Rivanna Water and Sewer Authority

Board of Directors Meeting

February 27, 2018

2:15pm

695 MOORES CREEK LANE
CHARLOTTESVILLE, VA 22902-9016
TEL: 434.977.2970
FAX: 434.293.8858
WWW.RIVANNA.ORG

BOARD OF DIRECTORS

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

DATE: **February 27, 2018**

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 December 19, 2017*

3. ***RECOGNITION***

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. *Recommendation for Approval of Purchasing Manual Update*

8. ***OTHER BUSINESS***
   (JOINT SESSION WITH THE RSWA; RECONVENE THE RSWA MEETING; MOTION REUIRED)

   a. *Presentation to the RWSA / RSWA on the Compensation & Classification Study Recommendations: Director of Finance & Administration, Lonnie Wood and Consultant David Bollenback with Evergreen Solutions*

   (RECESS TO COMPLETE THE RSWA MEETING; MOTION REQUIRED)

b. *Introduction of the FY 2019 – 2023 Capital Improvement Program: Executive Director, Bill Mawyer and Director of Engineering and Maintenance, Jennifer Whitaker*

9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

10. CLOSED MEETING

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)

Rev. September 22, 2009

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RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
January 23, 2018

A regular meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was held on Tuesday, January 23, 2018 at 2:15 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia.

Board Members Present: Mr. Mike Gaffney – Chair, presiding; Ms. Kathy Galvin; Ms. Lauren Hildebrand; Mr. Maurice Jones; Mr. Gary O'Connell; Dr. Liz Palmer; and Mr. Jeff Richardson (arrived at 2:22 p.m.).

Board Members Absent: None.

Staff Present: Mr. Tim Castillo, Ms. Victoria Fort, Mr. Rich Gullick, Mr. Bill Mawyer, Ms. Katie McIlwee, Mr. Scott Schiller, Ms. Michelle Simpson, Ms. Andrea Terry, and Mr. Lonnie Wood.

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

1. Call to Order

The Chair called the regular meeting of the Rivanna Water and Sewer Authority to order at 2:20 p.m.

2. Minutes of Previous Board Meetings

a) Approval of Board meeting minutes - December 19, 2017

Mr. O'Connell moved to approve the minutes of the regular board meeting of December 19, 2017. Mr. Jones seconded the motion, which passed by a vote of 6-0. Mr. Richardson had not yet arrived at the meeting and was absent from the vote.

3. Recognition

Mr. Gaffney mentioned that there were no recognition items on the agenda.

4. Executive Director's Report

Mr. Mawyer reported that the recent precipitation had helped the reservoirs and the urban reservoirs were about 86% full. He noted that Sugar Hollow was up to 6½ feet below the dam,

and he referenced a picture that showed the contrast to 12½ feet down in December, which he noted was good news for Sugar Hollow. He stated that Rivanna had resumed the transfer from Sugar Hollow to Ragged Mountain starting the previous day. Mr. Mawyer noted that the strategy that staff had presented to the Board the previous month was to stop transfers when it got down to 19 feet below the top, and when it refilled to about 10 feet, to resume transfers. He noted that they waited a few days because some of the air release valves were frozen from the cold weather, so they let them thaw to get them started again. Mr. Mawyer noted that Ragged Mountain was about 80% full.

Mr. O'Connell requested information regarding the amount of precipitation during the drop in water levels.

Dr. Gullick stated that it was an inch and a half.

Dr. Palmer commented that she had visited the South Fork of the Rivanna near the Skyline Drive over the weekend and was struck by the amount of ice buildup. She noted that she wondered whether the flow rate might be affected by the melting ice, as she had not noticed it in the report.

Mr. Mawyer responded that there was some ice still visible at Sugar Hollow on one side the previous day. He stated that Beaver Creek was at 84% full, 2½ feet below the dam, and Totier Creek in Scottsville was 100% full; and South Rivanna was 100% full and overflowing, with hopes that precipitation would continue.

Mr. Mawyer discussed a community outreach presentation by water department manager Mr. David Tungate to a class of fifth grade students from Crozet Elementary School. Mr. Mawyer also reported having given a quarterly presentation to the Albemarle County Board of Supervisors and Charlottesville City Council, wherein he had presented the water supply strategy that was discussed with the RWSA Board in December 2017.

Mr. Mawyer stated that the Environmental Working Group had released a report suggesting that 170 million Americans drink radioactive tap water. He explained that there was a radioactive element – radium – in the Earth's crust, and if you have a groundwater well there was a higher probability of radium content as compared to water systems supplied from surface water from rivers and streams. Mr. Mawyer stated that most RWSA water supplies are from surface water sources but noted that an exception is the groundwater well in the Red Hill Elementary School area. He stated that the RWSA monitors for radium at all of its water sources and the level was well below the maximum contaminant levels – so it was not considered an issue at this time.

Mr. Mawyer recognized Ms. Katie McIlwee, a new employee, who along with staff member Miranda Baird had improved the RWSA job application process, which allows for electronic submission of applications directly to the HR department instead of by print and/or email.

Mr. Mawyer presented information and pictures pertaining to the current state of the Sugar Hollow Reservoir, noting that the pool behind the dam was visible, and he noted that the flow out of the pipe at the bottom was the minimum instream release into the stilling basin at the foot of the dam. He presented the State Drought Management Map, which continued to show Central

Virginia and the Middle James River region in a drought watch. He noted that the state recently updated the webpage and updated the precipitation levels and stream flows were in the Emergency category, with a Watch for the ground water levels, and reservoir levels being shown as Normal. Mr. Mawyer noted that this information continued to be monitored along with water supply information for the community.

Mr. Gaffney asked for an update regarding the recommendation to award a contract to Raftelis, the firm that had assisted RWSA in developing the strategic plan.

Mr. Mawyer explained that the initial solicitation was to develop and implement a strategic plan, with the contract initially negotiated in June 2017 for $82,195.00 to do the plan development, which was completed and approved by the RWSA Board in December 2017. Following that approval, he noted, the RWSA requested a proposal from the firm to help implement the plan. He explained that Raftelis responded with a proposal to take the six goal teams and provide workshops with each of the teams that helped develop the six goals in the strategic plan, which were workforce development, operational optimization, communication and collaboration, environmental stewardship, solid waste services, infrastructure, and master planning. Mr. Mawyer stated that the six goal teams and Raftelis would work on these six goals via their template and process to keep the teams focused on strategies and implementation of the goals, with attention paid to timelines and resources. Following this process, he noted, they would provide information to the Board to review the next steps regarding the need for resources and the time required for implementation. Mr. Mawyer indicated that Raftelis' scope in the second part of the contract was to assist the goal teams with their implementation workshops and assist with the development of a comprehensive strategy for the upcoming year.

Mr. Mawyer stated that Raftelis will also assist with presenting information to the Board in regard to keeping the teams focused and meeting the goals, and keeping the Board and public apprised of the progress towards those goals. He noted that contracts under the threshold of $100,000.00 could be awarded by staff, but the second part of the contract would take the amount over that threshold – which is the purpose of bringing the entire contract back to the Board for review and approval, including the second part in the amount of $61,805.00.

Mr. Gaffney asked if this was for a period of the next 12 months or the next phase.

Mr. Mawyer indicated that it would be for the better part of the next 12 months, as they want to get the annual plan done in the next few months so it could be brought to the Board for review by April 2018 –after that, Raftelis would be assisting the teams to move forward with those plans. Mr. Mawyer clarified that the total contract cost would be $144,000.00, including the previous $82,195.

Mr. O'Connell inquired as to the breakdown of specific costs and expenditures, as it seemed like a lot of hours.

Mr. Mawyer responded that it encompassed onsite facilitation, workshops, annual plan development, and presentation to the Board, with some work be done by Raftelis in their own office. He mentioned that they would work with the data they came up with, similarly to the

strategic plan development wherein the committees developed thoughts and formulated them into statements to be used in the actual plan.

Mr. Gaffney noted it was nice to know it didn't sit on a shelf.

Mr. Mawyer agreed, adding that they decided to move forward with Raftelis to the second phase – which was included in the scope – because they were pleased with the company's previous work.

Ms. Galvin commented that she had no problems with the second phase and noted she felt it was wise to have the assistance of Raftelis because they were very familiar with the plan.

Mr. O'Connell noted that the company had considerable experience working with utilities, which he considered a strength in the process.

5. Items from the Public

There were no items from the public presented.

6. Responses to Public Comments

There were no responses, as there had been no comments the previous month.

7. Consent Agenda

a) Staff Report on Finance
b) Staff Report on Ongoing Projects
c) Staff Report on Operations
d) Recommendation for Award of Non-Professional Services Contract for Strategic Plan Development and Implementation: Raftelis Financial Consultants
e) Recommendation for Award of Construction Contract Award – Piney Mountain Ground Storage Tank Improvements: Utility Services Co., Inc.

Mr. Jones moved to approve the Consent Agenda items as presented. Mr. O'Connell seconded the motion, which passed unanimously 7-0.

8. Other Business

a) Community Water Supply Program – Review of the South Fork Rivanna Reservoir to Ragged Mountain Reservoir Waterline Project

Mr. Mawyer reviewed the previous month's discussion regarding the Rivanna Reservoir to Ragged Mountain pipeline. He stated that the objective of the current discussion was to address significance of the project within the community water supply plan and review some of the project alternatives, as well as addressing the specifics of whether the project should proceed within the 2019 to 2023 CIP that was currently being drafted and prepared for discussion at the February Board meeting. He noted that the main purpose was to review the project and consider some of the alternatives, with no decision necessary other than whether it should be included in the current CIP.

Mr. Mawyer reported that the project has an estimated budget of approximately $100 million, which warranted some history and discussion, and staff wanted to review the scope of the work, some of the assumptions, how it would affect the overall debt, guidance from the strategic plan, explanation of the construction phasing and completion alternatives, and how potential scheduling could impact debt – as well as the cost to RWSA customers as best as can be predicted at the present time. He referenced a map and explained that there is water in Sugar Hollow that runs through the Moormans River to South Rivanna, and piped water from Sugar Hollow to Ragged Mountain. He noted that the water supply plan included building a larger dam at Ragged Mountain and extending a pipeline from the South Rivanna Reservoir to Ragged Mountain, which would require pump stations and a pretreatment facility.

Mr. Mawyer referred to a map showing a tentative route of the pipeline from the South Rivanna Reservoir to the Ragged Mountain Reservoir, and he noted this would connect the two largest reservoirs and provide redundancy. Mr. Mawyer provided some historical context and described the drought of 2002 as creating a decade-long water supply plan and ultimate development of the 50-year community water supply plan. He stated that permits were applied for in 2008, and the U.S. Army Corps of Engineers granted a 10-year permit for construction of the pipeline in 2008 that would expire later this year. Mr. Mawyer noted that Rivanna had already applied for an extension of that for an additional 10-year period, and the Department of Environmental Quality granted permits to withdraw water from the Rivanna Reservoir and pipe it to Ragged Mountain. He noted that the DEQ permit was a 15-year permit that would expire in February of 2023.

Mr. Mawyer explained that when an application is made for a permit extension, DEQ will apply the new rules and regulations to that request. He reported that the City of Charlottesville, the Albemarle County Service Authority (ACSA), and RWSA had agreed to the Ragged Mountain Dam Project Agreement in January 2012, and the agreement stated that there would be a new earthen dam built at the Ragged Mountain Reservoir and the pipeline. Mr. Mawyer reported that the cost sharing ratio for the dam was to be 85% for ACSA and 15% for the City of Charlottesville, with the cost of the South Rivanna to Ragged Mountain pipeline construction to be shared by ACSA at 80% and the City at 20%. He noted that the agreement also provided for raising the water level in the Ragged Mountain Reservoir 12 feet, which would add 600 million gallons to the reservoir capacity from 1.5 billion to 2.1 billion. He explained that this could occur when the community demand was equal to 85% of the safe yield of the water supply system, which currently was about 16 million gallons per day. He noted the agreement states that the ACSA or the City could ask Rivanna to increase the water level – and it did not have to be both but could be either one.

Mr. O'Connell posed the question as to whether a prior agreement would allow them to do that earlier.

Mr. Mawyer noted that was the way Rivanna staff was looking at it, and indicated that at a minimum, the City or Service Authority could request it once the demand reached the 85% safe yield water level and Rivanna could move forward. Mr. Mawyer stated that the dam was already built for the additional 12 feet and that adjustments may have to be made on the gates on the outlet tower, with some clearing around the perimeter of the reservoir, but otherwise it was

considered to be a low-cost project to add the 12 feet of water and provide another 2.4 million gallons per day in safe yield.

Mr. O'Connell asked about relooking at safe yield in 2020 with a new study.

Mr. Mawyer confirmed this, noting that the Ragged Mountain Dam Agreement required Rivanna to do bathymetric studies of the urban reservoirs to assess the volume of water, how much they had silted, and the current volume. He also mentioned that they had done the wholesale meter project to measure the amount of water the City and ACSA were taking and compare the current safe yield to the current demand to see if the 85% ACSA/15% City allocation was still applicable.

Dr. Palmer asked when the metering was to be completed.

Mr. Mawyer responded that they hoped it would be within the next few months, depending on the completion of the last vault on Ivy Road – but he noted recent challenges and the prospect of some changes may have to be made regarding the approach to the project, which he was discussing with Mr. O'Connell.

Mr. O'Connell asked if it was possible to upgrade the system data without the Ivy Road vault at least until it was up and running and collecting data.

Mr. Mawyer stated that it would be possible but indicated that there were other devices that needed to be corrected so that the wholesale water meters read flows correctly. He noted that the Ivy Road vault was not the only thing that was unfinished but it was the major location to be addressed.

Mr. O'Connell noted that they were five to six years past the point this was hoped to be completed.

Mr. Mawyer clarified that it was three years, as the original agreement was 2012 and it was hoped to be completed by 2015.

Mr. O'Connell noted that it was six years beyond the original agreement date.

Dr. Palmer asked if the delay was due to logistical issues.

Mr. Mawyer replied that it was due to construction difficulties.

Mr. O'Connell added that there was also the UVA issue, which required several meters to be relocated.

Mr. Mawyer indicated that the dam as a longstanding facility was finished in 2014 and the reservoir was filled in 2015, so they were entering the third summer using the new reservoirs. He stated that the benefits of the project were increasing the safe yield for the community – which means more water for use – and reduction of risk of water restrictions due to drought.

Dr. Palmer asked for further explanation.

Mr. Mawyer stated that there were numbers from the modeling consultant and prior to the Ragged Mountain Dam being built, they looked at the hydrologic and weather history for the last 87 years, then applied the data from 1927 to 2014. He explained that it was determined if the dam was not built, there would be voluntary restrictions projected at least 13 times – which then could progress to mandatory restrictions 10 times and emergency restrictions 6 times. Following construction of the dam, he noted, the likelihood of those events was reduced from 13 to 8, 10 to 5, and 6 to 3. Mr. Mawyer added that this was looking forward and trying to apply past weather history to future projections, taking into account the existing infrastructure.

Dr. Palmer asked whether or any climate modeling could be included in those figures regarding climate change.

Mr. Mawyer stated that he would ask the consultants to see if any specifics were available beyond historical data being applied forward.

Ms. Galvin noted she felt it was very important to take into account the new science of climate change.

Mr. Mawyer stated that before the dam was built, the minimum storage was going to be 5% of the water level to survive the drought; after the dam was built, the expectation was for the water level to be no lower than 30% ,which was new information not indicated on the graph.

Mr. Mawyer pointed out that the benefits of the pipeline project also include the flexibility to utilize the South Rivanna Water Treatment Plant and the Observatory Treatment Plant if the reservoirs are hooked together by the pipeline. He noted that water can be pumped back and forth and they can use whichever water treatment plant would be better suited for that given time. He noted that this gave a better balance of community amenities and environmental needs in that it keeps the community out of the drought, particularly because there is a large reservoir at Ragged Mountain that can't be effectively used yet because without the pipeline it can only feed the Observatory Treatment Plant, which has alimited treatment capacity. Mr. Mawyer also noted that if water could be pumped to Ragged Mountain from South Rivanna when it was full and spilling, more water could be used without drawing from Sugar Hollow and therefore it would keep minimum instream flows at the higher levels as opposed to what occurred in the fall of 2017 when the minimum instream flow was reduced at DEQ's approval.

Mr. Krueger clarified for the benefit of the public that Dr. Palmer's comments regarding the 87-year historical data analysis which was used for projections for a 50-year period, the length of the water supply plan.

Mr. Mawyer responded that he thought that was correct.

Dr. Palmer stated that Mr. Mawyer had mentioned that every three to five years, one could expect voluntary or mandatory restrictions.

Mr. Mawyer clarified that the data presumed there would be restrictions no more frequently than every five years regarding mandatory status.

Mr. O'Connell and Dr. Palmer expressed confusion in the public regarding the data and projections of restrictions. Mr. O'Connell stated that the public expectation was that because of the drought, Ragged Mountain was going to solve all water needs for 50 years. He noted that there were many other pieces to the puzzle to complete, including the pipeline and numerous other projects that would have financial consequences to the public. He emphasized that he was not sure whether the public understood and was prepared to accept that at this time, so there was a necessary educational component to this.

Mr. Mawyer referenced a 2014 letter that Hydrologics sent Rivanna when they were attempting to enumerate the benefits of building the dam. He noted that the data was intended to indicate a reduction in the occurrence of events, and as the capacity of the Observatory Treatment Plant was increased and/or the pipeline was installed, the numbers of drought restrictions would continue to decline. He stated that no specific numbers were available regarding how far they would decline, but that the number would be less than eight.

Dr. Palmer asked if the 2014 letter from Hydrologics could be shared with the Board.

Mr. Jones also inquired as to when it could be expected that the eight voluntary experiences, the five mandatory experiences, and the three emergency experiences could be expected to occur.

Mr. Gaffney stated that these figures were considered relevant prior to the pipeline being implemented – so with no completed community water supply plan, just raising the dam alone would not affect those issues.

Dr. Palmer noted those figures would change depending on how much treatment capacity there would be at Observatory Hill.

Mr. Jones noted that raising the capacity another 12 feet at the dam, it would play into that.

Mr. Krueger indicated that the 2014 letter was not accounting for the dam raise nor the pipeline.

Mr. Gaffney added that it was probably also not accounting for Observatory capacity increases.

Mr. Jones emphasized that those were important pieces.

Mr. Krueger agreed that it did not account for Observatory's increased capacity.

Mr. Mawyer emphasized that it was only before the dam, and after the dam.

Mr. O'Connell stated that very few people know about the other projects, and until they are done the plan is not complete.

Mr. Mawyer agreed, stating that all of those projects would be addressed.

Dr. Gullick stated that his impression was that the estimates being discussed were based on the 87-year period, and he explained that they took the past 87 years and projected them forward under current operating conditions.

Mr. Mawyer reiterated that the figures only applied to conditions before the dam and after the dam and had nothing to do with the Observatory Plant or raising the Ragged Mountain Dam level or building the pipeline. He added that it just showed that project reduced the risk of the community having drought events.

Mrs. Palmer asked if the projections were just a probability-based analysis assuming the same precipitation and period of record during the 87-year historical period. She noted that the next 87-year period would likely be different, but the current data was the best available at this time.

Mr. Mawyer stated that the original scope of work for the project back in 2006 was to put in a raw waterline about nine miles long that had a capacity of transferring 25 million gallons per day (MGD) between the two reservoirs; there would be an intake structure at the South Rivanna Reservoir to take the water out of the Rivanna Reservoir, and there would be a pump station at both ends, with a pretreatment facility at the South Rivanna plant to remove only sediment – and that pretreatment facility was anticipated to cost approximately $7 million in 2017 dollar value. He added that they would close the Sugar Hollow Reservoir waterline that goes to Ragged Mountain, and the estimate in 2009 for the entire pipeline project was[A1] $63 million dollars. He stated that current plans to do the original scope may also include nutrient removal in addition to sediment at the pretreatment facility, which could add $8 million to the project. Mr. Mawyer noted that they had done an inflationary index increase from the period of 2009 to 2017 dollars, which added $19 million, and an addition for the replacement of the raw water pipelines between the Ragged Mountain Reservoir and the Observatory Water Treatment Plant resulted in a cost of $10 million. Mr. Mawyer noted that if all adjustments were added to the prior $63 million, the total of the project estimate was $100 million dollars, and it is expected that once the project was started it would take about eight years.

Dr. Palmer asked whether the removal of nutrients from the pretreatment would add $8 million to the $7 million figure.

Mr. Mawyer confirmed that the $8 million would be added to the prior $7 million figure, noting that those figures were preliminary at this time.

Mr. Gaffney asked if there were that many more nutrients in South Rivanna as compared to Sugar Hollow.

Mr. Mawyer affirmed this but added that he did not have a quantified answer. He explained that the watershed of the South Rivanna Reservoir, which he was considereding as including everything west of Route 29 from Greene Co. to Nelson Co., everything drains to South Rivanna. He then indicated that the watershed for Sugar Hollow was only at the foot of the National Park and the mountains and was very pristine, so the Rivanna Reservoir was getting a

runoff from development areas and clearly would have a higher sediment and nutrient load than the water in Sugar Hollow.

Mr. Gaffney stated that it would make sense not to contaminate Ragged Mountain with the nutrients.

Mr. Mawyer answered that the concern would be that Ragged Mountain is a static reservoir that did not have enough strong steady flow-through, so there would be a potential for algae growth if nutrients were pumped in.

Mr. O'Connell asked if that situation was an issue at this time at Ragged Mountain.

Mr. Mawyer stated that there were no known events of blue-green algae.

Ms. Terry commented that there had been some green algae but that was not unusual.

Dr. Gullick stated that it was due to the transfer of water to fill Ragged Mountain in 2015, and it had only occurred that one time.

Ms. Terry added that this didn't mean Ragged wouldn't get algae.

Mr. O'Connell asked about the original proposal for two raw water pump stations and what the current thinking was.

Mr. Mawyer replied that it was the same, stating that there would be a water pump station at the South Rivanna plant to pump to Ragged Mountain, and another pump station at the Ragged Mountain end to pump back to the Rivanna Treatment Plant or Reservoir. He stated that if there was a lack of water as in the past October, when there was plenty of water in the Ragged Mountain Reservoir, if the pipeline and the pump station were at both ends, they could have pumped from Ragged Mountain back to the Rivanna Treatment Plant or the Rivanna Reservoir. He used a hypothetical example of the previous Friday, when transfer from Sugar Hollow was stopped because that reservoir had gotten to the maximum lowering of 19 feet – but yet the Rivanna reservoir was overflowing – water could have been pumped from the Rivanna Reservoir to Ragged Mountain to help fill it and not rely on the Sugar Hollow pipeline.

Mr. O'Connell indicated that his question was sufficiently answered by that example.

Mr. Mawyer explained that the original scope pertaining to pump stations was still the same, and that all the original scope was the same as it is presently except that the nutrient element was added to the pretreatment facility and the pipeline between the Ragged Mountain Reservoir and the Observatory Treatment Plant was added. He stated that the thinking is if there is all the water at Ragged Mountain and the Observatory Treatment Plant is upgraded, there would still be a 100-year-old pipe in between, along with two pump stations that were not very reliable – and they want the whole system to be reliable.

Dr. Palmer expressed surprise that that information was not in the first scope of work.

Ms. Galvin agreed.

Mr. Mawyer stated that Ms. Whitaker had gone through the paperwork and noted they included a section of that pipeline but not the entire length, so staff added that information. Mr. Mawyer reported that some of the assumptions going forward are that there would be improvements made to the Observatory Treatment Plant and upgrade it to 10 MGD, and renovations would be done at the South Rivanna Plant to keep that in good working order per the current CIP, and they would expect that in about five years that the work would be completed. He added that the safe yield of the urban reservoirs is expected to meet the community demand until about 2040, which is currently estimated at 14 MGD. He noted the safe yield could be increased by 2.4 MGD if the Ragged Mountain water level was raised 12 feet, and he noted that the 2.4 million gallons added about 10 years in meeting community demand.

Mr. Mawyer noted that the asterisks next to numbers on the slide being presented to the Board were to indicate that these numbers were the estimates that AECOM did back in 2011, and staff was poised to move forward with another assessment over the next year or two to reevaluate again the safe yield of all the reservoirs through the bathymetric studies, as well as the community demand, to reevaluate when the demand would be equal to the safe yield. He added that there was data that suggests that the safe yield would last longer than 2040 or 2050 and that the community demand would not increase at the level anticipated, but the new study would address those figures. He also noted that there was no specific information as to how much sediment has come into the reservoirs, so the safe yield could go down and demand could go down. Mr. Mawyer emphasized that those issues would be reassessed as stipulated in the Ragged Mountain Dam agreement – which requires it to be done by 2020 and every 10 years thereafter. He added that it is anticipated that with the predictions for 2040 to 2050, newer data may revise those figures.

Mr. Mawyer stated that one criteria for consideration this project was affordability. He indicated that the lime green color on the graph was the current debt service paid at a level of $12 million per year for the $160 million in existing RWSA debt. He stated that the debt payment proposed for 2019 CIP was approximately $15.7 million per year. He indicated a line on the graph as a point of reference and stated that the dark blue graph was for $95 million in additional debt proposed in the FY 2019-2023 CIP – which did not include the Ragged Mountain project.

Mr. O'Connell requested that information be repeated.

Mr. Mawyer explained that the existing debt profile in lime green shows the current debt service payment at approximately $12 million per year currently, and it begins to decline around 2030 as those obligations begin to be paid off. He indicated that the dark green shows that the current CIP proposed for the coming year, which the Board had not seen yet, is for about $190 million and includes $95 million dollars in additional debt – with a proposal that the debt service payment would be about $15.7 million that would be shared in accordance with the Ragged Mountain Dam agreement requirements with the ACSA and the City Utilities Department. He stated that these were the current debt and projected debt profiles, noting that this information

could be used as a criteria for the Board in addressing how the Ragged Mountain pipeline project could be afforded.

Mr. Mawyer reported on the strategic plan and noted that one of the six goals was infrastructure and master planning: to plan, deliver, and maintain dependable infrastructure in a financially responsible manner. He noted that it is believed the project is consistent with this goal and was clearly a major addition to the water infrastructure; would enhance the dependability of the water supply infrastructure when completed; and would be completed in a financially responsible manner. Mr. Mawyer explained the three phases of construction, stating that Phase One is currently ongoing and includes the preliminary alignment for the Rivanna to Ragged Mountain pipeline. He noted that when that is completed, they would move on to acquiring the easements of the properties for that project at a cost of $2.3 million, which is included in what is referred to as the project budget of $100 million. He stated that they were also in the process of planning and designing the improvements to the Observatory Water Treatment Plant and the South Rivanna Water Treatment Plant, estimated collectively to be $26 million and increasing the Observatory Treatment Plan capacity from 7 to 10 MGD by rating. He noted that this did not include any added capacity to the South Rivanna Water Treatment Plant, but it may add some capacity to the sub-systems within the plant. He noted that this is planned concurrently with the right of way acquisition. He noted that thirdly and concurrently, there are plans for the Avon Street to Pantops Mountain waterline that was in last year's CIP, and money was being added in the current CIP for that project – which is a 24-inch pipeline three miles long that generally helps to complete a loop around the entire urban area and helps distribute water with better pressure and reliability.

Dr. Palmer asked if Phase One was already included in the graph that addressed the debt service. Mr. Mawyer confirmed this, but noted that some of the costs may end up being the $95 million being requested to be added to the debt curve.

Mr. Wood noted that it was shown on the graph as dark blue and green, before any other costs are added.

Mr. Mawyer stated that all of the costs were included in the $95 million.

He gave a preview of the upcoming CIP, stating that the Beaver Creek Dam work is about $9 million; there is $8.5 million for the Observatory Water Treatment Plant upgrade; there was approximately $7 million for the Avon to Pantops waterline, with some of that money in the current budget and $7 million fulfilling the budget. He stated that the Crozet water treatment facility would require $6.5 million; a major waterline from the South Rivanna Plant north towards the 29 North area estimated at $5 million – and that is all part of the $95 million that the Board would hear about the following month.

Mr. O'Connell noted that to achieve full redundancy, there was now 12 MGD capacity at South Rivanna – with plans to go to 10 MGD at Observatory – and he asked if something happened to South Rivanna if it could fully support the system. He asked if it would be prudent to increase capacity slightly so both could fully support equal amounts.

Mr. Mawyer stated that they were getting estimates to go to both 10 million and to 12 million at Observatory, and he understood that it was an exponential increase to go above 10 million. He added that they could tweak things to go to 10, but if they go to 12, it would require a whole new process.

Dr. Gullick noted there would be a need for new filters to go to 12, which was the big jump.

Mr. Mawyer stated that those figures would be available to the Board and that if they wanted to increase Observatory capacity to 12 million it could be done. He noted that the current demand was 9.25 MGD but it would be close for Observatory to meet demand at 10 million.

Mr. Gaffney asked what the production capacity was for North Fork.

Mr. Mawyer responded that North Fork production was rated as 1 or 2 million, but typically it produced about 400 thousand gallons to 1/2 million gallons.

Dr. Gullick added that it had a safe yield of 2 million, and a production capacity of 1 million with the current pumping system there.

Mr. Mawyer noted there were old pipes between the Ragged Mountain Reservoir and the Observatory Treatment Plant, with two pipes that go through two raw water pump stations. He stated that the plan is to replace all of that infrastructure so there would be a significant water supply and an upgraded treatment plant so they can get the water there dependably. Mr. Mawyer stated that the budget to achieve those goals is approximately $18 million.

Mr. O'Connell asked if those pipes were both 100 years old.

Mr. Mawyer stated that the Royal Pump Station was built in 1920, and the Stadium was newer but it did not have the capacity to serve a 10 MGD or a 12 MGD Observatory Treatment Plant He stated that the proposal is to build one new pump station with a dual purpose of transferring water from the reservoir to the Observatory Treatment Plant and serving as the pump station to return water to the Rivanna Reservoir. He noted that it would then be one of the two new pump stations discussed with the Ragged Mountain to Rivanna pipeline. He noted that the facility could be designed without the pumps if the construction of the actual pipeline was going to be a long way off, but they would have the infrastructure at the pumping facility set up to accommodate the 36-inch pipeline between Rivanna and Ragged Mountain.

Mr. Mawyer explained that Phase Three is the core project, which has a budget of approximately $80 million to build the 9 miles of piping between the two reservoirs, the intake structure, the second of the two raw water pump stations at the Rivanna end, the pre-treatment facility, and to close the Sugar Hollow waterline. He noted there was a projection of eight years to design and build the project, and he noted there were four potential schedules regarding this plan. He noted that it was recommended that once the pipeline was built, the Ragged Mountain Reservoir would be raised 12 feet, the infrastructure would be available to do it from the reservoir side and the pumping and piping side, and staff recommended that they take advantage of that.

Mr. Mawyer referenced a timeline that showed ongoing projects of getting the right of way acquisitions between 2017 and 2021, as well as doing the improvements; a capacity increase to the Observatory Water Treatment Plant and the improvements at the Rivanna Treatment Plant; and working on the Avon to Pantops waterline. He noted these were all moving forward between 2017 and 2022. He noted that the Phase Two projects of replacing the waterline between the Ragged Mountain reservoir and the Observatory Treatment Plant, concurrently replacing the pump stations, would begin in 2022 when the ongoing projects were over and would extend through 2026. Mr. Mawyer stated that the core project options for building the nine miles of pipe and the second pump station and the pretreatment facility were addressed through some alternatives. He noted that the Schedule A alternative indicated that the earliest start of the core project would follow the acquisition of the right of way for the pipeline, which would go from 2022 through 2030 for a total of 8 years. He noted that the Schedule B alternative logic, with a later start of the core project, was that the debt service started to decline around 2030, and the first few years of Schedule B would be design dollars – smaller dollars relative to the total project of $80 million – and the larger expenditures would begin about the time the debt profile began to decline, with more debt service capacity. Mr. Mawyer noted that Schedule B allow for payment of the debt service without significant rate increases.

Mr. Mawyer reported that Schedule C was based on the AECOM 2011 report, which noted that safe yield would equal demand in 2040 – so it has an even later start for the core project and begins in 2032 and completes the core project by 2040, when the report noted they were needed. He noted that the other Schedule D logic states that if around 2038 to 2040, if Ragged Mountain water level was raised 12 feet, it would give a 2.4 MGD safe yield that could satisfy demand for an additional 10 years and extend the need to approximately 2050. He pointed out that all of the schedules are the same amount of work – it was just a matter of when they would be done.

Mr. Mawyer presented a summary of each schedule as follows: Schedule A from 2022 to 2030 increases the water supply safe yield and the redundancy, providing flexibility to use either Observatory Treatment Plant or Rivanna treatment plant via the Ragged Mountain reservoir and the Rivanna reservoir. He noted that this would allow redundancy within the infrastructure as well as the additional benefits discussed earlier, but it creates a financial impact because it would be concurrent with other projects ongoing. He added that it could be completed by a fairly straightforward extension of existing regulatory permits, which would extend until at least 2028. He stated that staff felt fairly comfortable that there would not be a permit issue.

Mr. Mawyer stated that Schedule B fit within the debt profile better, and it increases safe yield and redundancy. He noted he was not sure how much of a permitting process it would require, but staff was hopeful that it would not be much different than Schedule A – although the permit would expire much earlier in the project, around 2028, than in Schedule A. He reported that Schedules C and D were based on water supply predictions of when the safe yield would be consumed by the community demand and more water supply would be needed. Mr. Mawyer stated that the current 2011 reports noted that must be completed by 2040, which would be way out beyond any expected permit extensions, so that may require an extensive permitting process. He noted that Schedule D went another 10 years, making it plausible if the water level at Ragged Mountain were raised by no later than 2038 or 2040; it would provide the same water supply and redundancy benefits and was also expected to take an extensive permitting process.

Mr. Mawyer provided a brief budget summary stating that ongoing projects: property acquisition is $2.3 million; the base projects of the waterline replacement and the pump station replacement are the $13 million and $5 million each; the core project at $80 million results in the $100 million project summary.

Mr. O' Connell asked if the inflationary factor of $19 million dollars projected would impact Schedules A, B, C.

Mr. Mawyer responded that the figures were all in 2017 dollars and they did not inflate them to 2040 dollars.

Mr. O'Connell indicated there would be budget changes at 2030 and 2040, and another at 2050.

Mr. Mawyer noted that depending on what schedule was used, they would have to inflate to then current dollars to get a current budget. He again reiterated that all figures were done in 2017 dollars to make them comparable.

Ms. Galvin agreed that Mr. O'Connell raised an interesting point because the longer these are projected out, the more likelihood that inflation would put pressure on the cost of the project. She also inquired as to whether there was cost to the extending of the permitting process.

Mr. Mawyer stated that there would likely be costs of permitting fees, processing, and consultants.

Ms. Galvin also mentioned the uncertainty of the negotiations with regulators as well, noting that RWSA currently had the permits in hand.

Mr. Mawyer agreed and noted that the extensions were readily available but beyond that it was uncertain what the regulatory agencies would require because they have to consider, at the time, what the laws are and the EPA direction when considering the application.

Ms. Galvin stated that Schedule B noted it "may" require new permits, and it appeared that many permits would still follow in that timeframe but some may not.

Mr. Mawyer confirmed this and commented that it would be close. He noted that if an extension was granted on the 2018 permit to 2028, that is in part of the Schedule B timeframe but at the very beginning – so staff was hopeful that it would work. Mr. Mawyer emphasized that it was not as clear as it was with the Schedule A timeframe that is clearly within the permit timeline.

Dr. Palmer noted that there were so many unknowns in putting something out that far, but she felt that as their knowledge increased as to what stream health entailed and what it needed, those environmental permit concerns might get stricter. She added that they were really talking about putting off Schedule D and putting off those full environmental effects with the water supply plan out into the future pretty significantly.

Mr. Mawyer agreed, noting that they would not know what animals might be put on an endangered list over the next decade – and he agreed that was a risk that would need to be considered.

Ms. Galvin noted that this would need to encompass the ability to investigate and identify animals that were currently there but were not yet inventoried.

Dr. Palmer stated that it would also need to be established what it took in velocity and flows to keep them healthy, and that specific information was not known at that time.

Mr. Gaffney pointed out that they didn't know what effect the LP gas pipelines and new regulations to be added once those were built.

Mr. Wood reported that there were several debt schedules that would impact the debt profile, stating that he used a consistent estimate for each one – with $90 million dollars in new debt issued that would add some cost to it at a 5% rate over 30 years. He noted it was basically taking it and fitting it on the schedule with the same timeline Mr. Mawyer reviewed. Mr. Wood stated that Schedule A indicated if you added the debt service related to that over a six-year period to an eight-year period, there would be a spike of around $24-25 million in debt service needs that would have to be built into rates and then probably more because the policy and bond ratings hinged on being able to charge excess revenue to cover debt service needs, which is known as debt service ratio. He noted that the Davenport presentation in November had included this information, with a schedule in the annual report showing the current debt service ratio revenue charges.

Mr. Wood noted that this showed that it was likely they would have to build in around $28-30 million of revenue charges to the two customers to meet Schedule A needs. He noted that Schedule B was a little better, with everything moved down three years, and this indicated that the number was down to about $23 million in the spike – which would only last for a couple of years and by that time it would already be built it into the rates.

Mr. O'Connell asked about the debt falloff.

Mr. Wood responded that the debt would fall off a year or two earlier than 2030, and Schedule C fit that timeframe better and could be moved up a little bit. He added the Schedule C timeframe could be pushed off a little bit from where Schedule B is – so somewhere in the middle, 2030 would hit the sweet spot. He then noted that on Schedule C, they were right at the $20-million to $19-million spike where the debt service charge would need to be. He noted that Schedule D would push it out quite a bit, and it would not really have an impact on the current estimate of the capital improvement plan to be adopted.

Ms. Galvin noted that Schedule D did not include all of the other capital projects that might be incurred.

Mr. Wood responded that it included a portion of the Ragged Mountain to Observatory pipeline and the pump station.

Mr. Mawyer interjected that way out at 2040 there may be lots of other unknown projects added to the CIP, and that debt profile is not going to look like what was being presented at the present time.

Mr. O'Connell commented that this did not have any wastewater projects included.

Mr. Mawyer stated that regulations could change with ammonia, for example, and projects regarding wastewater would certainly change the current debt profile – so the further they went out, the more likelihood it would be different than what was expected at this point.

Mr. Gaffney asked that if it was pushed out to 2040 there may be a spike due to other costs.

Mr. Mawyer concurred and noted that it didn't mean they would be below the $15.7-million line, because a lot of other things may have happened that would have pushed the debt service up by then.

Mr. Mawyer noted that they did project that in 2019, preliminarily, for a total operating CIP budget, the projection was a 5% revenue increase from the City of Charlottesville, and a 10.5% increase from ACSA. He stated that through 2023, the projected increases were indicated by a five-year rate model. He noted that they were in the process of getting a rate model that would go beyond five years, and within a month that would be operational – which is why no numbers were available for 2024, 2025, or 2026. He noted that an example was provided in Schedule B, and the projection for just the core projects was a 1.5% addition to the City and 5% to the Service Authority above any other normal budget increase. Mr. Mawyer noted that was the best information available to date to answer some of the Board's questions, and staff may have be better information available in the months to come.

Mr. O'Connell noted that 2019 would represent what the staff was thinking about CIP projects, some of which was shown.

Mr. Mawyer noted that also included operating and any other recommendations, and those five years were the full budget.

Mr. O'Connell asked if the 8% was more of a guess.

Mr. Wood responded that it assumed a 3-5% increase in operations.

Dr. Palmer asked Mr. O'Connell if he could provide the completed report as to what it means in costs to ratepayers.

Ms. Galvin reiterated this request.

Mr. O'Connell explained that all three agencies would be doing a rate study to consider current impact and impact over the next 10 years or longer – so the timing is perfect.

Dr. Palmer agreed, stating that the percentage was sometimes misleading and this was why the actual cost per month illustrates what people are actually going to have to pay.

Ms. Galvin stated that it was going to be really important how they communicate this, and the most successful way to understand it would be through looking at the dollars.

Mr. Jones noted that the tendency was to look at the average household and the effect it would have on them.

Dr. Palmer stated that she thought that the Board would like to know that information when all of the matters were taken care of, and she felt certain that would happen.

Mr. O'Connell echoed that 10.5% would be a significant piece.

Mr. Gaffney noted the question was whether it would just be a few dollars a month.

Dr. Palmer noted that the ACSA has had a policy for many years that growth pays for growth, and there were connection charges used as rate stabilization, so the ACSA Board got to decide how to use that money to stretch out these increases over time.

Mr. O'Connell noted that the rate study would look at this, and the City had something similar. He noted that part of looking this far out was beneficial, rather than having those big spikes and trying to find out how you can smooth out and have the least impact.

Dr. Palmer added that John Martin used to call it "yo-yo water pricing" many years ago, and they did not want that.

Mr. Mawyer summarized that the presentation was an overview of the community water supply plan that was generally created about 10 years earlier. He noted that he had shown alternatives of how the core projects could go forward, and he would ask for any feedback offered regarding whether Schedule A was under consideration – as well as whether they needed to include that project in the new CIP to be brought to them in February.

Dr. Palmer asked for information regarding staffing needs for this type of process, and assumed that if Schedule A were to be considered, it would have some impact on staff.

Mr. Mawyer stated that if they were trying to do all the work at the same time, they would have to add staff or use more consultants – which could be a good thing but was an expensive option. He noted that if all the projects were stacked together in the same timeline, there would need to be additional staff. He was unable to provide an actual number but noted it would be a challenge. He noted the need for inspectors, project engineers, and noted it would produce a ripple effect throughout the whole organization when they were paying more bills, processing more paperwork, etc.

Mr. Gaffney noted that he recognized this was an overview of the four different timeframes, but urged them to throw out Schedule D quickly, recognizing how difficult it was to keep Ragged Mountain full with the Sugar Hollow pipeline. He expressed concern that they were going to add 600 million more gallons of capacity and try to fill it with the same pipe and the same Sugar Hollow Reservoir.

Ms. Galvin noted that Schedule D was so far out it was almost just a guess and was not based on any current projections, and she did not think they would be able to anticipate extreme weather that might occur over the next several decades.

Dr. Palmer added that there appeared to be lots of problems with the process because today they were being asked about Schedule A, but she had tremendous concerns about D from an environmental standpoint and an economic development standpoint, as well as considering climate change and community expectations. She noted that she doubted that the community was really expecting to have to go into restrictions every three to five years. Dr. Palmer added that it was not a very good advertisement for the community.

Mr. Gaffney stated that the community expectation was that there would be no more restrictions at all simply because of the Ragged Mountain dam.

Ms. Galvin expressed concern at the "multiple puzzle piece" nature of the issue, and noted that if one piece is missing then it would be difficult to access and fully utilize the investment that has already been made in the dam. She stated that it didn't make sense to go that far out, and Schedule A didn't make sense because it was not quite needed yet, and they didn't need that enormous investment in staff time.

Mr. Gaffney countered that while it was noted that it wasn't needed, they just went through the type of water supply they thought they had figured out, and having Observatory rebuilt would help.

Ms. Galvin stated that the reality was that they were implementing the water supply plan at the present time, with a current investment of $20 million of the $100-million-dollar cost regardless.

Mr. O'Connell stated that they would go through the design and the land acquisition piece anyway, so they were in the Phase One – which was a multiple year effort.

Dr. Palmer agreed that Schedule A needed to come off for right now, and she felt that ACSA and the City had to look at their pricing, then come back on the timing.

Ms. Galvin commented that it seemed there would be a big spike.

Mr. Gaffney noted that what staff was proposing with the Schedules was not the specific time periods, it was just for examples. He added that the projects could be left out of the CIP this year and added in next year.

