there were no further comments.

Mr. Gaffney closed the items from the public.

7. RESPONSES TO PUBLIC COMMENTS

Mr. Mawyer stated that Ms. Smith’s comments and correspondence were always appreciated. He stated Ms. Smith had often discussed the Central Water Line project and the Route 250 bypass alternative. He stated it was an alternative that was being closely examined and considered, and tentatively, there would be data to report by the next month.

8. CONSENT AGENDA

a. Staff Report on Finance

b. Staff Report on Operations

c. Staff Report on Ongoing Projects

d. Staff Report on Wholesale Metering

e. Staff Drought Monitoring Report

f. Approval of the FY 2022-2023 Personnel Management Plan Update

g. Approval of FY 2022-2023 Pay Scale Adjustment

h. Award of Term Contracts for Professional Dam Engineering Services

i. Authorization for Construction Change Order – Moores Creek Slide Gate Improvements Project

j. Update on Buck Mountain Property Management Plan

Mr. Gaffney asked if there were items any member would like to pull for comment or discussion.

Ms. Mallek stated she believed the security enhancements and fences related to Moores Creek were on the Consent Agenda. She asked about the valves that irrigation trucks used as they pulled up to fill up with water, noting that this was a concern to the citizens. She stated a one-way valve replacement was a minimum protection for the water facilities, and she would like that to be discussed at a future date. She stated she had a question regarding wholesale meters and asked if the County had invested in the infrastructure so that it would have access to 11.99 million gallons per day—as they currently used just 4.5 million.

Mr. Mawyer stated that was correct.

Ms. Mallek stated that was great, and she was in favor of planning ahead.

Ms. Mallek moved to approve the Consent Agenda as presented. The motion was seconded by Mr. O'Connell and passed unanimously (7-0).

9. OTHER BUSINESS

a. Presentation and Approval: FY 2023-2027 Capital Improvement Plan

Mr. Mawyer stated that the Capital Improvement Plan had been discussed previously, in February, and the Authority was guided by the strategic plan goal of infrastructure and master planning. He stated the FY 23–27 CIP included 41 projects that totaled $205.1M. He stated that the Authority was spending funds to improve the water systems. Expenditures on the urban water system were estimated to be $122.5M, with expenditures on the urban wastewater system totaling $44.4M. He stated expenditures on the non-urban plants and shared projects totaled $38.2M. $10M in cash reserves would be utilized to help fund the CIP, but otherwise it would take additional debt issuance of about $123M over the five years.

Mr. Mawyer stated the annual Capital Budget could be seen on the slide presented for the upcoming fiscal years, and the FY23 budget was estimated at $26 million. He stated in FY25, it was $32M—with a noticeable drop-off after that may not hold true. He stated typically as they got closer to the horizon, they find they have items that need to be funded. He stated this constituted the $205M five-year CIP.

Mr. Mawyer continued that they used the funds to manage, improve, and maintain their facilities and equipment, of which they had about $390M. He stated that included five water supply reservoirs, six water treatment plants, four wastewater treatment plants, and they also owned and managed the Lickinghole stormwater basin that served the Crozet area and helped protect the South Rivanna Reservoir.

Mr. Mawyer stated that their major programs and projects came in several categories, and they

were currently upgrading their water treatment plants at South Rivanna and Observatory. He stated they worked on reliability and redundancy within their facilities, which was why they were building the Airport Road Water Pump Station and the Central Water Line and replacing the major electrical system at Moores Creek. He stated they had operating, maintenance, and safety issues that they would address in terms of security and environmental facilities—an increasingly prevalent topic—and maintaining the facilities at Moores Creek consumed a lot of their maintenance funding.

Mr. Mawyer stated they had regulatory requirements at the Beaver Creek Dam to increase the spillway capacity so it could pass about 31 inches of water per day, and that was an increase from about 15 inches of water per day currently. He commented that this was a huge increase, but the records showed that in 1969, Hurricane Camille dumped 29 inches of water in a short amount of time in the Nelson County area, so it was not unheard of. He stated they were also about to finish the flow equalization tank, which was going to allow them to store wastewater from Crozet in a tank when rainwater was getting in the sewer pipe—rather than having it overflow somewhere between Crozet and Moores Creek, they would take it out of a pipe and store it in a tank; when the flow subsided, they would take the wastewater out of the tank and put it back into the pipe.

Mr. Mawyer reported that they also had capacity projects, including the Schenks Branch interceptor, which they were working on with the City and the County. He stated they were planning a renovation and addition to the administration building at Moores Creek, and also had the major project of the South Rivanna to Ragged Mountain Pipeline. He stated these were some of the programs and projects contained within the CIP.

Mr. Mawyer continued that some of the major projects they had heard a lot about were the community water supply projects. He stated numbers 1 and 2 on the slide were renovating their two largest water treatment plants, and number 3 was replacing a raw waterline between the Ragged Mountain Reservoir and the Observatory Water Treatment Plant as well as building a pump station with that project. He noted a short section of the Rivanna to Ragged Pipeline would be built to connect to the south end of the existing pipe they built at Birdwood.

Mr. Mawyer stated they would build the pipe between the Ragged Mountain Reservoir and the Observatory Treatment Plant so the raw water supply could be increased to the larger Observatory Water Treatment Plant. He stated they needed to build the Central Water Line pipe, to get the water from the Observatory Treatment Plant and to the full area of the City and into the County.

Mr. Mawyer stated the pipe from of the South Rivanna to Ragged Mountain Reservoir would give them raw water needed to keep Ragged Mountain full. He stated Ragged Mountain was their largest reservoir but did not fill on its own, and they had to pipe water to it. He stated that was the largest project in the program, and when completed, it would raise the water level in Ragged Mountain by 12 feet and add 700 million gallons to their storage capacity, which was a major increase.

Mr. Mawyer stated over the 15-year horizon, they estimated they had about $523M in

expenditures planned, but those costs may increase as they identified needs. He stated there were lots of emerging programs for water and wastewater treatment for which they would have to plan.

Mr. Mawyer stated in summary, they had 41 projects in the FY23–27 CIP, totaling $205.1M. He stated they estimated their charge increases to the City would be 6.9% in FY23, and to the ACSA, 9.6%. He stated they were pursuing NRCS grants to help with the Beaver Creek project, so that would help lower the ACSA's charge increase if they were successful. He stated they were exploring additional grants.

Mr. Mawyer stated that Rivanna appreciated that the County had approved $750,000 in ARPA funding for RWSA, which would help them with the Red Hill Water Treatment Plant addition and Scottsville lagoon liners replacement at the water treatment plant. He stated they applied for a $21M grant with the health department that would add more GAC facilities so they could remove PFAS, an emerging contaminant that was at the center of a national discussion—not only in drinking water but in wastewater. He noted that this was coming from the bipartisan infrastructure law with federal money available for grants.

Mr. Mawyer reported that they were poised to apply in the next month for a cybersecurity grant to help them put in a card access system for their entrance gate at Moores Creek and improve the fencing, gating and traffic access at the front gate. He stated they were also looking at a program called Building Resilient Infrastructure and Communities, which was a federally funded program that included climate change and how it may make storms more intense and droughts more extensive. If the storms were more intense, flooding at Moores Creek would impact the wastewater facilities. They were exploring that issue and how they could possibly be eligible for that grant program from the federal government.

Mr. Mawyer stated they had an extensive program trying to maintain their facilities and assets and making sure they were providing water of an adequate quality and quantity for the community, as well as treating wastewater so the environment and public were protected. He stated they appreciated the funding from the City and Albemarle County Service Authority, but they were also trying to find any funding opportunity they could through the current grant programs.

Mr. Pinkston asked to see the previous slide and asked if the charge increases were the rate increases, with the City's at 6.9 %.

Mr. Mawyer responded that they were the charge increases from Rivanna to the City. He stated Ms. Hildebrand with her staff and the finance staff would determine the retail charges to retail customers.

Mr. Pinkston asked if that number from RWSA included the annual operating costs.

Mr. Mawyer responded affirmatively. He stated even though they presented it as part of the CIP, these charges were the total Rivanna charge increases they estimated, which would be CIP debt service cost as well as the operating cost to give a comprehensive view of what the charges

would be. He stated it would not be very meaningful to tell them what the CIP would cost if they did not include what the operating programs would cost.

Mr. Pinkston asked what the operating budget for the upcoming year was.

Mr. Mawyer replied that it was $41.8M, and they would talk about that next.

Ms. Mallek asked if this resilience grant that Mr. Mawyer just mentioned could also help with the cost of the Rivanna to Ragged pipeline, because it seemed drought was as equally as possible as flooding, given climate change.

Mr. Mawyer stated they would explore that possibility with their consultant. He stated the grant programs had a maze of requirements and trying to match projects with programs for which they were eligible was a challenge. A lot of the programs had preferences for disadvantaged communities, but they were working hard to identify every project for which they had a reasonable chance of eligibility.

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

Mr. Mawyer stated it was requested the Board approve the CIP.

Mr. Gaffney asked if there was a member of the Board who would make a motion to approve the Capital Improvement Plan for Fiscal Year 2023-2027.

Ms. Mallek motioned the Board approve the FY23-27 Capital Improvement Plan. Mr. O'Connell seconded the motion.

Mr. O'Connell asked if the next year's CIP was roughly $26M.

Mr. O'Connell asked of what big projects they could tell their customers were being funded out of the next year's funds. He stated he knew a lot of these projects were in process, like the two treatment plants for example.

Mr. Mawyer stated there were the two treatment plants, the Airport Road Pump Station was currently under construction, the Moores Creek 5kV electrical replacement was a $5M project underway, and he could send a list of the rest of the projects.

Mr. O'Connell stated that was helpful. He stated he was trying to recall the major ones.

Mr. Gaffney asked if there were any other questions. There being none, the Board voted.

The motion passed unanimously (7-0).

b. Presentation, Public Hearing, and Approval: FY 2022-2023 Rate Schedule and Operating Budget

Mr. Mawyer reported that the budget was introduced in March. He stated they were guided by their strategic plan goals that were listed on the slide. He stated that the budget for next year was estimated to be $41.8M, which was a 7.4% increase above this year's budget. He stated their debt service cost was estimated to be $19.7M, which was a 6.9% increase. He stated their expenses were to increase by $1.6M, or 7.8%. He stated they were going to contribute a small amount from reserves, $150,000 to support the GAC initiative that had been going on for several years. This would be the last year they would contribute to the GAC subsidy.

Mr. Mawyer stated the total charges to the City were estimated to be $16.5M, or a 6.9% total increase. He stated the charges to the Service Authority would be $23.6M, or a 9.6% increase over current year charges. He stated the simple pie chart for the budget showed that expenses were 53% and debt service was 47% of their $41.8M budget. He stated they were building all the major infrastructure for the water and sewer system, and they carried all the debt to support those systems for the County and the City. He stated the expenses of $22.1M—when they combined the essential costs of personnel, chemicals, equipment, building repairs, and utilities—represented about 84% of their expenses, so they did not have much flexibility within the budget.

Mr. Mawyer reported that they did have a specialty program in Wastewater Odor Control for $400,000, through which they were putting chemicals into the wastewater as it made its way from Crozet to Moores Creek, to make sure that locations along Rt. 250 were not impacted. He stated they trucked biosolids, the end-of-the-line product of wastewater treatment, to Waverly, Virginia to be used for compost. He noted that this was 3% of their budget at $735,000. He stated Information Technology was a growing part of their budget, and to take care of their Supervisory Control and Data Acquisition System (SCADA) that they used to manage and report on treatment processes, as well as asset management software and document management software, they were heavily dependent on technology and committed to those associated expenses.

Mr. Mawyer stated major projects for the fiscal year that had been mentioned already were the water treatment plant renovations and the Airport Road pump station construction. He stated they wanted to build a section of the Rivanna to Ragged pipeline, which would extend from the north end of the Birdwood waterline under Rt. 250 and Old Garth Road onto University Foundation property. He stated the Beaver Creek Dam pump station/piping design was a large project that they were continuing to work on with the NRCS in preliminary design. He stated the Central Water Line was a major project, and in the future they would be talking more about how climate change may affect these projects.

Mr. Mawyer stated Mr. Pinkston had asked why the City charge increases were different from the Service Authority charge increases. He explained that the asterisks shown on the slide noted that the water treatment plant renovations were funded 52% by the Service Authority and 48% by the City, and Airport Road would be 100% funded by the Service Authority in the new agreement. He continued that the Birdwood to Old Garth Road construction would be 80% funded by the Service Authority and 20% by the City; the Beaver Creek project was 100% funded by the Service Authority; and the Central Water Line was 52% Service Authority and 48% City. He explained that this was why there were funding and charge increase differences from Rivanna to the two organizations.

Mr. Mawyer stated some of the additional expenses they had projected for the next year, such as chemicals, biosolids transportation and disposal, and odor control, were all going up. He stated they were trying to keep up with technology and fund that appropriately for SCADA, security, and other programs. He stated they proposed a 4% merit pool to begin in July for their staff and did not propose any additional staff for next year; they continued to focus on existing staff and appreciated the 6% increase the Board had granted in February.

Mr. Mawyer stated that the financial forecast showed the rate charge increases projected for the next five years. He stated their operating budget was projected to be $41.8M for next year. He stated their capital budget was $25.8M, and their five-year CIP was $250.1M. He stated they anticipated new CIP debt of about $123M over the next five years. He stated in summary, their total budget proposed was $41.8M, a 7.4% increase above the current year. He stated the City and ACSA charges were shown on the slide and the same as previously mentioned. He stated he would be glad to answer any questions and that they had the rate schedule, which was the foundation of their budget, for viewing on the screen. He requested that the Chair have a public hearing on the rate schedule and the budget.

Mr. Gaffney opened the public hearing for the FY2022–2023 Rate Schedule and Operating Budget. He asked Mr. Hull if there were any members of the public who would like to speak at this time.

Mr. Hull indicated that there were no comments from the public.

Mr. Gaffney stated they would close the public hearing and asked the Board if there were comments or questions.

Mr. Pinkston commented to Mr. Mawyer that he was impressed by the thoughtfulness and attention to the future that the CIP represented, and the recent tour of the facilities gave him an impression of professionalism as well as preparing for the future. He emphasized that this sort of preparation and robustness they wanted to have in place came at a cost. He stated Mr. Gaffney could perhaps speak to this point, but years ago when they faced a drought, they were almost at a point of not being able to provide services. He asked to see the slide of rate increases per year again. He stated he believed those numbers were fair and accurate in terms of the CIP they were approving, the level of investment they wanted, and the quality of operations they had. He stated the other side of that, however, was a geometric sort of increase in terms of the rates.

Mr. Pinkston stated he did not know if there was a way in the future for them to do some benchmarking compared to other communities, or of that rate increase of 7% as a nominal figure for the City, how much could be attributed to inflationary pressures versus the desire to have a robust system. He stated he was not sure if he was being clear in his remarks but thought the system they had and that they were working towards was world class, and he was grateful they had and would have that. He stated he thought the geometric and exponential increase in rates should have more discussion at some point to explain to the average consumer the rationale for that. He asked Mr. Mawyer if that made sense.

Mr. Mawyer responded that it did. He stated that inflation, as in other parts of their lives, impacted the chemical costs, labor costs, and transportation and fuel costs. He stated because the chemicals were trucked to them, the cost of diesel was reflected in those charges. He stated they were sensitive to and appreciated the fact that their charges were projected to go up, and they strived to minimize and be effective and efficient but also had to balance that with system reliability and quality.

Mr. Pinkston agreed and reiterated that he was impressed by the professionalism and levels of redundancy—and from an engineering perspective, the systems that they were creating were world class. He stated that was what the community wanted and needed, but they had to be able to explain the fact that what they were getting was a world-class system that might have impacts on rates, as well as the fact they were in an inflationary period in terms of both materials and compensation. He stated he was unsure of what to do about what he just stated, but he thought they needed to be thinking about if they were making the right investments and if they were able to explain it to the people paying their water bill that it was not just the increase over the year but multiple increases over multiple years, and a lot of that had to do with inflation.

Mr. Mawyer stated they would be glad to work with him on that as they started their next budgeting process and see what they could come up with. He stated before his time here, the Authority decided they would have a granular activated carbon (GAC) water filtering process, which was expensive and generated a clear cost-benefit situation. He stated there were great benefits to the community, which he thought most people appreciated if they understood them, but there was again a cost to build it and maintain it every year. He stated those types of things he knew Mr. O'Connell focused on as well, to explain to customers the benefits they were getting for their water and sewer bill. He stated they were glad to help with that as best they could.

Ms. Mallek stated she always appreciated being able to see those benchmarks, because they made us look good. She pointed out that their water was unbelievably inexpensive. She stated when Mr. O'Connell spoke, she would like him to explain what a penny bought, because she was always pleasantly shocked by that. She stated it felt like in that past 15 years or so, the agency had pushed hard to catch up after a decade or more of total postponement of doing any improvements, and unfortunately the downside of that was that then they had to pay.

Ms. Mallek stated she was really grateful for all the planning that had gone in and the work that was going to happen, because she remembered very clearly in 2004 when the water agency stated they were seven days away from closing the University. She stated that would have had an economic impact far greater than these percentages and increases now. She stated they were a large percentage, they were pennies in the water and sewer bills and absolutely made a difference, for which the value was huge.

Mr. O'Connell stated one penny would buy someone two gallons of safe, clean, and reliable water. He stated the 9.6% increase was the wholesale charge. He stated on the retail side as to what the customer was actually charged, they had 4.6% in their budget proposal. He stated they were trying to find some other ways to help fund what he thought was necessary for what Rivanna was doing. He stated as Ms. Mallek had just mentioned, there were two major water

treatment plants that were more than 60 years old that needed major repairs, and there were some expansions but mostly delayed repairs that they at some point must do—and now seemed to be a good time.

Mr. O'Connell stated there were also some statewide dashboards, and Draper Aden had one that anyone could look at that showed their retail rates compared to the rest of the state. He stated the Service Authority rates had consistently been below the statewide average for their comparable bills, so he thought that spoke well to appreciate the value and have safe water to provide reliably to their customers.

Mr. Gaffney added that the ACSA, even before his time on this Board, for many years had hook-up fees for new construction for larger buildings so that they built a fund that helped pay for the new and improved infrastructure that was needed for the growth. He stated that was why ACSA with a 9% increase only had their rates go up 4.6%. He stated he knew the City also looked at these rates and what they charged their customers, but he was not aware as much as he was about ACSA's service fees to help pay for that infrastructure. He asked if there were any other comments or questions.

Mr. Pinkston motioned to approve the Fiscal Year 2022-2023 Rate Schedule and Operating Budget. Mr. O'Connell seconded the motion, which passed unanimously (7-0).

Mr. Mawyer thanked Lonnie Wood, Jennifer Whitaker, David Tungate, and their staff for working through the budget process from the previous August to the finalization in the following May. He stated they all had to work as a team to try to think strategically and cost effectively about what they needed to not create an unreasonable financial burden on the public. He stated he appreciated all that they did to put these budgets together.

c. Presentation: Urban Finished Water Master Plan

Ms. Michelle Simpson introduced herself and stated she would be discussing the Urban Finished Water Master Plan, which covered the urban service area, colored pink on the map shown on the slide. She stated it encompassed the City of Charlottesville and the surrounding areas served by the ACSA out to Glenmore and up to the North Rivanna zone. She stated this master plan supported their strategic plan goal for infrastructure and master planning.

Ms. Simpson noted that this was a master plan, so this was a high-level, conceptual plan for the next 50 years. She stated that a lot of this work had started in 2019, and a lot of the earlier work had been the basis for advancing several of their other CIP projects. She stated many projects they would see listed were already in progress, and they were included in the CIP. She continued that some of Urban Finished Water Master Plan goals were to identify improvements required to enhance water system efficiency, provide capacity to meet future demands, and increase operational flexibility. She stated as part of the project, they were preparing schedules and cost estimates for completing all of those improvements.

Ms. Simpson stated the water system analysis included first an update of their 2012 hydraulic model, and part of the work done by Baker Engineering was to evaluate the model for various

water demand projections out to 2070. She stated the 2070 water demand projection was about 14 million gallons per day. She stated it also evaluated needs for various operational scenarios, including their maximum day demands, imbalanced water production at the various water treatment plants, and whether there was a water transmission main or water tank out of service, under drought conditions and under fire flow conditions.

Ms. Simpson stated the master plan was organized into separate groupings of distribution system improvements, storage improvements, pumping improvements, and other studies that needed to be done. She stated first they would discuss distribution system results. She stated the slide showed specific conveyance improvements that were outlined. She stated Baker evaluated the entire distribution system, the lines of which were highlighted in yellow on the map. She stated the results showed that they had a lot of gaps in their transmission system, which resulted in a lack of hydraulic connectivity in the urban service area. She stated their goal with these improvements was to address operational and hydraulic inefficiencies in moving water across the system and improve system flexibility.

Ms. Simpson stated one of the projects for conveyance improvements was the Central Water Line, on which she had given a presentation in January. She stated it currently included about five miles of 24-inch to 30-inch transmission main and coordinated with replacement of the City's East High Street main. She stated this project would significantly improve the hydraulic connectivity between the Observatory plant, the Observatory tank, the Avon Street tank, and the Pantops tank. She stated it also allowed for the full 10-MGD capacity of the Observatory Water Treatment Plant improvements to be utilized.

She stated another conveyance improvement was the Berkmar/Airport Road Waterline project, which was currently under construction. She stated it was a new 24-inch water main that tied into their water main in Route 29, as shown on the lower part of the map. She stated the blue line on the map showed their existing line, and they were building a new 24-inch waterline behind Kohl's, which would follow Berkmar Drive to their new Airport Road pump station. She stated the pump station would have a new 16-inch waterline conveying water out into the north zone and connecting into the Service Authority's existing 12-inch line in Timberwood Boulevard. She stated they would build a Phase 2 of that project, which would be a new 16-inch waterline from the Airport Road Pump Station to Airport Road once VDOT came back and built the remaining section of Berkmar Road Extended.

