RIVANNA
WATER & SEWER AUTHORITY

Board of Directors Meeting

June 25, 2019

2:15pm

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

BOARD OF DIRECTORS

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

DATE: **June 25, 2019**

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

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

AGENDA

1. ***CALL TO ORDER***

2. ***MINUTES OF PREVIOUS BOARD MEETINGS***
   a. *Minutes of Regular Board Meeting on April 23, 2019*
   b. *Minutes of Regular Board Meeting on May 28, 2019*

3. ***RECOGNITION***
   a. *Mr. Michael R. Davis*
   b. *Mr. Michael R. Haley*
   c. *Mr. Michael F. Ralston*

4. ***EXECUTIVE DIRECTOR'S REPORT***

5. ***ITEMS FROM THE PUBLIC***

6. ***RESPONSES TO PUBLIC COMMENTS***

7. ***CONSENT AGENDA***
   a. *Staff Report on Finance*
   b. *Staff Report on Ongoing Projects*
   c. *Staff Report on Operations*
   d. *Resolution of Official Intent to Reimburse Expenditures with Proceeds of a Borrowing*
   e. *Construction Change Order Authorization - Crozet Interceptor System Pump Station Improvements Project– Anderson Construction*
   f. *Construction Work Authorization - Sugar Hollow Transfer Flow Meter – G.L. Howard Construction*

g. *Construction Contract Award – Scottsville Water Treatment Plant Finished Water Flow Metering Improvements – Anderson Construction*

8. OTHER BUSINESS

a. *Presentation: Buck Mountain Property Review; Andrea Terry, Water Resources Manager*

9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

10. CLOSED MEETING: (JOINT SESSION WITH THE RSWA)

11. ADJOURNMENT

GUIDELINES FOR PUBLIC COMMENT AT RIVANNA BOARD OF DIRECTORS MEETINGS

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

Members of the public requesting to speak will be recognized during the specific time designated on the meeting agenda for "Items From The Public." Each person will be allowed to speak for up to three minutes. When two or more individuals are present from the same group, it is recommended that the group designate a spokesperson to present its comments to the Board and the designated speaker can ask other members of the group to be recognized by raising their hand or standing. Each spokesperson for a group will be allowed to speak for up to five minutes.

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

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

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

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

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RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
April 23, 2019

A regular meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was held on Tuesday, April 23, 2019 at 2:15 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia.

Board Members Present: Lauren Hildebrand, Mike Gaffney, Mike Murphy, Jeff Richardson (left at 3:19 p.m.), Liz Palmer.

Board Members Absent: Kathy Galvin, Gary O'Connell.

Staff Present: Lonnie Wood, Jennifer Whitaker, Phil McKalips, David Rhoades, Steven Miller, Liz Coleman, Scott Schiller, Bill Morris, Victoria Fort, Dyon Vega, Austin Marrs, Andrea Terry, David Tungate, Michelle Simpson, Bill Mawyer, Katie McIlwee.

Also Present: Mr. Kurt Krueger, RWSA counsel, members of the public and media representatives.

1. CALL TO ORDER

Mr. Gaffney called the regular meeting of the Board of Directors of the Rivanna Water and Sewer Authority at 2:59 p.m.

2. MINUTES OF PREVIOUS BOARD MEETINGS

a. Minutes of Regular Board Meeting on March 26, 2019

Dr. Palmer moved that the Board approve the minutes of the meeting of March 26, 2019. The motion was seconded by Mr. Richardson and passed unanimously (5-0). Ms. Galvin and Mr. O'Connell were absent from the meeting and the vote.

3. ***RECOGNITION***

a. Joint Resolution of Appreciation for Mike Murphy

The resolution of appreciation was adopted by the RSWA's action as follows:

WHEREAS, Mr. Murphy has served as a member of the Rivanna Water & Sewer Authority and Solid Waste Authority Boards of Directors since August of 2018; and

WHEREAS, over that same period Mr. Murphy has demonstrated leadership in water and sewer, solid waste and recycling services; and has been a valuable member of the Boards of Directors and a resource to the Authorities; and

WHEREAS, Mr. Murphy's understanding of the water, sewer, solid waste and recycling operations of the City of Charlottesville, the Water & Sewer Authority and the Solid Waste

Authority has supported a strategic decision-making process that provided benefits to the customers served by the City of Charlottesville as well as the community as a whole.

WHEREAS, the Water & Sewer Authority and Solid Waste Authority Boards of Directors are most grateful for the professional and personal contributions Mr. Murphy has provided to both Authorities and to the community; and

NOW, THEREFORE, BE IT RESOLVED that the Rivanna Water & Sewer Authority and the Rivanna Solid Waste Authority Boards of Directors recognize, thank, and commend Mr. Murphy for his distinguished service, efforts, and achievements as a member of the Rivanna Water & Sewer Authority and the Rivanna Solid Waste Authority, and present this Resolution as a token of esteem, with their best wishes in his future endeavors.

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

4. EXECUTIVE DIRECTOR'S REPORT

Mr. Mawyer reported that they continued with safety training programs and were pleased that this was part of the strategic plan for workforce development. He stated that Tom Corrice had updated his wastewater license from Class IV to Class III, and they conducted an Earth Day event as part of their environmental stewardship. He stated the State was moving forward with Phase III of the watershed improvement plan to clean up the Chesapeake Bay and was not likely to achieve its goals within the allotted time period, with legislation proposed to reduce the nutrient output from wastewater plants to 4 mg for nitrogen and 0.3 mg for phosphorous. He stated the RWSA had been doing a good job in reducing nitrogen and believed that, with additional treatment, it can meet the goals.

Mr. Mawyer mentioned that they had discussed the new FOIA laws and requirements at the last VAWWA meeting, and they learned there could be penalties for individuals for not following FOIA rules, and for a board if it did not follow closed session requirements.

Mr. Murphy noted that City Attorney John Blair and Meghan Ryan of the Virginia Coalition on Open Government had recently conducted a FOIA training that was open to the public. He asked if there were Board members who didn't feel they knew enough about the FOIA obligation, the City could likely provide it to them.

Mr. Krueger responded that for the last 20 years, the City representatives on the Board have been given FOIA training by the City Attorney, and the County representatives on the Board by the County Attorney. He stated he worked with Mr. Mawyer, Mr. Wood, and Mike Gaffney, and he had not conducted repetitive training for the Board as everyone else already had the training.

Mr. Murphy stated that it continued to evolve and for boards that had a lot of citizens, it was an extremely important part of their orientation to service.

Mr. Krueger commented that it was also very important when they had a Citizens Advisory Council.

Mr. Mawyer resumed his presentation with photos of the recent Earth Day cleanup event. He next reviewed the Birdwood waterline, noting that they have completed about 4,300 feet and were two-thirds completed and somewhat ahead of schedule. He stated they were working on erosion control issues with the County, UVA Foundation, and residents of the neighborhoods. He presented a picture with the route of the new waterline, pointing out the locations that had been completed.

Mr. Mawyer stated they continued to work with the UVA Foundation, other businesses, and residents on the South Rivanna to Ragged Mountain waterline easements. He stated they had a surveyor in the field currently and were conducting appraisals, and they hoped to make offers in late May to private owners at Ingleridge Farm.

Mr. Mawyer reported they were working with the University on the Observatory Water Treatment Plant leases, and had done community outreach in April with UVA, Western Albemarle High School, and Hollymead Elementary School. He stated he would make a budget presentation to the Albemarle County Service Authority in May and they were on the agenda for an upcoming meeting with the Crozet CAC in June. He stated they have issued a press release about the granular activated carbon project and would conduct an open house on May 9 at the South Rivanna Treatment Plant to demonstrate the system.

Dr. Palmer noted that the state's draft of Phase III of the Watershed Implementation Plan was already up for public review and comment, and she asked if the legislation was supposed to come through next year and if the legislation had passed.

Mr. Mawyer clarified that the closing date for comments was June 7 and stated they wanted the legislation as soon as possible to meet 2025 goals, and he did not think the legislation had passed yet. He stated he did not know if Phase III of the Watershed Implementation Plan could be made without the approval of the General Assembly, though he would find out.

Mr. Krueger interjected that he thought this might be through the adoption of regulations to change the timetable and may not result in an actual bill.

Mr. Gaffney commented that he had come across a chart of the Chesapeake Bay watershed, graded by locations – with a lot of Fs and Ds – but the James River watershed had a C+.

Mr. Mawyer added that he had learned that the James River watershed was the only one to have met its goals thus far. He stated that he had asked why the requirements were changing since the James River watershed was meeting its goals, and he was told that this was because it was a statewide program and they wanted everyone to participate.

Mr. Mawyer reported on the monthly wastewater allocations for nitrogen and phosphorous.

Mr. Krueger commented that this was traditionally a battle that the dischargers into the James River had lost.

Dr. Palmer stated she'd like to see other groups join.

Mr. Mawyer stated the legislation exempts Lynchburg, Richmond, and Hopewell wastewater plants from the restrictions – so the equity challenge continued.

5. ITEMS FROM THE PUBLIC

Mr. Harry Wellons, owner of Danwell Farm, addressed the Board. He stated the farm was located on Buck Mountain Creek and he has come to address the 82 acres the RWSA took in the 1980s. He stated his understanding was that the RWSA intended to build a reservoir at Buck Mountain Creek, which had not happened as the land had been used to mitigate for expansion of the Ragged Mountain Reservoir, and he requested that he be allowed to reacquire some of this taken land. He distributed copies of an aerial photograph of the property and surrounding land, which he stated was originally 312 acres, with 82 acres taken out of the center. He stated there were also 38 acres of buffer zone that had all been fenced, with cattle having access to waterers in the fields so they did not get into any of the waterways. He pointed out the fence line and areas that have been used for mitigation, including plastic sleeves, the area of the house site, and fields they use for hay.

Dr. Wellons asked that he be permitted to buy back the land should it not be used by RWSA to reunite the property. He stated he was willing to abide by all the restrictions in place to keep cattle from the water and to be a good steward of the land. He noted that when he had the house constructed in 1979, he was not aware of plans to make use of Buck Mountain for a reservoir, and could have used other sites on the property to construct the house if he had known. He expressed concern that the take line ran along the western side of the fence around the yard and may eventually obstruct their view with future growth.

6. RESPONSES TO PUBLIC COMMENTS

Mr. Gaffney stated that the Board would likely have a response for Dr. Wellons at their May meeting, or possibly at the end of the current meeting.

Mr. Gaffney stated that several times over the last 17-18 years, Rivanna decided to expand Ragged Mountain and had discussions of the property – and it may be good for staff to refresh the Board's memory as there were new members. He stated that it would be helpful to have background and how they got to the current point.

Dr. Palmer noted that they should also discuss whether they were supposed to be replanting the trees on that site.

Mr. Mawyer responded that it was a mitigation site for the Ragged Mountain Dam, and Andrea Terry took care of the Buck Mountain property – but there were some extenuating circumstances with people living in the area, and a pond dam with regulatory requirements. He mentioned that he knew Dr. Wellons was coming to this meeting. Mr. Mawyer stated that there were 1,312 acres and 38 parcels purchased as part of the property, with two parcels condemned, including Dr. Wellons' property. He stated there were about 600 acres in the mitigation area, and staff would bring back a presentation and review all of this for the Board in May.

Mr. Peter Wiley, Dr. Wellons' real estate agent, stated that people in the area – considering the mitigation had taken place and the reservoir would not be constructed – wanted to know what the purpose would be for holding on to the land.

Mr. Mawyer responded that it could become a reservoir in the distant future, and the mitigation site could be relocated with approval from the Department of Environmental Quality. He noted that if there were a reservoir there that would inundate the mitigation, they would have to find a replacement mitigation and rebuild it somewhere else. Mr. Mawyer stated that the mitigation didn't prevent it from becoming a reservoir in the future, but the James River spinymussel was an environmental impediment and no one knew if the current regulations would continue into the future.

7. CONSENT AGENDA

a. Staff Report on Finance

b. Staff Report on Ongoing Projects

c. Staff Report on Operations

d. Proposed Additional Holiday: July 5, 2019

e. Approval of Easement Acquisition Services, SRR to RMR Pipeline; ERM & Associates

Dr. Palmer moved that the Board approve the Consent Agenda. The motion was seconded by Mr. Richardson and passed unanimously (5-0). Ms. Galvin and Mr. O'Connell were absent from the meeting and the vote.

8. OTHER BUSINESS

a. Presentation: Rivanna Conservation Alliance - Lisa Wittenborn, Program Director and Julia Ela, Operations Director

Rivanna Conservation Alliance

Program Director Lisa Wittenborn and Operations Director Julia Ela of the Rivanna Conservation Alliance presented.

Ms. Wittenborn stated that they have taken over for Robbi Savage and would update the Board on monitoring programs and items they were working on. She stated her organization was formed in 2016 by a merger of Rivanna Conservation Society and Streamwatch. She explained that their vision is to have a healthy and thriving community that valued rivers and streams, and they worked to protect the Rivanna River and its tributaries through a number of programs. She noted that the Rivanna watershed is part of the Chesapeake Bay watershed and presented a map of the river system. She stated they involve schoolchildren in classroom and outdoor educational activities such as stream water quality monitoring, and would take students from Burley Middle School to do a buffer planting along Schenks Branch.

Ms. Wittenborn stated their new Pop-Ups program would include river activity programs at local parks, kiosks at boat landings, the 100-acre Schier Natural Area and Nature Center in Fluvanna County, and they would participate in public events such as the May 11 Riverfest. She explained that the River Steward program has two stewards who look for safety and water quality issues and work with partners like the County to remedy situations. She stated that her organization participates in stream cleanups, paddling experiences for kids, a river race, and conservation projects such as tree plantings, rain gardens, and buffer restoration. She introduced Julia Ela to present on monitoring programs.

Ms. Julia Ela stated that in addition to visual monitoring performed by the river stewards, they have two scientifically rigorous watershed water quality monitoring programs for which they have been certified as level three monitors by Virginia Department of Environmental Quality, which is equivalent to those collected by the state agency itself, and can be used to list and delist impaired water and in TMDL processes, the MS4 stormwater permitting programs, and help to inform and guide water quality improvement decisions. She explained that state certification adds a lot of value and creates more investment by volunteers.

Ms. Ela reported that the first monitoring program is the Benthic Macroinvertebrate Streams Monitoring Program, for which they have a full-time staff member and volunteers dedicated to sampling the organisms that live in stream bottoms and whose presence or absence can indicate long-term stream health. She stated there are 50 sites throughout the watershed that they sample each spring and fall. She stated their other level three program is the Bacteria Monitoring Program, in which volunteers test for E-Coli bacteria, with some sites sampled monthly and others weekly, with information posted on their website. She presented a map of the sampling locations and indicated that pink dots represent benthic monitoring sites, yellow dots represent 16 established bacteria sites, and they plan to add four additional sites. She noted that the benthic sites present a long-term picture while bacteria monitoring presents a snapshot in time, with the two programs together providing a good indication of stream health. She stated they are looking into the addition of a chemical monitoring program to measure Ph and conductivity.

Mr. Murphy asked what the orange squares on the map represented.

Ms. Ela responded that these represented educational kiosk locations.

Dr. Palmer asked Ms. Ela what the land use categories were that the 50 benthic sampling sites represented.

Ms. Ela explained that four locations are reference sites located near the headwaters and within or adjacent to Shenandoah National Park. She stated the other sites represent agricultural, urban, and forested land uses.

Dr. Palmer asked if any sites are near traditional illegal dumping areas.

Ms. Wittenborn explained that the sites were selected almost 15 years ago by Streamwatch and she is not sure of the rationale for why they were chosen. She stated they have been talking about

updating the internal land use study to consider whether they need to adjust the site locations or to add sites, though they don't want to eliminate existing ones because they have a long legacy of data available.

Dr. Palmer suggested they consider adding some traditional dump sites if they decide to increase the number of sampling locations and she offered to provide a list.

Ms. Ela remarked that they are looking to work with partners that are doing significant restoration activities to conduct before and after monitoring at additional sites.

Ms. Ela stated she would review monitoring highlights from last year. She stated 2018 was the first year they used the Level 3 monitoring program throughout the sampling season. She stated their bacteria monitors detected some sewer line leaks, which led to very quick repairs and which may have gone unnoticed for a long time. She stated they moved to a new location on River Road so that all staff and volunteers are now located in one space, which has created more cohesion. She noted that they won the USDA NRCS Virginia and Southeast Region awards for outstanding volunteer group.

Ms. Ela explained that their 2019 monitoring goals are determined by staff, as recommended from their scientific advisory committee, and work with community partners to make sure the goals align. She stated they would add habitat assessments at the benthic locations to obtain a more complete picture of what is going on in the surrounding area to inform them of what is occurring with the benthic community in the stream. She stated they hope to conduct a trend analysis utilizing 15 years of data to determine if there have been land use changes or anything else that may have contributed to changes, they are looking to establish a new Level 3 program for PH dissolved oxygen and conductivity, and would take data from a 2007 study of fish in conjunction with the Woolen Mills Dam removal and hope to replicate it in conjunction with Department of Game and Inland Fisheries. She stated they publish an annual Watershed Stream Health Report and would update date this at the end of the summer.

Mr. Gaffney asked what conductivity was in this context.

Ms. Wittenborn replied that they would look at salinity conductivity with an interest in the use of road salt and have been able to make linkages to conductivity and the health of the benthic community.

Ms. Ela interjected that it is a measure of ion concentration in the water to see how strongly the conductivity correlates to road salts vs. other things.

Dr. Palmer asked how many paid employees they have.

Ms. Wittenborn replied that there is one full-time employee plus two three quarters time employees and two part-time river stewards, one of whom also serves as the education manager.

Ms. Ela added that they are about three FTEs spread over five people.

Dr. Palmer remarked that they do amazing work with a small number of employees. She asked if they have attended Board of Supervisors or City Council meetings.

Ms. Wittenborn stated they have not.

Dr. Palmer invited her to attend a Board of Supervisors meeting.

Mr. Mawyer added that they would continue to support the RCA in the 2020 budget.

b. Presentation: Annual Reservoir Report – Andrea Terry, Water Resources Manager

Ms. Andrea Terry, Water Resources Manager, presented. She stated she would talk about water quality, monitoring, quantity, and the results of the bathymetric surveys completed this year.

She reminded the Board that South Fork Rivanna, Sugar Hollow, and Ragged Mountain make up the urban area reservoirs, Totier Creek serves Scottsville, and Beaver Creek serves Crozet. She stated they began a reservoir water quality and management assessment in 2015 with DiNatale Water Consultants, which looked at data from various studies and created a long-term monitoring plan for each reservoir in order to develop a robust database and understand what is happening. She stated they learned that the reservoirs differ from one another and looked at potential water quality management strategies.

Ms. Terry stated Phase 2 focused mainly on Beaver Creek and South Fork Rivanna Reservoirs, since they have had issues with algae blooms, and involved sampling and flow studies including identifying the source of nutrients, with refined reservoir management methods recommended. She stated the primary method recommended is the hypolimnetic oxygenation system for Beaver Creek. She stated that, though the consultant's work is done, they continue to collect data bi-weekly from April – November from three reservoirs and have learned a lot from the samples. She stated the monitoring data from the past year indicates they are trending similar to what they had been.

Ms. Terry stated that stratification occurs early in May at Beaver Creek and lasts through November, with the surface water becoming warmer and setting up temperature gradients that lead to algae blooms as a result of nutrients at the bottom, including an algae bloom at Beaver Creek last December. She explained that Beaver Creek has a ten square mile watershed and they want to know how long the water remains in the reservoir, which is known as residence time, which they estimate ranges from 39–135 days, with shorter times during periods of high flows. She stated they are investigating the possibility of installing a water quality sonde in Beaver Creek to continuously monitor the water.

Ms. Terry characterized South Fork Rivanna as a run-of-the-river reservoir, as it operates like a river, with residence times of less than one day during a storm, which does not provide a lot of time for nutrients to accumulate. She noted that 2018 was a very wet year, the reservoir never fell below the crest, and they did not experience any algae blooms above the triggers. She stated they have not seen any blue-green algae blooms at Ragged Mountain since it was filled, though they have seen green algae and Totier Creek and Sugar Hollow have not had any algae blooms

that required treatment. She presented a slide with information on algae treatments at the reservoirs and noted that they treated Beaver Creek with algaecide last week and are monitoring the reservoirs and will continue to collaborate with the County, Rivanna Soil and Water Conservation District, RCA and other organizations.

Ms. Terry addressed an earlier question about mitigation at Buck Mountain, explaining they are working with a consultant who is doing studies of mitigation sites and providing data on what is and what is not living.