Ms. Galvin asked when they would get the water demand study.

Mr. Mawyer responded that it would be available over the next two years but probably sooner rather than later since the discussion had been started.

Ms. Galvin noted that would help them understand the difference between Schedules B and C.

Dr. Palmer noted that they would want to give a long enough period in between the two for it to meaningful, and weather patterns – not just population – would be used as variables. She added that if they had a few years of normal to better than average rainfall, it would skew the outcomes.

Ms. Galvin agreed.

Dr. Palmer noted that they were in a building boom now, and it was extraordinary how it was picking up after the recession ended.

Mr. Gaffney responded that it was built-up demand from the recession.

Ms. Galvin agreed.

Mr. O'Connell indicated that ACSA would have its regular Board meeting on Thursday and he added this to the agenda to keep them apprised – so as they moved through the budget process, he will have some guidance from them. He added that in the original negotiations, it was projected in the numbers that the Service Authority was running about 2030 for the pipeline coming into play. He noted that it did believe that the 12 feet of the dam would have already have been built before that happened. Mr. O'Connell noted that it was a starting point for the Board to look at the timing of this, and noted that probably a lot of it would be driven just by the finances. Mr. O'Connell stated that Mr. Wood had done a good job in the past in avoiding big jumps.

Mr. Gaffney asked if it was possible to determine whether they could actually fill the 12 feet with the Sugar Hollow pipeline.

Mr. Mawyer responded that he felt they could get their modeler to give them, based on weather patterns, how long it would take to get it to full and to keep it full.

Dr. Gullick noted that keeping it full was the key, with the higher volume filled in a year and a half, adding that it was full when the weather was right.

Mr. Gaffney noted that once they got Observatory rebuilt, if they needed to go to Ragged Mountain, it would go down quicker.

Mr. O'Connell asked what the current size of Ragged Mountain was.

Mr. Mawyer responded that it was 1.5 billion, and it went to about 2.1 billion with the additional 12 feet of water.

Dr. Palmer commented that the community expectation to realize the full environmental benefits of a completed water supply was important for them to remember – and what she strongly disliked about Schedule D was relying on a 17-square-mile watershed of Ragged Mountain for an extended period of time. She also expressed concern about weather patterns and economic development impacts.

Ms. Galvin asked if there needed to be a fuller discussion with City Council.

Mr. Jones noted that he felt Council should have that discussion.

Ms. Galvin stated that it was important to consider rates, but emphasized that they were in a pattern of unpredictable and extreme weather. She acknowledged the building boom but noted the City was focused on affordable housing, adding that they should not underestimate the needed infrastructure for balanced growth. She noted that they would need to hear from the ACSA regarding decisions as to how to use their rate stabilization fund.

Mr. Richardson commented that this would be very helpful.

Ms. Galvin asked Mr. Mawyer whether he wanted to know if Schedule A was off the table, and when he needed to know that.

Mr. Mawyer responded that this would be helpful, and staff would be meeting with Mr. O'Connell and Ms. Hildebrand in a few weeks, then with the whole Board in February, particularly to inform the CIP.

Dr. Palmer reiterated Mr. Gaffney's point regarding whether to take it off for this year.

Ms. Hildebrand noted that they could run different scenarios based on Mr. Wood's 10-year projections.

Mr. Richardson noted that they were getting feedback that this would be pushed off for the coming year, and the analysis would be done for 2019-2023, with consideration to add it back just one year behind Schedule A but other options to be reviewed between now and then.

Mr. Mawyer noted that Schedule A wouldn't be delayed even if it were put off this year, because it doesn't start until 2022.

9. Other Items from Board or Staff not on the Agenda

There were no additional items presented.

10. Closed Meeting

There was no closed meeting held.

11. Adjournment

Dr. Palmer moved to adjourn the Board meeting. Mr. Jones seconded the motion, which passed unanimously (7-0).

There being no further business, the meeting adjourned at 3:41 p.m.

695 MOORES CREEK LANE
CHARLOTTESVILLE, VA 22902-9016
TEL: 434.977.2970
FAX: 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: **FEBRUARY 27, 2018**

Water Supply

1. All of our five reservoirs are full and overflowing except Ragged Mountain, which is 87% full. We resumed the transfer of water from Sugar Hollow to Ragged Mountain Reservoir on January 22, 2018.
2. The Louisa County Water Authority continues to require Mandatory Water Restrictions, which began in October 2017, due to low reservoir and ground water well levels.
3. Cape Town, a major city of four million people on South Africa's coast, is going through one of the worst droughts in its history. The city is enduring a three-year drought and water rationing is in effect.

Internship Program

We have received applications for three internship positions to support our programs this summer. We were recently successful in hiring a former intern, Austin Marrs, for a Capital Projects Engineer position. Austin will start in May after graduating from James Madison University.

Community Outreach

The "Crozet Gazette" and "Cville" publications provided information about our Water Supply Plan and water infrastructure projects. Both articles examined our current and future plans to provide an adequate supply of drinking water for the urban area and Crozet.

Our Wastewater Department Manager, Tim Costillo, provided a presentation and demonstration regarding wastewater treatment at St Anne's-Belfield for a class of 3rd grade students. Our Water Resources Manager, Andrea Terry, spoke to a class at Monticello High School about Ragged Mountain Reservoir and the community water supply. Our Water Department Manager, Dave Tungate, provide a tour of Observatory Water Treatment Plant to an Environmental Studies Lab class from UVA.

We provided a tour of the Observatory and South Rivanna Water Treatment Plants, the Ragged Mountain and South Rivanna Reservoirs, and the Moores Creek Advanced Water Resource Recovery Facility to the City Mayor, Ms. Walker, and Vice-Mayor, Ms. Hill.

695 MOORES CREEK LANE
CHARLOTTESVILLE, VA 22902-9016
TEL: 434.977.2970
FAX: 434.293.8858
WWW.RIVANNA.ORG

MEMORANDUM

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

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

SUBJECT: **JANUARY MONTHLY FINANCIAL SUMMARY – FY 2018**

DATE: **FEBRUARY 27, 2018**

Urban Water flows and rate revenues are slightly under budget estimates for the first seven months of this fiscal year, and Urban Wastewater flows and rate revenues are 12% under budget. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	$ 3,999,401	$ 3,674,265	$ 1,188,257	$ 8,861,923
Expenses	(3,790,083)	(4,474,336)	(1,096,154)	(9,360,573)
Surplus (deficit)	$ 209,318	$ (800,071)	$ 92,103	$ (498,650)
Debt Service				
Revenues	$ 3,279,135	$ 4,852,290	$ 490,441	$ 8,621,866
Expenses	(3,264,283)	(4,806,703)	(490,356)	(8,561,342)
Surplus (deficit)	$ 14,852	$ 45,587	$ 85	$ 60,524
Total				
Revenues	$ 7,278,536	$ 8,526,555	$ 1,678,698	$ 17,483,789
Expenses	(7,054,366)	(9,281,039)	(1,586,510)	(17,921,915)
Surplus (deficit)	$ 224,170	$ (754,484)	$ 92,188	$ (438,126)

Urban Wastewater received the annual Nutrient Exchange Credit of $87,105 and Albemarle County's annual septage receiving support of $109,441 in July.

Some expense categories are over the prorated year-to-date budget as follows:

A. Personnel Costs (Lab – page 10) – Lab salaries are over budget due to the August payment of accumulated leave balances to the lab manager upon his retirement, and due to overlapping salaries in July for the former lab manager and his replacement.

B. Other Services & Charges (Urban Wastewater, Administration, Engineering - pages 5, 8, 11) - Urban Wastewater is over budget on odor control costs for Crozet Interceptor/Pump Stations, and Utility costs are running higher than budget estimates. The Administration Department is over the prorated budget for strategic plan costs, but that will even out by the end of the year.

C. Equipment Purchases (Crozet - page 3) – Crozet incurred some unbudgeted small equipment purchases.

D. Information Technology (Engineering – page 11) – Engineering paid $25,000 in August to renew an annual computer software license agreement, as budgeted.

E. Operations and Maintenance (Urban Wastewater, Administration, Maintenance, Lab – pages 5, 8, 9, 10) – Urban Wastewater has expended $61,000 more than the total annual budget of $215,000 for Pipelines and Appurtenances due to emergency repairs. More than $116,000 was spent on a Rivanna Interceptor stream bank restoration in Dunlora in October. Unbudgeted repairs were made to the steps outside the Administration building along with tree pruning, costing a total of about $8,000. The Maintenance department incurred some unbudgeted vehicle repair costs, and the Lab is over budget on supplies and repairs.

F. Professional Services (Urban Water, Crozet Water, Administration – pages 2, 3, 8) – Urban Water is $65,000 over the prorated budget for engineering and technical services but is not over the annual budget. Urban Water has spent $32,000 more than the total year's budget for legal fees, related to the Observatory plant lease. These fees will continue to be significantly over budget. Crozet Water has spent $31,000 more than the total annual budget for engineering and technical services costs. Administration is currently over the prorated budget, but is within the annual budget.

Attachments

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018
Fiscal Year 2018

Consolidated
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	*Budget FY 2018*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Operations Rate Revenue		$ 15,403,127	$ 8,985,157	$ 8,401,234	$ (583,923)	-6.50%
Lease Revenue		64,000	37,333	56,868	19,535	52.32%
Admin., Maint. & Engineering Revenue		410,000	239,167	250,785	11,618	4.86%
Other Revenues		534,630	311,868	338,713	26,846	8.61%
Use of Watershed Management Funds		80,000	46,667	46,311	(355)	-0.76%
Interest Allocation		15,000	8,750	18,796	10,046	114.81%
Total Operating Revenues		**$ 16,506,757**	**$ 9,628,942**	**$ 9,112,707**	**$ (516,234)**	**-5.36%**
Expenses						
Personnel Cost	**A**	$ 7,841,522	$ 4,537,062	$ 4,340,524	$ 196,538	4.33%
Professional Services	**F**	590,350	344,371	405,625	(61,254)	-17.79%
Other Services & Charges	**B**	2,552,662	1,489,053	1,745,587	(256,534)	-17.23%
Communications		142,605	83,186	86,450	(3,264)	-3.92%
Information Technology	**D**	324,400	189,233	113,502	75,732	40.02%
Supplies		44,970	26,233	24,025	2,208	8.42%
Operations & Maintenance	**E**	3,613,450	2,107,846	2,113,262	(5,416)	-0.26%
Equipment Purchases	**C**	336,300	196,175	163,758	32,417	16.52%
Depreciation		788,000	459,667	459,667	(0)	0.00%
Reserve Transfers		272,500	158,958	158,958	0	0.00%
Total Operating Expenses		**$ 16,506,759**	**$ 9,591,784**	**$ 9,611,357**	**$ (19,574)**	**-0.20%**
Operating Surplus/(Deficit)		**$ (2)**	**$ 37,158**	**$ (498,650)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 13,561,158	$ 7,910,676	$ 7,910,679	$ 3	0.00%
Use of Reserves for 2016 Bond DS		600,000	350,000	350,000	-	0.00%
Septage Receiving Support - County		109,440	63,840	109,441	45,601	71.43%
Buck Mountain Surcharge		84,000	49,000	63,200	14,200	28.98%
Buck Mountain Lease Revenue		1,600	933	1,309	375	40.22%
Trust Fund Interest		46,400	27,067	27,412	345	1.27%
Reserve Fund Interest		100,500	58,625	159,826	101,201	172.62%
Total Debt Service Revenues		**$ 14,503,098**	**$ 8,460,141**	**$ 8,621,867**	**$ 161,726**	**1.91%**
Debt Service Costs						
Total Principal & Interest		$ 12,370,200	$ 7,215,950	$ 7,215,950	$ -	0.00%
Reserve Additions-Interest		100,500	58,625	159,826	(101,201)	-172.62%
Debt Service Ratio Charge		725,000	422,917	422,917	-	0.00%
Reserve Additions-CIP Growth		1,307,400	762,650	762,650	-	0.00%
Total Debt Service Costs		**$ 14,503,100**	**$ 8,460,142**	**$ 8,561,343**	**$ (101,201)**	**-1.20%**
Debt Service Surplus/(Deficit)		**$ (2)**	**$ (1)**	**$ 60,524**		

Summary

Total Revenues	$ 31,009,855	$ 18,089,082	$ 17,734,574	$ (354,508)	-1.96%
Total Expenses	31,009,859	18,051,925	18,172,700	(120,775)	-0.67%
Surplus/(Deficit)	**$ (4)**	**$ 37,157**	**$ (438,126)**		

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018

Urban Water Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2018*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 6,758,077	$ 3,942,212	$ 3,928,177	$ (14,035)	-0.36%
Lease Revenue		35,000	20,417	40,179	19,762	96.79%
Miscellaneous		7,000	4,083	-	(4,083)	-100.00%
Use of Reserves		40,000	23,333	23,156	(178)	-0.76%
Interest Allocation		6,300	3,675	7,890	4,215	114.70%
Total Operating Revenues		**$ 6,846,377**	**$ 3,993,720**	**$ 3,999,401**	**$ 5,681**	**0.14%**
Expenses						
Personnel Cost		$ 1,828,852	$ 1,058,560	$ 1,021,818	$ 36,742	3.47%
Professional Services	F	142,450	83,096	184,122	(101,026)	-121.58%
Other Services & Charges		606,100	353,558	276,171	77,387	21.89%
Communications		64,690	37,736	37,240	495	1.31%
Information Technology		65,300	38,092	18,043	20,049	52.63%
Supplies		7,000	4,083	4,900	(817)	-20.01%
Operations & Maintenance		1,522,660	888,218	797,183	91,035	10.25%
Equipment Purchases		106,500	62,125	40,489	21,636	34.83%
Depreciation		260,000	151,667	151,667	(0)	0.00%
Reserve Transfers		250,000	145,833	145,833	0	0.00%
Subtotal Before Allocations		$ 4,853,552	$ 2,822,969	$ 2,677,468	$ 145,501	5.15%
Allocation of Support Departments		1,992,824	1,154,089	1,112,616	41,474	3.59%
Total Operating Expenses		**$ 6,846,377**	**$ 3,977,058**	**$ 3,790,083**	**$ 186,975**	**4.70%**
Operating Surplus/(Deficit)		**$ 0**	**$ 16,662**	**$ 209,318**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 5,345,730	$ 3,118,343	$ 3,118,346	$ 4	0.00%
Trust Fund Interest		18,000	10,500	10,773	273	2.60%
Reserve Fund Interest		18,000	10,500	85,507	75,007	714.35%
Buck Mountain Surcharge		84,000	49,000	63,200	14,200	28.98%
Lease Revenue		1,600	933	1,309	375	40.22%
Total Debt Service Revenues		**$ 5,467,330**	**$ 3,189,276**	**$ 3,279,135**	**$ 89,859**	**2.82%**
Debt Service Costs						
Total Principal & Interest		$ 4,242,130	$ 2,474,576	$ 2,474,576	$ -	0.00%
Reserve Additions-Interest		18,000	10,500	85,507	(75,007)	-714.35%
Debt Service Ratio Charge		400,000	233,333	233,333	-	0.00%
Reserve Additions-CIP Growth		807,200	470,867	470,867	-	0.00%
Total Debt Service Costs		**$ 5,467,330**	**$ 3,189,276**	**$ 3,264,283**	**$ (75,007)**	**-2.35%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 14,852**		
Rate Center Summary						
Total Revenues		$ 12,313,707	$ 7,182,996	$ 7,278,536	$ 95,540	1.33%
Total Expenses		12,313,707	7,166,334	7,054,366	111,968	1.56%
Surplus/(Deficit)		**$ 0**	**$ 16,662**	**$ 224,170**		
Costs per 1000 Gallons		1.99		1.90		
Thousand Gallons Treated		3,432,018	2,002,011	1,995,011	(7,000)	-0.35%
or						
Flow (MGD)		9.403		9.279		

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018

Crozet Water Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2018	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 915,336	$ 533,946	$ 533,946	$ -	0.00%
Lease Revenues		29,000	16,917	16,689	(227)	-1.34%
Use of Reserves		24,000	14,000	17,009	3,009	21.49%
Interest Allocation		900	525	1,186	661	125.90%
Total Operating Revenues		**$ 969,236**	**$ 565,388**	**$ 568,830**	**$ 3,443**	**0.61%**
Expenses						
Personnel Cost		$ 289,212	$ 167,413	$ 160,465	$ 6,948	4.15%
Professional Services	F	47,000	27,417	78,109	(50,692)	-184.90%
Other Services & Charges		121,480	70,863	59,794	11,070	15.62%
Communications		4,230	2,468	2,972	(504)	-20.44%
Information Technology		14,200	8,283	509	7,774	93.85%
Supplies		670	391	689	(298)	-76.34%
Operations & Maintenance		233,630	136,284	129,707	6,577	4.83%
Equipment Purchases	C	26,400	15,400	20,894	(5,494)	-35.67%
Depreciation		25,000	14,583	14,583	0	0.00%
Reserve Transfers		20,000	11,667	11,667	(0)	0.00%
Subtotal Before Allocations		$ 781,822	$ 454,769	$ 479,389	$ (24,620)	-5.41%
Allocation of Support Departments		187,417	108,537	105,044	3,493	3.22%
Total Operating Expenses		**$ 969,238**	**$ 563,306**	**$ 584,433**	**$ (21,127)**	**-3.75%**
Operating Surplus/(Deficit)		**$ (2)**	**$ 2,082**	**$ (15,603)**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 691,476	$ 403,361	$ 403,361	$ -	0.00%
Trust Fund Interest		1,800	1,050	1,042	(8)	-0.80%
Reserve Fund Interest		2,700	1,575	2,397	822	52.22%
Total Debt Service Revenues		**$ 695,976**	**$ 405,986**	**$ 406,800**	**$ 814**	**0.20%**
Debt Service Costs						
Total Principal & Interest		$ 426,977	$ 249,070	$ 249,070	$ -	0.00%
Reserve Additions-Interest		2,700	1,575	2,397	(822)	-52.22%
Reserve Additions-CIP Growth		266,300	155,342	155,342	-	0.00%
Total Debt Service Costs		**$ 695,977**	**$ 405,987**	**$ 406,809**	**$ (822)**	**-0.20%**
Debt Service Surplus/(Deficit)		**$ (1)**	**$ (1)**	**$ (9)**		

Rate Center Summary

Total Revenues	$ 1,665,212	$ 971,374	$ 975,630	$ 4,257	0.44%
Total Expenses	1,665,215	969,292	991,242	(21,950)	-2.26%
Surplus/(Deficit)	**$ (3)**	**$ 2,081**	**$ (15,612)**		
Costs per 1000 Gallons	5.31		4.99		
Thousand Gallons Treated	182,610	106,523	117,016	10,494	9.85%
Flow (MGD)	0.500		0.544		

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018

Scottsville Water Rate Center
Revenues and Expenses Summary

	Budget FY 2018	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual					
Notes					
Revenues					
Operations Rate Revenue	$ 412,236	$ 240,471	$ 240,471	$ -	0.00%
Use of Reserves	16,000	9,333	6,147	(3,186)	
Interest Allocation	400	233	492	258	110.73%
Total Operating Revenues	**$ 428,636**	**$ 250,038**	**$ 247,110**	**$ (2,928)**	**-1.17%**
Expenses					
Personnel Cost	$ 154,467	$ 89,422	$ 84,525	$ 4,897	5.48%
Professional Services	26,000	15,167	11,851	3,316	21.86%
Other Services & Charges	19,490	11,369	14,099	(2,730)	-24.01%
Communications	3,210	1,873	2,140	(268)	-14.31%
Information Technology	7,000	4,083	1,131	2,952	72.30%
Supplies	750	438	75	363	82.87%
Operations & Maintenance	66,570	38,833	14,641	24,192	62.30%
Equipment Purchases	14,400	8,400	1,656	6,744	80.29%
Depreciation	17,000	9,917	9,917	(0)	0.00%
Reserve Transfers	2,500	1,458	1,458	0	0.00%
Subtotal Before Allocations	$ 311,387	$ 180,959	$ 141,493	$ 39,466	21.81%
Allocation of Support Departments	117,247	67,904	65,981	1,923	2.83%
Total Operating Expenses	**$ 428,634**	**$ 248,863**	**$ 207,474**	**$ 41,389**	**16.63%**
Operating Surplus/(Deficit)	**$ 2**	**$ 1,175**	**$ 39,635**		
Debt Service Budget vs. Actual					
Revenues					
Debt Service Rate Revenue	$ 129,448	$ 75,511	$ 75,509	$ (2)	0.00%
Trust Fund Interest	400	233	302	68	29.24%
Reserve Fund Interest	1,500	875	1,279	404	46.13%
Total Debt Service Revenues	**$ 131,348**	**$ 76,620**	**$ 77,089**	**$ 470**	**0.61%**
Debt Service Costs					
Total Principal & Interest	$ 129,848	$ 75,745	$ 75,745	$ -	0.00%
Reserve Additions-Interest	1,500	875	1,279	(404)	
Reserve Additions-CIP Growth	-	-	-	-	
Total Debt Service Costs	**$ 131,348**	**$ 76,620**	**$ 77,023**	**$ (404)**	**-0.53%**
Debt Service Surplus/(Deficit)	**$ -**	**$ -**	**$ 66**		
Rate Center Summary					
Total Revenues	$ 559,984	$ 326,657	$ 324,199	$ (2,459)	-0.75%
Total Expenses	559,982	325,483	284,498	40,985	12.59%
Surplus/(Deficit)	**$ 2**	**$ 1,175**	**$ 39,701**		
Costs per 1000 Gallons	22.39		21.36		
Thousand Gallons Treated	19,143	11,167	9,714	(1,453)	-13.01%
or					
Flow (MGD)	0.052		0.045		

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018

Urban Wastewater Rate Center
Revenues and Expenses Summary

	Notes	*Budget FY 2018*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual						
Revenues						
Operations Rate Revenue		$ 6,680,446	$ 3,896,927	$ 3,327,038	$ (569,888)	-14.62%
Stone Robinson WWTP		27,630	16,118	12,393	(3,724)	-23.11%
Septage Acceptance		390,000	227,500	239,215	11,715	5.15%
Nutrient Credits		100,000	58,333	87,105	28,772	49.32%
Miscellaneous Revenue		10,000	5,833	-	(5,833)	-100.00%
Interest Allocation		6,800	3,967	8,514	4,547	114.63%
Total Operating Revenues		**$ 7,214,876**	**$ 4,208,678**	**$ 3,674,265**	**$ (534,413)**	**-12.70%**
Expenses						
Personnel Cost		$ 1,230,128	$ 711,906	$ 623,361	$ 88,544	12.44%
Professional Services		54,000	31,500	10,700	20,800	66.03%
Other Services & Charges	**B**	1,571,400	916,650	1,222,235	(305,585)	-33.34%
Communications		10,430	6,084	7,347	(1,263)	-20.75%
Information Technology		57,300	33,425	13,110	20,315	60.78%
Supplies		2,700	1,575	695	880	55.85%
Operations & Maintenance	**E**	1,390,300	811,008	957,167	(146,159)	-18.02%
Equipment Purchases		54,000	31,500	28,976	2,524	8.01%
Depreciation		465,000	271,250	271,250	-	0.00%
Reserve Transfers		-	-	-	-	
Subtotal Before Allocations		$ 4,835,258	$ 2,814,898	$ 3,134,842	$ (319,944)	-11.37%
Allocation of Support Departments		2,379,618	1,378,098	1,339,495	38,603	2.80%
Total Operating Expenses		**$ 7,214,876**	**$ 4,192,996**	**$ 4,474,336**	**$ (281,341)**	**-6.71%**
Operating Surplus/(Deficit)		**$ 0**	**$ 15,682**	**$ (800,071)**		
Debt Service Budget vs. Actual						
Revenues						
Debt Service Rate Revenue		$ 7,384,689	$ 4,307,735	$ 4,307,737	$ 2	0.00%
Use of Reserves for 2016 Bond DS		600,000	350,000	350,000	-	0.00%
Septage Receiving Support - County		109,440	63,840	109,441	45,601	71.43%
Trust Fund Interest		26,200	15,283	15,268	(15)	-0.10%
Reserve Fund Interest		77,300	45,092	69,844	24,752	54.89%
Total Debt Service Revenues		**$ 8,197,629**	**$ 4,781,950**	**$ 4,852,290**	**$ 70,340**	**1.47%**
Debt Service Costs						
Total Principal & Interest		$ 7,561,430	$ 4,410,834	$ 4,410,834	$ -	0.00%
Reserve Additions-Interest		77,300	45,092	69,844	(24,752)	-54.89%
Debt Service Ratio Charge		325,000	189,583	189,583	-	0.00%
Reserve Additions-CIP Growth		233,900	136,442	136,442	-	0.00%
Total Debt Service Costs		**$ 8,197,630**	**$ 4,781,951**	**$ 4,806,703**	**$ (24,752)**	**-0.52%**
Debt Service Surplus/(Deficit)		**$ (1)**	**$ (1)**	**$ 45,587**		
Rate Center Summary						
Total Revenues		$ 15,412,505	$ 8,990,628	$ 8,526,556	$ (464,072)	-5.16%
Total Expenses		15,412,506	8,974,946	9,281,040	(306,093)	-3.41%
Surplus/(Deficit)		**$ (1)**	**$ 15,681**	**$ (754,484)**		
Costs per 1000 Gallons		2.11		2.55		
Thousand Gallons Treated		3,424,639	1,997,706	1,756,401	(241,305)	-12.08%
or						
Flow (MGD)		9.383		8.169		

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

	Budget FY 2018	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Operating Budget vs. Actual					
Notes					
Revenues					
Operations Rate Revenue	$ 352,344	$ 205,534	$ 205,534	$ -	0.00%
Interest Allocation	300	175	395	220	125.54%
Total Operating Revenues	**$ 352,644**	**$ 205,709**	**$ 205,929**	**$ 220**	**0.11%**
Expenses					
Personnel Cost	$ 90,823	$ 52,563	$ 45,900	$ 6,663	12.68%
Professional Services	3,000	1,750	-	1,750	
Other Services & Charges	31,490	18,369	19,943	(1,574)	-8.57%
Communications	2,600	1,517	1,983	(467)	-30.76%
Information Technology	3,500	2,042	119	1,923	94.20%
Supplies	100	58	-	58	100.00%
Operations & Maintenance	121,450	70,846	47,986	22,860	32.27%
Equipment Purchases	3,100	1,808	1,517	292	16.13%
Depreciation	5,000	2,917	2,917	(0)	0.00%
Subtotal Before Allocations	$ 261,063	$ 151,870	$ 120,364	$ 31,506	20.75%
Allocation of Support Departments	91,584	53,048	51,478	1,569	2.96%
Total Operating Expenses	**$ 352,647**	**$ 204,918**	**$ 171,843**	**$ 33,075**	**16.14%**
Operating Surplus/(Deficit)	**$ (3)**	**$ 791**	**$ 34,086**		
Debt Service Budget vs. Actual					
Revenues					
Debt Service Rate Revenue	$ 1,582	$ 923	$ 924	$ 1	0.13%
Trust Fund Interest	-	-	-	-	
Reserve Fund Interest	600	350	479	129	36.99%
Total Debt Service Revenues	**$ 2,182**	**$ 1,273**	**$ 1,403**	**$ 1**	**0.09%**
Debt Service Costs					
Total Principal & Interest	$ 1,582	$ 923	$ 923	$ -	0.00%
Reserve Additions-Interest	600	350	479	(129)	-36.99%
Total Debt Service Costs	**$ 2,182**	**$ 1,273**	**$ 1,402**	**$ (129)**	**-10.17%**
Debt Service Surplus/(Deficit)	**$ -**	**$ -**	**$ 1**		

Rate Center Summary					
Total Revenues	$ 354,826	$ 206,982	$ 207,332	$ 350	0.17%
Total Expenses	354,829	206,191	173,245	32,946	15.98%
Surplus/(Deficit)	**$ (3)**	**$ 791**	**$ 34,087**		
Costs per 1000 Gallons	8.12		7.50		
Thousand Gallons Treated	43,412	25,324	22,927	(2,397)	**-9.46%**
or					
Flow (MGD)	0.119		0.107		

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

Operating Budget vs. Actual

	Notes	Budget FY 2018	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
Revenues						
Operations Rate Revenue		$ 284,688	$ 166,068	$ 166,068	$ -	0.00%
Interest Allocation		300	175	320	145	82.57%
Total Operating Revenues		**$ 284,988**	**$ 166,243**	**$ 166,388**	**$ 145**	**0.09%**
Expenses						
Personnel Cost		$ 90,848	$ 52,578	$ 45,900	$ 6,678	12.70%
Professional Services		2,000	1,167	-	1,167	100.00%
Other Services & Charges		22,900	13,358	16,028	(2,669)	-19.98%
Communications		2,630	1,534	2,321	(787)	-51.29%
Information Technology		4,400	2,567	-	2,567	100.00%
Supplies		100	58	-	58	100.00%
Operations & Maintenance		57,850	33,746	9,671	24,075	71.34%
Equipment Purchases		3,400	1,983	1,517	467	23.53%
Depreciation		16,000	9,333	9,333	0	0.00%
Subtotal Before Allocations		$ 200,128	$ 116,325	$ 84,769	$ 31,555	27.13%
Allocation of Support Departments		84,858	49,152	47,633	1,519	3.09%
Total Operating Expenses		**$ 284,987**	**$ 165,477**	**$ 132,402**	**$ 33,074**	**19.99%**
Operating Surplus/(Deficit)		**$ 1**	**$ 766**	**$ 33,985**		

Debt Service Budget vs. Actual

Revenues						
Debt Service Rate Revenue		$ 8,233	$ 4,803	$ 4,802	$ (1)	-0.01%
Trust Fund Interest		-	-	27	27	
Reserve Fund Interest		400	233	320	86	36.98%
Total Debt Service Revenues		**$ 8,633**	**$ 5,036**	**$ 5,149**	**$ 113**	**2.25%**
Debt Service Costs						
Total Principal & Interest		$ 8,233	$ 4,803	$ 4,803	$ -	0.00%
Reserve Additions-Interest		400	233	320	(86)	-36.98%
Estimated New Principal & Interest		-	-	-	-	
Total Debt Service Costs		**$ 8,633**	**$ 5,036**	**$ 5,122**	**$ (86)**	**-1.71%**
Debt Service Surplus/(Deficit)		**$ -**	**$ -**	**$ 27**		

Rate Center Summary

Total Revenues	$ 293,621	$ 171,279	$ 171,536	$ 258	0.15%
Total Expenses	293,620	170,512	137,525	32,988	19.35%
Surplus/(Deficit)	**$ 1**	**$ 766**	**$ 34,012**		
Costs per 1000 Gallons	14.27		14.35		
Thousand Gallons Treated	19,967	11,647	9,227	(2,420)	**-20.78%**
or					
Flow (MGD)	0.055		0.043		

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018

Administration

Operating Budget vs. Actual

	Notes	*Budget FY 2018*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ 409,000	$ 238,583	$ 238,583	$ (0)	0.00%
Miscellaneous Revenue		1,000	583	4,475	3,891	667.10%
Total Operating Revenues		**$ 410,000**	**$ 239,167**	**$ 243,058**	**$ 3,891**	**1.63%**
Expenses						
Personnel Cost		$ 1,544,126	$ 892,968	$ 894,684	$ (1,717)	-0.19%
Professional Services	**F**	171,900	100,275	115,935	(15,660)	-15.62%
Other Services & Charges	**B**	111,940	65,298	80,017	(14,719)	-22.54%
Communications		21,280	12,413	9,010	3,403	27.41%
Information Technology		118,000	68,833	41,205	27,628	40.14%
Supplies		22,000	12,833	12,775	59	0.46%
Operations & Maintenance	**E**	36,600	21,350	31,999	(10,649)	-49.88%
Equipment Purchases		8,300	4,842	4,842	(0)	0.00%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 2,034,146**	**$ 1,178,813**	**$ 1,190,468**	**$ (11,655)**	**-0.99%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,624,146)**	**$ (939,646)**	**$ (947,410)**	**$ 7,764**	**-0.83%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 714,624**	**$ 413,444**	**$ 416,860**	**$ (3,416)**	
Crozet Water	4.00%	**$ 64,966**	**37,586**	**37,896**	**(311)**	
Scottsville Water	2.00%	**$ 32,483**	**18,793**	**18,948**	**(155)**	
Urban Wastewater	48.00%	**$ 779,590**	**451,030**	**454,757**	**(3,727)**	
Glenmore Wastewater	1.00%	**$ 16,241**	**9,396**	**9,474**	**(78)**	
Scottsville Wastewater	1.00%	**$ 16,241**	**9,396**	**9,474**	**(78)**	
	100.00%	**$ 1,624,146**	**$ 939,646**	**$ 947,410**	**$ (7,764)**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018

Maintenance

Operating Budget vs. Actual

	Notes	*Budget FY 2018*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Miscellaneous Revenue		-	-	4,610	4,610	
Total Operating Revenues		**$ -**	**$ -**	**$ 4,610**	**$ 4,610**	
Expenses						
Personnel Cost		$ 1,150,821	$ 665,878	$ 651,858	$ 14,020	2.11%
Professional Services		-	-	-	-	
Other Services & Charges		12,300	7,175	11,711	(4,536)	-63.22%
Communications		15,635	9,120	13,141	(4,020)	-44.08%
Information Technology		6,500	3,792	2,328	1,464	38.60%
Supplies		500	292	97	194	66.66%
Operations & Maintenance	**E**	64,450	37,596	44,766	(7,170)	-19.07%
Equipment Purchases		94,850	55,329	49,797	5,533	10.00%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 1,345,056**	**$ 779,181**	**$ 773,697**	**$ 5,485**	**0.70%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (1,345,056)**	**$ (779,181)**	**$ (769,086)**	**$ (874)**	**0.11%**
Allocations to the Rate Centers						
Urban Water	30.00%	**$ 403,517**	**$ 233,754**	**$ 230,726**	**$ 3,029**	
Crozet Water	3.50%	**47,077**	**27,271**	**26,918**	**353**	
Scottsville Water	3.50%	**47,077**	**27,271**	**26,918**	**353**	
Urban Wastewater	56.50%	**759,957**	**440,237**	**434,534**	**5,704**	
Glenmore Wastewater	3.50%	**47,077**	**27,271**	**26,918**	**353**	
Scottsville Wastewater	3.00%	**40,352**	**23,375**	**23,073**	**303**	
	100.00%	**$ 1,345,056**	**$ 779,181**	**$ 769,086**	**$ 10,095**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018

Laboratory

Operating Budget vs. Actual

	Notes	*Budget FY 2018*	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
N/A						
Expenses						
Personnel Cost	**A**	$ 293,948	$ 170,030	$ 206,359	$ (36,330)	-21.37%
Professional Services		-	-	-	-	
Other Services & Charges		10,412	6,074	4,649	1,424	23.45%
Communications		600	350	867	(517)	
Information Technology		2,200	1,283	270	1,013	78.97%
Supplies		1,650	963	1,569	(606)	-62.99%
Operations & Maintenance	**E**	55,000	32,083	41,491	(9,408)	-29.32%
Equipment Purchases		1,500	875	583	292	33.34%
Depreciation		-	-	-	-	
Total Operating Expenses		**$ 365,310**	**$ 211,657**	**$ 255,789**	**$ (44,131)**	**-20.85%**

Department Summary

Net Costs Allocable to Rate Centers		**$ (365,310)**	**$ (211,657)**	**$ (255,789)**	**$ 44,131**	**-20.85%**
Allocations to the Rate Centers						
Urban Water	44.00%	**$ 160,736**	**$ 93,129**	**$ 112,547**	**$ (19,418)**	
Crozet Water	4.00%	**14,612**	**8,466**	**10,232**	**(1,765)**	
Scottsville Water	2.00%	**7,306**	**4,233**	**5,116**	**(883)**	
Urban Wastewater	47.00%	**171,696**	**99,479**	**120,221**	**(20,742)**	
Glenmore Wastewater	1.50%	**5,480**	**3,175**	**3,837**	**(662)**	
Scottsville Wastewater	1.50%	**5,480**	**3,175**	**3,837**	**(662)**	
	100.00%	**$ 365,310**	**$ 211,657**	**$ 255,789**	**$ (44,131)**	

Rivanna Water & Sewer Authority
Monthly Financial Statements - January 2018

Engineering

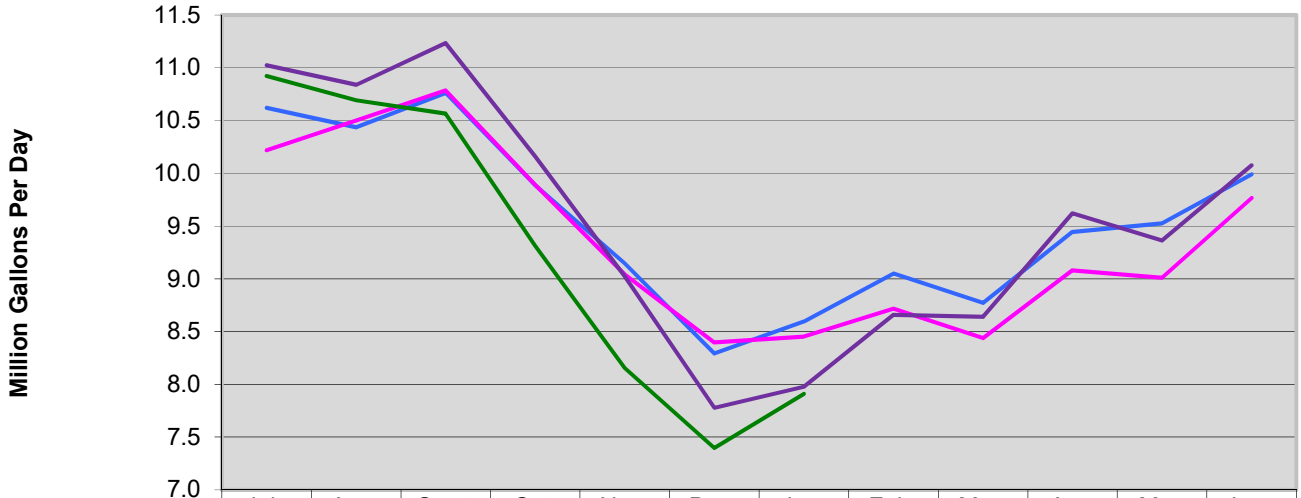
Operating Budget vs. Actual

		Budget FY 2018	*Budget Year-to-Date*	*Actual Year-to-Date*	*Budget vs. Actual*	*Variance Percentage*
Revenues						
Payment for Services SWA		$ -	$ -	$ 3,117	$ 3,117	
Total Operating Revenues		**$ -**	**$ -**	**$ 3,117**	**$ 3,117**	
Expenses						
Personnel Cost		$ 1,168,296	$ 675,745	$ 605,654	$ 70,091	10.37%
Professional Services		144,000	84,000	4,907	79,093	94.16%
Other Services & Charges	**B**	45,150	26,338	40,940	(14,602)	-55.44%
Communications		17,300	10,092	9,429	663	6.57%
Information Technology	**D**	46,000	26,833	36,787	(9,954)	-37.10%
Supplies		9,500	5,542	3,224	2,318	41.82%
Operations & Maintenance		64,940	37,882	38,651	(769)	-2.03%
Equipment Purchases		23,850	13,913	13,488	425	3.05%
Depreciation & Capital Reserve Transfers		-	-	-	-	
Total Operating Expenses		**$ 1,519,036**	**$ 880,343**	**$ 753,079**	**$ 127,264**	**14.46%**

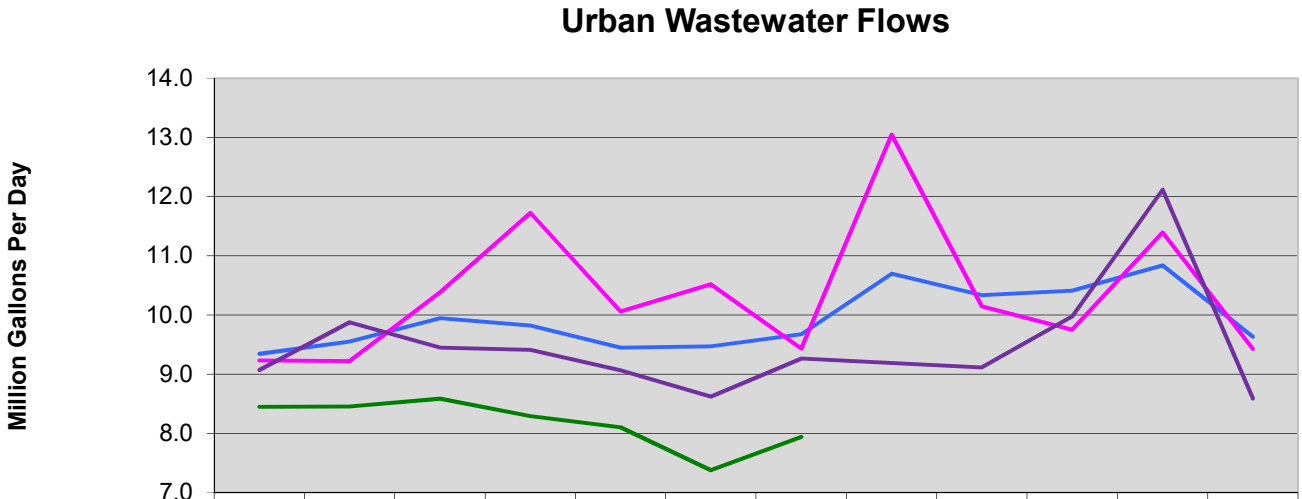
Department Summary

Net Costs Allocable to Rate Centers		**$ (1,519,036)**	**$ (880,343)**	**$ (749,962)**	**$ (124,148)**	**14.10%**
Allocations to the Rate Centers						
Urban Water	47.00%	**$ 713,947**	**$ 413,761**	**$ 352,482**	**$ 61,279**	
Crozet Water	4.00%	**60,761**	**35,214**	**29,998**	**5,215**	
Scottsville Water	2.00%	**30,381**	**17,607**	**14,999**	**2,608**	
Urban Wastewater	44.00%	**668,376**	**387,351**	**329,983**	**57,368**	
Glenmore Wastewater	1.50%	**22,786**	**13,205**	**11,249**	**1,956**	
Scottsville Wastewater	1.50%	**22,786**	**13,205**	**11,249**	**1,956**	
	100.00%	**$ 1,519,036**	**$ 880,343**	**$ 749,962**	**$ 130,381**	

Rivanna Water and Sewer Authority
Flow Graphs



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG.	10.62	10.44	10.76	9.89	9.15	8.29	8.60	9.05	8.77	9.45	9.53	9.99
FY 2016	10.22	10.50	10.79	9.89	9.04	8.40	8.45	8.72	8.44	9.08	9.01	9.77
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					



	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
5 YR AVG	9.34	9.55	9.95	9.82	9.45	9.47	9.67	10.70	10.33	10.41	10.84	9.63
FY 2016	9.23	9.22	10.38	11.73	10.06	10.52	9.43	13.05	10.15	9.75	11.39	9.43
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					

695 MOORES CREEK LANE
CHARLOTTESVILLE, VA 22902-9016
TEL: 434.977.2970
FAX: 434.293.8858
WWW.RIVANNA.ORG

MEMORANDUM

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

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

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

SUBJECT: **STATUS REPORT: ONGOING PROJECTS**

DATE: **FEBRUARY 27, 2018**

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

Under Construction

1. Drinking Water Activated Carbon and Water Treatment Plant Improvements
2. Wholesale Water Master Metering
3. Moores Creek AWRRF Odor Control Phase 2, Bridge Repairs & Second Centrifuge
4. Crozet Finished Water Pump Station
5. Moores Creek AWRRF Roof Replacements
6. Sugar Hollow Reservoir to Ragged Mountain Reservoir Transfer Flow Meter
7. Piney Mountain Tank Rehabilitation
8. Interceptor Sewer & Manhole Repair
9. Urgent and Emergency Repairs

Design and Bidding

10. Observatory Water Treatment Plant Expansion
11. South Rivanna Water Treatment Plant Improvements
12. Crozet Water Treatment Plant Expansion
13. Interconnect Lower Sugar Hollow and Ragged Mountain Raw Water Mains
14. Route 29 Pump Station and Pipeline
15. South Fork Rivanna Reservoir to Ragged Mountain Reservoir Water Line Right-of-Way
16. Avon to Pantops Water Main
17. Crozet Interceptor Pump Stations Bypass & Isolation Valves
18. Crozet Flow Equalization Tank

Planning and Studies

19. Reservoir Management Plan
20. South Rivanna Hydropower Plant Decommissioning
21. Drinking Water Infrastructure Plan – Crozet Area

1. Drinking Water Activated Carbon and WTP Improvements

Design Engineer:	Hazen and Sawyer
Construction Contractor:	Ulliman Shutte Construction, LLC
Construction Start:	April 2015
Percent Complete:	97%
Base Construction Contract + Change Orders to Date = Current Value:	$22,563,000 + $974,710 = $23,537,710
Expected Completion Date:	April 2018
Total Capital Project Budget:	Urban GAC: $24,000,000 Crozet GAC: $3,418,390 Scottsville GAC: $1,600,000

Current Status:

Crozet WTP – The Granular Activated Carbon (GAC) system has under gone start-up procedures and should be placed in service in March following some additional work on the carbon treated water meter vault The GAC material was installed in the contactors on October 11-12, 2017. The GAC building, GAC contactors and piping, and chemical feed systems are 100% complete. Interior electrical conduit and wiring systems, as well as HVAC systems have been completed. Stormwater management facilities have been completed. Following completion of the meter vault improvements, work at this plant will be complete.

