RIVANNA
WATER & SEWER AUTHORITY

Board of Directors Meeting

April 27, 2021

2:15pm

RIVANNA WATER & SEWER AUTHORITY
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BOARD OF DIRECTORS

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

DATE: **April 27, 2021**

LOCATION: **Virtually via ZOOM**

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

AGENDA

1. ***CALL TO ORDER***
2. ***STATEMENT FROM THE CHAIR***
3. ***MINUTES OF PREVIOUS BOARD MEETINGS***
   a. *Minutes of Regular Board Meeting on March 23, 2021*
4. ***RECOGNITION***
5. ***EXECUTIVE DIRECTOR'S REPORT***
6. ***ITEMS FROM THE PUBLIC***
7. ***RESPONSES TO PUBLIC COMMENTS***
8. ***CONSENT AGENDA***
   a. *Staff Report on Finance*
   b. *Staff Report on Operations*
   c. *Staff Report on Ongoing Projects*
   d. *Staff Report on Wholesale Metering*
   e. *Award of Term Contract for Professional Surveying Services; Draper Aden Associates*
9. ***OTHER BUSINESS***
   a. *Presentation: Annual Reservoir Report; Andrea Bowles – Water Resources Manager*
   b. *Presentation: Review of Organizational Agreements; Bill Mawyer – Executive Director*
10. ***OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA***

11. CLOSED MEETING

12. 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." 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." 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" 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. May 20, 2020

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 April 27, 2021 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 25, 2020, Albemarle County's Continuity of Government Ordinance adopted on April 15th, 2020, and revised effective October 1, 2020 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:

Mr. Boyles: Please state your full name and location.
Ms. Hildebrand: Please state your full name and location.
Mr. O'Connell: Please state your full name and location.
Dr. Palmer: Please state your full name and location.
Mr. Richardson: Please state your full name and location.
Mr. Snook: Please state your full name and location.

And I am Mike Gaffney and I am located at _____.

Joining us today electronically are the follow Authority staff members:

Bill Mawyer, Lonnie Wood, Jennifer Whitaker, David Tungate, Andrea Bowles, John Hull, and Katie McIlwee

We are also joined electronically by Valerie Long, counsel to the Authority.

RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
March 23, 2021

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, March 23, 2021 at 2:15 p.m. via Zoom.

Board Members Present: Mike Gaffney, Dr. Liz Palmer, Jeff Richardson, Lauren Hildebrand, Gary O'Connell.

Board Members Absent: Chip Boyles, Lloyd Snook.

Rivanna Staff Present: Bill Mawyer, Katie McIlwee, Lonnie Wood, Jennifer Whitaker, David Tungate, John Hull, Andrea Bowles.

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

1. CALL TO ORDER

Mr. Gaffney called the March 23, 2021 regular meeting of the Rivanna Water and Sewer Authority to order at 2:50 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 March 23, 2021 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 25, 2020, Albemarle County's Continuity of Government Ordinance adopted on April 15th, 2020, and revised effective October 1, 2020 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.

Mr. Chip Boyles was absent.

Ms. Lauren Hildebrand stated she was located at 305 4th Street Northwest in Charlottesville, VA.

Mr. O'Connell stated he was located at 168 Spotnap Road (ACSA Headquarters).

Dr. Liz Palmer stated she was located at her home address of 2958 Mechum Banks Drive in Charlottesville, VA.

Mr. Lloyd Snook was absent.

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

Mr. Gaffney stated the following Authority staff members were joining the meeting electronically: Bill Mawyer, Lonnie Wood, Jennifer Whitaker, David Tungate, Andrea Terry, John Hull, and Katie McIlwee.

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

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

3. MINUTES OF PREVIOUS BOARD MEETINGS

a. Minutes of Regular Board Meeting on February 23, 2021

Dr. Palmer noted she made a couple of name corrections to the minutes.

Dr. Palmer moved that the board approve the minutes of the previous board meeting as amended. The motion was seconded by Mr. O'Connell and passed unanimously (5-0). (Mr. Boyles and Mr. Snook were absent.)

4. RECOGNITIONS

There were no recognitions.

5. EXECUTIVE DIRECTOR'S REPORT

Mr. Mawyer stated on the Water & Sewer side, about 75% of the staff signed up to request a COVID vaccine, and most of those employees have received vaccinations. He stated in full, between the Solid Waste Authority and the Water & Sewer Authority, they expect about 75% of staff to be vaccinated, and they encourage 100%.

Mr. Mawyer stated Rivanna has had good meetings recently with ACSA and City staff (including Ms. Hildebrand, Mr. O'Connell and his staff) about the Central Waterline project, which is a major waterline that will convey treated water from Observatory Treatment Plant to the Long Street

Bridge area and supply the water storage tank on Pantops Mountain. He stated they are looking at threading the pipe through the City and are working with staff to talk about location details.

Mr. Mawyer stated Rivanna is also working with the City and the ACSA on options to improve or decommission the North Rivanna Water Treatment Plant. He stated they will provide a report to the board in the coming months about what options they come up with. He stated in general, the plant needs expensive improvements, and they will have to decide if it is better to make those improvements, or to shift the resources and production to the South Rivanna Water Treatment Plant.

Mr. Mawyer stated they continue to work on the Rivanna-to-Ragged Waterline easement acquisitions, and he understands they are on the agenda with the Albemarle County School Board on April 1 to give a presentation and hopefully have them grant an easement.

Mr. Mawyer presented a map showing the pipe alignment. He stated the black area on the map denoted where easements or agreements have been obtained.

Mr. Mawyer stated the blue areas on the map where easements are needed are with the UVA Foundation. He stated Rivanna is trying to get ramped up with UVA Foundation to get the two blue areas under easements, adding that there are three private property owners as well (shown in green). He stated otherwise, Rivanna has obtained easements in all the areas on the map shown in black. He stated in the right-of-way around Rio Road and Woodburn Road, Rivanna has an agreement and understanding with VDOT, but VDOT will not promise them they can use it until the time that they want to install the pipe, which is when they will then confirm it.

Mr. Mawyer stated the Safety Manager had a regional safety meeting with other safety staff from the ACSA, City Utilities Department, Augusta County, and Louisa County as they try to learn from their peers and grow their programs.

Mr. Gaffney asked if the requests for COVID vaccinations were trickling in or if they had stopped.

Mr. Mawyer stated they have stopped, but they keep recruiting employees who did not initially indicate that they wanted a vaccine. He stated Rivanna keeps talking to them about the benefits in the hope that they will give it a try. He stated they are now fairly static in terms of the list of which staff would like to get the vaccine.

6. ITEMS FROM THE PUBLIC

Mr. Gaffney opened the meeting to the public.

Ms. Dede Smith stated she was sorry that most of the board members from the City were not there that day. She stated she was reading the minutes from the last meeting, and what struck her was that in the extensive discussion of the next five to fifteen years of CIP, they seem to be so stuck in a 20th century model of municipal water.

Ms. Smith stated the board gave a nod to changing times, and it was progress when Rivanna finally recognized that water use has dropped per capita by about half, according to Mr. Mawyer's

statement in the minutes. She stated 10 years ago, it was 110 gallons per person and now, it is down to 60 gallons per person. She agreed, acknowledging that most of that drop is low-flow toilets.

Ms. Smith stated it is great they have cut water use in half in the first decades of the 21st century, yet they still use 60 gallons of treated water a day each, only a fraction of which needs to be what they call "drinking water." She stated most of it is still flushed down the toilet or is used for other purposes that do not need chlorinated, fluoridated GAC-filtered drinking water to do what they do.

Ms. Smith stated the fact is that they are still planning and paying for a model which assumes that in 50 years, they will still be flushing toilets with drinking water, which is a bit like saying they should be drilling an oil well now for fear that they will not have enough gasoline for their cars in 50 years. She stated like the Federal Energy Act that mandated the low-flow toilets, change will come, and it will be prompted by the crisis in the West and Southwest because they cannot keep doing this. She stated they simply do not have the water Rivanna has, not to mention (as Mr. O'Connell stated, per the minutes) it is tremendously expensive, with much of it going to store and manage the water they flush down the toilets.

Ms. Smith stated she remembers years ago that when her father was in his last days, the hospice nurse told her, "You know, you can live for a long time without food, but not more than a few days without water." She stated her dream is that someday, Rivanna will treat only enough water to consume, and it will be free, as it should be, because no one should have their water cut off because they cannot afford this 20th-century mindset.

Ms. Smith stated Rivanna talks a lot about using reserves to offset debt. She asked where the reserves come from and if they honor the cost-share agreements of each of the projects they are used for.

Mr. Gaffney closed Items From the Public.

7. RESPONSES TO PUBLIC COMMENT

Mr. Mawyer stated he would offer that Ms. Smith is correct that only a small amount of water Rivanna produces is actually used for drinking. He stated he has read statistics of 1% to 3%. He stated the other uses have to be managed also, with flushing, manufacturing, and other washing types of events, so it is a broad goal, as Ms. Smith mentioned, of trying to reduce the water they produce close to the amount that they consume.

Mr. Mawyer asked Mr. Wood if he wanted to comment about reserve funds.

Mr. Wood stated the reserves are built into the charges. He stated for debt service purposes, it would follow all the cost allocation agreements. He stated the way they charge for the CIP is they determine how much debt service is needed over a five-year period, and they then will issue bonds for certain years based on the need. He stated in certain years, they will create reserves while in other years, they may use some reserves to offset the rate. He stated this is a way to have an even charge over a five-year period, and this is how most of the reserves get generated. He stated if there is a cost allocation agreement that applies to a project in the CIP, Rivanna is following the

Agreement.

Mr. Wood stated the other way that reserves are created is in each rate center, there is a small amount of depreciation. He stated this is a way to generate reserves for replacement of equipment, line breaks that are unexpected, or (such as last year) to offset rate increases during an emergency. He stated those do not have a cost allocation agreement, but they do follow the budget allocations that are voted on by the board. He stated these are the two main ways that reserves are generated.

Mr. Mawyer stated Rivanna has financial policies that help drive a lot of those allocations and reserves.

Mr. Wood stated the financial policies detail out how those reserves are generated, stored, and spent.

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. Award of Term Contract for On-Call Maintenance Construction Services

f. Award of Term Contract – Reservoir Algal Management Services to Solitude Lake Management

Dr. Palmer moved that the board approve the Consent Agenda. The motion was seconded by Mr. O'Connell and passed unanimously (5-0). (Mr. Snook and Mr. Boyles were absent.)

9. OTHER BUSINESS

a. *Presentation: Buck Mountain Property Update; Water Manager, Andrea Bowles*

Ms. Andrea Bowles, Water Resources Manager, said the board would be hearing from her as well as from Ms. Valerie Long from Williams Mullen about some of the issues. She said Ms. Tristan Cleveland, the project manager for the property management plan from LPDA was also present to answer questions.

Ms. Bowles said a map of Albemarle County was shown on the screen, which showed where the Buck Mountain property is located. She said it is in the northern part of the County, near Earlysville and Free Union.

Ms. Bowles said Rivanna acquired 38 parcels in the Buck Mountain Creek Watershed between 1984 and 1987. She said the intent of getting those parcels was so RWSA could build a water supply reservoir. She said the parcels range in size from 1 acre to 160 acres. She said there is a total of 1,314 acres, and it cost the Authority $6.95 million.

Ms. Bowles said the presence of the James spinymussel was identified, and this is a federally listed endangered species, which prevented construction of the water supply reservoir because Rivanna would not be able to get a permit with the habitat being there.

Ms. Bowles said in terms of current use of the property, in 2012, Rivanna started working on its mitigation plan for the impacts they had at Ragged Mountain Reservoir, as construction of the new dam impacted streams and wetlands. She said they used the Buck Mountain property as the stream mitigation area. She said there are two spots with a combined total of 500 linear feet along Buck Mountain Creek, as shown in the picture on the slide, that a stream restoration was done. She said they did buffer enhancement and preservation of riparian habitat along 80,000 linear feet of stream. She said they planted over 40,500 trees, and they placed 600 acres into deed restrictions.

Ms. Bowles asked the board to keep in mind that this area is a mitigation project, and Rivanna is continually monitoring the area as required by DEQ and the Army Corps of Engineers until at least 2023.

Ms. Bowles said that in 2019, a previous landowner in that area came to the Board and requested that he be allowed to buy his original property back. She said in the discussion, Rivanna followed up with providing more information to the Board, and the Board asked staff to create a master plan, which is an evaluation of the uses of the Buck Mountain property with respect to the vision, mission, and values of Rivanna.

Ms. Bowles said whatever they do at the Buck Mountain property, they want to address it through the mission, values, and strategic plan goals of environmental stewardship, water quality protection, operational optimization in how they use those properties while being efficient and sustainable with use of the resources. She said this also matches the strategic plan goal of infrastructure and master planning, as the whole site was reviewed for water supply in the future.

Ms. Bowles said out of the master plan, staff came back to the board in August 2020 and presented some information about the property management issues. She said staff was asked to come up with a property management plan, which they are still working on and is not complete. She said staff did want to come to the board that day to talk about an update on the three separate topics of parcel leases, sale of the small lots and Buck Mountain House, and the Allen Farm Lane and bridge.

Ms. Bowles said the map on the screen showed the existing leases. She said there are 15 parcels that are leased by nine leaseholders all throughout the Buck Mountain property, shown in the color-coded sections on the map. She said the sections shown that were not colored are all parcels that are not currently leased. She said there are eight parcels in agriculture (cattle or horses), but the livestock are fenced out of the streams. She said many of these people use this for quiet enjoyment.

Ms. Bowles said currently, the leases generate about $1,900 per year, and staff would recommend to the Board that they update current leases to current market value when they are renewed. She said they are on two-year terms and as they turn over, staff plan to increase them up to market value.

Ms. Bowles said another thing staff plan to do is evaluate additional parcels for leases. She said those areas indicated on the map are those parts that have not yet been leased out.

Ms. Bowles presented the lease fee schedule, noting that this will increase revenue to somewhere in the range of $6,300 to $8,800 per year.

Ms. Bowles said she would talk about the creation and sale of residential lots. She said as part of the presentation for the master plan, LPDA came up with the parcels with the highest sale potential. She presented the four parcels LPDA suggested, noting these are located near the intersection of Catterton Road and Buck Mountain Road. She said the four different parcels altogether are assessed at $665,600, which puts the average value at $14,200 per acre.

Ms. Bowles said staff did additional work in this part of the property management plan and identified how many development rights there are on each of these parcels, which was listed on the slide. She said the middle parcel, 29-35H, is the parcel with the house on it. She said the little white squares show on the photo how a 2-acre lot would be able to fit on a parcel. She said if one were to imagine if the parcels were sold, what home sites might be available.

Ms. Bowles said running through the middle of all the parcels is Piney Creek. She said around that, in the green-shaded areas, are deed-restricted areas where there would be no development.

Ms. Bowles said the value of the house parcel and property is estimated to be between $243,000 and $325,000. She said this parcel itself is assessed for the land at $133,000 and the improvements at $196,000.

Ms. Bowles said based on the structural review of the house and LPDA evaluation of the house, taking many pictures that defined the condition, staff does not think the house can be reasonably repaired. She said staff is recommending to demolish the house and sell anywhere from one to five lots. These funds would be used to support property management expenses.

Ms. Bowles said she would speak to the topic of Allen Farm Lane and bridge. She presented a map and said Allen Farm Lane is at the very northern tip of the property that Rivanna owns, and it is a private road that goes through the section in the middle, around the creek. She said it also includes the bridge.

Ms. Bowles said LPDA came up with information on this bridge and property, and staff also consulted with Rivanna's attorney, Ms. Valerie Long. She said Ms. Long would discuss some legalities of owning the bridge and property, and she herself would then come back later to talk about recommendations.

Ms. Valerie Long said she is with Williams Mullen and works on real estate matters, among other things. She said she has been helping Ms. Bowles and others at the Authority on some questions about Allen Farm Lane.

Ms. Long presented an aerial map and said the parcels outlined in pink are those owned by the Authority. She said one could see Allen Farm Lane in green. She said it is a private road, meaning it is not owned nor maintained by VDOT, but it does connect to two different public roads that are maintained by VDOT. She said the one to the east, where the map said "Begin Private Road," is the junction where Allen Farm Lane intersection with Allen Road, which is a publicly maintained road. She said at the opposite end of Allen Farm Lane is another public road, which is Buck Mountain Ford Lane.

Ms. Long said the question came up about the bridge on Rivanna property that goes over the creek, which was labeled on the map. She said there are a number of landowners who live along Allen Farm Lane who use the lane to access the public roads on either end. She said based on her understanding, the majority (or perhaps all) of them proceed down Allen Farm Lane to the east, towards Allen Road, for their access to other public roads. She said the lane is not frequently used to access Buck Mountain Ford Lane. She said they have not had a chance to look into all of it yet, but it sounded as if access may be restricted in the form of a farm gate or some other method.

Ms. Long said the question was what obligation the Authority may have to maintain the portions of Allen Farm Lane that run through its parcels, particularly given that it does not use the road (or very minimally), and certainly not for trucks. She said the bridge was identified as being not up to current standards, which is not unusual for roads like this in Rural Areas.

Ms. Long said the question was about who has the obligation to maintain it and under Virginia law, the general rule is that barring any written agreement to the contrary between the parties, those who have the benefit of the right to use the easement (in this case, the road) have the underlying

obligation to maintain the road. She said to the extent that there are any road repairs necessary, including to the bridge, the Authority would not have any obligation to maintain that individually.

Ms. Long said there is also an old road maintenance agreement that was recorded in the land records in 1994 among a number of landowners who do use Allen Farm Lane. She said the Authority was not party to that agreement, and this was not clear as to why. She said it was in 1994, after the Authority acquired its title to the land.

Ms. Long said she believes the road maintenance agreement may have expired based on its terms, or it has at least been voided based on the stated terms. She said she understands that the landowners do annually collect fees from each other to generate a reserve fund for various road maintenance expenses, and the Authority does not participate in that.

Ms. Long said these people likely have the right to use the road, including the bridge, based on historical factors, implied easement right, and long-time use, but the Authority does not have any particular obligation to maintain the bridge or the road. She offered to answer any questions.

Mr. Gaffney asked who would stop the people from using the road. He asked if VDOT or a government agency decide that the road does not meet standards for a stream crossing or that someone needs to build a new bridge.

Ms. Long replied that VDOT would not because it does not have any ownership or maintenance obligations of any kind in the road, since it is a private road. She said whether the County could have any ability to restrict it, she did not believe this was the case, assuming that it meets at least the standards for ingress and egress.

Ms. Long said that typically, when rural subdivisions are created, the County processes part of the review of the subdivision ordinance, which contains rigid regulations about ensuring that before a subdivision plat is approved and recorded, a maintenance agreement is in place that is reviewed by the County Attorney, requires certain things like annual assessments of all the owners that use the easement and road, etc. She said this one was put in place before those procedures and regulations went into effect, so her understanding is that the County does not ever step up to maintain these roads or support them financially.

Ms. Long said she is not aware of any situation where the County would come in and require it to be upgraded, nor is she aware of any obligation or authority they would have for that. She said she believes it all falls on the owners.

Mr. Gaffney said there are owners being Rivanna, and then there are owners of the adjoining properties. He said in effect, he supposes that the property owners can continue to use this bridge

in its current, deteriorating condition until they can no longer actually pass over the bridge. He asked if this was correct.

Ms. Long said this is correct and according to her review of the property management report that LPDA prepared and the aerial images, it looks like there is a low water crossing that is utilized fairly regularly where vehicles cross through the stream if their vehicle is too large to utilize the bridge. She said her understanding is that trucks cannot use the bridge, given its width, so they use the low water crossing that is next to it.

Mr. Gaffney asked if because the easement is across the bridge, they can put a fence on both sides up to the bridge.