Mr. Richardson asked to see the previous slide. He stated Ms. Simpson had discussed dependability and reliability. He asked if with Phase 1 of the pump station and piping, by 2025, there would be increased water capacity in that area.

Ms. Simpson responded that the new pump station would be redundant to the existing North Rivanna Water Treatment Plant until the North Rivanna Water Treatment Plant was decommissioned. She stated at that point, it would provide the same water capacity to the north zone after that, with the potential for increased capacity in the future.

Mr. Richardson thanked Ms. Simpson.

Ms. Simpson stated the next type of distribution system results in this category were reinforcement and redundancy improvements. She stated the plan recognized that there were multiple vulnerable areas in their systems, and that included areas where they had railroad crossings, river crossings, major highway crossings, and high-pressure mains. She stated these were critical assets that were difficult to access and difficult to repair, and that made them vulnerable areas.

Ms. Simpson stated for redundancy projects, they had the Emmet Street Waterline, which would be about 14,000 feet of waterline connecting near the Observatory Water Treatment Plant all the way up to Route 29 and Hydraulic Road. She stated Phase 1 of the waterline would prioritize the gap that they had between the waterlines of the Lambeth pump station area up to Hydraulic Road and Route 29. She stated this would provide redundancy to the Central Water Line and additional reliability between Observatory Water Plant and South Rivanna Water Plant.

Ms. Simpson reported that another project that had advanced was the Second South Rivanna River Crossing. She stated this was a new 24-inch line that left South Rivanna Water Treatment Plant and would have a directional drill under the river, then follow Rio Mills Road over to their 24-inch waterline in Route 29. She stated the river crossing would be parallel to the Berkmar Bridge. She stated the next project was the Second North Rivanna River Waterline Crossing and Reinforcement.

Ms. Simpson stated in the center of the screen was the North Rivanna River, and the area with the yellow box shown was their highest-pressure section of the North Rivanna Waterline at 175 PSI. She stated it was made of old cast iron, and the stars shown on the map notated the multiple waterline breaks on this old cast iron line. She stated in consideration of the breaks, the high pressure, and the age, they were looking to replace this section of pipe and strengthen the system because it was the most vulnerable area. She stated they would put in a second river crossing because of vulnerability there as well.

Ms. Simpson stated they looked at another redundant river crossing. She stated this was in the Pantops area. She stated the City's 12-inch line was shown in the bottom left of the map, at the end of Market Street. She stated the yellow line shown would be a new 16-inch redundant river crossing that went over to State Farm Boulevard and would tie in with the ACSA's 16-inch line that went around the hospital, and their line in State Farm Boulevard. She stated that would be a redundant crossing to the 24-inch river crossing on River Road. She showed on the screen some additional areas for redundancy. She stated these were various projects that the City and Service Authority and Rivanna could do within their systems to strengthen connectivity between their Southern Loop Waterline and the planned Central Water Line. She stated those could be done over a range of time and would increase connectivity through the system.

Ms. Simpson stated the next category for distribution system results were for piping replacement improvements. She stated the master planning process recognized that in the next 50 years, much of their cast iron would be over 100 years old, so the map on the slide showed the pipe ages at 2070. She stated the sections highlighted in red would be the sections that would be over 100 years old by 2070. She stated for programming purposes and to have it documented in the master plan, they assumed a 100-year useful life. She stated the specific waterlines highlighted in red

were programmed into the 50-year plan to be replaced as they reached their 100-year life.

Ms. Simpson stated overall, those distribution system improvement projects would accomplish a lot of goals. She stated they would close gaps across the Urban Service Area, address operational inefficiencies, improve system flexibility and redundancy, move more water across the transmission system, and enhance hydraulic connectivity.

Ms. Simpson stated she would now move onto the storage system results. She stated the results of the study showed that they had a lot of storage, but much of it was not usable. She stated their goals as part of this study were to increase usable storage in the existing storage tanks, add storage where needed to improve their operations, and increase water turnover and reduce water age. She continued that regarding urban zone storage, for the short term, they would be looking at opportunities to recover unusable storage by addressing high-elevation customers. She stated in the long term, they would look at moving the Pantops tank to a higher elevation when it needed to be replaced, install an elevated tank when the Avon Street tank needed to be replaced, and the new tanks could overflow at a higher elevation to match the overflow elevation of the Observatory tank.

Ms. Simpson stated for the Stillhouse tank, they were looking at installing a second 50-foot diameter, 50 feet high, 0.7 MG tank on the existing site. She continued that at Lewis Mountain, they were looking at putting a second 0.5 MG tank on the same site. She stated the Lewis Mountain and Stillhouse tanks were in their own pressure zones, so this would help to reduce pump station cycling and provide some redundancy to the existing tanks in both of those systems when one of the tanks needed to be offline for maintenance or painting.

Ms. Simpson stated that at the Airport Road Pump Station, the site had room for two future 1MG storage tanks. She stated they currently were not building those tanks with the new pump station, but they had reserved the space on the site for them. She stated they would continue to reevaluate those tanks with each master planning cycle to see if they were needed. She stated finally, the pump station results from the study identified that their pump stations were adequate for what they had, and the only new pump station that was really needed within their system was the Airport Road Pump Station.

Ms. Simpson stated it was currently being built as part of the Airport Road and Berkmar Waterline project that she discussed at the beginning of the presentation. She stated this station would have two 1.5 MGD pumps and would be used to support the north zone instead of using the temporary Kohl's pump that they used in emergencies. She stated this would support as redundancy to the North Rivanna Water Treatment Plant, and in the future when the North Rivanna Plant was decommissioned, it would serve the north zone entirely.

Mr. O'Connell asked if there was also space there for an additional larger pump there so they could get more capacity in the northern system as part of the future plan or when the growth needs occurred.

Ms. Simpson replied that this was absolutely correct. She stated right now, they were putting in 1.5MGD pumps, but there was room for four pumps in the pumps station, so they could

definitely add more pumps in the future and have a larger firm capacity for that zone. She asked if that answered Mr. O'Connell's question.

Mr. O'Connell stated yes and thanked Ms. Simpson.

Ms. Mallek asked if there were no mountains available, whether the tanks could be raised on stilts or an abasement to get the higher elevation needed. She asked if that was reasonable.

Ms. Simpson asked if she meant for the Airport Road site specifically or for the rest of the urban system.

Ms. Mallek noted that Ms. Simpson had mentioned moving storage tanks to higher elevations.

Ms. Simpson stated yes. She explained that as far as the Pantops tank, they would be looking to elevate the base of it up the hill, but it would not be extensive. She stated they were talking about maintaining a very similar overflow elevation, or a few extra feet to match the Observatory tank overflow. She stated if they could get more of the tank at a higher elevation but maintain the same overflow elevation, it would help with the amount of usable storage. She stated in other words, they would be looking to have a shorter tank, but the entire tank would be up higher so it would be more usable. She stated for the Avon Street tank, that could be a shorter, wider tank on stilts.

Ms. Mallek thanked her for the explanation.

Ms. Simpson stated in the master plan, they had outlined multiple additional operational studies that would include a waterline condition assessment to better determine the condition of their aging cast iron pipe, some additional pump facility condition assessment, pressure surge investigation and mitigation in the north zone, additional model calibration, and additional storage and operations evaluations. She showed a chart of all the projects listed in the finished water master plan, noting that they totaled about $155M for the next 50 years. She commented that this did not include maintenance items such as tank painting or right-of-way clearing.

Ms. Simpson stated in summary, the 50-year comprehensive plan costs $155M. She stated all of these projects would enhance their hydraulic connectivity, address operational inefficiencies, and address increased future water demands. She stated the entire master plan was grouped in 5-year increments to program replacement of aging infrastructure, and it would improve overall system flexibility and redundancy.

Mr. Rogers thanked Ms. Simpson for the presentation. He stated he knew from his other work that the Department of Transportation would be doing major work on Hydraulic Road on Route 29 and was talking about installing a roundabout in that area. He asked if there was any coordination in terms of the street work that must be done by both agencies, so they were not impacting each other's work and creating a longer-term inconvenience for the residents in that area.

Ms. Simpson asked if Mr. Rogers was speaking about the Emmet Street Waterline. She stated the

short answer was yes: They were coordinating with VDOT, and they were aware that they were interested in waterline improvements in that area. She stated she believed the roundabout may be on Hydraulic in the vicinity of the Whole Foods entrance there, and they were looking at this work. She stated she believed what was originally planned was a grade-separated interchange there at Hydraulic, but that may have changed and would just include lane widening, so it may not be as extensive as originally planned. She added that they were coordinating with VDOT and the City on betterment opportunities in this area.

Mr. Rogers thanked Ms. Simpson and stated that was useful.

Mr. Gaffney asked Ms. Simpson if, with the new pump stations at Airport Road, there was a need to complete the Airport Road storage tanks for quite a while. He asked if they would have to wait and see.

Ms. Simpson responded affirmatively and stated it was determined that the tanks were not needed right now, so at this point they were just reserving the space on the site for them.

Mr. Gaffney asked if they were to be installed, whether they would increase the available water capacity in that part of the County, which he believed had been one of Mr. Richardson's questions earlier.

Ms. Simpson stated based on the information in the report, there was adequate water within the existing urban storage tanks now and that increased storage at the site would not provide increased water capacity to the area.

Mr. Gaffney stated okay.

Mr. Pinkston stated the purpose of this report was to focus on the finished water system. He asked if that was correct.

Ms. Simpson stated that was correct.

Mr. Pinkston stated obviously wastewater was not a component of that. He stated water treatment facilities were a part of that. He asked if that was correct.

Ms. Simpson stated water treatment was not. She stated that was separate.

Mr. Pinkston stated it was everything it takes to close the gaps.

Ms. Simpson stated once the water left the water treatment plant, it was the distribution system.

Mr. Pinkston stated he understood. He stated the net result was that for an investment of about $3M a year over the course of 50 years, in terms of the sum total of the cost outlined at the end of the presentation, that kind of investment over time would give them a tightly and interconnected distribution system. He asked if that summary sounded correct.

Ms. Simpson responded that it did, adding that there were additional studies recommended in the master plan that may give them additional projects.

Mr. Pinkston noted that the net result was that for that sort of investment per year, they could expect in 50 years to have a system that was very well interconnected and woven throughout the whole area. He stated his other question was how they were able to advance the Central Water Line prior to having this particular study completed. He stated he saw at one level why someone would think they should have the final overall plan finalized before making a major decision like the Central Water Line. He asked if they could speak at all to why they felt comfortable moving forward with the Central Water Line as one component of this, even though the overall plan was still being finalized. He asked if Ms. Simpson could say a bit more about that.

Ms. Simpson responded that the majority of the modeling was completed earlier on in 2019 and 2020. She stated the hydraulic modeling set the stage for what improvements were needed, and that was how they were able to confirm which projects were needed. She stated essentially, for a lot of these projects, they had an idea that something needed to happen but just needed the modeling to confirm it.

Ms. Simpson stated the Avon to Pantops and the Southern Loop analyses were all started before the finished water master planning began. She stated they put the Avon and Pantops work on hold, then started on the Finished Water Master Plan, and that modeling work confirmed the status and some of the things they already knew beforehand, so they were able to continue on with that project. She stated the same was true of the Airport Road Pump Station and some of the newer waterlines that were up Route 29. She stated some of that analysis was already in progress, and then the modeling confirmed the hydraulics they needed to move forward into design.

Mr. Pinkston stated it sounded like they had a thoughtful and professional sense of figuring things needed to be built, and the modeling confirmed that for them in terms of facts and figures.

Ms. Simpson stated that was correct.

Mr. Pinkston thanked Ms. Simpson.

Mr. Gaffney asked if there were any other questions.

10. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

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

Mr. Mawyer stated there were none from staff.

11. CLOSED MEETING

There was no reason for a closed meeting.

12. ADJOURNMENT

At 3:51 p.m., Mr. Pinkston moved to adjourn the meeting of the Rivanna Water and Sewer Authority. Mr. Rogers seconded the motion, which passed unanimously (7-0).

RIVANNA WATER & SEWER AUTHORITY
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MEMORANDUM

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

FROM: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **EXECUTIVE DIRECTOR'S REPORT**

DATE: **JUNE 28, 2022**

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

Recognitions

Mr. David Bortner, Water Operator Class 2, assisted the Charlottesville Police Department (CPD) in locating a missing person on May 17th. A Code Red alert had been issued by CPD for the missing person who was last seen in the Prospect Avenue area at 10 AM. While traveling to Crozet to collect water samples for analysis by our lab, Mr. Bortner noticed the missing individual on Rt. 250 W near Bellair Market. David notified the police who returned the individual safely to his home.

The Virginia General Assembly established June 30th as Virginia's Annual Drinking Water and Wastewater Professionals Appreciation Day, a special day recognizing the vital work of water and wastewater professionals. We appreciate our dedicated staff who work to provide safe drinking water for our community and those treating wastewater to be safely returned to the environment.

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

- Austin Marrs passed his Professional Engineer exam

STRATEGIC PLAN GOAL: OPERATIONAL OPTIMIZATION

Virginia Drinking Water Optimization Program Awards for 2021

Our four major water treatment plants have been recognized by the Virginia Dept. of Health (VDH), Office of Drinking Water for achieving high and sustained levels of excellent water treatment. This recognition by VDH reflects our commitment to excellence in WTP operations and the high-quality service provided to our urban drinking water community. The Virginia Optimization Program is voluntary and comprised of 3 elements: filtration, clarification, and backwashing. A WTP receives a bronze award when it achieves the filtration element of having a combined filter effluent less than 0.1 NTU 95% of the time (the regulatory limit is 1.0 NTU). A silver award is given if a WTP meets one of the additional elements, and finally a gold award if a

WTP achieves all three elements. Our plants were successful in achieving the filtration and backwashing elements which gave them a silver award, and the OBWTP earned gold by also meeting the clarification requirements (settled water turbidity of less than 1.0 NTU 95% of the time).

Silver Award
North Rivanna WTP
South Rivanna WTP
Crozet WTP
Scottsville WTP

Gold Award
Observatory WTP

We congratulate Division Director David Tungate, Water Manager Daniel Campbell and all of the Water Operators for their efforts to provide outstanding drinking water to our community, and for receiving these awards.

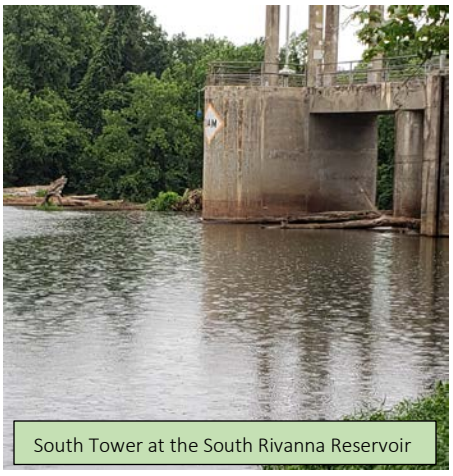
STRATEGIC PLAN GOAL: COMMUNICATION & COLLABORATION

Public Safety

May 31st was Dam Safety Awareness Day, and June is National Safety Month. With the recent tragic accident at Bosher's Dam on the James River near Richmond, we want to remind everyone about the hazards related to our dams, and some of the safety and water quality rules we have for our 5 water supply reservoirs, including:

- Boaters should not go beyond our safety buoys located near the dams.
- Boats are not allowed on the Sugar Hollow reservoir due to the hazards created by our inflatable gate on top of the concrete dam.
- Only electric boat motors are allowed on Ragged Mtn, S. Fork Rivanna, Totier Creek, and Beaver Creek reservoirs.
- Swimming is not permitted in any RWSA reservoir.

North Tower at the South Rivanna Reservoir


South Tower at the South Rivanna Reservoir

Reauthorization of the RWSA

The Albemarle Board of Supervisors and the Charlottesville City Council approved a Concurrent Resolution to reauthorize the RWSA for another 50 years, in accordance with the requirements of the Virginia Water and Wastewater Authorities Act. The RWSA was originally chartered by the Albemarle Board and City Council in 1972.

Crozet Community Advisory Committee Meeting

On June 8, we presented information to the CCAC about topics including the status of the Beaver Creek Dam Spillway and the Crozet Wastewater Flow Equalization Tank projects. Members of the CCAC had several questions about federal funding for these projects, water quality and quantity impacts due to development, as well as the redundancy and resiliency of our water and wastewater facilities if damaged by storms or other hazards.

UVA Class

Andrea Bowles, our Water Resources Manager, gave an on-site presentation at Ragged Mountain Reservoir to students from Brian Richter's "Water on Earth" class at UVA. Ms. Bowles discussed stream flows, water supply systems, and drought planning.

Buck Mtn Neighborhood Meeting

On June 27, we met with residents who live on the private road, Allen Farm Lane (AFL), and other interested neighbors to review our plans for maintenance of the bridge on AFL, as well as our plans for leasing of our Buck Mtn properties and sale of the Elliot house.

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MEMORANDUM

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

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

REVIEWED: **BILL MAWYER, EXECUTIVE DIRECTOR**

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

DATE: **JUNE 28, 2022**

Urban Water flows and rate revenues are 1.5% over budget estimates through April, and Urban Wastewater flows and rate revenues are 1.9% over budget. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	$ 7,002,728	$ 7,914,533	$ 1,963,341	$ 16,880,602
Expenses	(6,816,763)	(7,740,649)	(2,147,395)	(16,704,807)
Surplus (deficit)	$ 185,965	$ 173,884	$ (184,054)	$ 175,795
Debt Service				
Revenues	$ 6,392,494	$ 7,279,858	$ 1,673,786	$ 15,346,138
Expenses	(6,393,268)	(7,275,000)	(1,676,102)	(15,344,370)
Surplus (deficit)	$ (774)	$ 4,858	$ (2,316)	$ 1,768
Total				
Revenues	$ 13,395,222	$ 15,194,391	$ 3,637,127	$ 32,226,740
Expenses	(13,210,031)	(15,015,649)	(3,823,497)	(32,049,177)
Surplus (deficit)	$ 185,191	$ 178,742	$ (186,370)	$ 177,563

The Authority's actual operating revenues are $765,000 greater than the prorated annual budget and operating expenses are $499,000 over budget, for a net budget surplus of $266,000.

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 will even out as the year progresses. Septage receiving support revenue of $109,441 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 Wastewater – page 5) – The Urban Wastewater rate center salaries are running high due to pay increases for plant operators resulting from operators achieving higher licenses.

C. Professional Services (Crozet Water, Glenmore Wastewater, Administration – pages 3, 6, 8) – Crozet Water incurred unbudgeted engineering and technical services expenses for a water demand forecast update. Glenmore Wastewater has spent $95,000 this year to perform a needs evaluation for Glenmore WRRF, which is an unbudgeted cost. This will cause Glenmore Reserves to be overdrawn, causing the other rate centers to fund Glenmore cost overruns. The Administration department has incurred $518,000 in unbudgeted bond issuance costs which were paid with bond proceeds.

D. Information Technology (Urban Water, Crozet Water, Scottsville Water, Administration – pages 2, 3, 4, 8) – Urban Water went over the annual budget on computer hardware purchases. Crozet and Scottsville Water incurred some unbudgeted SCADA maintenance and support costs to replace modems. The Administration department has spent about $44,000 more than the annual budget in this category. Extra costs will be incurred this year to mitigate several items identified in a Cyber Security Assessment conducted in August of 2021.

E. Operations & Maintenance (Crozet Water, Scottsville Water, Urban Wastewater, Scottsville Wastewater, Maintenance – pages 3, 4, 5, 7, 9) – Scottsville Water has incurred some unbudgeted building and grounds maintenance costs. Crozet Water is over budget for Beaver Creek Watershed signs and utility easement clearing costs, but we expect to be reimbursed by a grant from the State for the watershed sign costs. Urban Wastewater's chemical costs and repair costs are running higher than estimated. Scottsville Wastewater incurred $14,000 of unbudgeted repairs to the lagoon intake gates. The Maintenance department is over budget on the cost of fuel, lubricants, and other maintenance supplies.

F. Other Services and Charges (Crozet Water, Urban Wastewater – pages 3, 5) - Urban Wastewater is over budget on odor control chemical costs at Crozet Pump Station and on the cost of sludge hauling for composting. Crozet Water's utility costs are running higher than estimates.