Scottsville WTP – The GAC system has been completed and GAC material has been delivered. Treatment of water through the GAC system is scheduled to begin by the end of February. The GAC metal building, and GAC contactor and piping are 100% complete. Asphalt paving, lawn restoration, fencing and gate improvements are on-going.

North Rivanna WTP – The GAC system is scheduled to be in operation in March. The GAC metal building, and GAC contactors and piping have been completed. Building finishes, electrical conduit and wiring, and HVAC system installations are being completed. The electrical system rehabilitation and improvement work in the existing filter building is on-going. The existing generator has been relocated and electrical equipment has been transferred.

After reviewing the existing status of the aged, original electrical wiring systems in the filter building with the contractor, RWSA staff has determined that additional wiring up-grades are warranted and recommended for the additional work.

South Rivanna WTP – The GAC system is anticipated to be in operation by May. The GAC metal building, and GAC contactors and piping have been completed. Work on the chemical feed systems is complete. Final testing of the filter air scour system is on-going. The liquid lime feed tanks and interior piping have been installed, with minor improvements on-going. All clarifier and filter work is complete and in service. Electrical and instrumentation installations are on-going and the contractor has completed their GAC building electrical service connection. Additional yard hydrants and basin ladders are to be installed as part of an upcoming Change Order.

Observatory WTP - The GAC system is anticipated to be in operation by May. The GAC building, Intermediate Pump Station building, and chlorine contact tank are complete, except for additional work on the contact tank overflow pipe (part of an upcoming Change Order) and some interior painting and finishes. The electrical conduit and wiring installation for the buildings is ongoing. The new potable water service line and booster pump system is complete and in service. Landscape retaining walls and storm sewer systems have been installed, with landscaping and fencing installation on-going.

We plan to have a press release upon completion of all GAC systems, likely in April or May 2018, along with individual on-site celebration events for Scottsville, Crozet and the Urban System (South Rivanna Water Treatment Plant).

History:

In 2006, the US EPA promulgated the Stage 2 Disinfectant and Disinfection Byproducts (D/DBP) Rule, which limits the maximum levels of certain disinfection byproducts in water distribution systems. RWSA hired Hazen and Sawyer to evaluate alternatives to reduce disinfection byproducts and ensure compliance with the Stage 2 D/DPR Rule. Hazen and Sawyer presented possible alternatives to assure continuous compliance with the Stage 2 D/DBP Rule, and the Board selected installation of granular activated carbon contactors. At the March 2015 RWSA board meeting, the Board approved a construction award to USC in the amount of $22,014,250 and a construction management work authorization in the amount of $1,686,700 to Hazen and Sawyer. In addition, the Board approved changes to the 2015-2019 Capital Improvement Plan (CIP) as follows: (1) Combined the Crozet GAC and Crozet Water Treatment Plant Improvements projects and increased the budget by $550,800 for a new total project budget of $3,190,000; (2) Increased the budget for Scottsville GAC by $382,100 for a new total project budget of $1,600,000; and (3) Combined the Urban Water GAC, South Fork Rivanna Water Treatment Plant Improvements, and the North Fork Water Treatment Plant Improvements projects into a single account with a combined total project budget of $24,000,494.

An additional CIP amendment was approved by the RWSA Board at the March 22, 2016 meeting. This adjustment increased the Crozet Water GAC and Water Treatment Plant Improvements project to $3,418,390. The RWSA Board also approved an additional change order amount to Ulliman Schutte of $840,356 at the December 15, 2015 meeting. This additional cost is for Observatory WTP flocculator upgrades, and is funded from a separate CIP project (Observatory WTP improvements).

2. Wholesale Water Master Metering

Design Engineer:	Michael Baker International (Baker)
Construction Contractor:	Linco, Inc.
Construction Start:	January 2016
Percent Complete:	94%
Base Construction Contract + Change Orders to Date = Current Value:	$2,228,254 - $221,177 = $2,007,077
Expected Completion Date:	April 2018
Total Capital Project Budget:	$3,600,000

Current Status:

The three water treatment plant flow meters and 23 of 25 distribution system flow meters have been completed. Based on recent progress, staff anticipates completion of one of the two remaining meters by April of 2018. The final remaining site, located adjacent to Ivy Road, has been removed from the Linco's contract and will be completed under a separate contract. Staff is in discussions with contractors under the existing on-call contract to determine a price and final completion schedule for the Ivy Road Site.

History:

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.

Staff met with the ACSA and the City on July 12, 2017 and established a plan for implementation of the new meters in accordance with the 2012 Water Cost Allocation Agreement and the Baker Study.

3. <u>Moores Creek AWRRF Odor Control Phase 2, Bridge Repairs and Second Centrifuge</u>

Design Engineer:	Hazen and Sawyer
Construction Contractor:	MEB General Contractors
Construction Start:	June 2016
Percent Complete:	90%
Base Construction Contract + Change Orders to Date = Current Value:	$6,796,000 +$1,571,652.63 =$8,367,652.63
Expected Completion Date:	March 2018
Total Capital Project Budget:	Odor Control Phase 2 - $10,108,000 MC Bridge Repairs - $330,000 Second Centrifuge - $1,290,000

<u>Current Status</u>:

The bio-scrubber has been assembled and startup occurred in October. Now that all of the basins are covered and air flows to the bio-scrubber have been balanced, performance testing of the biological process (measured in amount of odor removal) will begin this month. Bridge repairs are underway. Installation of the second centrifuge and associated electrical and mechanical systems is ongoing. The grit facilities were started up in the beginning of February 2018.

In addition to the above construction activities, the following initiatives are being conducted as part of the overall Odor Control program:

- Digester Coating ($540,000 budgeted). Odor-causing gases have been found to be emitted from the digester roofs. This project is intended to seal the interior of the digesters, reducing gas emission as well as protecting the integrity of the existing digester roof from harmful corrosion. Bids were received on August 3, 2017, and the Board approved the award at the September 2017 BOD meeting. Contract documents were executed and work began on January 2, 2018 to erect scaffolding in Digester No. 1. Current work includes concrete surface preparation for the new coating.

- Holding Pond Cleanout ($500,000 budgeted). Over time, grit and organic material have accumulated in the Wet Weather Holding Ponds and Equalization Basins and have been a source of odor. This project is to remove these accumulated solids in the summer of 2018 after the other components of the Odor Control project have been completed.

- Solids Handling ($550,000 budgeted). RWSA purchased covered trailers to load biosolids directly from the centrifuge's conveyor system. Conveyor system modifications are complete and the new trailers are being utilized.

<u>History:</u>

At its September 2013 meeting, members of City Council inquired about the possibility to add another phase of odor control to the current Capital Program in response to citizen

complaints. Staff asked Hazen at that time to compile conceptual costs to implement the next phases of odor control from the 2007 master plan, which were estimated over $10 million dollars. In an effort to better define our next steps for odor control while being cost effective, Hazen performed an operations audit over the winter and two rounds of air and liquid phase sampling at the wastewater treatment facility in summer and fall of 2014. Hazen attended the Board of Directors meeting in December and presented a summary of recommendations and estimated project costs for a project that would significantly control odors from traveling beyond the MCAWRRF fence line.

At the January 27, 2015 meeting, the Board approved this project with a budget of $9,330,000 and adopted it with the 2015-2019 CIP. DEQ issued the Certificate to Construct in early November 2015. This project advertised for bid on November 6, 2015 and bids were opened on December 17, 2015. Unfortunately, all of the bids were considerably over the project budget and subsequently were rejected. The design engineers, Hazen and Short Elliot Hendrickson, Inc. evaluated ways to reduce the scope of work without sacrificing the odor control goals. The redesigned project with reduced scope advertised for bid on February 5, 2016 and bids were opened on March 30, 2016. The Board of Directors approved award of the construction contract to MEB General Contractors, Inc. at the April 2016 Board Meeting with an associated capital budget increase.

4. Crozet Finished Water Pump Station

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Anderson Construction, Inc.
Construction Start:	May 2017
Percent Complete:	45 %
Base Construction Contract + Change Orders to Date = Current Value:	$1,941,000
Expected Completion Date:	September 2018
Total Capital Project Budget:	$2,600,000

Current Status:

Concrete footings and foundation walls have been placed for the pump station building. Discharge lines to and from the new pump station building have been placed and electrical rough-in work is in progress. Pipelines have been flushed, pressure tested and disinfected.

History:

Bids were received and opened for the project on March 7, 2017. The apparent low bidder was Anderson Construction, Inc. from Lynchburg, VA. The Board of Directors approved the contract bid award of $1,941,000 at the March 2017 meeting, a Notice of Award was issued on April 10, 2017, and a Notice to Proceed was issued on May 3, 2017.

The filter plant effluent line to the ground storage tank has been installed, tested, disinfected and placed into service. The existing generator and electrical lines have been

relocated and placed into a temporary location. The pipeline and generator were relocated in order to make room for the new pump station foundation excavation. Partial removal of old, existing asbestos cement (transite) pipe was completed in July.

As part of the current FY 2016 CIP, the Crozet Water Treatment Plant is being studied to expand the treatment capacity to secure future demand needs of the Crozet community. Prior to any plant expansion, it has been determined that the finished water pumping facilities are in need of replacement. The existing pump station is very small and was constructed as part of the original plant construction in the late 1960s. The pumping equipment and controls are outdated, and reduce operational reliability and efficiency. The pump house is located in a low, poorly drained area near the ground storage clearwell, and drainage issues exist. Due to the age and condition of pumps, electrical systems, building systems and controls, it has been determined that a full station replacement is necessary. An Alternatives Analysis Report was completed in June 2016, and the chosen alternative is to construct a new, larger building uphill from the existing clearwell tank. The new pump station building will be of similar construction as what is being proposed for the GAC facility at Crozet WTP.

5. <u>Moores Creek AWRRF Roof Replacements</u>

Design Engineer:	Hazen and Sawyer
Construction Contractor	Triangle Roofing Services, Inc.
Construction Start:	March 2018
Percent Complete	0%
Base Construction Contract + Change Orders to Date = Current Value:	$818,000
Expected Completion:	September 2018
Total Capital Project Budget:	$1,264,000

<u>Current Status</u>:

Construction has been deferred until March 2018 to mitigate safety hazards associated with re-roofing during the winter months. Hazen and Sawyer is reviewing contractor submittals.

<u>History:</u>

Construction bids were received on September 7, 2017 to replace the metal roof on eight buildings and award of the project was approved by the Board at the September Board Meeting. A Notice of Award was provided to Triangle Roofing Services, Inc. on October 10, 2017. Final Contract Documents have been executed.

The majority of the buildings at the Moores Creek Advanced Water Resource Recovery Facility were constructed in 1981 and 1982 during a major expansion of the existing treatment plant. All buildings constructed at that time were built with a metal roof system. In 2014, deficiencies were identified in the roof at the Administration Building and the roof was replaced. The materials of the original roof at the Administration Building are the same as the roof material on the other buildings. Likewise, many of the buildings have started to experience leaks and structural deficiencies. As a result, the purpose of this

project is to replace the roof systems at the following buildings at the Moores Creek AWRRF: Blower Building, Moores Creek Pump Station, Sludge Pump Station No. 2, Maintenance Building 1, and Maintenance Building 2. Following additional review of the conditions of various buildings located at the Moores Creek AWRRF, this project also now includes replacement of the roof systems Sludge Pumping Building, the Primary Pump Building, and the Effluent Pump Building.

In December 2016, the Board of Directors authorized staff to enter into a work authorization with Hazen and Sawyer to design bidding documents to replace the identified roofs at Moores Creek AWRRF. A kick-off meeting was held with plant operations and maintenance staff; asbestos testing was performed to determine impacts during demolition activities; and design is ongoing. An application was submitted to the Albemarle County Architectural Review Board and approval has been obtained.

6. <u>Sugar Hollow to Ragged Mountain Reservoir Transfer Flow Meter</u>

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2017
Project Status:	100% Design Complete
Construction Contractor:	G.L. Howard
Construction Start:	July 2018
Completion:	September 2018
Total Capital Project Budget:	$350,000

<u>Current Status</u>:

This project will require the Sugar Hollow to Ragged Mt. Reservoir transfer line to be out of service and unavailable for approximately 4 weeks. Due to the current refill of Ragged Mountain Reservoir staff believes that losing the option to transfer water between the two reservoirs, even for a short time period, is not recommended. Therefore, we are delaying this project until reservoir storage capacities improve and transfers from Sugar Hollow are not needed.

<u>History:</u>

RWSA staff has worked with the design engineers to complete plan and profile design drawings for this project. The project will include installation of a flow meter on the 18-inch diameter Sugar Hollow Reservoir discharge pipe, and a control valve that can be operated remotely through the Observatory WTP SCADA system. The control valve will modulate the amount of flow being transferred between the two reservoirs, the flow meter will record data, and staff will be able to remotely monitor the data through the SCADA system. Additional work has been added to this project including replacement of an existing, original gate valve at the site, demolition of two existing small utility structures that have not been used in many years, demolition of the existing Gatekeeper's House, and a separate control valve vault that will optimize the accuracy of the new flow meter by creating adequate separation distance between the meter and modulating control valve. The structures to be demolished and removed have been inspected and tested for asbestos containing materials and lead based paint. There will be some special abatement work

required, and the contractor will have to include these costs in their estimate.

After initial cost estimating discussions with the contractor and RWSA staff, it was found that the current project budget is not enough to complete all of the identified work aspects. The Capital Improvement Program budget will likely have to be increased in order to perform all the work in one project.

7. Piney Mountain Tank Rehabilitation

Design Engineer:	Johnson, Mirmiran & Thompson (JMT)
Project Start:	September 2017
Project Status:	Notice of Award Issued
Construction Contractor:	Utility Service Co, Inc.
Construction Start:	April 2018
Completion:	October 2018
Total Capital Project Budget:	$500,000

Current Status:

The project was advertised for bid on November 28, 2017 and bids were opened on January 9, 2018. At its January meeting, the RWSA Board of Directors approved staff's recommendation of award to Utility Service Co., Inc., the apparent low bidder on the project. A Notice of Award has been issued and construction is expected to start in April of 2018.

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.

8. Interceptor Sewer and Manhole Repair

Design Engineer:	Frazier Engineering
Project Start:	July 2017
Project Status:	5% Construction Complete
Construction Start:	November 2017
Completion:	2020
Total Capital Project Budget:	$1,962,389

Current Status:

Award of the 2017 Sanitary Sewer Rehabilitation and Repair Contract to IPR Northeast was approved by the Board at the October Board Meeting and a Notice of Award has been provided. Contract Documents have been formally executed and a preconstruction meeting was recently held with the contractor. Frazier Engineering continues to conduct condition assessment activities and has completed a preliminary review of previous CCTV results. Manhole inspections on various interceptors has begun and is anticipated to be complete by the end of February. The initial work authorization with the contractor will focus on additional CCTV investigations and will be followed up by rehabilitation recommendations from Frazier Engineering based on the CCTV results and manhole inspections.

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.

9. 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	$100,000
2017-04	Crozet Water Main Repair – 5068 Three Notch'd Road	$25,000
2018-01	Rivanna Interceptor – RVI-MH-32 Erosion Repair	$25,000

- 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 will be contacted in order to assist with this repair with the intent of addressing the issue starting in February.

- Crozet Water Main Repair – 5068 Three Notch'd Road

  A potential leak was identified near the 12-inch Crozet Water Main based on water collecting in an adjacent ditch line. The water was tested and appears to be finished water and the potential leak is located near the termination point of a recent water main replacement project. RWSA coordinated with ACSA and VDOT since the repair

requires a street cut of Route 240 and assistance from ACSA should the line need to be cut. To begin the repair process, an exploratory excavation was performed by Faulconer Construction on January 24th to better determine the cause and location of the leak. A section of the water main was exposed and it was confirmed that the supposed leak was not coming from the RWSA main. During this process, the excavation area was dewatered and on the second day of the work, no additional finished water was found in the trench. As a result, it's possible that there is a small leak elsewhere that coincidently accumulated in this area or that a significant amount of finished water was purposely released from another location that happened to pool in this location. RWSA will coordinate with ACSA to determine if leak detection activities are necessary to better identify what the issue may be, but otherwise, urgent work on this section of water main is complete. Based on the exploratory excavation, temporary asphalt was used for initial restoration of Route 240 with final restoration and permanent asphalt to be installed per VDOT requirements pending weather conditions.

- Rivanna Interceptor – RVI-MH-32 Erosion Repair

  During routine inspections of the Rivanna Interceptor, the Maintenance Department observed some significant erosion around RVI-MH-32. The issue is being reviewed to determine the cause of the erosion and to develop a preferred method of repair.

10. Observatory WTP Expansion

Design Engineer:	Short Elliot Hendrickson, Inc. (SEH)
Project Start:	October 2017
Project Status:	Preliminary Engineering Report
Construction Start:	2019
Completion:	2022
Total Capital Project Budget:	$18,630,000

Current Status:

The PER will be completed by May 2018. Design documents will be completed by May 2019.

History:

This project will consider the design and costs for upgrading the plant systems to achieve a consistent 7 MGD plant capacity, as well as consider the costs involved with upgrading the plant to 10 and 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 contractor needs to address some minor punchlist items in order to reach final completion.

11. South Rivanna Water Treatment Plant Improvements

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	October 2017
Project Status:	Preliminary Engineering Report
Construction Start:	2019
Completion:	2022
Total Capital Project Budget:	$7,500,000

Current Status:

The PER will be completed by May 2018. Design documents will be completed by May 2019.

History:

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.

12. Crozet WTP Expansion

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	August 2016
Project Status:	35 % Design Complete
Construction Start:	September 2018
Completion:	December 2020
Total Capital Project Budget:	$7,000,000

Current Status:

Construction documents will be completed by June 2018. The consultant's draft preliminary design and opinion of probable cost for the plant expansion were submitted and reviewed in January 2018.

History:

SEH has completed the Preliminary Engineering Report (PER) for this project, and is in the process of addressing comments from the Virginia Department of Health. Some preliminary watershed modeling and data collection was also performed as part of this

work. In addition, raw water jar testing has been performed to finalize the type of treatment parameters necessary for the upgrade work, and the testing results were incorporated into the PER. The proposed new work will provide needed updates to equipment, as well as a plant capacity upgrade to approximately 1.5 - 2.0 million gallons per day.

A new Work Authorization with SEH was executed to perform preliminary and final design documents, as well as construction administration services.

This project was created to analyze the feasibility of increasing the supply capacity of the existing Crozet WTP by modernizing plant systems. The goal is to not drastically increase the plant footprint in regards to existing filter plant, flocculation tanks, and sedimentation basins. By modernizing the outdated equipment within these treatment systems, the plant discharge capacity can be improved by approximately 50-100%. The project currently only includes study and design funding.

13. <u>Interconnection Lower Sugar Hollow and Ragged Mountain Raw Water Mains</u>

Design Engineer:	Dewberry Engineers
Project Start:	October 2017
Project Status:	10% Design
Construction Start:	May 2018
Completion:	October 2018
Total Capital Project Budget:	$225,000

<u>Current Status</u>:

A Work Authorization with Dewberry was executed to evaluate several alignment options and to identify the most suitable alignment. A separate Work Authorization will be executed to prepare final design documents after the alignment is selected.

<u>History</u>:

The two 18-inch water mains that supply water from Ragged Mountain Reservoir to Observatory Water Treatment Plant are 71 and 109 years old. The mains are interconnected at the top of the Ragged Mountain Dam, with one serving the 1920's Royal Pump Station and the other serving the more modern Stadium Road Pump Station. Both pump stations provide raw water to the Observatory Water Treatment Plant. This project will serve to interconnect the two raw water lines near the Route 29/Fontaine Avenue Intersection, which will provide improved reliability and operability in the event of raw water line breaks.

14. Route 29 Pump Station and Pipeline

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2018
Project Status:	Update Existing Design Report
Construction Start:	2019
Completion:	2021
Total Capital Project Budget:	$2,300,000

Current Status:

Work is currently underway to review and update the 2008 preliminary engineering report, including analysis of current water demand projections. Portions of the work have already been completed, including a temporary bypass pumping location near Kohl's department store, and the abandonment of existing pipeline in the median of Rte. 29 from the south end of Hollymead Town Center to Timberwood Boulevard. Other portions of the project have been completed including the Pump Station Site Acquisition and new 24-inch pipeline installed as part of the Rt. 29 VDOT Betterment project. Once the report update has been completed, the preliminary design of the remaining pipeline and the pump station will be started. Preliminary and final design along with construction funding will be included in the 2019-2023 CIP.

History:

This project will include construction of a 2 mgd drinking water pump station and two 1,000,000 gallon ground water storage tanks, as well as completion of a 24-inch diameter pipeline along the Meeting Street corridor. This project has been identified as a need in the County Comprehensive Plan and RWSA Capital Improvement Plan.
A report and technical memorandum on this project was previously completed in 2008. The future pump station and tanks, along with a new transmission pipeline between the pump station and the South Rivanna Water Treatment Plant, will provide an interconnection between the areas presently served by the South Rivanna WTP and the North Rivanna WTP. The interconnection is needed for redundancy of service in the event of an emergency, during drought conditions, and to adequately serve the growing needs of the Rt. 29 area generally north of Hollymead Town Center and Airport Road.

At the May 2017 Board Meeting, a 1.6-acre parcel of land was acquired through condemnation proceedings which included a public hearing. The site location was identified in a prior project report from 2008 (completed by Michael Baker), and is also identified in the current County Comprehensive Plan. The land value of the parcel was estimated through a March 16, 2017 Property Appraisal completed by CRES, Inc., a professional real estate and appraiser company. After negotiations with the current landowner to acquire the property were unsuccessful, and final offers were refused, the land was acquired after a Certificate of Take was recorded. This property will be utilized for future construction of a new drinking water pump station and ground storage tanks.

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

Design Engineer:	Michael Baker International (Baker)
Project Start:	October 2017
Project Status:	15 % Complete
Completion:	2021
Total Capital Project Budget:	$2,295,000

Current Status:

The PER will be completed by August 2018. Preliminary design work began in November 2017. Property owners will be contacted in May 2018 to gain permission to begin topographical surveying. The consultant is in the process of data collection,and review, hydraulic modeling, and field evaluation of alignment options for the Preliminary Engineering Report.

History:

RWSA has negotiated a scope and fee with Michael Baker International for the routing study, preliminary design, plat creation and easement acquisition process.
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.

16. Avon to Pantops Water Main

Design Engineer:	Michael Baker International (Baker)
Project Start:	August 2017
Project Status:	23% Preliminary Design Complete
Construction Start:	2020
Completion:	2022
Total Capital Project Budget:	$13,000,000

Current Status:

Route alignment determination, hydraulic modeling, and preliminary design are underway. A hydraulic modeling workshop is anticipated in late February 2018.

History:

An engineering contract has been negotiated and was approved by the Board of Directors in July 2017.

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.

17. <u>Crozet Interceptor Pump Stations Bypass and Isolation Valves</u>

Design Engineer:	Johnson, Mirmiran & Thompson (JMT)
Project Start:	August 2017
Project Status:	90% Design Complete
Construction Start:	May 2018
Expected Completion Date:	September 2018
Total Capital Project Budget:	$720,000

<u>Current Status</u>:

A work authorization with JMT was finalized to provide design, bidding and construction administration related services for this project. Design services began in August. Bidding is anticipated for March with a contract award at the April Board Meeting.

<u>History:</u>

There are four pump stations located in the Crozet Interceptor system that help convey flow from the Crozet Area into the Morey Creek Interceptor and the rest of the urban collection system. These pump stations were constructed in the 1980s and provided no means of isolating each pump station from its downstream force main. This condition complicates maintenance-related activities as each time a pump station component needs to be serviced or replaced, the volume of wastewater within the force main must be addressed at the pump station as it drains back to the wet well. In addition, the Crozet Interceptor pump stations also have limited storage within their wet wells, and any reduction of down time as a result of dealing with the impacts of no isolation valves, decreases the amount of time available to work on the equipment. In order to alleviate this condition, temporary valves called "line stops" will be temporarily installed on the force mains downstream of the pump stations to allow enough time for a new isolation valve to be installed. Isolation valves will be located in order to provide the maximum amount of down time available based on current system conditions for future pump station maintenance activities. While line stops are in place, bypass connections will also be provided at each pump station. These will allow staff the option of bringing in bypass pumps for more significant pump station shutdowns required for maintenance activities or repairs for which the isolation valves alone cannot account.

18. Crozet Flow Equalization Tank

Design Engineer:	Greeley and Hansen (G&H)
Project Start:	October 2016
Project Status:	Siting Study 100% Complete
Construction Start:	2019
Completion:	2020
Total Capital Project Budget:	$3,300,000

Current Status:

G&H has submitted a work authorization to continue the project through construction which was approved by the Board during the December meeting. The work authorization is being finalized and prepared for signatures with project kick-off anticipated for end of February.

History:

G&H has completed a report documenting potential tank locations within the drainage basin. A meeting was held with ACSA on October 9, 2017 and a tank location was agreed upon for additional investigation work and preliminary engineering activities.

A Work Authorization with G&H to perform a siting study for the flow equalization tank project was issued in October 2016 and with completion expected in 2017. These services include the sizing of the flow equalization tank and the pumping station based on information from the updated model, a preliminary site selection process based on the sizing requirements identified in order to narrow down the number of sites, and an alternatives analysis performed for each selected site to evaluate the feasibility of locating the facility. This is the first step in the site selection process and will be followed by a more in depth analysis of the potential tank locations and the eventual selection of a final site. As part of the first task, pump tests are being performed at all four Crozet Pump Stations to confirm existing capacities.

Rehabilitation work in the RWSA and Albemarle County Service Authority sewer systems is on-going to meet inflow and infiltration (I&I) reduction goals in the Crozet Interceptor sewer basin based on the flow metering and modeling results of the Comprehensive Sanitary Sewer Model and Study conducted in 2006. The intent was to reduce I&I in the system to meet the 2020 two-year storm flow targets.

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.

19. Reservoir Management Plan

Consultant:	DiNatale Water Consultants
Project Start:	November 2014
Project Status:	90% Complete
Completion:	April 2018
Total Contract Cost:	$336,475

Current Status:

The second year of water quality monitoring for this project is in progress. An intensive week of sampling took place in June. A project team meeting was held on June 16 to discuss the results. Sediment sampling at Beaver Creek Reservoir and South Fork Rivanna Reservoir took place in July. The final report with recommendations will be presented to the Board in April 2018.

History:

The Phase 1 report is complete, along with a related public information document, and both have been distributed to the Board and are also available for public review at www.rivanna.org/reservoir-study. In June 2014 staff received proposals for services to develop a Reservoir Management Plan to include all five reservoirs that RWSA manages for water supply (Beaver Creek, Ragged Mountain, South Fork Rivanna, Sugar Hollow, and Totier Creek). A selection committee represented by staff from RWSA, ACSA, and the City reviewed proposals and selected two firms for interviews. DiNatale Water Consultants was awarded this contract in the amount of the $176,334, and the contract was executed in November 2014. The contract was extended in 2016, with $160,141 being approved by the Board in August 2016 for Phase 2, for a total approved contract amount of $336,475.

20. 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
Total Capital Project Budget:	$1,000,000

Current Status:

Work associated with the development of a consultation document to be provided to local regulatory agencies has begun with the intent of hosting a meeting with agencies to discuss the decommissioning process in March 2018.

History:

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.
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 and has been completely offline for the past four years. 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.

21. Drinking Water Infrastructure Plan – Crozet Area

Design Engineer:	Hazen and Sawyer
Project Start:	June 2017
Project Status:	40% Complete
Completion:	Fall 2018
Total Capital Project Budget:	$300,000

Current Status:

Staff met with DEQ in November to review preliminary water demand, supply and downstream release findings. At DEQ's suggestion, staff will provide a pre-application project overview to all related State and Federal Agencies in March. Staff also plans to

provide an update to the Crozet community in June 2018.

History:

A progress meeting was completed in October, and additional meetings with the County of Albemarle Planning Department and the VADEQ are scheduled for November.

Hazen is currently reviewing RWSA and ACSA historical average and peak day water demand data, as well as County zoning and land use data, to develop water demand forecasts. RWSA staff has provided Hazen with existing data, reports and service area history to start their analysis. A design team kick-off meeting has been held, and additional meetings with county staff and the VA DEQ will be scheduled this Fall, when future demand analyses have been completed. Field investigation of hydraulic data is being scheduled, however, hydrant flow testing will be suspended until the current Drought Watch restrictions have been lifted.
Preliminary meetings with an Albemarle County Board member and Community Development representatives were held in May. A meeting with the Crozet Community Advisory Committee was held on June 21, 2017.

This project was previously entitled the Crozet Water Master Plan, and is identified in the current Capital Improvement Plan as such. The project name has been changed to avoid confusion with the separate Crozet Master Plan document. The Crozet water service area continues to see expanded growth in the average and maximum day water demands. Discussion with county and ACSA officials have confirmed recent growth trends that water use is increasing in Crozet. While some projects ae currently underway to address the immediate need in Crozet, this project will develop a comprehensive mid and long range plan (50 years) for the entire water system including; raw water supply, raw water pumping and conveyance, finished water treatment, finished water pumping, and finished water distribution and storage. Future water demand projections will be an important part of this project. At the June 27, 2017 Board Meeting, it was approved to award this planning project to the consulting engineering firm of Hazen and Sawyer. An Engineering Services Agreement was executed on July 5, 2017, as well as Work Authorization No. 1 for the fee of $269,120.

695 MOORES CREEK LANE
CHARLOTTESVILLE, VA 22902-9016
TEL: 434.977.2970
FAX: 434.293.8858
WWW.RIVANNA.ORG

MEMORANDUM

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

FROM: **DAVE TUNGATE, WATER MANAGER**
TIMOTHY CASTILLO, WASTEWATER MANAGER

REVIEWED BY: **BILL MAWYER, EXECUTIVE DIRECTOR**
RICHARD GULLICK, DIRECTOR OF OPERATIONS

SUBJECT: **OPERATIONS REPORT FOR JANUARY 2018**

DATE: **February 27, 2018**

WATER OPERATIONS:

The average daily/monthly total water distributed for January 2018 was as follows:

Water Treatment Plant	***Average Daily Production (MGD)***	***Total Monthly Production (MG)***	***Maximum Daily Production in the Month (MGD)***
Observatory	0.88	27.36	---
South Rivanna	6.66	206.50	---
North Rivanna	0.37	11.37	---
Urban Total	7.91	245.23	9.00 (1/15/18)
Crozet	0.49	15.23	0.726 (1/31/18)
Scottsville	0.045	1.40	0.077 (1/05/18)
RWSA Total	8.44	261.86	---

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

Status of Reservoirs (as of February 12, 2018):

- Urban Reservoirs: 91.84 % of Total Useable Capacity
- Ragged Mountain Reservoir is –4.27 feet (85.2%)
- Sugar Hollow Reservoir is full (100%)
- South Rivanna Reservoir is full (100%)
- Beaver Creek Reservoir is full (100%)
- Totier Creek Reservoir is full (100%)

WASTEWATER OPERATIONS:

All RWSA Water Resource Recovery Facilities (WRRFs) were in regulatory compliance with their effluent limitations during the month of January 2018. Performance of the WRRFs in January was as follows compared to the respective VADEQ 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	7.72	0.8	10	1.0	22	0.28	7.7
Glenmore	0.107	1.2	15	4.2	30	0.04	NL
Scottsville	0.044	7.2	25	15.8	30	1.17	NL
Stone Robinson	0.001	NR	30	NR	30	NR	NL

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

Nutrient discharges at the Moores Creek AWRRF were as follows for January 2018:

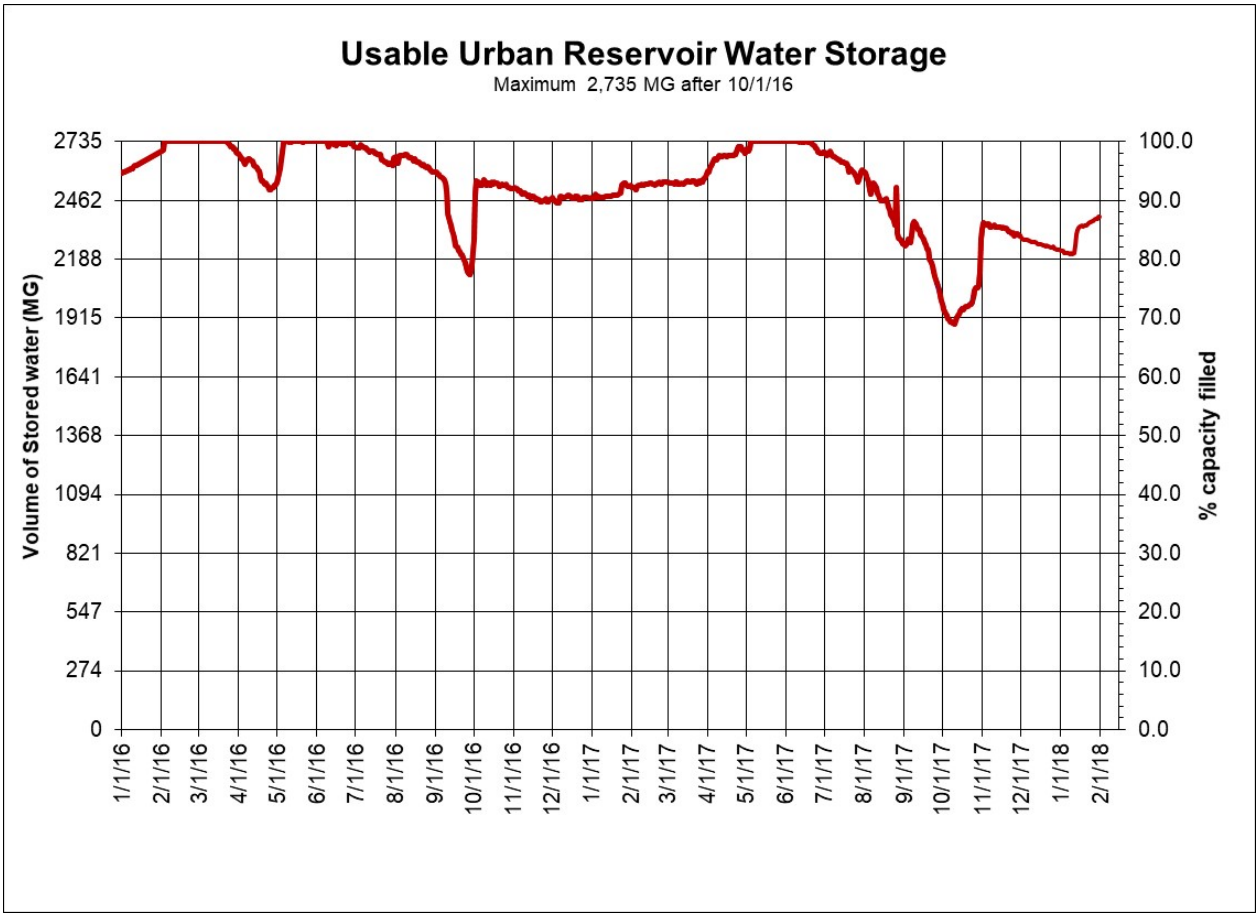
State Annual Allocation (lb./yr.)		*Average Monthly Allocation (lb./mo.)**	*Moores Creek Discharge (lb./mo.)*	*Performance as % of Average Allocation**
Nitrogen	282,994	23,583	11,811	50%
Phosphorous	18,525	1,544	307	20%

*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
- Moores Creek AWRRF BOD and TSS Loadings to Receiving Stream
- Moores Creek AWRRF Effluent Monthly Average Ammonia Concentrations
- Moores Creek AWRRF Total Phosphorus Discharged
- Moores Creek AWRRF Total Nitrogen Discharged