Ms. Long replied that she believed they could if it did not prohibit anyone's reasonable use of the road and the bridge. She said to the extent that such a fence would prohibit or prevent a large vehicle that cannot use the bridge from crossing the creek and using Allen Farm Lane, she does not believe that they could. She said as the owner of the land through which the road runs, the Authority could not prevent access (ingress and egress) along the road by any other owner who has a right to use it.

Ms. Long said there is a lot of gray area in terms of what constitutes reasonable use or restrictions. She said her understanding is there is a sign up saying "No Trucks," which she thinks is reasonable because it does not prevent a truck from using Allen Farm Lane, but prevents it from using a bridge that apparently is not designed to accommodate its weight, much less its width.

Ms. Bowles said LPDA looked at some alternatives Rivanna could consider in terms of the bridge and access to and from it. She said one of them is exactly what Mr. Gaffney stated about whether they could continue to use it up until it was no longer passable. She said Ms. Long confirmed this to be correct. She said LPDA looked at removal of the bridge and estimated that to physically remove the bridge to eliminate any liability or danger to people whouse it, it will cost approximately $50,000. She said replacing the bridge with a robust low water crossing was estimated at $50,000. She said LPDA and VHB estimated that a new bridge (to VDOT standards) would cost $800,000, which is extremely pricey. She said staff also identified that residents may have an alternate access, which is what Ms. Long was discussing.

Ms. Bowles said as an initial recommendation, they talked about removing the bridge in 2024, which is after the period of time in which Rivanna would need to access the property, as the mitigation plan will be finished and accepted; and/or considering bridge and road ownership transfer back to the people that originally had it.

Dr. Palmer said she did not think she had been out there in 5-6 years, but when she did, she always came in off of Buck Mountain Road and went over this bridge, as she had some friends who lived out there. She said she assumes that nothing has been done to the bridge, so it is probably in the same state that it was then.

Ms. Bowles said there were two structural analyses and some repairs done back in 2006.

Dr. Palmer said she has been out there since 2006. She said there is some kind of homeowners association agreement there, apparently, but Ms. Bowles said this may have run its course and no longer be valid because no one has renewed it. She asked if this was correct.

Ms. Long replied that it is not a homeowners association that has been established, but there is a written and recorded road maintenance agreement executed by six or so landowners whose land is to the west of the bridge. She said it has some unusual terms that provide that if certain things were to occur, it would automatically be void and terminated. She said one of them is that a majority of those who sign the agreement could just decide among themselves that it should be terminated; or it says that if any of the parcels that were part of that road maintenance agreement have another residence or dwelling constructed on the parcel, in that event, it would also become void.

Ms. Long said based on her research, it looks like at least one parcel was approved for a family subdivision several years ago, and at least one new dwelling unit has been constructed. She said it could be that the parties are nevertheless treating it like it is still in effect and providing the funds for the maintenance. She said she is not aware of any other issues. She said they have not done a full title search to see if perhaps there has been a more recent road maintenance agreement recorded, but this is the one they reviewed.

Dr. Palmer asked if she was correct to assume that if Rivanna decided to replace the bridge with something lesser than VDOT standards, a lawyer would tell them that this is dangerous from a liability standpoint.

Ms. Long replied that it would depend on what it was replaced with. She said if it is a new bridge or some sort of ford (robust low water crossing), this may be safer than a bridge that is not quite up to standards. She said there is also perhaps a question of how deteriorated the bridge really is. She said they know that it is not up to VDOT standards, as it was not built this way, but it may be that it is perfectly fine for regular passenger use.

Mr. Gaffney asked who the approval agencies would be for a bridge on this private road.

Ms. Long replied that she believed it would be the County, probably through its Engineering department. She noted that because this bridge does lie entirely within federal floodplain, for most

any type of replacement bridge or low water crossing (like a fjord), this would require a special use permit because it would entail the placement of fill in the floodplain.

Ms. Bowles asked if it would also require overview by DEQ and the Army Corps of Engineers.

Ms. Long said she suspected that it would as part of that process.

Dr. Palmer said she thinks they definitely need to know what the neighbors think about this before they do anything and hear from them. She said they certainly would not want to decide to remove it so that the neighbors only have one access without understanding what their situation is with respect to that. She said there may be willingness to take over the maintenance.

Ms. Bowles said that in her experience in working with the people who live there and are leasing from RWSA, she thinks this would be of concern for them. She said the costs may be difficult for them to bear. She said this was the feeling she got thus far, but staff could certainly engage more and collect information.

Dr. Palmer expressed that if one choice was to remove the bridge and there would be one access point, she believed it would be a good idea to talk with the neighbors.

Ms. Bowles said currently, the neighbors are using just one access because she believes the other two are gated off.

Ms. Hildebrand said there was mention of an alternate access, and she wanted to know if they really did have one, and what the detail was of the alternative if it were available.

Ms. Long presented a map that had been shown earlier, indicating to the top-right corner that said, “Potential Alternate Access Point.” She said to the right of that is a gate location. She said where the map says “Gate Location” is where there is apparently a gate, according to a physical survey that she found in the land records. She said based on Ms. Bowles’ conversations with some of the landowners along Allen Farm Lane, apparently, the gate there prohibits vehicles traveling along Allen Farm Lane from continuing and using the lane between the point where it says “Gate Location” and “Buck Mountain Ford Road.” She said this land is under private ownership.

Ms. Long said as best she knows at this point, those residents are not able to use that route of access, but she has not dug into that in detail. She said she does not know if the landowner has the legal right to prohibit access to the residents of Allen Farm Lane. She said they may or may not, and this would require some additional research of the deeds in question.

Ms. Long said as Dr. Palmer suggested, Ms. Bowles talked about meeting with and learning from the neighbors what, if any, use they do have and whether they have engaged with the owner of the land in question.

Ms. Long said she believes it is L&P Land Company that owns that property now, and there is the question of what legal documentation they may have to demonstrate the right to put that gate there or maintain it. She said it looks like it has been there for at least a few years. She said it may be that some of the residents along Allen Farm Lane actually do have access. She said they may have a key to the gate, or perhaps they stop to open it and close it behind them every day. She said this information has not been provided to her at this point.

Ms. Hildebrand asked if this road is generally a gravel one.

Dr. Palmer replied yes.

Ms. Long clarified that it may be that if the owners of Allen Farm Lane also have the right of ingress and egress through the entire span of Allen Farm Lane to Buck Mountain Ford Lane, this would obviously avoid the situation that she thinks everyone wants to avoid of cutting off any of the landowners' right of access. She said they cannot cut it off, but they certainly do not want to create a situation that makes it unreasonably difficult for them, either.

Mr. O'Connell asked where on the map showing the bridge the potential residential lots are located. He asked if it was in the upper quadrant right beside "Begin" or if it was somewhere else on the property.

Mr. O'Connell clarified that he was referring to the properties that they may entertain selling off of up to five lots.

Mr. Mawyer asked Ms. Bowles to point on the map to Catterton and Buck Mountain Roads.

Mr. O'Connell said this was helpful.

Mr. Mawyer asked to point to Allen Farm Lane again, noting that these points were a long way apart.

Dr. Palmer said she had some questions about the slide that contained the lots that Rivanna may potentially sell. She asked if they have considered putting them in conservation easement prior to selling so that they would lose those development rights.

Ms. Bowles replied that the parcels already have deed restrictions along the streams which prohibit development in those areas.

Mr. Mawyer clarified that the home lots are not in the deed restricted areas.

Dr. Palmer said she has talked to some of the Supervisors about this, and she certainly would not want to make this decision without talking to them more about this. She said the consideration was whether these could be put into conservation easements to remove those development rights so that they do not have clusters of homes there, recognizing that development rights do not necessarily translate into developable home sites.

Ms. Bowles replied that they had not looked at this.

Dr. Palmer said she would like to have Ms. Bowles take a look at this on one of those pacels. She said she thinks the Board of Supervisors will be very interested if the decision is to sell a lot. She said if the decision is not to sell anything, she still thinks they should be looking at putting them in conservation easement. She said she was not sure who would want a 16-acre or 19-acre lot (but perhaps the County would) to hold those conservation easements.

Dr. Palmer said with regard to the lot with the Buck Mountain House on it, there is one individual who really wants to purchase the house and restore it. She said clearly, this is not something staff recommends Rivanna do, but if they sold that piece of property with the Buck Mountain House on it without demolishing it, she wondered what the opinion or recommendation was there.

Ms. Bowles said they could do this, and one of the alternatives was to sell it as-is.

Dr. Palmer asked how many development rights are on that piece of property.

Ms. Bowles replied it is four.

Dr. Palmer said if this is something they are considering, she would like to talk to Ms. Bowles later about it. She said she recognized there were some issues with that, but she thinks it would be something they would want to discuss later with Ms. Bowles or Mr. Mawyer.

b. Presentation: Drinking Water Treatment Update; Director of Operations, Dave Tungate

Mr. David Tungate stated he would bring everyone up to speed on the status of the corrosion inhibitor project, which is something they had talked about over the last couple of years. He stated corrosion inhibitor is a product that they feed at the water treatment plants to reduce the corrosivity

of the drinking water and prevents lead and copper from leaching from premise pipes into the water.

Mr. Tungate stated there are several types of corrosion inhibitor products that are fed into drinking water systems. He stated Rivanna had been feeding a poly-phosphate product for more than 30 years. He stated the City and ACSA would support that they have exceptionally low lead and copper levels when they test for lead and copper in the drinking water. He stated an operational optimization was done about two years ago, and they began a transition to an ortho-phosphate product in December of 2019.

Mr. Tungate stated that as part of the transition, they had to feed a blended product that is part ortho- and part poly- for one year. He stated after one year, they transitioned to an ortho-phosphate product only. He stated they started in Crozet in early December of 2019 with the blended product, and they started the ortho-only product on February 1, 2021. He stated in Scottsville, they started the blended product in September 2020 and in the Urban System, they started the blended product in February 2021. He stated the transitions in Scottsville and the Urban System were delayed due to COVID, and they expect to transition to the ortho-only products in September of 2021 and in February of 2022, respectively.

Mr. Tungate noted that this has been done in complete cooperation with Rivanna's two partners (the City and ACSA), and it involves taking a lot of samples in the system at the water treatment plant and in the customers' homes.

Mr. Tungate stated he would provide an update on the water treatment plants. He stated there are six water treatment facilities, with South Rivanna and Observatory being the two largest and currently under renovation. He stated when Observatory is completed, it will be a 10-mgd facility. He stated Crozet is under renovation and will soon be substantially completed and increase from a 1 to 2 mgd facility. He stated the smallest facility is the Red Hill Well Field, which is at 6,000 gallons per day. He stated they staff these facilities and treat the drinking water with 26.4 water treatment plant operators.

Mr. Tungate stated the Water Operations staff use online instruments and hundreds of daily "grab samples" at the water treatment plants to measure water quality during the treatment plant process. He stated RWSA staff collect over 1,600 water samples annually in the distribution systems (Crozet, Scottsville, Urban System, and Red Hill).

Mr. Tungate stated in cooperation with the City and County, Rivanna has recently installed some water sampling stations so staff did not have to enter private homes, which came out of COVID safety protocol procedures. He stated they have installed sampling stations, with one being at the Field School of Charlottesville, in the Crozet system. He stated they have installed six other

sampling stations in the Urban System, which allows staff easier access to water sampling collection. He stated the photo on the slide showed one of Rivanna's lab employees, collecting a water sample.

Mr. Tungate stated there is a series of sampling stations that will be installed in the spring, which is the second set of sampling stations. He stated these will allow Rivanna staff to have better access to drinking water samples. He stated there will be one in the UVA system, next to the UVA Law School, and four others in the Urban System. He stated these will look just like the ones that were installed at the end of 2020.

Mr. Tungate stated the granular activated carbon (GAC) project is something Rivanna is proud of as any given day, there is 492,000 pounds of GAC in service. He stated they have competitively bid out GAC, and the replacement cost is $1.36 per pound for virgin GAC. He stated there is a reuse/recycling process where the carbon vendor will take their spent carbon and reactivate it. He stated they reheat it, fracture the carbon again, and expose additional exchange sites, which is what is called reactivated GAC and costs $1.07 per pound. He stated it was part of Rivanna's operational optimization to have these two choices available.

c. Presentation: Introduction of the FY 2021 - 2022 Operating Budget; Executive Director, Bill Mawyer

Mr. Mawyer presented a slide, pointing out how there were pictures shown of: 1 - an operator in a control center, who was using multiple screens to monitor the wastewater treatment processes, the operator can adjust equipment and control the process from those screens. 2 – a chemist was shown testing water and wastewater samples, 3 - Rivanna's staff going down into a confined space with appropriate protective safety equipment. He stated the yellow setup was a safety harness Rivanna has added as they have improved their safety program. He noted how the harness and yellow vest were hooked to make sure that the employee could be taken out of the confined space if necessary.

Mr. Mawyer stated the Water and Sewer proposed budget is $38.9 million for FY 22, which is a $1.8 million increase or 4.9% above FY 21. He stated expenses are expected to go up 5.9%, and debt service will increase 3.9%. He stated they are proposing to use $516,250 of reserve funds, which is different from FY 21 when they used $1.7 million in reserve funds for the purpose of having a zero charge increase to the City and to the ACSA. He stated as they move forward into the FY 22, however, they have reduced that contribution of reserve funds.

Mr. Mawyer stated the budget included a $3.7 million net budget change, of which $1.1 million is allocated to the City, and $2.6 million is allocated to the ACSA. He noted this is a large increase to the ACSA, at 14.3%. He stated it is also a large 7.6% increase to the City. He stated the asterisks on the slide indicate that per the 1983 Water Allocation Agreement, the City and ACSA report

their actual water and wastewater flows, which is how Rivanna proportions operating expenses to the two entities for the upcoming year. He stated this resulted in a $259,700 shift in costs, which equated to about a 1.8% decrease for the City, and a 1.4% increase for the ACSA for FY 22.

Mr. Mawyer stated when looking at the 14.3% to the ACSA, if the flow allocation had remained unchanged, this would have been 12.9%, and the City would have been 9.4%. He stated as they follow the 1983 Agreement, they are required to implement this allocation change based on the actual retail flows from FY 2020.

Mr. Mawyer stated the most expensive part of the operating budget is debt service, at $18.4 million (47%). He stated debt service pays for capital projects, some of which are underway, some being from the past, and some in the future. He stated there are personnel costs and salaries totaliing 24% of the budget. He stated operations and maintenance is 17% of expenses, or $6.3 million, which pays for chemicals, building repairs, equipment maintenance, and depreciation of facilities. He stated general services makes up 12% of the budget, which includes professional and nonprofessional services that Rivanna obtains, utilities, voice and data communications, permits, and the like.

Mr. Mawyer stated Rivanna's operating budget history is a fairly linear one that has grown from about $18 million in 2007 to almost $39 million proposed for 2022. He noted that the budget has more than doubled in 15 years.

Mr. Mawyer stated these funds are required to manage $280 million in facilities and equipment. He stated these include reservoirs, water and wastewater treatment plants, pump stations, 67 miles of water pipe, and 42 miles of wastewater collection pipe. He stated they control and manage the Lickinghole Creek Basin, which is a stormwater impoundment, and they currently have 93.4 employees.

Mr. Mawyer stated he wanted to celebrate what will be completed in FY 2021. He stated they celebrate that they have kept the water and wastewater treatment processes underway 24/7/365, despite the pandemic, which he is grateful for. He stated they are nearly finished upgrading the Crozet Water Treatment Plant from 1 to 2 mgd.

Mr. Mawyer stated they are nearly finished with the Rivanna Reservoir gate repairs. He stated they wrote an emergency response plan that the federal government required of them as part of the American Water Infrastructure Act of 2018. He stated they completed the Buck Mountain Property Master Plan that the board just heard some information about, and Rivanna is about to complete a Moores Creek Facilities Master Plan to plan for the future in terms of what wastewater facilities will be needed.

Mr. Mawyer stated the South Rivanna and Observatory Treatment Plants are under construction and renovation. He stated the Crozet Wastewater Flow Equalization Tank near the intersection of Routes 240 and 250 is under construction, which is an ACSA-only project for costs. He stated there is a pump station on Airport Road that will start construction later in 2021 for the next two years. He stated they are nearly done with the Ragged-to-Rivanna pipeline easement acquisitions, adding that he told the board in February how the small section of piping (1,200 feet) from the Birdwood pipe under Route 250 and Old Garth Road is the next section of pipe Rivanna would like to get under construction.

Mr. Mawyer stated he had mentioned the Central Waterline is a pipe they are trying to thread through the City to connect the Observatory Treatment Plant to the Pantops area and strengthen the City infrastructure along the way. He stated there is a major project at Beaver Creek to improve the spillway dam and bring it up to current regulations, and replace the raw water pump station and piping. He stated this is a 100%-ACSA cost project. He stated he mentioned this to explain why the City's cost went up 7.6% while the ACSA went up 14%. He stated there are projects in the current plan where ACSA is either paying 80% or 100%.

Mr. Mawyer stated there are also the Virginia Water Protection applications due for the Urban Water System that Rivanna expects to submit to DEQ in May. He stated in Crozet, they also have to apply to take more water out of the Beaver Creek Reservoir to serve the larger water treatment plant and the growth in Crozet. He stated in about six months or so, they will be submitting that application to DEQ. He stated these were some of the major projects for FY 22.

Mr. Mawyer stated some of the strategic investments proposed in the FY 22 budget include a 2% merit pool for staff, and three additional positions, including an Accounting Associate. He stated he mentioned in the budget history section that the budget has doubled over the last 16 years, and Mr. Wood and his staff have not added any accounting staff during that period, so they feel like the time has come in managing the finances of not just one but two authorities, the accounting staff need help.

Mr. Mawyer stated there is also a proposed IT Administrator position that will help Rivanna run its new asset management system, Cityworks, as well as a security system they are putting in for access control at the buildings and gates. He stated the IT Administrator will run the software and scanner at the new plants, as those demands are growing daily. He stated the board likely read in the newspaper about a month ago that a hacker tried to take over the control system for a water treatment plant in Florida. He stated the IT component of security is a big part of this position.

Mr. Mawyer stated thirdly, there is a Facilities Coordinator proposed to help with implementation of a new asset management system to make sure they are getting asset data in and valuable

predictive asset repair or replacement data out, the business process it takes in order for that to be successful, and the security system and similar projects.

Mr. Mawyer stated Rivanna is not self-insured for health insurance, so they project that their contribution to health insurance premiums will go up. He stated there is equipment that needs to be replace and engineering studies that need to be done to help them maintain and manage the facilities. He stated software licensing is needed for Cityworks. He stated the Observatory Water Treatment Plant lease will go up $75,000 in its renewal this year, and they have $65,000 allocated to help them do some of the projects at Buck Mountain they just spoke about earlier.

Mr. Mawyer stated the three positions proposed for Water and Sewer are the Accounting Associate, IT Administrator, and Facilities Coordinator (in the Engineering group).

Mr. Mawyer stated that in FY 21, there were 0% charge increases to the City and ACSA, but with the expenses projected for FY 22, they would be 7.6% for the City and 14.3% for the ACSA in FY 22. He stated the slide showed the remaining four years of the five-year CIP and what those charge increases would total. He stated he has met with Mr. O'Connell and Ms. Hildebrand quite a few times to review ways to minimize those expenses.

Mr. Mawyer stated the budget increase for the proposed year is 4.9%. He stated they are contributing cash reserves of $516,250 to help stabilize the charge increases. He stated the capital budget is $25.8 million in FY 22. He stated the FY 22-26 CIP is $170.1 million, noting that when he gave the board the CIP presentation in February, it was $169.7 million. He stated there was a small adjustment made for some work they thought they would finish this year, but they do not think it will. He stated it will not add any cost to the five-year CIP and is just a shifting from one year to the other of a few dollars. He stated they do anticipate new debt issuance of $129 million over the next five years.