Attachments

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

Consolidated Revenues and Expenses Summary

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 18,810,555	$ 15,675,463	$ 15,906,872	$ 231,409	1.48%
Lease Revenue		105,000	87,500	109,519	22,019	25.16%
Admin., Maint. & Engineering Revenue	C	553,000	460,833	995,427	534,594	116.01%
Other Revenues		540,589	450,491	583,188	132,697	29.46%
Use of Reserves-GAC		316,250	263,542	101,850	(161,692)	-61.35%
Rate Stabilization Reserves		200,000	166,667	166,667	-	0.00%
Interest Allocation		8,200	6,833	12,507	5,674	83.03%
Total Operating Revenues		**$ 20,533,594**	**$ 17,111,328**	**$ 17,876,029**	**$ 764,701**	**4.47%**
Expenses						
Personnel Cost		$ 9,649,988	$ 8,131,667	$ 8,023,020	$ 108,647	1.34%
Professional Services	C	712,050	593,375	1,127,738	(534,363)	-90.05%
Other Services & Charges	F	3,111,400	2,592,833	2,558,308	34,525	1.33%
Communications		191,412	159,510	168,147	(8,637)	-5.41%
Information Technology	A, D	447,100	372,583	529,596	(157,013)	-42.14%
Supplies		42,160	35,133	30,152	4,981	14.18%
Operations & Maintenance	A, E	4,864,235	4,053,529	4,276,694	(223,164)	-5.51%
Equipment Purchases		615,250	512,708	236,578	276,130	53.86%
Depreciation		900,000	750,000	750,000	-	0.00%
Reserve Transfers		-	-	-	-	
Total Operating Expenses		**$ 20,533,595**	**$ 17,201,340**	**$ 17,700,234**	**$ (498,895)**	**-2.90%**
Operating Surplus/(Deficit)		**$ (1)**	**$ (90,011)**	**$ 175,795**	**$ 265,806**	
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 18,193,960	$ 15,161,633	$ 15,161,650	$ 17	0.00%
Use of Reserves		-	-	-	-	
Septage Receiving Support - County		109,440	91,200	109,441	18,241	20.00%
Buck Mountain Lease Revenue		1,600	1,333	9,201	7,868	590.10%
Trust Fund Interest		33,700	28,083	3,735	(24,348)	-86.70%
Reserve Fund Interest		80,000	66,667	62,112	(4,555)	-6.83%
Total Debt Service Revenues		**$ 18,418,700**	**$ 15,348,917**	**$ 15,346,139**	**$ (2,778)**	**-0.02%**
Debt Service Costs						
Total Principal & Interest		$ 14,256,077	$ 11,880,064	$ 12,295,065	$ (415,001)	-3.49%
Reserve Additions-Interest		80,000	66,667	62,112	4,555	6.83%
Debt Service Ratio Charge		725,000	604,167	604,167	-	0.00%
Reserve Additions-CIP Growth		3,357,634	2,798,028	2,383,028	415,001	14.83%
Total Debt Service Costs		**$ 18,418,711**	**$ 15,348,926**	**$ 15,344,371**	**$ 4,555**	**0.03%**
Debt Service Surplus/(Deficit)		**$ (11)**	**$ (9)**	**$ 1,768**	**$ 1,768**	

Summary

Total Revenues	$ 38,952,294	$ 32,460,245	$ 33,222,168	$ 761,923	2.35%
Total Expenses	38,952,306	32,550,265	33,044,605	(494,340)	-1.52%
Surplus/(Deficit)	**$ (12)**	**$ (90,020)**	**$ 177,563**	**$ 267,584**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2022

Urban Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 7,971,504	$ 6,642,920	$ 6,742,784	$ 99,864	1.50%
Lease Revenue		75,000	62,500	83,846	21,346	34.15%
Miscellaneous		-	-	1,987	1,987	
Use of Reserves-GAC		300,000	250,000	85,600	(164,400)	-65.76%
Rate Stabilization Reserves		100,000	83,333	83,333	-	0.00%
Interest Allocation		3,400	2,833	5,178	2,345	82.75%
Total Operating Revenues		**$ 8,449,904**	**$ 7,041,587**	**$ 7,002,728**	**$ (38,859)**	**-0.55%**
Expenses						
Personnel Cost		$ 2,039,157	$ 1,716,987	$ 1,700,535	$ 16,453	0.96%
Professional Services		279,200	232,667	157,650	75,017	32.24%
Other Services & Charges		734,150	611,792	567,383	44,409	7.26%
Communications		98,670	82,225	85,387	(3,162)	-3.85%
Information Technology	D	80,500	67,083	82,637	(15,553)	-23.18%
Supplies		5,100	4,250	5,885	(1,635)	-38.48%
Operations & Maintenance		2,250,440	1,875,367	1,824,896	50,470	2.69%
Equipment Purchases		15,400	12,833	12,833	0	0.00%
Depreciation		300,000	250,000	250,000	-	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 5,802,617	$ 4,853,204	$ 4,687,206	$ 165,998	3.42%
Allocation of Support Departments		2,647,289	2,228,640	2,129,558	99,082	4.45%
Total Operating Expenses		**$ 8,449,906**	**$ 7,081,844**	**$ 6,816,763**	**$ 265,080**	**3.74%**
Operating Surplus/(Deficit)		**$ (2)**	**$ (40,257)**	**$ 185,965**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 7,621,725	$ 6,351,438	$ 6,351,440	$ 3	0.00%
Trust Fund Interest		12,000	10,000	1,356	(8,644)	-86.44%
Reserve Fund Interest		39,300	32,750	30,497	(2,253)	-6.88%
Use of Reserves		-	-	-	-	
Lease Revenue		1,600	1,333	9,201	7,868	590.10%
Total Debt Service Revenues		**$ 7,674,625**	**$ 6,395,521**	**$ 6,392,494**	**$ (3,027)**	**-0.05%**
Debt Service Costs						
Total Principal & Interest		$ 5,215,275	$ 4,346,063	$ 4,726,203	$ (380,141)	-8.75%
Reserve Additions-Interest		39,300	32,750	30,497	2,253	6.88%
Debt Service Ratio Charge		400,000	333,333	333,333	-	0.00%
Reserve Additions-CIP Growth		2,020,050	1,683,375	$ 1,303,234	380,141	22.58%
Total Debt Service Costs		**$ 7,674,625**	**$ 6,395,521**	**$ 6,393,268**	**$ 2,253**	**0.04%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ (774)**		
Rate Center Summary						
Total Revenues		$ 16,124,529	$ 13,437,108	$ 13,395,222	$ (41,885)	-0.31%
Total Expenses		16,124,531	13,477,365	13,210,031	267,334	1.98%
Surplus/(Deficit)		**$ (2)**	**$ (40,257)**	**$ 185,191**		
Costs per 1000 Gallons		$ 2.49		$ 2.37		
Operating and DS		$ 4.75		$ 4.60		
Thousand Gallons Treated		3,397,700	2,831,417	2,874,162	42,745	1.51%
or						
Flow (MGD)		9.309		9.454		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2022

Crozet Water Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2022	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 1,058,856	$ 882,380	$ 882,380	$ -	0.00%
Lease Revenues		30,000	25,000	25,673	673	2.69%
Use of Reserves-GAC		13,000	10,833	13,000	2,167	20.00%
Interest Allocation		500	417	725	309	74.10%
Total Operating Revenues		**$ 1,102,356**	**$ 918,630**	**$ 921,778**	**$ 3,148**	**0.34%**
Expenses						
Personnel Cost		$ 324,463	$ 273,192	$ 269,915	$ 3,277	1.20%
Professional Services	**C**	15,100	12,583	26,548	(13,965)	-110.98%
Other Services & Charges	**F**	104,450	87,042	97,162	(10,120)	-11.63%
Communications		17,530	14,608	15,126	(517)	-3.54%
Information Technology	**D**	5,250	4,375	37,386	(33,011)	-754.53%
Supplies		1,500	1,250	958	292	23.33%
Operations & Maintenance	**E**	296,900	247,417	294,021	(46,605)	-18.84%
Equipment Purchases		28,000	23,333	3,072	20,261	86.83%
Depreciation		60,000	50,000	50,000	-	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 853,193	$ 713,800	$ 794,187	$ (80,387)	-11.26%
Allocation of Support Departments		249,161	209,744	200,208	9,535	4.55%
Total Operating Expenses		**$ 1,102,354**	**$ 923,544**	**$ 994,396**	**$ (70,852)**	**-7.67%**
Operating Surplus/(Deficit)		**$ 2**	**$ (4,914)**	**$ (72,617)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 1,847,832	$ 1,539,860	$ 1,539,860	$ -	0.00%
Trust Fund Interest		2,900	2,417	314	(2,103)	-87.02%
Use of Reserves		-	-	-	-	
Reserve Fund Interest		2,500	2,083	1,925	(158)	-7.58%
Total Debt Service Revenues		**$ 1,853,232**	**$ 1,544,360**	**$ 1,542,099**	**$ (2,261)**	**-0.15%**
Debt Service Costs						
Total Principal & Interest		$ 1,216,667	$ 1,013,889	$ 1,013,889	$ -	0.00%
Reserve Additions-Interest		2,500	2,083	1,925	158	7.58%
Reserve Additions-CIP Growth		634,070	528,392	528,392	-	0.00%
Total Debt Service Costs		**$ 1,853,237**	**$ 1,544,364**	**$ 1,544,206**	**$ 158**	**0.01%**
Debt Service Surplus/(Deficit)		**$ (5)**	**$ (4)**	**$ (2,107)**		

Rate Center Summary

Total Revenues	$ 2,955,588	$ 2,462,990	$ 2,463,877	$ 887	0.04%
Total Expenses	2,955,591	2,467,908	2,538,602	(70,694)	-2.86%
Surplus/(Deficit)	**$ (3)**	**$ (4,918)**	**$ (74,724)**		
Costs per 1000 Gallons	$ 5.44		$ 4.80		
Operating and DS	$ 14.58		$ 12.26		
Thousand Gallons Treated	202,697	168,914	207,030	38,116	22.57%
Flow (MGD)	0.555		0.681		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2022

Scottsville Water Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 514,704	$ 428,920	$ 428,920	$ -	0.00%
Use of Reserves-GAC		3,250	2,708	3,250	542	20.00%
Interest Allocation		200	167	350	184	110.12%
Total Operating Revenues		**$ 518,154**	**$ 431,795**	**$ 432,520**	**$ 725**	**0.17%**
Expenses						
Personnel Cost		$ 195,695	$ 164,803	$ 164,510	$ 293	0.18%
Professional Services		2,900	2,417	9,572	(7,156)	-296.09%
Other Services & Charges		28,100	23,417	30,402	(6,985)	-29.83%
Communications		4,930	4,108	5,746	(1,638)	-39.87%
Information Technology	**D**	1,250	1,042	13,311	(12,269)	-1177.81%
Supplies		770	642	71	571	88.98%
Operations & Maintenance	**E**	87,200	72,667	88,612	(15,945)	-21.94%
Equipment Purchases		1,500	1,250	1,658	(408)	-32.64%
Depreciation		40,000	33,333	33,333	0	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 362,345	$ 303,678	$ 347,215	$ (43,537)	-14.34%
Allocation of Support Departments		155,813	131,129	124,340	6,789	5.18%
Total Operating Expenses		**$ 518,158**	**$ 434,807**	**$ 471,555**	**$ (36,749)**	**-8.45%**
Operating Surplus/(Deficit)		**$ (4)**	**$ (3,012)**	**$ (39,035)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 138,888	$ 115,740	$ 115,740	$ -	0.00%
Trust Fund Interest		300	250	34	(216)	-86.56%
Reserve Fund Interest		1,200	1,000	932	(68)	-6.84%
Total Debt Service Revenues		**$ 140,388**	**$ 116,990**	**$ 116,705**	**$ (285)**	**-0.24%**
Debt Service Costs						
Total Principal & Interest		$ 125,892	$ 104,910	$ 109,890	$ (4,980)	-4.75%
Reserve Additions-Interest		1,200	1,000	932	68	
Reserve Additions-CIP Growth		13,299	11,083	$ 6,103	4,980	
Total Debt Service Costs		**$ 140,391**	**$ 116,993**	**$ 116,924**	**$ 68**	**0.06%**
Debt Service Surplus/(Deficit)		**$ (3)**	**$ (3)**	**$ (219)**		

Rate Center Summary

Total Revenues	$ 658,542	$ 548,785	$ 549,225	$ 440	0.08%
Total Expenses	658,549	551,799	588,479	(36,680)	-6.65%
Surplus/(Deficit)	**$ (7)**	**$ (3,014)**	**$ (39,254)**		
Costs per 1000 Gallons	$ 30.07		$ 27.53		
Operating and DS	$ 38.22		$ 34.36		
Thousand Gallons Treated	17,230	14,358	17,129	2,771	19.30%
or					
Flow (MGD)	0.047		0.056		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2022

Urban Wastewater Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2022	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 8,535,195	$ 7,112,663	$ 7,244,208	$ 131,545	1.85%
Stone Robinson WWTP		20,589	17,158	14,120	(3,038)	-17.70%
Septage Acceptance		475,000	395,833	462,606	66,773	16.87%
Nutrient Credits		45,000	37,500	104,475	66,975	178.60%
Rate Stabilization Reserve		100,000	83,333	83,333	-	0.00%
Miscellaneous Revenue		-	-	-	-	
Interest Allocation		3,800	3,167	5,791	2,624	82.87%
Total Operating Revenues		**$ 9,179,584**	**$ 7,649,653**	**$ 7,914,533**	**$ 264,880**	**3.46%**
Expenses						
Personnel Cost	**B**	$ 1,289,471	$ 1,086,250	$ 1,117,730	$ (31,479)	-2.90%
Professional Services		208,500	173,750	180,514	(6,764)	-3.89%
Other Services & Charges	**F**	2,011,700	1,676,417	1,690,632	(14,216)	-0.85%
Communications		9,800	8,167	9,568	(1,401)	-17.16%
Information Technology		56,500	47,083	55,669	(8,586)	-18.24%
Supplies		1,200	1,000	1,484	(484)	-48.40%
Operations & Maintenance	**A, E**	1,672,520	1,393,767	1,678,020	(284,254)	-20.39%
Equipment Purchases		294,250	245,208	76,157	169,052	68.94%
Depreciation		470,000	391,667	391,667	(0)	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 6,013,941	$ 5,023,309	$ 5,201,441	$ (178,132)	-3.55%
Allocation of Support Departments		3,165,643	2,664,582	2,539,208	125,374	4.71%
Total Operating Expenses		**$ 9,179,584**	**$ 7,687,890**	**$ 7,740,649**	**$ (52,758)**	**-0.69%**
Operating Surplus/(Deficit)		**$ (0)**	**$ (38,237)**	**$ 173,884**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 8,568,221	$ 7,140,184	$ 7,140,190	$ 6	0.00%
Septage Receiving Support - County		109,440	91,200	109,441	18,241	20.00%
Trust Fund Interest		18,500	15,417	2,028	(13,388)	-86.84%
Use of Reserves		-	-	-	-	
Reserve Fund Interest		36,300	30,250	28,199	(2,051)	-6.78%
Total Debt Service Revenues		**$ 8,732,461**	**$ 7,277,051**	**$ 7,279,858**	**$ 2,807**	**0.04%**
Debt Service Costs						
Total Principal & Interest		$ 7,689,212	$ 6,407,677	$ 6,433,822	$ (26,145)	-0.41%
Reserve Additions-Interest		36,300	30,250	28,199	2,051	6.78%
Debt Service Ratio Charge		325,000	270,833	270,833	-	0.00%
Reserve Additions-CIP Growth		681,950	568,292	$ 542,147	26,145	4.60%
Total Debt Service Costs		**$ 8,732,462**	**$ 7,277,052**	**$ 7,275,000**	**$ 2,051**	**0.03%**
Debt Service Surplus/(Deficit)		**$ (1)**	**$ (1)**	**$ 4,858**		

Rate Center Summary

Total Revenues	$ 17,912,045	$ 14,926,704	$ 15,194,391	$ 267,687	1.79%
Total Expenses	17,912,046	14,964,942	15,015,649	(50,707)	-0.34%
Surplus/(Deficit)	**$ (1)**	**$ (38,238)**	**$ 178,742**		
Costs per 1000 Gallons	$ 2.71		$ 2.69		
Operating and DS	$ 5.28		$ 5.22		
Thousand Gallons Treated	3,390,400	2,825,333	2,878,112	52,779	1.87%
or					
Flow (MGD)	9.289		9.467		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2022

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 404,028	$ 336,690	$ 336,690	$ -	0.00%
Rate Stabilization Reserve		-	-	-	-	
Interest Allocation		200	167	263	96	57.61%
Total Operating Revenues		**$ 404,228**	**$ 336,857**	**$ 336,953**	**$ 96**	**0.03%**
Expenses						
Personnel Cost		$ 94,885	$ 79,930	$ 82,453	$ (2,523)	-3.16%
Professional Services	**C**	12,900	10,750	95,000	(84,250)	
Other Services & Charges		34,300	28,583	27,570	1,014	3.55%
Communications		3,130	2,608	2,706	(98)	-3.75%
Information Technology		2,000	1,667	787	880	52.80%
Supplies		-	-	69	(69)	
Operations & Maintenance		121,650	101,375	81,134	20,241	19.97%
Equipment Purchases		3,800	3,167	3,167	(0)	0.00%
Depreciation		10,000	8,333	8,333	0	0.00%
Subtotal Before Allocations		$ 282,665	$ 236,413	$ 301,218	$ (64,805)	-27.41%
Allocation of Support Departments		121,563	102,274	95,964	6,310	6.17%
Total Operating Expenses		**$ 404,229**	**$ 338,687**	**$ 397,182**	**$ (58,496)**	**-17.27%**
Operating Surplus/(Deficit)		**$ (1)**	**$ (1,830)**	**$ (60,230)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 7,412	$ 6,177	$ 6,180	$ 3	0.05%
Trust Fund Interest		-	-	-	-	
Reserve Fund Interest		200	167	186	20	11.79%
Total Debt Service Revenues		**$ 7,612**	**$ 6,343**	**$ 6,366**	**$ 3**	**0.05%**
Debt Service Costs						
Total Principal & Interest		$ 1,578	$ 1,315	$ 5,050	$ (3,735)	-284.03%
Reserve Additions-CIP Growth		5,834	4,862	1,127	3,735	76.83%
Reserve Additions-Interest		200	167	186	(20)	-11.79%
Total Debt Service Costs		**$ 7,612**	**$ 6,343**	**$ 6,363**	**$ (20)**	**-0.31%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 3**		

Rate Center Summary

Total Revenues	$ 411,840	$ 343,200	$ 343,319	$ 119	0.03%
Total Expenses	411,841	345,030	403,545	(58,515)	-16.96%
Surplus/(Deficit)	**$ (1)**	**$ (1,830)**	**$ (60,226)**		
Costs per 1000 Gallons	$ 9.76		$ 14.68		
Operating and DS	$ 9.95		$ 14.91		
Thousand Gallons Treated	41,401	34,501	27,058	(7,443)	**-21.57%**
or					
Flow (MGD)	0.113		0.089		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2022

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 326,268	$ 271,890	$ 271,890	$ -	0.00%
Interest Allocation		100	83	200	117	140.08%
Total Operating Revenues		**$ 326,368**	**$ 271,973**	**$ 272,090**	**$ 117**	**0.04%**
Expenses						
Personnel Cost		$ 94,875	$ 79,921	$ 82,453	$ (2,531)	-3.17%
Professional Services		10,250	8,542	1,788	6,754	79.07%
Other Services & Charges		21,800	18,167	18,461	(295)	-1.62%
Communications		3,400	2,833	3,213	(380)	-13.41%
Information Technology		1,500	1,250	1,999	(749)	-59.92%
Supplies		-	-	-	-	
Operations & Maintenance	**E**	58,100	48,417	67,475	(19,058)	-39.36%
Equipment Purchases		3,800	3,167	3,167	(0)	0.00%
Depreciation		20,000	16,667	16,667	(0)	0.00%
Subtotal Before Allocations		$ 213,725	$ 178,963	$ 195,223	$ (16,260)	-9.09%
Allocation of Support Departments		112,640	94,772	89,040	5,732	6.05%
Total Operating Expenses		**$ 326,365**	**$ 273,735**	**$ 284,262**	**$ (10,528)**	**-3.85%**
Operating Surplus/(Deficit)		**$ 3**	**$ (1,761)**	**$ (12,172)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 9,882	$ 8,235	$ 8,240	$ 5	0.06%
Trust Fund Interest		-	-	4	4	
Reserve Fund Interest		500	417	373	(44)	-10.55%
Total Debt Service Revenues		**$ 10,382**	**$ 8,652**	**$ 8,616**	**$ (35)**	**-0.41%**
Debt Service Costs						
Total Principal & Interest		$ 7,453	$ 6,211	$ 6,211	$ -	0.00%
Reserve Additions-Interest		500	417	373	44	10.55%
Estimated New Principal & Interest		2,431	2,026	2,026	-	0.00%
Total Debt Service Costs		**$ 10,384**	**$ 8,653**	**$ 8,609**	**$ 44**	**0.51%**
Debt Service Surplus/(Deficit)		**$ (2)**	**$ (2)**	**$ 7**		

Rate Center Summary

Total Revenues	$ 336,750	$ 280,625	$ 280,706	$ 81	0.03%
Total Expenses	336,749	282,388	292,872	(10,484)	-3.71%
Surplus/(Deficit)	**$ 1**	**$ (1,763)**	**$ (12,165)**		
Costs per 1000 Gallons	$ 13.80		$ 19.51		
Operating and DS	$ 14.24		$ 20.11		
Thousand Gallons Treated	23,643	19,703	14,567	(5,136)	**-26.07%**
or					
Flow (MGD)	0.065		0.048		

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2022

Administration

Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ 551,000	$ 459,167	$ 461,670	$ 2,503	0.55%
Bond Proceeeds Funding Bond Issuance Costs	**C**	-	-	518,307	518,307	
Miscellaneous Revenue		2,000	1,667	13,476	11,809	708.56%
Total Operating Revenues		**$ 553,000**	**$ 460,833**	**$ 993,453**	**$ 532,620**	**115.58%**
Expenses						
Personnel Cost		$ 2,177,998	$ 1,836,426	$ 1,803,891	$ 32,535	1.77%
Professional Services	**C**	163,200	136,000	648,082	(512,082)	-376.53%
Other Services & Charges		86,200	71,833	79,634	(7,801)	-10.86%
Communications		21,000	17,500	23,031	(5,531)	-31.61%
Information Technology	**A, D**	171,900	143,250	252,466	(109,216)	-76.24%
Supplies		21,500	17,917	16,441	1,476	8.24%
Operations & Maintenance		68,600	57,167	39,074	18,093	31.65%
Equipment Purchases		25,200	21,000	12,667	8,333	39.68%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 2,735,598**	**$ 2,301,092**	**$ 2,875,284**	**$ (574,192)**	**-24.95%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (2,182,598)**	**$ (1,840,259)**	**$ (1,881,831)**	**$ 41,572**	**-2.26%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 960,343**	**$ 809,714**	**$ 828,006**	**$ (18,292)**	
Crozet Water	4.00%	**$ 87,304**	**73,610**	**75,273**	**(1,663)**	
Scottsville Water	2.00%	**$ 43,652**	**36,805**	**37,637**	**(831)**	
Urban Wastewater	48.00%	**$ 1,047,647**	**883,324**	**903,279**	**(19,955)**	
Glenmore Wastewater	1.00%	**$ 21,826**	**18,403**	**18,818**	**(416)**	
Scottsville Wastewater	1.00%	**$ 21,826**	**18,403**	**18,818**	**(416)**	
	100.00%	**$ 2,182,598**	**$ 1,840,259**	**$ 1,881,831**	**$ (41,572)**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2022