Usable Urban Reservoir Water Storage
Maximum 2,735 MG after 10/1/16
Volume of Stored water (MG)
% capacity filled
2735
2462
2188
1915
1641
1368
1094
821
547
274
0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1/1/16
2/1/16
3/1/16
4/1/16
5/1/16
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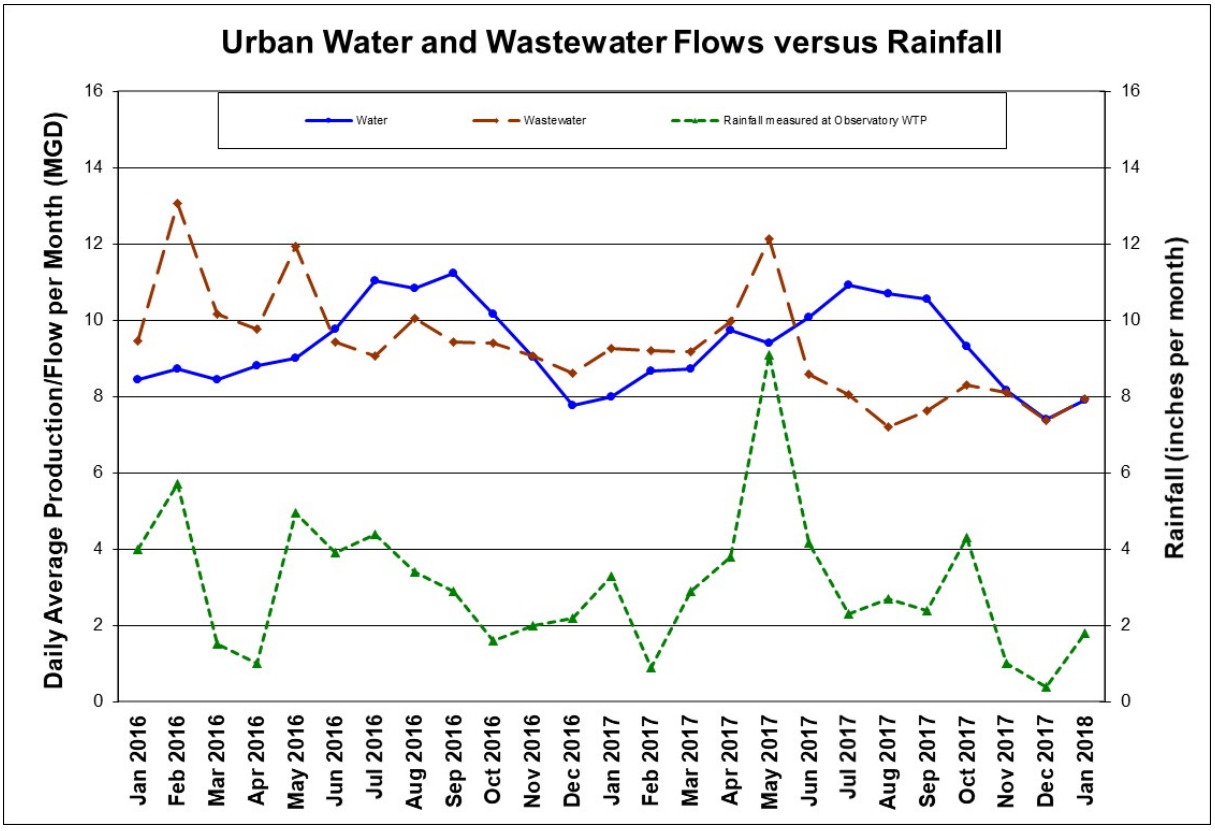
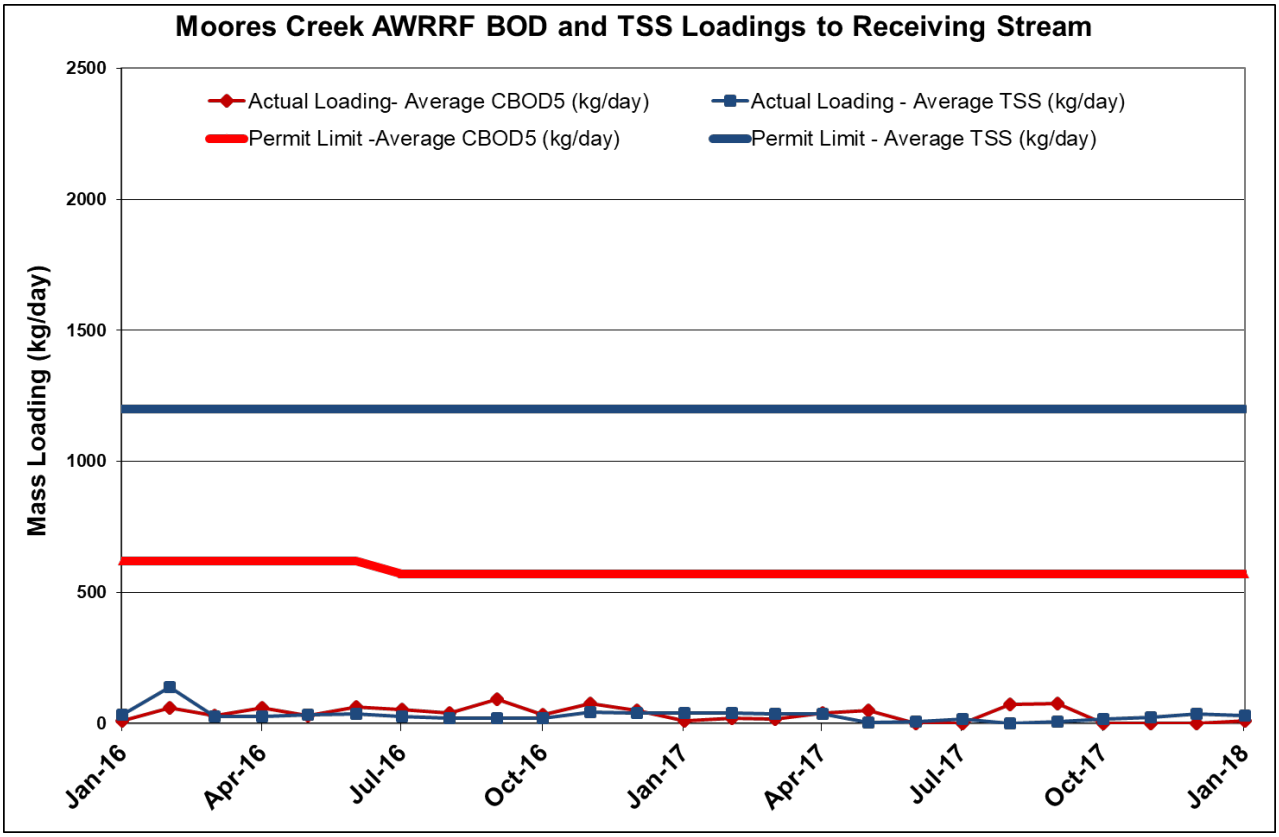
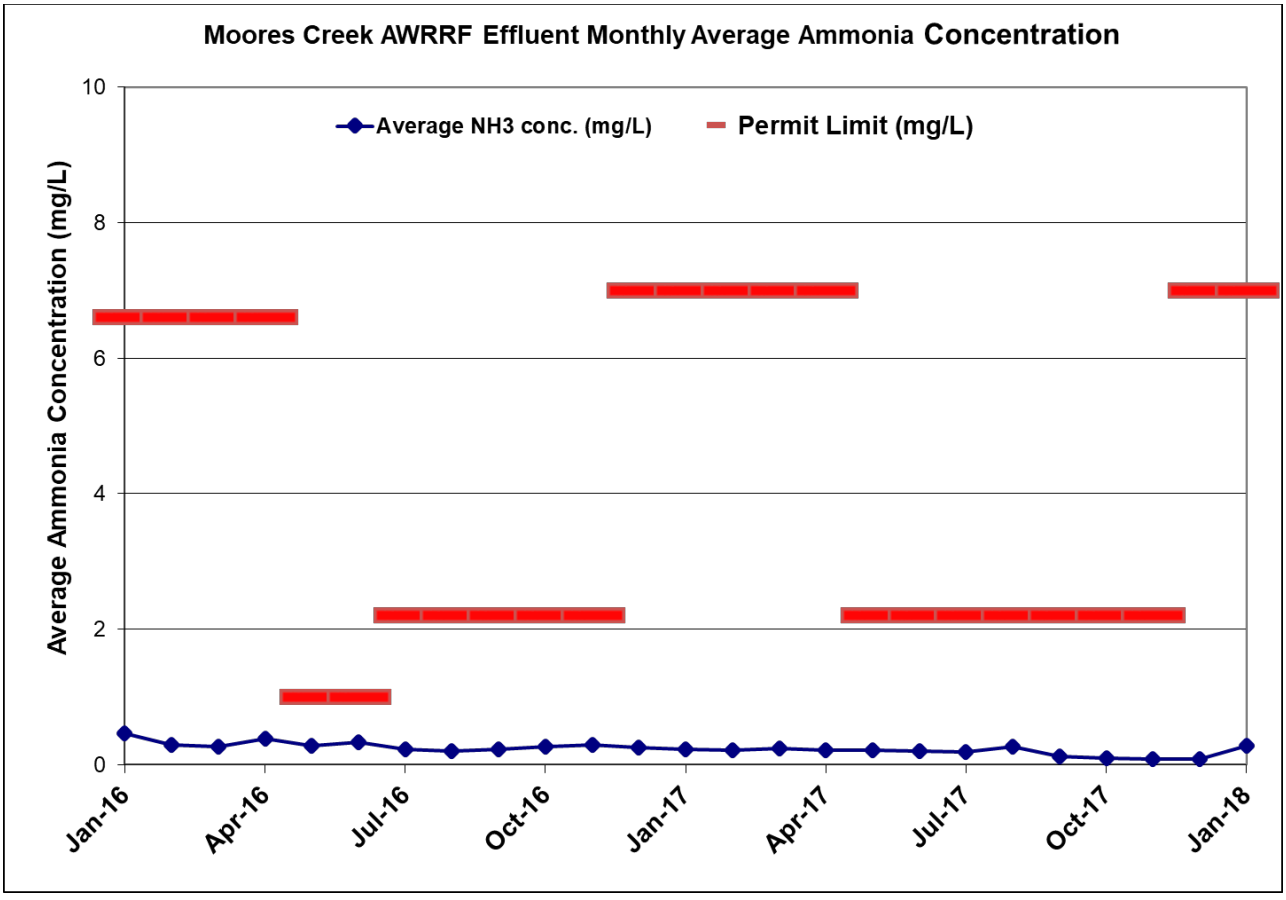
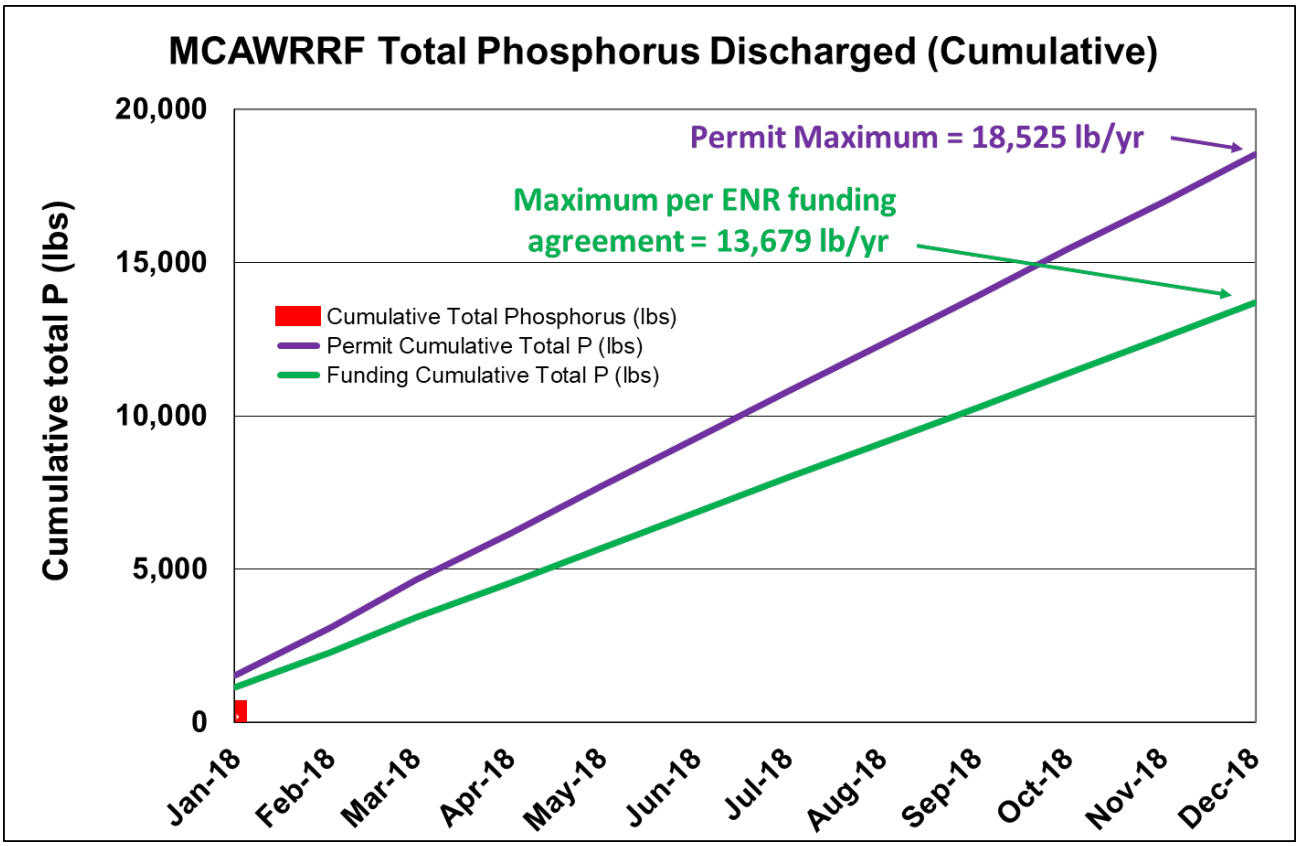
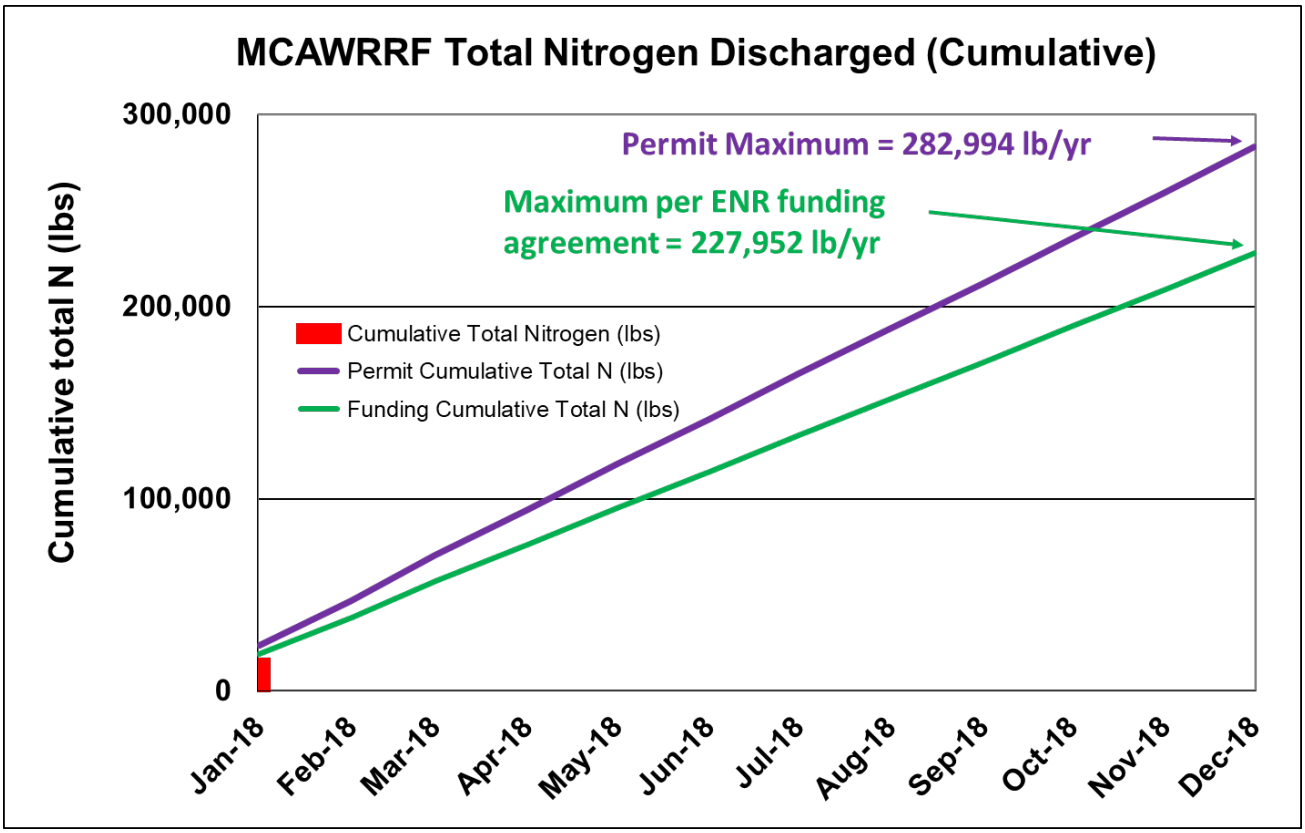

Urban Water and Wastewater Flows versus Rainfall
Water
Wastewater
Rainfall measured at Observatory WTP
Daily Average Production/Flow per Month (MGD)
Rainfall (inches per month)
16
14
12
10
8
6
4
2
0
Jan 2016
Feb 2016
Mar 2016
Apr 2016
May 2016
Jun 2016
Jul 2016
Aug 2016
Sep 2016
Oct 2016
Nov 2016
Dec 2016
Jan 2017
Feb 2017
Mar 2017
Apr 2017
May 2017
Jun 2017
Jul 2017
Aug 2017
Sep 2017
Oct 2017
Nov 2017
Dec 2017
Jan 2018


Moores Creek AWRRF BOD and TSS Loadings to Receiving Stream
Actual Loading- Average CBOD5 (kg/day)
Actual Loading - Average TSS (kg/day)
Permit Limit -Average CBOD5 (kg/day)
Permit Limit - Average TSS (kg/day)
Mass Loading (kg/day)
2500
2000
1500
1000
500
0
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18


Moores Creek AWRRF Effluent Monthly Average Ammonia Concentration
Average NH3 conc. (mg/L)
Permit Limit (mg/L)
Average Ammonia Concentration (mg/L)
10
8
6
4
2
0
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18


MCAWRRF Total Phosphorus Discharged (Cumulative)
Cumulative total P (lbs)
20,000
15,000
10,000
5,000
0
Permit Maximum = 18,525 lb/yr
Maximum per ENR funding agreement = 13,679 lb/yr
Cumulative Total Phosphorus (lbs)
Permit Cumulative Total P (lbs)
Funding Cumulative Total P (lbs)
Jan-18
Feb-18
Mar-18
Apr-18
May-18
Jun-18
Jul-18
Aug-18
Sep-18
Oct-18
Nov-18
Dec-18


MCAWRRF Total Nitrogen Discharged (Cumulative)
Cumulative total N (lbs)
300,000
200,000
100,000
0
Permit Maximum = 282,994 lb/yr
Maximum per ENR funding agreement = 227,952 lb/yr
Cumulative Total Nitrogen (lbs)
Permit Cumulative Total N (lbs)
Funding Cumulative Total N (lbs)
Jan-18
Feb-18
Mar-18
Apr-18
May-18
Jun-18
Jul-18
Aug-18
Sep-18
Oct-18
Nov-18
Dec-18

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MEMORANDUM

TO: **RIVANNA WATER & SEWER AUTHORITY;**
RIVANNA SOLID WASTE AUTHORITY
BOARD OF DIRECTORS

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

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

SUBJECT: **PURCHASING MANUAL AND POLICIES UPDATE**

DATE: **FEBRURARY 27, 2018**

The Authorities last updated the Purchasing Manual in October 2015, as adopted by the Boards. Since that time, the Virginia Public Procurment Act (VPPA) has had several changes that need to be incorporated into the Purchasing Manual of both Authorities.

There were no significant changes made to the purchasing thresholds already stated in the policy manual since the last adoption. The most significant changes included:

- elevating the standing and procedures of Competitive Negotiation (Section VIII) to be the same as Competitive Sealed Bidding (Section XI) for goods and other than professional services. Previously, Competitive Sealed Bidding was the preferred method and Competitive Negotiations could only be used in special circumstances. Therefore, this change and the process for executing this procedure as promulgated by the VPPA were incorporated into the manual/policy.

- adding a requirement for many types of procurements to solicit proposals or bids from businesses certified by the Virginia Department of Small Business and Supplier Diversity as a small business, a women-owned business, a minority-owned business, a service disabled veteran-owned business and/or a micro business.

Several other minor changes were made as needed from the amended code, changing or adding Code of Virginia sections to match the current code, and minor clarifications in wording since the last adoption. A red-lined version is included and attached with this memo for your review.

Board Action Requested:

It is requested that the Board of Directors approve the updated Purchasing Manual (as shown in the attached red-lined version).

PURCHASING MANUAL

RIVANNA WATER & SEWER AUTHORITY
AND
RIVANNA SOLID WASTE AUTHORITY

Revised and adopted ~~October 27~~ draft - February 27 , 201~~5~~8

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I. INTRODUCTION

This manual has been prepared as a reference and guide for the purchasing policies and procedures adopted by the Rivanna Water & Sewer Authority and the Rivanna Solid Waste Authority (together "Authority"). This Manual is designed to guide all Authority employees involved in some way in the purchasing function in implementing the Authority's procurement regulations in the acquisition of all goods and services, including construction services to make the policies and procedures clearly understood resulting in a more effective and efficient system.

The requirements of this manual are intended to assure fair and ethical procurement practices for the cost-effective acquisition of all goods and services, including construction services, and to promote good, continuous relations with suppliers. The Manual is also intended to assure compliance with the Virginia Public Procurement Act, as amended (Virginia Code § 2.2-4300 et seq.) and other applicable law. By buying competitively the Authority will obtain maximum value for public funds spent. Nothing in this Manual and no deviation from its guidance by Authority staff is intended to nor shall create rights in any third person, including but not limited to Authority suppliers, contractors, service providers, bidders or proposers.

No person shall purchase or contract for any goods, services, insurance or construction except as provided by this Manual. The Authority shall not be bound by any purchase order or contract made contrary to these procedures. Any person responsible for such purchase shall be held personally liable for such purchase, and, if already paid for out of Authority funds, the amount may be recovered in the name of the Authority.

The manual shall be subject to the requirements of the Virginia Public Procurement Act as amended. This Manual was adopted with all provisions effective as of July 1, 2013 (Subsequently revised and adopted – October 27, 2015, February 27, 2018) . To the extent any provision in this Manual is deemed inconsistent with the Code of Virginia, Title 2.2, Chapter 43, the Virginia Public Procurement Act, whether due to amendment of that Chapter or otherwise, then the provisions of that Chapter shall control as to such inconsistency.

II. PURCHASING STAFF ORGANIZATION

The Executive Director is authorized to enter into, administer, terminate and otherwise manage contracts subject to any approval thresholds that may be established by the Board. The Executive Director, or his designee, shall have the sole authority to authorize, in writing:

a) extension of professional services contracts per the renewals authorized in the original terms and conditions of the contract and within the limitations specified in law; and
b) use of competitive negotiation for ~~goods,~~ construction ~~and non-professional~~ services as provided by law.

The Executive Director has delegated to the Director of Finance/Administration the role of Purchasing Agent. The Purchasing Agent:

a) manages the purchasing function, with certain exceptions~~*~~ [HAH1]related to capital project contracts as noted below*~~ and to the hiring of consultants~~[HAH2];
b) helps set policy; and
c) supervises all procedures including interpretation of policies and procedures;

The Purchasing Agent is responsible for the

a) procurement of insurance, goods, ~~and~~ non-professional services, and non-capital construction services*;
b) general supervision of all inventories of goods held by the Authority;
c) the development and enforcement of specifications;
d) the disposal of surplus property; and
e) the enforcement of these policies and procedures; and
f) ensuring that this manual maintains conformance with the Code of Virginia and other applicable law and with efficient Authority operations.

The Purchasing Agent has delegated certain authority and responsibility to the Buyer and, under the Small Purchase Procedure, to the Managers and Directors. The Purchasing Agent monitors all purchasing activity, including that managed by the Executive Director, for compliance with these rules and regulations and applicable laws.

The Accounts Payable/Purchasing Technician is designated the Authority's Buyer and is responsible for:

a) following procedures
b) the selection of vendors and ordering (with certain exceptions noted below*);
c) follow through;
d) record keeping; and
e) verification of coding of purchases.

The Buyer is under the regular supervision of the Purchasing Agent and delegates Buyer functions to staff as appropriate.

*Exception: The hiring of legal and other professional services ~~consultant services~~ and the procuring of contracts for construction or capital related projects are managed by the Executive Director with the technical assistance of the Purchasing Agent.

III. POLICY

Purchasing staff has the responsibility to purchase or contract for all insurance, materials, equipment, and non-professional services ~~(with certain exceptions)~~. The Authority strives to achieve the goal of securing the best value in acquiring materials or services through open and fair competition among vendors. This Manual is intended to assist responsible Authority staff to ensure that all procurements:

1. Are made in an ethical manner that is impartial and above reproach, with preferential treatment for none.
2. Are made efficiently and economically through open and fair competition among vendors.
3. Ensure, at a minimum, that:
    a. Solicitations and contracts are properly advertised, posted and issued.
    b. The methods of contractor selection and contract type are appropriate to the procurement and represent the Authority's best interest.
    c. Bonding and security are obtained when appropriate.
    d. Contractors have the necessary insurance to protect the Authority's interests.
    e. Liquidated damages, when appropriate, are included in contracts.
    f. Contractors perform in accordance with the terms and conditions of their contracts.
    g. Payments are made only for goods and services, including construction services, received and authorized in the contract.
4. Are made only to contractors selected in accordance with the stated evaluation criteria.
5. Are made without restrictive specifications that limit or inhibit full and open competition.
6. Are made on a sole-source or limited competition basis only after justification in writing.
7. Include reasonable efforts to increase the opportunity for participation by business enterprises eligible under the Authority's Disadvantaged Business Enterprise ~~business development p~~Program.
8. Are approved at the proper level.
9. Have approved funding.

~~*Exception: The hiring of legal and consultant services and the procuring of contracts for capital projects are managed by the Executive Director with the technical assistance of the Purchasing Agent.~~[HAH3]

IV. ETHICS

The Authority recognizes its special responsibilities under the Code of Virginia and incorporates Article Six, "Ethics in Public Contracting," of the Virginia Public Procurement Act, Article 6, Virginia Code § 2.2-4367 et seq., Virginia State and Local Government Conflict of Interests Act, Va. Code §2.2-3100 et seq., Virginia Governmental Frauds Act §18.2-498.1 et seq., and Articles 2 (§ 18.2-438 et seq.) and 3 (§ 18.2-446 et seq.) of Chapter 10 of Title 18.2 into its Policies and Procedures. The Standards of Conduct section of the Authority Personnel Manual are also part of the behavior requirements.

The following rules should guide employees involved in the procurement process:

1) All Authority employees having official responsibility in the procurement process are subject to and should become familiar with its provisions.
2) Definitions:
    a. “Official responsibility” means administrative or operating authority, whether intermediate or final, to initiate, approve, disapprove or otherwise affect a procurement transaction, or any claim resulting therefrom.
    b. “Procurement transaction” means all functions that pertain to the obtaining of any goods, services or construction, including description of requirements, selection and solicitation of sources, preparation and award of contract and all phases of contract administration.
    c. "Immediate family" shall mean a spouse, children, parents, brothers and sisters, and any other person living in the same household as the employee.
    d. "Public employee" shall mean any person employed by a public body, including elected officials or appointed members of governing bodies.
3) No Authority employee having official responsibility for a procurement transaction shall participate in that transaction on behalf of the Authority when that employee knows that:
    a. The employee is contemporaneously employed by a bidder, offeror or contractor involved in the procurement transaction;
    b. The employee, the employee's partner, or any member of the employee's immediate family holds a position with a bidder, offeror or contractor such as an officer, director, trustee, partner or the like, or is employed in a capacity involving personal and substantial participation in the procurement transaction, or owns or controls an interest of more than five (5) percent;
    c. The employee, the employee's partner or any member of the employee's immediate family has a pecuniary interest arising from the procurement transaction; or
    d. The employee, the employee's partner or any member of the employee's immediate family is negotiating, or has an arrangement concerning, prospective employment with a bidder, offeror or contractor.
4) Vendor contacts should be limited to the purpose of obtaining information related to an actual Authority purchase.
5) No Authority employee will accept any gifts, meals, or free trips prior to the awarding of a purchase contract or subsequent to award of a contract except as may be provided for as a part of the contract.
    a. Should any bid, proposal or contract require travel outside the Authority’s service area, all travel related expenses shall have been provided for as part of the contract or they shall be paid for by the Authority.
    b. This section shall not prohibit employees from accepting items of nominal value which are generally available and are primarily intended for advertising. The Authority has determined nominal value to be $25.00.
6) No Authority employee or former Authority employee having official responsibility for procurement transactions shall accept employment with any bidder, offeror or contractor

with whom the employee or former employee dealt in an official capacity concerning procurement transactions for a period of one (1) year from the cessation of employment by the Authority unless the employee, or former employee, provides written notification to the Executive Director prior to commencement of employment by that bidder, offeror or contractor

7) No Authority employee may contract to provide goods or services to the Authority.
8) No employee shall have a financial interest in the purchase of Authority surplus material and equipment in excess of $500 or purchase such surplus material unless allowed by law.

GIFTS

The following rules should guide employees' acceptance of gifts related to services provided in the course of their job

1) Employees will not accept any personal gift, favor, service, money, business or professional opportunity, or anything of value which might reasonably be inferred as having the potential to influence the impartial discharge of duties, or as a reward for an official action
2) Gifts should be discouraged. If the gifts cannot be declined gracefully, and are of more than nominal value (see 5b above) the gifts shall be declared surplus property and addressed accordingly unless the gifts are consumables, e.g. cookies, in which they will be set out for all to consume. ~~the employee should donate them to charity~~. Employees should bear in mind that the donor of gifts, presents and favors may come to expect or seek preferential treatment. Therefore, the perception of an individual's action is as important as the monetary value of the gift.
3) Employees with procurement responsibilities will not accept gifts or money for services the Authority pays them ~~they are paid~~ to perform.
4) Favoritism, especially as a result of acceptance of a gift or favor, will not be tolerated. Employees will not give any special consideration, treatment or advantage to any vendor or citizen beyond that which is available to every other vendor or citizen.
5) Nothing contained herein prohibits employees from attending vendor-sponsored seminars or trade shows where they will benefit from receiving product information and learning of new techniques and product or service trends. Food, drinks and give-away items offered to all participants at such functions may be accepted by Authority employees attending.

V. AUTHORIZED METHODS OF PROCUREMENT AND THRESHOLDS

AUTHORIZED PURCHASE METHODS

a) Field Purchase (See below)
b) Small purchase (Section VII)
   a. Goods and services
   b. Professional services
c) Request for proposals
   a. Goods and services (Section VIII)
   b. Professional services (Section IX & X)
d) Invitation for bids (Competitive Sealed Bid) (Section XI)
e) Sole Source (Section XV)
f) Emergency (Section XVI)
g) Cooperative procurements (Section XVII)
h) Public Auction (See below)
i) Public-Private Partnership in Education and Infrastructure Act (PPEA) (See below)

THRESHOLDS – SMALL OR INFORMAL PURCHASES

Under $1,500 - Field Purchase, Small Purchaseds below $5,000

Small purchases under $1,500 are considered field purchases for operational needs by Directors and Managers (or as delegated) for time and convenience purposes. Field purchases are to be held to a minimum and all are subject to review by the Purchasing Agent. Only in unusual circumstances may $1,500.00 be exceeded.

Procedures for the purchase of goods and services from $1,500 to $5,000 will be prescribed by the Purchasing Agent or the Executive Director. The Purchasing Agent shall from time to time evaluate the use of field purchases and purchases below $5,000 to determine whether warehousing of spare parts or the like is advantageous. Single transactions under $5,000 do not require competition, though it's always advisable.

All Purchases over $5,000

All purchases over $5,000 must have a purchase order.

Goods, Non-professional Services and Construction

$5,000 to $29,999.99

Requires soliciting at least three (3) written or verbal quotes from valid sources. Include businesses, if available, from the annual listing provided by the Authorities which includes businesses certified by the Virginia Department of Small Business and Supplier Diversity that sell the products and services most commonly purchased by the Authorities. Requisition to be prepared and a tabulation of the quotes received should be forwarded to Purchasing where the documentation will be audited and, if approved, a purchase order will be prepared and mailed. Files are required for the annual audit. Requisitions without proper documentation may be returned. It is strongly recommended that all quotes over $5,000 be confirmed in writing.

$30,000 to $99,999.99

Requires soliciting at least four (4) written quotes from valid sources. No fewer than four (4) valid sources shall be solicited to submit written quotations for purchases between $30,000 and $99,999.99. Include businesses, if available, from the annual listing provided by the Authorities which includes businesses certified by the Virginia Department of Small Business and Supplier Diversity that sell the products and services most commonly purchased by the Authorities. ~~All solicitations between thirty thousand dollars $30,000 and 99,999 shall also include posting of a public notice on, at least, the Authority Procurements website.~~[SJJ6]

Professional Services

$5,000 - $59,999.99

Requires soliciting at least four (4) written quotes from valid sources. Include businesses, if available, from the annual listing provided by the Authorities which includes businesses certified by the Virginia Department of Small Business and Supplier Diversity that sell the products and services most commonly purchased by the Authorities. ~~.~~ Professional services are defined in the Glossary (Section XXVII). All other services are classified as non-professional. The VPPA provides the authority for local public bodies to~~–~~ develop procedures to solicit single or term contracts for professional services without requiring competitive negotiation, provided the aggregate or the sum of all phases is not expected to exceed $60,000 (refer to Small Purchase procedures for professional services Page 13).

THRESHOLDS – FORMAL P~~URCHASES~~ROCUREMENT PROCEDURES

Professional Services $60,000 and above

Requires a formal Request for Proposal.

Over $100,000 and above – Goods and Non-professional Services

All purchases for goods and non-professional services over $100,000 must have a formal procurement process, either a competitive sealed bid or~~, if approved by the Executive Director~~[SJJ7]~~,~~ competitive negotiation, unless exceptions apply.

OTHER PURCHASING METHODS

Public Auction

Upon a written determination made in advance that the purchase of goods, products or commodities from a public auction sale is in the best interests of the public, such items may be purchased at the auction, including online public auctions. The written determination, approved by the Purchasing Agent, is required stating the basis for the determination. All requests for using a public auction on procurements exceeding the formal competitive sealed bidding process requirements must be reviewed and approved by the Executive Director or his designee. The written determination must be retained in the contract file.

Public-Private partnership in Education and Infrastructure Act (PPEA)

When authorized in advance by the Board of Directors, the Authority may solicit proposals for projects under the Virginia Public-Private Partnership in Education and Infrastructure Act as an alternative means of procurement to the options represented in this ~~Section~~ Manual. In soliciting proposals under the PPEA, the Authority shall follow the PPEA Guidelines (previously adopted by the Board of Directors of the RWSA only) and included as **Appendix A** to this Purchasing Manual ~~to be~~ as adopted by the Board of Directors of both the RWSA and the RSWA in 2013.

The Authority may also receive unsolicited proposals from potential contractors as prescribed in the Authority's PPEA Guidelines.

VI. EXEMPTIONS TO PROCUREMENT (QUOTES, BIDS, OR PROPOSALS)~~BIDDING~~

The Authority has determined that the following categories of purchases are often not susceptible to competitive purchasing and thus are either exempt from the relevant requirements in the purchasing procedure or are treated explicitly in sections of this manual. However, one quote must be obtained and documented, and a purchase order must be issued for requirements over the delegated purchase limit.

Those categories are:

1. Purchases under the delegated purchase limit of $5,000.
2. The following selected categories of goods and services up to and including the formal competitive process requirement:
    a) Legal services or expert witnesses or other services associated with litigation or regulatory proceedings.
    b) Books, pre-printed materials, reprints and subscriptions (e.g., print or electronic), pre-recorded audio and videocassettes, compact discs, slide presentations, etc., when only available from the publisher/producer.
    c) Academic/research consulting services.
    d) Honoraria, entertainment (speakers, lecturers, musicians, performing artists).
    e) Training that is specialized, proprietary, and not typically available to the general public for which competition is generally unavailable, off-site, and requires a registration fee. Contact the Procurement Division to ascertain if the training being requested is available through an existing contract or another source.
    f) Royalties and film rentals when only available from the producer or protected distributors.
    g) Professional Organizational Membership dues.
    h) Writers.
    i) Artists (does not include graphic artists); original works of art; and original, or authentic antique period art frames (does not include newly created replacement or reproduction frames).
    j) Photographers other than for graduations and yearbooks, e.g., for official photographs/portraits.
    k) Advertisements such as in newspapers, magazines, journals, radio, television, etc.
    l) Utility charges, where competition is not practicably available.
    ~~m) Conference facilities [SJJ8][HAH9](to include conference support and related lodging and meals) only when the use of a specific facility is directed by an outside donor, sponsor, or organization.~~
    m) Accreditation fees and academic testing services.
    n) Pumps and other equipment repair services when the initial anticipated cost is expected to be under the delegated purchase limit of $5,000, but after equipment tear down it is realized additional repair work is needed and the ability to obtain competition is limited due to the circumstances. Documentation of a fair and reasonable price must be made prior to processing payment for any such purchase.

3. Purchases of used equipment up to and including the formal competitive sealed bidding requirement. This ~~is~~ also includes used equipment purchased at a public auction, if determined in writing that the purchase would be in the best interest of the Authority.
4. Purchases from the federal government, other states and their agencies or institutions, and public bodies, if the terms and conditions of their contract permit such purchases and meet the requirement of the VPPA. Care must be exercised to be certain that the price is fair and reasonable. This exemption includes all purchased for good and/or services obtained within the Virginia Water and Wastewater Agency Response Network (VA WARN) emergency assistance program.
5. Surplus property.
6. Purchases for testing or evaluation services (limited to purchases of quantities considered necessary for complete and adequate testing) not to exceed the dollar threshold defined above for formal procurement of goods and non-professional services.
7. Emergency purchases (competition obtained when practicable).

8. Purchase or lease of Real Estate and easements.
9. Travel services.
10. Purchase under a cooperative procurement contract through another state or local public agency as described in Section XVII of this Manual provided pricing under such contract was competitive.

VII. SMALL OR INFORMAL PURCHASES

General

This section covers procedures for informal procurements of goods and non-professional services based on price, to include processes requiring both verbal and written quotes. For thresholds on informal purchases, to include thresholds that require written quotes, see Section V of this Manual. This Section does not include the procurement of non-professional services by competitive negotiations (see Section VIII for competitive procurement procedures).

Your total requirements should be considered in determining the value of the purchase. You cannot use an informal, small purchase to drive a large sole source award later.

Obtaining Quotes

When you get a verbal or written quote, make sure you get complete information. Oral or written quote records must show:

a) name and address of vendor,
b) complete item description or service offered,
c) price quoted,
d) delivery/performance date(s),
e) payment terms,
f) FOB point (see definition in Glossary),
g) name of person quoting prices, and date received, if not confirmed in writing.

When complete send a requisition with all documentation to Purchasing to have a purchase order issued.

FOB Destination Prepaid and Allowed is preferred and should be requested. You can also request this by asking for "a delivered price". This is important because title and risk of loss are borne by the vendor until the Authority actually receives the goods. In a written quote "FOB Destination Prepaid and Allowed" should be specified**.**

Evaluation

There are three determining factors when evaluating quotes:

a) RESPONSIVE - Did the vendor meet all minimum requirements requested, including specifications payment terms, and delivery time?
b) RESPONSIBLE - Is the vendor deemed capable of doing the job, based on references or knowledge of prior jobs? *Since you are selecting the vendors to contact, a majority of the time you should know this before you contact them for a price*.
c) PRICE - Is the price reasonable and within budget?

When evaluating price, make sure you have "apples and apples". Specifically, ensure that the items are equal or meet your minimum requirements, shipping is included in all quotes, and consider reasonable prompt payment discounts.

If the price is not reasonable, or affordable, you can try to get a lower price.

You can:

a) revise your specifications or delivery schedule and ask everyone to re-quote, or:
b) cancel the procurement.

You **CANNOT**

a) "Auction", or
b) Let vendors know what other quotes are until ***after*** award.

SOLICIT QUOTES FROM VENDORS YOU BELIEVE ARE QUALIFIED TO DO THE WORK REQUESTED. DO NOT SOLICIT FROM UNQUALIFIED VENDORS.

VIII. REQUEST FOR PROPOSAL - OTHER THAN PROFESSIONAL SERVICES

Competitive negotiation is a method for purchasing ~~professional services,~~ ~~and, if approved for use by the Executive Director,~~ non-professional services, and goods as well as construction in limited circumstances. ~~and goods of a complex nature.~~ The "professional services" definition is included in the Glossary to this Manual (Section XXVII). All other services are categorized as non-professional.

Unlike the use of the RFP process for professional services, which prohibits the consideration of cost in the initial evaluation process, cost can be a consideration when using competitive negotiation for other than professional services and should always be included within Evaluation Criteria, though it need not be the sole determining factor.

~~Use of competitive negotiation for other than professional services requires a determination in writing that competitive sealed bidding is not practicable or fiscally advantageous to the Authority, the reasons why, approved by the Executive Director and included in the procurement file.~~

Procedure:

The RFP is prepared and stating in general terms:

a) the services sought as well as related contingent services that may be needed;
b) the time and place for receipt of proposals;
c) the factors to be used in evaluating proposals, including cost;
d) the contractual terms and conditions; to include whether services are specific to a single project for the duration of that project, or multiple project for a specific term; and
e) any unique capabilities or qualifications required of the proposers.

A Public Notice of RFP's exceeding $100,000 for goods and non-professional services ~~shall be:~~

a) advertised in The Daily Progress and/or Cville Weekly at least ten (10) business days prior to receipt of proposals;
~~b)a)sent directly to firms that have requested to be notified of work and may be sent to those firms believed to be qualified to perform the work; and~~
~~c)~~b) posted on the Authority's Procurement web-site at least ten (10) business days prior to the date set for receipt of proposals.

A Public Notice of RFP's exceeding $100,00 for goods ~~and non-professional services and $60,000 for professional sesrvices~~:

a) may be sent directly to firms that have requested to be notified of work
b) ~~and may be~~ may be sent to those firms believed to be qualified to perform the work; and
c) if potential offerors are solicited directly, the Authority must include businesses certified by the Virginia Department of Small Business and Supplier Diversity as a small business, a women-owned business, a minority-owned business, a service disabled veteran-owned business and/or a micro business.

~~Sealed~~[SJJ10] ~~p~~Proposals are

a) Received at the specified location and receipt is documented;
b) ~~Proposals are opened at the specified time.~~ Proposals not received at the specified time shall not be opened and should be returned unopened.
~~c) Only the name of the offeror is read aloud~~ [SJJ11]
~~i. None of the information in the proposal is disclosed.~~
~~d)~~c) All RFP responses are to be evaluated.
i. Proposals not meeting requirements should be evaluated lower but only bids in response to an IFB may be determined to be nonresponsive.

~~e)~~d) Proposals are evaluated solely on the basis of the criteria set forth in the RFP, using the scoring criteria (qualitative and/or quantitative) previously determined, including cost. Prior to scoring, if a proposal is missing any needed information in order to evaluate or the committee has any specific questions regarding information in the proposal, a short period of time may be provided to the offeror to answer questions and provide missing information. A deadline should be set for receipt of the information, and if the offeror does not meet the deadline, it may be necessary to score the proposal lower in the areas affected by the lack of information/questions.

~~f)~~e) A short list of firms is developed and presentations or discussions with offerors may be scheduled, as necessary, to clarify material in the proposal, to help determine those fully qualified and best suited.

~~g)~~f) A final ranking is done at the completion of the interview process if interviews are conducted, or after receipt of answer to questions, if asked, are received. Negotiations are then conducted with each of the two or more offerors selected (at least the top two) as being fully qualified and best suited amo~~u~~ng those submitting proposals.

~~h)~~g) After negotiations have been conducted with each offeror selected, the Authority shall select the one (or more than one when allowed by the RFP) which, in its opinion, has made the best proposal and provides the best value, and award the contract to that offeror.

~~i)~~h) If the Authority determines, in writing and in its sole discretion, that only one offeror is fully qualified, or that one offeror is clearly more highly qualified than the others under consideration, a contract may be negotiated and awarded to that offeror.

~~j)~~i) When multiple awards have been approved by the Executive Director in advance of the RFP and the terms and conditions of multiple awards have been included in the RFP, awards may be made to more than one offeror.

Any agreement reached as a result of negotiation must incorporate all agreements from negotiations into the written contract.

Any offeror may inspect proposal records after the evaluation and negotiation are completed but prior to award of the contract, except in cases where the Purchasing Agent or Executive Director have decided not to accept any of the proposals and to reopen the procurement. All records subject to public disclosure under the Virginia Freedom of Information Act shall be open to public inspection only after award of the contract.

When the terms and conditions of multiple awards have been included in the RFP in advance, awards may be made to more than one offeror.

VPPA

§ ~~2.2-4301. Definitions~~2.2-4302.2. **Process for competitive negotiation.**

~~3 (b) Procurement of other than professional services. Selection shall be made of two or more offerors deemed to be fully qualified and best suited among those submitting proposals, on the basis of the factors involved in the Request for Proposal, including price if so stated in the Request for Proposal. Negotiations shall then be conducted with each of the offerors so selected. Price shall be considered, but need not be the sole determining factor. After negotiations have been conducted with each offeror so selected, the public body shall select the offeror which, in its opinion, has made the best proposal, and shall award the contract to that offeror. When the terms and conditions of multiple awards are so provided in the Request for Proposal, awards may be made to more than one offeror. Should the public body determine in writing and in its sole discretion that only one offeror is fully qualified, or that one offeror is clearly more highly qualified than the others under consideration, a contract may be negotiated and awarded to that offeror.~~

A (3) For goods, nonprofessional services, and insurance, selection shall be made of two or more offerors deemed to be fully qualified and best suited among those submitting proposals, on the basis of the factors involved in the Request for Proposal, including price if so stated in the Request for Proposal. In the case of a proposal for information technology, as defined in § 2.2-2006, a public body shall not require an offeror to state in a proposal any exception to any liability provisions contained in the Request for Proposal. Negotiations shall then be conducted with each of the offerors so selected. The offeror shall state any exception to any liability provisions contained in the Request for Proposal in writing at the beginning of negotiations, and such exceptions shall be considered during negotiation. Price shall be considered, but need not be the sole or primary determining factor. After negotiations have been conducted with each offeror so selected, the public body shall select the offeror which, in its opinion, has made the best proposal and provides the best value, and shall award the contract to that offeror. When the terms and conditions of multiple awards are so provided in the Request for Proposal, awards may be made to more than one

offeror. Should the public body determine in writing and in its sole discretion that only one offeror is fully qualified, or that one offeror is clearly more highly qualified than the others under consideration, a contract may be negotiated and awarded to that offeror

For a detailed sample format for a request for Proposal refer to the Commonwealth of Virginia Department of General Services, Division of Purchases and Supply, Agency Procurement and Surplus Property Manual (APSPM), Chapter 7, Annex A

Contract awards from all formal Requests for Proposals with competitive negotiation for which fees may exceed $100,000 shall be made by affirmative action of the Authority's Board of Directors upon recommendation of the Executive Director. ~~Affirmative action of the Board may be in the form an approved annual budget and/or capital budget, annual and special appropriations, and approval of Capital Improvement Pprojects,~~ The Executive Director may appoint a Selection Committee to review proposals, conduct competitive negotiations, and rank proposals.

The Executive Director is authorized to award contracts from Request for Proposals whenever fees are $100,000 or less.

IX. REQUEST FOR PROPOSAL - PROFESSIONAL SERVICES

Except as otherwise allowed by the Authority's small purchase procedures, ~~C~~competitive negotiation must, by law, be used for purchasing professional services if the estimated cost for such services is expected to be $60,000 or more. Professional Services are defined in the VPPA as "work performed by an independent contractor within the scope of the practice of accounting, actuarial services, architecture, land surveying~~ –~~, landscape architecture, law, dentistry, medicine, optometry, pharmacy or professional engineering." All other services are categorized as non-professional.

A difference between the RFP process for professional services is that, for professional services, the law prohibits the consideration of cost in the initial evaluation process though it can be considered with the introduction of "non-binding cost estimates" after the responses have been evaluated and a short list developed for interviews.

Procedure:
The RFP is prepared and stating in general terms;

a) the services sought;
b) the time and place for receipt of proposals;
c) the factors to be used in evaluating proposals,
    a. The RFP must not request estimates of labor hours or cost for services.
d) the contractual terms and conditions; and
e) any unique capabilities or qualifications required of the proposers.