Mr. Mawyer stated in February, Mr. Snook asked how this would affect the charge increases if the Rivanna-to-Ragged pipeline project was delayed five years. He stated Mr. Wood ran the rate model, and what was shown on the slide were small impacts to the City, with a 0.1% decrease in FY 25 if that project were delayed five years, rising to about a 0.7% difference in FY 28. He stated it is a little more of an increase to the ACSA because they are paying 80% of the cost of that project. He stated there is very little effect, and it goes down 0.3% in FY 25. He stated the most significant is a 2.1% difference in FY 29. He stated this is how the rates would be affected if the project were delayed by five years.

Mr. Mawyer stated the project is still in the CIP from 2027 to 2033, as presented in February. He stated they are not proposing that the project schedule change, but they were responding to Mr. Snook's question of how rates would be impacted if the project was defered for five years.

Mr. Mawyer stated Rivanna's outstanding debt continues to grow, although over the last few years, it has been coming down. He stated over the coming five years they expect to add $129 million.

Mr. Mawyer presented a graph showing that while the horizontal red line will go up, and debt service will increase in the coming years, they expect that there will still be an area underneath the debt service line to take on additional debt without a major increase in debt service costs.

Mr. Mawyer stated in summary, Rivanna is proposing a 4.9% increase to their budget for next year. He stated with that, the City allocation would be about $15.9 million, which would be a 7.6% increase. He stated the ACSA would have a $21.1 million allocation, which is a 14.3% increase above the FY 21 rates, which were previously held to a zero increase above the FY 20 rates.

Mr. Mawyer offered to answer any questions and once doing that, he would ask the board to consider approval of the resolution that authorizes the board to advertise the noted rates and charges for water and wastewater, for which the board would have a public hearing on May 25 at their regular meeting for final consideration.

Dr. Palmer thanked Mr. Mawyer. She stated the board has seen this a couple of times now, and it is informative. She stated she is happy for all the good financial planning that ACSA and Rivanna have done in order to get this infrastructure in or repaired over the coming years.

Mr. Mawyer thanked staff, Mr. Wood, Ms. Whitaker, Mr. Tungate, and Mr. McKalips (on the Solid Waste budget). He stated they all worked very hard trying to optimize, streamline, and be effective in the expenses and proposals. He stated he thinks it came together well, though he recognizes it is a significant increase for the City and ACSA. He stated they did their best to balance that, and they did help them achieve a zero charge increase from Rivanna last year.

Mr. O'Connell reminded everyone that the rates Mr. Mawyer presented on the screen are the wholesale rates that would be charged to the City and to the ACSA. He stated ACSA is completing its budget and through the use of some planned reserves, they were going to be looking at a retail rate increase of about 5%. He stated there is a major difference between what Mr. Mawyer shows with the wholesale rates and what will actually make its way to the customers. He stated he wanted to make sure that anyone listening in understood that.

Mr. O'Connell thanked staff for their great work, Mr. Mawyer and Mr. Wood in particular.

Mr. Gaffney stated this goes to Mr. O'Connell and the ACSA planning for many years to build reserves to offset some of the big improvements and new projects that are happening out in the County.

Mr. O'Connell moved to authorize advertisement of the preliminary rate schedule for public hearing on May 25. The motion was seconded by Dr. Palmer and passed unanimously (5-0). (Mr. Boyles and Mr. Snook were absent.)

10. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

There were no items.

11. CLOSED MEETING

There was no closed meeting.

12. ADJOURNMENT

At 4:08 p.m., Dr. Palmer moved to adjourn the meeting of the Rivanna Water and Sewer Authority. The motion was seconded by Mr. O'Connell and passed unanimously (5-0). (Mr. Boyles and Mr. Snook were absent.)

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: **APRIL 27, 2021**

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

COVID Vaccinations

80% of our water/sewer staff requested vaccinations, and from that group, 98% have received one or more vaccinations.

Safety Training

A Sr Safety Representative from the Virginia Risk Sharing Association (our risk insurance carrier) recently provided "Incident Investigation Training" for our management team.

STRATEGIC PLAN GOAL: INFRASTRUCTURE AND MASTER PLANNING

Central Water Line

We continue to work with City and ACSA staff to refine a route through the City for this 24" finished water distribution pipe needed to strengthen the urban drinking water system.

North Rivanna Water Treatment Plant

We continue to work with City and ACSA staff to refine cost effective options to provide significant upgrades needed vs. removal of this plant from our urban water system, without compromising reliability and customer service.

S. Rivanna to Ragged Mtn Reservoir Water Line

We have obtained agreements with VDOT and easements for 6 miles of the 8 mile long 36" raw water pipeline from SRR to the new raw water pump station located near RMR. The Albemarle County School Board granted a 1 mile long easement located behind Greer Elementary School on April 22, 2021. Discussions continue with UVA Foundation and 3 private owners and for the remaining 2 miles.

Beaver Creek Dam, Pump Station and Pipeline Project

We recently walked the proposed pump station sites with the Clark family to visualize site conditions and topography.

STRATEGIC PLAN GOAL: COMMUNICATION AND COLLABORATION

Regional Utility Managers Meeting

We hosted the 3rd annual NW Central Va Utility Managers coordination meeting in March. Attendees included managers from the City Utilities Department and Culpeper County, as well as from Harrisonburg, Augusta and Louisa Service Authorities.

Facilities Tour

We recently assisted the ACSA to provide a tour of the Scottsville Water and Wastewater treatment plants for Ms. Price, Scottsville Representative to the Albemarle Board of Supervisors.

Scottsville Town Council

We recently provided a presentation to the Scottsville Town Council to review the public drinking water and wastewater treatment facilities which serve the town.

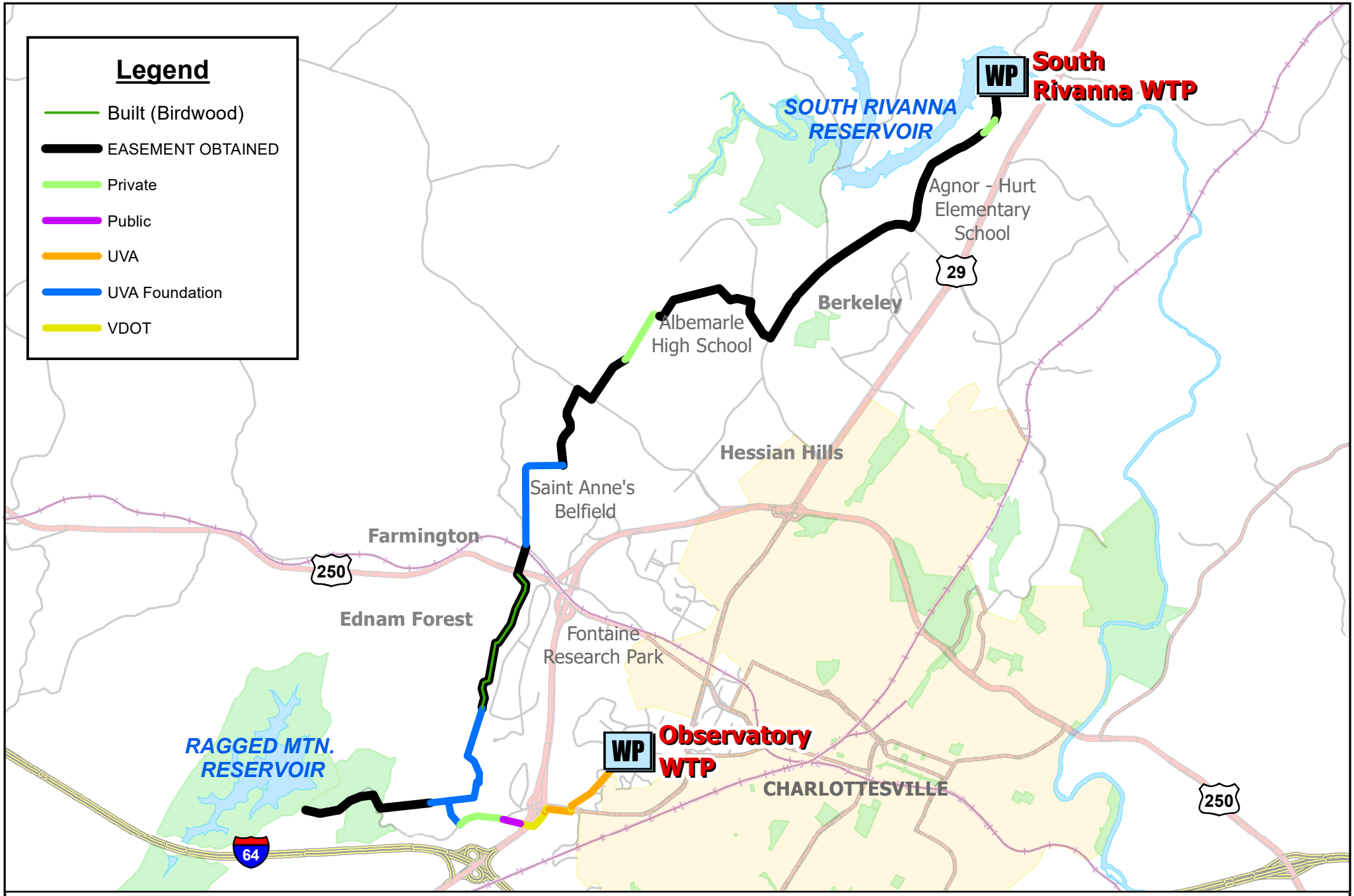
STRATEGIC PLAN GOAL: OPERATIONAL OPTIMIZATION

Per- and Polyfluorinated Alkyl Compounds (PFAS)

We recently completed our 4th annual testing program in our reservoirs and water treatment plants. Results indicate these compounds were well below the EPA health advisory level.

Electronic Filing Service for Easement Documents

The Engineering Department has begun using an electronic filing service to record easements. This service will increase efficiencies, and maintain control of the original documents, since documents will no longer have to be hand delivered to the Clerks of the Courts.



Preliminary South Rivanna Reservoir to Ragged Mountain Reservoir Water Line

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Miles
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Date: 4/12/2021

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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: **FEBRUARY MONTHLY FINANCIAL SUMMARY – FY 2021**

DATE: **APRIL 27, 2021**

Urban Water flow and rate revenues are in line with budget estimates through February, and Urban Wastewater flow and rate revenues are 16% over budget. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	$ 5,205,578	$ 6,761,864	$ 1,524,405	$ 13,491,847
Expenses	(5,614,202)	(5,775,346)	(1,505,565)	(12,895,113)
Surplus (deficit)	$ (408,624)	$ 986,518	$ 18,840	$ 596,734
Debt Service				
Revenues	$ 4,591,683	$ 5,688,512	$ 1,104,675	$ 11,384,870
Expenses	(4,620,958)	(5,694,561)	(1,112,095)	(11,427,614)
Surplus (deficit)	$ (29,275)	$ (6,049)	$ (7,420)	$ (42,744)
Total				
Revenues	$ 9,797,261	$ 12,450,376	$ 2,629,080	$ 24,876,717
Expenses	(10,235,160)	(11,469,907)	(2,617,660)	(24,322,727)
Surplus (deficit)	$ (437,899)	$ 980,469	$ 11,420	$ 553,990

When reviewing the Authority as a whole, operating revenues are $991,600 over budget (7.6%), and operating expenses are $476,500 over budget (3.7%).

A. Annual Transactions

Some revenues and expenses are over the prorated year-to-date budget due to one-time annual payments made or revenues received for the year. 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 received annually from

the County. Annual payments made for certain leases and maintenance agreements and some quarterly insurance premiums are good examples.

B. Personnel Costs (various departments) – Unbudgeted Special Award bonuses were paid to staff in October, and unbudgeted merit pool salary increases went into effect in January. Maintenance department salaries and overtime pay were underbudgeted this year, and the Administration department is over budget on Employee Education and Training costs.

C. Professional Services (Urban Water, Crozet Water, Urban Wastewater – pages 2,3,5) – Urban Water incurred $212,000 of unbudgeted professional fees, but $110,000 of that amount has been refunded by UVA pursuant to our Supplemental Water Treatment Systems Study, Design and Construction Agreement, and recorded as miscellaneous revenue. The remaining $102,000 of unbudgeted costs include fees for engineering and technical services related to Virginia Water Permit renewal and Buck Mountain land use planning. Urban Wastewater has spent $47,000 on unbudgeted engineering and technical services related to updating the flow model. Crozet Water is slightly over the annual budget in this category.

D. Other Services and Charges (Urban Water and Wastewater – pages 2 and 5) – Urban Water incurred $57,000 of unbudgeted watershed management costs due to unexpected charges related to mitigation plan compliance at the Moores Creek wetland site. Urban Water and Urban Wastewater utilities are running higher than anticipated. Urban Wastewater is $16,000 over the annual budget for lab analysis costs and safety programs, and $16,000 over the prorated budget for odor control costs.

E. Operations and Maintenance (Urban Water, Crozet Water, Glenmore Wastewater, Administration – pages 2,3,6,8) – Urban Water is $363,000 over its total annual budget for Pipeline and Appurtenances repairs due to several major line breaks, and Glenmore had some unexpected equipment repair costs. The Administration building is undergoing some unbudgeted remodeling costs to create more offices for staff. Crozet Water incurred $15,000 of unbudgeted instrumentation and metering costs and is over the prorated budget for chemicals and maintenance costs.

F. Communications (Urban Water, Crozet Water – pages 2-3) – Urban Water and Crozet Water data lines were upgraded to fiber, and the annual costs will be much higher going forward.

G. Miscellaneous Revenue (Urban Water – page 2) – Urban Water's Miscellaneous Revenue is mostly legal settlement revenue ($128,000) and UVA's reimbursement of professional fees ($110,000 as explained in Note C).

Attachments

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021
Fiscal Year 2021

Consolidated
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2021*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 17,381,293	$ 11,587,529	$ 12,464,500	$ 876,971	7.57%
Lease Revenue		105,000	70,000	80,922	10,922	15.60%
Admin., Maint. & Engineering Revenue		545,000	363,333	422,742	59,409	16.35%
Other Revenues	C, G	542,788	361,859	693,330	331,471	91.60%
Use of Reserves-GAC		535,220	356,813	85,600	(271,213)	-76.01%
Rate Stabilization Reserves		240,027	160,018	160,018	-	0.00%
Interest Allocation		35,100	23,400	7,478	(15,922)	-68.04%
Total Operating Revenues		**$ 19,384,428**	**$ 12,922,952**	**$ 13,914,589**	**$ 991,637**	**7.67%**
Expenses						
Personnel Cost	B	$ 8,913,257	$ 5,860,622	$ 5,955,955	$ (95,332)	-1.63%
Professional Services	C	602,700	401,800	646,220	(244,420)	-60.83%
Other Services & Charges	D	3,136,780	2,091,187	2,228,604	(137,418)	-6.57%
Communications	F	161,020	107,347	145,341	(37,994)	-35.39%
Information Technology		392,950	261,967	191,004	70,963	27.09%
Supplies		47,045	31,363	27,062	4,301	13.71%
Operations & Maintenance	A, E	4,918,416	3,278,944	3,370,974	(92,030)	-2.81%
Equipment Purchases		352,250	234,833	179,361	55,473	23.62%
Depreciation		860,000	573,333	573,333	(0)	0.00%
Reserve Transfers		-	-	-	-	
Total Operating Expenses		**$ 19,384,418**	**$ 12,841,396**	**$ 13,317,854**	**$ (476,458)**	**-3.71%**
Operating Surplus/(Deficit)		**$ 10**	**$ 81,556**	**$ 596,735**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 15,861,016	$ 10,574,011	$ 10,574,016	$ 5	0.00%
Use of Reserves		954,652	636,435	636,435	-	
Septage Receiving Support - County		109,440	72,960	109,441	36,481	50.00%
Buck Mountain Lease Revenue		1,600	1,067	-	(1,067)	-100.00%
Trust Fund Interest		135,900	90,600	12,439	(78,161)	-86.27%
Reserve Fund Interest		666,000	444,000	52,539	(391,461)	-88.17%
Total Debt Service Revenues		**$ 17,728,608**	**$ 11,819,072**	**$ 11,384,870**	**$ (434,202)**	**-3.67%**
Debt Service Costs						
Total Principal & Interest		$ 14,380,219	$ 9,586,813	$ 9,586,813	$ -	0.00%
Reserve Additions-Interest		666,000	444,000	52,539	391,461	88.17%
Debt Service Ratio Charge		725,000	483,333	483,333	-	0.00%
Reserve Additions-CIP Growth		1,957,394	1,304,929	1,304,929	-	0.00%
Total Debt Service Costs		**$ 17,728,613**	**$ 11,819,075**	**$ 11,427,614**	**$ 391,461**	**3.31%**
Debt Service Surplus/(Deficit)		**$ (5)**	**$ (3)**	**$ (42,745)**		

Summary

Total Revenues	$ 37,113,036	$ 24,742,024	$ 25,299,459	$ 557,435	2.25%
Total Expenses	37,113,031	24,660,472	24,745,468	(84,997)	-0.34%
Surplus/(Deficit)	**$ 5**	**$ 81,552**	**$ 553,990**		

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021

Urban Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2021*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 7,118,541	$ 4,745,694	$ 4,745,414	$ (280)	-0.01%
Lease Revenue		75,000	50,000	59,900	9,900	19.80%
Miscellaneous	C, G	-	-	248,718	248,718	
Use of Reserves-GAC		500,000	333,333	85,600	(247,733)	-74.32%
Rate Stabilization Reserves		94,254	62,836	62,836	-	0.00%
Interest Allocation		14,600	9,733	3,111	(6,623)	-68.04%
Total Operating Revenues		**$ 7,802,395**	**$ 5,201,597**	**$ 5,205,578**	**$ 3,982**	**0.08%**
Expenses						
Personnel Cost	B	$ 1,918,361	$ 1,262,763	$ 1,306,496	$ (43,733)	-3.46%
Professional Services	C	134,000	89,333	345,987	(256,654)	-287.30%
Other Services & Charges	D	738,130	492,087	598,033	(105,946)	-21.53%
Communications	F	76,000	50,667	69,803	(19,136)	-37.77%
Information Technology		85,500	57,000	30,945	26,055	45.71%
Supplies		5,745	3,830	4,934	(1,104)	-28.83%
Operations & Maintenance	A, E	2,159,300	1,439,533	1,565,217	(125,684)	-8.73%
Equipment Purchases		28,000	18,667	15,289	3,378	18.09%
Depreciation		300,000	200,000	200,000	-	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 5,445,036	$ 3,613,880	$ 4,136,704	$ (522,824)	-14.47%
Allocation of Support Departments		2,357,359	1,551,620	1,477,498	74,122	4.78%
Total Operating Expenses		**$ 7,802,395**	**$ 5,165,500**	**$ 5,614,202**	**$ (448,702)**	**-8.69%**
Operating Surplus/(Deficit)		**$ 0**	**$ 36,097**	**$ (408,623)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 6,178,645	$ 4,119,097	$ 4,119,064	$ (33)	0.00%
Trust Fund Interest		49,000	32,667	4,491	(28,176)	-86.25%
Reserve Fund Interest		339,600	226,400	26,795	(199,605)	-88.16%
Use of Reserves		662,000	441,333	441,333	-	0.00%
Lease Revenue		1,600	1,067	-	(1,067)	-100.00%
Total Debt Service Revenues		**$ 7,230,845**	**$ 4,820,563**	**$ 4,591,683**	**$ (228,881)**	**-4.75%**
Debt Service Costs						
Total Principal & Interest		$ 5,215,445	$ 3,476,963	$ 3,476,963	$ -	0.00%
Reserve Additions-Interest		339,600	226,400	26,795	199,605	88.16%
Debt Service Ratio Charge		400,000	266,667	266,667	-	0.00%
Reserve Additions-CIP Growth		1,275,800	850,533	850,533	-	0.00%
Total Debt Service Costs		**$ 7,230,845**	**$ 4,820,563**	**$ 4,620,958**	**$ 199,605**	**4.14%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ (29,275)**		
Rate Center Summary						
Total Revenues		$ 15,033,240	$ 10,022,160	$ 9,797,261	$ (224,899)	-2.24%
Total Expenses		15,033,240	9,986,063	10,235,160	(249,097)	-2.49%
Surplus/(Deficit)		**$ 0**	**$ 36,097**	**$ (437,899)**		
Costs per 1000 Gallons		$ 2.30		$ 2.48		
Operating and DS		$ 4.42		$ 4.52		
Thousand Gallons Treated		3,397,700	2,265,133	2,265,113	(20)	0.00%
or						
Flow (MGD)		9.309		9.321		