Ms. Terry presented slides with data on useable storage volumes for the reservoirs before the bathometric study was established in 2018, followed by slides with current data. She stated that South Fork changed from 883M gallons to 885M, and Ragged Mountain from 1.5B to 1.4B gallons.

Ms. Palmer emphasized that there may be questions about accuracy as there were several years in between and different people were conducting the study.

Ms. Terry pointed out that there has been a net decrease of 70M gallons in total useable storage in the urban water system. She stated the last time they had a study from which they could make a stage storage curve was the 2016 as-built for the Ragged Mountain dam, based on the as-built drawings of the dam itself.

Ms. Palmer asked if the decrease was statistically significant.

Ms. Whitaker responded that it was from the perspective of Ragged Mountain, and she pointed out that this is the first true baseline. She explained that they flew the site in 2009, conducted a survey, excavation, and estimates based on drawings, whereas recently they conducted a detailed analysis above and below the water using LIDAR, and suggested that they use this baseline going forward as it provides greater accuracy with respect to lake volume. She opined that the reservoir shifts and sediment is flushed out in storms.

Ms. Terry noted that the last time they did this at South Fork was 2009, and the 883MG estimates came from that effort– and past estimates suggested they would be reducing storage by 15M gallons a year, but the latest data indicated that has not happened.

Mr. Gaffney commented that the sand bars seemed to be getting bigger.

Ms. Terry emphasized that the sediment shifts around, and the 2018 May storm flushed out a lot of sediment. She noted that the recent information reduces the capcity by 70M gallons, and assuming consumption of 10 MGD, that would be 7 days of usable storage.

Mr. Murphy commented that as the City moved forward with its new comprehensive plan, with conversations about density and consumption, he was curious as to usage today versus in the future when populations in both the City and County increased. He asked how difficult it would be to obtain that number.

Ms. Whitaker and Mr. Mawyer responded that they were working on a study now.

Mr. Mawyer stated that they would do projections of City and County growth, and from that data they would establish projections – including the maximum safe yield available – as part of the urban water demand study, which would be brought back to the Board in the fall.

Mr. Gaffney stated they used Weldon Cooper's information, which was based on interviews with the City and developers, etc.

Ms. Terry pointed out that Rivanna's consultants interviewed City staff and County staff to try to get all the necessary input.

Mr. Murphy asked if the projections would be available in six months or so.

Ms. Whitaker replied that it would be by the end of the year.

Mr. Mawyer noted that the Ragged Mountain agreement stated that every 10 years they must check the community demand versus supply, and 2020 was the next year a check was required.

Ms. Whitaker stated that since the South Fork Reservoir was built in 1966, Rivanna had mapped this out – and average loss was consistently 15 million gallons a year. She stated that this was a virtual straight line, and staff intentionally waited until after the storm to do this work. She noted that in 2006, one of the big hydrology discussions they had about dredging and reservoir health was what happened when lakes filled up with more sediment, possibly reaching equilibrium. Ms. Whitaker stated that this showed that a big storm could disrupt the equilibrium equation – and one storm could effectively undo a decade of deposits.

Mr. Gaffney asked if that big storm was a 100-year storm.

Ms. Whitaker responded that it was a 500-year storm localized, and because it was right over the watershed, it created the scour.

Ms. Terry emphasized that rivers move, and storms over time would do different things – but staff was confident in the numbers they were using now, with the same one used for stage storage in South Rivanna.

Mr. Gaffney asked if they were losing 15 MGD before that storm.

Ms. Whitaker and Ms. Terry responded that they did not know.

Ms. Whitaker stated if they had been using the 15 MGD a year loss, they would have lost 150 million gallons in the reservoir.

9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

There were no other items presented.

10. CLOSED MEETING

There was no closed meeting held.

11. ADJOURNMENT

Dr. Palmer moved to adjourn the meeting. Ms. Hildebrand seconded the motion, which passed unanimously (5-0). Ms. Galvin and Mr. O'Connell were absent from the meeting and the vote.

RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
May 28, 2019

A regular meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was held on Tuesday, May 28, 2019 at 2:25 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia.

Board Members Present: Mike Gaffney, Gary O'Connell, Dr. Tarron Richardson, Kathy Galvin.

Board Members Absent: Lauren Hildebrand, Jeff Richardson, Dr. Liz Palmer.

Staff Present: Lonnie Wood, Jennifer Whitaker, Phil McKalips, David Rhoades, Steven Miller, Liz Coleman, Scott Schiller, Bill Morris, Victoria Fort, Dyon Vega, Austin Marrs, Andrea Terry, David Tungate, Michelle Simpson, Bill Mawyer, Katie McIlwee.

Also Present: Mr. Kurt Krueger, RWSA counsel, members of the public and media representatives.

1. *CALL TO ORDER*

At 2:25 p.m., Mr. Gaffney opened the May 28, 2019 regular meeting of the Rivanna Water and Sewer Authority as a joint meeting with the Rivanna Solid Waste Authority.

2. *OTHER BUSINESS*

a. Presentation: Quarterly Strategic Plan Update – year one Wrap-Up; Goal Team Leaders

Ms. Katie McIlwee reminded the Board that they have had three previous updates and stated the champions of the six goal eams will present their year-end wrap ups, after which the Board may ask questions. She stated they have six goals and 12 strategies from which the goal teams have developed 78 tactics and they have completed 100% of what they had intended for year one.

Ms. McIlwee presented for the Communications and Collaboration goal team. She stated that over the last quarter they have continued to collaborate with IT and other members of the goal team to test and research different methods of increasing internal communication and Office 365 products and have also worked with Administration and IT to research a new document management workflow software. She stated they have completed the employee portal, enhanced the usability of the Rivanna website, and coordinated with Environmental Stewardship goal team on some community events, such as Imagine A Day Without Water and Riverfest, as well as a regional managers' mixer, for which they brought in other utilities from the Central Virginia area, and team building events with the City and the Albemarle County Service Authority. She stated they also have quarterly internal employee team building engagements and a bi-monthly Rivanna employees' newsletter.

Mr. O'Connell asked what the communications agreement among water partner agencies was about.

Ms. McIlwee explained that this stemmed from the initial tactic planning meetings when they were deciding how to implement strategies and thought that an agreement was needed, though as they have moved along they have realized that some of the tactics are not necessary. She stated this tactic was about knowing who to speak with at the County, City, or ACSA with regards to communications or marketing and working together, more than developing an actual agreement.

Ms. Betsy Nemeth, Manager of Human Resources, presented for the Workforce Development goal team. She stated they have been busy working their strategy of developing a comprehensive staffing classification and compensation plan and to conduct a training needs assessment and enhance the training program. She noted that they recommend a pay grade scale adjustment as well as new positions for both Authorities, which she noted are in the final draft of the Personnel Management Plan, which now is combined for the two Authorities and has had language regarding standard operating procedures removed. She stated they have conducted and continue to conduct training on CPR, ADAD, and leadership for managers and certain operators, for which they have partnered with PVCC, which she characterized as an amazing and terrific partner. She continued that last July 1st they implemented the recommendations of the compensation plan salary survey conducted by Evergreen. She stated they have a Staffing Master Plan which will be regularly evaluated and a Consolidated Personnel Management Plan.

Mr. David Tungate, Director of Operations, presented for the Operational Optimization goal team. He stated their strategy is to continually evaluate, prioritize, and improve key business and operational processes and to protect our workforce and the public by continually growing a culture of safety. He reviewed recent activity, including completion of Phase 1 and the beginning of Phase 2 of the corrosion inhibitor project, compliance with the American Water Infrastructure Act, by conducting a vulnerability assessment for which they must demonstrate compliance by August 2020 and expect to be compliant by next March, and continuing with the design of the South Rivanna Water Treatment Plant, which will use updated technology and allow them to change some processes. He reviewed year one highlights, which include the hiring of a consultant to conduct a safety master plan to look at how they do things on the operations side, how they treat water and wastewater, and the equipment and processes. He stated they have installed web-based security cameras at South Rivanna, Crozet, and Moores Creek.

Ms. Andrea Terry, Water Resources Manager, presented for the Environmental Stewardship goal team. She stated that their strategies are to increase environmental engagement and designate resources to support environmental outreach agreements. She stated they wanted to have an employee from each division come and sit with them and talk about what Rivanna does that is good for the environment and how they can engage with the community and partners to do this a little bit more. She stated the committee has supported the Rivanna Riverfest, which she characterized as a great effort with Rivanna Conservation Alliance and ACSA and a good collaborative opportunity. She stated they also conducted stream cleanup on Moores Creek after which three employees asked to serve on the committee and now serve. She stated they have catalogued a list of green activities, increased outside collaboration and will continue to do so, and they plan to establish an environmental committee next year, which will meet bi-monthly and consider ways to become more engaged.

Mr. Stewart expressed his thanks to Phil McKalips for taking part in the climate action team and stated that he has been an incredible resource.

Mr. Phil McKalips, Director of Solid Waste, presented for the Solid Waste Services goal team. He stated that when considering their strategies he considers what people want them to be and what the community landscape is. He stated they feel they have set themselves up well to be able to communicate with community partners such as haulers, UVA, the City and County, and the public, which can provide feedback as to where they see needs. He stated they decided to open on Mondays after speaking with haulers, which stimulated them to conduct cost modeling and which has been favorably received. He explained that the idea to introduce composting resulted from dialog with representatives of UVA and the Climate Action Committee. He reviewed ideas they have for next year, including optimization of existing resources at McIntire and improving public outreach.

Mr. Gaffney emphasized that the strategic plan was a long time coming and has taken some time to be developed, and stated that he is thoroughly impressed every time. He asked how it has helped Mr. McKalips as well as others in the organization along the way.

Mr. McKalips replied that putting the idea of optimization on a piece of paper has pushed them to look at things outside of the box and he feels they have utilized the process effectively.

Mr. Mawyer echoed Mr. McKalips' comment, adding that they are looking in every drawer and at every policy and procedure to see if they can do things in a better way. He emphasized that the skillset and knowledge of staff is important to be able to do this.

Mr. Scott Schiller, Engineering Manager, presented for the Infrastructure & Master Planning goal team. He stated their two strategies are to implement an asset management program for the Authority and to develop and maintain long-term master plans. He stated they have developed an internal asset management policy, which can help dictate how the program proceeds and is part of the first phase of the plan, which they focused on this year. He described this as a road map for what they want the plan to look like, how it will be implemented over the next few years and indicated that, as part of the process, they have had staff training workshops, performed a gap assessment on procedures, and are looking at business process improvements and IT strategies.

Mr. Schiller stated they have developed an inventory of master plans to enable to determine if there are projects that have been identified that still have to be done and to see which facilities or systems may have gaps for which they don't have a master plan. He next reviewed year one highlights. He stated they contracted with a nationally recognized consulting firm to guide them through the asset management process, which he characterized as a great learning experience, and for both strategies they have begun to organize internal assets, some of which will be included in the internal asset management program as they move to the implementation phase, and which will allow them to identify some critical assets in the Master Plan that may warrant their own master plans.

Ms. Galvin asked who the consulting firm is.

Mr. Schiller replied that it is GHD, based in Maryland.

Mr. Gaffney asked if there is a way to measure ways to increase the life of equipment and if the consulting company can help with this.

Mr. Schiller replied that a lot of the asset management involves risk assessment and where to best apply their efforts and they will answer questions about pieces of equipment to determine risk and consequence of failure in order to apply efforts most effectively. He stated there could be opportunities to extend the life of equipment through additional preventive maintenance or by having more spare parts in stock.

Mr. Mawyer added that there are benefits in cost savings where they can proactively plan for replacement rather than react when something breaks.

Ms. McIlwee stated that in year two some of the goal teams will be replacing members and inviting additional employees to serve, the teams will develop new tactics, start new strategies, decide what needs to roll forward and what is complete, and they will provide another update to the Board next quarter.

Ms. Galvin remarked that she understands the value of the strategic plan, described it as being crisp, clean, concise, substantive, and can be used to enhance performance. She thanked them for taking it so seriously and for implementing it so wholeheartedly.

Mr. Mawyer remarked that the strategic plan has given them guidance and direction.

Mr. McKalips remarked that it is helpful to have the strategic plan posted at work locations.

Mr. Mawyer stated that at the benefits and safety meeting they talked about the purpose and goals of the strategic plan and have tried to keep it front and center for everyone.

a. Presentations; Lonnie Wood, Director of Finance and Administration
i. Personnel Management Plan Update
ii. FY 2020 Pay Scale Adjustment
iii. Virginia Retirement System Long Term Care Program

Mr. Wood stated they have come up with a new personnel management plan based on the combining of existing plans and the elimination of some procedures. He noted that their payroll timesheet and timekeeping process is manually driven, though they plan to go to an automated system as part of their IT Master Plan, as their policies didn't fit with modern payroll and timekeeping processes. He continued that they have gone to a blended overtime rate, which means that overtime is calculated weekly, whereas the Authority has a bi-weekly pay schedule, which could result in two different overtime rates on one paycheck. System changes they have made will allow them to do this and to bring the overtime policy into the modern era and to meet all FLSA requirements. He stated they have added night differential pay of 2% of base pay for water and wastewater operators that work a rolling 12 hour day/night shift, as this had been identified in meetings with employees and is an incentive for employees to take this shift.

Mr. O'Connell asked if he has included the funding for that in the budget.

Mr. Wood replied that it will cost about $16K and will be absorbed under normal vacancy turnover and, should it run over, they can make up the difference in workman's compensation since they received a better bid this year. He stated they have included a retirement benefit that mirrors what VRS Plan 1 employees receive in the old manual. The new policy enables hybrid employees to receive $200 of sick leave pay for each year of service up to a maximum of $5K. He stated he will review a couple of other notable policy changes. He stated the Wednesday before Thanksgiving will become a formal holiday and they will make April 13, Thomas Jefferson's birthday, a floating holiday for which the Authority will be open. He stated they have increased the tuition reimbursement of college credit courses from $2,625 to $5,250, which is the IRS tax-exempt limit. He thanked Ms. Nemeth for her work on this.

Mr. Wood reminded the Board that in summer 2017, they instituted a salary survey along with the compensation plan and that salary adjustments in 2018 were made based on the results, despite the fact the data was probably a year old. He stated they utilized that year-old data and will now add a CPI-U Index adjustment increase which could support a 5% increase, but which will not have a budget impact.

Dr. Richardson asked how they planned to keep the scale moving.

Mr. Wood replied that the Authority's policy mandates a salary survey every five years, though their goal is to conduct this every three years, and in off years will look at the CPI-U increase.

Mr. Gaffney stated if they only did it once every five years, it would look like a huge jump.

Mr. Wood informed the Board that VRS offers a long-term care insurance program through political subdivision employers, the last time political subdivisions could opt in was in 2010-2011, and the Authority recommends they opt in this time, as this will not entail any cost to the Authority as employees pay for 100% of the cost and it does not have to be deducted by payroll.

Dr. Richardson asked what the savings on overtime will be by calculating overtime pay on a weekly basis.

Mr. Wood explained that under the current system, they consider holiday and unscheduled time pay to be overtime pay, which is difficult to manage, and the new system will be easier to manage by separating out what is truly overtime and allow them to adjust schedules to reduce overtime.

Dr. Richardson remarked that when a person takes off the second week of the pay period the costs jump if overtime is calculated weekly and he thinks they will see cost savings.

Mr. Wood replied that he is hoping they will.

Ms. Galvin asked how often employees were evaluated.

Mr. Wood replied that the evaluation period runs from April 1–March 30, so that the merit system can be effective July 1, and enables them to have sufficient time to conduct evaluations, meet with employees, and enter the information into the system.

Mr. Mawyer explained that employees are rated on a 1 to 3 scale and the 3% pool money approved by the Board is distributed in accordance with the merit score.

Mr. Wood added that the pool of money for merit pay is limited and they have to wait until everyone has been evaluated in order to calculate the merit pay for each employee.

Ms. Galvin moved that the boards of the RSWA and RWSA approve the update of the Personnel Management Plan, FY20 payroll scale adjustment, and Virginia Retirement System Long-Term Care Insurance program. The motion was seconded by Mr. Oberdorfer and passed (5-0) by the RSWA Board and (5-0) by the RWSA Board. Mr. Richardson and Dr. Palmer were absent from the joint meeting and the vote.

The Rivanna Solid Waste Authority Board Meeting was adjourned at this time. At 3:01 p.m., Ms. Galvin moved that the RSWA Board adjourn its meeting. The motion was seconded by Mr. Oberdorfer and passed (5-0).

3. *ELECTION OF VICE-CHAIR*

Ms. Galvin moved to elect Dr. Richardson as Vice-Chair of the RWSA Board. Mr. O'Connell seconded the motion, which passed unanimously (4-0). Ms. Hildebrand, Mr. Richardson, and Dr. Palmer were absent from the meeting and the vote.

4. *APPROVAL OF MINUTES*

a. Approval of April 2019 RWSA Board meeting minutes.

The Board deferred a vote on the April 2019 minutes until the June meeting because Dr. Richardson had not been present at the meeting and thus could not vote.

5. *RECOGNITION*

a. Government Finance Officers Association – Certificate of Achievement for Excellence in Financial Reporting: Director of Finance, Mr. Lonnie Wood

Mr. Gaffney noted that receipt of this Certificate was acknowledged at the RSWA meeting.

6. *EXECUTIVE DIRECTOR'S REPORT*

Nothing Reported

7. *Originally Item 9 c. on the agenda:*

Presentation and Public Hearing: Rate Resolution Adoption, Approval of FY 2019 – 2020 Budget and FY 2020-2024 CIP: Bill Mawyer, Executive Director

Mr. Bill Mawyer presented. He reminded the Board that they discussed the budget and CIP in February and March. He noted that the budget is over $36M, a $2.9M increase over last year, which is split between an operating expense increase of $1.7M and debt service of $1.2M. He stated the operating expense increase represents a $491K increase for the City and $1.5M increase for Service Authority, and Rivanna will contribute $667K from reserves to offset some of the expenses. He noted that 47% of the budget consists of bond debt service of $17M, which is used to finance the CIP. He continued that personnel costs are $8.5M, professional fees, utilities, insurance, and permits are almost $4M, and $6.7M is for chemicals, technology, and building and equipment repairs. He noted that much of the operating expense increase is for replacing the media in the filters of the granular activated carbon system at a budget cost of $900K.

Mr. Mawyer listed the following new positions added to the budget: construction inspector and laboratory chemist. He stated bio-solids have been shipped to Waverly for which they have a $128K increase. He stated they are trying to complete the wholesale meter project, which will add 28 meters that will need to be annually calibrated and maintained. He noted that they have reclassified a lab technician position as a chemist and will now have three chemists in the lab and four inspectors in the CIP group, for a total of 93.4 full-time equivalent (FTE) positions. He stated the $1.2M increase in debt service is to fund projects including Birdwood water line, the Observatory water treatment upgrade, South Rivanna Water Treatment Plant upgrade, Ragged Mountain to Observatory pipe and pump station replacement, Crozet water treatment plant upgrade, and Beaver Creek Dam upgrade. He presented photos of some of the facilities. He stated they will build a flow equalization tank for Crozet, which will store wastewater to prevent system overflows when it rains.

Mr. Mawyer presented the proposed CIP budget for the next five years at $97.2M for completion of 37 projects, including five that would extend to the next five-year cycle, which he stated is a significant decrease from $153M in last year´s CIP. He reminded the Board that these changes were made to level rates and mitigate costs to customers and to the Service Authority. He suggested they hold a public hearing on the wholesale rates charged to the City and to ACSA and asked the Board to approve the budget and CIP.

Mr. Gaffney opened the public hearing on the rates and related budget. As no member of the public came forward to speak Mr. Gaffney closed the public hearing.

Ms. Galvin moved that the Board adopt the rate resolution, approve the FY 20 Budget, and the FY 20–24 CIP. The motion was seconded by Mr. O'Connell and passed unanimously (4:0). Ms. Hildebrand, Mr. Richardson, and Dr. Palmer were absent from the meeting and the vote.

8. *ITEMS FROM THE PUBLIC*

There were none presented.

9. *RESPONSES TO PUBLIC COMMENTS*

There were no responses to public comments.

10. *CONSENT AGENDA*

a. Staff Report on Finance

b. Staff Report on Ongoing Projects

c. Staff Report on Operations

d. Sugar Hollow Dam – Rubber Crest Gate Replacement and Intake Tower Repairs – Engineering Design, Bid, and Construction Phase Services

The Board unanimously approved the consent agenda.

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

There were none presented.

12. *CLOSED MEETING*

There was no closed meeting held.