A Public Notice of the RFP shall be:

a) advertised in The Daily Progress or Cville Weekly at least ten (10) business days prior to receipt of proposals;
~~b) sent directly to firms that have requested to be notified of work and may be sent to those firms believed to be qualified to perform the work; and~~
~~c)~~b) posted on the Authority Procurement website at least ten (10) business days prior to receipt of proposals.

d) may be sent directly to firms that have requested to be notified of work
e) may be sent to those firms believed to be qualified to perform the work; and
f) if potential offerors are solicited directly, the Authority must include businesses certified by the Virginia Department of Small Business and Supplier Diversity as a small business, a women-owned business, a minority-owned business, a service disabled veteran-owned business and/or a micro business.

Sealed proposals are:

a) Received at the specified location and receipt is documented;
b) ~~Proposals are opened at the specified time.~~ [SJJ12] Proposals not received at the specified time shall not be opened and should be returned unopened.
~~c) Only the name of the offeror is read aloud.~~ [SJJ13]
~~d)~~c) None of the information in the proposal is disclosed.
~~e)~~d) All RFP responses are to be evaluated.
~~f)~~e) Proposals not meeting requirements should be ranked lower but only bids in response to an IFB may be determined to be nonresponsive.
~~g)~~f) Proposals are evaluated solely on the basis of the criteria set forth in the RFP, ranking offerors using previously determined qualitative or quantitative means.
~~h)~~g) A short list of firms is developed and the Authority shall engage in individual discussions with two or more offerors deemed fully qualified. Repetitive informal interviews are permissible.
~~i)~~**h) At the discussion stage, the Authority may discuss nonbinding estimates of total project costs, including, but not limited to, life-cycle costing, and where appropriate, nonbinding estimates of price for services.**

~~j)~~i) At the conclusion of discussions, a final ranking is done on the basis of evaluation factors published in the RFP and all information developed in the selection process to this point.

~~k)~~j) The Authority shall select, in the order of preference, two or more offerors whose professional qualifications and proposed services are deemed most meritorious.

~~l)~~k) Negotiations shall then be conducted, beginning with the offeror ranked first.

i. If a contract satisfactory and advantageous to the public body can be negotiated at a price considered fair and reasonable, the award shall be made to that offeror.

ii. Otherwise, negotiations with that offeror are formally *terminated* and the Authority cannot re-engage that offeror in further negotiations. Then negotiations shall be conducted with the offeror ranked second, and so on until such a contract can be negotiated at a fair and reasonable price.

~~m)~~l) When multiple awards have been approved in advance of the RFP by the Executive Director and the terms and conditions of multiple awards have been included in the RFP, awards may be made to more than one offeror.

Should the Authority determine in writing and in its sole discretion that only one offeror is fully qualified, or that one offeror is clearly more highly qualified than the others under consideration, a contract may be negotiated and awarded to that offeror.

Any agreement reached as a result of negotiation must incorporate all agreements from negotiations into the written contract.

Any offeror may inspect proposal records after the evaluation and negotiation are completed but prior to award of the contract, except in cases where the Purchasing Agent or Executive Director have decided not to accept any of the proposals and to reopen the procurement. All records subject to public disclosure under the Virginia Freedom of Information Act shall be open to public inspection only after award of the contract.

VPPA

§ ~~2.2-4301. Definitions~~

~~3. a. Procurement of professional services. The public body shall engage in individual discussions with two or more offerors deemed fully qualified, responsible and suitable on the basis of initial responses and with emphasis on professional competence, to provide the required services. Repetitive informal interviews shall be permissible. The offerors shall be encouraged to elaborate on their qualifications and performance data or staff expertise pertinent to the proposed project, as well as alternative concepts. In addition, offerors shall be informed of any ranking criteria that will be used by the public body in addition to the review of the professional competence of the offeror. The Request for Proposal shall not, however, request that offerors furnish estimates of man-hours or cost for services. At the discussion stage, the public body may discuss nonbinding estimates of total project costs, including, but not limited to, life-cycle costing, and where appropriate, nonbinding estimates of price for services. Proprietary information from competing offerors shall not be disclosed to the public or to competitors. At the conclusion of discussion, outlined in this subdivision, on the basis of evaluation factors published in the Request for Proposal and all information developed in the selection process to this point, the public body shall select in the order of preference two or more offerors whose professional qualifications and proposed services are deemed most meritorious. Negotiations shall then be conducted, beginning with the offeror ranked first. If a contract satisfactory and advantageous to the public body can be negotiated at a price considered fair and reasonable, the award shall be made to that offeror. Otherwise, negotiations with the offeror ranked first shall be formally terminated and negotiations conducted with the offeror ranked second, and so on until such a contract can be negotiated at a fair and reasonable price. Notwithstanding the foregoing, if the terms and conditions for multiple awards are included in the Request for Proposal, a public body may award contracts to more than one offeror.~~

§ 2.2-4302.2**. Process for competitive negotiation.**

A (4). For professional services, the public body shall engage in individual discussions with two or more offerors deemed fully qualified, responsible and suitable on the basis of initial responses and with emphasis on professional competence, to provide the required services. Repetitive informal interviews shall be permissible. The offerors shall be encouraged to elaborate on their qualifications and performance data or staff expertise pertinent to the proposed project, as well as alternative concepts. In addition, offerors shall be informed of any ranking criteria that will be used by the public body in addition to the review of the professional competence of the offeror. The Request for Proposal shall not, however, request that offerors furnish estimates of man-hours or cost for services. At the discussion stage, the public body may discuss nonbinding estimates of total project costs, including, but not limited

to, life-cycle costing, and where appropriate, nonbinding estimates of price for services. In accordance with § 2.2-4342, proprietary information from competing offerors shall not be disclosed to the public or to competitors. For architectural or engineering services, the public body shall not request or require offerors to list any exceptions to proposed contractual terms and conditions, unless such terms and conditions are required by statute, regulation, ordinance, or standards developed pursuant to § 2.2-1132, until after the qualified offerors are ranked for negotiations. At the conclusion of discussion, outlined in this subdivision, on the basis of evaluation factors published in the Request for Proposal and all information developed in the selection process to this point, the public body shall select in the order of preference two or more offerors whose professional qualifications and proposed services are deemed most meritorious.

Negotiations shall then be conducted, beginning with the offeror ranked first. If a contract satisfactory and advantageous to the public body can be negotiated at a price considered fair and reasonable and pursuant to contractual terms and conditions acceptable to the public body, the award shall be made to that offeror. Otherwise, negotiations with the offeror ranked first shall be formally terminated and negotiations conducted with the offeror ranked second, and so on until such a contract can be negotiated at a fair and reasonable price.

Notwithstanding the foregoing, if the terms and conditions for multiple awards are included in the Request for Proposal, a public body may award contracts to more than one offeror.

Should the public body determine in writing and in its sole discretion that only one offeror is fully qualified or that one offeror is clearly more highly qualified and suitable than the others under consideration, a contract may be negotiated and awarded to that offeror.

Contract awards from all formal Requests for Proposals with competitive negotiation which fees may exceed $100,000 shall be made by affirmative action of the Authority's Board of Directors upon recommendation of the Executive Director. The Executive Director may appoint a Selection Committee to review proposals, conduct competitive negotiations and rank proposals.

The Executive Director is authorized to award contracts from Request for Proposals whenever fees are $100,000 or less.

X. REQUEST FOR PROPOSAL - PROFESSIONAL SERVICES CONTRACTS FOR MULTIPLE PROJECTS AND MULTIPLE YEARS

A contract for architectural or professional engineering services relating to construction projects may be negotiated by a public body, for multiple projects within limits outlined in the VPPA. The procurement process is the same as that used for professional services.
The VPPA allows such contracts providing:

a) the projects require similar experience and expertise,
b) the nature of the projects is clearly identified in the Request for Proposal, and
c) the contract term is limited to one year or when the cumulative total project fees reach the maximum cost authorized in the VPPA, whichever occurs first.

The Authority may award contracts renewable, with the written approval of the Executive Director, for four additional one-year terms at the option of Authority.

The law requires that in such contracts:

a) the fair and reasonable prices, as negotiated, shall be used in determining the cost of each project performed
b) the sum of all such projects within a single one-year term shall not exceed ~~$5~~$6 million; and
c) the sum for any single project within a single one-year term shall not exceed $2.5 million as specified in § 2.2-4303.1.

Any unused amounts from the first contract term shall *not* be carried forward to the additional term in determining the sum of all projects within a term, however, costs against the allowed limit for a single project shall be cumulative from the initial one-year term and subsequent additional terms.

Competitive negotiations for such contracts may result in awards to more than one offeror provided:

a) the RFP so states; and
b) ~~the initial contract term shall be limited to two years or when the cumulative total project fees reach $5 million, whichever occurs first.~~ the Authority has established procedures for distributing multiple projects among the selected contractors during the contract term. Such procedures shall prohibit requiring the selected contractors to compete for individual projects based on price.

VPPA

~~§ 2.2-4301~~§ 2.2-4303.1. Architectural and professional engineering term contracting; limitations.

~~3. a. (Third paragraph) A contract for architectural or professional engineering services relating to construction projects may be negotiated by a public body, for multiple projects provided (i) the projects require similar experience and expertise, (ii) the nature of the projects is clearly identified in the Request for Proposal, and (iii) the contract term is limited to one year or when the cumulative total project fees reach the maximum cost authorized in this paragraph, whichever occurs first. For local public bodies, including metropolitan planning organizations or planning district commissions, such contract may be renewable for four additional one-year terms at the option of the public body. Under such contract, the fair and reasonable prices, as negotiated, shall be used in determining the cost of each project performed, (a) except those awarded for environmental, location, design and inspection work regarding highways and bridges by the Commissioner of Highways, the sum of all projects performed in one contract term shall not exceed $500,000 or, in the case of a state agency, as defined in § 2.2-4347, such greater amount as may be determined by the Director of the Department of General Services, not to exceed $1 million, except that in any locality or any authority, sanitation district, metropolitan planning organization or planning district commission with a population in excess of 80,000, the sum of all such projects shall not exceed $5 million; and those awarded for any airport as defined in §5.1-1 and aviation transportation projects, the sum of all such projects shall not exceed $1.5 million, and (b) except those awarded for environmental, location, design and inspection work regarding highways and bridges by the Commissioner of Highways or for architectural and engineering services for rail and public transportation projects by the Director of the Department of Rail and Public Transportation, the project fee of any single project shall not exceed $100,000 or, for architectural or engineering services for airports as defined in §5.1-1 and aviation transportation projects, the project fee of any single project shall not exceed $500,000, or, in the case of a state agency, such greater amount as may be determined by the Director of the Department of General Services not to exceed $200,000, except that in any locality or any authority or sanitation district with a population~~

~~in excess of 80,000, such fee shall not exceed $2 million. Any unused amounts from the first contract term shall not be carried forward to the additional term. Competitive negotiations for such contracts may result in awards to more than one offeror provided (1) the Request for Proposal so states and (2) the public body has established procedures for distributing multiple projects among the selected contractors during the contract term.~~

A. A contract for architectural or professional engineering services relating to multiple construction projects may be awarded by a public body, provided (i) the projects require similar experience and expertise, (ii) the nature of the projects is clearly identified in the Request for Proposal, and (iii) the contract is limited to a term of one year or when the cumulative total project fees reach the maximum authorized in this section, whichever occurs first. Such contracts may be renewable for four additional one-year terms at the option of the public body. The fair and reasonable prices as negotiated shall be used in determining the cost of each project performed.

B. 2. Any locality with a population in excess of 78,000 or school division within such locality, or any authority, sanitation district, metropolitan planning organization, transportation district commission, or planning district commission, or any city within Planning District 8, the sum of all projects performed in a one-year contract term shall not exceed $6 million;

C. Competitive negotiations for such architectural or professional engineering services contracts may result in awards to more than one offeror, provided (i) the Request for Proposal so states and (ii) the public body has established procedures for distributing multiple projects among the selected contractors during the contract term. Such procedures shall prohibit requiring the selected contractors to compete for individual projects based on price.

D. 2. Any locality with a population in excess of 78,000 or school division within such locality, or any authority, transportation district commission, or sanitation district, or any city within Planning District 8, the project fee shall not exceed $2.5 million.

E. For the purposes of subsection B, any unused amounts from one contract term shall not be carried forward to any additional term, except as otherwise provided by the Restructured Higher Education Financial and Administrative Operations Act (§ 23.1-1000 et seq.).

XI. COMPETITIVE SEALED BID

Competitive sealed bidding is required for procurements over $100,000 where performance specifications can be written in specific detail and price is the basis of award. In competitive sealed bidding the invitation for bid (IFB) is the tool used to list the purchase specifications or scope of work and all contractual terms and conditions. Bids are posted on the Authority's Public Announcement Board and Procurement website and may be posted on other web sites such as the state's Virginia Business Opportunities. Bids are not required by law to be advertised in newspapers~~; however large construction contracts are generally advertised~~[SJJ14]. IFB will be posted on the Authority website – procurement section/location. In addition to the public notice, bids may be solicited directly from potential qualified bidders and any such direct solicitations shall include businesses selected from an electronic list made available by the ~~Department of Minority Business Enterprise (DMBE)~~Virginia Department of Small Business and Supplier Diversity (SBSD).

Bids sh~~ould~~all be received at the specified location and remain unopened in a secure area until the date and time established for opening. When bids are received they should be date and time stamped on the envelopes showing the time of receipt. The Purchasing Agent shall be responsible for deciding when the receipt deadline has arrived and no bids shall be accepted after that time. Late bids cannot be opened or considered.

Unlike ~~in the opening of a~~ RFP processing, ~~in the~~ competitive sealed bid~~s process, bids~~ are publicly opened and the following information read aloud:

a) bidders' names;
b) significant unit prices or lot prices~~,~~ as may be deemed appropriate by the Authority~~or are requested by attendees~~;
c) discount terms offered, if discount terms are to be considered in making the award
    i) if the Authority is certain that it can regularly process payments within a prescribed time frame and wants to consider cash discounts in its evaluation, then it may do so by including a statement in the bid document such as "discounts for prompt payment within _#_ (state number of days, e.g., 10, 20, etc.) days will be considered in determining net low bid."
d) brand names and model numbers only if requested by the attendees otherwise can be provided on bid tabulation provided later.

Any competitive sealed bidding bidder, upon request, shall be ~~given~~ afforded the~~an~~ opportunity to inspect bid records within a reasonable time after opening of all bids ~~and evaluation of bids~~[SJJ15]~~,~~ but prior to award, except in the event the agency decides not to accept any of the bids and to reopen the contract. ~~reject all bids or offers and rebid.~~ Otherwise, bid records shall be open to public inspection only after award of the contract. (VPPA, § 2.2-4342C).

Awards are, by law, based on a determination of the lowest responsive and responsible bidder. Responsible and responsive bidder/offeror are defined in Section XXVII of this Manual. When the terms and conditions of multiple awards are so provided in the Invitation for Bids, awards may be made to more than one bidder.

A responsive bid must comply in all material aspects with the terms and conditions and specifications in the IFB. Bids shall be evaluated based upon the requirements set forth in the invitation, which may include special qualifications of potential contractors, life-cycle costing, value analysis, and any other criteria such as inspection, testing, quality, workmanship, delivery, and suitability for a particular purpose, which are helpful in determining acceptability. Failure to comply with the requirements set forth in the IFB may result in a bid being declared non-responsive. For ~~–~~example, and not by way of limitation: failure to~~–~~ sign the bid, return required bid documents, substitution of a vendor's terms for the Authority's, deletion of terms and conditions stated in the IFB or failure to offer a product or service that meets the specifications may be grounds for this finding. A non-responsive bid is removed from consideration for award. The Authority has the right to waive informalities.

Caution must be exercised in words used in all aspects of the Invitation for Bid from specifications to terms and conditions for words such as "may", "should", "could", "will" and "must". If you say a specific action "may

cause rejection of the bid" you have leeway to exercise your discretion. However, if you say a specific action "shall cause rejection of the bid" you have no discretion as "shall" is an imperative.

No contract may be awarded to a bidder who is determined by the Purchasing Agent to be non-responsible. The Purchasing Agent must follow the procedure per the VPPA 2.2-4359 for declaration of non-responsibility of a bidder. Responsible bidder/offeror and responsive bidder~~/offeror~~ are defined in Section XXVII of this ~~m~~Manual. In determining the responsibility of a bidder, the following criteria will be considered:

a) The ability, capacity or skill of the bidder to perform the contract or provide the services required;
b) Whether the bidder can perform the contract or provide the service promptly, or within the time specified, without delay or interference;
c) The character, integrity, reliability, reputation, judgment, experience and efficiency of the bidder;
d) The quality of performance on previous contracts or services, for the Authority or others;
e) The previous and existing compliance by a bidder with laws and ordinances relating to the contract or service;
f) The sufficiency of the financial resources and ability of the bidder to perform the contract or provide the service;
g) The quality, availability, and adaptability of the goods or services to the particular use required;
h) The number and scope of any conditions attached to the bid;
i) Whether the bidder is in arrears to the Authority on a debt or contract or is in default on a surety to the Authority;
j) Such other information as may be secured by the Purchasing Agent, having a bearing on the decision to award the contract.

Contract awards from Competitively Sealed Bids exceeding $100,000 shall be made by affirmative action of the Authority's Board of Directors upon recommendation of the Executive Director, except that with respect to awards of contracts for purchase of chemicals used at various plants in the normal course of operations, which the board's approved yearly operation budget contemplates as an operating expense, no additional affirmative action by the Board shall be required to proceed with the purchase.

Negotiation with the Lowest Responsible Bidder: If the bid from the lowest responsible bidder exceeds available funds, the Authority may negotiate with the apparent low bidder to obtain a contract price within available funds if the solicitation contains the appropriate clause to do so within the IFB, Virginia Code § 2.2-4318.

The Authority's process for negotiations includes:

1. The requesting department shall provide the Executive Director with a written determination that the apparent low bid exceeds available funds. Such determination shall be confirmed in writing by the Executive Director or his designee. The requesting department shall also provide the Executive Director with a suggested reduction in scope or other suggested bid modification(s) to obtain a contract price within available funds.
2. The Executive Director or designee shall advise the lowest responsible bidder in writing that the proposed purchase exceeds available funds. He shall further suggest a reduction in scope or other bid modification(s) for the proposed purchase and invite the lowest responsible bidder to amend its bid based upon the proposed reduction in scope or other bid modification(s).
3. Informal discussions shall be commenced with the low bidder, and repetitive informal discussions for the purposes of obtaining a contract within available funds shall be permissible.
4. The low bidder shall submit an addendum to its bid, which addendum shall include the change in scope for the proposed purchase, the reduction in price and the new contract value. If the addendum is acceptable to the Authority the Authority may award a contract within funds available to the lowest responsible bidder based upon the amended bid proposal.

5. The Authority reserves the right to infuse additional funds during or subsequent to negotiations to meet a negotiated price.
~~1.~~6. If the Authority and the lowest responsible bidder cannot negotiate a contract within available funds, all bids shall be rejected.

Determinations of responsiveness and responsibility shall be made by the Purchasing Agent in consultation, if necessary, with the Authority's Attorney.

For a detailed sample format for an Invitation for Bid refer to the Commonwealth of Virginia Department of General Services, Division of Purchases and Supply, Agency Procurement and Surplus Property Manual (APSPM), Chapter 6, Annex B.

XII. PREQUALIFICATION PROCESS FOR CONSTRUCTION CONTRACTS

1. The Executive Director or his designee may, in his discretion and when he believes it to be in the best interests of the Authority, require prequalification of prospective contractors to bid on a specific construction project for the Authority. The purpose of such prequalification shall be to limit prospective bidders for such construction project to contractors who show themselves to be qualified to construct the project. In addition, the IFB may waive the requirement for certain bonds when the pre-qualification process is used. When the prequalification process is used for a project, only contractors who have complied with the prequalification process and have been determined qualified will be eligible to submit bids for the project.

2. The Executive Director or his designee shall develop the appropriate documentation for potential contractors to apply for prequalification. The Executive Director or his designee may prescribe in such documentation specific mandatory requirements contractors must meet to prequalify for specific projects.

3. In conducting prequalification of potential contractors, the Executive Director or his designee shall follow this prequalification process and the requirements of Virginia Code § 2.2-4317.

4. The documentation used in the Authority's prequalification process shall set forth the criteria upon which the qualifications of such contractors will be evaluated. The documentation shall request of prospective contractors only such information as is appropriate for an objective evaluation of all prospective contractors pursuant to such criteria. The documentation shall allow the prospective contractor seeking prequalification to request, by checking the appropriate box, that all information voluntarily submitted by the contractor pursuant to this subsection shall be considered a trade secret or proprietary information subject to the provisions of subsection ~~D~~ F of § 2.2-4342.

5. In all instances in which the Authority requires prequalification of potential contractors for construction projects, advance notice shall be given of the deadline for the submission of prequalification applications. The deadline for submission shall be sufficiently in advance of the date set for the submission of bids for such construction so as to allow the procedures set forth in this subsection to be accomplished.

6. At least 30 days prior to the date established for submission of bids or proposals under the procurement of the contract for which the prequalification applies, the Authority shall advise in writing each contractor who submitted an application whether that contractor has been prequalified. In the event that a contractor is denied prequalification, the written notification to the contractor shall state the reasons for the denial of prequalification and the factual basis of such reasons.

7. A decision by the Executive Director or his designee denying prequalification under the provisions of this subsection shall be final and conclusive unless the contractor appeals the decision as provided in § 2.2-4357.

8. The Authority may deny prequalification to any contractor only if the public body finds one of the following:
    a. The contractor does not have sufficient financial ability to perform the contract that would result from such procurement. If a bond is required to ensure performance of a contract, evidence that the contractor can acquire a surety bond from a corporation included on the United States Treasury list of acceptable surety corporations in the amount and type required by the Authority shall be sufficient to establish the financial ability of the contractor to perform the contract resulting from such procurement;
    b. The contractor does not have appropriate experience to perform the construction project in question;

c. The contractor or any officer, director or owner thereof has had judgments entered against him within the past ten years for the breach of contracts for governmental or nongovernmental construction, including, but not limited to, design-build or construction management;
d. The contractor has been in substantial noncompliance with the terms and conditions of prior construction contracts with the Authority without good cause. If the Authority has not contracted with a contractor in any prior construction contracts, the public body may deny prequalification if the contractor has been in substantial noncompliance with the terms and conditions of comparable construction contracts with another public body without good cause. The Authority may not utilize this provision to deny prequalification unless the facts underlying such substantial noncompliance were documented in writing in the prior construction project file and such information relating thereto given to the contractor at that time, with the opportunity to respond;
e. The contractor or any officer, director, owner, project manager, procurement manager or chief financial official thereof has been convicted within the past ten years of a crime related to governmental or nongovernmental construction or contracting, including, but not limited to, a violation of (i) Article 6 (§ 2.2-4367 et seq.) of the Virginia Public Procurement Act, (ii) the *Virginia Governmental Frauds Act* (§ 18.2-498.1 et seq.), (iii) Chapter 4.2 (§ 59.1-68.6 et seq.) of Title 59.1, or (iv) any substantially similar law of the United States or another state;
f. The contractor or any officer, director or owner thereof is currently debarred pursuant to an established debarment procedure from bidding or contracting by any public body, agency of another state or agency of the federal government; and
g. The contractor failed to provide to the public body in a timely manner any information requested by the public body relevant to subdivisions a through f of this subsection.

9. In determining if a contractor has the "appropriate experience" to be prequalified, the Authority may consider and use specific minimum experience requirements established by the Executive Director or his designee for the specific project. The Authority may also consider the contractor's past performance on the projects that provide its past experience to determine if the projects provide the appropriate experience required.

10. To the extent any provision in this process is deemed inconsistent with Virginia Code § 2.2-4317, whether due to amendment of that statutory provision or otherwise, then the provisions of Virginia Code § 2.2-4317 shall control as to such inconsistency.

11. The provisions of this process and its implementation are intended to be severable, and if any provision is deemed invalid, this shall not be deemed to affect the validity of other provisions.

12. This prequalification process does not apply to any procurement done under the Public-Private Education facilities and Infrastructure Act of 2002 ("PPEA"), Code of Virginia §56-575.1, et seq., and is in no way intended to limit the Authority's discretion in the way it selects contractors under PPEA.

13. A determination that a contractor is prequalified does not necessarily preclude the Authority from determining that such contractor is not responsible following bid opening. Among other things, a change in circumstances or change in information, as well as different criteria allowed to be considered for prequalification versus responsibility, may lead to a different result. For example, a prequalified contractor that becomes debarred between prequalification and bid opening, or a contractor who is subsequently discovered not to have been totally candid in answering its prequalification questionnaire, might be deemed non-responsible.

14. Prequalification of a contractor to bid on one project does not prequalify that contractor to bid on a different project or mean that the contractor will necessarily be deemed to be a responsible bidder for a different project.

15. Neither the Prequalification Process nor its implementation by the Authority shall be deemed to create and contract right in any prospective contractor or to give any prospective contractor any right beyond that conferred by Code of Virginia § 2.2-4317. All prospective contractors shall be responsible for their own expenses in applying for prequalification, and the Authority shall have no liability for any such expense.

XIII. BONDS

Bid Bonds. Except in cases of emergency or prequalification, all bids or proposals for non-transportation-related construction contracts in excess of $500,000 shall be accompanied by a bid bond from a surety company selected by the bidder that is legally authorized to do business in Virginia. The specified amount of the bid bond shall not exceed five percent of the amount bid (*Code of Virginia*, § 2.2-4336). For non-transportation-related construction contracts in excess of $100,000 but less than $500,000, the bid bond requirements may be ~~are~~ waived provided that prospective contractors shall be prequalified for each individual project in accordance with **§** 2.2-4317.

Performance and Payment Bonds. (*Code of Virginia*, § 2.2-4337).
Unless otherwise authorized in this section, upon the award of any (i) public construction contract exceeding $500,000 awarded to any prime contractor; ~~or~~ (ii) construction contract~~s~~ exceeding $500,000 awarded to any prime contractor requiring the performance of labor or the furnishing of materials for buildings, structures or other improvements to real property owned by the Authority, or (iii) construction contract exceeding $500,000 in which the performance of labor or the furnishing of materials will be paid with pubic funds, the contractor shall furnish to the Authority the following bonds:

a) A performance bond in the sum of the contract amount conditioned upon the faithful performance of the contract in strict conformity with the plans, specifications and conditions of the contract.
b) A payment bond in the sum of the contract amount. The bond shall be for the protection of claimants who have and fulfill contracts to supply labor or materials to the prime contractor to whom the contract was awarded, or to any subcontractors, in furtherance of the work provided for in the contract, and shall be conditioned upon the prompt payment for all materials furnished or labor supplied or performed in the furtherance of the work.
c) Nothing in this section shall preclude the Authority from requiring payment or performance bonds for construction contracts below $500,000 for non-transportation-related projects.

Bonds on Other Than Construction Contracts. The Authority may require bid, payment, or performance bonds for contracts for goods or services if provided in the Invitation for Bids or Request for Proposal.

Alternative Forms of Security. A certified check, cashier's check or cash escrow may be accepted in lieu of a bid, payment, or performance bond in the face amount required for the bond. If approved by Authority's attorney, a bidder may furnish a personal bond, property bond or bank or savings institution's letter of credit on certain designated funds in the face amount required for the bid, payment, or performance bond. Approval shall be granted only upon a determination by the attorney that the alternative form of security proffered affords protection to the Authority equivalent to a corporate surety's bond. (*Code of Virginia*, § 2.2-4338).

XIV. WITHDRAWAL OF BIDS

The Authority recognizes that errors can occur in bidding and has established procedures for withdrawal of bids for other than construction contracts and incorporates the procedure per § 2.2-4330 of the VPPA for withdrawal of a bid for a public construction contract, other than a contract for construction or maintenance of public highways, to provide a consistent and fair means of allowing a bidder to withdraw a bid due to error.

For construction contracts the Authority shall specify which procedure listed under paragraph B will be used in the Invitation for Bids.

A. Procedure for withdrawal of a bid for other than a construction contract:
A bidder for *other than a contract for construction* may withdraw a bid from consideration if the price was substantially lower than the other bids due solely to a mistake therein, provided the bid was submitted in good faith, and~~,~~ the Purchasing Agent, in his sole discretion, determines~~,~~ in writing~~,~~ that the mistake was a clerical mistake as opposed to a judgmental mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of the bid, or if the purchasing agent determines that it is in the best interest of the Authority to allow the withdrawal of the bid.

a) Procedure: The bidder shall give notice~~,~~ in writing~~,~~ to the purchasing agent of a claim of right to withdraw a bid within two business days after the conclusion of the opening of the bids. The ~~p~~Purchasing ~~a~~Agent may, if there is sufficient cause to suspect an error exists, suggest that a bidder review a bid and offer an opportunity to withdraw the bid in question.
b) If the ~~p~~Purchasing ~~a~~Agent denies the withdrawal of a bid under the provisions of this section, he or she shall notify the bidder in writing stating the reasons for the decision.
c) No bid may be withdrawn under this section when the result would be to award the contract on another bid of the same bidder or of another bidder in which the ownership of the withdrawing bidder is more than five percent (5%).
d) If a bid is withdrawn under the authority of this section, the lowest remaining bid shall be deemed to be the low bid.

B. Withdrawal of a bid for a public construction contract, other than a contract for construction or maintenance of public highways shall be in accordance with Virginia Code repeated below:

§ 2.2-4330. Withdrawal of bid due to error. -- A. A bidder for a public construction contract, other than a contract for construction or maintenance of public highways, may withdraw his bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake in the bid, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of a bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn.

If a bid contains both clerical and judgment mistakes, a bidder may withdraw his bid from consideration if the price bid would have been substantially lower than the other bids due solely to the clerical mistake, that was an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of a bid that shall be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn.

B. One of the following procedures for withdrawal of a bid shall be selected by the Authority and stated in the advertisement for bids:

1. bidder shall give notice in writing of his claim of right to withdraw his bid within two business days after the conclusion of the bid opening procedure and shall submit original work papers with such notice; or

2. Where the Authority opens the bids one day following the time fixed for the submission of bids, the bidder shall submit to the public body or designated official his original work papers, documents and materials used in the preparation of the bid at or prior to the time fixed for the opening of bids. The work papers shall be

delivered by the bidder in person or by registered mail. The bidder shall have two hours after the opening of bids within which to claim in writing any mistake as defined herein and withdraw his bid. The contract shall not be awarded by the Authority until the two-hour period has elapsed.

Under these procedures, the mistake shall be proved only from the original work papers, documents and materials delivered as required herein. The work papers, documents and materials submitted by the bidder shall, at the bidder's request, be considered trade secrets or proprietary information subject to the conditions of subsection F of § 2.2-4342.

C. The Authority may establish procedures for the withdrawal of bids for other than construction contracts (see A above).

D. No bid shall be withdrawn under this section when the result would be the awarding of the contract on another bid of the same bidder or of another bidder in which the ownership of the withdrawing bidder is more than five percent.

E. If a bid is withdrawn in accordance with this section, the lowest remaining bid shall be deemed to be the low bid.

F. No bidder who is permitted to withdraw a bid shall, for compensation, supply any material or labor to or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid was submitted.

G. The Authority shall notify the bidder in writing within five business days of its decision regarding the bidder's request to withdraw its bid. If the Authority denies the withdrawal of a bid under the provisions of this section, it shall state in such notice the reasons for its decision and award the contract to such bidder at the bid price, provided such bidder is a responsible and responsive bidder. At the same time that the notice is provided, the Authority shall return all work papers and copies thereof that have been submitted by the bidder.

Bids can always be withdrawn at any time before the time specified for opening.

XV. SOLE SOURCE

Competitive procedures are waived when a determination is made that the goods or services required are practicably available from only one source. The procurement record for a sole source procurement must include the appropriate approval in support of the action to forego the competitive process, and be posted to the Authority's web site identifying that which is being procured, the contractor selected, and the date of the decision.

Negotiations for a sole source contract or purchase order award may commence without providing for full and open competition only after the Purchasing Agent justifies the use of such actions in writing, certifies the accuracy and completeness of the justification, and obtains any required approvals. A justification must contain sufficient facts and rationale to justify the use of the sole source method. In making this determination, the purchasing agent shall determine whether there is, in fact, only one vendor practicably available to provide the goods and services. ~~because the specifications or statement of work and/or vendor requirements (experience, licensing, certifications, etc…), the schedule or other factors may have been written so narrowly that they effectively preclude all but one product or provider being responsive.~~ Prior to making his determination, the purchasing agent may conduct his own investigation, request additional information or consult with the Authority's attorney. If the request is denied the normal procurement procedures will be followed.

Before award of any sole source procurement, the proposed price must be determined to be fair and reasonable using the method most appropriate to the procurement.

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E. Upon a determination in writing that there is only one source practicably available for that which is to be procured, a contract may be negotiated and awarded to that source without competitive sealed bidding or competitive negotiation. The writing shall document the basis for this determination. The public body shall issue a written notice stating that only one source was determined to be practicably available, and identifying that which is being procured, the contractor selected, and the date on which the contract was or will be awarded. This notice shall be posted on the Department of General Services' central electronic procurement website or other appropriate websites, and in addition, public bodies may publish in a newspaper of general circulation on the day the public body awards or announces its decision to award the contract, whichever occurs first. Posting on the Department of General Services' central electronic procurement website shall be required of any state public body. Local public bodies are encouraged to utilize the Department of General Services' central electronic procurement website to provide the public with centralized visibility and access to the Commonwealth's procurement opportunities.

XVI. EMERGENCY

Reasonable steps shall be taken to avoid using non-competitive emergency procurement methods. An emergency situation occurs when the failure to acquire the goods, services, or construction in a timely manner would seriously threaten the health or safety of any person; the preservation or protection of property; the continuation of necessary Authority functions; or the Authority's compliance with legal requirements.

Parts or services greater than $5,000 when time or other circumstance does not permit full review may be classed an emergency if so approved by the Executive Director or the Purchasing Agent. For parts and services under $5,000 the Small Purchase Procedure shall apply.

For an emergency purchase the employee responsible should find an appropriate source and then direct the vendor to proceed. Even in an emergency, the procurement shall be made with such competition as is practicable under the circumstances, obtaining a fair and reasonable price, and documenting the procurement action. In an emergency competition is not necessarily limited to cost. Since immediate action is required, factors such as delivery, availability and response time can be more critical than cost. By definition an emergency purchase should immediately address the problem. Emergency procurements must be limited to only the emergency procurement need. Additional goods and services not needed for the emergency procurement are not allowed.

When placing an emergency order, the following information must be obtained from the vendor and entered on a confirming requisition to be sent to the Purchasing Agent:

a) Accurate prices if possible (for services this may be hourly rates for services and equipment);
b) Payment terms;
c) Method of shipment (Ship Via);
d) Delivery date or completion date (the purchase must ***immediately*** address the problem so this should not be in terms of weeks or months);
e) Accurate FOB point;
f) How ordered (by telephone, email, fax, etc.);
g) First and last name of vendor representative who accepts the order; and
h) Obtain a written quote (email or fax is acceptable) if possible.

On the requisition clearly indicate that this is a "Confirming Telephone Order (or email or fax)" complete with

a) the date the order was phoned in;
b) the name of the person at the company accepting the order;
c) the name of the departmental personnel placing the order; and
d) details of all other quotes solicited and/or received.

Include with the requisition an explanation of:

a) the emergency, stating the urgent nature of the emergency;
b) the reasons this vendor was selected; and
c) all details of the agreement made with the vendor.

The Purchasing Agent will review the transaction and process the requisition through normal channels. If goods or services have been ordered or received, no purchase order will be issued. The requisition will be submitted to the appropriate director for review.

Emergency procedures may be utilized only to purchase the goods or services necessary to address the emergency. Subsequent requirements shall be obtained using normal purchasing procedures. The emergency purchase procedure is not intended to be used to cover inadequate planning or control or to by-pass the normal procedure.

The Authority shall issue a written notice stating that stating that the contract is being awarded on an emergency basis, identifying that which is being procured, the contractor selected, and the date on which the contract was or will be awarded. This notice shall be posted on the Authority website.

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F. In case of emergency, a contract may be awarded without competitive sealed bidding or competitive negotiation; however, such procurement shall be made with such competition as is practicable under the circumstances. A written determination of the basis for the emergency and for the selection of the particular contractor shall be included in the contract file. The public body shall issue a written notice stating that the contract is being awarded on an emergency basis, and identifying that which is being procured, the contractor selected, and the date on which the contract was or will be awarded. This notice shall be posted on the Department of General Services' central electronic procurement website or other appropriate websites, and in addition, public bodies may publish in a newspaper of general circulation on the day the public body awards or announces its decision to award the contract, whichever occurs first, or as soon thereafter as is practicable. Posting on the Department of General Services' central electronic procurement website shall be required of any state public body. Local public bodies are encouraged to utilize the Department of General Services' central electronic procurement website to provide the public with centralized visibility and access to the Commonwealth's procurement opportunities.

XVII. USE OF STATE AND OTHER COOPERATIVE CONTRACTS AND JOINT PROCUREMENTS

The Authority may participate in, sponsor, conduct, or administer a joint procurement agreement on behalf of or in conjunction with one or more other public bodies, or public agencies or institutions or localities of the several states, of the United States or its territories, the District of Columbia, the U.S. General Services Administration, or the Metropolitan Washington Council of Governments, for the purpose of combining requirements to increase efficiency or reduce administrative expenses in any acquisition of goods, services, or construction (VPPA § 2.2-4304.A).

The Authority may from time to time participate in, sponsor, conduct, or administer a cooperative procurement agreement with one or more public bodies for reasons of efficiency and/or cost savings in accordance with the VPPA § 2.2-4304.B.

The most commonly used cooperative contracts are state contracts, including: ~~those entered into by the Commonwealth of Virginia, listed on their web site and including local governments as eligible users. The contract listing can be accessed from the State Contract link on the Virginia Division of Purchases and Supplies (DPS) website.~~ 1) Virginia State Contracts, 2) Virginia Information Technology Agency Contracts, 3) Virginia Office of Fleet Management Fuel Programs, 4) Division of Engineering and Buildings, and 5) other Virginia localities and authorities.

~~Except for contracts for: 1) architectural and engineering services; and 2) Construction, except for the installation of artificial turf and track surfaces, including all associated and necessary construction, and for construction in excess of $200,000 from the contract of another local public body that is more than a straight line distance of 75 miles from the territorial limits of the local public body procuring the construction,~~ The Authority may purchase from another public body's contract or from the contract of the Metropolitan Washington Council of Governments or the Virginia Sheriffs' Association even if it did not participate in the request for proposal or invitation to bid, if the request for proposal or invitation to bid specified that the procurement was a cooperative procurement being conducted on behalf of other public bodies, except for:

1. Contracts for architectural or engineering services; or

2. Construction, except for the installation of artificial turf and track surfaces, including all associated and necessary construction, which shall not be subject to the limitations prescribed in this subdivision.

~~may purchase from another public body's contract even if it did not participate in the request for proposal or invitation to bid, if the request for proposal or invitation to bid specified that the procurement was being conducted on behalf of other public bodies. The Purchasing Agent must ensure that the contract is in effect, the goods or services needed are covered by the scope of the contract and that the terms and conditions of the contract are acceptable to the Authority, that the price provided to the Authority is in accordance with the cooperative contract and that the price is fair and reasonable.~~

Consistent with applicable federal regulations and provided the terms of the contract permit such purchases, the Authority may purchase goods and nonprofessional services from a U.S. General Services Administration contract. The GSA Cooperative Purchasing Program makes available GSA Schedules 70 and 84. GSA Schedule 70 is available for the acquisition of Information Technology goods and services and Schedule 84 contracts are available for the acquisition of security, fire and law enforcement equipment ~~information technology goods and services~~. ~~If a vendor recommends a cooperative contract to you the Purchasing Agent should be consulted to insure that the contract is in compliance with all legal requirements and can be used by the Authority.~~ Note that some GSA contracts are pre-qualification lists with the direction to compete amongst those vendors that have

been prequalified, so a procurement process may still be required. Follow the direction of the specific GSA schedule. ~~to ensure a legal basis of competition.~~

If a vendor recommends a cooperative contract to you, the Purchasing Agent should be consulted to en~~in~~sure ~~that~~ the contract is in compliance with all legal requirements and can be used by the Authority.

The Authority will generally be responsible for contracting directly with the vendor under cooperative contracts.

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XVIII. PURCHASE REQUISITION

A requisition is a request for goods or services necessary for the day to day operation of a department. It is to be filled in COMPLETELY as shown below and sent to Purchasing. Be sure you allow adequate time for processing, ordering and shipping. The requisition is used to collect all information to support the issuance of the Purchase Order described in Section XX.

All purchases over $5,000 must be placed on a purchase requisition. Requisitioned purchases are reviewed for appropriateness, required approvals, and funds availability.

All requisitions must be approved by the Director of Water & Sewer (for Water & Sewer), the Executive Director (for Solid Waste) or his delegate, or the Purchasing Agent before a purchase order is prepared.

Complete as follows:

a. Requestor: person to contact for further information
b. For: facility and what used for or on
c. Budget Acct: Account from which payment is to be made.
d. Vendor Information: If you have received quotes and selected a vendor put all pertinent information on the selected vendor – Legal Name, Address, contact name, phone number, fax number and email address. If this has been purchased from a vendor before, if you know where it's available or if you've talked about it to a particular vendor, put that vendor's name here or list under Vendor Research below or attach a separate sheet.
e. Vendor Data: indicate the appropriate box and provide detail if either Only Source or Best Vendor (and not the lowest cost) and provide reasons under Vendor Research or attach an additional sheet.
f. Quantity: how many of what unit such as each (ea), dozen (dz), pounds (lbs), square feet (sf), square yards (sy) etc.
g. Part number: any identification, from catalog, parts list, manual or the like. Indicate source of information. If known provide the serial number here
g. Description: Fill in with the most complete description possible including size, color, manufacturer, model number, special requirements.
h. Unit Cost: price per unit
i. Total Cost: total cost for that line item
j. Vendor Research: If you have received quotes and selected a vendor put all pertinent information on the selected vendor and information on the solicitations and, if applicable, attach all written quotes. If Purchasing is soliciting bids/proposals and this has been purchased from a vendor before, if you know where it's available or if you've talked about it to a particular vendor, put that vendor's name here. If there are multiple possible sources available attach a separate sheet
k. Approved, Verified, Purchase Order # and date will be completed by the Purchasing Agent

Confirming requisitions are to be used after an emergency purchase of goods or services.

XIX. SPECIFICATIONS

A. Purpose

To describe as completely and accurately as reasonably possible the goods or services required and to allow purchase of those goods or services on a competitive basis with the goal that the Authority receives the best value for the level of quality required.

The Virginia Public Procurement Act §2.2-4300 (C) requires "that specifications reflect the procurement needs of the purchasing body rather than being drawn to favor a particular vendor" and that "all procurement procedures be conducted in a fair and impartial manner" and "that rules governing contract awards be made clear in advance of competition". Specifications must be written to allow for competitive bids and not to arbitrarily exclude a particular firm or product. They're written so as to promote competition.

B. Preparation

Specifications are developed by purchasing staff with the assistance of the other Authority staff, vendors, other agencies, and other resources. Contact with prospective contractors is allowed to learn industry capabilities but care must be taken to not use information provided to create a proprietary non-competitive specification. Also, no person who, for compensation, prepares an Invitation to Bid or Request for Proposal for or on behalf of the Authority shall:

i. submit a bid or proposal for that procurement or any portion thereof, or
ii. disclose to any bidder or offeror information concerning the procurement which is not available to the public.

However, the Authority may permit such person to submit a bid or proposal for that procurement or any portion thereof if Authority, in writing, determines that the exclusion of such person would limit the number of potential qualified bidders or offerors in a manner contrary to the best interests of the Authority (*Code of Virginia*, § 2.2-4373).