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021

Crozet Water Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2021	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 1,028,808	$ 685,872	$ 685,872	$ -	0.00%
Lease Revenues		30,000	20,000	21,022	1,022	5.11%
Use of Reserves-GAC		26,000	17,333	-	(17,333)	-100.00%
Interest Allocation		2,100	1,400	441	(959)	-68.49%
Total Operating Revenues		**$ 1,086,908**	**$ 724,605**	**$ 707,335**	**$ (17,270)**	**-2.38%**
Expenses						
Personnel Cost	**B**	$ 302,598	$ 199,175	$ 208,154	$ (8,979)	-4.51%
Professional Services	**C**	15,000	10,000	15,983	(5,983)	-59.83%
Other Services & Charges		142,360	94,907	64,565	30,341	31.97%
Communications	**F**	5,600	3,733	12,250	(8,517)	-228.13%
Information Technology		2,250	1,500	489	1,011	67.40%
Supplies		1,350	900	1,193	(293)	-32.59%
Operations & Maintenance	**E**	353,292	235,528	277,704	(42,176)	-17.91%
Equipment Purchases		3,000	2,000	2,000	-	0.00%
Depreciation		40,000	26,667	26,667	0	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 865,450	$ 574,409	$ 609,005	$ (34,596)	-6.02%
Allocation of Support Departments		221,456	145,776	139,751	6,026	4.13%
Total Operating Expenses		**$ 1,086,906**	**$ 720,186**	**$ 748,756**	**$ (28,570)**	**-3.97%**
Operating Surplus/(Deficit)		**$ 2**	**$ 4,420**	**$ (41,421)**		

Debt Service Budget vs. Actual

	Budget FY 2021	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues					
Debt Service Rate Revenue	$ 1,311,312	$ 874,208	$ 874,208	$ -	0.00%
Trust Fund Interest	11,600	7,733	1,057	(6,676)	-86.33%
Use of Reserves	198,252	132,168	132,168	-	0.00%
Reserve Fund Interest	15,700	10,467	1,261	(9,206)	-87.95%
Total Debt Service Revenues	**$ 1,536,864**	**$ 1,024,576**	**$ 1,008,694**	**$ (15,882)**	**-1.55%**
Debt Service Costs					
Total Principal & Interest	$ 1,217,569	$ 811,713	$ 811,713	$ -	0.00%
Reserve Additions-Interest	15,700	10,467	1,261	9,206	87.95%
Reserve Additions-CIP Growth	303,600	202,400	202,400	-	0.00%
Total Debt Service Costs	**$ 1,536,869**	**$ 1,024,579**	**$ 1,015,374**	**$ 9,206**	**0.90%**
Debt Service Surplus/(Deficit)	**$ (5)**	**$ (3)**	**$ (6,679)**		

Rate Center Summary

	Budget FY 2021	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Total Revenues	$ 2,623,772	$ 1,749,181	$ 1,716,029	$ (33,152)	-1.90%
Total Expenses	2,623,775	1,744,765	1,764,130	(19,365)	-1.11%
Surplus/(Deficit)	**$ (3)**	**$ 4,416**	**$ (48,100)**		
Costs per 1000 Gallons	$ 5.47		$ 4.91		
Operating and DS	$ 13.20		$ 11.57		
Thousand Gallons Treated	198,830	132,553	152,426	19,873	14.99%
Flow (MGD)	0.545		0.627		

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021

Scottsville Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2021*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 520,812	$ 347,208	$ 347,208	$ -	0.00%
Use of Reserves-GAC		9,220	6,147	-	$ (6,147)	-100.00%
Interest Allocation		1,000	667	217	(450)	-67.47%
Total Operating Revenues		**$ 531,032**	**$ 354,021**	**$ 347,425**	**$ (6,596)**	**-1.86%**
Expenses						
Personnel Cost	**B**	$ 184,031	$ 121,116	$ 126,970	$ (5,854)	-4.83%
Professional Services		71,000	47,333	2,769	44,565	94.15%
Other Services & Charges		22,780	15,187	18,582	(3,395)	-22.36%
Communications		4,600	3,067	6,380	(3,313)	-108.03%
Information Technology		650	433	2,024	(1,590)	-367.03%
Supplies		200	133	42	91	68.16%
Operations & Maintenance		87,662	58,441	47,773	10,668	18.25%
Equipment Purchases		2,500	1,667	1,667	(0)	0.00%
Depreciation		20,000	13,333	13,333	(0)	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 393,423	$ 260,711	$ 219,540	$ 41,171	15.79%
Allocation of Support Departments		137,604	90,611	88,607	2,004	2.21%
Total Operating Expenses		**$ 531,027**	**$ 351,322**	**$ 308,147**	**$ 43,174**	**12.29%**
Operating Surplus/(Deficit)		**$ 5**	**$ 2,700**	**$ 39,278**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 128,749	$ 85,833	$ 85,832	$ (1)	0.00%
Trust Fund Interest		1,200	800	112	(688)	-86.01%
Reserve Fund Interest		8,300	5,533	630	(4,903)	-88.61%
Total Debt Service Revenues		**$ 138,249**	**$ 92,166**	**$ 86,574**	**$ (5,592)**	**-6.07%**
Debt Service Costs						
Total Principal & Interest		$ 126,032	$ 84,021	$ 84,021	$ -	0.00%
Reserve Additions-Interest		8,300	5,533	630	4,903	
Reserve Additions-CIP Growth		3,917	2,611	2,611	-	
Total Debt Service Costs		**$ 138,249**	**$ 92,166**	**$ 87,263**	**$ 4,903**	**5.32%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ (689)**		
Rate Center Summary						
Total Revenues		$ 669,281	$ 446,187	$ 433,999	$ (12,188)	-2.73%
Total Expenses		669,276	443,488	395,410	48,077	10.84%
Surplus/(Deficit)		**$ 5**	**$ 2,700**	**$ 38,589**		
Costs per 1000 Gallons		$ 30.79		$ 21.79		
Operating and DS		$ 38.81		$ 27.97		
Thousand Gallons Treated		17,245	11,497	14,139	2,642	22.98%
or						
Flow (MGD)		0.047		0.058		

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021

Urban Wastewater Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2021*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 8,033,620	$ 5,355,747	$ 6,232,998	$ 877,251	16.38%
Stone Robinson WWTP		22,788	15,192	9,792	(5,400)	-35.55%
Septage Acceptance		475,000	316,667	345,598	28,931	9.14%
Nutrient Credits		45,000	30,000	86,999	56,999	190.00%
Rate Stabilization Reserve		121,233	80,822	80,822	-	0.00%
Miscellaneous Revenue		-	-	2,224	2,224	
Interest Allocation		16,100	10,733	3,432	(7,301)	-68.02%
Total Operating Revenues		**$ 8,713,741**	**$ 5,809,161**	**$ 6,761,864**	**$ 952,703**	**16.40%**
Expenses						
Personnel Cost		$ 1,299,876	$ 854,934	$ 828,606	$ 26,329	3.08%
Professional Services	C	143,400	95,600	190,290	(94,690)	-99.05%
Other Services & Charges	D	2,020,300	1,346,867	1,426,780	(79,914)	-5.93%
Communications		10,700	7,133	9,239	(2,106)	-29.52%
Information Technology		69,500	46,333	11,716	34,617	74.71%
Supplies		1,900	1,267	1,365	(98)	-7.76%
Operations & Maintenance		1,767,000	1,178,000	1,157,757	20,243	1.72%
Equipment Purchases		125,250	83,500	48,738	34,762	41.63%
Depreciation		470,000	313,333	313,333	(0)	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 5,907,926	$ 3,926,968	$ 3,987,825	$ (60,857)	-1.55%
Allocation of Support Departments		2,805,815	1,847,211	1,787,521	59,690	3.23%
Total Operating Expenses		**$ 8,713,741**	**$ 5,774,178**	**$ 5,775,346**	**$ (1,167)**	**-0.02%**
Operating Surplus/(Deficit)		**$ (0)**	**$ 34,982**	**$ 986,518**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 8,229,090	$ 5,486,060	$ 5,486,096	$ 36	0.00%
Septage Receiving Support - County		109,440	72,960	109,441	36,481	50.00%
Trust Fund Interest		74,000	49,333	6,767	(42,566)	-86.28%
Use of Reserves		94,400	62,933	62,933	-	0.00%
Reserve Fund Interest		295,200	196,800	23,275	(173,525)	-88.17%
Total Debt Service Revenues		**$ 8,802,130**	**$ 5,868,087**	**$ 5,688,512**	**$ (179,575)**	**-3.06%**
Debt Service Costs						
Total Principal & Interest		$ 7,812,130	$ 5,208,087	$ 5,208,087	$ -	0.00%
Reserve Additions-Interest		295,200	196,800	23,275	173,525	88.17%
Debt Service Ratio Charge		325,000	216,667	216,667	-	0.00%
Reserve Additions-CIP Growth		369,800	246,533	246,533	-	0.00%
Total Debt Service Costs		**$ 8,802,130**	**$ 5,868,087**	**$ 5,694,561**	**$ 173,525**	**2.96%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ (6,049)**		
Rate Center Summary						
Total Revenues		$ 17,515,871	$ 11,677,247	$ 12,450,376	$ 773,129	6.62%
Total Expenses		17,515,871	11,642,265	11,469,907	172,358	1.48%
Surplus/(Deficit)		**$ (0)**	**$ 34,982**	**$ 980,469**		
Costs per 1000 Gallons		$ 2.57		$ 2.20		
Operating and DS		$ 5.17		$ 4.36		
Thousand Gallons Treated		3,390,400	2,260,267	2,631,066	370,799	16.41%
or						
Flow (MGD)		9.289		10.827		

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2021*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 370,524	$ 247,016	$ 247,016	$ -	0.00%
Rate Stabilization Reserve		24,540	16,360	16,360	-	0.00%
Interest Allocation		700	467	150	(317)	-67.95%
Total Operating Revenues		**$ 395,764**	**$ 263,843**	**$ 263,526**	**$ (317)**	**-0.12%**
Expenses						
Personnel Cost		$ 97,804	$ 64,346	$ 60,281	$ 4,064	6.32%
Professional Services		24,200	16,133	87	16,046	
Other Services & Charges		36,800	24,533	24,134	399	1.63%
Communications		3,200	2,133	2,456	(323)	-15.13%
Information Technology		4,050	2,700	915	1,785	66.12%
Supplies		-	-	654	(654)	
Operations & Maintenance	E	109,100	72,733	92,016	(19,282)	-26.51%
Equipment Purchases		3,700	2,467	2,467	0	0.00%
Depreciation		10,000	6,667	6,667	0	0.00%
Subtotal Before Allocations		$ 288,854	$ 191,712	$ 189,676	$ 2,036	1.06%
Allocation of Support Departments		106,907	70,423	69,771	653	0.93%
Total Operating Expenses		**$ 395,761**	**$ 262,136**	**$ 259,447**	**$ 2,689**	**1.03%**
Operating Surplus/(Deficit)		**$ 3**	**$ 1,707**	**$ 4,079**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 3,778	$ 2,519	$ 2,520	$ 1	0.05%
Trust Fund Interest		-	-	-	-	
Reserve Fund Interest		3,000	2,000	263	(1,737)	-86.87%
Total Debt Service Revenues		**$ 6,778**	**$ 4,519**	**$ 2,783**	**$ 1**	**0.03%**
Debt Service Costs						
Total Principal & Interest		$ 1,579	$ 1,053	$ 1,053	$ -	0.00%
Reserve Additions-CIP Growth		2,199	1,466	1,466	-	0.00%
Reserve Additions-Interest		3,000	2,000	263	1,737	86.87%
Total Debt Service Costs		**$ 6,778**	**$ 4,519**	**$ 2,781**	**$ 1,737**	**38.45%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 1**		

Rate Center Summary

Total Revenues	$ 402,542	$ 268,361	$ 266,308	$ (2,053)	-0.77%
Total Expenses	402,539	266,654	262,228	4,426	1.66%
Surplus/(Deficit)	**$ 3**	**$ 1,707**	**$ 4,080**		
Costs per 1000 Gallons	$ 9.51		$ 8.56		
Operating and DS	$ 9.67		$ 8.65		
Thousand Gallons Treated	41,629	27,753	30,321	2,568	**9.25%**
or					
Flow (MGD)	0.114		0.125		

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2021	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 308,988	$ 205,992	$ 205,992	$ -	0.00%
Interest Allocation		600	400	127	(273)	-68.23%
Total Operating Revenues		**$ 309,588**	**$ 206,392**	**$ 206,119**	**$ (273)**	**-0.13%**
Expenses						
Personnel Cost		$ 97,317	$ 64,021	$ 60,281	$ 3,740	5.84%
Professional Services		2,100	1,400	87	1,313	93.76%
Other Services & Charges		23,710	15,807	18,971	(3,164)	-20.02%
Communications		3,720	2,480	2,607	(127)	-5.13%
Information Technology		1,500	1,000	478	522	52.22%
Supplies		500	333	0	333	99.90%
Operations & Maintenance		57,812	38,541	26,571	11,970	31.06%
Equipment Purchases		3,700	2,467	2,467	0	0.00%
Depreciation		20,000	13,333	13,333	(0)	0.00%
Subtotal Before Allocations		$ 210,359	$ 139,382	$ 124,796	$ 14,586	10.46%
Allocation of Support Departments		99,228	65,360	64,419	941	1.44%
Total Operating Expenses		**$ 309,587**	**$ 204,742**	**$ 189,215**	**$ 15,527**	**7.58%**
Operating Surplus/(Deficit)		**$ 1**	**$ 1,650**	**$ 16,904**		

Debt Service Budget vs. Actual

	Budget FY 2021	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues					
Debt Service Rate Revenue	$ 9,442	$ 6,295	$ 6,296	$ 1	0.02%
Trust Fund Interest	100	67	12	(54)	-81.40%
Reserve Fund Interest	4,200	2,800	315	(2,485)	-88.74%
Total Debt Service Revenues	**$ 13,742**	**$ 9,161**	**$ 6,624**	**$ (2,538)**	**-27.70%**
Debt Service Costs					
Total Principal & Interest	$ 7,464	$ 4,976	$ 4,976	$ -	0.00%
Reserve Additions-Interest	4,200	2,800	315	2,485	88.74%
Estimated New Principal & Interest	2,078	1,385	1,385	-	0.00%
Total Debt Service Costs	**$ 13,742**	**$ 9,161**	**$ 6,677**	**$ 2,485**	**27.12%**
Debt Service Surplus/(Deficit)	**$ -**	**$ -**	**$ (53)**		

Rate Center Summary

	Budget FY 2021	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Total Revenues	$ 323,330	$ 215,553	$ 212,743	$ (2,811)	-1.30%
Total Expenses	323,329	213,903	195,891	18,012	8.42%
Surplus/(Deficit)	**$ 1**	**$ 1,650**	**$ 16,851**		
Costs per 1000 Gallons	$ 13.39		$ 9.07		
Operating and DS	$ 13.98		$ 9.39		
Thousand Gallons Treated	23,126	15,417	20,859	5,442	**35.30%**
or					
Flow (MGD)	0.063		0.086		

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021

Administration

Operating Budget vs. Actual

	Notes	*Budget FY 2021*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ 543,000	$ 362,000	$ 362,000	$ -	0.00%
Miscellaneous Revenue		2,000	1,333	48,131	46,797	3509.81%
Total Operating Revenues		**$ 545,000**	**$ 363,333**	**$ 410,131**	**$ 46,797**	**12.88%**
Expenses						
Personnel Cost	**B**	$ 1,906,136	$ 1,252,137	$ 1,257,268	$ (5,131)	-0.41%
Professional Services		183,000	122,000	81,744	40,256	33.00%
Other Services & Charges		80,600	53,733	53,047	687	1.28%
Communications		21,500	14,333	14,091	242	1.69%
Information Technology		177,000	118,000	115,967	2,033	1.72%
Supplies		24,250	16,167	14,416	1,751	10.83%
Operations & Maintenance	**E**	75,200	50,133	74,321	(24,188)	-48.25%
Equipment Purchases		24,000	16,000	9,333	6,667	41.67%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 2,491,686**	**$ 1,642,503**	**$ 1,620,188**	**$ 22,315**	**1.36%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,946,686)**	**$ (1,279,170)**	**$ (1,210,057)**	**$ (69,113)**	**5.40%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 856,542**	**$ 562,835**	**$ 532,425**	**$ 30,410**	
Crozet Water	4.00%	**$ 77,867**	**51,167**	**48,402**	**2,765**	
Scottsville Water	2.00%	**$ 38,934**	**25,583**	**24,201**	**1,382**	
Urban Wastewater	48.00%	**$ 934,409**	**614,002**	**580,827**	**33,174**	
Glenmore Wastewater	1.00%	**$ 19,467**	**12,792**	**12,101**	**691**	
Scottsville Wastewater	1.00%	**$ 19,467**	**12,792**	**12,101**	**691**	
	100.00%	**$ 1,946,686**	**$ 1,279,170**	**$ 1,210,057**	**$ 69,113**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021

Maintenance

Operating Budget vs. Actual

	Notes	*Budget FY 2021*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ -	$ -	
Miscellaneous Revenue		-	-	3,101	3,101	
Total Operating Revenues		**$ -**	**$ -**	**$ 3,101**	**$ 3,101**	
Expenses						
Personnel Cost	**B**	$ 1,233,605	$ 811,281	$ 890,308	$ (79,027)	-9.74%
Professional Services		-	-	-	-	
Other Services & Charges		50,700	33,800	16,493	17,307	51.20%
Communications		17,400	11,600	16,017	(4,417)	-38.07%
Information Technology		8,500	5,667	6,010	(343)	-6.05%
Supplies		2,000	1,333	186	1,147	86.05%
Operations & Maintenance		84,550	56,367	62,473	(6,106)	-10.83%
Equipment Purchases		139,000	92,667	82,000	10,667	11.51%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 1,535,755**	**$ 1,012,714**	**$ 1,073,486**	**$ (60,772)**	**-6.00%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,535,755)**	**$ (1,012,714)**	**$ (1,070,385)**	**$ 63,873**	**-6.31%**
Allocations to the Rate Centers						
Urban Water	30.00%	**$ 460,727**	**$ 303,814**	**$ 321,115**	**$ (17,301)**	
Crozet Water	3.50%	**53,751**	**35,445**	**37,463**	**(2,018)**	
Scottsville Water	3.50%	**53,751**	**35,445**	**37,463**	**(2,018)**	
Urban Wastewater	56.50%	**867,702**	**572,184**	**604,767**	**(32,584)**	
Glenmore Wastewater	3.50%	**53,751**	**35,445**	**37,463**	**(2,018)**	
Scottsville Wastewater	3.00%	**46,073**	**30,381**	**32,112**	**(1,730)**	
	100.00%	**$ 1,535,755**	**$ 1,012,714**	**$ 1,070,385**	**$ (57,670)**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021