Maintenance

Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ -	$ -	
Miscellaneous Revenue		-	-	623	623	
Total Operating Revenues		**$ -**	**$ -**	**$ 623**	**$ 623**	
Expenses						
Personnel Cost		$ 1,398,597	$ 1,178,631	$ 1,152,339	$ 26,292	2.23%
Professional Services		-	-	-	-	
Other Services & Charges		61,200	51,000	25,180	25,820	50.63%
Communications		15,730	13,108	13,014	94	0.72%
Information Technology		9,500	7,917	888	7,029	88.78%
Supplies		2,000	1,667	395	1,272	76.31%
Operations & Maintenance	**E**	89,600	74,667	89,322	(14,656)	-19.63%
Equipment Purchases		208,100	173,417	104,417	69,000	39.79%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 1,784,727**	**$ 1,500,406**	**$ 1,385,555**	**$ 114,851**	**7.65%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,784,727)**	**$ (1,500,406)**	**$ (1,384,932)**	**$ (114,228)**	**7.61%**
Allocations to the Rate Centers						
Urban Water	30.00%	**$ 535,418**	**$ 450,122**	**$ 415,480**	**$ 34,642**	
Crozet Water	3.50%	**62,465**	**52,514**	**48,473**	**4,042**	
Scottsville Water	3.50%	**62,465**	**52,514**	**48,473**	**4,042**	
Urban Wastewater	56.50%	**1,008,371**	**847,729**	**782,486**	**65,243**	
Glenmore Wastewater	3.50%	**62,465**	**52,514**	**48,473**	**4,042**	
Scottsville Wastewater	3.00%	**53,542**	**45,012**	**41,548**	**3,464**	
	100.00%	**$ 1,784,727**	**$ 1,500,406**	**$ 1,384,932**	**$ 115,474**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2022

Laboratory

Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
N/A						
Expenses						
Personnel Cost		$ 411,037	$ 346,483	$ 319,400	$ 27,083	7.82%
Professional Services		-	-	-	-	
Other Services & Charges		7,900	6,583	10,495	(3,912)	-59.42%
Communications		1,300	1,083	1,030	53	
Information Technology		200	167	610	(443)	-266.00%
Supplies		1,300	1,083	1,166	(83)	-7.64%
Operations & Maintenance		120,590	100,492	77,722	22,770	22.66%
Equipment Purchases		1,700	1,417	1,525	(108)	-7.65%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 544,027**	**$ 457,308**	**$ 411,948**	**$ 45,359**	**9.92%**

Department Summary

Net Costs Allocable to Rate Centers	**$ (544,027)**	**$ (457,308)**	**$ (411,948)**	**$ (45,359)**	**9.92%**
Allocations to the Rate Centers					
Urban Water 44.00%	**$ 239,372**	**$ 201,215**	**$ 181,257**	**$ 19,958**	
Crozet Water 4.00%	**21,761**	**18,292**	**16,478**	**1,814**	
Scottsville Water 2.00%	**10,881**	**9,146**	**8,239**	**907**	
Urban Wastewater 47.00%	**255,693**	**214,935**	**193,616**	**21,319**	
Glenmore Wastewater 1.50%	**8,160**	**6,860**	**6,179**	**680**	
Scottsville Wastewater 1.50%	**8,160**	**6,860**	**6,179**	**680**	
100.00%	**$ 544,027**	**$ 457,308**	**$ 411,948**	**$ 45,359**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - April 2022

Engineering

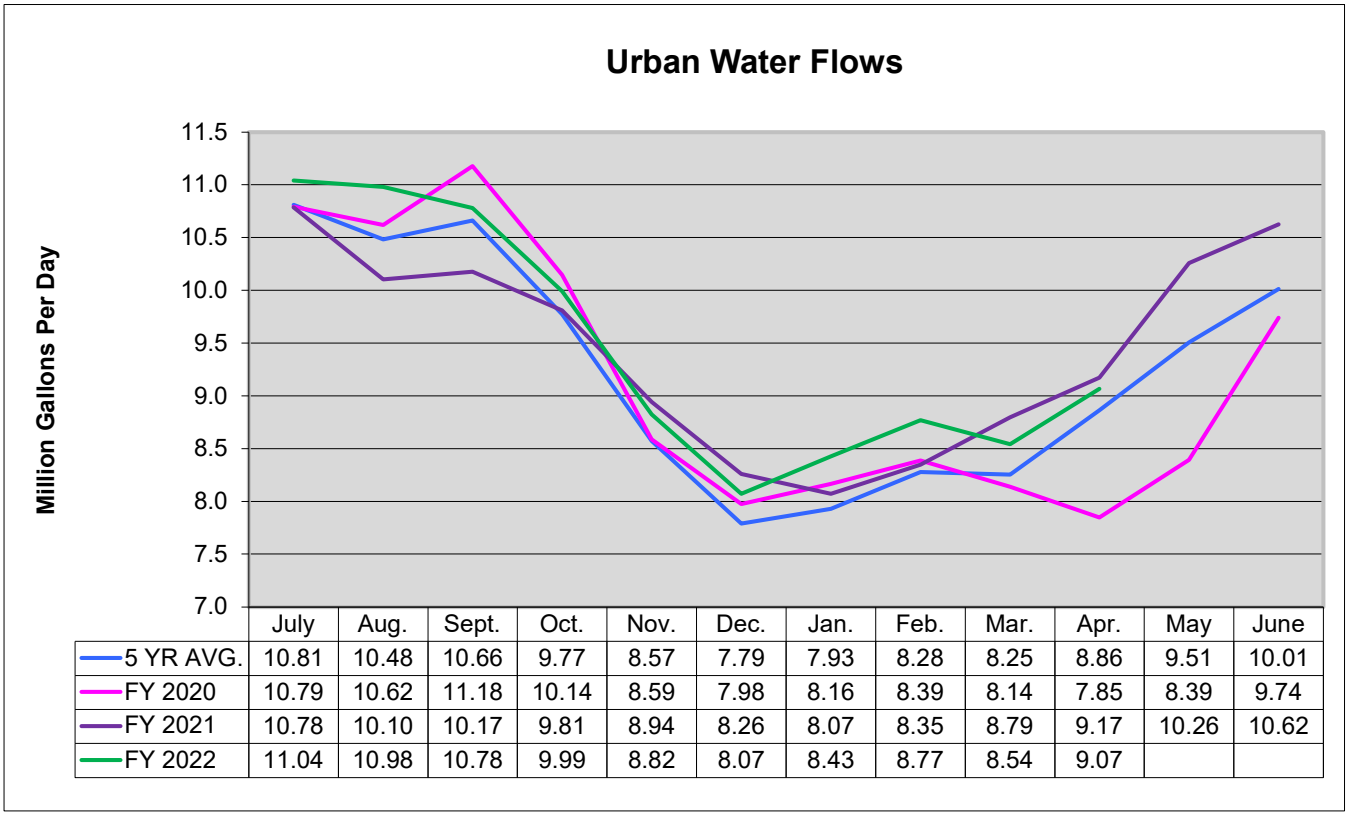
Operating Budget vs. Actual

	Notes	*Budget FY 2022*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ 1,351	$ 1,351	
Total Operating Revenues		**$ -**	**$ -**	**$ 1,351**	**$ 1,351**	
Expenses						
Personnel Cost		$ 1,623,810	$ 1,369,045	$ 1,329,797	$ 39,249	2.87%
Professional Services		20,000	16,667	8,585	8,082	48.49%
Other Services & Charges		21,600	18,000	11,390	6,610	36.72%
Communications		15,922	13,268	9,326	3,943	29.71%
Information Technology		118,500	98,750	83,844	14,906	15.09%
Supplies		8,790	7,325	3,683	3,642	49.71%
Operations & Maintenance		98,635	82,196	36,417	45,779	55.69%
Equipment Purchases		33,500	27,917	17,917	10,000	35.82%
Depreciation & Capital Reserve Transfers		-	-	-	-	
Total Operating Expenses		**$ 1,940,757**	**$ 1,633,168**	**$ 1,500,958**	**$ 132,210**	**8.10%**

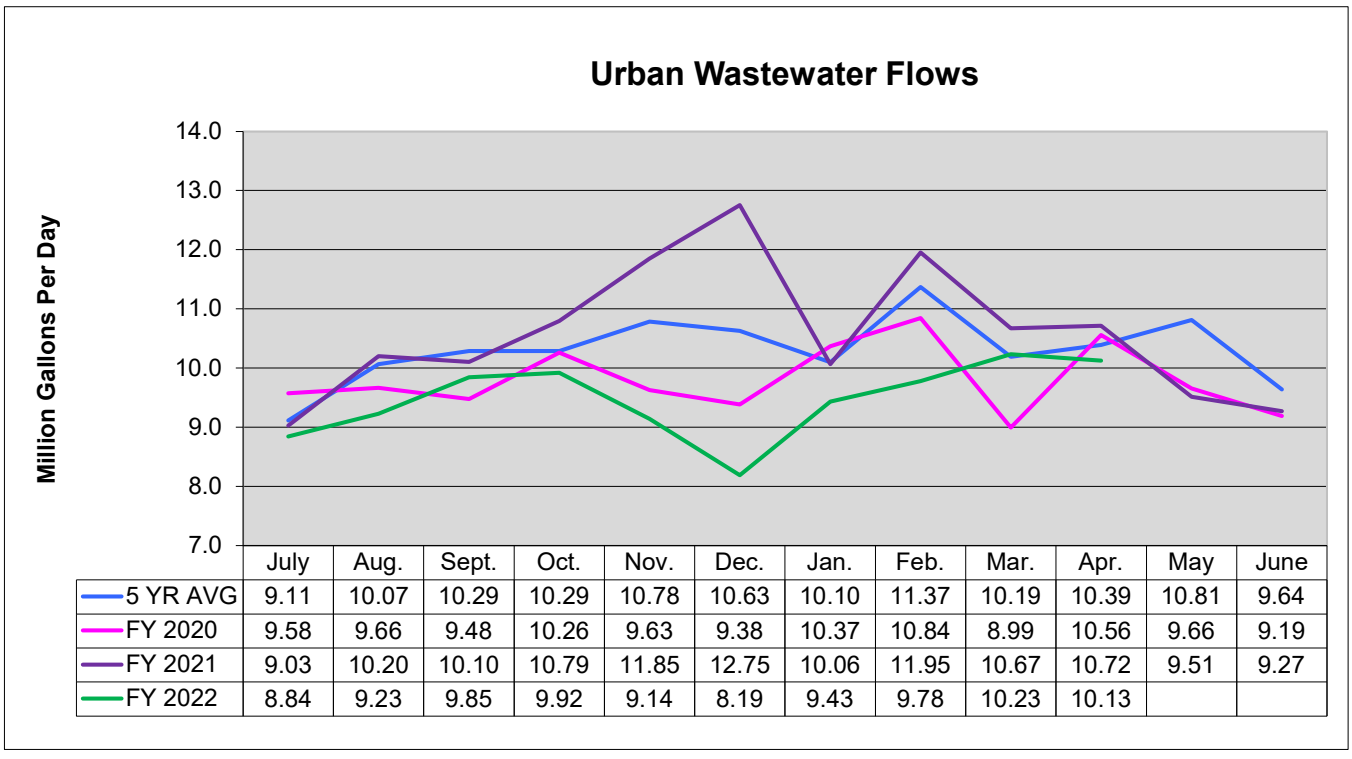
Department Summary

Net Costs Allocable to Rate Centers		**$ (1,940,757)**	**$ (1,633,168)**	**$ (1,499,607)**	**$ (130,859)**	**8.01%**
Allocations to the Rate Centers						
Urban Water	47.00%	**$ 912,156**	**$ 767,589**	**$ 704,815**	**$ 62,774**	
Crozet Water	4.00%	**77,630**	**65,327**	**59,984**	**5,342**	
Scottsville Water	2.00%	**38,815**	**32,663**	**29,992**	**2,671**	
Urban Wastewater	44.00%	**853,933**	**718,594**	**659,827**	**58,767**	
Glenmore Wastewater	1.50%	**29,111**	**24,498**	**22,494**	**2,003**	
Scottsville Wastewater	1.50%	**29,111**	**24,498**	**22,494**	**2,003**	
	100.00%	**$ 1,940,757**	**$ 1,633,168**	**$ 1,499,607**	**$ 133,561**	

Rivanna Water and Sewer Authority
Flow Graphs



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



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

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

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

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

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

SUBJECT: **REIMBURSEMENT RESOLUTION – CIP FUNDING**

DATE: **JUNE 28, 2022**

Adoption of the Capital Improvement Plan (CIP) at the regular May meeting allows the Authority to move forward into a period of significant financing activity to fund many of the construction projects identified in the plan. We are currently using the latest bond issue from the Series 2021 Bond to finance several projects. However, as detailed in the approved CIP document, additional debt funding not covered in the current bonds for several projects is required over the next five years.

The attached Resolution of Official Intent (reimbursement resolution) and Exhibit A provide an estimate that as much as $121.6 million in new debt funding may be needed to finance project costs, which can be implemented in multiple issuances over several years as needed. After adding issuance cost requirements, a total of up to $125 million is estimated. As projects begin, we typically use 100% cash from the capital fund to pay project costs. Occasionally, we use temporary financing before bond sales to fund the projects. Then, after permanent financing is in place, bond proceeds are used to partially pay back cash to the capital fund (or pay off temporary financing) - in essence pay ourselves back. This capability to pay ourselves back as each debt issuance takes place is very important to provide the financial flexibility and continuity as projects are implemented while also complying with debt covenants and regulations (e.g. arbitrage requirements).

To perform this reimbursement with tax exempt borrowings, the Authority needs to have a "Reimbursement Resolution" in place each year after the new CIP is adopted. The attached resolution does this and does not specifically authorize the issuance of debt at this time. This resolution does not fix the exact amount of the future debt we will issue, although it is important that we not issue debt in amounts larger than the amount stated in this resolution. The attached resolution states the official intention of the Board to fund projects with debt, and additionally states that some proceeds of this debt, when issued for the purposes of funding projects in the CIP, will be used to pay for costs incurred prior to the date of the debt being issued.

The Authority has routinely adopted similar reimbursement resolutions annually in the past

following the last several updates of the CIP that were approved by the Board. The reimbursement resolution included with the Board agenda item is required for tax-exempt bond issues.

Board Action Requested:

Approve the attached *Resolution of Official Intent To Reimburse Expenditures With Proceeds of a Borrowing*.

Attachment

RESOLUTION OF OFFICIAL INTENT TO REIMBURSE EXPENDITURES WITH PROCEEDS OF A BORROWING

WHEREAS, Rivanna Water and Sewer Authority (the "Borrower") intends to acquire, construct and equip improvements to its water and sewer system, including without limitation the capital improvement projects described in Exhibit A attached hereto (collectively, the "Project"); and

WHEREAS, plans for the Project have advanced and the Borrower expects to advance its own funds to pay expenditures related to the Project (the "Expenditures") prior to incurring indebtedness and to receive reimbursement for all or a portion of such Expenditures from proceeds of tax-exempt bonds or taxable debt, or both;

BE IT RESOLVED BY THE RIVANNA WATER AND SEWER AUTHORITY:

1. The Borrower intends to utilize the proceeds of tax-exempt bonds (the "Bonds") or to incur other debt, in an amount not currently expected to exceed $125,000,000 to pay all or a portion of the costs of the Project.

2. The Borrower intends that the proceeds of the Bonds be used to reimburse the Borrower for Expenditures with respect to the Project made on or after the date that is no more than 60 days prior to the date hereof. The Borrower reasonably expects on the date hereof that it will reimburse the Expenditures with the proceeds of the Bonds or other debt.

3. Each Expenditure was or will be, unless otherwise approved by bond counsel, either (a) of a type properly chargeable to a capital account under general federal income tax principles (determined in each case as of the date of the Expenditure), (b) a cost of issuance with respect to the Bonds, (c) a nonrecurring item that is not customarily payable from current revenues, or (d) a grant to a party that is not related to or an agent of the Borrower so long as such grant does not impose any obligation or condition (directly or indirectly) to repay any amount to or for the benefit of the Borrower.

4. The Borrower intends to make a reimbursement allocation, which is a written allocation by the Borrower that evidences the Borrower's use of proceeds of the Bonds to reimburse an Expenditure, no later than 18 months after the later of the date on which the Expenditure is paid or the Project is placed in service or abandoned, but in no event more than three years after the date on which the Expenditure is paid. The Borrower recognizes that exceptions are available for certain "preliminary expenditures," costs of issuance, certain de minimis amounts, expenditures by "small issuers" (based on the year of issuance and not the year of expenditure) and expenditures for construction of at least five years.

5. The Borrower intends that the adoption of this resolution confirms the "official intent" within the meaning of Treasury Regulations Section 1.150-2 promulgated under the Internal Revenue Code of 1986, as amended.

6. This resolution shall take effect immediately upon its passage.

June 28, 2022

EXHIBIT A

Summary of the Capital Improvement Plan and financing plan as adopted on June 28, 2022:

	2023 - 2027 *Adopted* CIP	2022 - 2026 Adopted CIP	Change $
Project Cost			
Urban Water Projects	$ 122,465,000	$ 95,873,000	$ 26,592,000
Urban Wastewater Projects	44,370,000	39,725,330	4,644,670
Non-Urban Projects & Shared	38,285,000	34,555,000	3,730,000
Total Project Cost Estimates	**$ 205,120,000**	**$ 170,153,330**	**$ 34,966,670**
Funding in place			
Work-in-Progress (paid for)	$ 23,146,700	$ 6,913,000	16,233,700
Debt Proceeds Available	46,355,250	19,755,100	26,600,150
Cash-Capital Available	4,000,000	4,688,000	(688,000)
	$ 73,501,950	$ 31,356,100	$ 42,145,850
Financing Needs			
Possible Future Reserves	$ 9,950,000	$ 9,700,000	250,000
New Debt	121,668,050	129,097,230	(7,429,180)
	$ 131,618,050	$ 138,797,230	$ (7,179,180)
Total Funding	**$ 205,120,000**	**$ 170,153,330**	**$ 34,966,670**

*The undersigned Secretary of the Rivanna Water and Sewer Authority hereby certifies that the foregoing is a true and correct copy of the resolutions adopted by the Board of Directors of the Authority at the regular meeting of the Board of Directors held on **June 28, 2022**.*

_____

Name: Jeff Richardson

Title: Secretary, Rivanna Water and Sewer Authority

RIVANNA WATER & SEWER AUTHORITY
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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 MAY 2022**

DATE: **JUNE 28, 2022**

WATER OPERATIONS:

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

Water Treatment Plant	*Average Daily Production (MGD)*	*Maximum Daily Production in the Month (MGD)*
South Rivanna	7.73	8.83 (5/5/2022)
Observatory	1.18	2.08 (5/3/2022)
North Rivanna	0.43	0.51 (5/21/2022)
Urban Total	9.34	10.79 (5/22/2022)
Crozet	0.63	0.76 (5/2/2022)
Scottsville	0.06	0.147 (5/23/2022)
Red Hill	0.0016	0.003 (5/2/2022)
RWSA Total	10.03	-

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

Status of Reservoirs (as of June 22, 2022):

- Urban Reservoirs: 99.4% of Total Useable Capacity
- Ragged Mountain Reservoir is -0.23 feet (98.89%)
- Sugar Hollow Reservoir is full (100%)
- South Rivanna Reservoir is full (100%)
- Beaver Creek Reservoir is full (100%)
- Totier Creek Reservoir is full (100%)

WASTEWATER OPERATIONS:

All RWSA Water Resource Recovery Facilities (WRRFs) were in regulatory compliance with their effluent limitations during May 2022. Performance of the WRRFs in May was as follows compared to the respective VDEQ permit limits:

WRRF	*Average Daily Effluent Flow (MGD)*	*Average $CBOD_5$ (ppm)*		*Average Total Suspended Solids (ppm)*		*Average Ammonia (ppm)*	
		RESULT	*LIMIT*	*RESULT*	*LIMIT*	*RESULT*	*LIMIT*
Moores Creek	10.39	6.0	9	<QL	22	<QL	2.2
Glenmore	0.106	3.5	15	3.9	30	NR	NL
Scottsville	0.050	5.4	25	3.5	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 May 2022.