13. *ADJOURNMENT*

At 3:10 p.m., Ms. Galvin moved to adjourn the RWSA Board meeting. Mr. O'Connell seconded the motion, which passed unanimously 4-0. Ms. Hildebrand, Mr. Richardson, and Dr. Palmer were absent from the meeting and the vote.

RIVANNA WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS

Resolution of Appreciation for Michael R. Davis

WHEREAS, Mr. Davis has served in a number of positions for the Rivanna Water and Sewer Authority since May of 2005, most recently as a Wastewater Operator; and

WHEREAS, over the same period in excess of 14 years, Mr. Davis has demonstrated leadership in his field and has been a valuable resource to the Authority and its employees; and

WHEREAS, Mr. Davis's understanding of the Authority's operation and dedication and loyalty to the Authority has positively impacted the Authority, its customers and its employees; and

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

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

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

Michael Gaffney, Chairman
Kathleen Galvin
Lauren Hildebrand
Gary O'Connell
Liz Palmer
Jeff Richardson
Tarron Richardson

RIVANNA WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS

Resolution of Appreciation for Michael R. Haley

WHEREAS, Mr. Haley has served in a number of positions for the Rivanna Water and Sewer Authority since May of 1996, most recently as a Mechanic 2; and

WHEREAS, over the same period in excess of 23 years, Mr. Haley has demonstrated leadership in his field and has been a valuable resource to the Authority and its employees; and

WHEREAS, Mr. Haley's understanding of the Authority's operation and dedication and loyalty to the Authority has positively impacted the Authority, its customers and its employees; and

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

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

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

Michael Gaffney, Chairman
Kathleen Galvin
Lauren Hildebrand
Gary O'Connell
Liz Palmer
Jeff Richardson
Tarron Richardson

RIVANNA WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS

Resolution of Appreciation for Michael F. Ralston

WHEREAS, Mr. Ralston has served in a number of positions for the Rivanna Water and Sewer Authority since August of 1992, most recently as a Mechanic Helper; and

WHEREAS, over the same period in excess of 26 years, Mr. Ralston has demonstrated leadership in his field and has been a valuable resource to the Authority and its employees; and

WHEREAS, Mr. Ralston's understanding of the Authority's operation and dedication and loyalty to the Authority has positively impacted the Authority, its customers and its employees; and

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

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

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

Michael Gaffney, Chairman
Kathleen Galvin
Lauren Hildebrand
Gary O'Connell
Liz Palmer
Jeff Richardson
Tarron Richardson

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: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **EXECUTIVE DIRECTOR'S REPORT**

DATE: **JUNE 25, 2019**

STRATEGIC PLAN GOAL: COMMUNICATION AND COLLABORATION

Community Outreach

We were deeply saddened about the recent tragic events and loss of employees at the Virginia Beach Department of Utilities. The attached letter was sent to the Department to express our condolences and support.

We provided a Project Update presentation to the Crozet Community Advisory Committee on June 12th. Our presentation included an overview of recently completed, current and near future projects such as the Crozet Water Infrastructure Study findings, Water Treatment Plant Upgrade, Lickinghole Basin evaluation, and the Beaver Creek Dam and Pump Station project.

On July 8th, I will review our Community Water Supply Plan at the Chamber of Commerce's Member Monday presentation series.

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

Water & Wastewater Professionals Month

In 2016, the Virginia General Assembly voted to make June 30th annual Drinking Water and Wastewater Professionals Appreciation Day. To celebrate and appreciate our employees, we our dedicating our quarterly teambuilding event on June 27th to them.

Security of our Employees and Facilities

Measures have been taken to secure our facilities. Visitor access to the Administration Building has been restricted. Security measures for the Engineering facilities will be improved shortly. A card-controlled access system is being planned for all of our facilities. Employees have received training for an "Active Shooter" event.

STRATEGIC PLAN GOAL: INFRASTRUCTURE AND MASTER PLANNING

South Rivanna to Ragged Mountain Water Line

Meetings are in progress with the UVA Foundation, VDOT, City staff and Albemarle School Board staff about locations for the water line easements. Surveying and appraisals are underway, and we expect to begin making offers to acquire easements in July.

Observatory Water Treatment Plant Lease

Discussions continue with UVA staff to finalize updated lease and easement documents. Our goal is to complete these documents and obtain signatures this summer.

RIVANNA
WATER & SEWER AUTHORITY
695 Moores Creek Lane | Charlottesville, Virginia 22902-9016
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June 11, 2019

Mr. Robert S. Montague, Jr.
Director, Virginia Beach Public Utilities Department
3500 Dam Neck Road
Virginia Beach, VA 23453

Dear Mr. Montague,

We at the Rivanna Water and Sewer Authority would like to express our deepest sympathies to the employees of the Public Utilities Department and all those impacted by the events of May 31st. Words seem inadequate to convey our shock and sorrow at the tragic loss of life.

As the days continue to pass, we hope that you find comfort and support, not only in your local community, but also in the larger community of water and wastewater professionals.

Please feel free to contact us if any assistance is ever needed.

Sincerely,

William I. Mawyer, Jr., P.E.
Executive Director

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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: **MAY MONTHLY FINANCIAL SUMMARY – FY 2019**

DATE: **JUNE 25, 2019**

Urban Water flow and rate revenues are 4% under budget estimates through May, and Urban Wastewater flow and rate revenues are 38% over budget. Thru May, we have a net surplus of $0.9 M in the overall budget. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	$ 6,289,895	$ 9,746,100	$ 1,988,239	$ 18,024,234
Expenses	(7,420,059)	(7,834,828)	(1,969,250)	(17,224,137)
Surplus (deficit)	$ (1,130,164)	$ 1,911,272	$ 18,989	$ 800,097
Debt Service				
Revenues	$ 5,926,454	$ 7,994,233	$ 1,073,271	$ 14,993,958
Expenses	(5,823,316)	(7,851,146)	(1,211,325)	(14,885,787)
Surplus (deficit)	$ 103,138	$ 143,087	$ (138,054)	$ 108,171
Total				
Revenues	$ 12,216,349	$ 17,740,333	$ 3,061,510	$ 33,018,192
Expenses	(13,243,375)	(15,685,974)	(3,180,575)	(32,109,924)
Surplus (deficit)	$ (1,027,026)	$ 2,054,359	$ (119,065)	$ 908,268

Overall operating revenues are $2.4 million higher than budget estimates, while operating expenses are running $1.6 million over budget, resulting in a net surplus of $0.8 million for the operating category. This is mostly related to the significant amount of flow resulting from record amounts of rainfall and the related revenues from Urban Wastewater. Overall, debt service revenues are higher than projected due to interest earnings being greater related to the rising interest rate environment creating a net surplus of $108,000 for the debt service category.

A. Professional Services (Urban Water, Scottsville Water, Urban Wastewater – pages 2, 4, 5) – The Urban Water rate center incurred unbudgeted expenditures of $108,000 for Engineering and Technical Services to support corrosion inhibitor, GAC and hydraulic modeling studies, and unbudgeted legal fees related to the Observatory plant lease of $41,000. Scottsville Water has exceeded the prorated budget for Engineering and

Technical Services for the Red Hill Community Water System, but ACSA is being billed for these costs. Urban Wastewater paid for an analysis of the Moores Creek AWRRF Cogeneration System that was not budgeted.

B. Other Services & Charges (Urban Water, Scottsville Water, Urban Wastewater, Engineering – pages 2, 4, 5, 11) – Urban Water and Urban Wastewater are over the prorated budget on the cost of hauling biosolids to Waverly, Virginia to be composted. Urban Wastewater is also over the prorated budget on odor control costs for the Crozet Interceptor/Pump Stations, and utilities are running high. Scottsville Water is over the prorated budget on consultant laboratory analysis fees required for total organics and the GAC reductions in disinfection by products. The Engineering department is over budget on ACSA modeling services.

C. Equipment Purchases (Urban Water, Scottsville Water, Maintenance – pages 2, 4, 9) – Scottsville Water spent $50,000 in October for the unbudgeted purchase of a replacement flocculator which was deteriorated and had reached the end of its life cycle. Urban Water has spent $187,800 more than the annual budget in this category primarily due to the unexpected need to replace a finished water pump at the South Rivanna plant and a high service pump at the North Rivanna plant, which were deteriorated and had reached the end of their life cycle. The Maintenance department is slightly over the prorated budget on equipment purchases.

D. Operations & Maintenance (Urban Water, Crozet Water, Urban Wastewater, Lab, Maintenance, Engineering – pages 2-5, 9-11) – Urban Water is $263,000 over the prorated budget for emergency line break repairs including June 2018 North Rivanna Waterline repairs. Urban Water has spent $462,000 more than the prorated budget for chemicals, related to GAC chemical purchases. Chemical cost overages for algae treatments of the Beaver Creek Reservoir and for the purchase of GAC chemicals are the main reasons Crozet Water is $122,000 over the prorated budget in the Operations & Maintenance expense category. Urban Wastewater is $88,000 over the prorated budget for chemical purchases related to the significant flows for the year. Urban Wastewater spent $119,000 to replace UV lamps at the Moores Creek plant and $154,000 for a Moores Creek stream bank repair. The Lab, Maintenance and Engineering departments are over the prorated budget on vehicle and equipment repairs.

E. Communications (Urban Water – page 2) – Urban Water's telephone and data service charges are running higher than estimated.

F. Information Technology (Administration – page 8) – The Administration department made an unbudgeted purchase of optical character recognition (OCR) software in March needed for our document management system upgrade; however, there were savings in other cost centers to fund this overage.

Attachments

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019
Fiscal Year 2019

Consolidated Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2019	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 16,387,174	$ 15,021,576	$ 17,262,450	$ 2,240,873	14.92%
Lease Revenue		100,000	91,667	101,881	10,215	11.14%
Admin., Maint. & Engineering Revenue		462,000	423,500	446,849	23,349	5.51%
Other Revenues		528,084	484,077	612,290	128,213	26.49%
Interest Allocation		28,050	25,713	47,613	21,900	85.17%
Total Operating Revenues		**$ 17,505,308**	**$ 16,046,532**	**$ 18,471,083**	**$ 2,424,550**	**15.11%**
Expenses						
Personnel Cost		$ 8,429,784	$ 7,766,521	$ 7,280,855	$ 485,666	6.25%
Professional Services	**A**	710,250	651,063	773,789	(122,726)	-18.85%
Other Services & Charges	**B**	2,814,735	2,580,174	3,008,625	(428,451)	-16.61%
Communications	**E**	143,105	131,180	145,122	(13,943)	-10.63%
Information Technology	**F**	341,450	312,996	297,119	15,877	5.07%
Supplies		43,920	40,260	40,368	(108)	-0.27%
Operations & Maintenance	**D**	3,719,660	3,409,688	4,759,220	(1,349,532)	-39.58%
Equipment Purchases	**C**	459,400	421,117	593,138	(172,022)	-40.85%
Depreciation		843,000	772,750	772,750	-	0.00%
Reserve Transfers		-	-	-	-	
Total Operating Expenses		**$ 17,505,304**	**$ 16,085,748**	**$ 17,670,986**	**$ (1,585,238)**	**-9.85%**
Operating Surplus/(Deficit)		**$ 4**	**$ (39,216)**	**$ 800,096**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 14,852,531	$ 13,614,820	$ 13,614,810	$ (10)	0.00%
Use of Reserves for 2016 Bond DS		300,000	275,000	275,000	-	0.00%
Septage Receiving Support - County		109,440	100,320	109,441	9,121	9.09%
Buck Mountain Surcharge		118,600	108,717	110,300	1,583	1.46%
Buck Mountain Lease Revenue		1,600	1,467	1,691	224	15.30%
Trust Fund Interest		46,400	42,533	169,041	126,508	297.43%
Reserve Fund Interest		344,000	315,333	713,676	398,342	126.32%
Total Debt Service Revenues		**$ 15,772,571**	**$ 14,458,190**	**$ 14,993,958**	**$ 535,768**	**3.71%**
Debt Service Costs						
Total Principal & Interest		$ 12,295,400	$ 11,270,783	$ 12,062,738	$ (791,955)	-7.03%
Reserve Additions-Interest		344,000	315,333	713,676	(398,342)	-126.32%
Debt Service Ratio Charge		725,000	664,583	664,583	-	0.00%
Reserve Additions-CIP Growth		2,408,175	2,207,494	1,444,790	762,704	34.55%
Total Debt Service Costs		**$ 15,772,575**	**$ 14,458,194**	**$ 14,885,787**	**$ (427,593)**	**-2.96%**
Debt Service Surplus/(Deficit)		**$ (4)**	**$ (4)**	**$ 108,172**		

Summary

Total Revenues	$ 33,277,879	$ 30,504,722	$ 33,465,041	$ 2,960,319	9.70%
Total Expenses	33,277,879	30,543,942	32,556,773	(2,012,831)	-6.59%
Surplus/(Deficit)	**$ 0**	**$ (39,219)**	**$ 908,268**		

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019

Urban Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2019*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 7,034,788	$ 6,448,556	$ 6,164,857	$ (283,698)	-4.40%
Lease Revenue		70,000	64,167	74,491	10,324	16.09%
Miscellaneous		-	-	30,316	30,316	
Interest Allocation		12,000	11,000	20,230	9,230	83.91%
Total Operating Revenues		**$ 7,116,788**	**$ 6,523,722**	**$ 6,289,895**	**$ (233,827)**	**-3.58%**
Expenses						
Personnel Cost		$ 1,903,779	$ 1,753,417	$ 1,634,127	$ 119,290	6.80%
Professional Services	**A**	329,250	301,813	479,077	(177,265)	-58.73%
Other Services & Charges	**B**	582,700	534,142	560,250	(26,108)	-4.89%
Communications	**E**	64,200	58,850	70,493	(11,643)	-19.78%
Information Technology		65,300	59,858	58,984	875	1.46%
Supplies		5,000	4,583	8,504	(3,921)	-85.55%
Operations & Maintenance	**D**	1,570,660	1,439,772	2,165,351	(725,580)	-50.40%
Equipment Purchases	**C**	106,600	97,717	294,447	(196,731)	-201.33%
Depreciation		300,000	275,000	275,000	-	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 4,927,489	$ 4,525,151	$ 5,546,234	$ (1,021,083)	-22.56%
Allocation of Support Departments		2,189,298	2,016,038	1,873,826	142,212	7.05%
Total Operating Expenses		**$ 7,116,787**	**$ 6,541,189**	**$ 7,420,059**	**$ (878,871)**	**-13.44%**
Operating Surplus/(Deficit)		**$ 1**	**$ (17,466)**	**$ (1,130,164)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 5,863,271	$ 5,374,665	$ 5,374,666	$ 1	0.00%
Trust Fund Interest		18,000	16,500	57,981	41,481	251.40%
Reserve Fund Interest		184,000	168,667	381,816	213,150	126.37%
Buck Mountain Surcharge		118,600	108,717	110,300	1,583	1.46%
Lease Revenue		1,600	1,467	1,691	224	15.30%
Total Debt Service Revenues		**$ 6,185,471**	**$ 5,670,015**	**$ 5,926,454**	**$ 256,439**	**4.52%**
Debt Service Costs						
Total Principal & Interest		$ 4,190,796	$ 3,841,563	$ 4,222,484	$ (380,921)	-9.92%
Reserve Additions-Interest		184,000	168,667	381,816	(213,150)	-126.37%
Debt Service Ratio Charge		400,000	366,667	366,667	-	0.00%
Reserve Additions-CIP Growth		1,410,675	1,293,119	852,349	440,770	34.09%
Total Debt Service Costs		**$ 6,185,471**	**$ 5,670,015**	**$ 5,823,316**	**$ (153,301)**	**-2.70%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 103,139**		

Rate Center Summary

Total Revenues	$ 13,302,259	$ 12,193,737	$ 12,216,349	$ 22,612	0.19%
Total Expenses	13,302,258	12,211,204	13,243,375	(1,032,172)	-8.45%
Surplus/(Deficit)	**$ 1**	**$ (17,466)**	**$ (1,027,026)**		
Costs per 1000 Gallons	2.09		2.49		
Operating and DS	3.92		4.45		
Thousand Gallons Treated	3,397,700	3,114,558	2,978,192	(136,366)	-4.38%
or					
Flow (MGD)	9.309		8.890		

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019

Crozet Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2019*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 957,384	$ 877,602	$ 877,602	$ -	0.00%
Lease Revenues		30,000	27,500	27,390	(110)	-0.40%
Interest Allocation		1,700	1,558	2,860	1,302	83.52%
Total Operating Revenues		**$ 989,084**	**$ 906,660**	**$ 907,852**	**$ 1,192**	**0.13%**
Expenses						
Personnel Cost		$ 288,389	$ 265,607	$ 246,909	$ 18,697	7.04%
Professional Services		30,000	27,500	5,552	21,948	79.81%
Other Services & Charges		126,960	116,380	110,876	5,504	4.73%
Communications		4,450	4,079	5,385	(1,306)	-32.02%
Information Technology		14,200	13,017	440	12,577	96.62%
Supplies		620	568	1,208	(639)	-112.47%
Operations & Maintenance	D	261,150	239,388	361,611	(122,223)	-51.06%
Equipment Purchases		26,450	24,246	9,707	14,539	59.96%
Depreciation		30,000	27,500	27,500	-	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 782,219	$ 718,284	$ 769,188	$ (50,904)	-7.09%
Allocation of Support Departments		206,863	190,490	177,140	13,350	7.01%
Total Operating Expenses		**$ 989,082**	**$ 908,774**	**$ 946,328**	**$ (37,554)**	**-4.13%**
Operating Surplus/(Deficit)		**$ 2**	**$ (2,113)**	**$ (38,476)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 995,568	$ 912,604	$ 912,604	$ -	0.00%
Trust Fund Interest		1,800	1,650	5,916	4,266	258.57%
Reserve Fund Interest		6,700	6,142	14,215	8,073	131.45%
Total Debt Service Revenues		**$ 1,004,068**	**$ 920,396**	**$ 932,736**	**$ 12,340**	**1.34%**
Debt Service Costs						
Total Principal & Interest		$ 426,071	$ 390,565	$ 673,439	$ (282,874)	-72.43%
Reserve Additions-Interest		6,700	6,142	14,215	(8,073)	-131.45%
Reserve Additions-CIP Growth		571,300	523,692	384,621	139,071	26.56%
Total Debt Service Costs		**$ 1,004,071**	**$ 920,398**	**$ 1,072,275**	**$ (151,876)**	**-16.50%**
Debt Service Surplus/(Deficit)		**$ (3)**	**$ (3)**	**$ (139,539)**		
Rate Center Summary						
Total Revenues		$ 1,993,152	$ 1,827,056	$ 1,840,588	$ 13,532	0.74%
Total Expenses		1,993,153	1,829,172	2,018,603	(189,431)	-10.36%
Surplus/(Deficit)		**$ (1)**	**$ (2,116)**	**$ (178,015)**		
Costs per 1000 Gallons		5.02		5.09		
Operating and DS		10.12		10.85		
Thousand Gallons Treated		196,946	180,534	186,065	5,531	3.06%
Flow (MGD)		0.540		0.555		

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019

Scottsville Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2019*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 443,328	$ 406,384	$ 406,384	$ -	0.00%
Red Hill		-	-	52,440	$ 52,440	
Interest Allocation		750	688	1,285	597	86.84%
Total Operating Revenues		**$ 444,078**	**$ 407,072**	**$ 460,109**	**$ 53,037**	**13.03%**
Expenses						
Personnel Cost		$ 153,885	$ 141,723	$ 130,268	$ 11,455	8.08%
Professional Services	A	20,000	18,333	28,691	(10,358)	-56.50%
Other Services & Charges	B	28,680	26,290	35,221	(8,931)	-33.97%
Communications		3,210	2,943	4,134	(1,191)	-40.48%
Information Technology		7,000	6,417	7,258	(841)	-13.11%
Supplies		750	688	64	624	90.76%
Operations & Maintenance		66,570	61,023	63,851	(2,829)	-4.64%
Equipment Purchases	C	14,000	12,833	60,781	(47,947)	-373.62%
Depreciation		20,000	18,333	18,333	(0)	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 314,095	$ 288,582	$ 348,600	$ (60,018)	-20.80%
Allocation of Support Departments		129,988	119,695	111,475	8,220	6.87%
Total Operating Expenses		**$ 444,083**	**$ 408,277**	**$ 460,075**	**$ (51,798)**	**-12.69%**
Operating Surplus/(Deficit)		**$ (5)**	**$ (1,205)**	**$ 34**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 129,280	$ 118,507	$ 118,503	$ (4)	0.00%
Trust Fund Interest		400	367	1,690	1,324	361.02%
Reserve Fund Interest		3,300	3,025	7,113	4,088	135.15%
Total Debt Service Revenues		**$ 132,980**	**$ 121,898**	**$ 127,307**	**$ 5,408**	**4.44%**
Debt Service Costs						
Total Principal & Interest		$ 129,680	$ 118,873	$ 118,873	$ -	0.00%
Reserve Additions-Interest		3,300	3,025	7,113	(4,088)	
Reserve Additions-CIP Growth		-	-	-	-	
Total Debt Service Costs		**$ 132,980**	**$ 121,898**	**$ 125,987**	**$ (4,088)**	**-3.35%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 1,320**		
Rate Center Summary						
Total Revenues		$ 577,058	$ 528,970	$ 587,416	$ 58,446	11.05%
Total Expenses		577,063	530,175	586,062	(55,887)	-10.54%
Surplus/(Deficit)		**$ (5)**	**$ (1,205)**	**$ 1,354**		
Costs per 1000 Gallons		23.70		32.27		
Operating and DS		30.80		41.11		
Thousand Gallons Treated		18,738	17,177	14,257	(2,920)	-17.00%
or						
Flow (MGD)		0.051		0.043		