Laboratory

Operating Budget vs. Actual

	Notes	*Budget FY 2021*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
N/A						
Expenses						
Personnel Cost		$ 404,171	$ 265,569	$ 261,208	$ 4,361	1.64%
Professional Services		-	-	-	-	
Other Services & Charges		7,600	5,067	875	4,192	82.73%
Communications		2,100	1,400	978	422	
Information Technology		2,500	1,667	102	1,565	93.91%
Supplies		1,300	867	1,058	(191)	-22.09%
Operations & Maintenance		97,250	64,833	41,089	23,745	36.62%
Equipment Purchases		1,600	1,067	1,067	0	0.00%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 516,521**	**$ 340,469**	**$ 306,376**	**$ 34,093**	**10.01%**

Department Summary

Net Costs Allocable to Rate Centers	**$ (516,521)**	**$ (340,469)**	**$ (306,376)**	**$ (34,093)**	**10.01%**
Allocations to the Rate Centers					
Urban Water 44.00%	**$ 227,269**	**$ 149,806**	**$ 134,806**	**$ 15,001**	
Crozet Water 4.00%	**20,661**	**13,619**	**12,255**	**1,364**	
Scottsville Water 2.00%	**10,330**	**6,809**	**6,128**	**682**	
Urban Wastewater 47.00%	**242,765**	**160,020**	**143,997**	**16,024**	
Glenmore Wastewater 1.50%	**7,748**	**5,107**	**4,596**	**511**	
Scottsville Wastewater 1.50%	**7,748**	**5,107**	**4,596**	**511**	
100.00%	**$ 516,521**	**$ 340,469**	**$ 306,376**	**$ 34,093**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - February 2021

Engineering

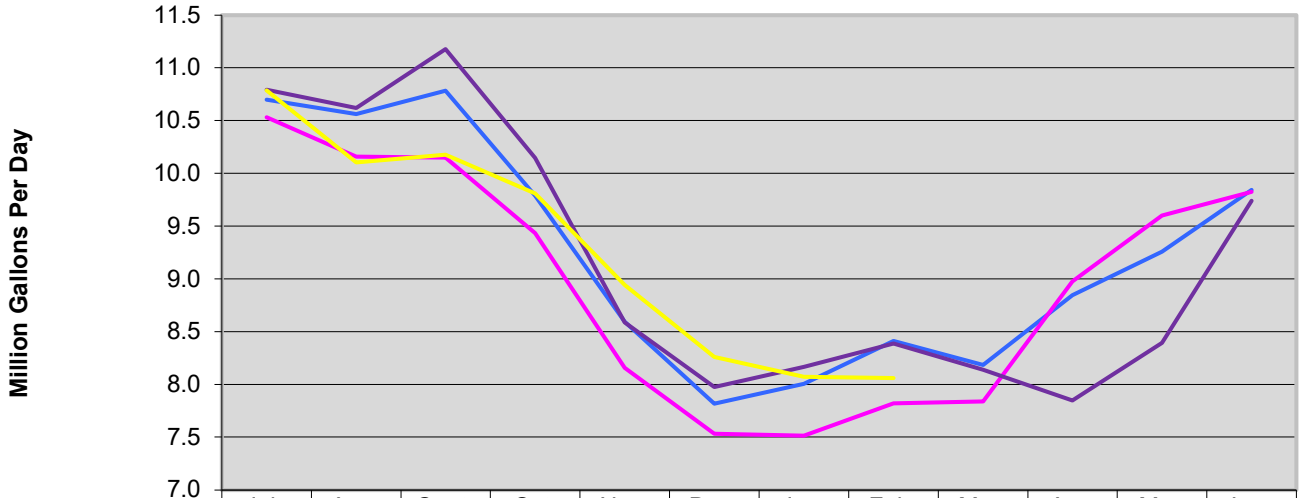
Operating Budget vs. Actual

	Budget FY 2021	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues					
Payment for Services SWA	$ -	$ -	$ 9,510	$ 9,510	
Total Operating Revenues	**$ -**	**$ -**	**$ 9,510**	**$ 9,510**	
Expenses					
Personnel Cost	$ 1,469,358	$ 965,281	$ 956,383	$ 8,898	0.92%
Professional Services	30,000	20,000	9,273	10,727	53.64%
Other Services & Charges	13,800	9,200	7,124	2,076	22.56%
Communications	16,200	10,800	11,520	(720)	-6.67%
Information Technology	41,500	27,667	22,359	5,308	19.19%
Supplies	9,800	6,533	3,213	3,320	50.82%
Operations & Maintenance	127,250	84,833	26,053	58,781	69.29%
Equipment Purchases	21,500	14,333	14,333	(0)	0.00%
Depreciation & Capital Reserve Transfers	-	-	-	-	
Total Operating Expenses	**$ 1,729,408**	**$ 1,138,648**	**$ 1,050,258**	**$ 88,390**	**7.76%**

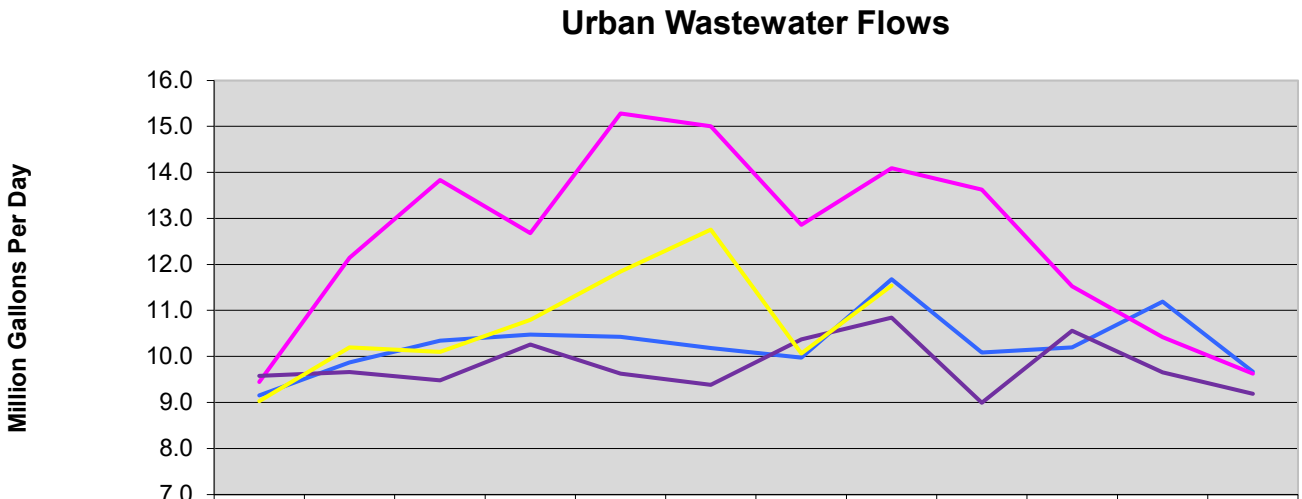
Department Summary

Net Costs Allocable to Rate Centers	**$ (1,729,408)**	**$ (1,138,648)**	**$ (1,040,748)**	**$ (78,880)**	**6.93%**
Allocations to the Rate Centers					
Urban Water 47.00%	**$ 812,822**	**$ 535,164**	**$ 489,152**	**$ 46,013**	
Crozet Water 4.00%	**69,176**	**45,546**	**41,630**	**3,916**	
Scottsville Water 2.00%	**34,588**	**22,773**	**20,815**	**1,958**	
Urban Wastewater 44.00%	**760,939**	**501,005**	**457,929**	**43,076**	
Glenmore Wastewater 1.50%	**25,941**	**17,080**	**15,611**	**1,468**	
Scottsville Wastewater 1.50%	**25,941**	**17,080**	**15,611**	**1,468**	
100.00%	**$ 1,729,408**	**$ 1,138,648**	**$ 1,040,748**	**$ 97,899**	

Rivanna Water and Sewer Authority
Flow Graphs



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG.	10.70	10.56	10.78	9.79	8.59	7.82	8.00	8.41	8.18	8.84	9.26	9.84
FY 2019	10.53	10.16	10.15	9.43	8.16	7.53	7.51	7.82	7.84	8.98	9.60	9.82
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	8.06				



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG	9.15	9.87	10.35	10.47	10.43	10.18	9.97	11.68	10.08	10.20	11.19	9.67
FY 2019	9.45	12.14	13.83	12.68	15.28	15.00	12.86	14.09	13.62	11.52	10.42	9.62
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	11.54				

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

MEMORANDUM

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

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

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

SUBJECT: **OPERATIONS REPORT FOR MARCH 2021**

DATE: **APRIL 27, 2021**

WATER OPERATIONS:

The average daily/monthly total water distributed for March 2021 was as follows:

Water Treatment Plant	***Average Daily Production (MGD)***	***Total Monthly Production (MG)***	***Maximum Daily Production in the Month (MGD)***
Observatory	1.91	59.22	3.17 (03/08/21)
South Rivanna	6.52	202.26	7.75 (03/22/21)
North Rivanna	0.36	11.14	0.44 (03/22/21)
Urban Total	8.79	272.63	10.21 (03/22/21)
Crozet	0.59	18.24	0.78 (03/17/21)
Scottsville	0.046	1.42	0.06 (03/08/21)
Red Hill	0.0016	0.049	0.003 (03/01/21)
RWSA Total	9.43	292.34	---

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

Status of Reservoirs (as of April 21, 2021):

- Urban Reservoirs: 97.60 % of Total Useable Capacity
- Ragged Mountain Reservoir is full (100%)
- Sugar Hollow Reservoir is not full (81.16%)*
- South Rivanna Reservoir is full (100%)
- Beaver Creek Reservoir is full (100%)
- Totier Creek Reservoir is full (100%)

*The Sugar Hollow Reservoir has been lowered 5 ft. for replacement of the rubber bladder on the dam.

WASTEWATER OPERATIONS:

All RWSA Water Resource Recovery Facilities (WRRFs) were in regulatory compliance with their effluent limitations during March 2021. Performance of the WRRFs in March 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	10.67	3.0	10	<QL	22	0.39	7.0
Glenmore	0.108	3.0	15	3.0	30	NR	NL
Scottsville	0.082	9.0	25	5.0	30	NR	NL
Stone Robinson	0.007	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 March 2021.

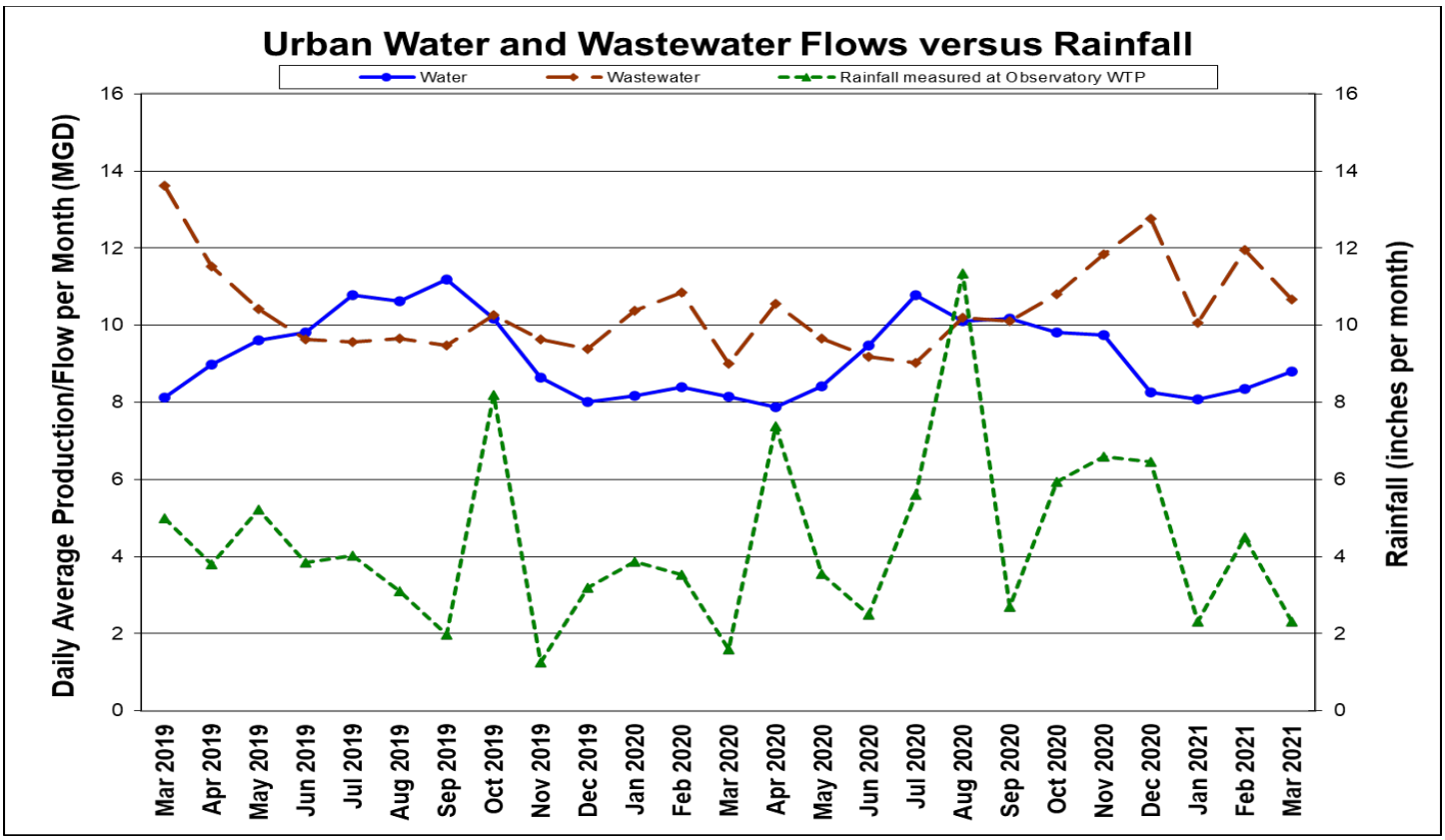
State Annual Allocation (lb./yr.) Permit		*Average Monthly Allocation (lb./mo.) **	*Moores Creek Discharge March (lb./mo.)*	*Performance as % of monthly average Allocation**	*Year to Date Performance as % of annual allocation*
Nitrogen	282,994	23,583	11,335	48%	4%
Phosphorous	18,525	1,544	1,108	72%	6%

*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


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)
0
2
4
6
8
10
12
14
16
Mar 2019
Apr 2019
May 2019
Jun 2019
Jul 2019
Aug 2019
Sep 2019
Oct 2019
Nov 2019
Dec 2019
Jan 2020
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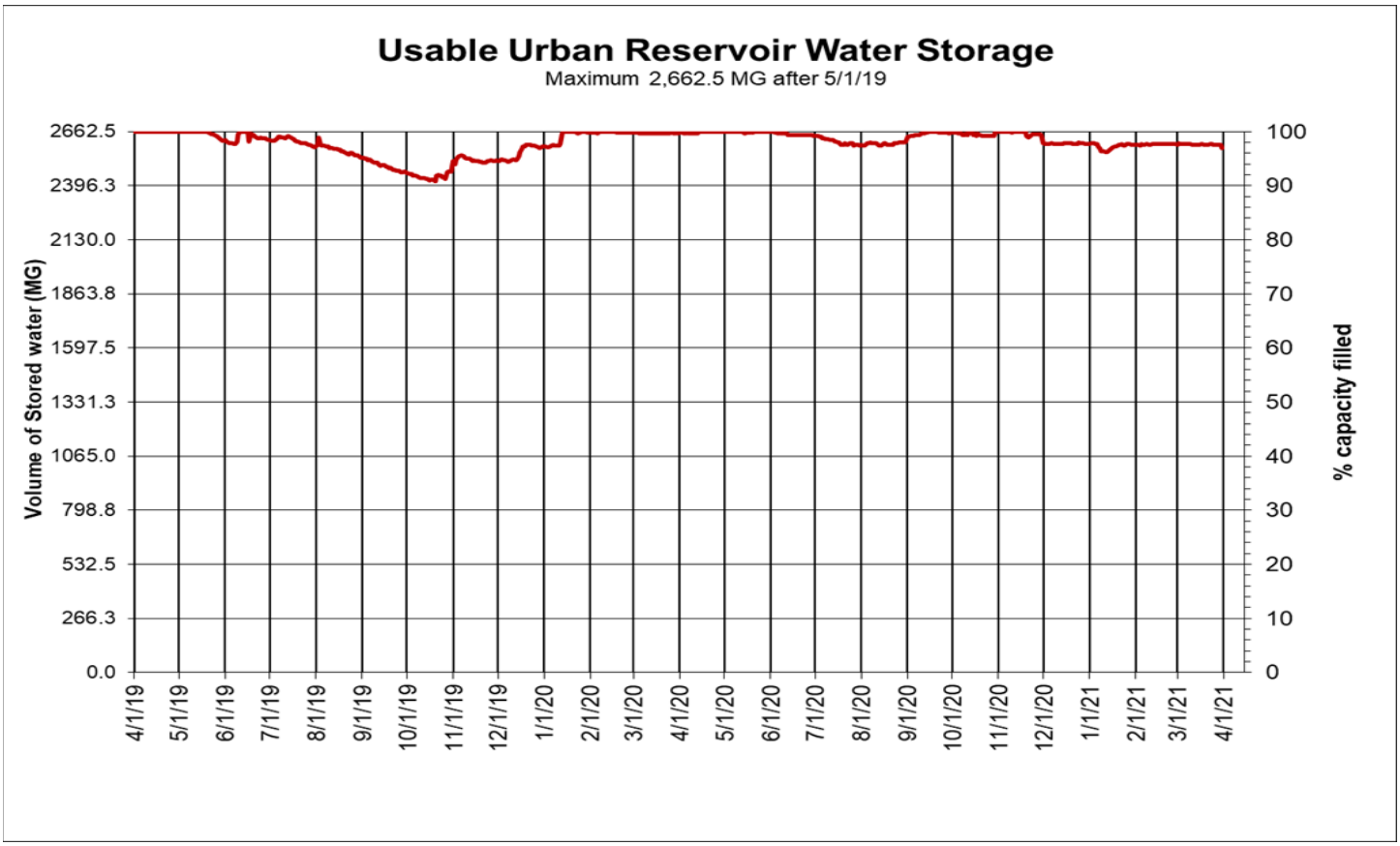
Nov 2020
Dec 2020
Jan 2021
Feb 2021
Mar 2021


Usable Urban Reservoir Water Storage
Maximum 2,662.5 MG after 5/1/19
Volume of Stored water (MG)
% capacity filled
0.0
266.3
532.5
798.8
1065.0
1331.3
1597.5
1863.8
2130.0
2396.3
2662.5
0
10
20
30
40
50
60
70
80
90
100
4/1/19
5/1/19
6/1/19
7/1/19
8/1/19
9/1/19
10/1/19
11/1/19
12/1/19
1/1/20
2/1/20
3/1/20
4/1/20
5/1/20
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

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

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

SUBJECT: **STATUS REPORT: ONGOING PROJECTS**

DATE: **APRIL 27, 2021**

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/2020/06/2021-2025-CIP-Final.pdf

Under Construction

1. Crozet Water Treatment Plant Expansion
2. South Rivanna and Observatory Water Treatment Plant Renovations
3. Crozet Flow Equalization Tank
4. MC Aluminum Slide Gate Replacements
5. Sugar Hollow Dam – Gate Replacement and Intake Tower Repairs
6. MC Exterior Lighting Improvements

Design and Bidding

7. Ragged Mtn Reservoir to Observatory WTP Raw Water Line and Pump Station
8. Beaver Creek Dam, Pump Station and Piping Improvements
9. Airport Road Water Pump Station and Piping
10. South Fork Rivanna River Crossing
11. MC Clarifier and Silo Demolition
12. MC Generator Fuel Expansion
13. MC Facility Renovations
14. MC 5kV Electrical System Upgrades
15. Glenmore WRRF Influent Pump & VFD Addition

Planning and Studies

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

17. Urban Finished Water Infrastructure Master Plan
18. Upper Schenks Branch Interceptor, Phase II
19. Asset Management Plan
20. MC Facilities Master Plan
21. SRR to RMR Pipeline – Pretreatment Pilot Study
22. Central Water Line - Routing Study

Other Significant Projects

23. Urgent and Emergency Repairs
24. Interceptor Sewer & Manhole Repair
25. Security Enhancements

Under Construction

1. Crozet Water Treatment Plant Expansion

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Orders Construction Co. (WVA)
Construction Start:	December 2018
Percent Complete:	99%
Base Construction Contract + Change Orders to Date = Current Value:	$7,170,000 - $47,372.73 = $7,122,627.27
Completion:	August 2021
Budget:	$8,500,000

Current Status: All work associated with the original scope of the project has reached substantial completion. As the project was coming to completion, a need to improve the raw water pumping and intermediate pump station capabilities of the Crozet Water System were identified and were added to this project. As a result of this additional work, the overall completion date has been pushed out to accommodate the lead time for the components and the installation and testing process. The pumps and VFDs associated with these additional improvements have been ordered and we are awaiting delivery, which is anticipated for late June 2021.