Specifications and purchase descriptions shall state Authority needs in a manner designed to promote full and open competition or maximum practicable competition based on the nature of the goods and services including construction being procured.

To the maximum practicable extent requirements should be stated in terms of:

i. functions to be performed;
ii. performance required; or
iii. essential physical characteristics.

Requirements should be defined in terms that enable and encourage the offer of commercial items to the extent that commercial items that meet Authority needs are available.

The Authority may describe a requirement by use of a brand name. Unless otherwise provided in the solicitation, the name of a certain brand, make or manufacturer does not restrict bidders to the specific brand or manufacturer named. ~~, provided the description is followed by the words "or equal."~~ The~~is~~ brand name description shall be used only when adequate specifications or a more detailed purchase description cannot be reasonably employed. When using a brand name or equal purchase description, the description shall also list the salient characteristics and minimum acceptable features. Restrictive provisions or conditions may be used only to the extent necessary to satisfy Authority needs. Any article that the public body in its sole discretion determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted. If the Authority justifies, in writing, use of a brand name only specification, then state as "brand name-no substitute."

XX. PURCHASE ORDER

The Purchase order is a legal contract between the Authority and the vendor specified to deliver the goods or services. The vendor is to deliver the goods or services specified at the quoted prices and the Authority is obligated to pay the amount shown in the time specified.

A purchase order is prepared from an approved requisition (see Section XVII.) after all necessary information has been obtained by one of the purchase methods previously outlined and after the availability of funds has been verified. Purchase orders are assigned by the Purchasing Agent or Accounts Payable/Purchasing Technician and are valid only when signed by the Purchasing Agent or his/her designee.

The purchase order is distributed as follows:

Vendor Copy. This is the vendor's authorization to ship as specified.

Purchasing Copy. Retained in Purchasing as permanent record. Provides reference for order, record of receipt and vendor performance. Filed after completed with all associated documents in completed purchase order history files~~)~~.

Requestor Copy.
Sent to using agency for their records. Should be checked against requisition immediately upon receipt to insure that goods or services ordered are as requested. To be used as reference when receiving and inspecting goods or approving service performance. It is also to be used to acknowledge receipt of the goods or performance of the service and returned for payment processing with packing tickets attached to ultimately be filed in vendor files

Confirming purchase orders are used to document orders that were placed by telephone to help ensure speedy delivery and are so marked to avoid duplicate orders. Purchase orders can have attached agreements with additional terms over the standard form PO or specifications detailing the services or goods to be provided and are part of the purchase order if referenced.

XXI. CHANGE ORDER & CONTRACT MODIFICATIONS

Any modification in a purchase order or contract requires issuance of a change order. This is legal authorization for the change to be made by the vendor and for the Authority to accept and pay for goods or services that vary from those originally ordered.

To change a purchase order a requisition is required specifying the change required and authorized, whether it be to the quantity, specification or price. The requisition should be clearly marked "Change to Purchase Order Number_____". A purchase order is then prepared as before except that it will indicate that it is a change order. The body of the order will explain the purpose of the change order. If a price change is involved it will show an "adjusted net total". It will, in the body, reflect the change made whether to quantity, delivery or price requisition in the case of a purchase order.

Where a formal contract exists, a change order or contract modification request form, with appropriate approvals, is required for the issuance of a change order or contract modification. All change orders and contract modifications must be approved and issued by the Purchasing Agent, Executive Director or the Board of Directors as required below.

ALL CHANGES TO A CONTRACT MUST BE IN WRITING. This provides legal authority for the change and also provides a record of the history of the delivery/performance for future reference.

A contract may include provisions for modification of the contract during performance, but no fixed-price contract may be increased by more than the allowable increase specified in the VPPA, § 2.2-4309, without the advance written approval of the Board of Directors. This limitation applies to the aggregate change orders in a contract. The term of an existing contract may be extended for services to allow completion of any work undertaken but not completed during the original term of the contract.

VPPA

§ 2.2-4309. Modification of the contract.

A. A public contract may include provisions for modification of the contract during performance, but no fixed-price contract may be increased by more than twenty-five percent of the amount of the contract or $50,000, whichever is greater, without the advance written approval of the governing body. In no event may the amount of any contract, without adequate consideration, be increased for any purpose, including, but not limited to, relief of an offeror from the consequences of an error in its bid or offer.

B. Any public body may extend the term of an existing contract for services to allow completion of any work undertaken but not completed during the original term of the contract.

C. Nothing in this section shall prevent any public body from placing greater restrictions on contract modifications.

D. The provisions of this section shall not limit the amount a party to a public contract may claim or recover against a public body pursuant to § 2.2-4363 or any other applicable statute or regulation. Modifications made by a political subdivision that fail to comply with this section are voidable at the discretion of the governing body, and the unauthorized approval of a modification cannot be the basis of a contractual claim as set forth in § 2.2-4363.

XXII. PROCUREMENT UNDER ASSISTANCE AGREEMENTS

Procurements funded with federal, state, or local funds, shall be guided by the Purchasing Manual except as necessary to conform to the requirements of the funding source, provided that such conformance does not violate the terms and conditions of other applicable federal, state, or local laws.

Under the Virginia Public Procurement Act, Article 3, Exemptions and Limitation, § 2.2-4343 the Authority is authorized to conform to mandatory conditions on Federal grants or contracts that are in conflict with the Act if the Board of Directors determines in writing that such conformation is in the public interest. The specific provision of the Act conflicting with the special conditions shall be identified.

No such conflict is yet apparent in the Environmental Protection Agency's Procurement under Assistance Agreements (40 CFR Part 33) with which the Authority must comply as a condition of receiving EPA State Revolving Loan funds. Therefore, the Agreements are regarded for the purposes of compliance as a part of this Manual. The Agreements in certain circumstances generally place more stringent procurement requirements upon the Authority for certain circumstances than does the Procurement Act.

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Article 3, Exemptions and Limitation:

§ 2.2-4343. Exemption from operation of chapter for certain transactions. ~~A. .....~~

(B) Where a procurement transaction involves the expenditure of federal assistance or contract funds, the receipt of which is conditioned upon compliance with mandatory requirements in federal laws or regulations not in conformance with the provisions of this chapter, a public body may comply with such federal requirements, notwithstanding the provisions of this chapter, only upon the written determination of the governing body, in the case of political subdivisions, that acceptance of the grant or contract funds under the applicable conditions is in the public interest. Such determination shall state the specific provision of this chapter in conflict with the conditions of the grant or contract.

XXIII. DISADVANTAGED BUSINESS PROGRAM

PURPOSE

By adoption of this program the Authorities affirm ~~its~~their policy to make every reasonable effort to maintain and increase opportunities for small, minority and women owned businesses, micro businesses and businesses owned by service disabled veterans to participate in Authority purchasing activities.

DEFINITIONS

Minority individual means an individual who is a citizen of the United States or a legal resident alien and who satisfies one or more of the following definitions:

1. "African American" means a person having origins in any of the original peoples of Africa and who is regarded as such by the community of which this person claims to be a part.

2. "Asian American" means a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands, including but not limited to Japan, China, Vietnam, Samoa, Laos, Cambodia, Taiwan, Northern Mariana, the Philippines, a U.S. territory of the Pacific, India, Pakistan, Bangladesh, or Sri Lanka and who is regarded as such by the community of which this person claims to be a part.

3. "Hispanic American" means a person having origins in any of the Spanish-speaking peoples of Mexico, South or Central America, or the Caribbean Islands or other Spanish or Portuguese cultures and who is regarded as such by the community of which this person claims to be a part.

4. "Native American" means a person having origins in any of the original peoples of North America and who is regarded as such by the community of which this person claims to be a part or who is recognized by a tribal organization.

A minority-owned business means a business that is at least 51% owned by one or more minority individuals who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51% of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more minority individuals who are U.S. citizens or legal resident aliens, and both the management and daily business operations are controlled by one or more minority individuals.

A women-owned business' means a business that is at least 51% owned by one or more women who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51% of the equity ownership interest is owned by one or more women who are U.S. citizens or legal resident aliens, and both the management and daily business operations are controlled by one or more women.

A small business means a business, independently owned and controlled by one or more individuals who are U.S. citizens or legal resident aliens, and together with affiliates, has 250 or fewer employees, or average annual gross receipts of $10 million or less averaged over the previous three years. One or more of the individual owners shall control both the management and daily business operations of the small business.

A micro business means a certified Small Business under the SWaM Program and has no more than twenty-five (25) employees AND no more than $3 million in average annual revenue over the three-year period prior to their certification.

Service disabled veteran means a veteran who (i) served on active duty in the United States military ground, naval, or air service, (ii) was discharged or released under conditions other than dishonorable, and (iii) has a service-connected disability rating fixed by the United States Department of Veterans Affairs.

A service disabled veteran business means a business that is at least 51% owned by one or more service disabled veterans or, in the case of a corporation, partnership, or limited liability company or other entity, at least 51% of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more individuals who are service disabled veterans and both the management and daily business operations are controlled by one or more individuals who are service disabled veterans.

POLICY

The Rivanna Authorities through theirits employees and agents shall make reasonable efforts to increase and maintain opportunities for small, minority, micro, service disabled veteraens and women owned businesses to participate in Authority purchasing procedures. All such efforts shall be consistent with all local, state, and federal laws and regulations and with the other sections of this Purchasing Manual. Following are examples of actions the Authority shall take in order to promote purchasing of facilities, equipment, materials, supplies and services from disadvantaged businesses:

- assuring such businesses are included on bidder's lists;
- assuring solicitation of such businesses when appropriate;
- dividing purchases when economically feasible to promote broader participation;
- establishing delivery schedules whenever feasible to encourage broader participation;
- using the services of the Small Business Administration, the Office of Minority Business Enterprise, local professional and business organizations, and other groups to help promote participation of such businesses; and
- requiring prime contractors to take such affirmative action steps when letting subcontracts.

RESPONSIBILITIES

Responsibilities for development, implementation and management of this program rest with the Purchasing Agent, who shall:

- develop means to ensure inclusion of disadvantaged businesses on Authority bidder lists and to ensure they have open opportunity to compete for purchasing contracts• develop and maintain lists of disadvantaged businesses for prime contractor use;
- develop a system to monitor program effectiveness;
- plan and conduct training seminars as necessary for disadvantaged businesses; and
- participate when able to in small and/or minority, service disabled veteran or female owned business purchasing exhibitions.

PROCEDURES

Authority purchasing staff shall follow these procedures as a minimum effort to implement this program:

- provide copies as requested of RFP's and IFB's;
- remain open and cooperative in answering questions regarding the program;
- encourage disadvantaged businesses to compete for Authority purchases;
- review bid and proposal specifications to ensure they protect the Authority's interests and conform to legal requirements without unnecessarily restricting disadvantaged firms from bidding or proposing.

XXIV. DISPOSAL OF SURPLUS PROPERTY

From time to time the Authority may choose to dispose of surplus property that is either in excess of requirements, no longer used, obsolete, worn out, or scrapped. The Purchasing Agent shall use his/her best judgment to dispose of surplus property by one of the following means:

Surplus materials means personal property including, but not limited to, materials, supplies, equipment, and recyclable items, but does not include property as defined in *Code of Virginia,* § 2.2-1147 (real property or real estate), that is determined to be surplus.

Surplus property must be handled carefully and stored properly, in a manner that minimizes breakage or damage from rough handling, improper stacking, excessive wear, or inappropriate storage outside that exposes property to weather, or any other poor storage condition. Surplus property, including recyclable materials, shall NOT be taken for personal use or personal sale by any Authority employee.

METHODS OF DISPOSAL

Sales/Transfers to Governmental Institutions - Sales may be made to governmental entities at the item's fair market value. Occasionally, a no-cost transfer is appropriate, for example, to facilitate a cooperative program between governmental institutions. Donations of surplus property may be utilized for items which remain unsold after a public sale or when the cost of handling the sale would exceed expected returns. Donations will only be authorized for governmental entities and non-profits providing services to the local community. A donation or no-cost transfer shall be approved by the Executive Director. Sales to other public bodies are not governed by the VPPA.

Competitive Sealed Bidding - Property may be sold by competitive sealed bidding on an individual item or lot basis. Advertisements are posted on the Authority's Bid Board, in newspapers, web sites, and/or solicitations are sent to persons or firms on bidder's lists maintained by the Purchasing Agent.

Department of General Services Office of Surplus Property Management – The Authority is authorized to use the services or facilities of the Commonwealth's DGS/OSPM to dispose of their surplus property, pursuant to the OSPM policies, procedures, and guidelines. For questions or information about the disposal of surplus property contact the Director, DGS/OSPM at (804) 236-3675 or email statesurplus@dgs.virginia.gov with a description of their surplus material. Proceeds from the sale of the surplus property shall be returned to the Authority minus a service fee. The service fee charged by the Department shall be consistent with the fee charged by the Department to state public bodies.

Advertisement for a fixed price – The sale price shall be at fair market value. Sale shall be advertised to the public and notices may be sent to persons or firms known to be interested in the sale. Procedures must be established for sale on a "first come - first served" basis such as a sale at designated location and specific time when sale shall be open to the public.

Fixed price sale - Surplus property may be offered to the public at a set- or fixed-price with approval of the Executive Director. The sales price of an item is based on known sales experience and/or assessed current market value. Generally, set-price sales should be publicly advertised at least a week in advance including the procedures established for the sale

Negotiated Sale - Under exceptional circumstances, surplus property may be sold through negotiation, such as when property has not been sold despite efforts of public sales, or where timely removal from the department's premises is crucial.

On-line Public Auctions - Property may be sold through internet on-line auctions, which generally allows items to remain at the Authority while posted for sale. Surplus items may be sold through a contracted on-line auction vendor or through the Commonwealth's DGS/OSPM Division which has contracted with a vendor for on-line auction sales.

Live Public Auction – A live advertised public auction may be conducted if sufficient surplus property exists and the value is sufficient to justify the expenses and labor including the fee paid for advertising and an auctioneer. The auctioneer should be obtained using the required procurement procedures based on the expected fee or through an available cooperative agreement.

Recycling - Recycling of eligible unsold surplus property such as computer monitors, large amounts of surplus paper products, etc. is strongly encouraged.

Spot Bid - For the disposal of scrap materials such as aluminum, steel, brass, copper wire, etc., the spot bid procedure may be used for selling items. This procedure involves contacting buyers on an informal basis to determine the best price under the current market conditions. Use of this method streamlines the disposal effort and eliminates storage of items until a sufficient quantity is available for competitive sealed bidding. The Spot Bidding procedure is also authorized for the Authority's sale of recyclable material received at solid waste centers including the McIntire Recycling Center.

Trade-ins - Obsolete, worn out, inactive, or uneconomical operating equipment may be traded in on the purchase of new equipment. Trade-in procedures should not be used if the monetary allowance offered is substantially below the known current sales price less expected administration costs associated with other disposal options. Items for trade-in must be fully described on the requisition and purchase order with the trade-in allowance shown on the purchase order. Authority property may not be used as credit on future purchases or to pay for a service provided to the Authority.

Computers and other information technology (IT) Assets including copiers - The state has a contract available to public bodies for the provision of Secure Data Destruction and Recycling Services available on the Virginia Information Technology (VITA) website. Prior to the disposal, regardless of the method used, sale, trade, recycling or any other transfer of computers or other IT assets, the Purchasing Agent must ensure that all hard drives or other sources of secure data or any other confidential Authority data or personal identifying information of employees have been removed.

Disposition and Accountability of Federally Funded Property – Disposition of any material or equipment purchased with Federal Funds must be accounted for in accordance with current Federal regulations.

PURCHASES BY AUTHORITY EMPLOYEES AND THEIR FAMILIES.

Except within the limits noted below, the *Code of Virginia*, § 2.2-3100 of the Conflict of Interests Act prohibits employees and their immediate family from engaging in certain transaction with a public employer, including purchasing surplus property valued at over $500. An employee's immediate family includes a spouse, children, parents, brothers and sisters, and any other person living in the same household as the employee. A $500 limit to purchasing surplus property applies to surplus property sales, such as auctions or internet sales even if the buyer works for a different agency than the selling agency unless the property is purchased in any sale of surplus property at uniform (fixed) prices that are available to the public. Employees of the Authority should not purchase property if they influence the maintenance, surplus designation, pricing or disposition of the property item.

XXV. DEBARMENT OF PROSPECTIVE CONTRACTORS

1. Generally

The purchasing agent may, in the public interest and consistent with § 2.2-4321 of the VPPA, Debarment, debar a prospective contractor (including a prospective subcontractor, supplier, insurer or surety) for any of the causes listed in section 2 below, using procedures described in section 3. The existence of a cause for debarment under section 2, however, does not necessarily require that the contractor be debarred. The seriousness of the contractor's acts or omissions and any mitigating factors should be considered in making any debarment decision. When debarment occurs, such debarment shall be considered to be just cause for cancellation of any existing contracts held by the person or business debarred.

2. Causes

The purchasing agent may, after consulting with the Authority's attorney, debar a prospective contractor for any of the following causes:

a) Conviction of, or civil judgment establishing the contractor's:
   i. Commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public contract or subcontract; or
   ii. Commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property; or
   iii. Commission of any other offense indicating a lack of business integrity or business honesty that seriously and directly affects the present responsibility of the prospective contractor; or
   iv. Failing to disclose a condition constituting a conflict of interest by any officer, director, owner, partner, or agent of the vendor in a contract or purchase order awarded by Authority;
   v. Conviction under state or federal antitrust statutes arising out of the submission of bids or proposals; or
   vi. Conviction of any officer, director, owner, partner, or agent of the vendor of any criminal offense involving public contracting.

b) Violation of the terms of a government contract or subcontract so serious as to justify debarment, such as (but not limited to) willful failure to perform in accordance with the terms of one (1) or more contracts, or a history of failure to perform, or of unsatisfactory performance of one (1) or more contracts.

c) Debarment by a federal, state or local government, a public authority, or other agency or entity subject to public procurement laws and requirements.

d) Any other cause of so serious or compelling a nature that it affects the present responsibility of a government contractor or subcontractor.

3. Debarment procedures

The following procedures governing the debarment decision-making process are designed to be as informal as practicable, consistent with principles of fundamental fairness:

a) Notice to contractor.
   i. Debarment shall be initiated by advising the prospective contractor, by hand-delivery or by certified mail, return receipt requested, that debarment is being considered. Such notice shall include the reasons for the proposed debarment in terms sufficiently detailed to put the contractor on notice of the conduct or transaction(s) upon which the debarment is based, and shall identify the specific period of debarment under consideration. Unless a response is received from the prospective contractor within ten (10) working days of the date of this notice, the purchasing agent's decision shall be final. For the purposes of this subsection the "date of the notice" shall be deemed to be the date on which the notice is hand-delivered to the contractor or is deposited in the United States Mail.

b) Opportunity of contractor to respond.
   i. The prospective contractor or his authorized representative may submit to the purchasing agent, in writing, and within ten (10) working days of the date of the notice described in subparagraph 3(a), any information or argument that the contractor deems relevant to the proposed

debarment, including, without limitation, any specific information that raises a genuine dispute as to a fact that is material to the purchasing agent's findings or conclusions. Following timely receipt of information from the contractor, the purchasing agent shall review the proposed debarment and shall, within ten (10) working days thereafter, render a final determination. During the ten-day review period, the prospective contractor shall provide the purchasing agent with such additional information as he may request in order to complete his review of the proposed debarment.

4. Appeals

A decision to debar or suspend shall be final and conclusive, unless the debarred or suspended person within five (5) working days after receipt of the decision protests the decision in writing to the Executive Director. The Executive Director shall issue a decision in writing within ten (10) working days after receipt of the protest stating the reasons for the action taken. This decision shall be final unless legal action as provided for in § 2.2-– 4364 Code of Virginia is taken within ten (10) working days of the Executive Director's decision.

5. Notice of decision.

A copy of the decision to debar or suspend shall be mailed or otherwise furnished immediately to the debarred or suspended person, with a copy to the Executive Director.

6. Period of debarment

A debarment shall be and remain effective for a period commensurate with the seriousness of the cause, as determined by the purchasing agent in his discretion, but shall not exceed three (3) years or for the length of the contract upon which debarment is based, whichever is longer.

XXVI. VENDOR APPEALS PROCEDURE

While the Authority is authorized in § 2.2-4365 of the VPPA, to "establish an administrative procedure for hearing (i) protests of a decision to award or an award, (ii) appeals from refusals to allow withdrawal of bids, (iii) appeals from disqualifications and determinations of non-responsibility, and (iv) appeals from decisions on disputes arising during the performance of a contract, or (v) any of these" the Authority has determined that the Virginia Public Procurement Act and the courts provide adequate review and remedies of Authority procurement practices. Therefore, no other administrative appeals procedure has been established.

Any inquiring vendors should be directed to the Virginia Public Procurement Act, Article 5, Remedies, and their contract or purchase order if applicable.

XXVII. GLOSSARY OF COMMONLY USED TERMS

Bid Bond: An insurance agreement in which a third party agrees to be liable to pay a certain amount of money in the event a selected bidder fails to accept the contract as bid.

Brand name or equal specification: A specification limited to one or more items by manufacturers' names or catalogue numbers to describe the standard of quality, performance, and other salient characteristics needed to meet requirements and which provides for the submission of equivalent products.

Business: any type of corporation, partnership, limited liability company, association, or sole proprietorship operated for profit.

Change order (unilateral): A written order signed and unilaterally issued by the Authority directing any contractor to make changes which the "changes" clauses of the contract authorizes the Authority to order without the consent of the contractor.

Claim: a written assertion or demand, by one of the parties to a contract, which seeks, as a contractual right, payment of money, adjustment of contract terms, or other relief, for injury, loss, or damage arising under or relating to the contract.

Competitive Negotiation: A method for purchasing goods and services, usually of a complex and technical nature whereby qualified individuals or firms are solicited by means of a Request for Proposals (RFP). Negotiations are conducted with selected offerors and the best proposal, as judged against criteria contained in the Request for Proposals, is accepted and an award issued.

Competitive sealed bidding: The offer of firm bids by individuals or firms competing for a contract, privilege, or right to supply specified services or goods bid submitted in a sealed envelope to prevent disclosure of its contents before the deadline set for the receipt of all bids. Competitive sealed bidding shall not be used to contract for professional services.

Construction: Construction shall mean building, altering, repairing, improving or demolishing any structure, building or highway, and any draining, dredging, excavation, grading or similar work upon real property;

Contract: An agreement enforceable by law, between two or more competent parties, to do or not to do something, not prohibited by law, for a consideration. A contract is any type of agreement or order for the procurement of goods or services.

Contract modification: Any written alteration in specifications, delivery point, rate of delivery, period of performance, price, quantity, or other provision of any contract accomplished by mutual action of the parties of the contract.

Contractor: Any person having a contract with the Authority.

Cooperative Procurement: A procurement by a public body with one or more other public bodies, for the purpose of combining requirements for the purchase of like goods and/or services in order to increase efficiency and/or reduce administrative expenses.

Direct or indirect participation in procurement process: Involvement through decision, approval, disapproval, recommendation, preparation of any part of a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity.

Disadvantaged business: A business which is owned or controlled by a majority of persons, not limited to members of minority groups, who have been deprived of the opportunity to develop and maintain a competitive position in the economy because of social disadvantages.

F.O.B. - (Free On Board): Term designating ownership of shipped goods and assigning liability for freight costs and damaged or lost goods. Most commonly used are:

a) *Shipping Point* - Prepay and Add: title of goods passes to buyer when goods leave vendors' dock, buyer is liable for loss or damage in transit; seller pays freight costs and adds to invoice
b) *Destination* - Prepaid and allowed: title passes to buyer upon receipt; seller is liable for loss or damage in transit; seller pays freight costs; preferred

Governing Body: The Board of Directors.

Immediate family: A spouse, children, parents, brothers and sisters, and any other person living in the same household as the employee.

Informality: A minor defect or variation of the bid or proposal from the exact requirements of the Invitation for Bids or the Request for Proposals, which does not affect the price, quality, quantity, or delivery schedule for the goods, services or construction being procured.

Invitation for bids: A document, containing or incorporating by reference the specifications or scope of work and all contractual terms and conditions, that is used to solicit written bids for a specific requirement for goods or nonprofessional services.

Late Bid or Proposal: A bid or proposal which is received at the place designated in the Invitation for Bids or Request for Proposals after the deadline established by the solicitation.

Liquidated Damages: A sum stated in a contract to be paid as ascertained damages for failure to perform in accordance with the contract. The damage figure stipulated must be a reasonable estimate of the probable loss to the agency, and not calculated simply to impose a penalty on the contractor.

Minority Individual: "Minority individual" means an individual who is a citizen of the United States or a non-citizen who is in full compliance with United States immigration law and who satisfies one or more of the following definitions:

1. "African American" means a person having origins in any of the original peoples of Africa and who is regarded as such by the community of which this person claims to be a part.

2. "Asian Americans" means a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands, including but not limited to Japan, China, Vietnam, Samoa, Laos, Cambodia, Taiwan, Northern Marinas, the Philippines, a U. S. territory of the Pacific, India, Pakistan, Bangladesh or Sri Lanka and who is regarded as such by the community of which this person claims to be a part.

3. "Hispanic American" means a person having origins in any of the Spanish speaking peoples of Mexico, South or Central America, or the Caribbean Islands or other Spanish or Portuguese cultures and who is regarded as such by the community of which this person claims to be a part.

4. "Native American" means a person having origins in any of the original peoples of North America and who is regarded as such by the community of which this person claims to be a part or who is recognized by a tribal organization.

Minority-Owned Business: Minority-owned business means a business concern that is at least 51% owned by one or more minority individuals or in the case of a corporation, partnership or limited liability company or other entity, at least 51% of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more minority individuals and both the management and daily business operations are controlled by one or more minority individuals.

Nonprofessional services: Any services not specifically identified as professional services in the definition of professional services.

Notice of Intent to Award: The Notice of Intent to Award is a written notice, or bid tabulation sheet publicly displayed, prior to award, that shows the selection of a vendor for the award of a specific contract or purchase order. This decision may be changed prior to the actual award of a contract or purchase order.

Potential Bidder or Offeror: A person who, at the time an agency awards or proposes to award a contract, is engaged in the sale or lease of goods, or the sale of services, insurance or construction of the type to be procured under such contract, and who at such time is eligible and qualified in all respects to perform that contract, and who would have been eligible and qualified to submit a bid or proposal had the contract been procured through competitive sealed bidding or competitive negotiation.

Professional services: Shall mean work performed by an independent contractor within the scope of the practice of accounting, actuarial services, architecture, land surveying, landscape architecture, dentistry, law, medicine, optometry, pharmacy, or professional engineering.

Prequalification: A procedure to prequalify products or vendors and limit consideration of bids or proposals to only those products or vendors which have been prequalified.

Public body: Any legislative, executive or judicial body, agency, office, department, authority, post, commission, committee, institution, board or political subdivision created by law to exercise some sovereign power or to perform some governmental duty, and empowered by law to undertake the activities described in this chapter.

Request for proposals: All documents, whether attached or incorporated by reference, utilized for soliciting proposals; the RFP procedure requires negotiation with offerors as distinguished from competitive bidding when using an Invitation for Bids.

Responsible bidder or offeror: A person or firm who has the capability, in all respects, to perform fully the contract requirements and the moral and business integrity and reliability which will assure good faith performance, and who has been prequalified, if required.

Responsive bidder: A person or firm who has submitted a bid which conforms in all material respects to the Invitation for Bids.

Services: Any activities performed by an independent contractor wherein the service rendered does not consist primarily of acquisition of equipment or materials, or the rental of equipment, materials and supplies.

Shall, Must: As used in specifications or requirements of a Request for Proposals (RFP), the terms "must" and "shall" identify requirements whose absence will have a major negative impact on the suitability of the proposed solution. Items labeled as "should" or "may" are highly desirable, although their absence will not have a large impact and would be useful, but are not necessary.

Small Business: "Small business " means a business, independently owned or operated by one or more persons who are citizens of the United States or non-citizens who are in full compliance with United States immigration law, which, together with affiliates, has 250 or fewer employees, or average annual gross receipts of $10 million or less averaged over the previous three years.

Sole Source: A product or service which is practicably available only from one source.

Specification: A description of the technical requirements for a material, product, or service that includes the criteria for determining whether these requirements are met. A specification may describe the performance parameters which a supplier has to meet, or it may provide a complete design disclosure of the work or job to be done. Specifications for service contracts normally take the form of a statement of work.

SWAM: The acronym SWAM, includes small businesses, women-owned businesses and minority-owned businesses.

Termination For Convenience: The termination by the owner, at its discretion, of the performance of work in whole or in part and makes settlement of the contractor's claims in accordance with appropriate policy and procedures.

Termination For Default: Action taken by a purchasing office to order a contractor to cease work under the contract, in whole or in part, because of the contractor's failure to perform in accordance with the contract's terms and conditions.

Virginia Public Procurement Act (VPPA): Chapter 43 of Title 2.2, *Code of Virginia,* which enunciates the public policies pertaining to governmental procurement from non-governmental sources.

Women-Owned Business: Women-owned business means a business concern that is at least 51% owned by one or more women who are citizens of the United States or non-citizens who are in full compliance with United States immigration law, or in the case of a corporation, partnership or limited liability company or other entity, at least 51% of the equity ownership interest is owned by one or more women who are citizens of the United States or non-citizens who are in full compliance with United States immigration law, and both the management and daily business operations are controlled by one or more women who are citizens of the United States or non-citizens who are in full compliance with the United States immigration law.

695 MOORES CREEK LANE
CHARLOTTESVILLE, VA 22902-9016
TEL: 434.977.2970
FAX: 434.293.8858
WWW.RIVANNA.ORG

MEMORANDUM

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

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

Reviewed By: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **COMPENSATION SURVEY – PAY GRADE ADJUSTMENTS**

DATE: **FEBRUARY 27, 2018**

Staff, with the assistance of Evergreen Solutions, LLC (Evergreen) of Tallahassee, FL, conducted a comprehensive review of both Authorities' compensation and classification system to determine if our compensation plans, pay scale and job titles continue to be competitive compared with market and internal expectations. The study, which is a key element identified in the recent strategic plan, concluded with several recommendations to increase our competitiveness in the market, to combat potential salary compression and to consistently evaluate new and updated position titles.

The external market compensation survey and analysis identified certain job classifications that are compensated below market average. The survey also found that the overall pay grade scale was below market conditions. However, the study did conclude that the actual salaries currently paid were within or above the market survey averages. The internal equity analysis identified classifications compensated disproportionately to other classifications based on complexity of the job performed.

In summary, the study supports a 4% overall pay scale adjustment, which does not have a budget impact. All staff in their current positions would remain the same as none would hit the minimum floor of the new adjusted pay scale range.

Board Action Requested

Staff recommends adoption of the attached Proposed Pay Grade Scale for FY 2018 – 2019 (Table 1). This table shows the current pay grade scale compared to the proposed scale (adopted in 2014) which represents a 4% increase in the over scale.

Staff also recommends approval of the proposed job title placements as shown with the attached (Table 2) as recommended by Evergreen Solutions, LLC. The placement of job classifications corrects those positions that were identified as significantly below market as mentioned above.

TABLE 1

Current Pay Grade Scale FY 2014-2015			
Grade	Min	Mid	Max
1	$21,172	$28,159	$35,146
2	$22,231	$29,567	$36,903
3	$23,343	$31,046	$38,749
4	$24,510	$32,598	$40,686
5	$25,735	$34,227	$42,719
6	$26,958	$35,854	$44,750
7	$28,373	$37,737	$47,100
8	$29,791	$39,622	$49,453
9	$31,281	$41,604	$51,927
10	$32,845	$43,684	$54,523
11	$34,487	$45,868	$57,249
12	$36,212	$48,162	$60,112
13	$38,023	$50,570	$63,117
14	$39,924	$53,099	$66,274
15	$41,920	$55,754	$69,587
16	$44,016	$58,541	$73,067
17	$46,216	$61,468	$76,719
18	$48,528	$64,542	$80,556
19	$50,954	$67,769	$84,584
20	$53,501	$71,156	$88,812
21	$56,177	$74,715	$93,253
22	$58,986	$78,451	$97,916
23	$61,934	$82,373	$102,811
24	$65,031	$86,491	$107,952
25	$68,283	$90,816	$113,350
26	$71,697	$95,357	$119,017
27	$75,282	$100,125	$124,968
28	$79,046	$105,131	$131,217

Proposed Pay Grade Scale FY 2018 - 2019			
Grade	Min	Mid	Max
10	$25,490	$33,902	$42,314
20	$26,765	$35,597	$44,429
30	$28,103	$37,377	$46,651
40	$29,508	$39,246	$48,983
50	$30,983	$41,208	$51,433
60	$32,533	$43,268	$54,004
70	$34,159	$45,432	$56,704
80	$35,867	$47,703	$59,540
90	$37,661	$50,089	$62,517
100	$39,544	$52,593	$65,642
110	$41,521	$55,223	$68,925
120	$43,597	$57,984	$72,371
130	$45,777	$60,883	$75,989
140	$48,066	$63,927	$79,789
150	$50,469	$67,123	$83,778
160	$52,992	$70,480	$87,967
170	$55,642	$74,004	$92,365
180	$58,424	$77,704	$96,984
190	$61,345	$81,589	$101,833
200	$64,412	$85,668	$106,925
210	$67,633	$89,952	$112,271
220	$71,015	$94,449	$117,884
230	$74,565	$99,172	$123,779
240	$78,294	$104,131	$129,967
250	$82,208	$109,337	$136,466

TABLE 2

Current Grade	Current Min	Current Mid	Current Max	Current FLSA	Proposed Title	Proposed Grade	Proposed Min	Proposed Mid	Proposed Max	Proposed FLSA
4	$24,510	$32,598	$40,686	Non Exempt	Maintenance Worker	10	$25,490	$33,902	$42,314	Non Exempt
6	$26,958	$35,854	$44,750	Non Exempt	Operator Attendant -Ivy / Recycling	20	$26,765	$35,597	$44,429	Non Exempt
5	$25,735	$34,227	$42,719	Non Exempt	Scale Clerk	30	$28,103	$37,377	$46,651	Non Exempt
5	$25,735	$34,227	$42,719	Non Exempt	Administrative Assistant	30	$28,103	$37,377	$46,651	Non Exempt
6	$26,958	$35,854	$44,750	Non Exempt	Mechanic Helper	40	$29,508	$39,246	$48,983	Non Exempt
7	$28,373	$37,737	$47,100	Non Exempt	Plant Operator 4	50	$30,983	$41,208	$51,433	Non Exempt
7	$28,373	$37,737	$47,100	Non Exempt	Plant Operator Trainee	50	$30,983	$41,208	$51,433	Non Exempt
8	$29,791	$39,622	$49,453	Non Exempt	Mechanic 4	60	$32,533	$43,268	$54,004	Non Exempt
9	$31,281	$41,604	$51,927	Non Exempt	Mechanic 3	70	$34,159	$45,432	$56,704	Non Exempt
9	$31,281	$41,604	$51,927	Non Exempt	Plant Operator 3	70	$34,159	$45,432	$56,704	Non Exempt
9	$31,381	$41,604	$51,927	Non Exempt	Heavy Equipment Operator/Attendant	80	$35,867	$47,703	$59,540	Non Exempt
10	$32,845	$43,684	$54,523	Non Exempt	Acct Tech / AP	80	$35,867	$47,703	$59,540	Non Exempt
10	$32,845	$43,684	$54,523	Non Exempt	Acct Tech / AR	80	$35,867	$47,703	$59,540	Non Exempt
10	$32,845	$43,684	$54,523	Non Exempt	Administrative Office Technician	80	$35,867	$47,703	$59,540	Non Exempt
10	$32,845	$43,684	$54,523	Non Exempt	Payroll & Benefits Coordinator	80	$35,867	$47,703	$59,540	Non Exempt
10	$32,845	$43,684	$54,523	Non Exempt	Vehicle Equipment Mechanic	80	$35,867	$47,703	$59,540	Non Exempt
11	$34,487	$45,868	$57,249	Non Exempt	Driver/Equipment Operator	80	$35,867	$47,703	$59,540	Non Exempt
10	$32,845	$43,684	$54,523	Non Exempt	Lab Tech	90	$37,661	$50,089	$62,517	Non Exempt
10	$32,845	$43,684	$54,523	Non Exempt	Water Quality Specialist	90	$37,661	$50,089	$62,517	Non Exempt
11	$34,487	$45,868	$57,249	Non Exempt	Mechanic 2	90	$37,661	$50,089	$62,517	Non Exempt
11	$34,487	$45,868	$57,249	Non Exempt	Plant Operator 2	90	$37,661	$50,089	$62,517	Non Exempt
12	$36,212	$48,162	$60,112	Non-Exempt	Executive Assistant	100	$39,544	$52,593	$65,642	Non Exempt
13	$38,023	$50,570	$63,117	Non Exempt	Plant Operator 1	110	$41,521	$55,223	$68,925	Non Exempt
14	$39,924	$53,099	$66,274	Exempt	Communication Manager/Executive Coor.	110	$41,521	$55,223	$68,925	Exempt
14	$39,924	$53,099	$66,274	Non Exempt	SCADA Technician	110	$41,521	$55,223	$68,925	Non Exempt
14	$39,924	$53,099	$66,274	Non Exempt	Engineering Technician/Inspector	120	$43,597	$57,984	$72,371	Non Exempt
14	$39,924	$53,099	$66,274	Non Exempt	Mechanic 1	120	$43,597	$57,984	$72,371	Non Exempt
15	$41,920	$55,754	$69,587	Non Exempt	Chemist	120	$43,597	$57,984	$72,371	Non Exempt
16	$44,016	$58,541	$73,067	Non Exempt	Wastewater Treatment Plant Supervisor	130	$45,777	$60,883	$75,989	Non Exempt
16	$44,016	$58,541	$73,067	Non Exempt	Water Treatment Plant Supervisor	130	$45,777	$60,883	$75,989	Non Exempt
16	$44,016	$58,541	$73,067	Exempt	Information Systems Assistant Administrat	140	$48,066	$63,927	$79,789	Exempt
16	$44,016	$58,541	$73,067	Non Exempt	GIS Coordinator	140	$48,066	$63,927	$79,789	Non Exempt
16	$44,016	$58,541	$73,067	Exempt	SCADA Systems Administrator	140	$48,066	$63,927	$79,789	Exempt
17	$46,216	$61,468	$76,719	Exempt	Senior Accountant	150	$50,469	$67,123	$83,778	Exempt
16	$44,016	$58,541	$73,067	Non Exempt	Maintenance Assistant Manager	160	$52,992	$70,480	$87,967	Exempt
17	$46,216	$61,468	$76,719	Non Exempt	Ivy MUC Assistant Manager	160	$52,992	$70,480	$87,967	Exempt
18	$48,528	$64,542	$80,556	Exempt	Wastewater Department Assistant Manage	160	$52,992	$70,480	$87,967	Exempt
18	$48,528	$64,542	$80,556	Exempt	Water Department Assistant Manager	160	$52,992	$70,480	$87,967	Exempt
20	$53,501	$71,156	$88,812	Exempt	Civil Engineer	170	$55,642	$74,004	$92,365	Exempt
20	$53,501	$71,156	$88,812	Exempt	Lab Manager	170	$55,642	$74,004	$92,365	Exempt
20	$53,501	$71,156	$88,812	Exempt	Water Resources Manager	170	$55,642	$74,004	$92,365	Exempt
21	$56,177	$74,715	$93,253	Exempt	Environment & Safety Manager	180	$58,424	$77,704	$96,984	Exempt
21	$56,177	$74,715	$93,253	Exempt	Human Resources Manager	180	$58,424	$77,704	$96,984	Exempt
21	$56,177	$74,715	$93,253	Exempt	Ivy MUC Manager	190	$61,345	$81,589	$101,833	Exempt
22	$58,986	$78,451	$97,916	Exempt	Information Systems Administrator	190	$61,345	$81,589	$101,833	Exempt
22	$58,986	$78,451	$97,916	Exempt	Maintenance Manager	190	$61,345	$81,589	$101,833	Exempt
22	$58,986	$78,451	$97,916	Exempt	Senior Civil Engineer	190	$61,345	$81,589	$101,833	Exempt
22	$58,986	$78,451	$97,916	Exempt	Wastewater Department Manager	190	$61,345	$81,589	$101,833	Exempt
22	$58,986	$78,451	$97,916	Exempt	Water Department Manager	190	$61,345	$81,589	$101,833	Exempt
26	$71,697	$95,357	$119,017	Exempt	Engineering Manager	210	$67,633	$89,952	$112,271	Exempt
28	$79,046	$105,131	$131,217	Exempt	Director of Engineering & Maintenance	250	$82,208	$109,337	$136,466	Exempt
28	$79,046	$105,131	$131,217	Exempt	Director of Finance & Administration	250	$82,208	$109,337	$136,466	Exempt
28	$79,046	$105,131	$131,217	Exempt	Director of Operations	250	$82,208	$109,337	$136,466	Exempt

Classification and Compensation Study for the Rivanna Authorities

Submitted by:

Evergreen Solutions, LLC

FEBRUARY 27, 2018

Study Process

- Study Goals
- Study Initiation and Data Collection
- Outreach and Orientation Sessions
- Analysis of Current Conditions
- Market Salary Survey
- Recommendations

Evergreen Solutions, LLC

Study Goals

- Review current classification and compensation system to ensure internal equity
- Survey peer organizations to ensure external equity
- Produce recommendations to provide the organization with a classification and compensation system that is equitable both—internally and externally

Evergreen Solutions, LLC

Study Initiation and Outreach

- Study Initiation – June 2017
- Orientation Sessions and Focus Groups – July 2017
- 11 Focus Groups conducted with 55 Employees
- Job Assessment Tool (JAT) – July 21 to August 15
- JAT Participation Rate – 83.5 percent

Evergreen Solutions, LLC

Outreach Summary

- Many employees appreciated the job stability that was afforded to them by the Authorities. Also, Employees praised the caring atmosphere in the agency and comradery with fellow employees.

- Compression is a real issue for operators, directors, managers and senior engineers, among others. This is especially true at the senior management level. Also, there is not much difference in pay between a one-year and 20-year employee in the same position.

- Employees said the current job descriptions do not, in many cases, reflect what the employees actually do. In many instances, the "Other Duties as Assigned," have grown due to turnover, program changes at the state and federal levels, changes in technology, and the like.

Evergreen Solutions, LLC

Assessment of Conditions

- Overall, the Authorities share a Single Salary Schedule with 56 Unique Classifications and 99 budgeted positions across the two organizations.

- Range spread - generally set between 50.0 to 70.0 percent for best practice - is consistent across the salary schedule with a range of 66.0 percent.

- The Authorities generally maintain a healthy positive linear relationship between experience and grade penetration throughout each pay grade.

Market Survey

- 63 Benchmark Classifications
- 26 Market Peers (including counties, cities, school systems, and other Utility Authorities.)
- 607 Market Matches Made - adjusted for the cost of living
- Evergreen found that overall salary ranges are:
  - 5.0 percent below the market average minimum across all surveyed job titles;
  - 6.3 percent below the market midpoint average; and
  - 7.4 percent below market average at maximum of the range.