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019

Urban Wastewater Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2019*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 7,277,082	$ 6,670,659	$ 9,195,230	$ 2,524,572	37.85%
Stone Robinson WWTP		28,084	25,744	20,339	(5,404)	-20.99%
Septage Acceptance		410,000	375,833	404,244	28,411	7.56%
Nutrient Credits		90,000	82,500	104,060	21,560	26.13%
Miscellaneous Revenue		-	-	891	891	
Interest Allocation		12,500	11,458	21,336	9,877	86.20%
Total Operating Revenues		**$ 7,817,666**	**$ 7,166,194**	**$ 9,746,100**	**$ 2,579,906**	**36.00%**
Expenses						
Personnel Cost		$ 1,282,792	$ 1,181,670	$ 1,094,301	$ 87,369	7.39%
Professional Services	A	54,000	49,500	67,176	(17,676)	-35.71%
Other Services & Charges	B	1,816,225	1,664,873	2,084,848	(419,975)	-25.23%
Communications		10,430	9,561	10,081	(520)	-5.44%
Information Technology		57,250	52,479	35,011	17,468	33.29%
Supplies		2,700	2,475	1,277	1,198	48.39%
Operations & Maintenance	D	1,408,900	1,291,492	1,789,247	(497,755)	-38.54%
Equipment Purchases		74,500	68,292	58,939	9,352	13.69%
Depreciation		470,000	430,833	430,833	(0)	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 5,176,797	$ 4,751,175	$ 5,571,714	$ (820,539)	-17.27%
Allocation of Support Departments		2,640,868	2,431,809	2,263,114	168,696	6.94%
Total Operating Expenses		**$ 7,817,665**	**$ 7,182,984**	**$ 7,834,828**	**$ (651,843)**	**-9.07%**
Operating Surplus/(Deficit)		**$ 1**	**$ (16,791)**	**$ 1,911,272**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 7,854,820	$ 7,200,252	$ 7,200,248	$ (4)	0.00%
Use of Reserves for 2016 Bond DS		300,000	275,000	275,000	-	0.00%
Septage Receiving Support - County		109,440	100,320	109,441	9,121	9.09%
Trust Fund Interest		26,200	24,017	103,284	79,267	330.05%
Reserve Fund Interest		148,000	135,667	306,260	170,594	125.74%
Total Debt Service Revenues		**$ 8,438,460**	**$ 7,735,255**	**$ 7,994,233**	**$ 258,978**	**3.35%**
Debt Service Costs						
Total Principal & Interest		$ 7,539,261	$ 6,910,989	$ 7,039,149	$ (128,160)	-1.85%
Reserve Additions-Interest		148,000	135,667	306,260	(170,594)	-125.74%
Debt Service Ratio Charge		325,000	297,917	297,917	-	0.00%
Reserve Additions-CIP Growth		426,200	390,683	207,820	182,863	46.81%
Total Debt Service Costs		**$ 8,438,461**	**$ 7,735,256**	**$ 7,851,147**	**$ (115,891)**	**-1.50%**
Debt Service Surplus/(Deficit)		**$ (1)**	**$ (1)**	**$ 143,087**		
Rate Center Summary						
Total Revenues		$ 16,256,126	$ 14,901,449	$ 17,740,333	$ 2,838,885	19.05%
Total Expenses		16,256,126	14,918,240	15,685,974	(767,734)	-5.15%
Surplus/(Deficit)		**$ (0)**	**$ (16,791)**	**$ 2,054,359**		
Costs per 1000 Gallons		2.31		1.83		
Operating and DS		4.79		3.66		
Thousand Gallons Treated		3,390,400	3,107,867	4,284,823	1,176,956	37.87%
or						
Flow (MGD)		9.289		12.791		

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

	Budget FY 2019	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Notes					
Revenues					
Operations Rate Revenue	$ 372,720	$ 341,660	$ 341,660	$ -	0.00%
Interest Allocation	600	550	1,046	496	90.26%
Total Operating Revenues	**$ 373,320**	**$ 342,210**	**$ 342,706**	**$ 496**	**0.15%**
Expenses					
Personnel Cost	$ 94,490	$ 87,040	$ 80,870	$ 6,171	7.09%
Professional Services	3,000	2,750	-	2,750	
Other Services & Charges	39,510	36,218	34,934	1,283	3.54%
Communications	2,600	2,383	3,019	(636)	-26.67%
Information Technology	3,350	3,071	-	3,071	100.00%
Supplies	100	92	-	92	100.00%
Operations & Maintenance	121,450	111,329	106,552	4,777	4.29%
Equipment Purchases	2,900	2,658	2,200	458	17.24%
Depreciation	5,000	4,583	4,583	0	0.00%
Subtotal Before Allocations	$ 272,400	$ 250,125	$ 232,159	$ 17,966	7.18%
Allocation of Support Departments	100,915	92,918	86,546	6,372	6.86%
Total Operating Expenses	**$ 373,315**	**$ 343,043**	**$ 318,705**	**$ 24,338**	**7.09%**
Operating Surplus/(Deficit)	**$ 5**	**$ (833)**	**$ 24,002**		

Operating Budget vs. Actual

Debt Service Budget vs. Actual

Revenues					
Debt Service Rate Revenue	$ 1,586	$ 1,454	$ 1,452	$ (2)	-0.13%
Trust Fund Interest	-	-	-	-	
Reserve Fund Interest	1,000	917	2,141	1,224	133.57%
Total Debt Service Revenues	**$ 2,586**	**$ 2,371**	**$ 3,593**	**$ (2)**	**-0.08%**
Debt Service Costs					
Total Principal & Interest	$ 1,586	$ 1,454	$ 1,454	$ -	0.00%
Reserve Additions-Interest	1,000	917	2,141	(1,224)	-133.57%
Total Debt Service Costs	**$ 2,586**	**$ 2,371**	**$ 3,595**	**$ (1,224)**	**-51.65%**
Debt Service Surplus/(Deficit)	**$ -**	**$ -**	**$ (2)**		

Rate Center Summary					
Total Revenues	$ 375,906	$ 344,581	$ 346,299	$ 1,719	0.50%
Total Expenses	375,901	345,413	322,300	23,114	6.69%
Surplus/(Deficit)	**$ 5**	**$ (833)**	**$ 24,000**		
Costs per 1000 Gallons	8.60		6.69		
Operating and DS	8.66		6.76		
Thousand Gallons Treated	43,412	39,794	47,646	7,852	**19.73%**
or					
Flow (MGD)	0.119		0.142		

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2019	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 301,872	$ 276,716	$ 276,716	$ -	0.00%
Interest Allocation		500	458	856	398	86.76%
Total Operating Revenues		**$ 302,372**	**$ 277,174**	**$ 277,572**	**$ 398**	**0.14%**
Expenses						
Personnel Cost		$ 94,515	$ 87,063	$ 80,870	$ 6,193	7.11%
Professional Services		2,000	1,833	-	1,833	100.00%
Other Services & Charges		28,400	26,033	18,702	7,331	28.16%
Communications		2,630	2,411	3,471	(1,060)	-43.96%
Information Technology		2,350	2,154	-	2,154	100.00%
Supplies		100	92	446	(354)	-386.01%
Operations & Maintenance		57,850	53,029	41,303	11,726	22.11%
Equipment Purchases		3,200	2,933	2,850	83	2.84%
Depreciation		18,000	16,500	16,500	-	0.00%
Subtotal Before Allocations		$ 209,045	$ 192,049	$ 164,141	$ 27,908	14.53%
Allocation of Support Departments		93,328	85,933	80,002	5,931	6.90%
Total Operating Expenses		**$ 302,372**	**$ 277,982**	**$ 244,143**	**$ 33,839**	**12.17%**
Operating Surplus/(Deficit)		**$ (0)**	**$ (807)**	**$ 33,429**		

Debt Service Budget vs. Actual

	Budget FY 2019	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues					
Debt Service Rate Revenue	$ 8,006	$ 7,339	$ 7,337	$ (2)	-0.02%
Trust Fund Interest	-	-	169	169	
Reserve Fund Interest	1,000	917	2,129	1,213	132.29%
Total Debt Service Revenues	**$ 9,006**	**$ 8,256**	**$ 9,635**	**$ 1,380**	**16.71%**
Debt Service Costs					
Total Principal & Interest	$ 8,006	$ 7,339	$ 7,339	$ -	0.00%
Reserve Additions-Interest	1,000	917	2,129	(1,213)	
Estimated New Principal & Interest	-	-	-	-	
Total Debt Service Costs	**$ 9,006**	**$ 8,256**	**$ 9,468**	**$ (1,213)**	**-14.69%**
Debt Service Surplus/(Deficit)	**$ -**	**$ -**	**$ 167**		

Rate Center Summary

	Budget FY 2019	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Total Revenues	$ 311,378	$ 285,430	$ 287,207	$ 1,778	0.62%
Total Expenses	311,378	286,237	253,611	32,626	11.40%
Surplus/(Deficit)	**$ (0)**	**$ (807)**	**$ 33,596**		
Costs per 1000 Gallons	15.14		8.33		
Operating and DS	15.60		8.66		
Thousand Gallons Treated	19,966	18,302	29,302	11,000	**60.10%**
or					
Flow (MGD)	0.055		0.087		

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019

Administration

Operating Budget vs. Actual

	Notes	*Budget FY 2019*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ 460,000	$ 421,667	$ 421,667	$ (0)	0.00%
Miscellaneous Revenue		2,000	1,833	8,339	6,506	354.87%
Total Operating Revenues		**$ 462,000**	**$ 423,500**	**$ 430,006**	**$ 6,506**	**1.54%**
Expenses						
Personnel Cost		$ 1,796,150	$ 1,655,434	$ 1,600,594	$ 54,840	3.31%
Professional Services		228,000	209,000	176,197	32,803	15.70%
Other Services & Charges		140,980	129,232	95,189	34,042	26.34%
Communications		20,280	18,590	18,667	(77)	-0.41%
Information Technology	**F**	138,500	126,958	156,011	(29,053)	-22.88%
Supplies		21,000	19,250	19,624	(374)	-1.94%
Operations & Maintenance		60,400	55,367	37,127	18,240	32.94%
Equipment Purchases		27,500	25,208	29,008	(3,799)	-15.07%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 2,432,810**	**$ 2,239,039**	**$ 2,132,416**	**$ 106,623**	**4.76%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,970,810)**	**$ (1,815,539)**	**$ (1,702,410)**	**$ (113,129)**	**6.23%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 867,157**	**$ 798,837**	**$ 749,061**	**$ 49,777**	
Crozet Water	4.00%	**$ 78,832**	**72,622**	**68,096**	**4,525**	
Scottsville Water	2.00%	**$ 39,416**	**36,311**	**34,048**	**2,263**	
Urban Wastewater	48.00%	**$ 945,989**	**871,459**	**817,157**	**54,302**	
Glenmore Wastewater	1.00%	**$ 19,708**	**18,155**	**17,024**	**1,131**	
Scottsville Wastewater	1.00%	**$ 19,708**	**18,155**	**17,024**	**1,131**	
	100.00%	**$ 1,970,810**	**$ 1,815,539**	**$ 1,702,410**	**$ 113,129**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019

Maintenance

Operating Budget vs. Actual

	Notes	*Budget FY 2019*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Miscellaneous Revenue		-	-	2,597	2,597	
Total Operating Revenues		**$ -**	**$ -**	**$ 2,597**	**$ 2,597**	
Expenses						
Personnel Cost		$ 1,304,247	$ 1,201,633	$ 1,091,963	$ 109,669	9.13%
Professional Services		-	-	-	-	
Other Services & Charges		17,500	16,042	16,816	(774)	-4.82%
Communications		17,325	15,881	16,201	(320)	-2.01%
Information Technology		6,500	5,958	5,275	683	11.47%
Supplies		2,000	1,833	361	1,473	80.33%
Operations & Maintenance	**D**	64,300	58,942	77,643	(18,701)	-31.73%
Equipment Purchases	**C**	105,650	96,846	103,172	(6,326)	-6.53%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 1,517,522**	**$ 1,397,135**	**$ 1,311,430**	**$ 85,705**	**6.13%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,517,522)**	**$ (1,397,135)**	**$ (1,308,834)**	**$ (83,108)**	**5.95%**
Allocations to the Rate Centers						
Urban Water	30.00%	**$ 455,256**	**$ 419,140**	**$ 392,650**	**$ 26,490**	
Crozet Water	3.50%	**53,113**	**48,900**	**45,809**	**3,091**	
Scottsville Water	3.50%	**53,113**	**48,900**	**45,809**	**3,091**	
Urban Wastewater	56.50%	**857,400**	**789,381**	**739,491**	**49,890**	
Glenmore Wastewater	3.50%	**53,113**	**48,900**	**45,809**	**3,091**	
Scottsville Wastewater	3.00%	**45,526**	**41,914**	**39,265**	**2,649**	
	100.00%	**$ 1,517,522**	**$ 1,397,135**	**$ 1,308,834**	**$ 88,301**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019

Laboratory

Operating Budget vs. Actual

	Notes	*Budget FY 2019*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
N/A						
Expenses						
Personnel Cost		$ 301,100	$ 277,422	$ 265,692	$ 11,730	4.23%
Professional Services		-	-	-	-	
Other Services & Charges		14,230	13,044	6,390	6,654	51.01%
Communications		800	733	2,005	(1,272)	
Information Technology		2,500	2,292	-	2,292	100.00%
Supplies		2,150	1,971	1,057	914	46.36%
Operations & Maintenance	**D**	53,500	49,042	76,315	(27,273)	-55.61%
Equipment Purchases		72,100	66,092	11,485	54,607	82.62%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 446,380**	**$ 410,595**	**$ 362,944**	**$ 47,652**	**11.61%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (446,380)**	**$ (410,595)**	**$ (362,944)**	**$ (47,652)**	**11.61%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 196,407**	**$ 180,662**	**$ 159,695**	**$ 20,967**	
Crozet Water	4.00%	**17,855**	**16,424**	**14,518**	**1,906**	
Scottsville Water	2.00%	**8,928**	**8,212**	**7,259**	**953**	
Urban Wastewater	47.00%	**209,799**	**192,980**	**170,583**	**22,396**	
Glenmore Wastewater	1.50%	**6,696**	**6,159**	**5,444**	**715**	
Scottsville Wastewater	1.50%	**6,696**	**6,159**	**5,444**	**715**	
	100.00%	**$ 446,380**	**$ 410,595**	**$ 362,944**	**$ 47,652**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - May 2019

Engineering

Operating Budget vs. Actual

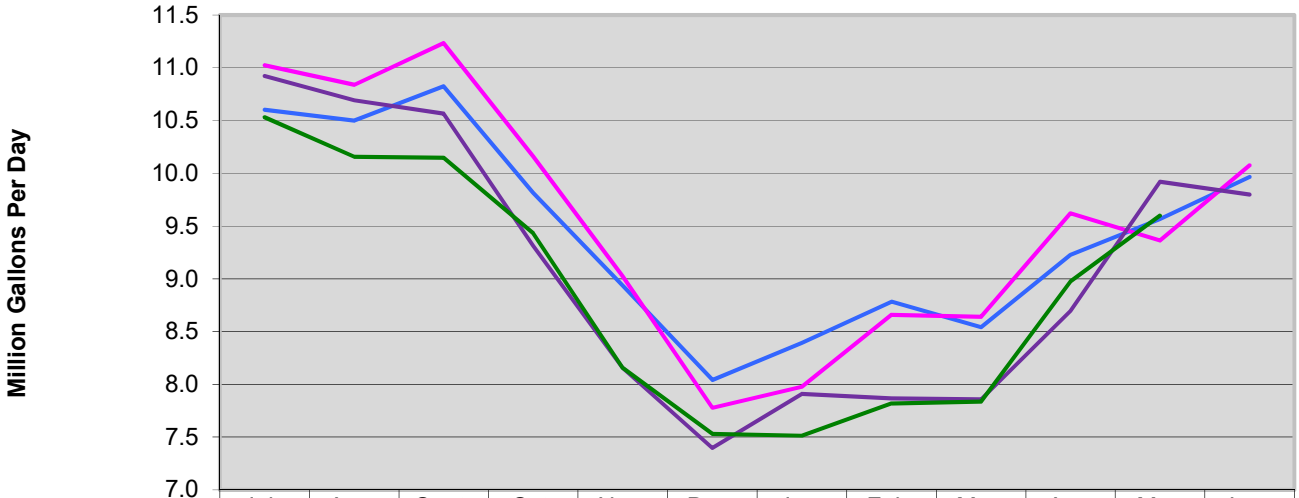
		Budget FY 2019	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ 14,246	$ 14,246	
Total Operating Revenues		**$ -**	**$ -**	**$ 14,246**	**$ 14,246**	
Expenses						
Personnel Cost		$ 1,210,438	$ 1,115,512	$ 1,055,261	$ 60,251	5.40%
Professional Services		44,000	40,333	17,095	23,238	57.61%
Other Services & Charges	**B**	19,550	17,921	45,398	(27,477)	-153.33%
Communications		17,180	15,748	11,668	4,081	25.91%
Information Technology		44,500	40,792	34,140	6,652	16.31%
Supplies		9,500	8,708	7,828	880	10.11%
Operations & Maintenance		54,880	50,307	40,221	10,086	20.05%
Equipment Purchases		26,500	24,292	20,550	3,742	15.40%
Depreciation & Capital Reserve Transfers		-	-	-	-	
Total Operating Expenses		**$ 1,426,548**	**$ 1,313,613**	**$ 1,232,161**	**$ 81,452**	**6.20%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,426,548)**	**$ (1,313,613)**	**$ (1,217,915)**	**$ (67,206)**	**5.12%**
Allocations to the Rate Centers						
Urban Water	47.00%	**$ 670,477**	**$ 617,398**	**$ 572,420**	**$ 44,978**	
Crozet Water	4.00%	**57,062**	**52,545**	**48,717**	**3,828**	
Scottsville Water	2.00%	**28,531**	**26,272**	**24,358**	**1,914**	
Urban Wastewater	44.00%	**627,681**	**577,990**	**535,882**	**42,107**	
Glenmore Wastewater	1.50%	**21,398**	**19,704**	**18,269**	**1,435**	
Scottsville Wastewater	1.50%	**21,398**	**19,704**	**18,269**	**1,435**	
	100.00%	**$ 1,426,548**	**$ 1,313,613**	**$ 1,217,915**	**$ 95,698**	

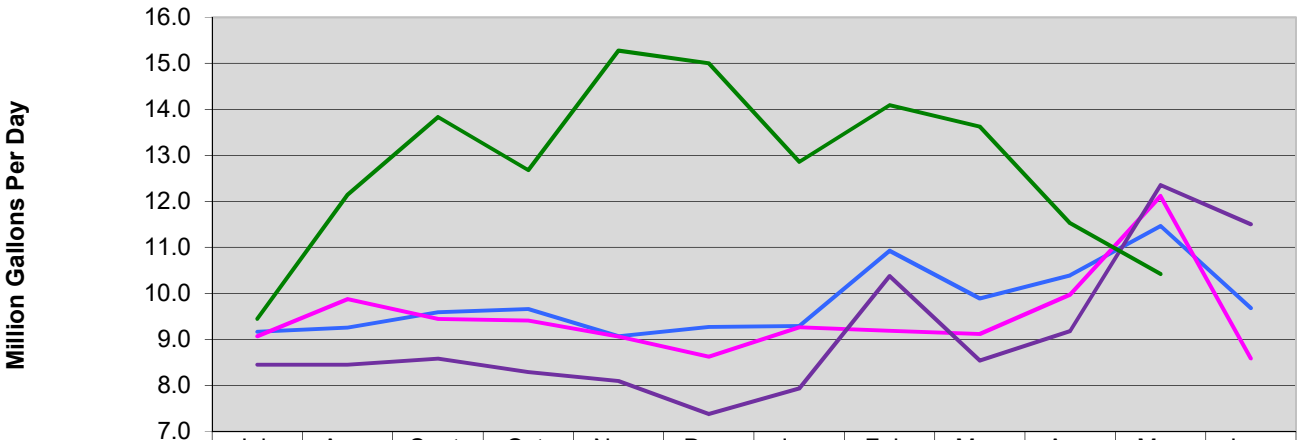
Rivanna Water and Sewer Authority
Flow Graphs