2. 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:	22%
Base Construction Contract + Change Orders to Date = Current Value:	$36,748,500 + $222,723.32 = $36,971,223,32
Completion:	March 2023
Budget:	$43,000,000

Current Status: Work continues at the SRWTP with construction of the filter building expansion and foundations for the Alum and Fluoride Chemical Storage Building and Administration Building. Work at the OBWTP includes exploratory excavations to identify underground utilities in the area of the new Chemical Building and relocation of process lines and an electrical ductbank.

3. Crozet Flow Equalization Tank

Design Engineer:	Schnabel Engineering
Construction Contractor:	Anderson Construction (Lynchburg, VA)
Construction Start:	September 2020
Percent Complete:	20%
Based Construction Contract + Change Orders to Date = Current Value:	$4,406,300
Completion:	November 2022
Budget:	$5,400,000

Current Status: All gravity pipe and associated manholes have been installed. About one half of the pressure pipe has been installed. The site is being prepared for tank construction and the tank manufacturer mobilized on April 19th to begin pouring test piles.

4. MC Aluminum Slide Gate Replacements

Design Engineer:	Hazen and Sawyer
Construction Contractor:	Waco Incorporated (Sandston, VA)
Construction Start:	September 2020
Percent Complete:	50%
Base Construction Contract + Change Orders to Date = Current Value:	$373,600 - $30,400 = $343,200
Completion:	October 2021
Budget:	$675,000

Current Status: Waco has completed slide gate replacement at the UV facility, and 2 of the 7 new actuators on the slide gates at the headworks.

5. Sugar Hollow Dam – Gate Replacement and Intake Tower Repairs

Design Engineer:	Schnabel Engineering
Construction Contractor:	Allegheny Construction (Roanoke, VA)
Construction Start:	October 2020
Percent Complete:	50%
Base Construction Contract + Change Order to Date = Current Value:	$1,410,875
Completion:	July 2021
Budget:	$1,900,000

Current Status: Installation of the new bladder is expected to be completed in May, with testing,

startup, and miscellaneous site improvements to follow in June. Periodic lowering of the reservoir by 2-5 feet will be required by the contractor for remaining construction activities.

6. MC Exterior Lighting Improvements

Design Engineer:	Hazen and Sawyer
Construction Contractor:	Pyramid Electrical Contractors (Richmond, VA)
Construction Start:	June 2021
Percent Complete:	20%
Base Construction Contract + Change Order to Date = Current Value:	$349,000
Completion:	February 2022
Budget:	$900,000

Current Status: Materials have been ordered. Replacement of light fixtures will begin in June.

Design and Bidding

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

Design Engineer:	Michael Baker International (Baker)
Project Start:	August 2018
Project Status:	Prelim Design & Easement Acquisition
Construction Start:	2023
Completion:	2027
Budget:	$24,000,000

Current Status:

Easement negotiations with two private owners, UVA, the UVA Foundation, and the Virginia Department of Forestry are in progress.

8. 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:	20% Design and Permitting Underway
Construction Start:	2024
Completion:	2026
Budget:	$27,000,000

Current Status: An updated site selection study for the new Raw Water Pump Station, Intake and Piping has been updated and is under review. Hazen continues with environmental investigations

required for development of a Joint Permit Application to be submitted to the VDEQ in 2021. A two-year planning study kicked off in late August 2020. The study is being completed with 100% funding from the Natural Resources Conservation Service (NRCS), part of the US Department of Agriculture (USDA). Following completion of the study and approval by NRCS in 2022, staff will pursue additional federal funding for up to 65% of the cost of design and construction.

9. Airport Road Water Pump Station and Piping

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	July 2019
Project Status:	70% Design
Construction Start:	September 2021
Completion:	June 2023
Budget:	$7,600,000

Current Status: SEH is working on VDH, County Site Plan, ARB, and WPO submittals and anticipates County submission of all documents in April.

10. South Fork Rivanna River Crossing

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2020
Project Status:	15% Design
Construction Start:	Spring 2022
Completion:	Fall 2023
Budget:	$3,655,000

Current Status: VDOT has provided preliminary feedback on the new water line alignments which may be in right-of-way on residue parcels from the original western bypass project. Baker is working on a technical memo to summarize the pros and cons, permitting impacts, and costs of the alternative river crossing alignment options.

11. MC Clarifier and Lime Silo Demolition

Design Engineer:	Hazen and Sawyer
Project Start:	October 2020
Project Status:	90% Design
Construction Start:	Summer 2021
Completion:	Summer 2022
Budget:	$655,000

Current Status: 90% design documents are under review .

12. MC Generator Fuel Storage Expansion

Design Engineer:	SEH, Inc.

Project Start:	August 2020
Project Status:	95% Design
Construction Start:	Summer 2021
Completion:	Fall 2021
Budget:	$100,000

Current Status: A Request for Quotes was provided to local contractors and two quotes were received. Quotes received exceeded the budget and methods for progressing the project through other means are being evaluated.

13. MC Facility Renovations

Design Engineer:	SEH, Inc.
Project Start:	August 2020
Project Status:	0% Design
Construction Start:	Winter 2020/2021
Completion:	Summer 2021
Budget:	$750,000

Current Status: Staff is evaluating the Duty Station for conversion into office space. This conversion will require extensive cleaning and the relocation of load bearing walls. An updated cost estimate has been developed by SEH to confirm the viability of this conversion. This work is on hold pending the outcome of the Moores Creek Facility Master Plan.

14. MC 5 kV Electrical System Upgrades

Design Engineer:	Hazen and Sawyer
Project Start:	August 2020
Project Status:	50% Design
Construction Start:	March 2022
Completion:	June 2024
Budget:	$4,600,000

Current Status: 50% design documents are under review.

15. Glenmore WRRF Influent Pump and VFD Addition

Design Consultant:	Wiley|Wilson
Project Start:	August 2020
Project Status:	80% Design
Construction Start:	2021
Completion:	Fall 2021
Budget:	$65,000

Current Status: Design documents are under review.

Planning and Studies

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

Design Engineer:	Michael Baker International (Baker)
Project Start:	October 2017
Project Status:	Easement Acquisition
Completion:	2021
Budget:	$2,295,000

Current Status: Progress continues in our efforts to acquire the 9.5 miles of easements and agreements (with VDOT) for this 36" water line. Discussions continue on remaining easements with 3 private owners and the UVA Foundation.

17. Urban Finished Water Infrastructure Master Plan

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2018
Project Status:	90% complete
Completion:	April 2021
Budget:	$253,000

Current Status: The revised draft Master Plan is anticipated in April and will be circulated to stakeholders for review and comment.

18. Upper Schenks Branch Interceptor, Phase II

Design Engineer:	Frazier Engineering, P.A.
Project Start:	TBD
Project Status:	Alignment Analysis
Construction Start:	TBD
Completion:	TBD
Budget:	$3,985,000

Current Status: Discussions about the pipe alignment will be renewed with the County and the City. Following pipe alignment determinations, the design plans will be updated, and the construction approach will be coordinated with a City project planned for the same general area.

19. Asset Management Plan

Design Engineer:	GHD, Inc.
Project Start:	July 2018
Project Status:	Phase 2 – 95% Complete CMMS Implementation – 7% Complete
Completion:	2021
Budget:	$1,115,000

Current Status: A draft Tactical Asset Management Plan has been submitted for review. For implementation of the new CMMS, workshops continue with various departments to identify their current and future workflows for eventual incorporation into the new CMMS. GHD continues with the development of an RWSA-wide asset register based on an export of assets from the current work order system that is being replaced. Workshops are also being held do facilitate the importing of maintenance data from the current work order system into Cityworks for future reference.

20. MC Facilities Master Plan

Design Consultant:	Hazen and Sawyer
Project Start:	August 2019
Project Status:	85% Complete
Completion:	May 2021
Budget:	$275,000

Current Status: Multiple reviews have been held with staff. RWSA is reviewing the scheduling and budgets for proposed future improvements and long term impacts to the CIP.

21. SRR to RMR Pipeline – Pretreatment Pilot Study

Design Consultant:	SEH
Project Start:	August 2020
Project Status:	80% Complete (Phase 1)
Completion:	July 2022
Budget:	$22,969 (Phase 1)

Current Status: Phase 1, analysis of existing water quality and seasonal weather data, is underway. SEH is finalizing their technical memorandum on this phase of the study. As Phase 1 gets closer to completion, RWSA and SEH are planning for subsequent phases of the study. A follow-up discussion between RWSA, SEH, and DiNatale Water Consultants was conducted to discuss options to model water quality impacts at Ragged Mountain Reservoir given different transfer water quality conditions from Rivanna Reservoir.

22. Central Water Line Project - Routing Study

Design Consultant:	Michael Baker International (Baker)
Project Start:	February 2021
Project Status:	50% Complete
Completion:	June 2021
Budget:	$63,070

Current Status: Baker, the City, ACSA and our staff have been coordinating on several water line corridors to connect the Observatory WTP to the Pantops area. A second workshop is scheduled on April 21, 2021 to go over field review observations.

Other Significant Projects

23. 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
2018-06	South Rivanna Dam Apron and River Bank Repairs	$200,000
2019-07	Urban Water Line Valve and Blow-off Repair	$175,000
2020-14	MCWWPS Gate Valve 205 Replacement	TBD
2020-20	Finished Water Sampling Stations	$150,000
2020-21	PCI Erosion	$125,000
2020-23	MCI Erosion @ Moores Creek Crossing (Near Avon Ct)	$50,000
2020-25	Upper MRI Point Repair/New MH Installation	$175,000
2021-02	CZI-MH-96 Slope Failure	$30,000
2021-04	UWL-ARV-15 Settlement	$25,000
2021-06	UWL Leak @ UWL-ARV-08	$5,000
2021-07	MCAWRRF Effluent Water Line @ Duty Station	$5,000
2021-08	MCAWRRF Digester Manway Sealing	TBD

- South Rivanna Dam Apron and River Bank Repairs: Repairs to the north and south concrete aprons were designed by Schnabel Engineering. Repair services will be procured from the on-call dam maintenance contractor and are expected to take place in summer 2021.
- Urban Water Line Valve and Blow-off Repair: Faulconer Construction has completed the installation of a new drain valve at UWL-017, as well as the associated modifications to the drain line outlet and creek bank. With the installation of the new drain valve in March 2020, leakage in this location has ceased. Faulconer Construction mobilized to UWL-025 at Gasoline Alley during the week of April 5. Similar to UWL-017, a redundant valve was installed to end any leakage from the site, and the outlet was reworked by Faulconer Construction to allow for a safe and effective discharge should the assembly ever need to be used during a system emergency. Repairs at this location were completed on April 14. Relocation of a nearby ARV in a difficult to access location is still being planned, however, this has been moved to a separate project due to the anticipated depth of the water main and proximity of adjacent utilities. Staff has also been notified of a similar (slight leakage) issue at UWL-010 near Route 29. This assembly currently is blind flanged and is not actively leaking into any adjacent creeks or stormwater structures. Staff will continue planning with this repair with Faulconer Construction as availability allows.

- Moores Creek WWPS Gate Valve 205 Replacement: In July 2020, RWSA Operations staff identified a valve had become stuck in nearly the fully closed position, causing a reduction in the discharge capacity of the pumping station (PS), especially during wet weather events where both of the 24" force mains leaving the PS are required. Waco, Inc. was selected to perform the work under an Emergency Declaration by the Executive Director, and staff worked with Waco to plan for the associated force main shutdown and valve replacement. Due to excessive lead times and impending weather, a spool piece of pipe was procured for temporary installation while the replacement valve is procured. The existing gate valve was ultimately replaced with the spool piece of pipe during a planned pumping station shutdown during the early morning hours of August 2, 2020, restoring full pumping capabilities to the PS. In the preliminary attempts to shut down one of the two discharge force mains and replace the No. 205 valve, it was discovered that additional valves inside the PS are not fully holding when placed in a closed position. Staff is currently evaluating the needs associated with bypass pumping around MCWWPS, which would allow for the permanent installation of the No. 205 Gate Valve Replacement, as well as replacement of the adjacent valves mentioned above and inspections of equipment inside of the PS that normally can't be inspected due to the incoming flows.
- Finished Water Sampling Stations: As a part of its ongoing Water Quality Monitoring Program, members of the Water & Laboratory Departments collect water samples from throughout the distribution system to track parameters such as Chlorine Residuals and Disinfection Byproducts. Historically, this has meant that staff must enter local businesses to collect the samples, which takes several minutes and further exposes staff to members of the public. In order to minimize staff exposure to the public and overall impact to local businesses/offices, seven (7) pre-fabricated sampling stations will be installed along ACSA finished water lines throughout the distribution system, which will allow staff to quickly and safely retrieve water samples. Faulconer Construction is performing this work for RWSA, with ACSA providing the associated wet taps. These 7 sites were completed by the week of December 7th. In addition, RWSA staff is coordinating with ACSA, the City, and UVA on a new set of five (5) additional sites. This work is slated to be completed by Faulconer Construction following the Upper MRI Point Repair and New MH Installation.
- PCI Erosion: RWSA Maintenance Department staff finished its annual inspection of the Powell Creek Interceptor in early October, and a number of erosion concerns were identified throughout the interceptor alignment. Engineering and Maintenance Department staff determined that two of the repairs were more urgent, and should be performed by Faulconer Construction as soon as possible. Both of the areas in question are large drainage ditches that have caused large wash-outs over the sewer line. RWSA coordinated access through Sutherland Middle School property with ACPS, and Faulconer began these repairs during the week of October 26. The scope of these two repairs was to backfill the ditches and install a large HDPE culvert pipe to safely and effectively move the storm water across the sewer line while minimizing erosion. The two ditch lines were completed by Faulconer Construction during the week of November 2, with the site fully restored by the week of November 9. Four creek crossings along the interceptor were also identified as

needing light rip-rap armament, as well as minor bank modifications to allow for enhanced access for RWSA staff. This work will also be coordinated with Faulconer Construction. A site visit was conducted on November 24, 2020, with the work being scheduled as crews have availability and site conditions allow.

- MCI Erosion @ Moores Creek Crossing (Near Avon Ct): While performing routine line maintenance activities, the RWSA Maintenance Department identified erosion along the Moores Creek Interceptor (MCI), at its creek crossing between MH-39 and MH-40. This is just downstream of the previous bank repair made in this area using imbricated stone in early 2019, which remains standing in good condition. No infrastructure is exposed at this time, and staff will continue to monitor the area and plan for the associated bank repairs (as site conditions allow), which will likely include the placement of large rip-rap to protect the sewer line from future high flow/erosion events.
- Upper MRI Point Repair/New MH Installation: RWSA is in the final stages of rehabilitation efforts along the upper Morey Creek Interceptor. The final piece of rehabilitation is to complete a point repair, which includes the installation of approximately 65' of new Ductile Iron Pipe, as well as a new manhole, due to a sag in the existing, Vitrified Clay Pipe. Rather than perform this work under the Sanitary Sewer Rehabilitation Contract, since that contractor generally performs no-dig style rehabilitation, RWSA has elected to shift this project to the On-Call Maintenance Construction Services Contract. RWSA and Faulconer Construction performed a constructability review on site on February 5th, which identified a conflict with a nearby Dominion Energy power pole. Dominion Energy will be relocating the pole's supports to facilitate the sewer repairs, following the necessary property owner coordination. Pending property owner approval, Dominion Energy is planning to relocate the pole supports during the week of April 19th, allowing Faulconer to also start the repairs that week. The design for the repair has also been modified by Frazier Engineering, in an effort to maintain a satisfactory level of separation between the storm and sanitary sewers while also minimizing the amount of rock removal that may be required during the repairs.
- CZI-MH-96 Slope Failure: Following recent heavy rains, the RWSA Engineering Department performed a 1-year inspection of the previous bank repair at CZI-MH-96. While the vast majority of the repair was found to be in good condition, a short stretch of the imbricated stone wall was undercut from behind, which caused a short stretch of the wall to become dislodged and fall over. Staff will coordinate the repairs with its On-Call Contractor, which will include repairs to the wall and additional erosion control measures behind the wall.
- UWL-ARV-15 Settlement: While marking a Miss Utility Ticket, the RWSA Engineering Department identified an ARV that was settling with a small section of Kenwood Lane. No immediate danger to the ARV is present, however, staff has looked at the issue with its On-Call Maintenance Contractor and is coordinating the necessary repairs for completion following some adjacent City sanitary sewer replacement.
- UWL Leak @ UWL-ARV-08: On Friday, March 23 around 6 pm, the RWSA Engineering Department was notified of a potential leak on the Urban Waterline, in a wooded area behind the

Rio Hill Apartments. Upon mobilizing to the site, RWSA Maintenance and Engineering staff found that UWL-ARV-08 had broken just above the corporation stop, causing large amounts of leakage and necessitating a shut down of the Urban Waterline. Staff coordinated the shutdown with the RWSA Water Department, as well as the City of Charlottesville and ACSA, and the main was shut down by 11:15 pm. The RWSA Maintenance Department was able to quickly dig down to the corporation stop, close it, and build out a new ARV assembly. The Urban Waterline was placed back into service at 1:15 am on Saturday Morning.

- MCAWRRF Effluent Waterline Leak @ Duty Station: On Monday, March 29, the RWSA Maintenance Department identified an apparent leak on the 1.25" Effluent Waterline Adjacent to the Duty Station. RWSA Wastewater, Maintenance, and Engineering Department staff analyzed the situation, confirmed any potential impacts to processes, and planned for the repair the next morning. During the following morning, the RWSA Maintenance Department discovered that the break was under the concrete pad for the Automatic Transfer Switch adjacent to the Duty Station, and that the 1.25" Effluent Waterline would need relocation. The relocation was completed by that afternoon, and any processes that required temporary hookups were able to be placed back to normal operations.
- MCAWRRF Digester Manway Sealing: Staff has identified the immediate need to repair gas leaks in Digesters #1, #2 and #3 at the MCAWRRF. The gas leaks are a safety concern and are causing significant concrete degradation which has led to Digester #2 being taken out of service thereby reducing solids processing redundancy. Following external and internal inspections by our engineering consultants, it has been decided that installation of rubber seals in the manways and sample ports will mitigate gas leaks into the annular roof space and decrease further concrete degradation. Waco, Inc. was selected to perform the work under an Emergency Declaration by the Executive Director.