Evergreen Solutions, LLC

Market Survey Peers and COLA

Market Peers	Cost of Living Index	Market Peers	Cost of Living Index
Rivanna, VA	106.4	Appomattox County Water*	97.9
Albemarle County	106.4	Augusta County Service Authority	99.9
Albemarle County Schools	106.4	Bedford County Public Service Authority	101.3
Chesterfield County	104.7	Fauquier County Water & Sanitation Authority	106.5
Fluvanna County	100.6	Harrisonburg-Rockingham Regional Sewer Authority	97.9
Hanover County	104.8	Hopewell Water Renewal	100.3
Henrico County	107.3	James City Service Authority	107.2
Spotsylvania County	103.1	Loudoun Water	109.5
City of Charlottesville	106.4	Roanoke Valley Resource Authority	107.0
City of Lynchburg	99.0	South Central Wastewater Authority*	104.7
City of Richmond	111.2	Upper Occoquan Service Authority	120.7
City of Staunton	99.9	Western Virginia Water Authority	107.0
City of Williamsburg	107.2	University of Virginia	106.4
Albemarle County Service Authority	106.4		

Recommendations

RECOMMENDATION 1: Adopt the revised unified grade structure and class list for both Authorities employees.

Evergreen Solutions, LLC

Recommendations

Grade	Min	Mid	Max	RS	MP
10	$25,490	$33,902	$42,314	66%	-
20	$26,765	$35,597	$44,429	66%	5%
30	$28,103	$37,377	$46,651	66%	5%
40	$29,508	$39,246	$48,983	66%	5%
50	$30,983	$41,208	$51,433	66%	5%
60	$32,533	$43,268	$54,004	66%	5%
70	$34,159	$45,432	$56,704	66%	5%
80	$35,867	$47,703	$59,540	66%	5%
90	$37,661	$50,089	$62,517	66%	5%
100	$39,544	$52,593	$65,642	66%	5%
110	$41,521	$55,223	$68,925	66%	5%
120	$43,597	$57,984	$72,371	66%	5%
130	$45,777	$60,883	$75,989	66%	5%
140	$48,066	$63,927	$79,789	66%	5%
150	$50,469	$67,123	$83,778	66%	5%
160	$52,992	$70,480	$87,967	66%	5%
170	$55,642	$74,004	$92,365	66%	5%
180	$58,424	$77,704	$96,984	66%	5%
190	$61,345	$81,589	$101,833	66%	5%
200	$64,412	$85,668	$106,925	66%	5%
210	$67,633	$89,952	$112,271	66%	5%
220	$71,015	$94,449	$117,884	66%	5%
230	$74,565	$99,172	$123,779	66%	5%
240	$78,294	$104,131	$129,967	66%	5%
250	$82,208	$109,337	$136,466	66%	5%

Evergreen Solutions, LLC

Recommendations

RECOMMENDATION 2: Utilize Evergreen's JAT tool and Point-factor system to revise and establish paygrades.

Evergreen Solutions, LLC

Recommendations

RECOMMENDATION 3: Conduct a compensation study every 3 – 5 years to ensure and further improve on the Authorities market position.

Evergreen Solutions, LLC

Thank you!

David Bollenback, Consultant
Evergreen Solutions, LLC
2878 Remington Green Circle
Tallahassee, Florida 32308
850.383.0111 phone
850.383.1511 fax
www.ConsultEvergreen.com

Evergreen Solutions, LLC

RIVANNA
WATER & SEWER AUTHORITY

695 MOORES CREEK LANE
CHARLOTTESVILLE, VA 22902-9016
TEL: 434.977.2970
FAX: 434.293.8858
WWW.RIVANNA.ORG

MEMORANDUM

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

FROM: **BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: **INTRODUCTION OF FY 2019-2023 CAPITAL IMPROVEMENT PLAN**

DATE: **FEBRUARY 27, 2018**

The proposed Five-Year Capital Improvement Plan (CIP) totaling $152.7 million for Fiscal Years 2019-2023 is being submitted for your review. This CIP was developed to strategically and proactively provide water and wastewater infrastructure in a financially responsible manner for our customers and the community.

The proposed CIP includes $119.6 million for water projects and $33.1 million for wastewater projects for a total proposed budget of $152.7 million. The proposed CIP is 12 % larger than the FY 2017-2021 CIP, which included $76.9 million for water and $59.0 million for wastewater for a total of $135.9 million. Major objectives in the proposed CIP include:

- Increasing drinking water treatment capacity at the Observatory and Crozet plants
- Renewal of our largest water treatment plant at South Rivanna
- Improving water supply, redundancy and reliability, in accordance with the Community Water Supply Plan, by:
    - Acquiring the right-of-way for a pipeline to connect the South Rivanna and Ragged Mountain Reservoirs
    - Replacing piping and pumping stations which convey raw water from the Ragged Mountain Reservoir to the Observatory Treatment Plant and have exceeded their service life
- Compliance with new regulatory requirements for the Beaver Creek Dam

Significant projects in the CIP include:

A. Additional infrastructure to increase capacity and redundancy:

1.	Observatory WTP Improvements	$18.6 M
2.	Avon to Pantops Water Main	$13.2 M

3. S. Rivanna to Ragged Mtn Reservoir WL Phase 1: Pipeline Right-of-Way Acquisition	$2.3 M
4. Crozet WTP Improvements	$6.9 M
5. Crozet Flow Equalization Tank	$3.3 M
6. Route 29 Water Pump Station	$3.5 M
7. SFR River Crossing & WL	$5.3 M
	$53.1 M

B. Renewal of existing infrastructure

1. S. Rivanna to Ragged Mtn Reservoir WL Phase 2: Replace PS and Pipes, RMR-OWTP	$6.5 of 18 M
2. South Rivanna WTP Renovations	$7.5 M
3. Interceptor Sewer & Manhole Repairs	$1.5 M
4. Buck's Elbow Water Tank Repairs	$1.2 M
5. Security Enhancements	$2.4 M
6. Engineering and Administration Building	$3.0 M
	$22.1 M

C. State and Federal Regulations

1. Beaver Creek Dam Alterations	$14.89 M
2. Upper Schenks Branch Sewer Interceptor	$4.5 M
	$19.4 M

This proposed CIP will continue the efforts of this Authority to provide reliable water and wastewater infrastructure for our customers and community.

Board Action Requested:

The FY 2019-2023 Capital Improvement Program is provided for review by the Board of Directors.

Capital Improvement Plan

Fiscal Years 2019 – 2023

DRAFT February 2018

Rivanna Water & Sewer Authority

695 Moores Creek Lane, Charlottesville, Virginia 22902

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Introduction

The Capital Improvement Plan (CIP) for Fiscal Years 2019-2023 has been prepared as a strategic and financially responsible plan for the Rivanna Water and Sewer Authority (RWSA) to complete major infrastructure construction projects. The projects included in the CIP are necessary to achieve the RWSA's core mission of providing safe, high-quality drinking water and environmentally responsible wastewater treatment services for the City of Charlottesville and the Albemarle County Service Authority (ACSA). The CIP is a 5-year planning document which provides an estimated budget and schedule for projects as they advance through the design and construction process.

The infrastructure requirements of the Capital Improvement Plan are developed through our Asset Management and Master Planning programs to address water and wastewater capacity demands, regulatory mandates and rehabilitation needs. Each year, these projects are reviewed and prioritized by the RWSA management team and brought forth for review by the Board of Directors.

During the past year, several capital projects were very near completion or are no longer needed, and as such are being removed from the 2019-2023 CIP. These projects account for approximately $38.5 million or 28.3% of FY 17-21 CIP. These projects include:

- Ragged Mountain Reservoir to Observatory WTP Pipeline Condition Assessment
- Rt. 29 Pump Station Site Acquisition
- Stillhouse Tank Repairs and System Improvements
- Rt. 29 Pipeline – VDOT Betterment (Rt. 29 & Berkmar)
- South Rivanna WTP Leaf Screen
- South Rivanna WTP Filter Press Rehabilitation
- Scottsville WTP High Service Pump Station Upgrade
- Rivanna Pump Station and Tunnel
- Crozet Interceptor Pump Station Automatic Bar Screens
- Moores Creek AWRRF Administration Building Repairs

The total 5-year 2019-2023 CIP is approximately $152.7 million, with the previous expenditures on active projects totaling approximately $33.5 million, leaving a net proposed 5-year projected expenditure of $119.2 million.

There are several new projects added to the CIP this year, with a total estimated expenditures of $23.31 million from 2019-2023, including:

- Ragged Mountain Reservoir to Observatory WTP Raw Water Line ($4.1 million)
- Ragged Mountain Reservoir to Observatory WTP Pump Station ($2.4 million)
- Water Demand Projection and Safe Yield Study ($0.1 million)
- South Fork Rivanna River Crossing and North Rivanna Transmission Main ($5.3 million)
- Rt. 29 Pump Station ($2.3 million)

- Urban Finished Water System Master Plan ($0.15 million)
- Maury Hill Branch Sewer Upgrade ($0.29 million)
- Crozet Interceptor Pump Station Rehabilitation ($0.53 million)
- Engineering and Administration Building ($3.0 million)
- MCAWRRRF Digester Sludge Storage Improvements ($0.265 million)
- MCAWRRF Aluminum Slide Gate Replacement ($0.470 million)
- Moores Creek AWRRF Facility Master Plan ($0.1 million)
- Moores Creek AWRRF Mechanical Thickeners ($1.2 million)
- Scottsville WRRF Grinder and Air Control Improvements ($0.1 million)
- Glenmore WRRF Secondary Clarifier Coating ($0.05 million)
- Information Technology Enhancement for Asset Management ($0.5 million)
- Security Enhancements ($2.4 million)

There are a few projects where the proposed budgets have been modified based on the anticipated project requirements and necessitate funding adjustments. The projects with changes include:

- Observatory WTP Improvements ($10.0 million existing / $18.63 million proposed)
- Interconnect Lower Sugar Hollow and Ragged Mountain Raw Water Mains ($0.225 million existing / $0.331 million proposed)
- Sugar Hollow to Ragged Mountain Reservoir Transfer Flow Meter ($0.150 million existing / $0.315 million proposed)
- Wholesale Water Master Metering ($3.6 million existing / $3.2 million proposed)
- Avon to Pantops Water Main ($5.5 million existing / $13.2 million proposed)
- South Rivanna Hydropower Plant Decommissioning ($1.0 million existing / $0.4 million proposed)
- South Rivanna WTP Improvements ($5.43 million existing / $7.5 million proposed)
- Beaver Creek Dam Alteration ($6.07 million existing / $14.93 million proposed)
- Crozet WTP Expansion ($0.25 million existing / $6.9 million proposed)
- Interceptor and Manhole Repair ($1.34 million existing / $1.94 million proposed)
- Crozet Flow Equalization Tank ($3.75 million existing / $3.3 million proposed)
- Moores Creek AWRRF Odor Control Phase 2 ($10.1 million existing / $11.1 million proposed)

FINANCIAL SUMMARY

MAJOR SYSTEM CATEGORIES

FINANCIAL SUMMARY
Major System Categories – Water

	Five-Year Capital Program			Projected Future Expenses by Year						
System Description	**Current CIP**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress**
Urban Water (UW)										
Community Water Supply Plan	$2,432,558	$6,398,442	$565,249	$275,000	$870,000	$1,420,751	$1,853,000	$3,847,000	$8,831,000	$25,249
Observatory WTP & Ragged Mountain/Sugar Hollow Reservoir System	$11,315,000	$8,901,000	$1,479,198	$1,870,000	$4,128,000	$8,871,000	$3,867,802		$20,216,000	$1,042,198
Finished Water Storage/Distribution	$35,025,494	$15,190,000	$28,830,494	$1,670,000	$2,001,000	$8,167,000	$8,830,000	$717,000	$50,215,494	$20,562,389
South & North Fork Rivanna Water System	$6,430,442	$1,469,558	$302,332	$691,668	$2,411,000	$4,398,000	$97,000		$7,900,000	$82,332
Security & Technology		$1,450,000	$25,000	$210,000	$660,000	$555,000			$1,450,000	
Subtotal (UW)	$55,203,494	$33,409,000	$31,202,273	$4,716,668	$10,070,000	$23,411,751	$14,647,802	$4,564,000	$88,612,494	$21,712,168
Non-Urban Water (NUW)										
Crozet Water System	$13,839,390	$15,509,000	$7,058,095	$4,084,000	$5,056,181	$2,307,000	$8,584,000	$2,259,114	$29,348,390	$3,285,369
Scottsville Water System	$1,615,000		$1,615,000						$1,615,000	$1,216,510
Subtotal (NUW)	$15,454,390	$15,509,000	$8,673,095	$4,084,000	$5,056,181	$2,307,000	$8,584,000	$2,259,114	$30,963,390	$4,501,879

FINANCIAL SUMMARY
Major System Categories – Wastewater

	Five-Year Capital Program			Projected Future Expenses by Year						
System Description	**Current CIP**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress**
Urban Wastewater (UWW)										
Wasterwater Interceptors and Pumping Stations	$13,095,324	($1,214,324)	$1,610,945	$2,187,000	$3,053,385	$3,672,670	$822,000	$535,000	$11,881,000	$342,401
Moores Creek AWRRF	$13,513,000	$6,051,151	$13,513,000	$1,751,151	$215,000	$1,210,000	$1,375,000	$1,500,000	$19,564,151	$6,944,485
Security & Technology		$1,450,000	$25,000	$210,000	$660,000	$555,000			$1,450,000	
Subtotal (UWW)	$26,608,324	$6,286,827	$15,148,945	$4,148,151	$3,928,385	$5,437,670	$2,197,000	$2,035,000	$32,895,151	$7,286,886
Non-Urban Wastewater (NUWW)										
Scottsville WRRF		$100,000			$30,000	$70,000			$100,000	
Glenmore WRRF	$61,000	$50,000		$25,000	$25,000	$61,000			$111,000	
Subtotal (NUWW)	$61,000	$150,000		$25,000	$55,000	$131,000			$211,000	
WASTEWATER TOTAL	$26,669,324	$6,436,827	$15,148,945	$4,173,151	$3,983,385	$5,568,670	$2,197,000	$2,035,000	$33,106,151	$7,286,886
TOTAL	$97,327,208	$55,354,827	$55,024,313	$12,973,819	$19,109,566	$31,287,421	$25,428,802	$8,858,114	$152,682,035	$33,500,933

PROJECT DETAILS

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Completed Projects

During fiscal years 2017 and 2018, several capital improvement projects were completed, were advanced to the final phases of close-out, or were determined to be no longer necessary. As such they will be removed from consideration in future planning documents. Presented in the table below are the twelve (12) completed projects, pertinent information on the adopted budgets, as well as the projected final costs and any anticipated savings. There was a total completed projects cost savings of $1.8 million.

4. Ragged Mountain Reservoir to Observatory Water Treatment Plant Pipeline Condition Assessment: The 18-inch Ragged Mountain and Lower Sugar Hollow raw water pipelines run in parallel to each other from the Ragged Mountain Reservoir to the Observatory Water Treatment Plant. These pipelines are constructed mostly of cast iron and are 109 and 71 years old, respectively. Originally an assessment was planned to update information on the condition of these pipelines and aid in planning for future conveyance of raw water from Ragged Mountain to the urban areas. This project included using non-destructive acoustic technologies to identify existing leaks and remaining pipe wall thickness as well as to determine the remaining service of these pipelines. Due to the addition of replacement pipe in the CIP, this project is no longer required.

8. Rt. 29 Pump Station Site Acquisition: This project provided site acquisition for a new Rt. 29 Pump Station and Storage Tank to be built at a later time in the general area south of Airport Road and north of Hollymead Towncenter on TMP No. 32-41 as identified in the Albemarle County Comprehensive Plan. The future pump station and tank, along with a new transmission pipeline between the proposed pump station and the South Rivanna Water Treatment Plant, will provide an interconnection between the areas presently served by the South Rivanna Water Treatment Plant and the North Rivanna Water Treatment Plant. The interconnection is needed for redundancy of service in the event of an emergency, during drought conditions, and to adequately serve the growing needs of the 29 area generally north of the Forest Lakes subdivision. Multiple meetings and negotiations took place with the property's land owner in an effort to acquire the needed property. The negotiations were not successful, and the property was acquired through condemnation proceedings authorized at the May 2017 RWSA Board Meeting. Final legal proceedings are anticipated to be completed by the end of FY 2018.

11. Stillhouse Tank Repairs and System Improvements: The Stillhouse Mountain pressure zone currently has one ground storage tank with a capacity of 0.70 million gallons. This project focused on structural improvements and interior painting, consisting of removal and replacement of the tank roof rafters, repainting of the tank interior, and other ancillary items. The project budget included design, bid-phase services, construction, and construction administration and inspection services. Construction of the tank improvements were completed fall of 2016.

14. Rt. 29 Pipeline – VDOT Betterment (Rt. 29 & Berkmar): The VDOT Rt. 29 Solutions projects include widening of Rt. 29 (Seminole Trail) from a four-lane divided highway to a six-lane divided highway from Polo Grounds to Town Center Drive at Hollymead Town Center. Improvement of this 1.8-mile-long section required relocation of RWSA's existing 12-inch

cast iron water main for the entire length of the project. RWSA had previously identified through master planning that a 24-inch water main will be needed from the South Rivanna Water Treatment Plant to Hollymead Town Center to meet future water demands. This project included the betterment cost to have VDOT and its Design-Build Contractor relocate the existing 12-inch water main as a 24-inch water main as well as funds to construct a section of 24-inch waterline adjacent to the new Berkmar Drive Extension for future use. Construction began in December 2016 and was completed in summer 2017. This project also includes funding for an update to the Airport Zone Study report by Michael Baker International to reassess future water system needs and update cost estimates for the North Rivanna Service Area.

17. South Fork Water Treatment Plant Leaf Screen: At the South Rivanna Water Treatment Plant, the raw water pump station and intake are integral to the dam and abutments. Water flows through a bar screen and then a mechanical band screen (leaf screen) into the raw water pump station wet well. The existing leaf screen was original to the 1964-1965 construction. Historically, the mechanical screen has been quite reliable, but recently had allowed significant debris to enter and damage the raw water pumps. An evaluation of the leaf screen determined that it has reached the end of its service life and needed to be replaced. Likewise, a detailed alternative analysis determined that the most cost-effective approach is to fabricate and install a replacement mechanical band screen. Design of a replacement leaf screen began in June 2016 and construction was completed in July 2017.

18. South Fork Water Treatment Plant Filter Press Rehabilitation: The South Rivanna Water Treatment Plant belt press is used to dewater sludge removed from the water treatment train. The current belt press has been in continuous operation since 1992. This project was to perform a complete factory overhaul to ensure reliable service and to preempt potential future mechanical failures. The project was completed in June 2017.

23. Crozet Ground Storage Tank Repairs and Upgrades: The 500,000-gallon Crozet Ground Storage Tank serves as the wet well for the finished water pumps at the Crozet Water Treatment Plant as well as one of two water storage tanks in the Crozet Service Area. A routine inspection of the Crozet Tank in April of 2012 revealed several deformed roof rafters, indicating the potential for structural deficiency. An in-depth structural inspection was performed in January 2013 and a list of recommended roof repairs provided. In addition to the structural repairs and other ancillary work, the project also included repainting of the tank interior and installation of an active mixing system to improve system-wide water quality by increasing circulation and minimizing tank stratification. The project budget included consultant services for design and bidding of necessary roof repairs and other ancillary items, as well as construction, construction administration, and inspection services. Construction of the tank improvements began in the spring of 2016 and was completed in the summer of 2016.

24. Crozet Water Treatment Plant - Miscellaneous Repairs: Staff identified several repairs needed within the Crozet water system within the next two years. These items have been consolidated into a single project and include new stem guides, valves and trash racks at the raw water pump station, a new backwash supply pump, a new overflow pipe for the backwash tank, and new

walkways and handrails. The work anticipated within this project has been combined into the Crozet WTP upgrade project and therefore is no longer needed as a separate project.

29. Scottsville High Service Pump Station Upgrades: Currently, the high service pumps at the Scottsville water treatment plant pump water to the RWSA Scottsville Storage Tank and then an ACSA booster station pumps water to the ACSA tank, which serves the majority of the Scottsville service area. This project was to evaluate and replace the high service pumps at the Scottsville WTP so that water can be pumped directly from the WTP to the ACSA tank, eliminating the need for the ACSA booster pump station and the RWSA Scottsville Storage Tank. Based on preliminary feedback from ACSA, this project has been eliminated from further consideration and the correct configuration will remain.

31. Rivanna Pump Station and Tunnel: Pumping capacity between the Rivanna Interceptor in Riverview Park and the Moores Creek Advanced Water Resource Recovery Facility required expansion for wet weather peak flow, from a capacity of 24.5 mgd to a firm capacity of 53 mgd in accordance with RWSA's DEQ Consent Order. Following a lengthy public process and study of alternatives, the RWSA Board selected to move forward with a final design in December 2011. The project included construction of approximately 1,620 linear feet of a tunnel with a tunnel-boring machine which will connect the existing Rivanna Interceptor in Riverview Park to a new pump station located on the RWSA MCAWRRF property. The final design included pumps capable of delivering a peak pumping rate equivalent to 53 mgd, electrical gear, influent grinders, self-cleaning wet well, air collection for odor control, back-up power generation, SCADA control and integration, tie-ins to the existing systems, site and permitting work, storage building demolition and electrical relocation work, as well as architectural, structural and mechanical systems. The existing pump station at the entrance to Riverview Park was demolished once the new pump station and tunnel were complete and in service. Construction began in March 2014 and was completed in late summer 2017.

35. Crozet Interceptor Pump Station Automatic Bar Screens: There are currently two automatic bar screens at Crozet Pump Station No. 4. These units were original to the pump station which was constructed in the mid-1980s. Prior to 2014, one of the units was operational, with the second unit no longer serviceable. The first screen was replaced as part of the CIP in 2014. This project involved replacement of the second unit in summer 2017.

38. Moores Creek AWRRF Administration Building Repairs: The RWSA Administration Building was constructed in 1978 as part of the Moores Creek wastewater treatment facility, with the addition of an elevator and office space in 1995. Over the past several years there have been several significant building maintenance issues. As a result, in October 2012, staff commissioned an architectural, mechanical, electrical, and plumbing evaluation of the building, which identified several near, mid, and long-term repair needs. This project included the replacement of the entire roof with a standing seem aluminum material, gutter and downspout replacement, electrical circuit mapping and rewiring, window replacement, and building exterior painting which have been capitalized via completed projects.

Completed Projects

		Five-Year Capital Program			
No.	**Project Description**	**Adopted Budget 3/2017**	**Previous Expenditures (7/1/2017)**	**Final Projected Costs**	**Savings**
4	Ragged Mountain Reservoir to Observatory Water Treatment Plant Pipeline Condition	$285,000			$285,000
8	Route 29 Pump Station Site Acquisition	$1,220,000	$466,416	$1,220,000	
11	Stillhouse Tank Repairs and System Improvements	$600,000	$51,397	$362,466	$237,534
14	Rt. 29 Pipeline - VDOT Betterment (Rt. 29 & Berkmar)	$2,900,000	$1,714,749	$2,600,000	$300,000
17	South Fork Water Treatment Plant Leaf Screen	$471,000		$432,086	$38,914
18	South Fork Water Treatment Plant Filter Press Rehabilitation	$150,000		$165,242	($15,242)
23	Crozet Ground Storage Tank Repairs and Upgrades	$351,610	$30,922	$315,739	$35,871
24	Crozet Water Treatment Plant Miscellaneous Repairs	$105,890			$105,890
29	Scottsville High Service Pump Station Upgrades	$100,000			$100,000
31	Rivanna Pump Station and Tunnel	$32,200,000	$30,040,496	$31,500,000	$700,000
35	Crozet Interceptor Pump Station Automatic Bar Screens	$75,000		$75,000	
38	Moores Creek AWRRF Administration Building Repairs	$84,746		$38,591	$46,155
	TOTAL	$38,543,246	$32,303,980	$36,709,124	$1,834,122

CIP 17-21 Total	**CIP 17-21 Completed**	**CIP 19-23 Remaining**	**CIP 19-23 New Funding**	**CIP 19-23 New Total**
$135,870,454	($38,543,246)	$97,327,208	$55,354,827	$152,682,035

Community Water Supply Plan

The Community Water Supply Plan represents the program developed with substantial community input to fulfill RWSA's contractual obligation to the City of Charlottesville (City) and the Albemarle County Service Authority (ACSA) to provide adequate drinking water for their future needs. An initiative started in 2003 to find a long-term solution that could achieve both local support and meet federal and state requirements. After multiple community meetings, updates with local officials, and frequent consultations with federal and state agencies, local support was obtained to apply for federal and state permits to expand the Ragged Mountain Reservoir and build a future pipeline between the South Rivanna and Ragged Mountain Reservoirs, with stream and wetlands mitigation to be provided through property in the Buck Mountain Creek area and property adjacent to a lower reach of Moores Creek near its confluence with the Rivanna River. Federal and state permits were granted in 2008, and amended in 2011.

The first phase of this long-term program centered around the expansion of the Ragged Mountain Reservoir, a project that would simultaneously address a legal obligation to correct safety deficiencies on the existing site. Through a combination of technical investigations, engineering evaluations, and continued public discussion, a decision was reached in February 2011 through the City Council and Board of Supervisors to build the new dam as an earthen dam, with the initial phase raising the reservoir pool height by 30 feet. The decision also outlined an objective of the further pursuit of water conservation through the City and ACSA, and the pursuit of opportunities for dredging of the South Rivanna Reservoir, with the second phase of reservoir expansion in the future as necessary.

Project Descriptions:

1. South Rivanna Reservoir to Ragged Mountain Reservoir Water Line Right-of-Way: The approved 50-year Community Water Supply Plan includes the future construction of a new raw water pipeline from the South Rivanna River to the Ragged Mountain Reservoir. This new pipeline will replace the Upper Sugar Hollow Pipeline along an alternative alignment to increase raw water transfer capacity in the Urban Water System. The preliminary route for the pipeline 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 pipeline. This project includes a routing study, preliminary design and preparation of easement documents, and acquisition of water line easements along the approved route. Prior expenditures covered a review of the 2009 conceptual design that was requested by the Board.

2. South Rivanna Reservoir Dredging: The South Rivanna Reservoir stores raw water for treatment at the South Rivanna Water Treatment Plant and in the future, is proposed to provide water for transfer to the enlarged Ragged Mountain Reservoir. River flow into the reservoir is from a drainage area, almost entirely within Albemarle County, of approximately 259 square miles. Soil erosion from natural events, from land use in the agricultural area, from land disturbances in the developed areas, and from re-suspension of flood plain deposits created during the 19th century (stream bank erosion), are likely the causes of sediment becoming trapped within the reservoir. The initial design of the reservoir anticipated the accumulation of these sediments, and a significant portion of the total storage volume was designated for this purpose. Currently the sediment stored does not exceed the available capacity.

The January 2012 Ragged Mountain Dam Project Agreement outlines that "the City and ACSA agree to direct, and RWSA agrees, to perform such dredging projects at the South Fork Rivanna Reservoir as may be specified jointly by the City and ACSA pursuant to the Water Cost Allocation Agreement." The Cost Allocation Agreement stipulates that target maintenance dredging shall be performed, and that the dredging be market driven, cost effective, and opportunistic and shall not exceed $3.5M. In 2012 and 2013, RWSA, via the Public-Private Education Facilities and Infrastructure Act (PPEA) process, solicited proposals to provide maintenance dredging. In July 2013, the one qualified PPEA proposer withdrew its proposal, citing difficulties in obtaining necessary land agreements.

Future Board decisions on the project contracting approach will dictate the next steps. This project remains in the CIP as the fulfillment of a contractual obligation from the January 2012 Ragged Mountain Dam Cost Allocation Agreement, and RWSA counsel has offered an opinion that consent to amend the Agreement from the City and ACSA is required before the RWSA Board amend or cancel the project.

3. Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line: Raw water is transferred from the Ragged Mountain Reservoir (RMR) 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 will have the capacity to treat 10-12 million gallons per day (mgd). The new pipeline is expected to be constructed of 36-inch ductile iron and will be on the order of 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.

4. Ragged Mountain Reservoir to Observatory Raw Water Pump Station: The Ragged Mountain Reservoir (RMR) to Observatory WTP raw water pump station is planned to replace the existing Stadium Road and Royal pump stations, which in part have exceeded their design lives or will require significant upgrades with the Observatory WTP expansion. The pump station will pump up to 10 mgd to the Observatory WTP. Integration of the new pump station with the planned South Rivanna Reservoir (SRR) 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 million gallons per day (mgd) of raw water from RMR back to the SRR WTP. The location of this pump station will be recommended as part of the SRR to RMR raw water main preliminary engineering study, which is currently under way.

Community Water Supply Plan

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
1	South Rivanna Reservoir to Ragged Mountain Reservoir Water Line Right-of-Way	$2,295,000		$565,249	$275,000	$870,000	$584,751			$2,295,000	$25,249
2	Rivanna Reservoir Dredging	$137,558	($127,558)				$10,000			$10,000	
3	Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line		$4,116,000				$426,000	$1,453,000	$2,237,000	$4,116,000	
4	Ragged Mountain Reservoir to Observatory Raw Water Pump Station		$2,410,000				$400,000	$400,000	$1,610,000	$2,410,000	
	TOTAL	$2,432,558	$6,398,442	$565,249	$275,000	$870,000	$1,420,751	$1,853,000	$3,847,000	$8,831,000	$25,249

Observatory WTP and Ragged Mountain/Sugar Hollow Reservoir System

The Observatory Water Treatment Plant (WTP) and Ragged Mountain/Sugar Hollow Reservoir System is comprised of the water treatment facility on Observatory Mountain and the associated raw water infrastructure that stores and conveys source water to the plant. The raw water storage system includes the new Ragged Mountain Dam (constructed in 2014, with a useable raw water storage capacity of 1.5 billion gallons) and the Sugar Hollow Dam (originally constructed in 1947, upgraded in 1999 and downstream discharge improvements completed in September 2014, with a useable raw water storage capacity of 339 million gallons as updated by a 2015 bathymetric survey). The system also includes 17.6 miles of 18-inch raw water cast-iron mains, originally installed in 1908, 1922, and 1946. The Sugar Hollow Raw Water Main historically conveyed water from the Sugar Hollow Dam to the Observatory Water Treatment Plant, however, as a result of the New Ragged Mountain Dam project, the main now discharges directly into Ragged Mountain Reservoir. The remaining downstream section of the Sugar Hollow main now conveys raw water from the Ragged Mountain Reservoir to the treatment plant. The line crosses the Mechums River (where an abandoned pumping station is sited) on its way to Ragged Mountain Reservoir, and eventually passes through the Royal Pumping Station and terminates at the Observatory WTP. The Ragged Mountain Raw Water Main conveys water from the Ragged Mountain Reservoir through the Stadium Road Pumping Station and terminates at the Observatory Water Treatment Plant.

Project Descriptions:

5. Observatory Water Treatment Plant Improvements: The Observatory Water Treatment Plant is the oldest of the three urban plants. Early planning for the Community Water Supply envisioned that the plant would undergo a wholesale upgrade. This upgrade will concentrate on specific improvements to critical elements, identified by a Needs Assessment Study as improvements to the flocculators, filters, sedimentation basins, and chemical feed facilities to enhance future reliability. In addition, the existing reinforced concrete flume, which conveys treated water from the sedimentation basins to the filters, is in need of repair or possible replacement. Also, old piping control valves will be replaced and modernized, as well as upgrading electrical and SCADA control systems.

   The Observatory Water Treatment Plant was originally constructed in the mid-1950s. Since that time very little has been replaced or upgraded at the facility. The sixty-year-old facility has much of the original equipment that is inefficient, prone to unexpected failure, and does not have readily accessible replacement parts. A portion of the project was completed in the 2016-2017 fiscal year. The flocculator systems were completely upgraded with new mechanical and electrical equipment, including variable speed motor drives for optimum efficiency. The upgraded flocculators have been in service since May 2017.

   In addition to providing needed equipment upgrades, the existing plant will also be considered for an upgrade in capacity. Upgrading the plant capacity during the proposed construction project may be economically feasible and beneficial. In order to determine the feasibility of a capacity upgrade, it will be necessary to thoroughly study all aspects of the treatment plant process, including raw water and finished water conveyance to and from the plant. This analysis will be performed in a detailed Preliminary Engineering Report (PER) as part of the

initial engineering for the project. Current funding assumes a future 10 million gallon a day capacity.

It should be noted that the Observatory Water Treatment Plant is sited on land leased to RWSA by the University of Virginia. The terms of the existing lease expire on April 17, 2021. Prior to construction of the remaining improvements, the terms of a new lease may be needed with RWSA and the University as participants. The new lease is currently under negotiation.

6. Interconnect Lower Sugar Hollow and Ragged Mountain Raw Water Mains: The two 18-inch water mains that supply water from Ragged Mountain Reservoir to Observatory Water Treatment Plant are 72 and 110 years old, respectively. The mains are interconnected at the top of the Ragged Mountain Dam, with one serving the 1920's Royal Pump Station and the other serving the more modern Stadium Road Pump Station. Both pump stations provide water to the Observatory Water Treatment Plant. This project will interconnect the two raw water lines near the Rt. 29/Fontaine Avenue interchange, which will provide improved reliability and operability during raw water line maintenance or repairs prior to the anticipated construction and completion of the new replacement line.

7. Sugar Hollow to Ragged Mountain Reservoir Transfer Flow Meter: The Sugar Hollow raw waterline is an 18-inch diameter cast iron pipeline which conveys water from Sugar Hollow Reservoir to Ragged Mountain Reservoir. The pipe discharges directly into the Ragged Mountain Reservoir is used to supplement inflow. Currently, the control valve to regulate flow between the two reservoirs is located near the old Gatekeeper's House at Sugar Hollow dam. The valve is a manual gate valve which requires RWSA staff to travel to the Sugar Hollow dam in order to operate it. In addition, there is currently no flow meter equipment in place to monitor and record flow transferred between the two reservoirs. This project proposes to install a new 18-inch flow meter, a modulating control valve, and new power and SCADA control wiring, to provide the means to regulate the flow between the two reservoirs. The new equipment will allow remote operation via SCADA from the RWSA water treatment plants. This project will allow RWSA staff to efficiently and remotely maintain the two reservoirs at optimal levels. In addition to this work, an old 18-inch diameter gate valve will be replaced or repaired, two abandoned out-buildings and a house will be demolished and removed.

8. Sugar Hollow Dam – Rubber Crest Gate Replacement & Intake Tower Repairs: In 1998 the Sugar Hollow Dam underwent a significant upgrade to improve structural stability and spillway capacity. The original metal spillway gates were replaced with a manufactured five-foot-high inflatable rubber dam that is bolted to the existing concrete structure. This rubber dam allows for the normal storage of water in the reservoir with the ability to be lowered during extreme storm events. The rubber dam has an approximate service life of twenty years and is therefore now due for replacement. The aging intake tower structure 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.

Observatory Water Treatment Plant and Ragged Mountain/Sugar Hollow Reservoir System

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
5	Observatory Water Treatment Plant Improvements	$10,000,000	$8,630,000	$1,207,198	$1,441,000	$3,655,000	$8,459,000	$3,867,802		$18,630,000	
6	Interconnect Lower Sugar Hollow and Ragged Mountain Raw Water	$225,000	$106,000	$91,000	$240,000					$331,000	
7	Sugar Hollow to Ragged Mountain Reservoir Transfer Flow Meter	$150,000	$165,000	$181,000	$134,000					$315,000	
8	Sugar Hollow Dam - Rubber Crest Gate Replacement & Intake	$940,000			$55,000	$473,000	$412,000			$940,000	
	TOTAL	$11,315,000	$8,901,000	$1,479,198	$1,870,000	$4,128,000	$8,871,000	$3,867,802	$0	$20,216,000	$0

Finished Water Storage/Transmission – Urban System

The urban finished water storage and transmission system serves to provide transmission of treated water from the three RWSA water plants (Observatory, South Rivanna, and North Rivanna Rivanna) to the distribution networks of the Albemarle County Service Authority, the City of Charlottesville, and the University of Virginia. The system includes approximately 40 miles of pipeline, six water storage tanks: Avon Street (2 MG), Pantops (5 MG), Piney Mountain. (0.7 MG), Stillhouse (0.7 MG), Observatory (3 MG), and Lewis Mountain (0.5 MG), and the Alderman Road and Stillhouse pumping stations.

Project Descriptions:

9. Valve Repair - Replacement (Phase 2): Isolation valves are critical for normal operation of the water distribution system and timely emergency response to water main breaks. Staff continuously review 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.

10. Urban Water Granular Activated Carbon and Water Treatment Improvements: The U.S. Environmental Protection Agency (EPA) regulates maximum contaminant levels (MCL) for total trihalomethanes (THMs) and haloacetic acids (HAAs) in drinking water under the Disinfectant/Disinfection Byproducts Rule (D/DBPR). In the early 1990s Stage 1 of the rule was implemented and RWSA, ACSA and the City of Charlottesville are in compliance with Stage 1. Stage 2 of the D/DBPR was to be effective for the Urban distribution system in October 2012, but the three agencies obtained a two-year extension that shifted the implementation to October 2014. The Stage 2 D/DBPR involved a major change in how THM and HAA levels are calculated and is more stringent than the Stage 1 requirements. A study concluded that complete compliance with the Stage 2 D/DBPR cannot be met consistently with minor modification of existing processes but would instead require significant capital improvements.

    In July 2012, the Board decided to pursue the installation of Granular Activated Carbon (GAC) contactors to achieve Stage 2 D/DBPR compliance in the Urban System. The GAC will adsorb organic matter from the water, thereby reducing the precursors to THMs and HAAs. As decided by the Board in December 2013, the GAC systems have been sized at a lower capacity than the current rated plant capacities (the "Hybrid GAC" approach). The GAC contactors are expected to be on-line and operational by the end of 2017, after the EPA-mandated compliance date. For the interim, a Risk Reduction Plan was developed, outlining interim methods to reduce trace natural organic matter from the source water thereby reducing DBPs. This project budget includes $631,000 to fund the capital needs of the Risk Reduction Plan. The plan includes installation of Powder Activated Carbon (PAC) feed systems at various treatment plants. The PAC treatment is adequate treatment for the new regulations in the interim time period before GAC completion. The PAC systems were completed in 2015, and are currently in operation as needed.

    Also included in the Urban Water GAC project are various improvements at the South Rivanna WTP including construction of additional clearwell storage, replacement of the lime feed

system, upgrades to the filter underdrains and backwash system, replacement of the filter media, sound attenuation and ventilation improvements for the high service pump station, installation of a variable frequency drive for the raw water pump station, installation of a new raw water flow meter and several improvements to the residuals management facilities. Included in the Urban Water GAC project are various improvements at the North Rivanna WTP including new filter control valves, new pump control valves, new filter sludge removal equipment, new electrical system upgrades throughout the plant, and the installation of a surge relief mechanism. The final site included in this project is the Observatory WTP with various improvements such as a new chlorine contact tank, improved potable water service piping to the filter building and upgraded finished water discharge piping. Construction of the projects started in late 2015 and will be complete mid-2018.

11. Wholesale Water Master Metering: The January 2012 Water Cost Allocation Agreement designated how the City of Charlottesville (City) and ACSA 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. In an effort to meet this obligation, the RWSA Board of Directors authorized staff in August of 2012 to complete an engineering study on metering plan alternatives. The study identified several alternatives for a metering plan based on combinations of metering and estimating methodologies. A Jurisdictional Approach was recommended which included installation of water meters at locations at the City/county corporate boundary plus one meter at each of the three urban water treatment plants. At its September 2013 meeting the Board directed that staff proceed with the Jurisdictional Coverage Approach. The final design includes 25 remote meter locations plus the three finished water flow meters at the water treatment plants. This project budget includes preliminary and final project design, right-of-way acquisition and negotiations, legal fees and permitting, bid-phase services, construction, and construction administration and inspection services. Construction of the 25 remote meter locations began in early 2016 and is expected to be completed in mid-2018. The three finished water flow meters were installed in 2015 as part of the Urban Water Granular Activated Carbon Project.

12. Piney Mountain Tank Rehabilitation: The 700,000-gallon Piney Mountain Tank serves the North Rivanna pressure band. A routine inspection of the Piney Mountain Tank revealed several deformed roof rafters, indicating the potential for structural deficiency. An in-depth structural inspection was performed 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 to maintain the existing tank in service for at least the next 10 years.

13. Avon to Pantops Water Main: The southern half of the Urban Area water system is currently served by the Avon Street and Pantops 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 reducing system flexibility. In 1987, the City and ASCA developed the Southern Loop Agreement,

outlining project phasing and cost allocations, as envisioned at the time. The first two phases of the project were constructed shortly thereafter. The third phase, known as the "Eastern Branch" is the subject of the current project. The initial funding for this project is to prepare an updated routing study and Preliminary Engineering Report to identify the scope, phasing, route and cost of the project, and a consultant has been selected for this work to begin in fall 2017. Additional funding is to perform design, easement acquisition and to begin construction.

14. Water Demand Projection and Safe Yield Study: In January 2012, the City of Charlottesville, Albemarle County Service Authority, and RWSA entered into the Ragged Mountain Dam Project Agreement. Within the agreement are 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. The bathymetric survey of the South Rivanna Reservoir and the Ragged Mountain Reservoir are currently funded in the FY2019 O&M Budget. Subsequent to collecting the reservoir survey data, 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.

15. South Rivanna River Crossing and North Rivanna Transmission Main: RWSA has previously identified through master planning that a 24-inch water main will be needed from the South Rivanna Water Treatment Plant (SRWTP) to Hollymead Town Center to meet future water demands. Two segments of this water main were constructed as part of the VDOT Rt. 29 Solutions projects, including approximately 10,000 LF of 24-inch water main along Rt. 29 and 600 LF of 24-inch water main along the new Berkmar Drive Extension, behind the Kohl's department store. To complete the connection between the SRWTP and the 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. This project includes funding for construction as well as engineering design, easement acquisition, bid-phase services, and construction administration and inspection services.

16. Rt. 29 Pump Station: 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 is currently being updated to reflect the changes in the system and demands since 2007. This project, along with project 15 above 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 a future low pressure condition. These facilities will also lead to future phase implementation which will include a storage tank and the creation of the Airport pressure zone.

17. Finished Water System Master Plan: As identified in the 2107 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. There are asset classes where comprehensive and ongoing plans exist or are in development (e.g. wastewater collection, raw water supply, Crozet water, etc.). In the case of the urban finished water system, many of the previously identified projects are in design or construction. As such, staff have identified a need to develop a current and ongoing finished water master plan.

Finished Water Storage/Transmission – Urban System

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
9	Valve Repair - Replacement (Phase 2)	$500,000		$250,000	$250,000					$500,000	
10	Urban Water GAC and Water Treatment Plant Improvements	$24,925,494		$24,925,494						$24,925,494	$18,292,018
11	Wholesale Water Master Metering	$3,600,000	($400,000)	$3,200,000						$3,200,000	$2,270,371
12	Piney Mountain Tank Rehabilitation	$500,000		$280,000	$220,000					$500,000	
13	Avon to Pantops Water Main	$5,500,000	$7,700,000	$175,000	$1,100,000	$1,800,000	$5,500,000	$4,625,000		$13,200,000	
14	Water Demand Projection and Safe Yield Study		$100,000		$100,000					$100,000	
15	South Fork Rivanna River Crossing and North Rivanna Transmission		$5,340,000				$843,000	$3,930,000	$567,000	$5,340,000	
16	Rt. 29 Pump Station		$2,300,000			$201,000	$1,824,000	$275,000		$2,300,000	
17	Finished Water System Master Plan		$150,000						$150,000	$150,000	
	TOTAL	$35,025,494	$15,190,000	$28,830,494	$1,670,000	$2,001,000	$8,167,000	$8,830,000	$717,000	$50,215,494	$20,562,389

South Rivanna Water System

The South Rivanna Water System is comprised of the source water, storage, conveyance and treatment infrastructure currently serving the urban area from the South Fork Rivanna River. The system includes the South Fork Rivanna Reservoir and Dam (built in 1966). The Dam is co-located with the raw water intake and pump station, as well as a small hydroelectric generation facility. The source water from the South Rivanna Reservoir is treated at the South Rivanna treatment plant (12-mgd rated capacity).