Urban Water Flows



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG.	10.60	10.50	10.83	9.82	8.94	8.04	8.39	8.78	8.54	9.23	9.57	9.97
FY 2017	11.02	10.84	11.23	10.16	9.02	7.78	7.98	8.66	8.64	9.62	9.36	10.07
FY 2018	10.92	10.69	10.57	9.31	8.16	7.40	7.91	7.87	7.86	8.70	9.92	9.80
FY 2019	10.53	10.16	10.15	9.43	8.16	7.53	7.51	7.82	7.84	8.98	9.60	

Urban Wastewater Flows



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG	9.17	9.26	9.59	9.66	9.07	9.27	9.29	10.93	9.89	10.39	11.47	9.68
FY 2017	9.07	9.87	9.45	9.41	9.06	8.62	9.26	9.19	9.12	9.97	12.12	8.59
FY 2018	8.45	8.45	8.59	8.29	8.10	7.38	7.94	10.38	8.54	9.18	12.36	11.50
FY 2019	9.45	12.14	13.83	12.68	15.28	15.00	12.86	14.09	13.62	11.52	10.42	

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: **JUNE 25, 2019**

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

Under Construction

1. Crozet Water Treatment Plant Expansion
2. Wholesale Water Master Metering
3. Interceptor Sewer & Manhole Repair
4. Valve Repair – Replacement (Phase 2)
5. Piney Mountain Tank Rehabilitation
6. Scottsville WTP – Finished Water Metering Improvements
7. Urgent and Emergency Repairs

Design and Bidding

8. Observatory Water Treatment Plant Expansion
9. South Rivanna Water Treatment Plant Improvements
10. Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line and Raw Water Pump Station
11. Crozet Flow Equalization Tank
12. Beaver Creek Dam Alterations
13. Beaver Creek Raw Water Pump Station
14. Crozet Interceptor Pump Station Rebuilds
15. Buck's Elbow Ground Storage Tank Chlorination System
16. MCAWRRF Digester Sludge Storage Improvements
17. MCAWRRF Aluminum Slide Gate Replacements
18. Glenmore Secondary Clarifier Coating
19. Sugar Hollow Dam – Rubber Crest Gate Replacement and Intake Tower Repairs

20. South Rivanna Dam – Gate Repairs
21. Moores Creek Wetland Hydrology Improvements

Planning and Studies

22. Avon to Pantops Water Main (on hold until completion of the Urban Water Master Plan)
23. South Fork Rivanna Reservoir to Ragged Mountain Reservoir Water Line Right-of-Way
24. Urban Water Demand and Safe Yield Study
25. Urban Finished Water Infrastructure Master Plan
26. South Rivanna River Crossing and North Rivanna Transmission Main
27. Route 29 Pump Station
28. South Rivanna Hydropower Plant Decommissioning
29. Security Enhancements
30. Upper Schenks Branch Interceptor, Phase II
31. Asset Management Plan

O&M Related Projects

32. NRWTP Raw Metering Improvements
33. NRWTP Sludge Lagoon Study and Needs Assessment
34. MCAWRRF Cogeneration System Analysis
35. SRWTP Future Site Development Analysis

1. Crozet Water Treatment Plant Expansion

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Orders Construction Co. (WVA)
Construction Start:	December 2018
Percent Completion:	8%
Base Construction Contract + Change Order to Date = Current Value:	$7,170,000- $285,000 = $6,885,000
Expected Completion Date:	December 2020
Total Capital Project Budget:	$8,500,000

Current Status:

A Notice to Proceed was issued on December 13, 2018 and the contractor mobilized on February 26, 2019. Electrical work activities have continued, and a series of plant shutdowns allowed for the installation of temporary measures to isolate a section of the plant for construction activities related to the first contract milestone are underway.

History:

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 discharge capacity will be improved by approximately 100% (from 1 to 2 mgd). SEH completed a Preliminary Engineering Report (PER); watershed data collection; raw water jar testing; pilot scale testing, as well as preliminary and final design.

2. <u>Wholesale Water Master Metering</u>

Design Engineer:	Michael Baker International (Baker)
Construction Contractor:	Linco, Inc.
Construction Start:	January 2016
Percent Complete:	97%
Base Construction Contract + Change Orders to Date = Current Value:	$2,228,254 - $284,104.24 = $1,944,149.76
Expected Completion Date:	August 2019
Total Capital Project Budget:	$3,200,000

<u>Current Status</u>:

Three water treatment plant flow meters, and all 25 distribution system flow meters have been installed. Of those 25 meters, 8 are currently functional, 10 are resolving calibration accuracy, 5 have been replaced and will be calibrated, and the final 2 replacement meters will be installed and calibrated upon receipt in July. Staff continues to work with the meter manufacturers and Baker to resolve any remaining issues related to meter accuracy. Staff hopes to have a fully functioning metering system by the end of August 2019, if no additional unforeseen issues arise.

<u>History</u>:

In January 2012, a Water Cost Allocation Agreement was signed by the City of Charlottesville (City) and ACSA designating how the two agencies would share in the financing of the New Ragged Mountain Dam project. Within the agreement is a general provision developed by the ACSA and City to enhance measurement of the water usage by each of the distribution agencies.

The Board authorized staff in August of 2012 to enter into an agreement with Michael Baker International, Inc. (Baker) to complete an engineering study on metering plan alternatives. Baker's study identified several alternatives for a metering plan based on combinations of metering and estimating methodologies. Based on feedback from ACSA, the City, and RWSA, Baker recommended a Jurisdictional Approach which included installation of water meters at 34 locations at the City/County corporate boundary and at each of the three urban water treatment plants at an estimated cost of $6.4 million. At its September 2013 meeting, the RWSA Board of Directors requested staff to proceed with the Jurisdictional Coverage Approach. In February 2014, the Board of Directors authorized Baker to complete preliminary and final design for the project and to provide bid-phase services. The final design includes construction of 25 metering systems in underground vaults and required acquisition of twenty (20) permanent water line easements and one (1) permanent access easement.

In May 2018, a final version of the *Wholesale Metering Administration and Implementation Policy* was completed and forwarded to the ACSA and the City. RWSA terminated the construction contract with Linco, Inc. on April 2, 2018 and is coordinating the remaining work in-house.

3. Interceptor Sewer and Manhole Repair

Design Engineer:	Frazier Engineering
Construction Contractor:	IPR Northeast
Construction Start:	November 2017
Percent Complete:	20%
Base Construction Contract + Change Orders to Date = Current Value:	$1,244,337.19
Expected Completion:	2020
Total Capital Project Budget:	$1,088,330 (Urban) + $625,000 (Crozet) = $1,713,330

Current Status:

Frazier Engineering continues to conduct condition assessment activities and has reviewed CCTV results from investigation activities performed by IPR Northeast. The results from these investigations and previous investigations are being compiled into an initial construction work authorization for rehabilitation work on portions of the Crozet and Morey Creek Interceptor. Some additional CCTV work will also be performed following the cleaning of certain sections of the interceptor system. The contractor anticipates mobilizing this month to begin this work. Additional investigation and rehabilitation work will follow after the initial round of CCTV investigations.

History:

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.

4. Valve Repair – Replacement (Phase 2)

Design Engineer:	N/A
Construction Contractor:	Garney Construction
Construction Start:	May 2019
Percent Complete:	15%
Base Construction Contract + Change Orders to Date = Current Value:	$843,460.00 + ($75,637.00) + $2,269.90 = $770,092.90
Expected Completion:	October 2019
Total Capital Project Budget:	$882,914

Current Status:

The first valve replacement completed on May 7, 2019. The second valve replacement was completed on May 21, 2019.

Due to the ongoing Piney Mountain Tank Rehabilitation and bypass pumping necessary for that work, two valves identified for replacement in the Valve Repair-Replacement Project are currently unavailable to be replaced. As such, the Contractor demobilized from the project after the valve replacement completed on May 21, 2019 and will return in early August once all valves included in the project are available for replacement.

History:
Isolation valves are critical for normal operation of the water distribution system and timely emergency response to water main breaks. Staff continuously reviews results from an ongoing Valve Exercising and Condition Assessment Program. This project will replace the highest-priority valves that are identified during the condition assessment as not operable and not repairable. In addition, valves that are identified in the condition assessment as being inoperable and repairable will be repaired as a part of the project. Phase 1 of the Valve Repair-Replacement Project replaced several inoperable and unrepairable valves in the North Rivanna Finished Water System. Phase 2 will continue replacing inoperable and unrepairable valves in the North Rivanna Finished Water System, but it will also replace (and potentially repair) valves on the South Rivanna, Crozet, Pantops, and Southern Loop Finished Water Systems. Once all specified valves have been repaired/replaced in Phase 2, the focus will shift to replacing older isolation valves in subsequent phases. Numerous valves in the North Rivanna and South Rivanna Finished Water Systems are 50+ years old and replacing these valves will enhance the resiliency and reliability of the two systems.

A Request for Bids (RFB) was issued on November 6, 2018. A Pre-Bid Conference was held on November 19, 2018. The first (and only) Addendum was issued on November 30, 2018. RWSA staff opened bids for the project on December 11, 2018, and Garney Companies, Inc. was the apparent low bidder ($843,460). The RWSA Board of Directors approved the bid award recommendation and Capital Improvement Plan Budget Amendment on January 22, 2019. A Notice of Award was sent to Garney Companies, Inc. on February 6, 2019. A Pre-Construction Conference was held with the Contractor, VDOT, ACSA, and RWSA on March 11, 2019. Mobilization occurred during the week of April 29, 2019, and a Notice to Proceed was issued on May 6, 2019.

5. Piney Mountain Tank Rehabilitation

Design Engineer:	Johnson, Mirmiran & Thompson (JMT)
Construction Contractor:	Utility Service Co, Inc.
Construction Start:	April 2019
Percent Complete:	20%
Base Construction Contract + Change Orders to Date = Current Value:	$251,700 + $12,585 = $264,285
Expected Completion:	August 2019
Total Capital Project Budget:	$570,000

Current Status:

The Piney Mountain Tank was taken offline during the week of April 22, 2019 and has a substantial completion date in late July 2019. The contractor mobilized to the site during the week of May 27, 2019, and is currently performing structural repairs to the rafters, with this phase of the project

scheduled to be completed by the week of June 17, 2019. Once the structural repairs are completed, the Contractor will transition to the interior and exterior coatings. It is anticipated that the Piney Mountain Tank will be placed back online in late July or early August 2019.

History:

The 700,000 gallon Piney Mountain Tank serves the North Rivanna pressure zone. A routine inspection of the Piney Mountain Tank in April of 2012 revealed several deformed roof rafters, indicating the potential for structural deficiency. An in-depth structural inspection was performed in May of 2013 and a list of recommended roof repairs provided. This project includes consultant services for design and bidding of necessary roof repairs and other ancillary items, as well as construction, construction administration, and inspection services. Long term plans for the Rt. 29 service area include the modification or elimination of this facility. The current recommended improvements are needed in order to maintain the existing tank in service for at least the next 10 years.

The project was advertised for bid on November 28, 2017 and bids were opened on January 9, 2018. At its January 2018 meeting, the RWSA Board of Directors approved staff's recommendation of award to Utility Service Co., Inc., the apparent low bidder on the project. Due to unforeseen complications with an extended tank shutdown and other ongoing construction activities in the North Rivanna Water System in spring of 2018, construction of the Piney Mountain Tank repairs was postponed to spring of 2019. The RWSA Board of Directors approved an amendment to the Capital Improvement Plan Budget at its March 2019 meeting.

6. Scottsville WTP – Finished Water Metering Improvements

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	September 2018
Project Status:	Construction Award
Construction Start:	August 2019
Completion:	November 2019
Approved Capital Budget:	$145,000

Current Status:

Construction bids were opened on May 29, 2019, and a recommendation for award of the contract is included in this month's Board packet.

History:

The Scottsville WTP is permitted to provide up to 0.25 MGD of potable drinking water to RWSA customers in the Scottsville service area. After water has been treated in the plant it is collected in an existing clearwell, which was constructed with the original facility. From the clearwell, the water is pumped into the distribution system by one of the two high service pumps. The flow from these pumps is not metered. In order to keep a record of the total flow entering the Scottsville system, plant operators must periodically conduct draw-down tests to verify the pumping rate of each of the two pumps. The total flow is then calculated based on the run time of each pump. This method of measuring flow is not accurate, as the pumping rate will vary based on the clearwell level and the hydraulic grade line of the distribution system. In addition, the Virginia Department of Health has indicated that the flow should be metered during recent conversations related to the disinfection profile

calculation throughout the plant. The purpose of this project is to install a finished water meter at the plant.

7. Urgent and Emergency Repairs

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

Project No.	Project Description	Approx. Cost
2017-03	Crozet Sewer Force Main Air Release Valve Repair	$135,000
2018-06	South Rivanna Dam Apron and River Bank Repairs	$200,000
2019-04	MCAWRRF EQ Basin No. 2 Drain Valve Investigation	$75,000

- Crozet Sewer Force Main Air Release Valve Repair

  During routine inspections of the sewer force main, the Maintenance Department identified that the saddle for one of the air release valves was loose and needed to be repaired. Due to the profile of the force main however, it is not possible to dewater the force main and take pressure off the pipe at this location without the installation of line stops. As a result, a contractor was contacted to begin development of a method to address the issue and a site meeting was conducted. The contractor has provided estimated pricing and a work authorization is being developed. Coordination with the property owner is underway and this repair will be scheduled this summer.

- 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. Repairs to the north and south concrete aprons will be designed by Schnabel Engineering and those services will be procured separately from the on-call contract.

- MCAWRRF EQ Basin No. 2 Drain Valve Investigation

  At MCAWRRF, the Equalization (EQ) Basins are currently used to store incoming wastewater during intense rainfalls and other high flow periods. Once these events have subsided, the wastewater held in the EQ Basins is drained and the treatment process begins. One of the EQ Basin's drain valves has become stuck in the closed position. With this valve stuck closed, MCAWRRF's ability to store wastewater was limited to the capacity of the first EQ Basin. One of RWSA's On-Call Emergency Maintenance Contractors, G.L. Howard, mobilized during the week of June 3rd to investigate the condition of the valve and perform a repair or replacement (depending on the condition of the valve determined through the investigation). Once the valve

was uncovered, it was found that the operator nut assembly had sheared away from the shaft and the rest of the gearbox, and the valve was in need of replacement. G.L. Howard replaced the 12" plug valve during the week of June 10, 2019.

8. Observatory Water Treatment Plant Expansion

Design Engineer:	Short Elliot Hendrickson, Inc. (SEH)
Project Start:	October 2017
Project Status:	60% Design
Construction Start:	December 2019
Completion:	2023
Approved Capital Budget:	$19,700,000

Current Status:

Sixty percent design documents are being submitted this month and meetings are being held to discuss construction sequencing with the intent of advertising the project for bids in September 2019.

History:

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 8th and a memo summarizing the results has being completed. Any agreed upon results will be incorporated into the project. This project will consider the design and costs for upgrading the plant systems to achieve a consistent 7.7 MGD plant capacity, as well as consider the costs involved with upgrading the plant to 10 or 12 MGD capacity. Much of the Observatory Water Treatment Plant is original to the 1953 construction. In an effort to better understand the needed future improvements, 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. A portion of this project was expedited in order to repair and replace old, existing equipment that was not functional. The flocculator systems have been replaced and upgraded as part of the Drinking Water Activated Carbon and WTP Improvements project (GAC). The second flocculator system was started up in May 2017, and both systems are currently in full service. The PER has been finalized, as well as a Work Authorization with the design engineer for design, bidding and construction administration services.

9. South Rivanna Water Treatment Plant Improvements

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	October 2017
Project Status:	60% Design
Construction Start:	December 2019
Completion:	2023
Approved Capital Budget:	$15,000,000

Current Status:

Sixty percent design documents are being submitted this month and meetings are being held to discuss construction sequencing concerns with the intent of advertising the project for bids in September 2019.

Project scope and budget have increased to address treatment system and building needs identified during the PER phase.

History:

A project kickoff meeting with staff was held on November 13, 2018 and 30% design documents were provided in February. A Value Engineering Workshop took place the week of April 8th and a memo summarizing the results has being completed. Any agreed upon results will be incorporated into the project. The South Rivanna Water Treatment Plant is currently undergoing significant upgrades as part of the Granular Activated Carbon Project. Several other significant needs have also been identified and have been assembled into a single project. The projects herein include: 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; and the construction of a new metal building to cover the existing liquid lime feed piping and tanks.

The scope of this project will not increase plant treatment capacity. The PER has been finalized, as well as a Work Authorization with the design engineer for design, bidding and construction administration services.

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

Design Engineer:	Michael Baker International (Baker)
Project Start:	August 2018
Project Status:	Prelim Design & Easement Acquisition in Progress
Construction Start:	2022
Completion:	2026
Approved Capital Budget:	$3,877,000
Current Project Estimate:	$18,000,000

Current Status:

A site evaluation study to recommend a location for the raw water pipe and pump station has been completed and is currently under review. Survey and Appraisal work have been completed for portions of this alignment, and easement acquisition is currently underway.

History:

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 to the Observatory Water Treatment Plant 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, which may eventually have the capacity to treat 10 mgd. The new pipeline is expected to be constructed of 36-

inch ductile iron and will approximately 14,000 feet in length. The opportunity to integrate the Observatory WTP raw water supply line with the proposed South Rivanna Reservoir to RMR raw water main project is currently being investigated 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. Integration of the new pump station with the planned South Rivanna Reservoir to RMR pipeline is being considered 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 SRR WTP.

11. <u>Crozet Flow Equalization Tank</u>

Design Engineer:	Schnabel Engineering
Project Start:	October 2016
Project Status:	70% Design
Construction Start:	December 2019
Completion:	2021
Approved Capital Budget:	$4,860,000

<u>Current Status</u>:

Final design documents will be completed by August 2019.

<u>History:</u>

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 namely 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. As a result, it is important to progress into the siting study for the flow equalization tank to ensure that it can be constructed in time for the 2025 flow targets but also to facilitate less complicated and more thorough maintenance on the system that has not been possible previously.

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. A data collection period has begun which includes a wetlands investigation of the project site and a topographic survey of the site has also been completed. An inspection of the existing Pump Station No. 4 is scheduled for September 20, 2018 where information on the control and electrical systems will be gathered.

12. <u>Beaver Creek Dam Alterations</u>

Design Engineer:	Schnabel Engineering
Project Start:	February 2018
Project Status:	Final Design and Permitting Underway
Construction Start:	2023
Completion:	2026
Approved Capital Budget:	$4,898,000
Current Project Estimate:	$15,000,000

<u>Current Status</u>:

A Preliminary Engineering Report has been completed for the selected design alternative. Final design of the dam improvements is underway. Development of a Joint Permit Application for the new Pump Station, Intake, and Beaver Creek Dam Spillway Upgrades began in May 2019 by Hazen & Sawyer and is expected to be completed in the summer of 2020. Staff is also currently pursing federal funding for the project.

<u>History</u>:

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. In 2017, RWSA entered into a term contract with Schnabel Engineering for dam-related engineering services. The design work for this project is being completed under Schnabel's term contract.

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.

13. Beaver Creek Raw Water Pump Station and Intake

Design Engineer:	Hazen & Sawyer
Project Start:	August 2018
Project Status:	Permitting and Site Selection Work Underway
Construction Start:	2023
Completion:	2026
Approved Capital Budget:	$4,138,000
Current Project Estimate:	$8,000,000

Current Status:

Hazen and Sawyer has begun work on a site selection study for the new Raw Water Pump Station and intake. Development of a Joint Permit Application for the new Pump Station, Intake, and Beaver Creek Dam Spillway Upgrades is also underway and is expected to be completed in the summer of 2020.

History:

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.