24. Interceptor Sewer and Manhole Repair

Design Engineer:	Frazier Engineering
Construction Contractor:	IPR Northeast
Construction Start:	November 2017
Percent Complete:	40%
Base Construction Contract + Change Orders to Date = Current Value:	$1,000,838.79
Expected Completion:	June 2021
Total Capital Project Budget:	$1,088,330 (Urban) + $880,000 (Crozet) = $1,968,330

Current Status: Repairs to the Upper Morey Creek Interceptor remain underway. Staff continues to coordinate with all groups involved to get the repairs completed as soon as possible on this portion of MRI, with mobilization for the new ductile iron sewer and manhole scheduled for the week of April 19th, pending relocation of a Dominion Energy power pole support. Staff also continues coordination on the lower Powell Creek Interceptor and a portion of the Woodbrook Interceptor, as these are the

next high-priority areas to be addressed based upon the latest CCTV footage. The scope of this rehabilitation work is likely to include several sections of Cured in Place Piping, as well as manhole rehabilitation. RWSA is awaiting a revised schedule from its Sanitary Sewer Evaluation and Rehabilitation Contractor for the associated cleaning and CCTV work on the applicable sections of the Woodbrook and Powell Creek Interceptors.

25. Security Enhancements

Design Engineer:	N/A
Construction Contractor:	Security 101
Construction Start:	March 2020
Percent Complete:	99% (WA #1)
Based Construction Contract + Change Orders to Date = Current Value:	$744,136.80 - $25,708.80 = $718,428.00 (WA#1)
Completion:	March 2021 (WA #1)
Approved Capital Budget:	$2,730,000

Current Status: Access control system installation is underway for all exterior doors at MCAWRRF, as well as all WTP motorized gates. Device installation at all sites has been completed. The Card Access System is in use at the Administration, Engineering, and Maintenance Buildings at MCAWRRF, as well as at the WTP gates. Programming has been completed by Security 101, and the only task that remains is some door/lock improvements at MCAWRRF, which will help enhance the functionality of the access control system and allow it to be placed fully online. RWSA is reviewing the pricing for these modifications provided by Security 101 and is preparing to sign the associated Work Authorization. RWSA is also preparing for the next round of installations, which will be conducted at the Scottsville and Crozet WTP exterior doors. In addition, staff has been coordinating with Security 101 on getting the necessary conduits installed at South Rivanna and Observatory WTPs. Security 101 has finalized pricing, and RWSA is finalizing the anticipated/desired schedule with all parties involved, including Security 101, English Construction, and SEH.

History

Under Construction

1. Crozet Water Treatment Plant Expansion

This project was created to increase the supply capacity of the existing Crozet WTP by modernizing plant systems. The goal was to not drastically increase the plant footprint in regard to the existing filter plant, flocculation tanks, and sedimentation basins. By modernizing the outdated equipment within these treatment systems, the plant treatment capacity will be improved by approximately 100% (from 1 to 2 MGD). A Notice to Proceed was issued on December 13, 2018 and the contractor mobilized on February 26, 2019.

2. 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.

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.

3. 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.

4. **MC Aluminum Slide Gate Replacements**

Several large aluminum slide gates are located at the influent side of the Moores Creek Pump Station. These gates allow staff to stop or divert flow to perform maintenance activities. After repeated attempts to repair the deteriorated gates, it is now necessary to replace the gates and modify the gate arrangement. There are also several deteriorated gates at the Ultraviolent disinfection facility that leak water, causing a reduced capacity of the facility. Replacement of these gates will restore the process to full capacity. Work also includes replacement of the cast iron gates in the holding pond pump station and new actuators on the headworks gates. A Notice to Proceed for these efforts was provided on October 6, 2020. The work specific to the Moores Creek Pump Station will be bid under a separate project due to the extensive bypass pumping.

5. **Sugar Hollow Dam – Rubber Crest Gate Replacement and Intake Tower Repairs**

In 1998, the Sugar Hollow Dam underwent a significant upgrade to improve structural stability and spillway capacity. The original metal spillway gates were replaced with a manufactured five-foot-high inflatable rubber dam that is bolted to the existing concrete structure. This rubber dam allows for the normal storage of water in the reservoir with the ability to be lowered during extreme storm events. The rubber dam has an approximate service life of twenty years and is therefore now due for replacement. The aging intake tower structure has been inspected and evaluated. Recommended repairs include repair or replacement of intake trash racks and sealing/grouting of minor concrete wall cracks. This project was advertised for construction in July 2020 and Allegheny Construction was awarded the project. A Notice to Proceed was provided on October 1, 2020.

6. **MC Exterior Lighting Improvements**

The lighting at the 80-acre MCAWRRF consists of over 300 fixtures installed over the entire life of the facilities presence at Moores Creek. In 2019, Albemarle County investigated the lighting plan at the facility and issued a Zoning Notice of Violation.

RWSA and Albemarle County staff have been working together to best address the issue. A photo metric plan of existing lighting was submitted to the county for review. RWSA has submitted a minor site plan amendment and Architectural Review Board submission that will include a large scale replacement of non-compliant fixtures as well as address industrial lighting standards for the entire facility. The submission was approved by the County and design is underway.

The design has been completed by Hazen and Sawyer and the project was awarded to Pyramid Electrical Contractors, LLC. Notice to Proceed was provided on April 13, 2021.

Design and Bidding

7. **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.

8. Beaver Creek Dam and Pump Station Improvements

Dam: 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.

9. 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.

10. South Fork 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.

11. 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 plat 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.

12. MC Generator Fuel Expansion

The Moores Creek AWRRF south side electrical facilities have a single large system back-up power generator that was installed between 2009 – 2012 during the ENR plant upgrade. The generator has a belly tank that allows for approximately 22 hours of operation. This project will install an ancillary fuel tank that will allow for approximately three days of operation.

13. MC Facility Renovations

The RWSA Administration Building Board Room finishes are generally original to the facility. The proposed project will update the wall and floor coverings, alter the shelving and update the room furnishings in order to create a more modern and useable meeting space.

The Duty Pump Station was construction in 1958 and no longer functions as an actual pump station. It currently houses electrical equipment that serves the plant, but otherwise has available space that could be beneficially used for other purposes. RWSA has a need for additional office space and has evaluated repurposing portions of the Duty Pump Station for office and work space in order to make use of all available space at the plant before proceeding with more significant administrative expansions. This project includes demolition of a select portion of the interior of the station, cleaning and sanitizing of the areas to be repurposed, and an interior upfit of the space to provide additional office and work space. Costs related to this effort have been updated and the budget is being evaluated through the CIP process.

14. 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.

15. 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.

Planning and Studies

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

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

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

17. Urban Finished Water Infrastructure Master Plan

As identified in the 2017 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. Many previously identified projects in the urban finished water treatment and distribution system are in preliminary engineering, design or construction. As such, staff have identified a need to develop a current and ongoing finished water master plan.

18. 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 to be located on County property (baseball field and County Office Building) adjacent to McIntire Road or within McIntire Road.

19. Asset Management Plan

Asset management is the practice of managing our infrastructure to minimize the total cost of owning and operating these assets while providing desired service levels. In doing so, it is used to make sure planned maintenance activities take place and that capital assets are replaced, repaired or upgraded at the right time, while ensuring that the money necessary to perform those activities is available. RWSA

has some components of an asset management program in place (i.e. GIS, work order system), but has identified the need to further develop the program as part of our Strategic Planning process. In order to continue to build the program, a consultant has been procured to assist with a three-phase process that will include facilitation and development of an asset management strategic plan, development and management of a pilot study where the results of the strategic plan will be applied to a specific class of assets, and assistance through a full implementation process. As part of this three-phase process, the consultant also assisted RWSA with the procurement of a new CMMS software package to facilitate the overall program. Cityworks was selected and implementation has begun.

20. Albemarle-Berkeley PS Capacity Analysis

The Albemarle Berkley wastewater pump station serves the schools and other connections in the area near Albemarle High School. Due to unacceptably high run times on the pumps, a capacity analysis of the pump station, given the current and projected upstream conditions, will be completed to provide design data for replacement of the pump station.

The Capacity Analysis Study began in Spring 2020, and the first report draft was reviewed by staff in September 2020. A final draft was issued to RWSA/ACSA/ACPS by the Design Consultant in December 2020, and comments were received in January 2021.

21. 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.

22. 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.

23. Central Water Line Project – Routing Study

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 has been negotiated and 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.

Other Significant Projects

24. Urgent and Emergency Repairs

- South Rivanna Dam Apron and River Bank 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 river bank 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 river bank 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.

25. 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 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.

26. <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.

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

MEMORANDUM

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

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

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

SUBJECT: **WHOLESALE METERING REPORT FOR MARCH 2021**

DATE: **APRIL 27, 2021**

The monthly and average daily Urban water system usages by the City and the ACSA for March 2021 were as follows:

	Month	***Daily Average***	
City Usage (gal)	143,999,816	4,645,155	**52.8%**
ACSA Usage (gal)	128,630,811	4,149,381	**47.2%**
Total (gal)	**272,630,627**	**8,794,536**	

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 April 2020), and that usage relative to the maximum allocation for each party (6.71 MGD for the City and 11.99 MGD for ACSA).

NOTE: Meter site #32, located on Fontaine Avenue, requires a replacement register in order for the meter to communicate with the Beacon AMA system, so this month's data was read manually. The replacement register is expected to ship in May 2021.

Figure 1: City of Charlottesville Monthly Water Usage and Allocation

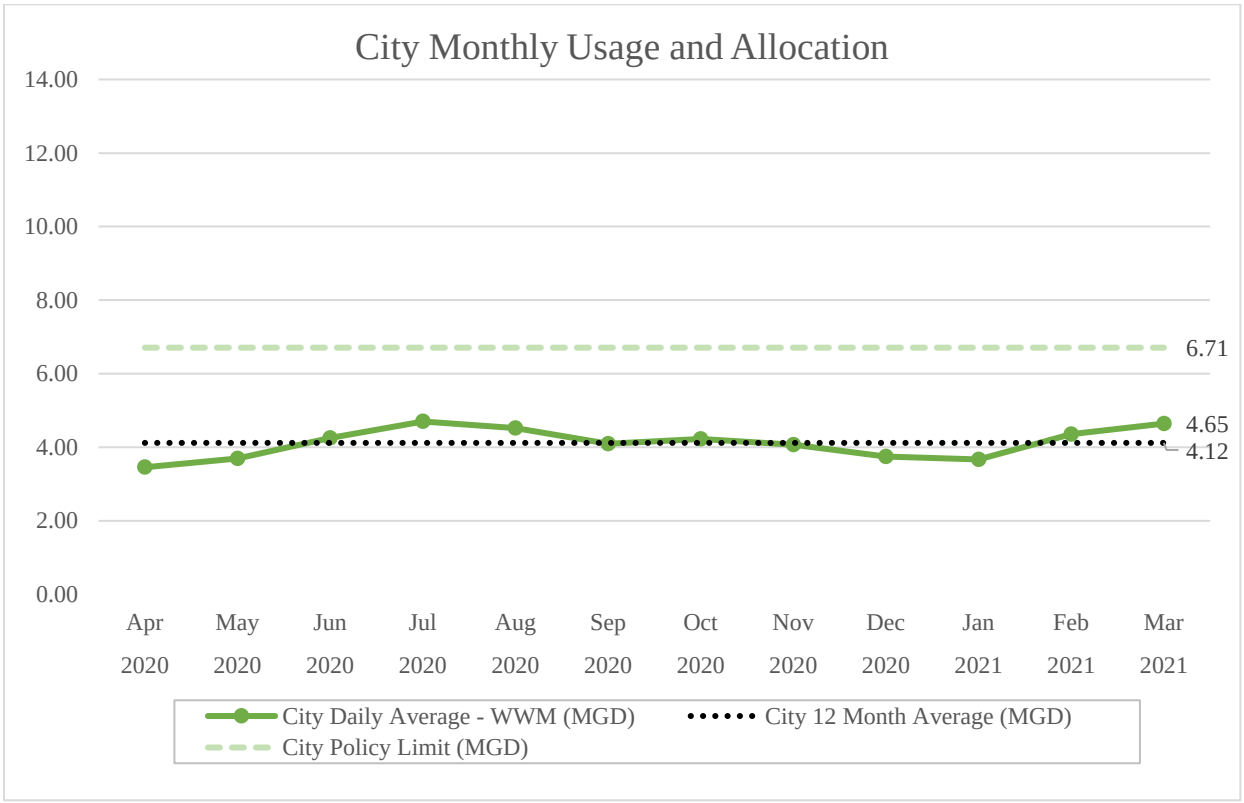
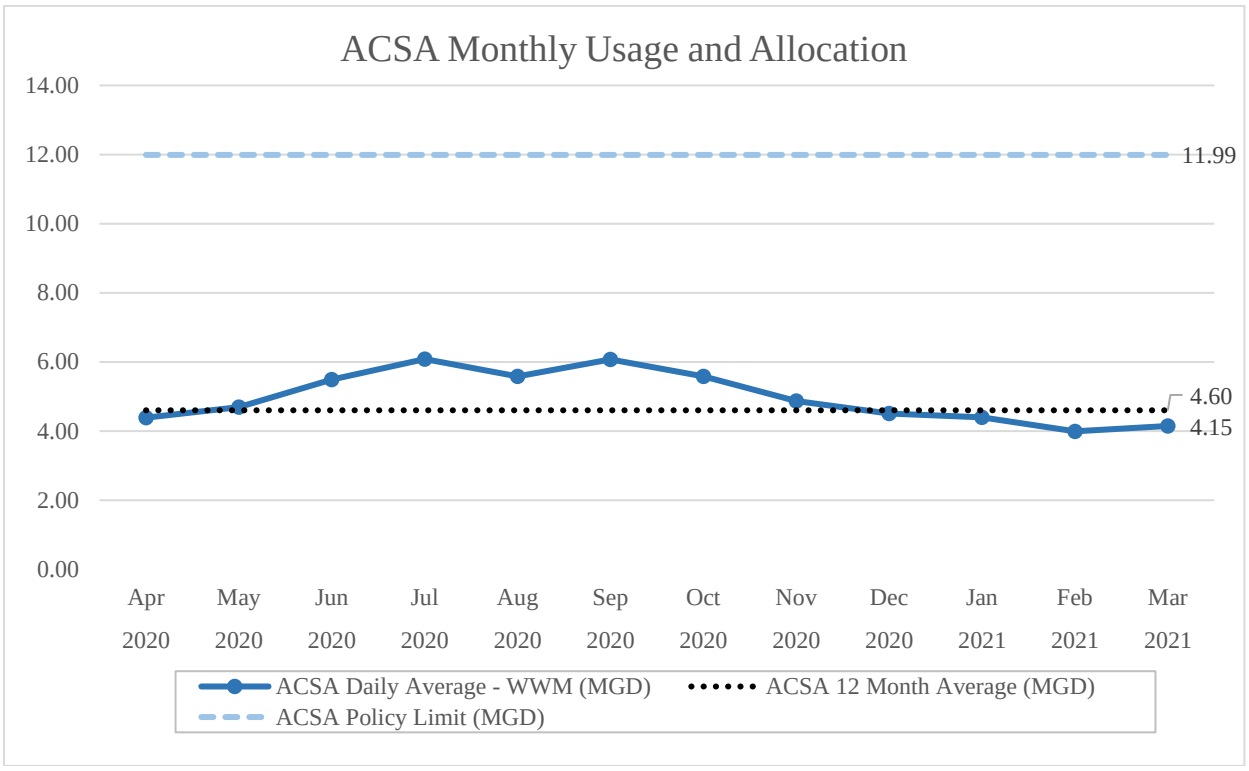


Figure 2: Albemarle County Service Authority Monthly Water Usage and Allocation



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

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

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

SUBJECT: **AWARD OF TERM CONTRACT FOR PROFESSIONAL SURVEYING SERVICES**

DATE: **APRIL 27, 2021**

RWSA has maintained a term contract for professional surveying services for two five-year terms. Over the course of those contracts, access to a wide variety of surveying services, including boundary survey, bathymetric survey, construction stakeout, and as-built survey, have proved invaluable to the Authority. As the current contract will be expiring soon, RWSA needed to procure these services again.

A Request for Proposals (RFP) was developed and advertised by RWSA and issued jointly with RSWA on February 11, 2021. We received eight proposals on March 11, 2021. The selection committee short-listed and interviewed three firms on March 24-25, 2021. Based upon the qualifications provided in the RFP and geographic proximity, the selection committee found that Draper Aden Associates (DAA) was best qualified to provide these services. DAA has a wide range of services including (but not limited to) traditional boundary and topographic survey, bathymetric/hydrographic survey, and drone capabilities. In addition, DAA has an in-house subsurface utility engineering team, which has helped us locate deep or otherwise non-locatable utilities in the past in a timely manner. DAA has a local office in Charlottesville, which helps ensure timely response to complex field situations and system emergencies. In addition to providing quality deliverables under two previous surveying term contracts, DAA has also worked extensively with the City of Charlottesville and University of Virginia. DAA is well qualified to provide any surveying services needed to support our mission of providing clean, safe, and high-quality water and wastewater services. The term of each contract will be for one year, with the option for four one-year renewals.

Board Action Requested:
Authorize the Executive Director to execute a Professional Services Term Agreement with Draper Aden Associates for Professional Surveying Services, and future work authorizations under the conditions of the Term Agreement.