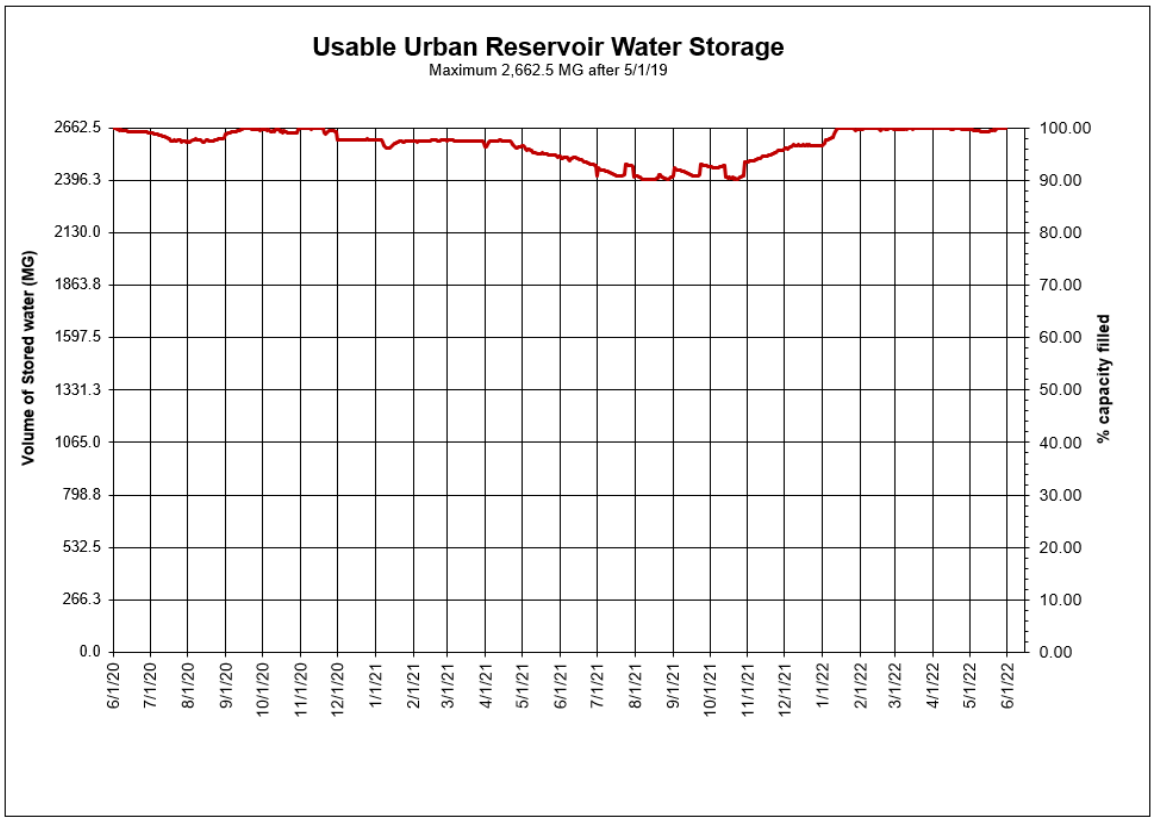
State Annual Allocation (lb./yr.) Permit		*Average Monthly Allocation (lb./mo.) **	*Moores Creek Discharge May (lb./mo.)*	*Performance as % of monthly average Allocation**	*Year to Date Performance as % of annual allocation*
Nitrogen	282,994	23,583	7,097	30%	15%
Phosphorous	18,525	1,544	1244	81%	16%

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

WATER AND WASTEWATER DATA:

The following graphs are provided for review:

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


Usable Urban Reservoir Water Storage
Maximum 2,662.5 MG after 5/1/19
Volume of Stored water (MG)
% capacity filled
2662.5
2396.3
2130.0
1863.8
1597.5
1331.3
1065.0
798.8
532.5
266.3
0.0
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
6/1/20
7/1/20
8/1/20
9/1/20
10/1/20
11/1/20
12/1/20
1/1/21
2/1/21
3/1/21
4/1/21
5/1/21
6/1/21
7/1/21
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9/1/21
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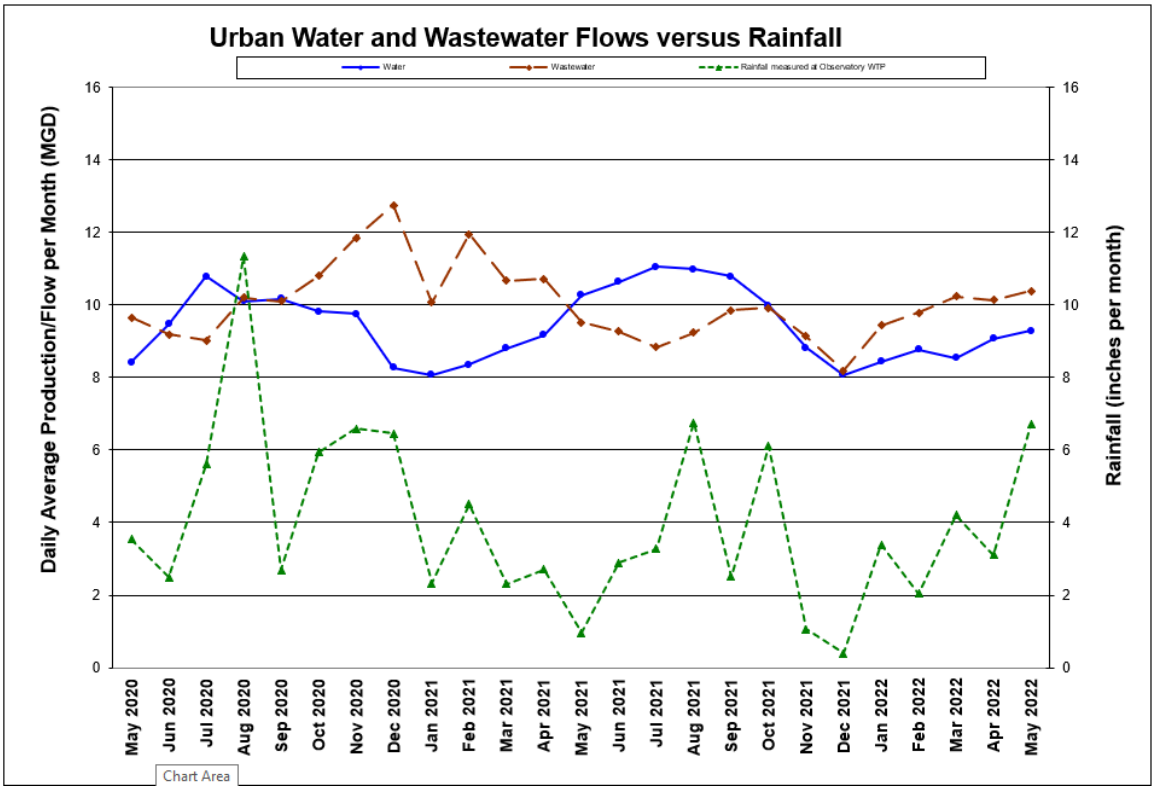
6/1/22


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

RIVANNA WATER & SEWER AUTHORITY
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MEMORANDUM

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

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

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

SUBJECT: **STATUS REPORT: ONGOING PROJECTS**

DATE: **JUNE 28, 2022**

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

For the current, approved CIP, please visit: https://www.rivanna.org/wp-content/uploads/2021/06/2022-2026-CIP-Final.pdf

Under Construction

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3. MC Clarifier and Lime Silo Demolition
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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:	62%
Base Construction Contract + Change Orders to Date = Current Value:	$36,748,500 + $718,669.49 = $37,467,169.49
Completion:	May 2023
Budget:	$43,000,000

Current Status: Work continues at SRWTP with construction of the Administration Building, replacement of the drive on the second clarifier, and improvements at the Raw Water Pump Station. Work at the OBWTP includes the new Chemical Storage Building, sedimentation basin improvements, foundation work for the GAC expansion and a large retaining wall.

2. Crozet Flow Equalization Tank

Design Engineer:	Schnabel Engineering
Construction Contractor:	Anderson Construction (Lynchburg, VA)
Construction Start:	September 2020
Percent Complete:	94%
Based Construction Contract + Change Orders to Date = Current Value:	$4,406,300 + $188,412.99 = $4,594,712.99
Completion:	October 2022
Budget:	$5,400,000

Current Status: Final construction of the tank continues with only completion of the tank dome, additional leak testing, SCADA integration and final painting remaining.

3. MC Clarifier and Lime Silo Demolition

Design Engineer:	Hazen and Sawyer
Construction Contractor:	Pleasant View Developers (Staunton, VA)
Construction Start:	November 2021
Percent Complete:	80%
Base Construction Contract + Change Order to Date = Current Value:	$649,000
Completion:	August 2022
Budget:	$790,000

Current Status: Contractor has demolished clarifiers and is backfilling and grading.

4. Glenmore WRRF Influent Pump and VFD Addition

Design Engineer:	Wiley|Wilson
Construction Contractor:	MEB (Chesapeake, VA)
Construction Start:	September 2021
Percent Complete:	35%
Base Construction Contract + Change Order to Date = Current Value:	$288,000
Completion:	October 2022
Budget:	$370,000

Current Status: Pump has been delivered and construction has started with the installation of a new valve at the third pump slot that required a short plant shutdown.

5. 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:	7%
Base Construction Contract + Change Order to Date = Current Value:	$8,520,312.50
Completion:	December 2023
Budget:	$10,000,000

Current Status: The contractor has installed approximately 300 feet of pipe at the Kohl's site. Excavation is slow due to the rock encountered. Clearing and grubbing of the pump station site is complete and grading is anticipated to begin this month.

6. MC 5kV Electrical System Upgrades

Design Engineer:	Hazen and Sawyer (Hazen)
Construction Contractor:	Pyramid Electrical Contractors (Richmond, VA)
Construction Start:	May 2022
Percent Complete:	1%
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: Notice to Proceed was provided to the Contractor on May 17th. The Contractor has begun providing applicable submittals for the project. Mobilization is not anticipated until Fall 2022, due to the long lead times affecting the electrical industry.

7. Scottsville WTP Lagoon Liners Replacement

Design Engineer:	Wiley|Wilson
Construction Contractor:	Haren Construction Company, Inc. (Etowah, TN)
Construction Start:	May 2022
Percent Complete:	35%
Base Construction Contract + Change Order to Date = Current Value:	$448,000
Completion:	November 2022
Budget:	$540,000

Current Status: Contractor has replaced the liner for Lagoon 1, which is being tested prior to work beginning on Lagoon 2.

Design and Bidding

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

Design Engineer:	Michael Baker International (Baker) (Right of Way)
Design Engineer:	Kimley-Horn (Design)
Project Start:	August 2018
Project Status:	Easement Acquisition & Design (15%)
Construction Start:	2025
Completion:	2028
Budget:	$29,375,000

Current Status: Preparation of engineering plans and specifications is underway. Topographic survey work to the East of the proposed pump station site continues, while stake out on UVA Foundation property has been completed to further easement negotiations. Easement negotiations with one private owner, UVA, and the UVA Foundation continue. Staff met with the UVA Foundation on June 8th to examine the proposed alignment through Foxhaven Farm, as well as discuss potential laydown areas on the property.

9. 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:	Summer 2022
Completion:	2023

Budget: $1,980,000

Current Status: Preparation of engineering plans and specifications is substantially complete for a 0.25-mile section of this 36" raw water pipe from Birdwood to Old Garth Road. One remaining easement is under negotiation with the UVA Foundation for this phase of the project. Design documents have been submitted to local regulatory authorities for review. Finalization of permits, design, and bidding are currently on hold awaiting the final UVAF easement.

10. 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:	80% NRCS Planning Process
Construction Start:	2024
Completion:	2027
Budget:	$30,870,000

Current Status: Staff are moving forward with development of a Joint Permit Application and supporting documents for submission to DEQ by June. Remaining NRCS requirements, including review and approval of the planning study, are scheduled for completion by December 2022. An application for design funding from NRCS will be submitted in 2022.

11. South Rivanna River Crossing

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2020
Project Status:	40% Design
Construction Start:	January 2023
Completion:	April 2024
Budget:	$5,850,000

Current Status: Baker has recommended a water line route that will cross the river parallel to the west side of the Berkmar Bridge and follow Rio Mills Road until it intersects the new 24" water line in Route 29. They are proceeding with 50% design documents which include a trenchless crossing of the river.

12. Central Water Line

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2021
Project Status:	5% Design
Construction Start:	2024
Completion:	2028
Budget:	$31,000,000

Current Status: Based on comments from community meetings, Baker is performing additional modeling and routing evaluations. Results from this supplemental work will be presented to City Council and the RWSA Board in June.

13. 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: A revised draft alignment of the sewer line to be installed within easements and out of the roadway has been completed and provided to the City of Charlottesville and Albemarle County for review. Pending review, a determination will be made regarding whether the line will be installed in McIntire Road or an easement adjacent to the road.

14. Red Hill Water Treatment Plant Upgrades

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	May 2022
Project Status:	Design
Construction Start:	September 2022
Completion:	September 2023
Budget:	$400,000

Current Status: A work authorization has been finalized with the design engineer and a kick-off meeting will be scheduled to begin the design process.

15. Emmet Street Water Line Betterment

Design Engineer:	Whitman, Requardt & Associates (WRA)
Project Start:	September 2021
Project Status:	Contemplative Commons – Preconstruction Emmet Streetscape – Preliminary Design
Completion:	2030
Budget:	$1,000,000

Current Status: Upgrading a section of 16" water main in Emmet Street to 30" as part of the UVA Ivy Corridor Public Realm project is complete. Upgrading a section of 16" water main adjacent to the Dell Pond to 30" as part of the UVA Contemplative Commons project is expected to start in September 2022. WRA and RWSA are developing a scope of work for design of a 24-30" water main in Emmet Street as part of the City's Emmet Streetscape Phase I project. Lastly, WRA has developed a draft technical memorandum detailing additional opportunities for betterment along Emmet Street, which is under review and is expected to be finalized this summer for CIP planning purposes.

16. Crozet Pump Station Rehabilitation

Design Engineer:	TBD
Project Start:	Summer 2022

Project Status:	Design
Construction Start:	TBD
Completion:	TBD
Budget:	$590,000

Current Status: Work authorizations are being developed to address various improvements needed at the four wastewater pump stations to include roof, generator, and pump replacements. An internal workshop is scheduled to confirm the scope of the work and then a final work authorization(s) will be developed to perform design and construction administration services. This work is being initiated based on the anticipated completion of the Crozet FET project this summer.

17. Moores Creek AWRRF Concrete Repairs

Design Engineer:	TBD
Project Start:	Summer 2022
Project Status:	Design
Completion:	TBD
Budget:	$2,650,000

Current Status: The project scope to complete repairs in the two holding ponds and two equalization basins is being reviewed. A consultant will be selected and a work authorization will be developed. This work is being initiated following completion of the MCAWRRF Master Plan.

18. Moores Creek AWRRF Compost Shed Roof Rehabilitation

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

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

19. Scottsville WRRF Whole Plant Generator and ATS

Design Engineer:	Wiley|Wilson
Project Start:	December 2021
Project Status	30 % Design
Completion:	Summer 2023
Budget:	$200,000

Current Status: The current back-up power generator at the Scottsville Water Treatment Plant has reached the end of its service life (22 years), does not power the entire plant, serving only the facilities needed to send flow to the lagoons, and needs to be replaced. A site plan is being prepared for the Town of Scottsville. Additionally, Wiley|Wilson is preparing an analysis of alternatives to the propane

generator at the wastewater influent pump station.

Planning and Studies

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

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

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

21. Asset Management Plan

Design Engineer:	GHD, Inc. (GHD)
Project Start:	July 2018
Project Status:	CMMS Implementation – 82% Complete
Completion:	CMMS Implementation – October 2022
Budget:	$1,180,000

Current Status: For implementation of the new CMMS, GHD is completing updates to our facility geodatabase and continuing the software configuration process. Upgrades to both our ESRI and Cityworks software that were necessary for security improvements have been completed. Discussions related to Phase 3 of RWSA's overall Asset Management Program have been completed and a work authorization to assist with this process is being reviewed.

22. MC Facilities Master Plan Supplement

Design Consultant:	Hazen and Sawyer (Hazen)
Project Start:	February 2022
Project Status:	40% Complete
Completion:	August 2022
Budget:	$45,000

Current Status: The master plan has been finalized. Data collection and analysis work has begun on the supplement to include the impact of the recent wastewater collection system flow allocation analysis.

23. SRR to RMR Pipeline – Pretreatment Pilot Study

Design Consultant:	SEH
Project Start:	August 2020
Project Status:	100% Complete (Phase 1), 65% Complete (Phase 2)
Completion:	December 2022
Budget:	$22,969 (Phase 1), $98,629 (Phase 2)

Current Status: Phase 2 of the study continues with detailed reservoir water quality modeling performed by DiNatale Water Consultants. Modeling efforts using the Excel-based desktop model have been completed, and while these efforts were helpful in determining high-level transfer scenarios, the more detailed reservoir model will be utilized to help better represent the future conditions at Ragged Mountain Reservoir based upon the known characteristics of the proposed transfer system. Staff continues to evaluate potential pretreatment and water quality improvement solutions, and will be touring Western Virginia Water Authority's Hypolimnetic Oxygenation Systems at their reservoirs on June 15th.

24. Moores Creek AWRRF Cogeneration Upgrades

Design Engineer:	SEH
Project Start:	October 2021
Project Status:	Preliminary Engineering/Study (85%)
Completion:	June 2024
Budget:	$2,145,000

Current Status: A study is underway to determine the viable manufacturers in the Cogeneration Industry and how to proceed with procuring the new unit. All manufacturer/vendor interviews have been completed, and after further discussion, staff will be following up with references provided by the manufacturers, in order to better understand how the references feel about the performance of the unit(s) and level of responsiveness by the service representative.

Other Significant Projects

25. Urgent and Emergency Repairs

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

Project No.	Project Description	Approx. Cost
2020-21	PCI Erosion and Access Improvements	$80,000

- PCI Erosion and Access Improvements: In October 2020, the RWSA Maintenance Department raised concerns about several creek crossings and ditch lines along the Powell Creek Interceptor (PCI). Through the On-Call Maintenance Contract, two of the worst ditch lines were addressed in November 2020, including the installation of culverts and erosion control as appropriate. In June 2022, staff will address the remaining 5 areas of concern along the interceptor, mostly focused to smaller creek crossings where access is particularly challenging. The scope of work will be to install vehicular rip-rap crossings, which will allow for much improved access for staff performing maintenance and inspections on the sewer, as well as emergency access for small-mid size construction equipment. This work began on June 13th, and is anticipated to take approximately 4 – 6 weeks to complete.

26. Interceptor Sewer and Manhole Repair

Design Engineer:	Frazier Engineering
Construction Contractor:	Insituform Technologies (Chesterfield, MO)
Construction Start:	November 2017
Percent Complete:	45%
Base Construction Contract + Change Orders to Date = Current Value:	$701,011
Expected Completion:	June 2022
Budget:	$1,088,330 (Urban) + $880,000 (Crozet) = $1,968,330

Current Status: Staff continues coordination on the lower Powell Creek Interceptor (PCI) and a portion of the Woodbrook Interceptor (WBI), as these are the next high-priority areas to be addressed based upon the latest CCTV footage. Rehabilitation is nearly complete on PCI and WBI. The Contractor is working through closeout items, and will be transitioning its focus to the Crozet Interceptor later this Summer.

27. Security Enhancements

Design Engineer:	N/A
Construction Contractor:	Security 101 (Richmond, VA)
Construction Start:	March 2020
Percent Complete:	99% (WA 2 & 3), 80% (WA 4), 0% (WA #5)
Based Construction Contract + Change Orders to Date = Current Value:	$718,428.00 (WA1) + $91,130.32 (WA2) + $128,166.69 (WA3) + $189,698.95 (WA4) + $76,920.11 = $1,204,344.07 (total)
Completion:	October 2022 (WA #5)
Budget:	$2,810,000

Current Status: The only task that remains under WA #2 is some door and lock hardware improvements, which will enhance the functionality of the card access system. Card access installation at the Crozet and Scottsville WTP exterior doors under WA #3 is substantially complete. Finally, WA #4 includes security conduit at the South Rivanna and Observatory WTPs that was not included in the Improvements Project. This work began on November 2, 2021, with the majority of the work at South Rivanna WTP now complete, with the exception of the Filter Building. Security 101's subcontractor has also completed most work at Observatory, aside from the Pretreatment Building, which is also currently undergoing heavy renovations. The subcontractor will return as these buildings become more available for the work. Staff also recently executed WA #5, 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). Work at these facilities is anticipated to begin in June.

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 being 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. **Crozet Flow Equalization Tank**

A 2016 update to the 2006 model was completed which evaluated the I&I reduction goals previously established and future capital project needs. Based on the results of that study, it was determined that the Crozet Interceptor system and the existing Crozet Pump Stations (1 through 4) have adequate capacity to handle the 2015 peak wet weather flow from the Crozet Service Area during a two-year storm. However, as projected growth in the service area occurs, peak wet weather flows in the area under the storm conditions established in the updated model will begin to exceed the firm capacities of the pump stations by 2025. Additional I&I reductions in order to reduce flows enough to not exceed the pump station firm capacities are not feasible and as a result, the construction of a flow equalization tank was identified as the best method to alleviate wet weather capacity issues.

While the study indicates that capacity should not be an issue until 2025, a flow equalization tank would also provide a significant benefit to the maintenance of the Crozet Pumping Station system which currently lacks system storage necessary to allow adequate time to perform repairs on the pumps and the associated force mains while the system is down.

Greeley and Hansen completed a siting study to determine the location for the flow equalization tank based on the results of the comprehensive model update. The results of the siting study were reviewed with ACSA and a final tank location was determined.

A work authorization with Schnabel Engineering was finalized and a Project Kick-off Meeting was held on July 12, 2018. The construction bids were received on July 16, 2020. Anderson Construction

of Lynchburg, VA was awarded the construction contract. Notice to Proceed on this project was given on October 9, 2020 and now construction is in progress.

3. MC Clarifier and Lime Silo Demolition

The two in-plant clarifiers were constructed in the late 1950's and were taken out of service as a result of the Odor Control Project at the plant. Due to the age of the tanks, various components have significantly deteriorated over time and no additional uses for these tanks have been identified. In addition, due to their out-of-service status, they remain empty and a safety concern for plant staff and visitors. There is also an abandoned lime silo currently located adjacent to the Solids Handling Building. Lime was previously used with the old plate and frame presses before centrifuges were installed for sludge dewatering purposes. This project will include the complete demolition of the in-plant clarifiers by removing all existing components, backfilling the area, and returning the area to open space and removing the lime silo from the plant and properly disposing of it. The project was advertised, and bids are due on July 1, 2021. A Notice of Award was issued on August 6, 2021 and a Notice to Proceed was issues on September 28, 2021.

4. Glenmore WRRF Influent Pump and VFD Addition

The 0.381-mgd water resource recovery facility, located within the Glenmore subdivision, is operated by RWSA. The facility includes an influent pumping station located immediately adjacent to the treatment facility. The Glenmore WRRF is predicted to see additional dry and wet weather flows as construction within the service area continues. Future wet weather flows will require higher influent pumping capacity and an additional pump and electrical variable frequency drive will be required to maintain firm capacity. After discussions with the Operations and Maintenance departments, installation of a new exhaust fan in the influent pump station will also be included. A work authorization for this project has been finalized and design is underway. The project was advertised, and bids are due on July 8, 2021. A Notice of Award was issued on August 6, 2021.

5. 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.

6. 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.

7. <u>Scottsville WTP Lagoon Liners Replacement</u>

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

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

Design and Bidding

8. 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.