14. Crozet Interceptor Pump Station Rebuilds

Design Engineer:	TBD
Project Start:	July 2018
Project Status:	25% Design
Construction Start:	2019
Completion:	2023
Approved Capital Budget:	$545,000

Current Status:

The Maintenance Department has begun pump replacement work associated with this overall project. Staff is reviewing the overall scope of work for the project and will be coordinating other items with the Maintenance Department regarding schedule and preferred equipment and materials. Work will be performed via quote packages and the need for consultant assistance is being determined.

History:

The Crozet Interceptor Pump Stations were constructed in the 1980's and many of the components are still original. The project will include the replacement of pumps and valves at Pump Station No. 2 in order to improve pumping capabilities at this location and provide spare parts for the pumps at Pump Station No. 1. This work will also include roof replacements at all four pump stations, siding

replacement for the wet well enclosure at Pump Station No. 3, and installation of a new water well at Pump Station No. 3. Components of this project will be coordinated and timed to properly coincide with the Crozet Flow Equalization Tank project.

15. Buck's Elbow Ground Storage Tank Chlorination System

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	Winter 2017
Project Status:	95% Design
Construction Start:	October 2019
Completion:	January 2020
Approved Capital Budget:	$187,000

Current Status:

SEH submitted 95% Plans and a draft Project Manual to RWSA for review on June 6, 2019. The documents are currently under review by RWSA staff, and the Request For Bids is scheduled to be posted in June. Once all design documents have been finalized and approved by RWSA, they will be submitted to the Virginia Department of Health (VDH) for final regulatory approval. Staff anticipates opening bids on July 11, 2019, with a Bid Award recommendation being brought to the RWSA Board of Directors at the July Meeting.

History:

The two million-gallon Bucks Elbow Ground Storage Tank provides finished water storage for the Crozet Area. Historically, RWSA has experienced low chlorine residuals in the tank during the warm weather months due to water age and stratification. When chlorine residuals drop, RWSA must manually feed chlorine into the tank. Previously, this meant that staff had to bring all required pumping infrastructure to the site and climb the tank to access the injection point(s). To enhance the efficiency and safety of this process, SEH is assisting RWSA with the design of a chlorine feed system that is capable of one-person operation, will not require tank climbing or confined space entry into the adjacent altitude valve vault, and will minimize overall chemical exposure risk to RWSA staff. An active mixing system will also be installed at the Buck's Elbow Ground Storage Tank as a part of the work to supplement the existing passive mixing system. This will ensure that the tank is being appropriately mixed during the chlorine feed process and will decrease overall stratification in the tank.

SEH completed an update to the project's original Alternatives Analysis (completed in Winter 2017 as an O&M Project) and held a review meeting with RWSA Engineering and Operations staff during the week of May 6, 2019. This document was submitted to VDH for preliminary review following the meeting.

16. MCAWRRF Digester Sludge Storage Improvements

Design Engineer:	TBD
Project Start:	Summer 2019
Project Status:	Preliminary Design
Construction Start:	Fall 2019

Completion:	June 2020
Approved Capital Budget:	$313,000

Current Status:

We are currently scheduling an engineer to perform an interior inspection of the sludge storage tank. Preparation of construction documents will begin after an inspection is completed and scope of repair work better defined. Implementation of this work will commence after Digester No. 3 is coated and back in service in July 2019.

History:

With the second centrifuge installation, additional capacity for storage of digested sludge would provide the Authority operational flexibility it does not currently have. Additionally, the sole sludge storage tank at the MCAWRRF was constructed in 1959 of reinforced concrete and is in need of repairs. This project would convert one of the three existing anaerobic digesters (Digester No. 1) into a sludge storage tank through piping modifications, and would provide redundancy to the existing sludge storage tank so it can be removed from service, cleaned, inspected, and repaired with minimal impact to the existing sludge dewatering operations. The piping configuration would also allow flexibility for the anaerobic digester to be used as either an anaerobic digester or sludge storage tank as needed for operations. The scope of work would include piping modifications, hydraulic improvements, tank safety improvements such as handrail and lights, and structural improvements to the existing sludge storage tank roof.

17. MCAWRRF Aluminum Slide Gate Replacements

Design Engineer:	Hazen and Sawyer
Project Start:	November 2018
Project Status:	95% Design (for UV Facility work)
Construction Start:	August 2019
Completion:	November 2019
Approved Capital Budget:	$470,000

Current Status:

Staff is currently reviewing the design for the UV Facility Slide Gate Replacement Project for which a quote package will be advertised in July 2019.

History:

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 access and repair the gates, it is now necessary to replace and modify the gate arrangement. The replacement includes new gates for greater flexibility and resiliency as well as significant influent flow bypass pumping. Likewise, there are several 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.

18. Glenmore Secondary Clarifier Coating

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	Fall 2018
Project Status:	Bidding
Construction Start:	July 2019
Completion:	November 2019
Approved Capital Budget:	$110,000

Current Status:

Request for Quote No. 1087 was issued on June 11, 2019. Quotes for cleaning and coating both clarifiers are due on June 25, 2019.

History:

The secondary clarifiers at the Glenmore facility were painted over 10-years ago. The clarifier environment is a particularly harsh environment subject to corrosive gases, grit abrasion and mechanical wear. Based on observations by operations staff, the coating system is in need of replacement to prevent deterioration and failure of the underlying metal superstructure. This project includes the cleaning and full coating of the clarifier.

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

Design Engineer:	Schnabel Engineering
Project Start:	January 2019
Project Status:	Design Work Underway
Construction Start:	2020
Completion:	2021
Approved Capital Budget:	$1,140,000

Current Status:

Schnabel Engineering has begun design work on the Sugar Hollow Dam Rubber Crest Gate Replacement. A dive inspection of the intake tower will be completed in summer of 2019. Construction is anticipated to begin in spring or summer of 2020.

History:

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 will be inspected and evaluated. Recommended repairs may include issues relating to the intake gate valves and tower walls, including repair or replacement of intake trash racks, and sealing/grouting of minor concrete wall cracks.

20. South Rivanna Dam – Gate Repairs

Design Engineer:	Schnabel
Project Start:	July 2019
Project Status:	Work Authorization Development
Construction Start:	Spring- Fall 2020
Completion:	2020
Approved Capital Budget:	$900,000

Current Status:
Design will begin in July 2019 with construction in 2020, pending preliminary findings.

History:
The South Rivanna Dam, originally constructed in 1965, is equipped with two 36" diameter slide gates and conduits, one each on the north and south abutments of the dam, which can be utilized to dewater the facility or to meet minimum instream flow (MIF) requirements when the dam is not spilling. These gates are original to the dam and while they are operable and are exercised regularly, they can no longer provide a complete seal, therefore allowing some leakage through the dam. RWSA has protocols in place to temporarily stop leakage through the gates when necessary to conserve water; however, there is a desire to repair or replace the gates and components as needed to restore full functionality. The project includes other repairs to the facility, including improvements to the concrete wall adjacent to the Raw Water Pump Station as well as improvements to the north dam tower to provide safer access by staff while still discouraging access by the general public.

21. Moores Creek Wetland Hydrology Improvements

Design Engineer:	VHB/ECS, Mid-Atlantic
Project Start:	March 2019
Project Status:	60% Design
Construction Start:	September 2019
Completion:	December 2019
Approved Capital Budget:	$95,000

Current Status:
Design is underway. Anticipate construction bidding in August.

History:
As part of the Ragged Mountain project, RWSA was required to mitigate for impacts to streams and wetlands. The wetland mitigation site is located along Moores Creek on Franklin St. RWSA has been monitoring the mitigation sites, as required by the project permit, since construction in 2014. Reports on the success of the site are submitted to the Department of Environmental Quality (DEQ) at intervals during the first 10 year of the project construction. From this monitoring it was determined that the wetland is holding more water than is ideal for its function. VHB designed a Hydrology Improvement

Plan for the site, which was approved by DEQ. RWSA is now working with ECS Mid-Atlantic, to obtain the necessary County permits for the improvements (i.e., Erosion and Sediment Control permit).

22. Avon to Pantops Water Main (on hold until completion of the Urban Water Master Plan)

Design Engineer:	Michael Baker International (Baker)
Project Start:	August 2017
Project Status:	Preliminary Engineering Report
Construction Start:	TBD
Completion:	TBD
Approved Capital Budget:	$2,100,000

Current Status:

Route alignment determination, hydraulic modeling, and preliminary design were underway. Due to the complicated nature of our finished water systems, it was decided at the August 2018 Board meeting that a more comprehensive approach is warranted and we should complete the Finished Water Master Plan prior to moving forward with final design and construction of the Avon to Pantops Water Main. This project is on hold.

History:

The focus of this project is 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 will service as a starting point for this current project. An engineering contract has been negotiated and was approved by the Board of Directors in July 2017.

23. 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 Underway
Completion:	2021
Approved Capital Budget:	$2,295,000

Current Status:

A Draft PER was completed in January 2019. Survey work began in late March to begin preparation of easement plats. Several of the properties are owned by the VDOT, Albemarle School Board, UVA Foundation and the City of Charlottesville. A work authorization for easement acquisition services with ERM and Associates was approved by the Board in April. Appraisal work is ongoing for any easements with an estimated value over $10,000 in accordance with RWSA policy.

History:

The approved 50-year Community Water Supply Plan includes the future construction of a raw water line from the South Fork Rivanna Reservoir to the Ragged Mountain Reservoir. This water line will replace the existing Upper Sugar Hollow Pipeline along an alternative alignment to 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 is now completing the routing study. Preliminary design, plat creation and the acquisition of easements will take place as soon as the final route determination has been made. Property owners have been contacted to request permission to access properties for topographical surveying which will take place following completion of the PER. A recommendation for a tentative final alignment was presented at a community information meeting in June 2018.

24. Urban Water Demand and Safe Yield Study

Design Engineer:	Hazen and Sawyer
Project Start:	November 2018
Project Status:	55% complete
Completion:	November 2019
Approved Capital Budget:	$154,000

Current Status:

Bathymetric studies of the South Rivanna and Ragged Mtn Reservoirs were completed in March 2019. Initial demand projections were presented to staff in mid-June. Additional workshops will be held with City, ACSA and County staff following the initial review.

History:

The City of Charlottesville, Albemarle County Service Authority, and RWSA entered into the Ragged Mountain Dam Project Agreement in 2012. This Agreement included provisions to monitor the bathymetric capacity of the Urban water reservoirs as well as a requirement to conduct reoccurring demand analysis, demand forecasting and safe yield evaluations. This study will evaluate and calculate current and future demands and present safe yield. Per the project Agreement, these analyses shall be completed by calendar year 2020.

25. Urban Finished Water Infrastructure Master Plan

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2018
Project Status:	35% complete
Completion:	April 2020
Approved Capital Budget:	$253,000

Current Status:

Work on this project is on-going and is being coordinated with flow projections being provided by Hazen and Sawyer under the Urban Water Demand and Safe Yield Study.

History:

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.

26. South Rivanna River Crossing and North Rivanna Transmission Main

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2020
Project Status:	Planning
Construction Start:	2021
Completion:	2023
Approved Capital Budget:	$5,340,000

Current Status:

An update to the Airport Zone Study Report was completed in summer of 2018, confirming the need for and timing of the river crossing and transmission main. Design of the project will begin in summer 2020.

History:

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. 20 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 Airport Road Pump Station Site, RWSA plans to construct a new river crossing at the South Fork Rivanna River and two "gap" sections of 24-inch water main between the already completed sections. Much of the new water main route is within VDOT right-of-way; however, acquisition of right-of-way will be required at the river crossing and on the Kohl's Property at Hollymead Town Center.

27. Route 29 Pump Station

Design Engineer:	TBD
Project Start:	July 2019
Project Status:	Planning
Construction Start:	2021
Completion:	2022

Approved Capital Budget: $2,300,000

Current Status:

Design of the pump station is anticipated to begin in the summer of 2019.

History:

The Rt. 29 Pipeline and Pump Station 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.

28. South Rivanna Hydropower Plant Decommissioning

Consultant:	Gomez and Sullivan
Project Start:	October 2016
Project Status:	Exemption Surrender Process – Phase 2 Underway
Construction Start:	2019
Completion:	2020
Approved Capital Budget:	$725,000

Current Status:

A consultation document was provided to local regulatory agencies and a meeting was held on May 21, 2018 with the agencies to discuss the decommissioning process. Minor comments were provided by those agencies and development of the surrender application for submission to FERC is underway. As part of the application, a draft decommissioning plan has been developed and is being reviewed by RWSA. Due to a recent significant wet weather event, returning the 72-inch diameter penstock to a reservoir drain has been evaluated by Gomez and Sullivan. Modifications to the decommissioning plan are being developed to incorporate that into the project. A revised conceptual plan has been submitted for review and will be distributed to local regulatory agencies to identify any issues prior to final submission to FERC.

History:

RWSA constructed a hydropower plant at the South Fork Rivanna Dam in 1987. Power generation at the plant was limited for a number of years due to various mechanical issues. In December 2011, RWSA retained HDR to perform a mechanical and electrical equipment assessment and to provide recommendations for capital expenditures and continued operation. This assessment identified the need to perform a number of mechanical and electrical modifications to improve operation of the hydropower plant. On June 16, 2013, while the plant was down for testing associated with repairs to

the speed reducer and generator, the powerhouse flooded during a heavy rainfall event. A post-flood inspection indicated that the rising water damaged the electrical equipment. In addition to electrical system issues, the turbine blades were "stuck" and inoperable prior to the flood event. Prior to beginning any rehabilitation work on the hydropower plant, it was determined that a feasibility study should be performed that reviewed previous recommendations and took into account interaction with the Federal Energy Regulatory Commission (FERC) to determine if it was cost effective for RWSA to rehabilitate the facility. The feasibility study was conducted by Gomez and Sullivan and concluded that rehabilitation of the facility would most likely not provide a return on investment based on current market conditions. Staff recommended that RWSA proceed with surrendering the exemption to licensure with FERC and decommission the facility. During the meeting on October 25, 2016, the Board of Directors agreed with the recommendation and staff began to proceed with the surrender process.

Work associated with the first phase of the exemption surrender process with Gomez and Sullivan and Van Ness Feldman was completed confirming with FERC what the next steps in the surrender process would include. A work authorization with Gomez and Sullivan for Phase 2 of the exemption surrender process was finalized in August 2017 and includes tasks to manage the local regulatory agencies consultation process and development of the surrender application and decommissioning plan.

29. <u>Security Enhancements</u>

Design Engineer:	TBD
Project Start:	July 2018
Project Status:	Planning/Procurement
Construction Start:	2019
Completion:	2021
Approved Capital Budget:	$1,000,000
Current Project Estimate:	$2,400,000

<u>Current Status:</u>

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 staff facilitated site visits on June 14, 2019, and proposals are due on June 27, 2019. The selected Implementer will install the proposed access control system at the Crozet, Observatory, and South Rivanna WTPs, as well as the Moores Creek Advanced Water Resource Recovery Facility (MCAWRRF) as in initial measure, with additional facilities to follow. RWSA staff anticipates presenting a recommendation to the RWSA Board of Directors in July. As a part of the RFP process, prospective Implementers will also submit their Firm's capabilities on several other security measures, such as CCTV cameras and intrusion detection systems.

<u>History:</u>

As required by the Federal Bioterrorism Act of 2002, 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.

30. <u>Upper Schenks Branch Interceptor, Phase II</u>

Design Engineer:	Frazier Engineering, P.A.
Project Start:	TBD
Project Status:	Work Authorization Development
Construction Start:	TBD
Completion:	TBD
Approved Capital Budget:	$3,985,000

<u>Current Status:</u>

Discussions are underway to determine an alignment for the replacement sewer line, generally located between the McIntire Recycling Center and Preston Avenue along McIntire Road. As part of this process, some additional subsurface exploration work will be conducted starting this summer to gather rock information along the alignment in McIntire Road as well as across the ballfield.

<u>History:</u>

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. Both phases are included in a DEQ Consent Order. As a result of discussions between RWSA and DEQ, DEQ approved a milestone schedule for completing the Phase 1 section by March 31, 2017 and set in "abeyance" a schedule for completing work on Phase 2 as a result of complications associated with

the execution of the necessary easements. Phase 2, preliminary construction drawings and specifications have been developed. No new agreements concerning right-of-way have been reported to RWSA regarding Phase 2. No bidding or construction can take place until one of the following two options occur: (1) County grants RWSA a suitable easement on County property; or (2) City grants RWSA permission and a street cut permit to install the sewer directly under McIntire Road.

31. Asset Management Plan

Design Consultant:	GHD, Inc.
Project Start:	July 2018
Project Status:	85% Complete (Phase 1)
Completion:	2020
Approved Capital Budget:	$500,000

Current Status:

As part of the first phase, Asset Management awareness training and workshops related to Asset Management Program Development, the Gap Assessment process, and development of an Asset Management Policy have been conducted. A draft report documenting the Gap Assessment has been submitted and various other documents associated with policy and business processes are being reviewed as well. The final workshop to discuss the implementation process is schedule for the first week in July and completion of the first phase of this project is anticipated by the end of July 2019.

History:

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 will also assist RWSA with the procurement of a software package to facilitate the overall program.

O&M Related Projects

Staff is currently working on several O&M related projects within the water and wastewater systems as listed below:

#	Project Description	Total Approx. Value
35	NRWTP Raw Water Metering Improvements	$135,000
36	NRWTP Sludge Lagoon Study and WTP Needs Assessment	$60,100
37	MCAWRRF Cogeneration System Analysis	$48,300
38	SRWTP Future Site Development Analysis	$15,000

- NRWTP Raw Water Metering Improvements

  The NRWTP is permitted to provide up to 2.0 MGD of potable drinking water to customers located in the Urban service area. After water is pumped from the raw water pump station on the North Fork Rivanna River, the raw water flow is metered by an orifice plate, or insert style meter, prior to entering the rapid mix chamber. The meter is located behind the existing powdered activated carbon feed system and is difficult to access. In addition, RWSA recognizes that the accuracy of this style of meter is reduced by laying length conditions in comparison to modern magnetic flow meters which have been installed at other locations. RWSA is working with SEH to develop contract documents to have a magnetic flow meter installed on the raw water line in an exterior below grade vault. The schedule for bidding of this work will be dependent on the availability of funds.

- NRWTP Sludge Lagoon Study and WTP Needs Assessment

  The two lagoons or settling ponds at the plant are earthen basins designed to capture and hold residuals generated through the treatment process as well as periodic draining and washdown of the sedimentation and flocculation basins. The basins were designed to allow all the residuals and solids to settle out and then the clarified water to be decanted and conveyed to the river. The operational use of these lagoons is not as originally intended, and the Virginia Department of Environmental Quality has concerns regarding their condition. A study is being performed to determine how they can be improved, and other locations on site that may be less prone to flood waters. Under this project, a needs assessment at the plant will be also be performed and updated. Construction activities associated with these improvements have been proposed in the FY20 CIP.

- MCAWRRF Cogeneration System Analysis

  The MCAWRRF currently utilizes a cogeneration facility which accepts digester gas and uses it to create electricity and heat. The facility was put into operation in 2011. The generator supplies power back to the plant electrical distribution system providing energy usage savings through offsetting usage through the electric utility. Unfortunately, there have been a number of issues associated with operation of the generator including, expensive and proprietary maintenance services and temperature issues. With a significant and expensive scheduled maintenance event forthcoming, RWSA wanted to conduct a study to determine if these issues could be resolved or if there was a more efficient way to utilize the digester gas. This study will evaluate options for improvements to the existing system or new systems that could be implemented along with estimated costs and returns on investment. A final report was submitted on February 22nd and RWSA is evaluating the final conclusions.

- SRWTP Future Site Development Analysis

  As future water demands increase, facility expansions and additions at the SRWTP site are proposed to continue. At some point in the future, RWSA plans to increase the capacity at the SRWTP to 16 MGD along with preliminary plans for a 41 MGD raw water pump station and a 25 MGD pretreatment facility associated with the future transfer of raw water from the South Rivanna Reservoir to the Ragged Mountain Reservoir. With property development activity increasing near the plant, the intent of this analysis is to confirm what approximate space would be needed to meet the plant's future needs in order to better determine future property requirements. The analysis is expected to be completed by July 2019.