Annual Reservoir Report

Results from 2020

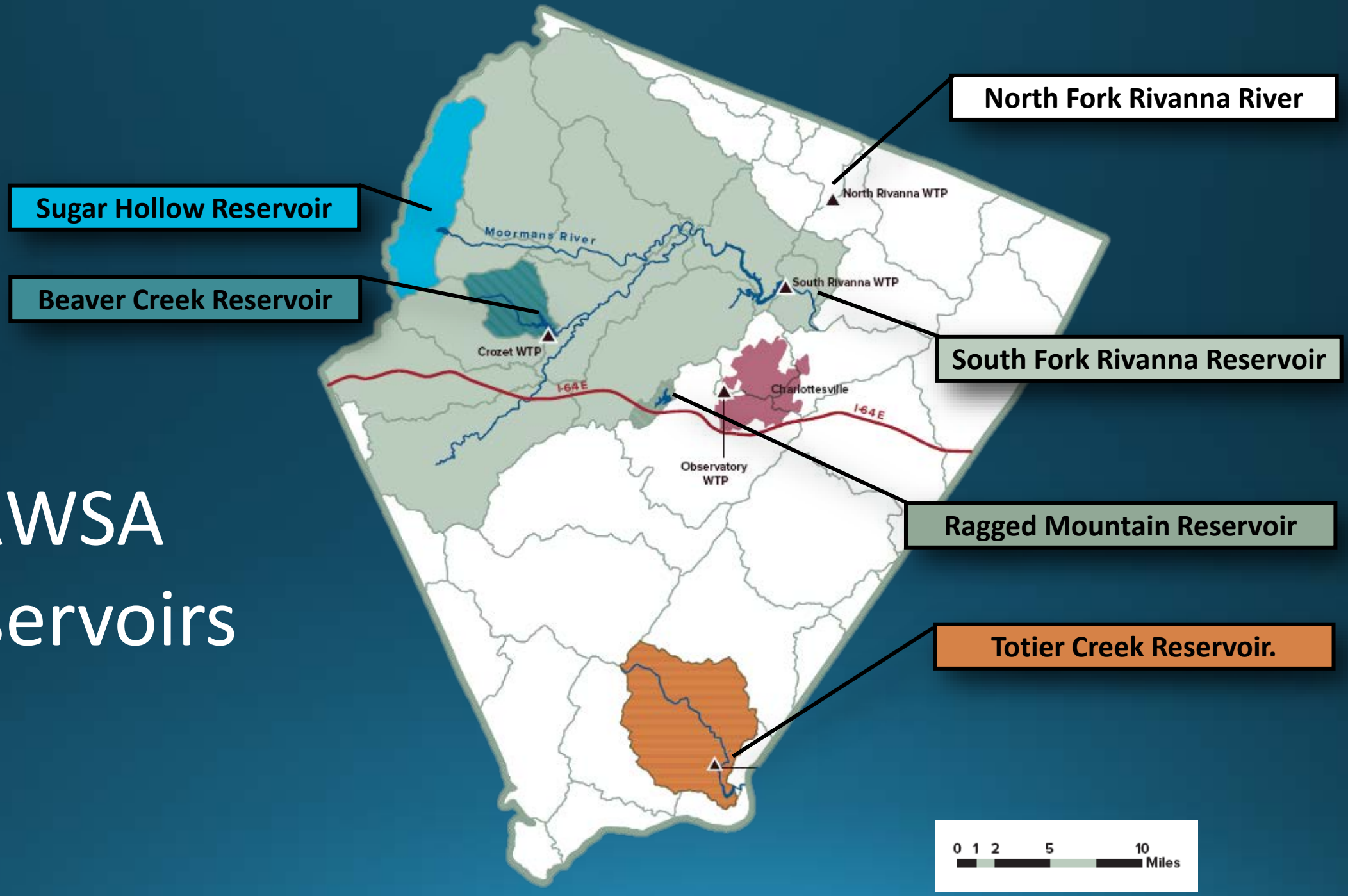
RIVANNA WATER & SEWER AUTHORITY

Presented by:

Andrea Bowles, Water Resources Manager

April 27, 2021

RWSA Reservoirs



Reservoir Characteristics

Reservoir	Volume* (MG)	Surface Area (Acres)	Watershed ($miles^2$)
South Fork Rivanna	885	366	259
Ragged Mountain	1,441	170	2
Sugar Hollow	339	47	18
Beaver Creek	500	104	10
Totier Creek	155	66	29

* Data Sources

- South Rivanna 2018 bathymetry
- Ragged Mountain 2018 bathymetry
- Sugar Hollow 2015 bathymetry
- Beaver Creek Reservoir 2016 Bathymetry

Water Quality and Management Assessment

- Began detailed study in 2014
- Established baseline
- Annually review yearly data and methodology by expert
- Valuable information collected providing a better understanding of reservoir processes
- Use this data to make operational decisions

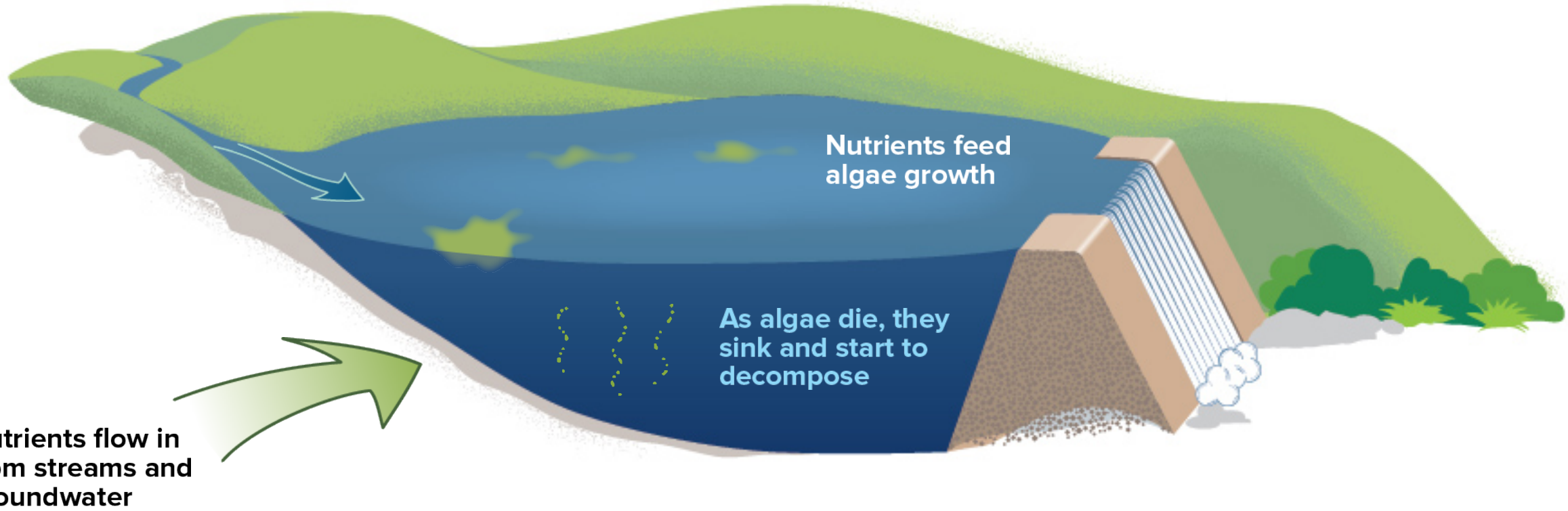
Reservoir Monitoring Program

Program Goal: To collect data to understand the biological processes in our reservoirs, and inform water treatment decision-making.

- Established baseline data in 2014
- Annual review of data and program by expert
- Bi-weekly sampling at Urban reservoirs (April-Nov)
- Monthly sampling at SHR and TCR (excluding 2020)
- Valuable information collected which provides a better understanding of each reservoir and in-lake processes
- Use this data to make operational and capital decisions

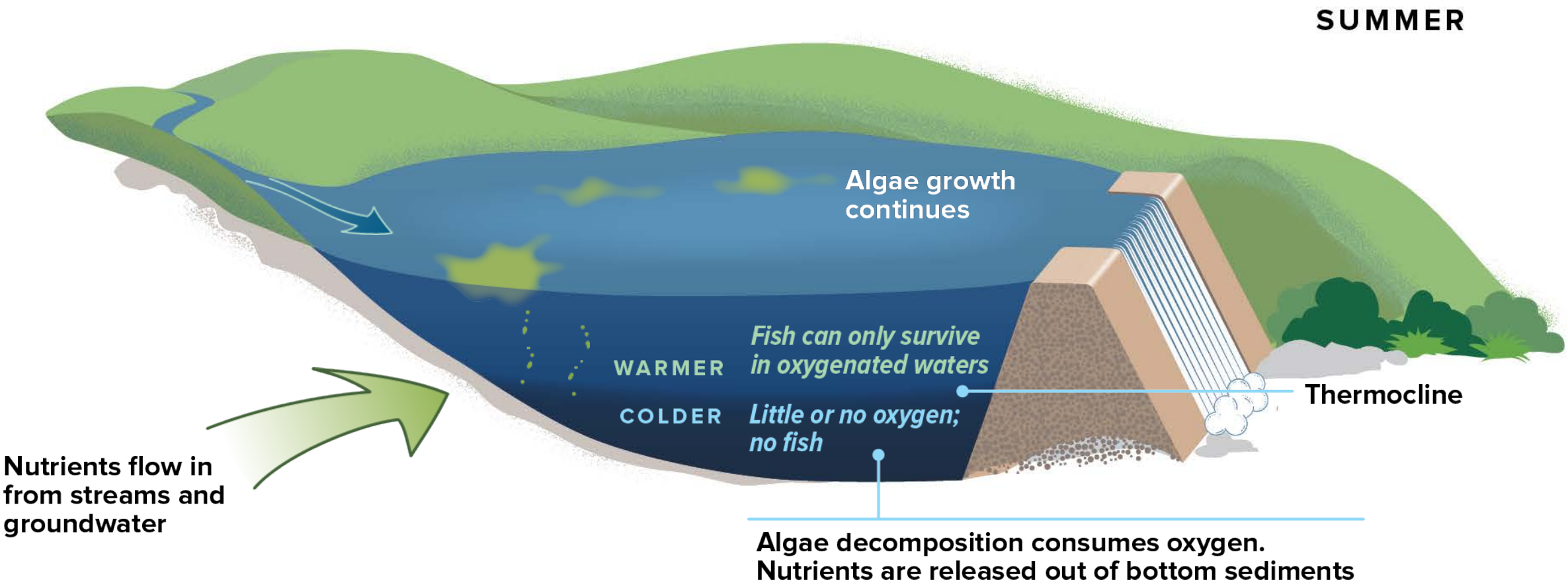
HOW A RESERVOIR CHANGES THROUGH THE SEASONS

SPRING



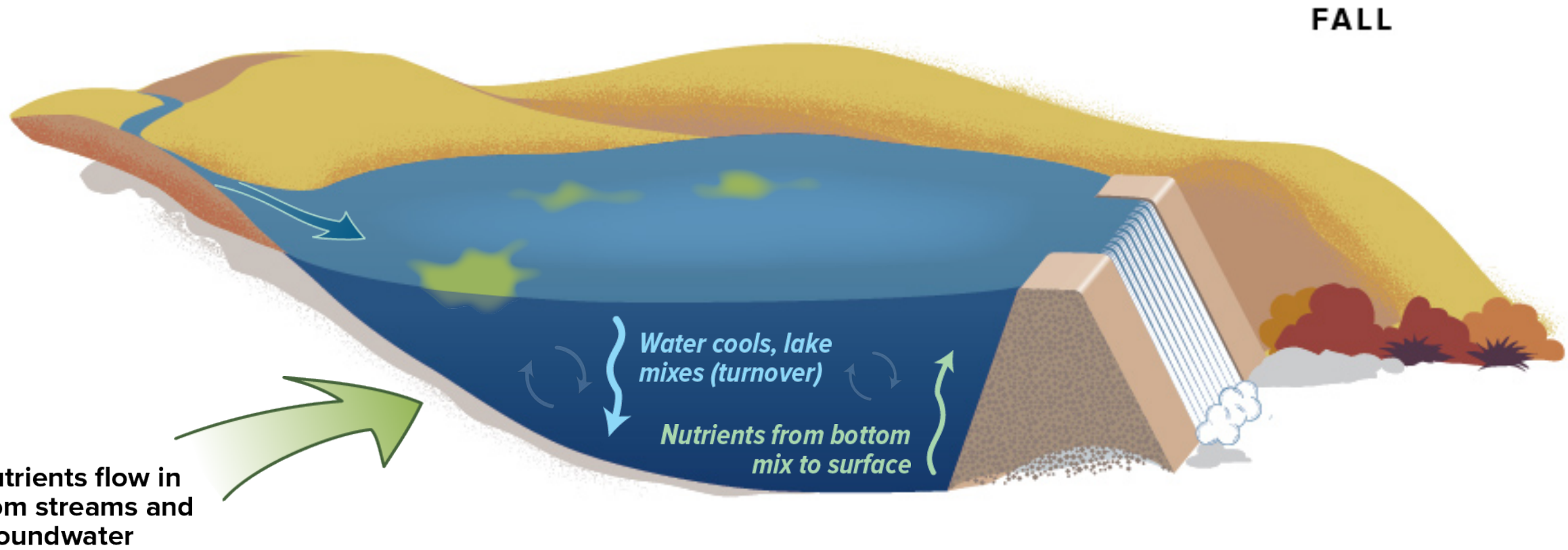
DiNatale WATER CONSULTANTS

HOW A RESERVOIR CHANGES THROUGH THE SEASONS



DiNatale
WATER CONSULTANTS

HOW A RESERVOIR CHANGES THROUGH THE SEASONS



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Monitoring Trends

- Beaver Creek Reservoir
  - Stratification - early May
  - Turnover – early November
  - Reservoir anoxic at depths mid-late May
  - Phosphorus from sediments and streams higher in 2020

- South Fork Rivanna Reservoir
  - Run-of-the-River Reservoir
  - Stratification variable each year – May
  - Turnover - early October
  - No blooms requiring treatment
  - Very small hypolimnion

- Ragged Mountain Reservoir
  - Stratification – May
  - Turnover – late November
  - TP in surface samples higher than previous years

Number of Algaecide Applications for Control of Blue-green Algae

Year	SR	BC	RM	SH	TC
2014	0	5	2*	0	0
2015	2	4	3*	1	1
2016	1	8	0	0	0
2017	2	5	0	0	0
2018	0	7	0	0	0
2019	0	6	0	0	0
2020	0	5	1	0**	0**

* Treatments at RM 2014 and 2015 were for green algae blooms

** Not sampled in 2020

Reservoir Surveillance

- RWSA conducts boat surveys of our reservoirs
  - BC, SR, RM – twice a year
  - SH, TC – once a year
- Inspecting for:
  - Trash
  - Dump sites
  - Illicit discharges
  - Unauthorized withdrawals
  - Invasive aquatic weeds (hydrilla)
  - Potential Water Protection Ordinance violations

Land Use Management

- Coordinate with City and County on land management around reservoirs
  - Recreational access / boat docs
  - Law enforcement
  - Safety

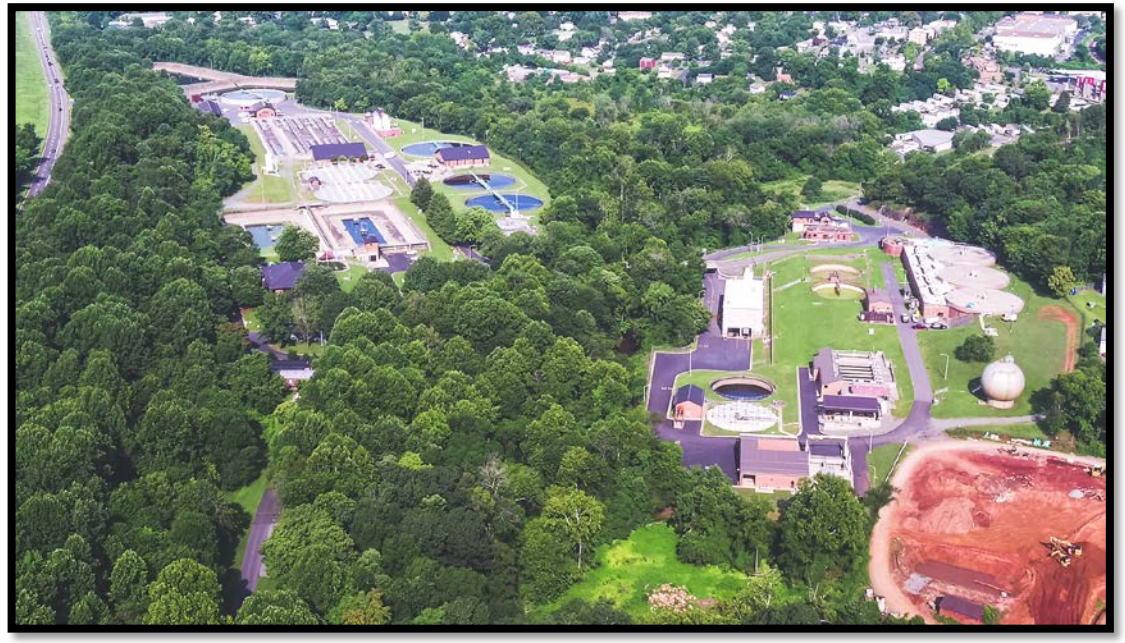
Source Water Protection Initiatives

- Updating Source Water Protection Plans for BC and TC reservoirs, North Fork intake, and Red Hill
- Received $19,200 grant from VDH to establish source water protection signage in three watersheds
- Participated in riparian zone planting and stream cleanups with Rivanna Conservation Alliance
- Participating on the County's Stream Health Initiative
- Source Water Protection Committee meeting in May 2021

Takeaways

- RWSA has a robust reservoir monitoring program that informs water treatment decision-making
- New in 2020: Blue-green algae bloom at Ragged Mountain
- Active Source Water Protection Program and collaboration with partners.

Questions?



Review of RWSA Organizational Agreements

PRESENTED TO THE BOARD OF DIRECTORS

BY BILL MAWYER, EXECUTIVE DIRECTOR

APRIL 27, 2021

RIVANNA WATER & SEWER AUTHORITY

Foundational Documents

1. Articles of Incorporation, 1972:

- The State Water Control Board notified the City and County about the availability of $13 M in Federal and State grants conditioned that the City and County must designate a single political entity to speak for both localities.
- By Concurrent Resolution of City Council and the Albemarle Board of Supervisors, the State Corporation Commission was notified of the intention to create the Rivanna Water Sewer Authority pursuant to the Virginia Water and Sewer Authorities Act (1950). RWSA was incorporated as a public body politic and corporate.
- For the purpose of acquiring, financing, constructing and maintaining facilities for a potable water supply and for abatement of pollution resulting from sewage from the City and the County.
- 5 Board Members: 2 from City, 2 from County and 1 jointly appointed (to be paid $1800/year).
- Prohibited RWSA from contracting with any other party in the City or County for water or sewer services.

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

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

3. By-Laws of RWSA, 1973

Revisions to the Articles of Incorporation

4. Amended and Restated Articles of Incorporation, 1985:

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

5. Second Restated Articles of Incorporation, 1986:

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

6. Third Restated Articles of Incorporation, 2009:

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

7. Forth Restated Articles of Incorporation, 2017:

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

Revisions to the By – Laws

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

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

Major Facilities

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

- Water and Wastewater treatment charges determined by applying the RWSA rates to the total amount of water delivered to the City and ACSA as obtained by their respective customer meter readings.

10. Joint Resolution, 1983:

- Purchased Buck Mtn Property for a drinking water supply reservoir; created Buck Mtn Surcharge on new public water connections.

11. Southern Loop Agreement, 1987:

- Funding plan for water lines and storage tanks from Ob WTP to Avon St (Western Branch; completed), and from Avon St to E. High St. (Eastern Branch; future location recently replanned and named “Central Waterline”: needs new Agreement**).

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

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

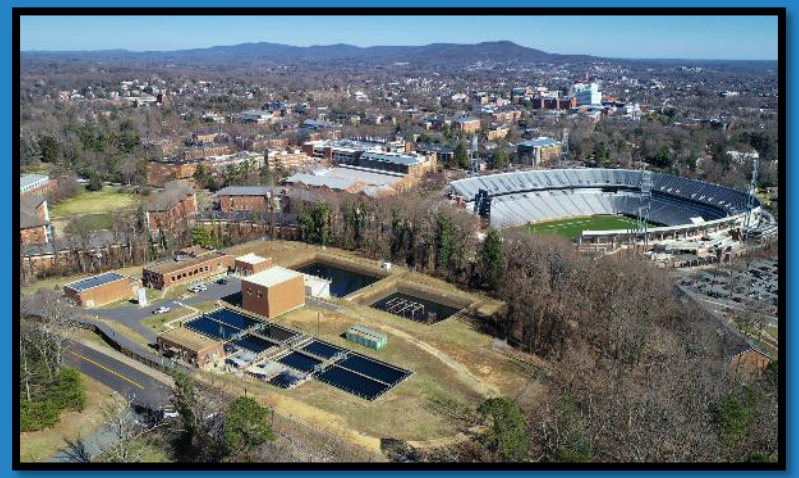
13. Urban Water Line, 1993:

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

14. South Rivanna WTP Expansion Agreement, 2003:

- Allocated cost of 4 mgd expansion of SR WTP.
- Allocated Non-capacity CIP costs for Urban Water System: 48% City / 52% ACSA.
- Allocated Urban plant capacity and SRR safe yield.

Major Facilities



15. Ragged Mtn Dam Project Agreement, 2012:

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

16. Water Cost Allocation Agreement, 2012:

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

17. Wastewater Projects Cost Agreement, 2014:

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

18. Amendment to the “4 Party Agreement”, 2015:

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

19. Joint Resolution, 2019:

- Ended the Buck Mtn surcharge.

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

- Allocated costs for additional capacity in these facilities.

21. Observatory WTP Ground Lease; 2020:

- 49-year lease with UVA.

Summary

- There are a large number of Agreements we must administer to accurately manage our resources and budgets.

Questions?