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

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

10. Beaver Creek Dam and Pump Station Improvements

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

system project.

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

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

Pump Station: The Drinking Water Infrastructure Plan for the Crozet water service area, developed by Hazen and Sawyer, recommends installation of a new Raw Water Pump Station and Intake at the Beaver Creek Dam in order to meet new minimum instream flow requirements and provide adequate raw water pumping capacity to serve the growing Crozet community for the next 50 years. The pump station will be moved out of its existing location at the toe of the dam to a new location, to be determined during design. The new intake structure will include enhanced controls to allow for access to the best quality water at any given time.

11. 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.

12. 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.

13. 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.

15. 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.

16. 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.

17. 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.

18. Moores Creek AWRRF Concrete Repairs

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

19. Moores Creek AWRRF Compost Shed Roof Rehabilitation

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

20. Scottsville WRRF Whole Plant Generator and ATS

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

Planning and Studies

21. 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.

22. 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.

23. MC Facilities Master Plan

The majority of the Moores Creek Water Resource Recovery Facility was constructed in the early 1980's. At the time, the plant layout was developed with space held open for future process expansion. With the Enhanced Nutrient Removal (ENR) project in 2009, the operation and layout of the plant was fundamentally altered, as needed to meet the new regulation. The project did anticipate the need for future expansion and some of the processes have readily available space. However, a full expansion plan was not developed at the time. As identified in the Strategic Plan, the Authority has a goal to plan, deliver and maintain dependable infrastructure in a financially responsible manner. Staff has identified asset master planning as a priority strategy to improve overall system development. As such, this project will serve to evaluate and plan for future space and process needs to accommodate capacity expansion and/or anticipated regulatory changes.

24. 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.

25. MCAWRRF Cogeneration Upgrades

The MCAWRRF has an existing cogeneration facility that was constructed in 2011. The purpose of the facility was to provide a beneficial use of the methane gas produced by the digester process at the plant, and in doing so, provide both digester heating and energy to the plant's electrical distribution system. Unfortunately, the existing cogeneration facility requires expensive recurring maintenance services, has proprietary equipment which further complicates servicing needs, and has had a number of operational issues that have impeded the benefit this facility was intended to provide. As a result, a Cogeneration

System Analysis was performed to determine a recommended approach for proceeding with improvements to the existing facility, installation of a new cogeneration facility without the issues of the previous facility or removing the cogeneration facility altogether and providing a backup boiler. This project includes costs for installation of a new cogeneration facility as described in the Cogeneration System Analysis.

Other Significant Projects

26. Urgent and Emergency Repairs

- South Rivanna Dam Apron and Riverbank Repairs

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

- Urban Water Line Valve and Blow-off Repair

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

27. Interceptor Sewer and Manhole Repair

Results from sewer flow monitoring and modeling under the Comprehensive Sanitary Sewer Study provided awareness to specific inflow and infiltration (I&I) concerns in the collection system and resulted in strengthened commitments from the City, ACSA and RWSA to continue professional engineering services to aid in the rehabilitation and repair of the sewer collection system. Engineering services will be used for sewer infrastructure condition assessments and the development of a sewer rehabilitation bid package for the procurement of a contractor to perform the recommended rehabilitation work.

Lining work and manhole rehabilitation on the Upper Morey Creek Interceptor began in Fall 2019 and was completed in Fall 2020. A critical section of upper Morey Creek Interceptor under Rt. 250 was lined on August 28, 2020. 65' of new ductile iron sewer to replace a sagging section of vitrified clay piping was installed in May 2021. Tri-State Utilities completed over 3,000 LF of Sewer Cleaning and CCTV under RFQ No. 1105 in October 2021 on high-priority portions of the Powell Creek and Woodbrook Interceptors.

A bid package was developed to address the highest priority known defects on the Powell Creek,

Woodbrook, and Crozet Interceptors. A Request for Bids (RFB) was issued on December 22, 2021, and bids were submitted on February 3, 2022. A Construction Contract Award for Insituform Technologies was approved by the RWSA Board of Directors on February 22, 2022, and a Notice of Award (NOA) was provided to Insituform Technologies on March 4, 2022. Notice of Award was provided on April 8th.

28. <u>Security Enhancements</u>

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

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

Access Control on exterior doors at the CZWTP and SVWTP was substantially completed in November 2021.

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

DATE: **JUNE 28, 2022**

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

	Month	***Daily Average***	
City Usage (gal)	142,385,396	4,593,077	**49.5%**
ACSA Usage (gal)	145,418,698	4,690,926	**50.5%**
Total (gal)	**287,804,094**	**9,284,003**	

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

Note: Staff detected a read issue with Meter Site 15 – Ivy Road at Colonnade Drive in March and has determined that the meter's register will require replacement. Staff will report a flow estimate for this site using available data until the issue is resolved, likely this summer.

Figure 1: City of Charlottesville Monthly Water Usage and Allocation

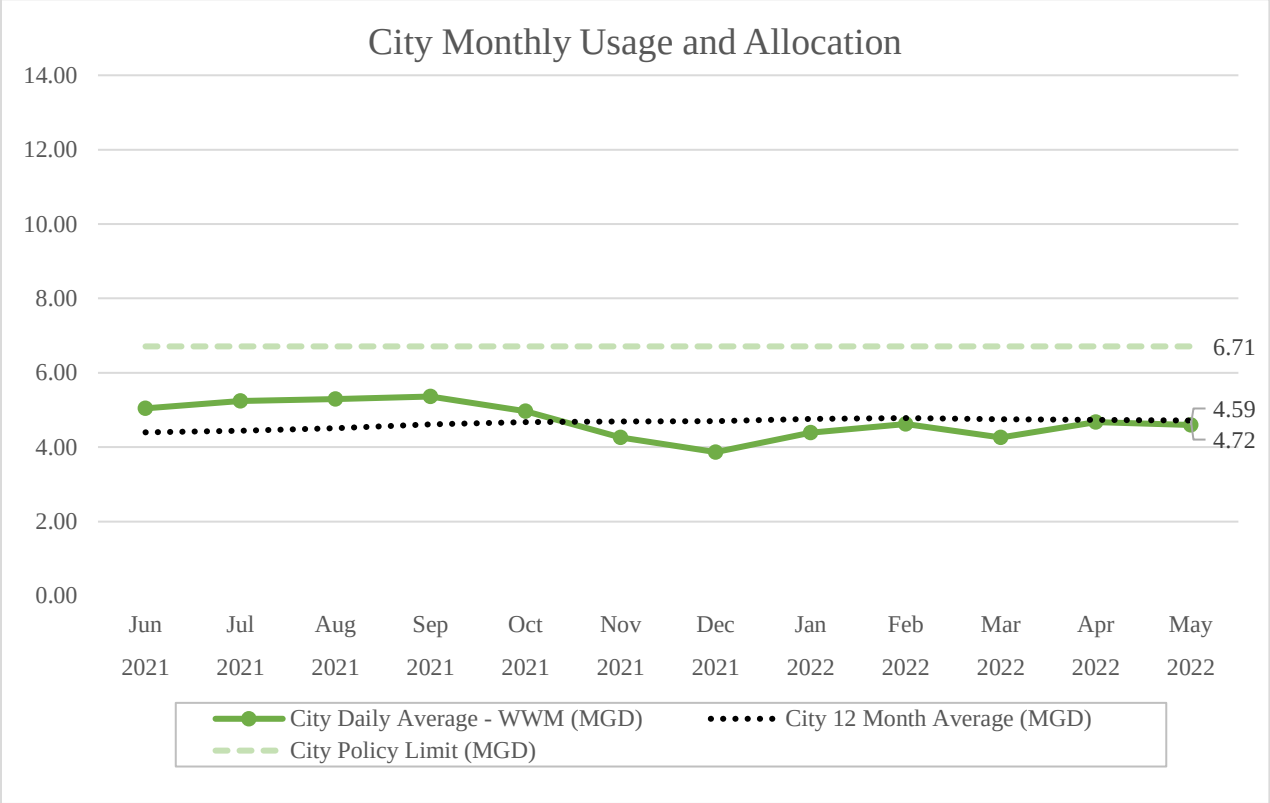
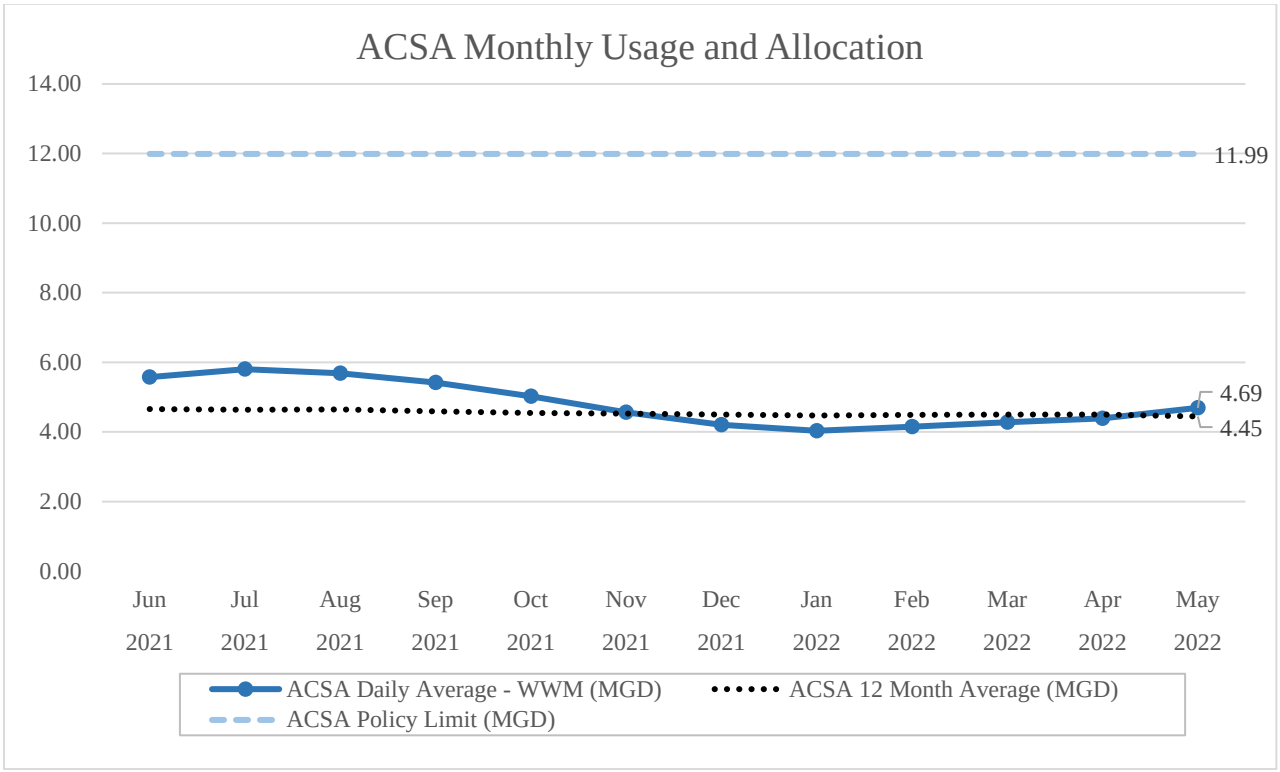
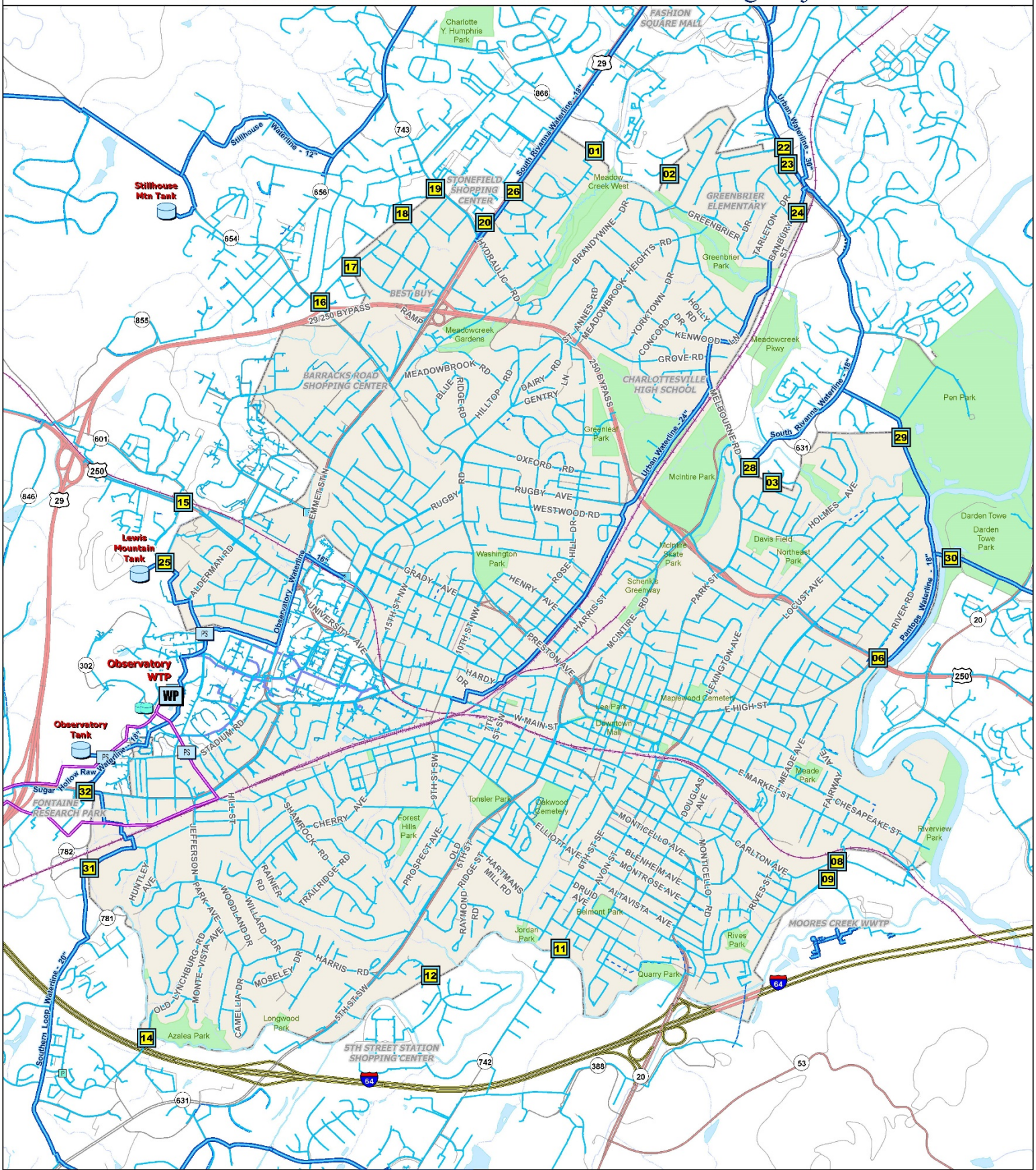


Figure 2: Albemarle County Service Authority Monthly Water Usage and Allocation



Meter Locations for the Wholesale Water Metering Project



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695 Moores Creek Lane
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Meter Site Locations - WWMP

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

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

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

REVIEWED: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **DROUGHT MONITORING REPORT**

DATE: **JUNE 28, 2022**

Drinking Water Supply and Drought Monitoring, as of June 22, 2022:

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

B. VDEQ Drought Status Report:
   - Our region is at a "Watch" level for groundwater.

C. Urban Reservoirs Status (Sugar Hollow, South Rivanna, Ragged Mountain):
   - 99.4 % full.

Precipitation

Charlottesville Precipitation				
Year	**Month**	**Observed (in.)**	**Normal (in.)**	**Departure (in.)**
2021	**Total: Jan - Dec**	**33.82**	**41.61**	**-7.79**
2022	January	3.79	2.96	0.83
	February	1.48	2.35	-0.87
	March	3.19	3.54	-0.35
	April	3.05	3.17	-0.12
	May	6.17	4.17	2.00
	Total: Jan - May	**17.68**	**16.19**	**+1.49**

Source: National Weather Service, National Climatic Data Center.

CENTRAL WATER LINE PROJECT

INVESTING in the Urban Drinking Water System

PRESENTATION TO THE RWSA BOARD OF DIRECTORS
June 28, 2022

BY: Michelle Simpson, PE, RWSA Senior Engineer

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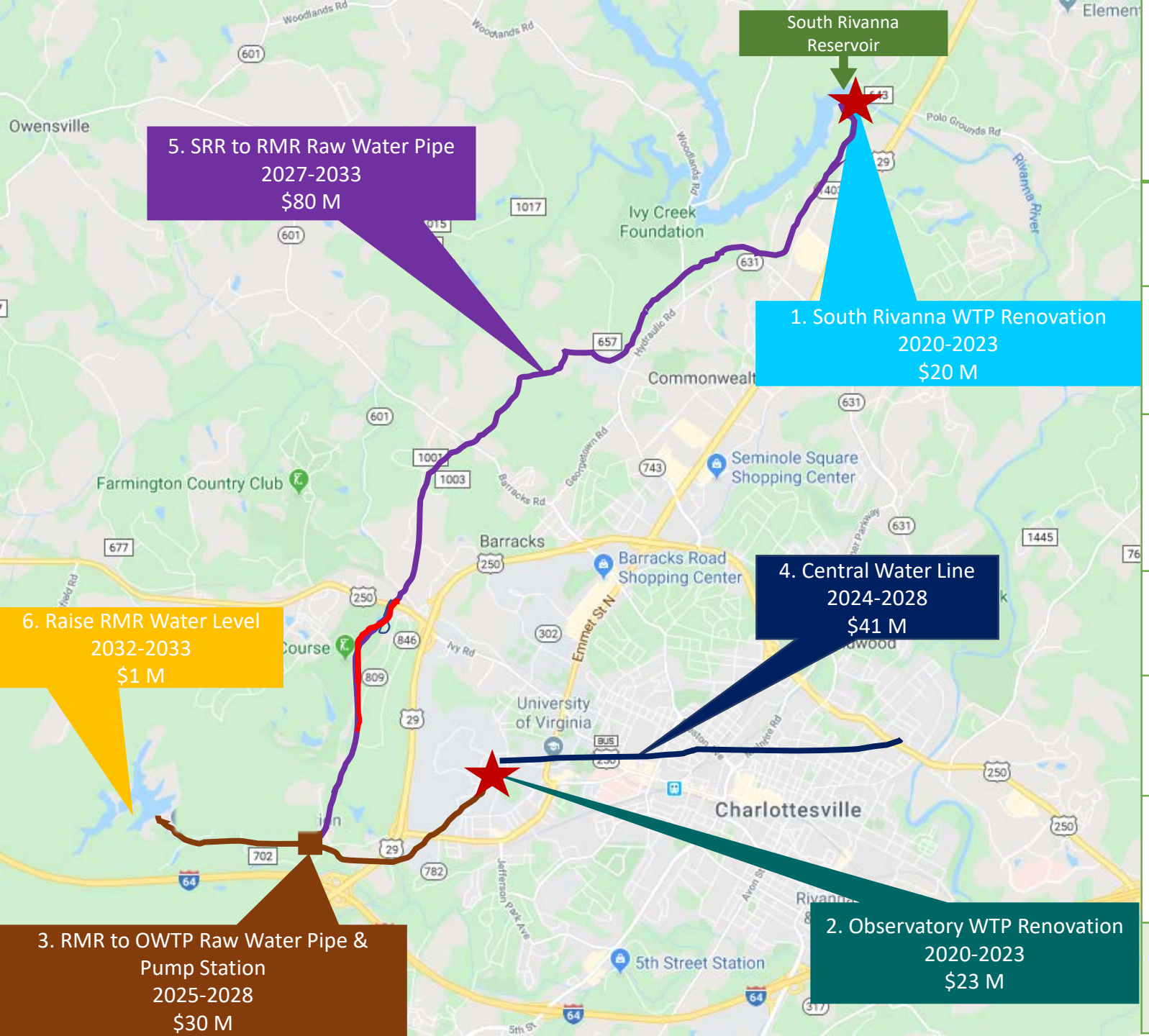

Community Water Supply Projects

(June 1, 2022)

1. SR WTP Renovation 2020-2023	$20 M
2. OB WTP Renovation 2020-2023	$23 M
3. RMR to OB WTP Raw Water Pipe & Pump Station 2025-2028	$30 M
4. Central Water Line 2024-2028	$41 M
5. SRR to RMR Raw Water Pipe 2027-2033	$80 M
6. Raise RMR Water Level 2032-2033	$1 M
City: $69 M ACSA: $126 M	**$195 M**

Overview of the Central Water Line Project

- Scope of Work
  - Construction of 5 miles of 24”-30” water transmission main
  - Installed under existing City streets in a segmented process
  - Construction schedule: 2024 – 2028
  - Cost allocation: 48% City, 52% ACSA

- Project History
  - 1987 Southern Loop Agreement: Western & Eastern Branches
  - 2017 Avon to Pantops Water Line (Eastern Branch of Southern Loop)
  - 2019 - 2022 Urban Finished Water Master Plan
  - 2020 Observatory Water Treatment Plant Agreement
  - 2021 Central Water Line Routing Study