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MEMORANDUM

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

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

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

SUBJECT: **OPERATIONS REPORT FOR MAY 2019**

DATE: **JUNE 25, 2019**

WATER OPERATIONS:

The average daily/monthly total water distributed for May 2019 was as follows:

Water Treatment Plant	***Average Daily Production (MGD)***	***Total Monthly Production (MG)***	***Maximum Daily Production in the Month (MGD)***
Observatory	1.55	48.03	2.05 (5/21/19)
South Rivanna	8.08	250.59	9.89 (5/30/19)
North Rivanna	0.11	0.453	0.14 (5/28/19)
Urban Total	9.74	299.07	10.93 (5/30/19)
Crozet	0.614	19.02	0.807 (5/19/19)
Scottsville	0.041	1.33	0.071 (5/05/19)
RWSA Total	10.40	319.42	---

- All RWSA water treatment facilities were in regulatory compliance during the month of May.
- North Rivanna WTP is operating on an intermittent basis while Piney Mountain Tank is inoperable for repairs.

Status of Reservoirs (as of June 21, 2019):

- Urban Reservoirs: 99.77 % of Total Useable Capacity
- Ragged Mountain Reservoir is full (100%)
- Sugar Hollow Reservoir is -0.38 feet (98.23%)
- South Rivanna Reservoir is full (100%)
- Beaver Creek Reservoir is full (100%)
- Totier Creek Reservoir is full (100%)

WASTEWATER OPERATIONS:

All RWSA Water Resource Recovery Facilities (WRRFs) were in regulatory compliance with their effluent limitations during May 2019. Collected six-month TSS and CBOD samples for Stone-Robinson. Performance of the WRRFs in May was as follows compared to the respective VDEQ permit limits:

WRRF	*Average Daily Effluent Flow (mgd)*	*Average $CBOD_5$ (ppm)*		*Average Total Suspended Solids (ppm)*		*Average Ammonia (ppm)*	
		RESULT	*LIMIT*	*RESULT*	*LIMIT*	*RESULT*	*LIMIT*
Moores Creek	10.13	1.0	10	1.1	22	0.045	7.0
Glenmore	0.089	4.0	15	4.0	30	NR	NL
Scottsville	0.066	2.0	25	3.0	30	NR	NL
Stone Robinson	0.002	22	25	11	30	NR	NL

NR = Not Required
NL = No Limit
<QL: Less than analytical method quantitative level (2 ppm for CBOD, and 1 ppm for TSS).

Nutrient discharges at the Moores Creek AWRRF were as follows for May 2019.

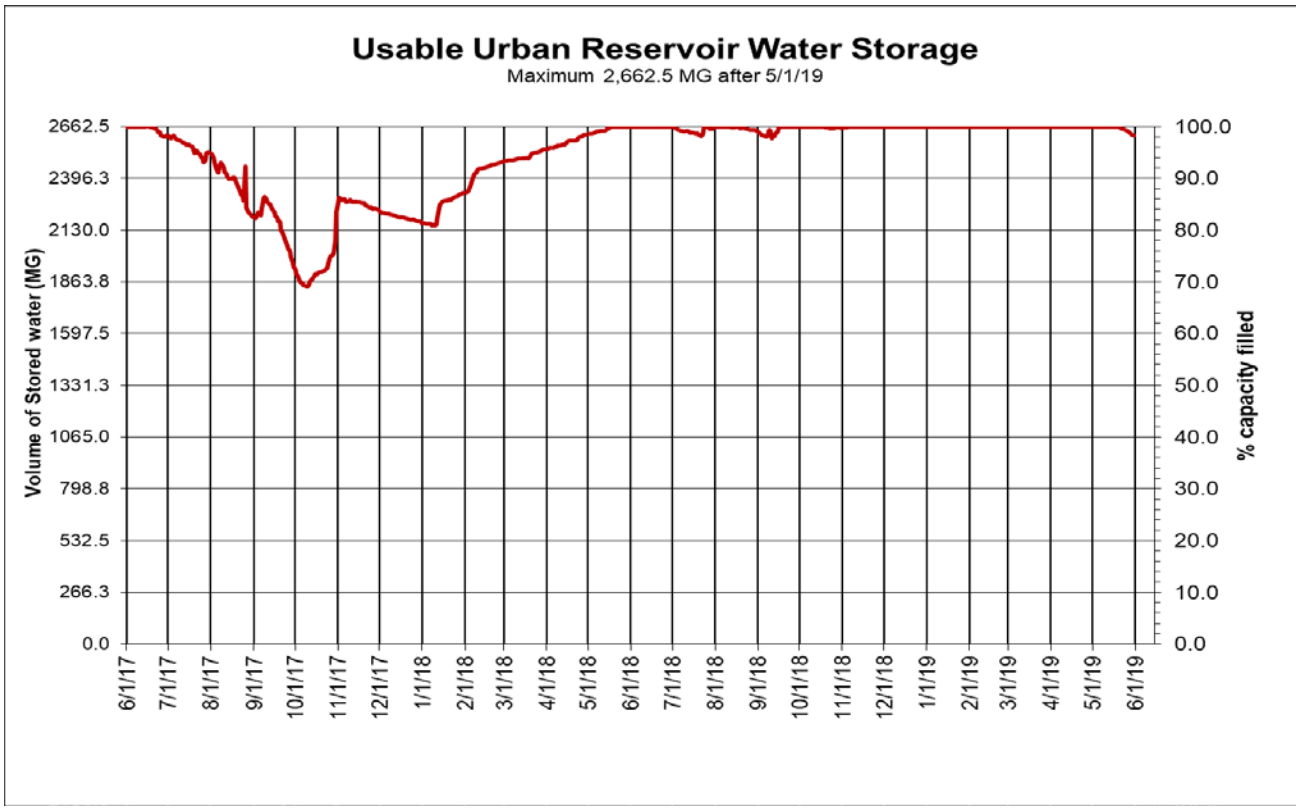
State Annual Allocation (lb./yr.)		*Average Monthly Allocation (lb./mo.) **	*Moores Creek Discharge (lb./mo.)*	*Performance as % of Average Allocation**
Nitrogen	282,994	23,583	6529	28%
Phosphorous	18,525	1,544	729	47%

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

WATER AND WASTEWATER DATA:

The following graphs are provided for review:

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


Usable Urban Reservoir Water Storage
Maximum 2,662.5 MG after 5/1/19
Volume of Stored water (MG)
% capacity filled
2662.5
2396.3
2130.0
1863.8
1597.5
1331.3
1065.0
798.8
532.5
266.3
0.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
6/1/17
7/1/17
8/1/17
9/1/17
10/1/17
11/1/17
12/1/17
1/1/18
2/1/18
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2/1/19
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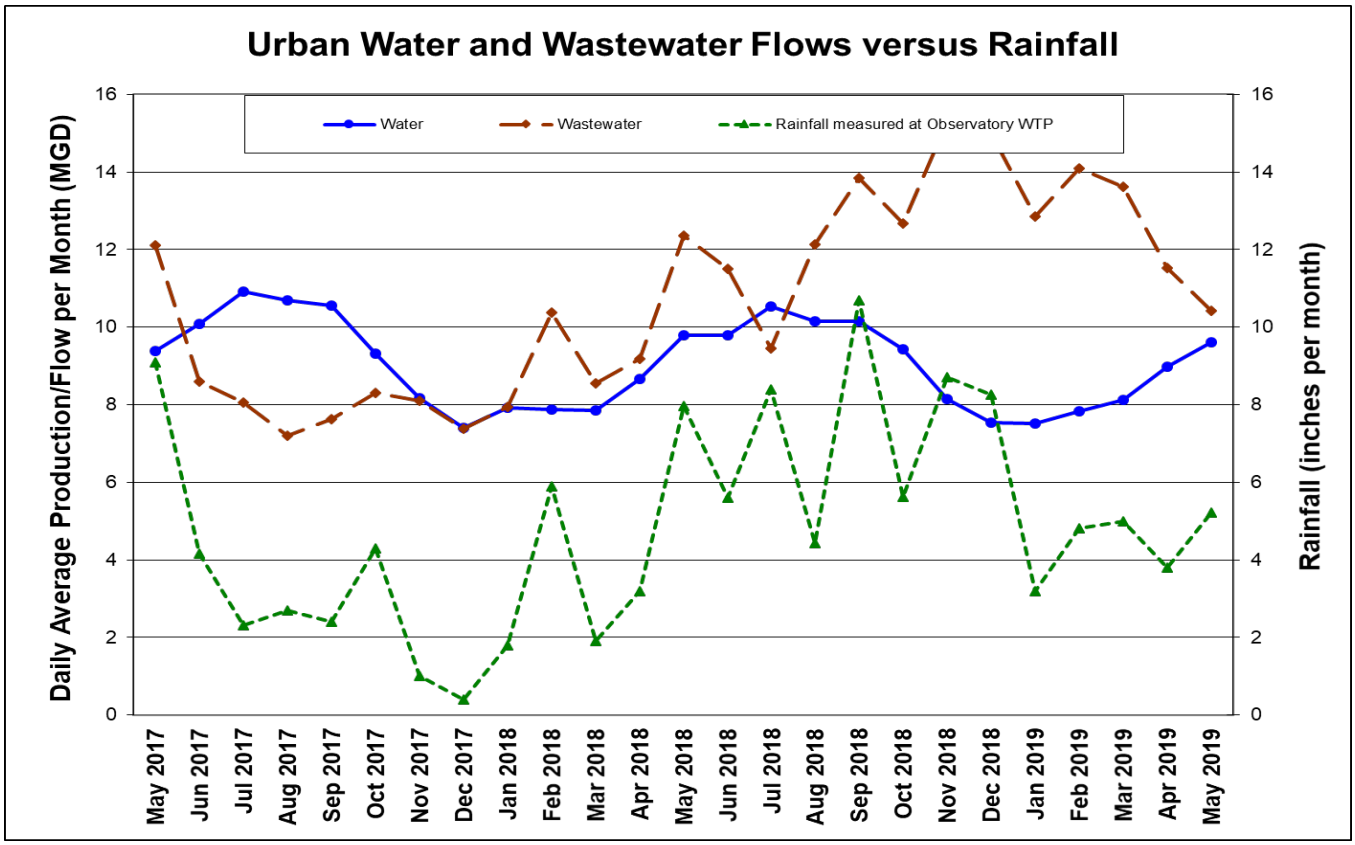
5/1/19
6/1/19


Urban Water and Wastewater Flows versus Rainfall
Water
Wastewater
Rainfall measured at Observatory WTP
Daily Average Production/Flow per Month (MGD)
Rainfall (inches per month)
16
14
12
10
8
6
4
2
0
May 2017
Jun 2017
Jul 2017
Aug 2017
Sep 2017
Oct 2017
Nov 2017
Dec 2017
Jan 2018
Feb 2018
Mar 2018
Apr 2018
May 2018
Jun 2018
Jul 2018
Aug 2018
Sep 2018
Oct 2018
Nov 2018
Dec 2018
Jan 2019
Feb 2019
Mar 2019
Apr 2019
May 2019

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MEMORANDUM

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

FROM: **LONZY E. WOOD, DIRECTOR OF FINANCE AND ADMINISTRATION**

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

SUBJECT: **REIMBURSEMENT RESOLUTION – CIP FUNDING**

DATE: **JUNE 25, 2019**

Adoption of the Capital Improvement Plan (CIP) at the regular May meeting allows the Authority to move forward into a period of significant financing activity to fund many of the construction projects identified in the plan. We are currently using the latest bond issue from the Series 2018 Bond to finance several projects. However, as detailed in the approved CIP document, additional debt funding not covered in the current bonds for several projects is required over the next five years.

The attached Resolution of Official Intent (reimbursement resolution) and Exhibit A provide an estimate that as much as $44.6 million in new debt funding may be needed to finance project costs, which can be implemented in multiple issuances over several years as needed. After adding issuance cost requirements, a total of up to $45.5 million is estimated. As projects begin, we will use 100% cash from the capital fund. Occasionally, we use temporary financing before bond sales to fund the projects. Then, after permanent financing is in place, bond proceeds are used to partially pay back cash to the capital fund (or pay off temporary financing) - in essence pay ourselves back. This capability to pay ourselves back as each debt issuance takes place is very important to provide the financial flexibility and continuity as projects are implemented while also complying with debt covenants and regulations (e.g. arbitrage requirements).

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

The Authority has routinely adopted reimbursement resolutions in the past, and adopted one

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

Board Action Requested:

After consideration by the Board, it is requested that the attached *Resolution Of Official Intent To Reimburse Expenditures With Proceeds of a Borrowing* be approved.

Attachment

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

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

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

BE IT RESOLVED BY THE RIVANNA WATER AND SEWER AUTHORITY:

1. The Borrower intends to utilize the proceeds of tax-exempt bonds (the "Bonds") or to incur other debt, in an amount not currently expected to exceed $45,500,000 to pay all or a portion of the costs of the Project.

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

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

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

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

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

June 25, 2019.

EXHIBIT A

Summary of the Capital Improvement Plan and financing plan as adopted on May 28, 2019:

	2020 - 2024 Adopted CIP	2019-2023 Adopted CIP	Change $
Project Cost			
Urban Water Projects	$ 61,501,900	$ 89,832,485	$ (28,330,585)
Urban Wastewater Projects	14,753,000	32,895,150	(18,142,150)
Non-Urban Projects & Shared	20,949,000	31,174,400	(10,225,400)
Total Project Cost Estimates	**$ 97,203,900**	**$ 153,902,035**	**$ (56,698,135)**
Funding in place			
Work-in-Progress (paid for)	$ 2,943,110	$ 33,967,484	(31,024,374)
Debt Proceeds Used	35,354,000	11,230,305	24,123,695
Cash-Capital Available	6,767,470	7,702,584	(935,114)
	$ 45,064,580	$ 52,900,373	$ (7,835,793)
Financing Needs			
Possible Future Reserves	$ 7,530,000	4,111,000	3,419,000
New Debt	44,609,320	96,890,662	(52,281,342)
	$ 52,139,320	$ 101,001,662	$ (48,862,342)
Total Funding	**$ 97,203,900**	**$ 153,902,035**	**$ (56,698,135)**
Percentage of funding in place	46.4%	34.4%	
Ratio of debt to expense	85.3%	92.3%	
Ratio of cash to expense	14.7%	7.7%	

*The undersigned Secretary of the Rivanna Water and Sewer Authority hereby certifies that the foregoing is a true and correct copy of the resolutions adopted by the Board of Directors of the Authority at the regular meeting of the Board of Directors held on **June 25, 2019**.*

_____

Name: Jeff Richardson

Title: Secretary, Rivanna Water and Sewer Authority

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MEMORANDUM

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

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

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

SUBJECT: **CONSTRUCTION CHANGE ORDER AUTHORIZATION - CROZET INTERCEPTOR SYSTEM PUMP STATION IMPROVEMENTS PROJECT**

DATE: **JUNE 25, 2019**

At the July 24, 2018 meeting, the Board of Directors approved the award of a construction contract to Anderson Construction, Inc. for the Crozet Interceptor System Pump Station Improvements project. The contract was approved for $361,820 with a 10% construction contingency. The project involves the installation of isolation valves and bypass pumping connections at each of the four Crozet wastewater pump stations to provide flexibility in pump station operations during maintenance activities.

Following completion of improvements at Crozet Pump Station No. 1, a sewer leak in the existing force main from this pump station was identified that was not directly related to work performed by the contractor. Due to the urgency of the needed repair and the contractor's accessibility, Anderson Construction was asked to investigate the leak and perform the emergency repair on the force main. We also requested addition grading be provided as part of the repair. The cost of these two additional construction activities totaled $46,108, exceeding the authorized 10% contingency ($36,182).

Staff recommends the authorized construction contingency be increased to $55,182 to fund the additional work and provide a small contingency in case any additional unforeseen need should arise as required to complete the project. The total CIP budget for this project remains unchanged.

Board Action Requested:

Staff requests that the Board of Directors authorize an increase in construction contingency to $55,182 for the Crozet Interceptor System Pump Station Improvements project.

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MEMORANDUM

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

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

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

SUBJECT: **CONSTRUCTION AUTHORIZATION AND CAPITAL IMPROVEMENT PLAN AMENDMENT – SUGAR HOLLOW TRANSFER FLOW METER – G.L. HOWARD, INC.**

DATE: **JUNE 25, 2019**

The 18" Upper Sugar Hollow raw waterline allows RWSA to transfer water from the Sugar Hollow Reservoir to the Ragged Mountain Reservoir. The waterline is nearly 100 years old, and previously, we had no means to monitor the amount of water being transferred between the two reservoirs. In the past, we had to send staff to turn a manual valve just downstream of the Sugar Hollow Dam in order to actuate or adjust the flow in the transfer line. The main goal of the Sugar Hollow to Ragged Mountain Transfer Flow Meter Project was to install an electronic flow meter and plug valve, which will allow staff to monitor and control operations of the transfer line remotely from the Observatory WTP. Additional items, including the replacement of a 90+ year old gate valve, and demolition of the existing Gatekeeper's House, Chlorine Building, Meter Building, and Storage Sheds, were also included in the overall scope of work.

In September 2018, the RWSA Board of Directors authorized the Executive Director to execute a Construction Work Authorization with one of RWSA's On-Call Emergency Maintenance Contractors, G.L. Howard. This Work Authorization had value of $313,904.79, which was coupled with a previous, smaller work authorization of $41,000 that allowed for the purchase of long lead materials (piping, valves, etc.) for the project. Ultimately, several unforeseen conditions throughout the duration of the work led to an increase in cost of $98,808. These conditions included the following:

- An additional thrust restraint to protect the integrity of the existing 90+ year old cast iron waterline while it was isolated for the improvements;
- Additional time, coordination, and effort associated with isolating the raw water line from the intake tower at the dam structure was needed, to ensure that there was not an inadvertent partial dewatering of the reservoir through this connection;
- Adverse site conditions (both surface and subsurface) and overall site geology. The amount of precipitation received over the past year has resulted in higher than normal groundwater, which required extra means for trench dewatering during the work. The

Contractor also encountered more subsurface rock than anticipated, necessitating additional time and equipment for excavation and placement of the new plug valve vault;

- Discovery of a previously unknown 18" cast iron pipeline that traveled to an abandoned grit facility on the site. Due to the interconnection of this previously unknown 18" line with the existing 90+ year old gate valve, the 18" line had to be permanently abandoned;
- Disposal of debris that had accumulated on the property over time that was not included in the original scope, and
- Abandonment of a previously unknown tap from the Chlorine Building to the raw water line that caused a minor leak that was not identified until after the initial site work had been completed.

To complete the work in a timely manner, the on-site contractor was directed to proceed with the work. Additional funding and authorization are requested.

Board Action Requested:

Staff requests the Board of Directors authorize additional construction required to complete this project, and to amend the Capital Improvement Plan to include a budget increase of $98,808 in Fiscal Year 2019. This amendment would bring the total project budget to $482,049.

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MEMORANDUM

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

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

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

SUBJECT: **CONSTRUCTION CONTRACT AWARD – SCOTTSVILLE WATER TREATMENT PLANT FINISHED WATER FLOW METERING IMPROVEMENTS – ANDERSON CONSTRUCTION**

DATE: **JUNE 25, 2019**

Rivanna Water and Sewer Authority owns and operates the Scottsville Water Treatment Plant which was constructed in 1967. The plant is permitted to provide up to 0.25 MGD of potable drinking water to Albemarle County Service Authority customers in the Scottsville service area. After water has been treated at the plant, it is collected in a clearwell, from which water is pumped into the distribution system by one of two high service pumps. The flow from these pumps is not metered. In order to keep a record of the total flow entering the Scottsville distribution system, plant operators must periodically conduct draw-down tests to verify the pumping rate of each of the two pumps. The total flow is then calculated based on the run time of each pump. Based on these procedures, this method of measuring flow may not be wholly representative of the flow entering the system as the pumping rate will vary based on the clearwell level and the hydraulic grade line of the distribution system. In addition, the Virginia Department of Health has indicated that the flow should be metered during recent conversations related to the disinfection profile calculation throughout the plant. To resolve this issue, this project requires the contractor to provide a finished water meter and modify the existing high service pump discharge piping.

Construction bids for the project were opened on May 29, 2019, and two bids were received ranging from $115,500 to $137,000. The apparent low bidder was Anderson Construction, Inc. of Lynchburg, VA with a total bid of $115,500. SEH has reviewed the bid documents submitted by Anderson Construction, Inc. and verified that the bid and attached documents are both responsive and responsible. SEH recommends awarding a construction contract for $115,500 to Anderson Construction, Inc. The project is anticipated to begin in August and to be completed by December of this year.

Board Action Requested:

Staff requests that the Board of Directors authorize award of the construction contract for the Scottsville Water Treatment Plant Finished Flow Metering Improvements project to Anderson Construction, Inc. in the amount of $115,500, and execution of any change orders when necessary for the completion of this project up to 10% of the awarded contract amount.

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MEMORANDUM

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

FROM: **ANDREA B. TERRY, WATER RESOURCES MANAGER**

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

SUBJECT: **BUCK MOUNTAIN PROPERTY REVIEW**

DATE: **JUNE 25, 2019**

At the April 23, 2019 Board meeting, a former property owner, Dr. Harry Wellons, requested the Board to consider selling him the Buck Mountain property we acquired from him by condemnation in the 1980's. As part of the Board meeting today, staff will provide an overview of the purpose, history, funding and current uses of the Buck Mountain property, along with options for future use.

There were 38 parcels of land, totaling 1313 acres, acquired by agreement or Eminent Domain from 1984 to 1987, with the intent to build the Buck Mountain Reservoir as an urban area water supply. In the late 1990's, environmental studies identified the presence of a state- and federally-listed endangered species, the James spinymussel, in the proposed watershed. This finding precluded use of the property as a reservoir site. In 2012, a portion of the property was used to mitigate impacts to streams and wetlands created by the new Ragged Mountain Reservoir Dam project. We currently lease 15 of these parcels, 385.5 acres, to 8 leaseholders.

Future options for the property include:

- Continue to retain, lease, and manage the property
- Consider the sale of any or all of the property not in deed restrictions

Board Action Requested:

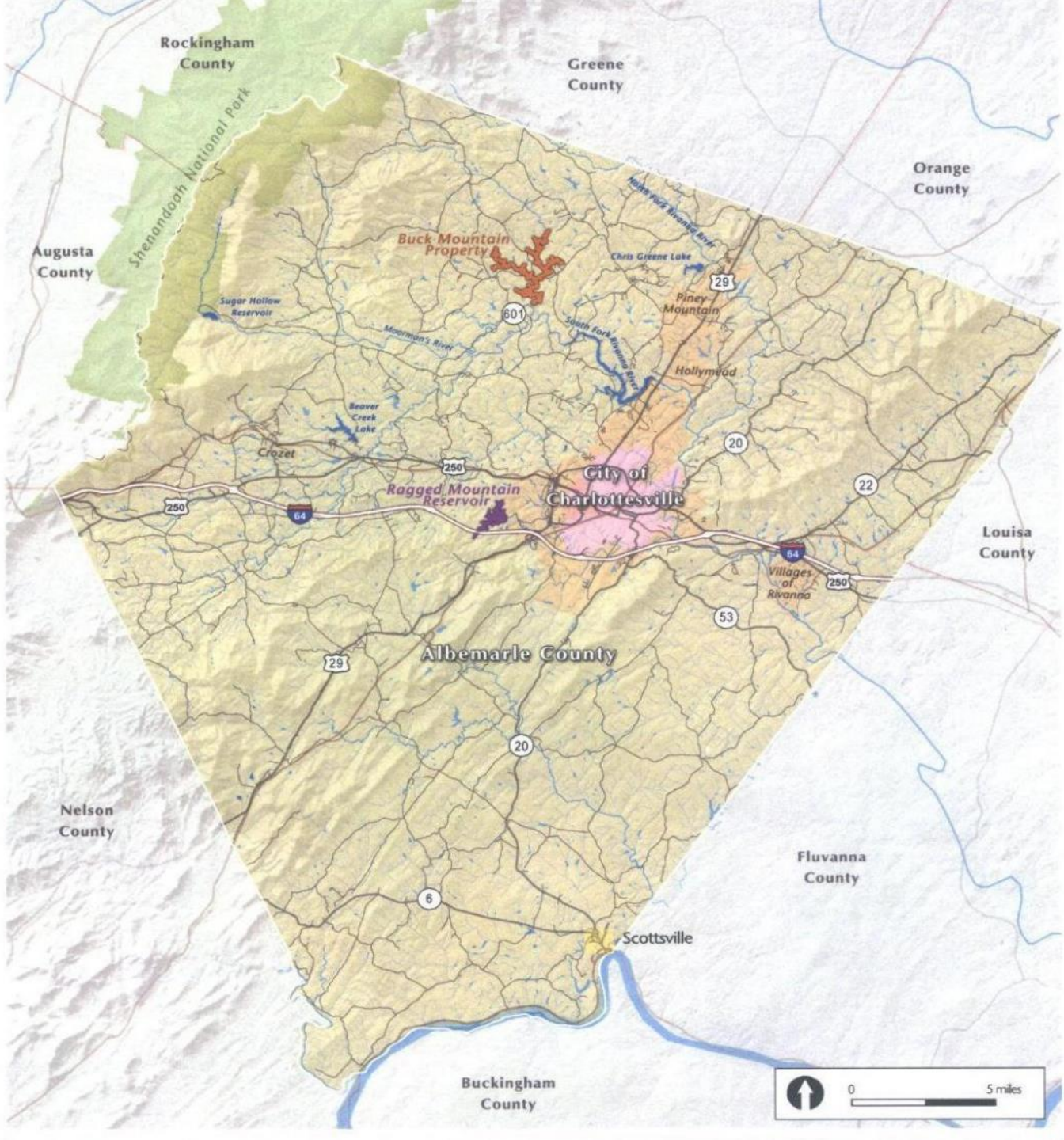
Staff requests the Board provide guidance on future use of the Buck Mountain property.

Buck Mountain Property Update 2019

Presented by:

Andrea Terry, Water Resources Manager

June 25, 2019



History

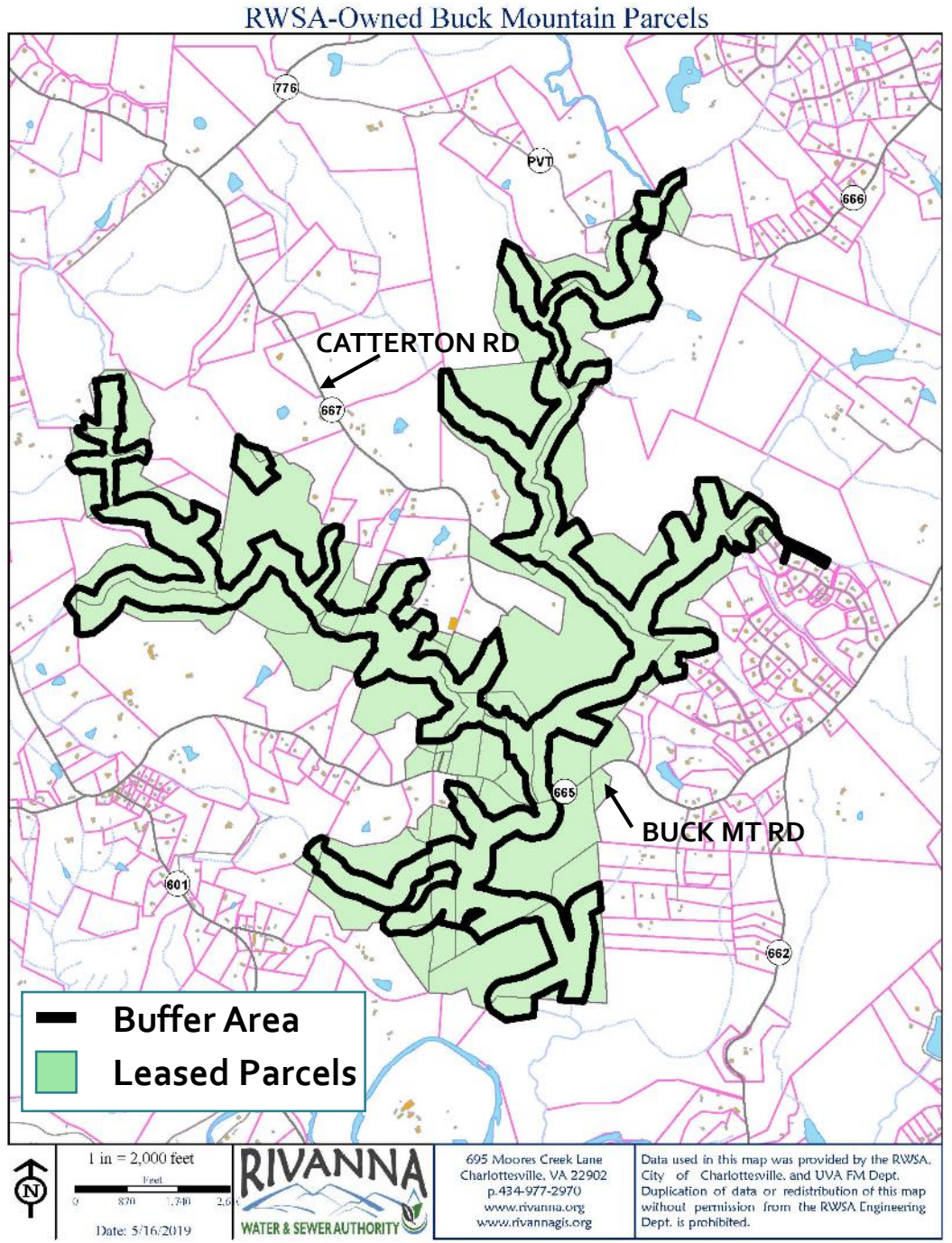
- As the result of water supply concerns for the urban area, 38 parcels were acquired through agreement (36) or Eminent Domain (2) from 1984 -1987, with an intent to build the Buck Mountain Reservoir

- 1,313 acres were acquired for $6.95 M

- Funds were spent as early as 1981 on studies and posted to this account through 1998.

PROPERTY

- RWSA owns 38 parcels in the Buck Mountain Creek watershed
- Parcels range in size from 1 acre to 160 acres
- Total acreage is 1,313 acres
- 600 acres have deed restrictions which prohibit development for water quality protection



Environmental Challenge

- Studies of the reservoir site in the late 1990's identified the presence of the James spinymussel, a state- and federally-listed endangered species.

- This finding eliminated Buck Mtn as a reservoir site.

Project Funding

- Several bonds were issued in the 1980s and 1990s
- Many bonds have been refinanced, making it difficult to confirm if ALL bonded debt has been retired
- Any sale of assets of the Authority will have to be approved by a majority of Bond Holders via the Trustee, Bank of New York/Melon regardless of whether the asset is still covered by a current bond issue

Buck Mountain Surcharge

- Buck Mountain surcharge created in 1983 by joint resolution of all 4 public bodies (County, City, ACSA, RWSA)
- Surcharge requires City/ACSA to charge a water connection fee based on meter size
- Surcharge ranges from $200-$43,000 per connection
- All sums collected transfer to RWSA
- $3,975,000 in revenues generated from FY1983 to FY 2018

Current Uses

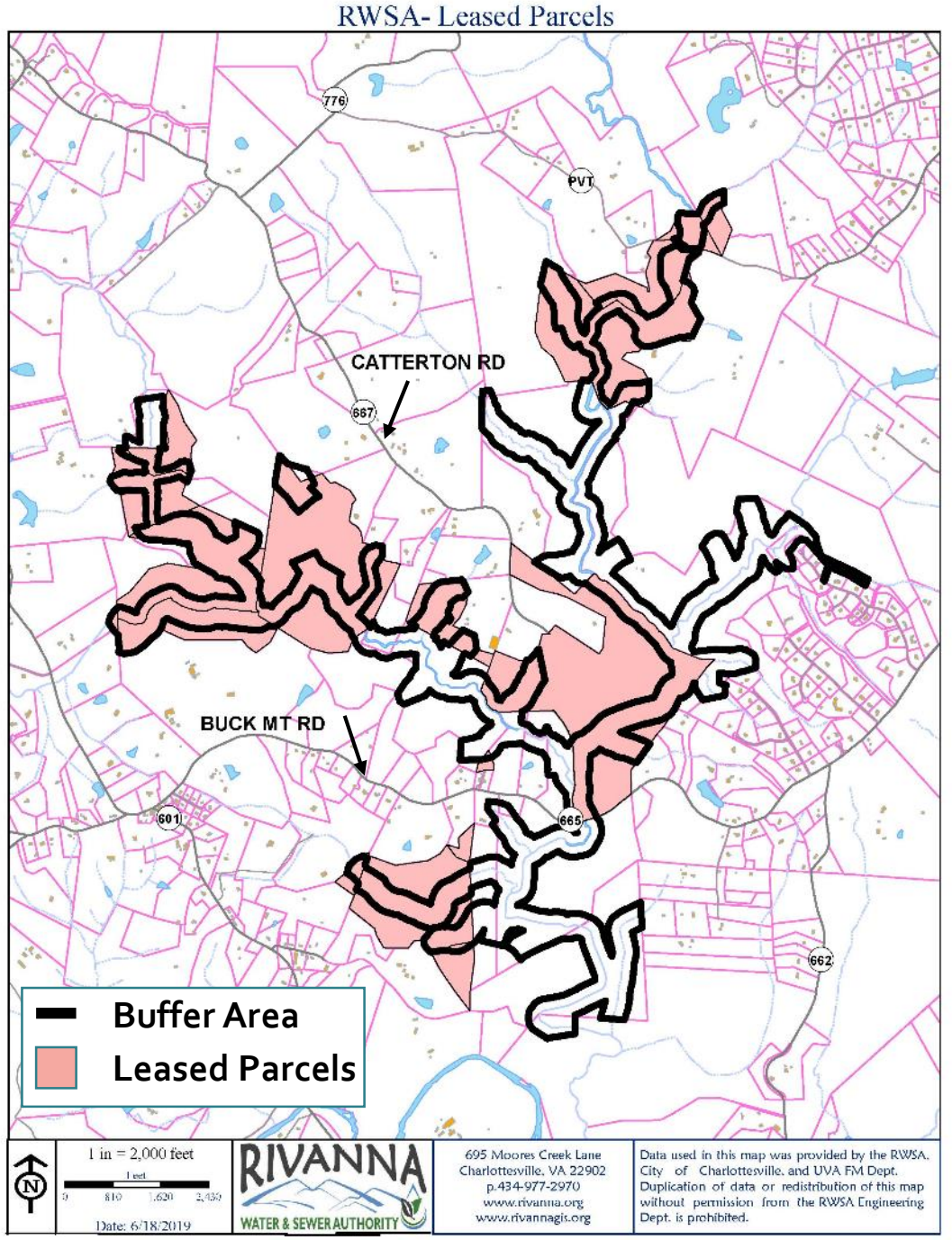
- Stream mitigation for Ragged Mtn Dam impacts in 2014
  - 11,511 linear feet (2.2 miles) impacted
- Stream restoration of 500 linear feet along Buck Mtn Creek

Current Uses

- Buffer enhancement and preservation of riparian habitat along 80,000 linear feet of stream
- Buffers from 100-200 feet wide
- Planted 93 acres with over 40,500 trees
- Placed buffer areas in deed restrictions (approx. 600 acres)

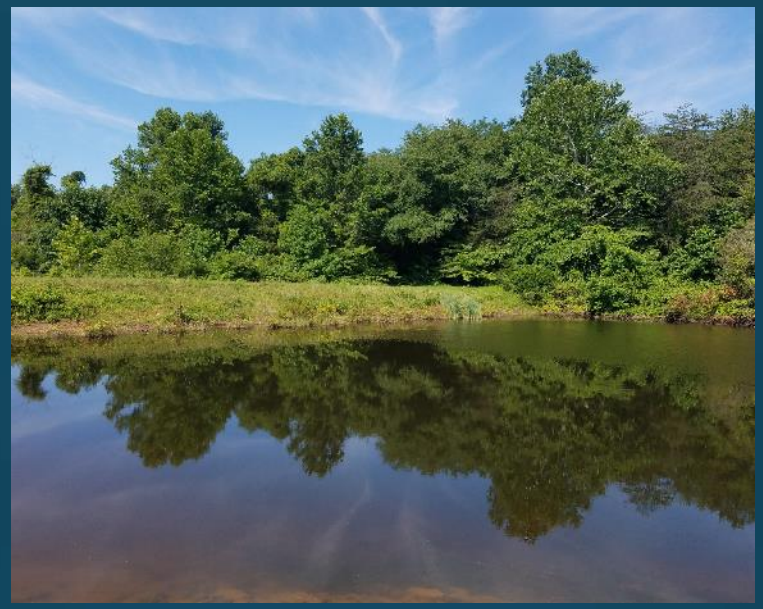
LEASES

- 15 parcels leased by 9 leaseholders totaling 385.5 acres
- 8 parcels are in agriculture (cattle or horses)
- Remainder are used for quiet enjoyment
- Short-term leases (two year terms)
- RWSA also hold water quality easements on several parcels
- Leases currently generating $1,600 annually



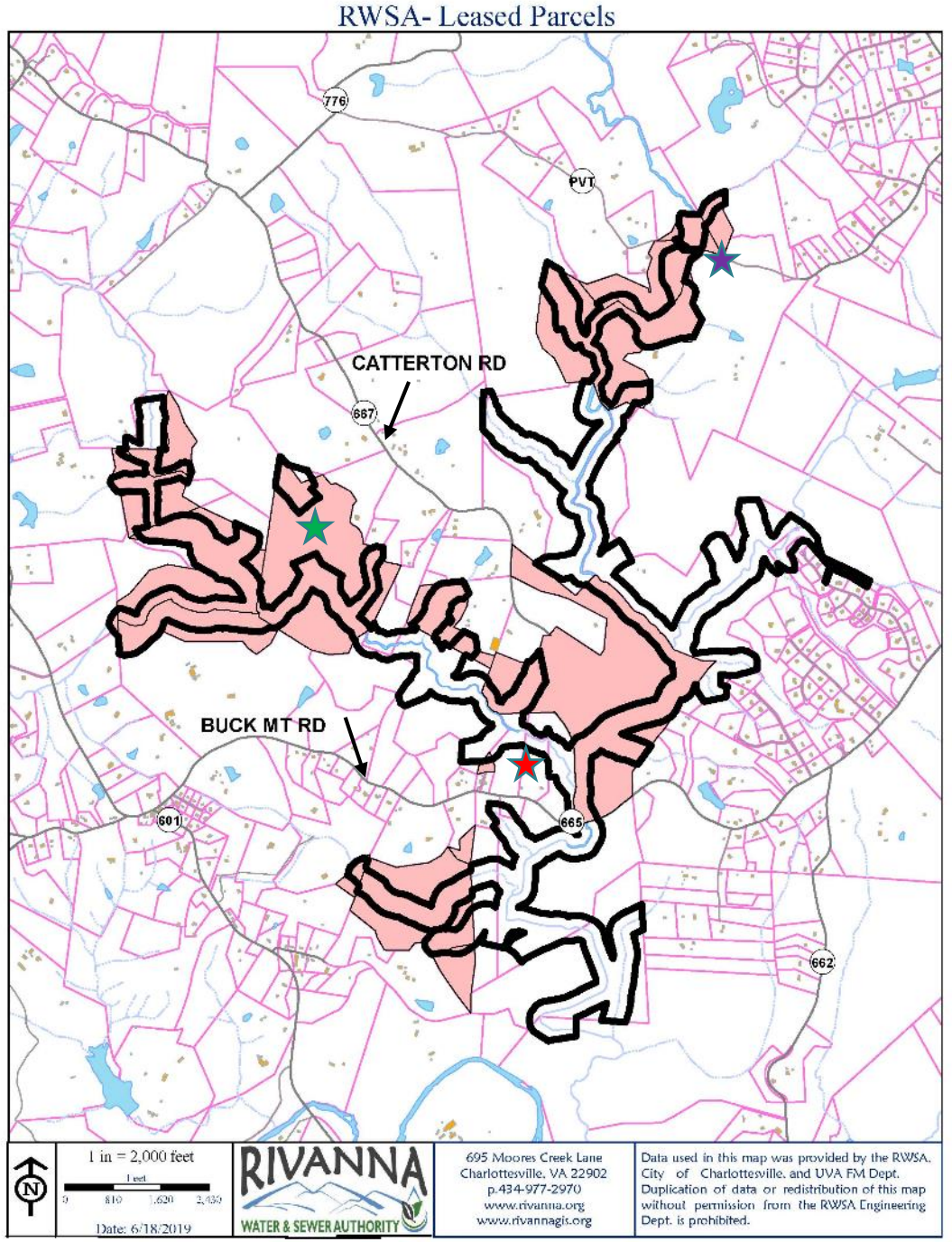
Property Management Issues

- Bridge - maintenance
- Pond Dam - permitting and maintenance
- House - previously rented but is no longer in a condition to be rented
- Hunting (coordinate with VDGIF)
- Illegal substances grown
- Trespassing - Four wheelers cause damage to mitigation areas (coordinate with Sheriff's Office



Property Management Issues

- Bridge
- Pond
- House



Options

- Continue to retain, lease, and manage the property

- Consider the sale of any or all of the property not in deed restrictions

(700 acres)

  - Property sales would be governed by the Code of Virginia

Questions?