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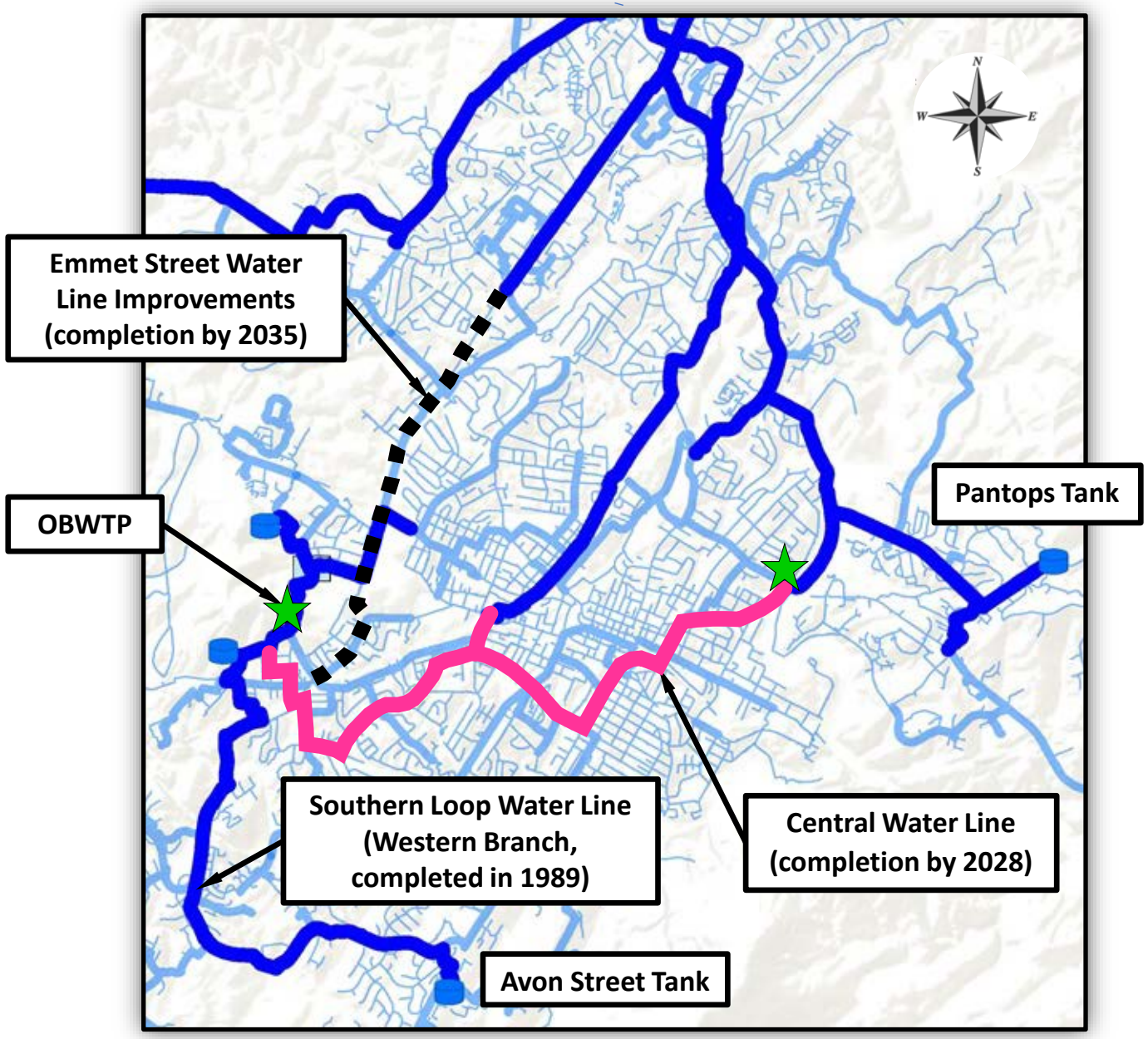
Results of Urban Finished Water Master Plan

- Modeling shows that closing gaps in the water transmission system will help:
  - Provide consistent supply and pressure to customer faucets
  - Reduce service disruptions during water line breaks and tank maintenance
  - Support fire fighting demands
  - Improve system flexibility, efficiency, and redundancy
  - Utilize capacity of OBWTP upgrade



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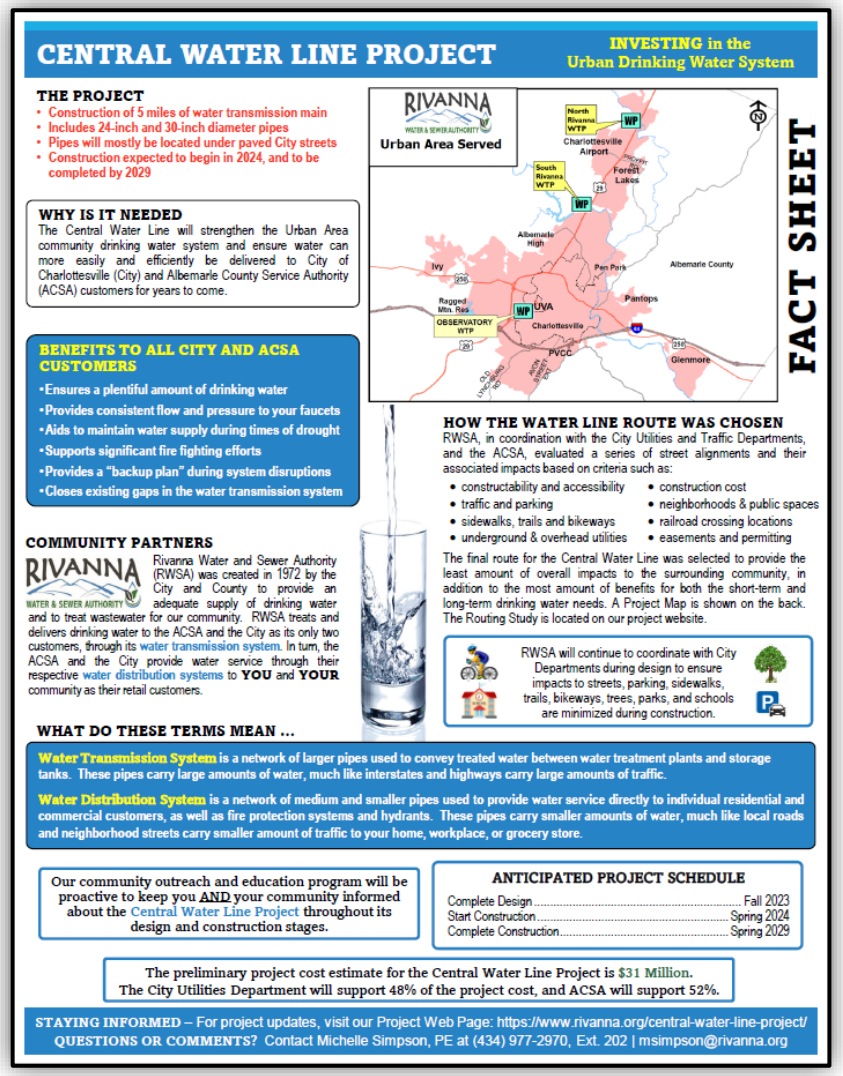
Community Outreach

- Communications
  - Presented to City Council and the RWSA Board of Directors in January 2022 and June 2022
  - Project Website (https://www.rivanna.org/central-water-line-project/)
  - Project Flyer mailed to 480 property owners along Southern/Cherry Avenue alignment
  - Presentations to 6 Neighborhood Associations
    - Fry's Spring, Fifeville, Little High, Martha Jefferson, Belmont-Carlton & Woolen Mills
- Considered comments from neighborhood meetings
- Evaluated 5 primary and 5 alternate routes

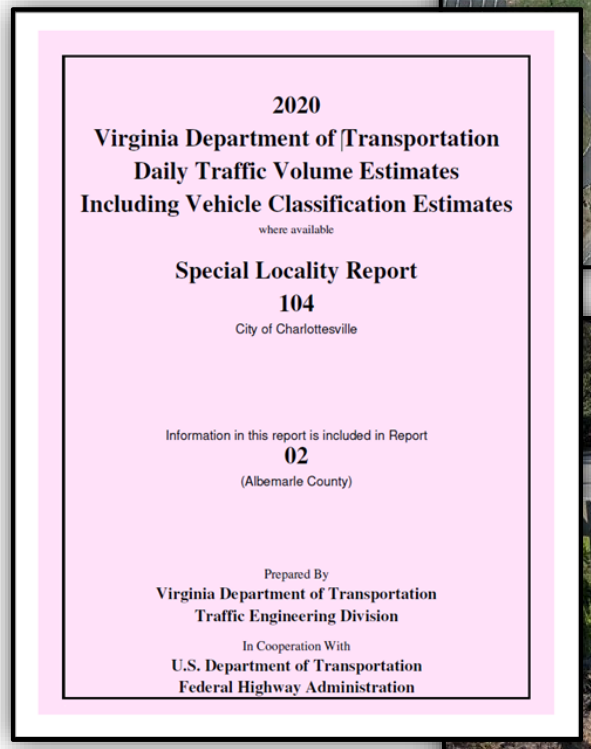
Primary Emmet/Rt. 250 Bypass, Northern (Preston), Middle (W. Main), Southern (Cherry) and Southern (Harris/5th)

Alternate Emmet/Rt. 250 Bypass (City Park), Northern (McIntire/Rt. 250 Bypass), Southern (Shamrock), Southern (E. Water/Meade) and Southern (E. Market/Meade)



How Was the Evaluation Performed?

- Field Investigations/Visual Observations
- VDOT Traffic Volume
- GIS Data & Aerial Photography
- Hydraulic Modeling
- By City Utilities, City Traffic, ACSA, Baker Engineering and RWSA



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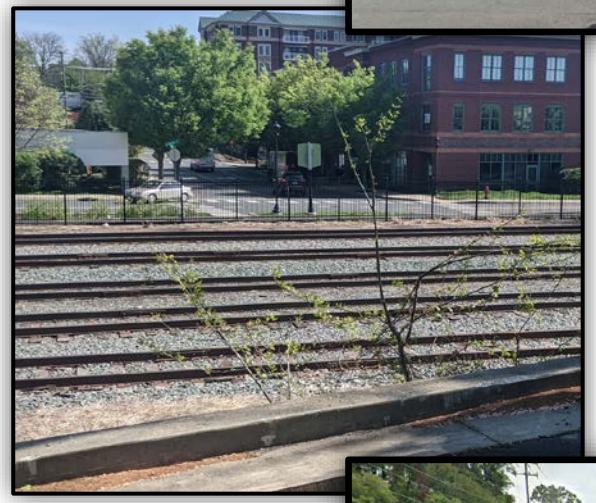
What Were the Evaluation Criteria?

- Water Distribution Benefits
  - Fire Flow and ability to fill Water Storage Tanks
- Average Day Traffic Impacts
- Impacts to Neighborhoods/Businesses/UVA/Medical
- Average Right-of-Way Widths
- Construction Cost
- Pipe Length
- Major Crossings of Physical Features
  - Signalized Intersections, Bridges, Railroads and Water Bodies
- Opportunity to Coordinate with Other Projects
- Underground and Aboveground Utility Congestion
- Overall Construction Duration
- Tree Clearing Requirements

Jefferson Park Avenue at Immanuel Lutheran Church (looking north)



Railroad Crossing at 10th Street NE (looking north)

US 250 Bypass at Locust Avenue (looking east)

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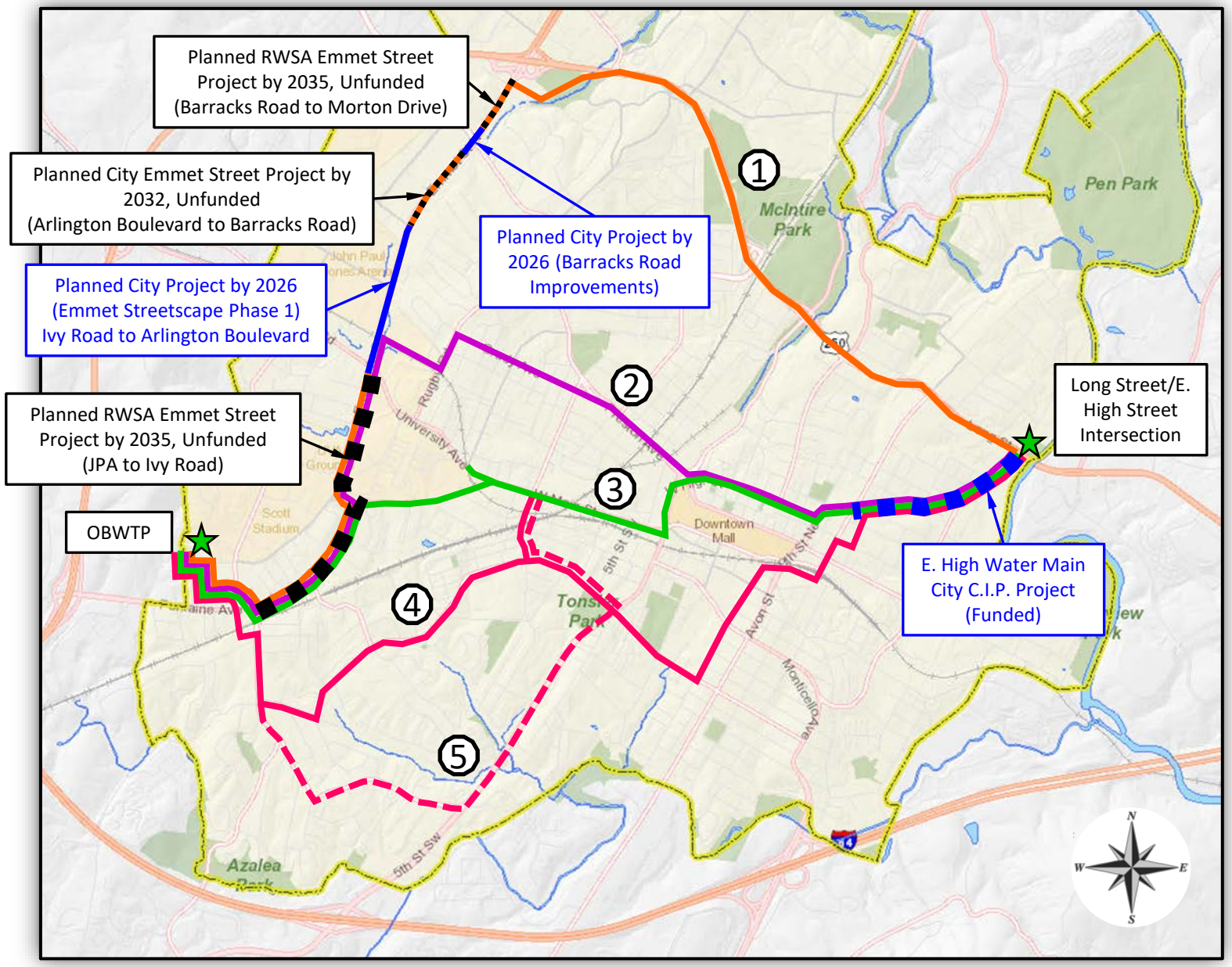
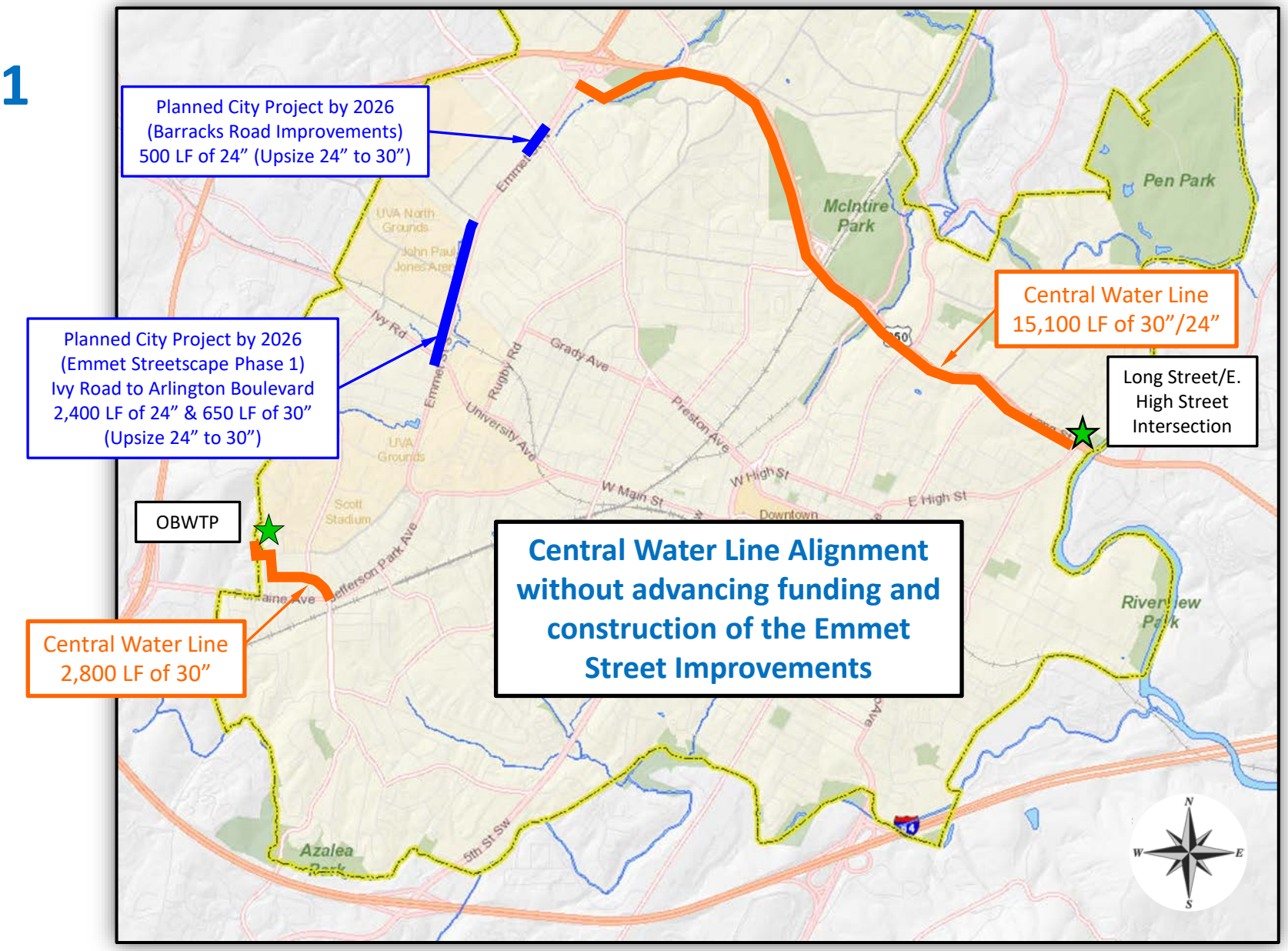
Alignments Evaluated

1. Emmet/Rt. 250 Bypass
2. Northern (Preston)
3. Middle (W. Main)
4. Southern (Cherry)
5. Southern (Harris/5th)



Preliminary Alignment #1

- **Emmet/Rt. 250 Bypass**
  - Stadium, Piedmont, Price, Maury, JPA, Emmet, Morton, Rivanna Trail (City Garden) & Route 250 Bypass
  - Night work required on Rt. 250 Bypass due to high traffic volume
  - Cost ≈ $45 Million
    - Free Bridge to Emmet St plus OBWTP connection
  - ***Must extend pipe to OBWTP along Emmet Street***



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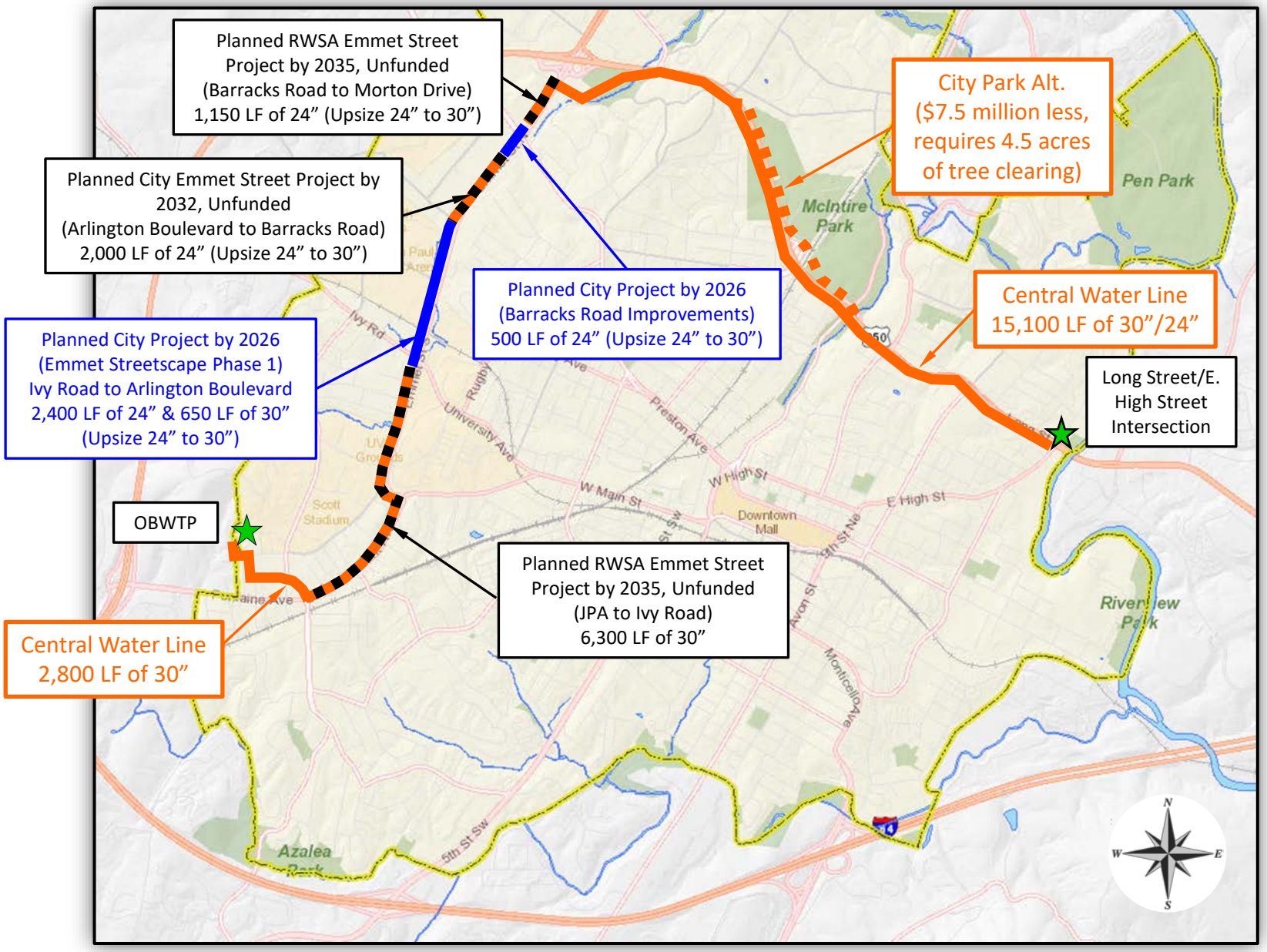
Alignment #1

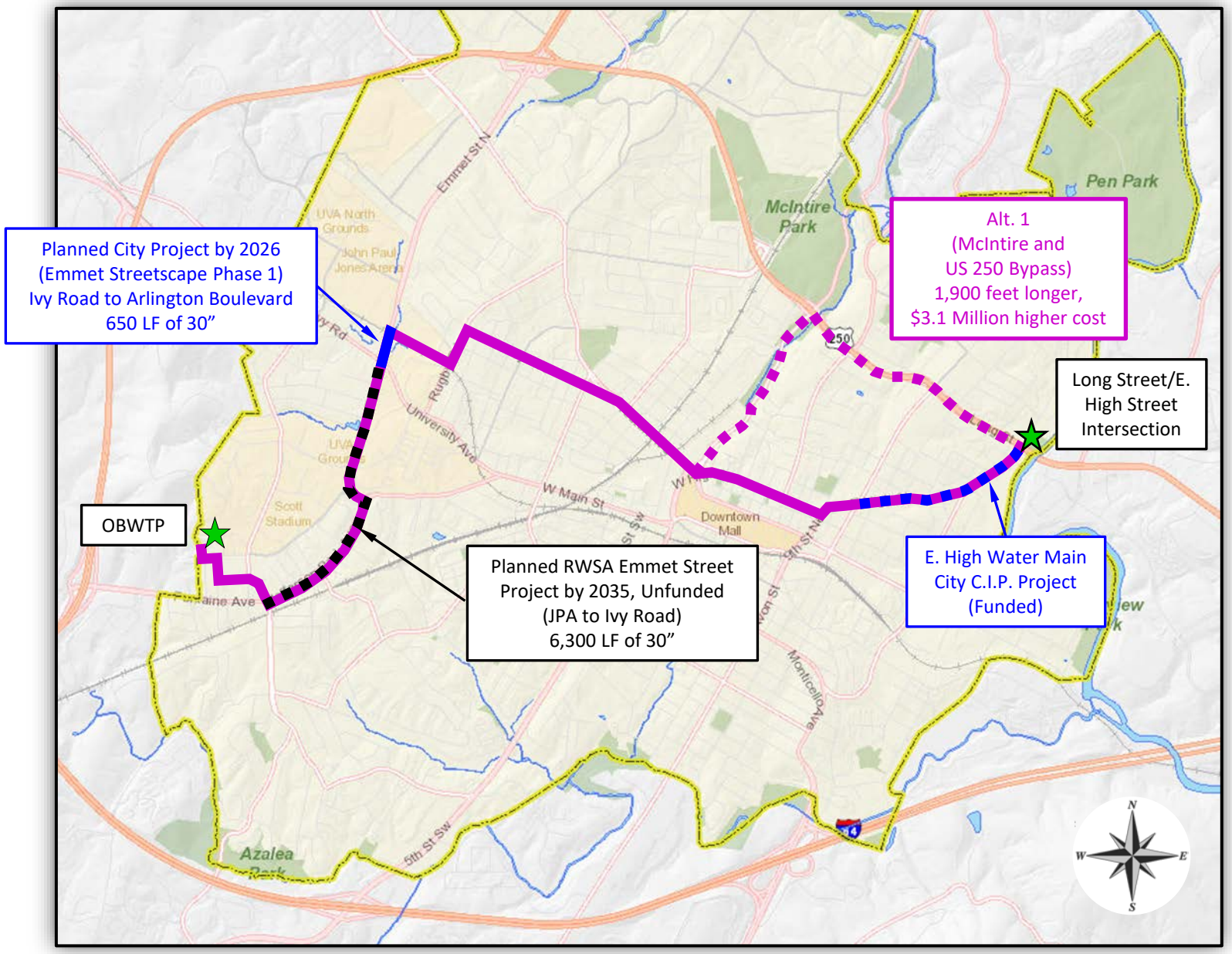
- **Emmet/Rt. 250 Bypass**
  - Stadium, Piedmont, Price, Maury, JPA, Emmet, Morton, Rivanna Trail (City Garden) & Route 250 Bypass
  - Night work required on Rt. 250 Bypass due to high traffic volume
  - Unfunded work on Emmet Street is required for the CWL Project
  - Cost ≈ $60 Million
- **Emmet/Rt. 250 Bypass Alternate (thru McIntire Park)**



RIVANNA WATER & SEWER AUTHORITY

Alignment #2

- **Northern (Preston)**
  - Stadium, Piedmont, Price, Maury, JPA, Emmet, Lambeth Field, Rugby, Grady, Preston, W. High & E. High
  - Congested residential and business areas
  - Cost ≈ $39 Million
- **Northern (McIntire/Rt. 250 Bypass) Alternate**
  - Uses McIntire & Route 250 Bypass instead of W. High & E. High
  - Night work required on Rt. 250 Bypass



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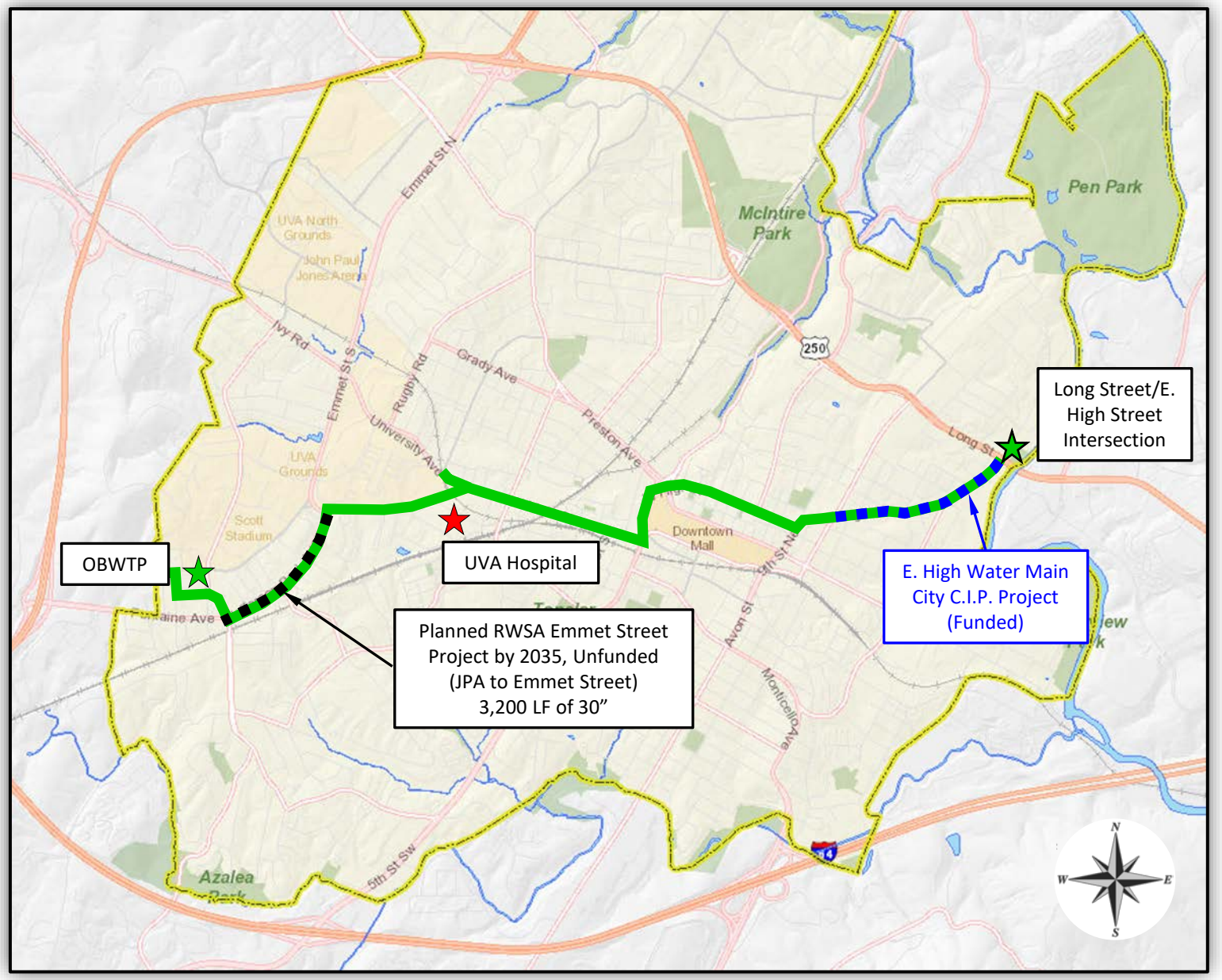
Alignment #3

- **Middle (W. Main)**
  - Stadium, Piedmont, Price, Maury, JPA, W. Main, Ridge McIntire, Preston, W. High & E. High
  - Congested academic/hospital/medical center & business areas
  - Cost ≈ $39 Million



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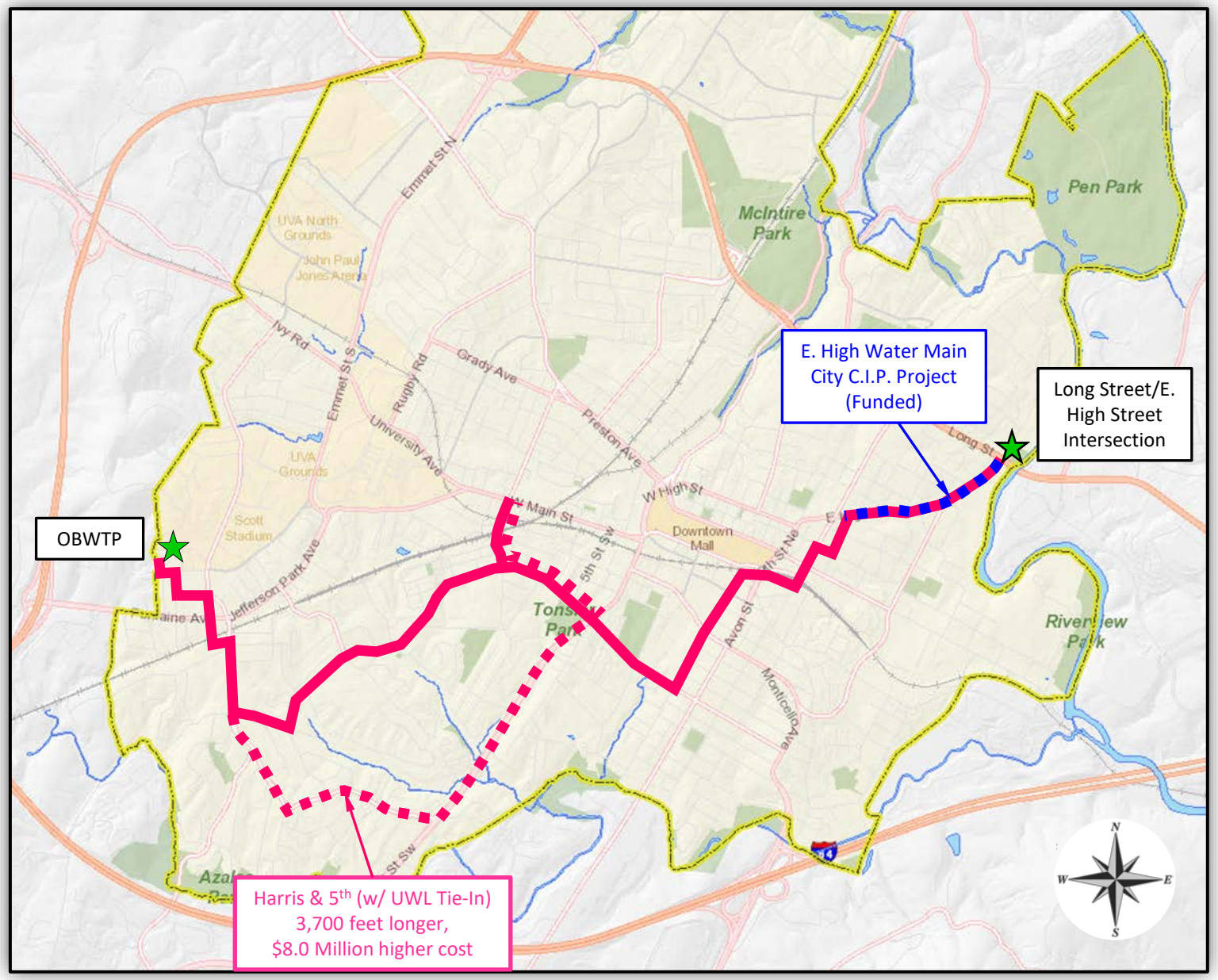
Alignments #4 & #5

- **#4 - Southern (Cherry)**
  - Stadium, Piedmont, Price, Lewis, JPA, Cleveland, Cherry, Elliott, 6th SE, Avon, 10th NE, E. Jefferson, 11th NE, E. High & Roosevelt Brown Connector
  - Mostly residential, lower traffic areas
  - Cost ≈ $41 Million
- **#5 - Southern (Harris/5th)**
  - Stadium, Piedmont, Price, Lewis, JPA, Harris, 5th SW, Elliott, 6th SE, Avon, 10th NE, E. Jefferson, 11th NE, E. High & Roosevelt Brown Connector
  - Higher traffic and emergency access route
  - Cost ≈ $49 Million



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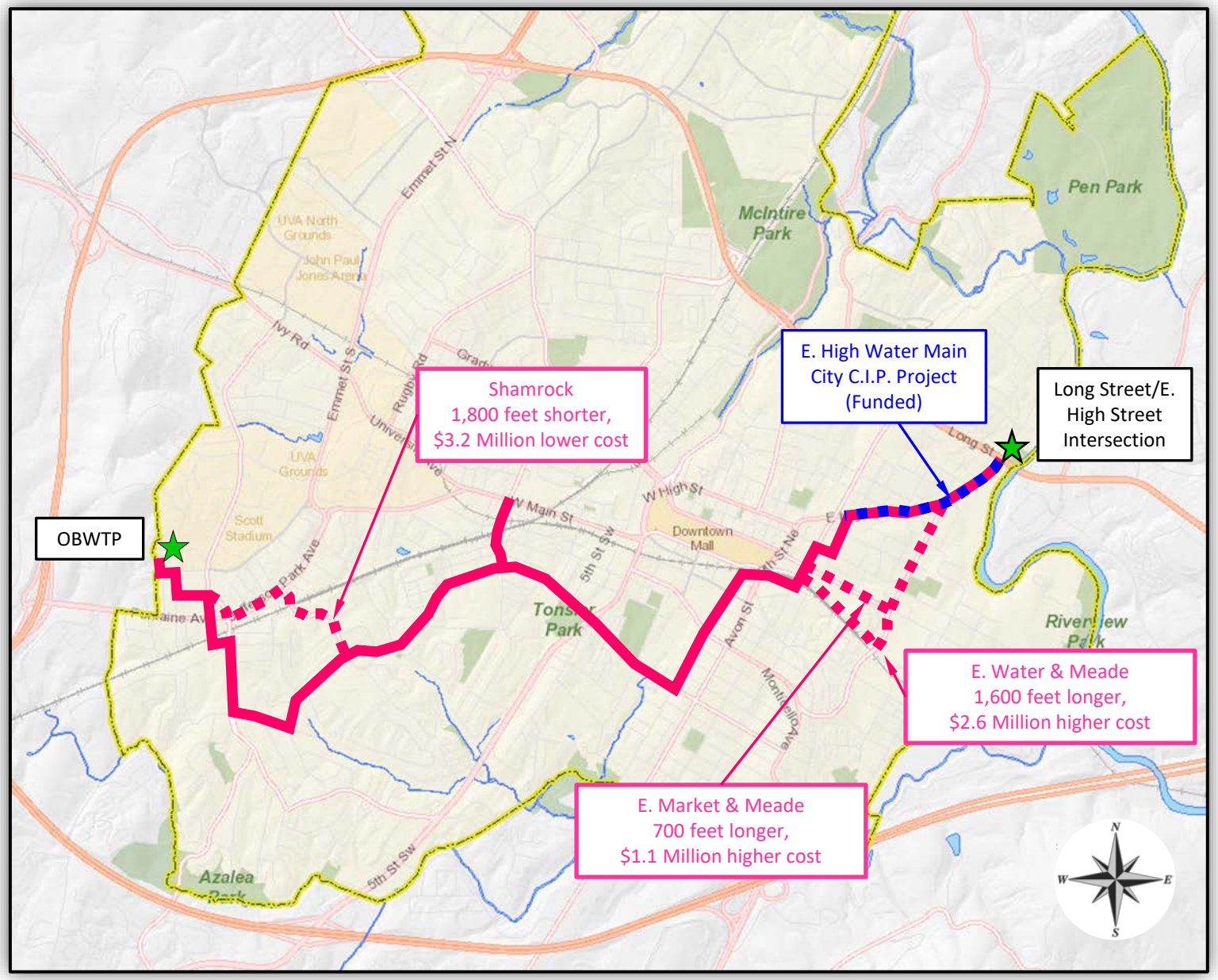
- **Southern (Shamrock) Alternate**
  - Stadium, Piedmont, Price, Maury, JPA, Shamrock, Cherry, Elliott, 6th SE, Avon, 10th NE, E. Jefferson, 11th NE, E. High & Roosevelt Brown Connector
  - Narrow street width; RR crossing
- **Southern (E. Market/Meade) Alt**
  - Stadium, Piedmont, Price, Lewis, Cross Railroad, JPA, Cleveland, Cherry, Elliott, 6th SE, Avon, E. Water, Meade, E. High & Roosevelt Brown Connector
  - Longer, more expensive and does not co-locate with much of City E. High water line project
- **Southern (E. Water/Meade) Alt**
  - Stadium, Piedmont, Price, Lewis, Cross Railroad, JPA, Cleveland, Cherry, Elliott, 6th SE, Avon, 10th NE, E. Market, Meade, E. High & Roosevelt Brown Connector
  - Longer, more expensive and does not co-locate with much of City E. High water line project



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OVERALL RESULTS FOR CORRIDORS EVALUATED THROUGH ADDITIONAL MODELING EFFORTS

ALIGNMENT DESIGNATION	Emmet/Rt. 250 Bypass	Northern (Preston)	Middle (W. Main)	Southern (Cherry)	Southern (Harris/5th)	Remarks
Streets Included in Alignment	Stadium, Piedmont, Price, Maury, JPA, Emmet, Morton, Rivanna Trail (City Garden) & Route 250 Bypass	Stadium, Piedmont, Price, Maury, JPA, Emmet, Lambeth Field, Rugby, Grady, Preston, W. High & E. High	Stadium, Piedmont, Price, Maury, JPA, W. Main, Ridge McIntire, Preston, W. High & E. High	Stadium, Piedmont, Price, Lewis, JPA, Cleveland, Cherry, Elliott, 6th SE, Avon, 10th NE, E. Jefferson, 11th NE, E. High &Roosevelt Brown Connector	Stadium, Piedmont, Price, Lewis, JPA, Harris, 5th SW, Elliott, 6th SE, Avon, 10th NE, E. Jefferson, 11th NE, E. High & Roosevelt Brown Connector	
Overall Length of Pipe (feet)	17,900 CWL 13,000 EWL 30,900 Total (1)	17,700 CWL 7,600 EWL 25,300 Total (1)	21,400	26,500	30,200	Includes total length of all projects along route
Average Daily Traffic Counts	85% > 10,000 Max. 39,000	86% > 10,000 Max. 29,000	87% > 10,000 Max. 29,000	32% > 10,000 Max. 17,000	45% > 10,000 Max. 18,000	10,000 vehicles per day is minimium threshold for arterial street.
Estimated Overall Construction Duration (Years)	8 (2)	4	6 (2)	4	4.5	(2) Assumes installation with one work crew, otherwise multiple crews will be required to complete the project within 4 years.
Estimated Project Cost for Central Waterline (CWL)	$ 45 Million	$ 28 Million	$ 39 Million	$ 41 Million	$ 49 Million	Includes: design, bidding, permitting, easements, construction, upsizing costs, CM, and contingencies
Estimated Project Cost for Advancing Emmet Street Waterline (EWL)	$ 15 Million	$ 11 Million	$ 0 Million	$ 0 Million	$ 0 Million	Excludes funded EWL CIP coincident with the CWL (Ivy Road to Arlington Boulevard and Barracks Road)
Estimated Overall Project Cost	$ 60 Million (3)	$ 39 Million	$ 39 Million	$ 41 Million	$ 49 Million	(3) Includes premium for night work
Water System Benefits	**Lower**	**Lower**	**Higher**	**Higher**	**Higher**	Adequate tank operability, fire flow, consistent pressures, operational reliability and redundancy
Ease of Future Operations and Maintenance Efforts	**Low**	**Medium**	**Low**	**High**	**Medium**	Traffic/neighborhood/business/hospital impacts, operations and maintenace with adjacent utilities

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- All alignments have challenges
- Not all alignments equally meet RWSA operational & hydraulic goals
- Southern (Cherry) Alignment #4 provides greatest overall benefits:
  - Higher water system advantages (redundancy, reliability and flexibility)
  - Customer benefits (improved supply and fire fighting, more consistent pressure)
  - Lowest impacts to traffic
  - Lower estimated overall project cost
  - Ease of future operations and maintenance efforts
  - Greatest hydraulic advantage when paired with future Emmet Street Water Line Improvements

- Request of the Board: Vote to Approve the Southern (Cherry) Alignment #4

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WE **WELCOME** YOUR

AND **THANK YOU** FOR YOUR TIME

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