Project Descriptions:

18. South Rivanna Hydropower Plant Decommissioning: The South Fork Hydropower Plant is a small hydroelectric generating facility constructed in 1987. The plant has historically operated intermittently, as river flows allow. The generated power is used at the South Rivanna Water Treatment Plant, thereby reducing power purchased off the electric grid. During an effort to troubleshoot and repair the turbine, a large rain and lightning event caused unexpected flooding into the facility. Insurance paid damages to more recent improvements, but not the pre-existing needs to repair the turbine. Engineering investigations in 2013 associated with the failed mechanical equipment and flood event confirmed the need for further disassembly and inspection of the turbine shaft and blade linkages from a remote factory location.

    Due to the complexity of possible rehabilitation, the associated Federal Energy Regulatory Commission (FERC) dam permitting, and the numerous variables in the economic analysis, proposals were solicited from national hydropower experts to initiate a feasibility study to determine the cost effectiveness of rehabilitating the hydropower plant while making sure to account for FERC-related costs and issues. The feasibility study was completed in May 2016 and determined that rehabilitation of the facility had a small likelihood for a positive return on investment. This conclusion was brought to the Board of Directors along with a recommendation to initiate the surrender of the exemption to licensure and decommission the facility. The Board approved this recommendation and staff has begun the exemption surrender process. The budget includes regulatory support as well as physical improvements such as removing defunct electrical components, sealing the penstock and the turbine.

19. South Rivanna Water Treatment Plant Improvements: The South Rivanna Water Treatment Plant is currently undergoing significant upgrades as part of the Urban Granular Activated Carbon project. Several other significant needs have also been identified and have been assembled into a single project within this Capital Plan. The projects identified herein include an 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, and improvements to storm sewers to accept allowable WTP discharges. Currently this facility operates at 80-90% of capacity and the identified upgrades will improve reliability and resiliency, particularly at higher flow rates.

South Rivanna Water System

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
18	South Rivanna Hydropower Plant Decommissioning	$1,000,000	($600,000)	$167,332	$232,668					$400,000	$82,332
19	South Rivanna Water Treatment Plan Improvements	$5,430,442	$2,069,558	$135,000	$459,000	$2,411,000	$4,398,000	$97,000		$7,500,000	
	TOTAL	$6,430,442	$1,469,558	$302,332	$691,668	$2,411,000	$4,398,000	$97,000	$0	$7,900,000	$82,332

Crozet Water System

The Crozet Water System includes the source water, raw water conveyance, finished water treatment, transmission and storage infrastructure for the Crozet community in western Albemarle County. The source water for this system is the Beaver Creek Reservoir and Garnett Dam which was built in 1964 with a current useable storage capacity of 521 million gallons. Raw water is treated at the Crozet Water Treatment Plant (1.0 mgd rated capacity) and provides finished water to the Albemarle County Service Authority. The system includes the Crozet Elevated (Waterball) Tank (0.05 MG) for water treatment plant backwash; the Crozet Ground Storage Tank (0.5 MG) and pump station, and the Buck's Elbow Storage Tank (2.0 MG).

Project Descriptions:

20. Beaver Creek Dam Alteration: From 2008-2014 the Virginia Department of Conservation and Recreation (DCR) adopted revised *Impounding Structures Regulation* which imposed new, more rigorous, evaluations of dams within the Commonwealth. As a result, the Beaver Creek Dam has been reclassified as a high hazard dam, thereby requiring a higher spillway design storm criteria. The higher design storm cannot be accommodated with the existing structure, and will require future modifications. Subsequently the Virginia Soil and Water Conservation Board adopted a new Probable Maximum Precipitation (PMP) Study on December 9, 2015. In March 2016, DCR published guidance documents on implementing the new PMP Study. This project includes investigation, preliminary design, public outreach, permitting, easement acquisition, final design, and construction of the anticipated modifications. Also included in this project are a new relocated raw water pump station, intake and oxygenation system. A revised Preliminary Engineering Report is due to DCR by June 2018.

21. Buck's Elbow & Crozet Waterball Tank Painting: The two million-gallon Bucks Elbow Ground Storage Tank provides finished water storage for the Crozet Area while the 50,000 gallon Crozet Waterball Tank serves as filter backwash storage at the Crozet Water Treatment Plant. Routine inspections of these tanks in 2012 indicated that the tanks would require recoating by 2020. The project includes recoating the interior and top-coating the exterior of both tanks as well as installation of an active mixing system at the Bucks Elbow Tank to decrease stratification and improve overall water quality in the Crozet area. Minor repairs and improvements to both tanks will also be included in this work. This project includes consultant services for design of project specifications, as well as construction, construction administration, and inspection services. Construction of the tank improvements are expected to begin in the spring of 2020.

22. Crozet Water Granular Activated Carbon and Water Treatment Improvements: The U.S. Environmental Protection Agency regulates maximum contaminant levels (MCL) for total trihalomethanes (THMs) and haloacetic acids (HAAs) in drinking water under the Disinfectant/Disinfection Byproducts Rule (D/DBPR). In the early 1990s Stage 1 of the rule was implemented and RWSA and ACSA are in compliance with Stage 1. Stage 2 of the D/DBPR would normally be effective for the Crozet distribution system in November 2014; however, a two-year extension was granted by Virginia Department of Health and Stage 2 became effective for Crozet in November 2016. The Stage 2 D/DBPR involved a major change in how THM and HAA levels are calculated and is more stringent than the Stage 1

requirements. A study concluded that complete compliance with the Stage 2 D/DBPR cannot be continuously met with minor modification of existing processes (water production facilities combined with ASCA distribution system) but would instead require significant capital improvements.

For the Crozet water system, installation of granular activated carbon (GAC) contactor units was selected due to the start/stop operation of the water treatment plant and the relatively higher water age in the distribution system. The GAC will adsorb organic matter from the water, thereby reducing the precursors to THMs and HAAs. Included in the Crozet WTP GAC project are various improvements including upgrade of the chlorine feed system to a modern hypochlorite feed system, as well as replacing the existing fluoride and corrosion inhibitor chemical feed systems. The new chemical feed systems will be housed in additional rooms in the proposed GAC contactor building. This new location will also allow for shorter chemical feed lines. Construction of the project started in 2016.

23. Crozet Water Treatment Plant Expansion: The Crozet water treatment system is currently permitted and rated to supply up to 1.0 million gallons per day (mgd) of water to the ACSA distribution system. Over the past several years, average day usage of water has increased steadily, with maximum day demand approaching plant capacity. The current lease agreement with ACSA for land at this facility stipulates that a 5-year notice must be given prior to altering or terminating the lease. As such, it is imperative that RWSA begin evaluating how a future plant expansion would be accomplished and any impacts on the ACSA lease. In addition, much of the existing plant systems are the same as when the plant was constructed in the 1960's.

    Expanding the plant capacity at Crozet WTP would require a new Virginia Department of Environmental Quality Water Withdrawal Permit, and could include possible stream release requirements. In order to fully analyze all aspects of the design required for this project, and honor plant upgrade notification requirements to ACSA, select elements of the preliminary design have been completed. These elements include a Preliminary Engineering Report (PER), plant field testing, and preliminary permitting work and coordination with pertinent regulators. The results of the PER state that the current treatment plant can be upgraded, and the capacity increased, through installation of newer, and more technologically advanced equipment into the existing footprint of the filter plant. Upgrading the system within the existing plant footprint would not impact the existing ACSA lease at the property. Proposed work will include preliminary/final design, bidding and construction of several upgraded treatment plant systems including general building rehabilitation, filter improvements, sedimentation expansion and improvements, chemical feed improvements, flocculator expansion, alum storage/containment improvements and waste sludge handling and removal improvements.

24. Crozet Water Treatment Plant Finished Water Pump Station: As noted in the above project description, the Crozet water treatment facilities will require an expansion to secure future needs of the Crozet community. The Finished Water Pump Station is the final step in the treatment and conveyance process. The Crozet Pump Station is original to the plant and has numerous design and operational impediments or challenges that severely limit its operational reliability. A new pump station at the site is required for both current and future service needs.

The project includes evaluation, permitting, design, construction and construction management.

25. Drinking Water Infrastructure Plan: The Crozet drinking water service area continues to see expanded growth, and recent discussions with Albemarle County and Albemarle County Service Authority (ACSA) personnel have confirmed that recent growth trends indicate that water use demands in Crozet are on the rise. While some projects are currently underway to address the immediate needs in Crozet, RWSA staff has concluded that it is pertinent to develop a comprehensive mid and long-range plan for the entire water system, including analysis of water supply, treatment, distribution, storage and raw water conveyance. The project will evaluate and analyze all of these parameters, and develop a Drinking Water Infrastructure Plan for the Crozet Service Area's water supply and distribution needs and recommended improvements for the next 50-year design period (Year 2070).

Crozet Water System

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/17)**
20	Beaver Creek Dam Alteration	$6,071,000	$8,859,000	$294,886	$660,000	$970,000	$2,162,000	$8,584,000	$2,259,114	$14,930,000	$133,886
21	Buck's Elbow & Crozet Waterball Tank Painting	$1,200,000			$60,000	$995,000	$145,000			$1,200,000	
22	Crozet Water GAC and Water Treatment Improvements	$3,418,390		$3,418,390						$3,418,390	$2,665,401
23	Crozet Water Treatment Plant Expansion	$250,000	$6,650,000	$528,819	$3,280,000	$3,091,181				$6,900,000	$90,419
24	Crozet Water Treatment Plant - Finished Water Pump Station	$2,600,000		$2,542,000	$58,000					$2,600,000	$395,663
25	Drinking Water Infrastructure Plan	$300,000		$274,000	$26,000					$300,000	
	TOTAL	$13,839,390	$15,509,000	$7,058,095	$4,084,000	$5,056,181	$2,307,000	$8,584,000	$2,259,114	$29,348,390	$3,285,369

Scottsville Water System

The Scottsville Water System is comprised of the raw water conveyance, finished water treatment, transmission and storage infrastructure for the Town of Scottsville in southern Albemarle County. The source water for this system is the Totier Creek Intake, and the backup supply is the Totier Creek Reservoir, which was built in 1971 with a current useable capacity of 182 million gallons. Raw water is treated at the Scottsville Water Treatment Plant (0.25 mgd rated capacity) and provides finished water to the Albemarle County Service Authority. The system includes the Scottsville Storage Tank (0.25 MG).

Project Description:

26. Scottsville Water Granular Activated Carbon: The U.S. Environmental Protection Agency regulates maximum contaminant levels (MCL) for total trihalomethanes (THMs) and haloacetic acids (HAAs) in drinking water under the Disinfectant/Disinfection Byproducts Rule (D/DBPR). In the early 1990s Stage 1 of the rule was implemented and RWSA and ACSA are in compliance with Stage 1. Stage 2 of the D/DBPR was effective for the Scottsville distribution system in November 2014. The Stage 2 D/DBPR involved a major change in how THM and HAA levels are calculated and are more stringent than the Stage 1 requirements. After a study, it was concluded that complete compliance with the Stage 2 D/DBPR cannot consistently be met with minor modification of existing processes (water production facilities combined with ASCA distribution system) but would instead require significant capital improvements.

    For the Scottsville water system, installation of granular activated carbon (GAC) contactor units was selected due to the start/stop operation of the water treatment plant and the higher water age in the distribution system. The GAC will adsorb organic matter from the water, thereby reducing the precursors to THMs and HAAs. Construction on the project started in 2016.

Scottsville Water System

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
26	Scottsville Water Granular Activated Carbon	$1,615,000		$1,615,000						$1,615,000	$1,216,510
	TOTAL	$1,615,000	$0	$1,615,000	$0	$0	$0	$0	$0	$1,615,000	$1,216,510

Wastewater Interceptors/Pumping Stations

The RWSA wastewater interceptors and pumping stations serve to convey wastewater from the collection systems of the City of Charlottesville and Albemarle County Service Authority to the Moores Creek Advanced Water Resource Recovery Facility (MCAWRRF). This grouping includes: the Crozet Interceptor and four associated pumping stations; the Moores Creek Interceptor and Relief Sewer; the Morey Creek, Maury Hills, Powell Creek, Meadow Creek, Schenks Branch, Woodbrook and Rivanna Interceptors; as well as the Albemarle-Berkley Interceptor and associated Albemarle Pumping Station. Also included in this system are the two primary pump stations into the MCAWRRF, the Rivanna and Moores Creek Pump Stations.

Project Descriptions:

27. Upper Schenks Branch Interceptor: The Schenks Branch Interceptor is located in the eastern part of the City of Charlottesville and ties into the Meadowcreek Interceptor. The interceptor was constructed in the mid-1950s of 21-inch clay and concrete pipe. The existing interceptor is undersized to serve present and future wet weather flows as determined by the City, and is to be upgraded to 30-inch pipe. The Upper Schenks Branch Interceptor consists of two sections along McIntire Road. Both of these sections have been designed with the first phase of this project located in the City's Schenks Branch Greenway, completed in early 2016. The second phase of the Upper Schenks Interceptor will be replaced by RWSA in coordination with the City of Charlottesville's sewer upgrades once easement negotiations with Albemarle County are complete (or the City authorizes the second phase project be constructed under McIntire Road). Project costs include design, permitting, easement acquisition, construction, construction observation/administration by the engineering consultant; and project contingencies.

28. Interceptor Sewer and Manhole Repair: This project is used to conduct assessment of various interceptors as well as rehabilitation of interceptors that do not have a separate CIP project. Planned projects include condition assessments and assumed rehabilitation of the Morey Creek Interceptor and Powell Creek Interceptor as well as rehabilitation efforts identified for the Moores Creek Interceptor and the Moores Creek Relief Interceptor that have been identified from previous condition assessment efforts. A sewer rehabilitation contract has been developed under this project as well which will procure a dedicated contractor for all rehabilitation work. This project will also provide an allowance in budgeted funds to carry out future repairs. The intent of this project is to complete a condition assessment of all RWSA interceptors (except those replaced during the period with new pipe) and perform as-needed rehabilitation work by the end of 2020. Such periodic assessments of all sewer pipe reflects industry best practices and the maintenance expectations of federal and state regulators as a part of avoiding sanitary sewer overflows.

29. Crozet Interceptor Sewer and Manhole Repairs: The Crozet Interceptor is located in western Albemarle County and serves the Crozet area. Flow metering indicated that the interceptor experienced substantial inflow and infiltration and requires rehabilitation. In order to minimize future infrastructure improvements, ACSA and RWSA have agreed to aggressively rehabilitate this interceptor and the sewers that flow to the interceptor. The initial phase of rehabilitation to repair defects in manholes and pipelines contributing to the inflow and infiltration in the

interceptor upstream of Crozet Pump Station No. 4 has been completed. The current budget accounts for condition assessment work and assumed rehabilitation needs for the lower portions of the interceptor. While wet weather flows have moderately improved based on the initial phase of work, the ACSA and RWSA continue to investigate and remediate deficiencies along the entire interceptor.

30. Crozet Flow Equalization Tank: Rehabilitation work in the RWSA and ACSA sewer systems is on-going to meet the I&I reduction goals in the Crozet Interceptor. This is based on the flow metering and modeling results of the Comprehensive Sanitary Sewer Model & Study conducted in 2006 and as part of the Crozet Interceptor CIP project. The results of the 2006 study were updated in 2016 to evaluate I/I reduction goals and future capital project needs. The need to proceed with construction of a flow equalization tank in the Crozet area was confirmed as a result of this study update, which will took into account recent flow monitoring data that had been collected following previous I/I reduction efforts. Based on those results, a preliminary engineering evaluation of a flow equalization tank upstream of Crozet Pump Station No. 4 has begun. Progressing into the preliminary engineering phase of the flow equalization tank is necessary to ensure that the facility can be sited, designed, permitted, constructed and ready for operation by 2020 in order to meet the two-year storm flow targets. The budget for this project includes estimates for the preliminary engineering, final design, property acquisition, legal assistance, construction costs and construction management services.

31. Crozet Interceptor Pump Station Bypass Isolation Valves: There are four pump stations located in the Crozet Interceptor system that help convey the flow from the Crozet area into the Morey Creek Interceptor and the rest of the urban collection system. These pump stations were constructed in the 1980s and provided no means of isolating each pump station from its downstream force main. This condition complicates maintenance-related activities as each time a pump station component needs to be serviced or replaced, the volume of wastewater within the force main must be addressed at the pump station as it drains back to the wet well. In addition, the Crozet Interceptor Pump Stations also have limited storage within their wet wells, and any reduction of down time as a result of dealing with the impacts of no isolation valves, decreases the amount of time available to work on the equipment. In order to alleviate this condition, temporary valves called “line stops” will be temporarily installed on the force mains downstream of the pump stations to allow enough time for a new isolation valve to be installed. This isolation valve location will provide the maximum amount of down time available based on current system conditions for future pump station maintenance activities. While line stops are in place, bypass connections will also be provided at each pump station. These will allow staff the option of bringing in bypass pumps for more significant pump station shutdowns required for maintenance activities or repairs that the isolation valves alone cannot account for. Design services for this project were initiated in August 2017 with completion of construction anticipated for summer 2018.

32. Maury Hill Branch Sewer Upgrade: Based on the sewer study performed by Greeley and Hansen in 2016, the Maury Hill Branch Sewer was targeted for capacity upgrades around 2020. This project would include an upgrade from 8-inch diameter sewer to 12-inch diameter sewer

along with all new manholes. Moving forward with this project would supersede other anticipated rehabilitation work on this interceptor that would be necessary otherwise.

33. Crozet Interceptor Pump Station Rehabilitation: The Crozet Interceptor Pump Stations were constructed in the 1980's and many of the components are still original. This project would include the replacement of pumps and valves at Pump Station 2 in order to improve pumping capabilities at this location and provide spare parts for the pumps at Pump Station 1. It would also include roof replacements at all four pump stations, siding replacement for the wet well enclosure at Pump Station 3, and installation of a new water well at Pump Station 3.

Urban Wastewater Interceptors/Pumping Stations

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
27	Upper Schenks Branch Interceptor	$6,667,935	($2,182,935)	$20,000		$128,000	$3,515,000	$822,000		$4,485,000	
28	Interceptor Sewer and Manhole Repair	$1,337,389	$603,611	$496,330	$592,000	$695,000	$157,670			$1,941,000	$124,330
29	Crozet Interceptor Sewer and Manhole Repairs	$625,000		$252,615	$142,000	$230,385				$625,000	$180,715
30	Crozet Flow Equalization Tank	$3,745,000	($445,000)	$238,000	$1,062,000	$2,000,000				$3,300,000	$37,356
31	Crozet Interceptor Pump Stations Bypass Isolation Valves	$720,000		$604,000	$116,000					$720,000	
32	Maury Hill Branch Sewer Replacement		$285,000						$285,000	$285,000	
33	Crozet Interceptor Pump Station Rehabilitation		$525,000		$275,000				$250,000	$525,000	
	TOTAL	$13,095,324	($1,214,324)	$1,610,945	$2,187,000	$3,053,385	$3,672,670	$822,000	$535,000	$11,881,000	$342,401

Moores Creek Advanced Water Resource Recovery Facility

The Moores Creek Advanced Water Resource Recovery Facility (MCAWRRF) is the largest wastewater treatment facility within the RWSA system. The plant was originally constructed in 1958 and upgraded and expanded in 1981 and 1982, and currently has a rated capacity of 15 mgd. From 2009 thru 2012 the facility was upgraded to provide enhanced nutrient removal, and increased wet weather pumping and treatment capacity. This site includes the infrastructure for the wastewater treatment process as well as the RWSA administration facilities.

Project Descriptions:

34. Bridge Repairs: The bridge crossing Moores Creek located at the Advanced Water Resource Recovery Facility was constructed in the early 1980s. In late 2011, staff commissioned a detailed inspection of the bridge. The inspection results indicated that the bridge was in good condition, but required maintenance repairs to assure continued safe operation. This work includes sealing the expansion joints, scupper installation to drain the bridge deck, repairs to the steel plate girders and their bearings, catwalk and steel corrosion repair and repainting, and minor concrete repair. This work will be completed by the spring of 2018 in conjunction with the Moores Creek Odor Control Improvements project.

35. Odor Control Phase 2: As part of the implementation of the next phase of the 2007 Odor Control Master Plan at the MCAWRRF, operations audits were performed, liquid and vapor phase sampling was conducted, and a computerized dispersion model was developed from 2013 to 2014. Recommendations for odor control improvements that would significantly control odors from traveling beyond the MCAWRRF fence line were presented to the RWSA Board of Directors in December 2014 and the CIP project for $9.33M was approved at the January 2015 Meeting. The budget was later increased to $9.85M. The final design for odor control improvements includes covering the head works and screening channels, installing grit facilities, constructing a bypass line through one equalization basin, covering the primary clarifiers, building additional odor scrubbing facilities to treat the foul air from the covered sources, removing the post-digestion clarifiers from service, modifying the handling, hauling and storage of bio solids, cleaning the equalization basins and holding ponds, and coating the interior of the digesters. The design for the Odor Control Improvements Project was completed in November 2015. An award of construction contract and associated engineering construction administration and inspection occurred in April 2016. Construction of the Odor Control project has been very challenging with many change orders needed to address unforeseen circumstances, and therefore, additional funding has been requested for contingency funding. Final project completion is expected in spring 2018. The digester coating project was bid in August 2017 and the bids were much higher than anticipated, accounting for an additional project need in excess of $1M. The basin cleaning project will be managed by RWSA staff through a separate contract anticipated in summer 2018.

36. Roof Replacements: The majority of the buildings at the Moores Creek Advanced Water Resource Recovery Facility were constructed in 1981 and 1982 during a major expansion of the existing treatment plant. All buildings constructed at that time were built with a metal roof system. In 2014, deficiencies were identified in the roof at the Administration Building and the roof was replaced. The materials of the original roof at the Administration Building are

the same as the roof material on the other buildings. Likewise, many of the buildings have started to experience leaks and structural deficiencies. As a result, the purpose of this project is to replace the roof systems at the following buildings at the Moores Creek AWRRF: Blower Building, Moores Creek Pump Station, Sludge Pump Station No. 2, Maintenance Building 1, and Maintenance Building 2, Sludge Pumping Building, Primary Pump Building, and the Effluent Pump Building. Design of these improvements began in March 2017 with completion of construction anticipated for May 2018.

37. Second Centrifuge: The Moores Creek AWRRF currently operates a high-speed centrifuge to process and dewater digested bio solids from the treatment process. The centrifuge was constructed during the 2009-2012 Nutrient Upgrade project and served to replace an older plate and frame filter press operation (which was removed during installation of the centrifuge), with a second plate and frame press serving as backup. An evaluation of the remaining filter press concluded that extensive repairs would be required to maintain this as a backup dewatering system and the repairs would not be cost-effective as purchasing a second centrifuge. Without the utility of the second press the facility does not have a redundant process, and thus during planned or emergency outages a portable back-up unit must be rented or leased. A second centrifuge will allow for continued bio solids dewatering during planned or emergency repairs to one of the two centrifuges, for higher-rate processing by operating both units simultaneously during other periods (thus saving on staff time), and for better maintenance of proper solids flow through the plant.

38. Engineering and Administration Building: RWSA currently has its administrative headquarters in two buildings on the grounds of the Moores Creek Advanced Water Resource Recovery Facility. The two-story Administration Building was constructed in the early 1980's and houses offices, IT server space, meeting space and a full service laboratory. The second building is a series of four trailers installed in between 2003-2010 that house the engineering department. The Administration building is located at the head of the wastewater treatment plant and is surrounded by underground piping and process functions that may conflict with existing parking and/or the building in a future plant expansion. There is currently a need to house additional staff; increase office and meeting space; plan for the replacement of the trailers; bring the IT server workrooms to modern standards; provide classroom space for education outreach. Staff is procuring a consultant to perform a space needs analysis and provide recommendations on how to address future building needs.

39. Digester Sludge Storage Improvements: With the second centrifuge installation almost complete, 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 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.

40. Aluminum Slide Gate Replacement: 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 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.

41. Moores Creek AWRRF Master Plan: The majority of the Moores Creek Water Resource Recovery Facility was constructed in the early 1980's. At the time, the plant layout was develop with space held open for future process expansion. With the Enhanced Nutrient Removal (ENR) project in 2009, the operation and layout of the plant was fundamentally altered, as needed to meet the new regulation. The project did anticipate the need for future expansion and some of the processes have readily available space. However, a full expansion plan was not developed at the time. As identified in the 2107 Strategic Plan, the Authority has a goal to plan, deliver and maintain dependable infrastructure in a financially responsible manner. Staff has identified asset master planning as a priority strategy to improve overall system development. As such, this project will serve to evaluate and plan for future space and process needs to accommodate capacity expansion and/or anticipated regulatory changes.

42. Mechanical Thickener: During the design of the Moores Creek AWRRF Phase 2 Odor Control project, the consultants conducted a detailed evaluation of all facility odor sources. One of the key sources identified, was the post-digestion clarifiers. These clarifiers are two round open-topped tanks of digested wastewater sludge, located on the north side of the plant. During the ENR upgrade, the characteristics of the post-aeration sludge changed. This change has led to less predictable sludge handing through the existing gravity thickeners. This change in the post-aeration sludge characteristics has made obtaining a clear thickener overflow more difficult without chemical addition. Removing the post-digestion clarifiers from service combined with solids carryover from the existing gravity thickeners create a number of downstream consequences in primary clarification, sludge digestion and solids dewatering. Removing these facilities from service reduces the sludge thickness and therefore the plant's ability to adequately process it. This project includes the design and installation of a mechanical thickener prior to digestion that will increase plant solids processing reliability and capacity.

43. Radio Upgrades: The regional 800 MHz Public Safety Communication System, in which the Rivanna Water and Sewer Authority participates to provide internal and emergency radio communication, is expected to reach the end of its service life in 2018. Because of technology changes (software and hardware) the Charlottesville-UVA-Albemarle County Emergency Communications Center (ECC) will need to upgrade or replace the system to keep it useable. This project plans for the upgrade or replacement of major technology components and equipment of the existing system include: electronic components at all tower sites and the

prime site at the ECC facility; new console equipment at the regional ECC; equipment such as tower site generators and UPS systems; an additional tower site (to improve service in southern Albemarle County); microwave backbone; and replacement of the system recording facilities. The project will take 24 months to complete and will be completed in Fiscal Year 2018. RWSA is being apportioned a part of the $18.8M project cost proportionately based on the number of radios (2.4% of the total project cost). In addition to this assessment from the ECC, the Authority will also be required to undertake programing upgrades to its fleet of stationary, mobile, and portable radios.

Moores Creek Advanced Water Resource Recovery Facility

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
34	Bridge Repairs	$330,000		$330,000						$330,000	$37,391
35	Odor Control Phase 2	$10,108,000	$1,016,151	$10,108,000	$1,016,151					$11,124,151	$6,669,061
36	Roof Replacements	$1,264,000		$1,264,000						$1,264,000	$61,492
37	Second Centrifuge	$1,290,000		$1,290,000						$1,290,000	$172,974
38	Engineering and Administration Building		$3,000,000			$65,000	$60,000	$1,375,000	$1,500,000	$3,000,000	
39	Digester Sludge Storage Improvements		$265,000		$265,000					$265,000	
40	Aluminum Slide Gate Replacements		$470,000		$470,000					$470,000	
41	Moores Creek AWRRF Master Plan		$100,000			$50,000	$50,000			$100,000	
42	Mechanical Thickener		$1,200,000			$100,000	$1,100,000			$1,200,000	
43	Radio Upgrades	$521,000		$521,000						$521,000	$3,567
	TOTAL	$13,513,000	$6,051,151	$13,513,000	$1,751,151	$215,000	$1,210,000	$1,375,000	$1,500,000	$19,564,151	$6,944,485

Scottsville Wastewater System

The Scottsville Wastewater System includes the influent pumping station, the water resource recovery facility constructed in 1983, and the historical treatment lagoon (now incorporated into the plant operation). The water resource recovery facility has a rated capacity of 0.2 mgd.

Project Descriptions:

44. Grinder and Air Control Improvements: Currently the influent raw water pump station does not have a means to prevent large material from impacting the pumps, resulting in frequent clogging and maintenance. The space within the pump station is very limited and therefore does not allow for screening. This project will design and install an inline grinder within the influent pump channel. In addition, this project will evaluate methods to automate air control for the biological treatment process. The current method of air control produces inconsistent results, adversely impacting treatment and operations.

Scottsville Water Resource Recovery Facility

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
44	Grinder and Air Control Improvements		$100,000			$30,000	$70,000			$100,000	
	TOTAL	$0	$100,000	$0	$0	$30,000	$70,000	$0	$0	$100,000	$0

Glenmore Wastewater System

The 0.381-mgd water resource recovery facility, located within the Glenmore subdivision, is operated by RWSA. The facility includes an influent pumping station located immediately adjacent to the treatment facility.

Project Descriptions:

45. Influent Pump & VFD Addition: The Glenmore WRRF is predicted to see additional dry and wet weather flows as construction within the service area continues. Future wet weather flows will require higher influent pumping capacity and an additional pump and electrical variable frequency drive will be required to maintain firm capacity.

46. Secondary Clarifier Coating: The secondary clarifiers at the Glenmore facility were painted over 10-years ago. The clarifier environment is a particularly harsh environment subject to corrosive gasses, grit abrashion 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.

Glenmore Water Resource Recovery Facility

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
45	Influent Pump & VFD Addition	$61,000					$61,000			$61,000	
46	Secondary Clarifier Coating		$50,000		$25,000	$25,000				$50,000	
	TOTAL	$61,000	$50,000	$0	$25,000	$25,000	$61,000	$0	$0	$111,000	$0

All Systems

Project Descriptions:

47. Information Technology Enhancement (Asset Management): 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. The Rivanna Water and Sewer Authority (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 will be 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.

48. Security Enhancements: As required by the federal Bioterrorism Act of 2002, water utilities must conduct vulnerability assessments (VA) and have emergency response plans. Rivanna Water and Sewer Authority (RWSA) recently completed a VA of our water system in collaboration with other regional partners and identified a number of security improvements that could be applied to both our water system and our wastewater system. 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.

All Systems

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
47	Information Technology Enhancement (Asset Management)		$500,000	$50,000	$250,000	$200,000				$500,000	
48	Security Enhancements		$2,400,000		$170,000	$1,120,000	$1,110,000			$2,400,000	
	TOTAL	$0	$2,900,000	$50,000	$420,000	$1,320,000	$1,110,000	$0	$0	$2,900,000	$0

APPENDICES

CIP Financial Summary

Water System Summary

Wastewater System Summary

CIP Financial Summary

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
1	South Rivanna Reservoir to Ragged Mountain Reservoir Water Line	$2,295,000		$565,249	$275,000	$870,000	$584,751			$2,295,000	$25,249
2	Rivanna Reservoir Dredging	$137,558	($127,558)				$10,000			$10,000	
3	Ragged Mountain Reservoir to Observatory Water Treatment Plant		$4,116,000				$426,000	$1,453,000	$2,237,000	$4,116,000	
4	Ragged Mountain Reservoir to Observatory Raw Water Pump Station		$2,410,000				$400,000	$400,000	$1,610,000	$2,410,000	
5	Observatory Water Treatment Plant Improvements	$10,000,000	$8,630,000	$1,207,198	$1,441,000	$3,655,000	$8,459,000	$3,867,802		$18,630,000	
6	Interconnect Lower Sugar Hollow and Ragged Mountain Raw Water	$225,000	$106,000	$91,000	$240,000					$331,000	
7	Sugar Hollow to Ragged Mountain Reservoir Transfer Flow Meter	$150,000	$165,000	$181,000	$134,000					$315,000	
8	Sugar Hollow Dam - Rubber Crest Gate Replacement & Intake	$940,000			$55,000	$473,000	$412,000			$940,000	
9	Valve Repair - Replacement (Phase 2)	$500,000		$250,000	$250,000					$500,000	
10	Urban Water Granular Activated Carbon and Water Treatment	$24,925,494		$24,925,494						$24,925,494	$18,292,018
11	Wholesale Water Master Metering	$3,600,000	($400,000)	$3,200,000						$3,200,000	$2,270,371
12	Piney Mountain Tank Rehabilitation	$500,000		$280,000	$220,000					$500,000	

CIP Financial Summary
(Continued)

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
13	Avon to Pantops Water Main	$5,500,000	$7,700,000	$175,000	$1,200,000	$1,800,000	$5,400,000	$4,625,000		$13,200,000	
14	Water Demand Projection and Safe Yield Study		$100,000				$100,000			$100,000	
15	South Fork Rivanna River Crossing and North Rivanna Transmission		$5,340,000				$843,000	$3,930,000	$567,000	$5,340,000	
16	Rt. 29 / Airport Road Pump Station		$2,300,000			$201,000	$1,824,000	$275,000		$2,300,000	
17	Finished Water System Master Plan		$150,000						$150,000	$150,000	
18	South Fork Rivanna Hydropower Plant Decommissioning	$1,000,000	($600,000)	$167,332	$232,668					$400,000	$82,332
19	South Fork Water Treatment Plan Improvements	$5,430,442	$2,069,558	$135,000	$459,000	$2,411,000	$4,398,000	$97,000		$7,500,000	
20	Beaver Creek Dam Alteration	$5,430,442	$2,069,558	$135,000	$2,411,000	$4,398,000	$97,000		$7,500,000		
21	Buck's Elbow Tank & Crozet Waterball Painting	$1,200,000			$60,000	$995,000	$145,000			$1,200,000	
22	Crozet Water GAC and Water Treatment Improvements	$3,418,390		$3,418,390						$3,418,390	$2,665,401
23	Crozet Water Treatment Plant Expansion	$250,000	$6,650,000	$528,819	$3,280,000	$3,091,181				$6,900,000	$90,419
24	Crozet Water Treatment Plant Finished Water Pump Station	$2,600,000		$2,542,000	$58,000					$2,600,000	$395,663

CIP Financial Summary
(Continued)

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
25	Drinking Water Infrastructure Plan	$300,000		$274,000	$26,000					$300,000	
26	Scottsville Water Granular Activated Carbon	1,615,000		1,615,000						1,615,000	1,216,510
27	Upper Schenks Branch Interceptor	$6,667,935	($2,182,935)	$20,000		$128,000	$3,515,000	$822,000		$4,485,000	
28	Interceptor Sewer and Manhole Repair	$1,337,389	$603,611	$496,330	$592,000	$695,000	$157,670			$1,941,000	$124,330
29	Crozet Interceptor Sewer and Manhole Repairs	$625,000		$252,615	$142,000	$230,385				$625,000	$180,715
30	Crozet Flow Equalization Tank	$3,745,000	($445,000)	$238,000	$1,062,000	$2,000,000				$3,300,000	$37,356
31	Crozet Interceptor Pump Station Bypass Isolation Valves	$720,000		$604,000	$116,000					$720,000	
32	Maury Hill Branch Sewer Replacement		$285,000						$285,000	$285,000	
33	Crozet Interceptor Pump Station Rebuilds		$525,000		$275,000				$250,000	$525,000	
34	Bridge Repairs	$330,000		$330,000						$330,000	$37,391
35	Moores Creek AWRRF Odor Control Phase 2	$10,108,000	$1,016,151	$10,108,000	$1,016,151					$11,124,151	$6,669,061
36	Moores Creek AWRRF Roof Replacements	$1,264,000		$1,264,000						$1,264,000	$61,492

CIP Financial Summary
(Continued)

		Five-Year Capital Program			Projected Future Expenses by Year						
Proj. No.	**Project Description**	**Current CIP Adopted 3/2017**	**Proposed Changes**	**Current Capital Budget**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Recommended CIP**	**Work-in-Progress (Prev. Expenses 6/30/2017)**
37	Moores Creek AWRRF Second Centrifuge	$1,290,000		$1,290,000						$1,290,000	$172,974
38	Engineering and Administration Building		$3,000,000			$65,000	$60,000	$1,375,000	$1,500,000	$3,000,000	
39	Digester Sludge Improvements		$265,000		$265,000					$265,000	
40	Aluminum Slide Gate Replacements		$470,000		$470,000					$470,000	
41	MCAWRRF Master Plan		$100,000			$50,000	$50,000			$100,000	
42	Mechanical Thickener		$1,200,000			$100,000	$1,100,000			$1,200,000	
43	Radio Upgrades	$521,000		$521,000						$521,000	$3,567
44	Grinder and Air Control Improvements		$100,000		$30,000	$70,000			$100,000		
45	Influent Pump & VFD Addition	$61,000				$61,000			$61,000		
46	Secondary Clarifier Coating		$50,000		$25,000				$50,000		
47	Information Technology Enhancement (Asset Management)		$500,000	$50,000	$200,000				$500,000		
48	Security Enhancements		$2,400,000		$1,120,000	$1,110,000			$240,000		
	Total	$96,686,650	$48,565,385	$54,864,427	$15,654,819	$22,403,566	$27,981,421	$16,844,802	$15,050,000	$134,641,035	$32,324,849

Water System Summary

	Summary			Projected Future Expenses by Year						
Urban Water System	**Current CIP**	**Proposed Changes**	**Current Capital Budget**	**FY19**	**FY20**	**FY21**	**FY22**	**FY23**	**Recommended CIP**	**Work-in - Progress**
PROJECT COSTS										
Community Water Supply Plan	$ 2,432,558	$ 6,398,442	$ 565,249	$ 275,000	$ 870,000	$ 1,420,751	$ 1,853,000	$ 3,847,000	$ 8,831,000	$ 25,249
Observatory WTP/Ragged Mtn/Sugar Hollow Systems	11,600,000	8,616,000	1,479,198	1,870,000	4,128,000	8,871,000	3,867,802	-	20,216,000	1,042,198
Finished Water Storage/Distribution - Urban System	39,745,494	10,470,000	28,830,494	1,670,000	2,001,000	8,167,000	8,830,000	717,000	50,215,494	20,562,389
South & North Fork Rivanna WTP and Reservoir System	7,051,442	848,558	302,332	691,668	2,411,000	4,398,000	97,000	-	7,900,000	82,332
Security & Asset Management	-	1,450,000	25,000	210,000	660,000	555,000	-	-	1,450,000	-
Total Projects Urban Water Systems	**$ 60,829,494**	**$ 27,783,000**	**$ 31,202,273**	**$ 4,716,668**	**$ 10,070,000**	**$ 23,411,751**	**$ 14,647,802**	**$ 4,564,000**	**$ 88,612,494**	**$ 21,712,168**
Completed or Closed Projects	$ (5,626,000)	$ (5,626,000)								
Adjusted	**$ 55,203,494**	**$ 33,409,000**								
FUNDING SOURCES URBAN SYSTEM - TO DATE										
Work-in-Progress			$ 21,712,168	$ -	$ -	$ -	$ -	$ -	$ 21,712,168	
Debt Proceeds Available 2015B			6,363,105		-	-	-	-	6,363,105	
Captial Cash Fund Disgnated			3,127,000	-	-	-	-	-	3,127,000	
SUBTOTAL			31,202,273	-	-	-	-	-	31,202,273	
FUNDING SOURCES URBAN SYSTEM - NEEDS										
Future Cash reserve transfer to Capital Fund				$ 1,000,000	$ 1,000,000	$ 1,000,000	$ -	$ -	$ 3,000,000	
New Debt Needed			-	3,716,668	9,070,000	22,411,751	14,647,802	4,564,000	54,410,221	
SUBTOTAL			-	4,716,668	10,070,000	23,411,751	14,647,802	4,564,000	57,410,221	
TOTAL URBAN WATER FUNDING			**$ 31,202,273**	**$ 4,716,668**	**$ 10,070,000**	**$ 23,411,751**	**$ 14,647,802**	**$ 4,564,000**	**$ 88,612,494**	
									$88,612,494	
Estimated Bond Issues					**$12,786,700**		**$41,623,600**			

Non-Urban Water System	**Current CIP**	**Proposed Changes**	**Current Capital Budget**	**FY19**	**FY20**	**FY21**	**FY22**	**FY23**	**Recommended CIP**	**Work-in - Progress**
PROJECT COSTS										
Crozet Water System	$ 14,296,890	$ 15,051,500	$ 7,058,095	$ 4,084,000	$ 5,056,181	$ 2,307,000	$ 8,584,000	$ 2,259,114	$ 29,348,390	$ 3,285,369
Scottsville Water System	1,715,000	(100,000)	1,615,000	-	-	-	-	-	1,615,000	1,216,510
Total Rural Water Systems	**$ 16,011,890**	**$ 14,951,500**	**$ 8,673,095**	**$ 4,084,000**	**$ 5,056,181**	**$ 2,307,000**	**$ 8,584,000**	**$ 2,259,114**	**$ 30,963,390**	**$ 4,501,879**
Completed or Closed Projects	$ (557,500)	$ (557,500)								
Adjusted Current CIP	**$ 15,454,390**	**$ 15,509,000**								
Non-URBAN FUNDING SOURCES										
Work in Progress			$ 4,502,000	$ -	$ -	$ -	$ -	$ -	$ 4,502,000	
Debt Proceeds 2012A/2015A Bond			1,269,200	-	-	-	-	-	1,269,200	
Future Cash reserve transfer to Capital Fund			-	400,000	-	-	-	-	400,000	
New Debt Needed			2,901,895	3,684,000	5,056,181	2,307,000	8,584,000	2,259,114	24,792,190	
TOTAL NON-URBAN WATER FUNDING			**$ 8,673,095**	**$ 4,084,000**	**$ 5,056,181**	**$ 2,307,000**	**$ 8,584,000**	**$ 2,259,114**	**$ 30,963,390**	
									$ 30,963,390	
Estimated Bond Issues				**$11,642,100**			**13,150,100**			

Wastewater System Summary

	Summary			Projected Future Expenses by Year						
Urban Wastewater System	**Current CIP**	**Proposed Changes**	**Current Capital Budget**	**FY19**	**FY20**	**FY21**	**FY22**	**FY23**	**Recommended CIP**	**Work-in - Progress**
PROJECT COSTS										
Wastewater Interceptor/Pumping Stations	$ 45,370,324	$ (33,489,324)	$ 1,610,945	$ 2,187,000	$ 3,053,385	$ 3,672,670	$ 822,000	$ 535,000	$ 11,881,000	$ 342,401
Moores Creek WWTP	13,597,746	5,966,405	13,513,000	1,751,151	215,000	1,210,000	1,375,000	1,500,000	19,564,151	6,944,485
Security & Asset Management	-	1,450,000	25,000	210,000	660,000	555,000	-	-	1,450,000	-
Total Urban Wastewater Systems	**$ 58,968,070**	**$ (26,072,919)**	**$15,148,945**	**$4,148,151**	**$3,928,385**	**$5,437,670**	**$2,197,000**	**$2,035,000**	**$32,895,151**	**$7,286,886**
Completed or Closed Projects	$ (32,359,746)	$ (32,359,746)								
Adjusted Current CIP	**$ 26,608,324**	**$6,286,827**								
FUNDING SOURCES URBAN SYSTEM - IN PLACEA										
Work-in-Progress			$ 7,286,886	$ -	$ -	$ -	$ -	$ -	$ 7,286,886	
Debt Proceeds - 2016			3,598,000	-	-	-	-		3,598,000	
Capital Cash on hand			3,822,000	-	-	-	-	-	3,822,000	
SUBTOTAL			14,706,886	-	-	-	-	-	14,706,886	
FUNDING SOURCES URBAN SYSTEM - NEEDS										
Future Cash Reserves			$ -	$ 750,000	$ 500,000	$ -	$ -	$ -	$ 1,250,000	
New Debt Needed			442,059	$3,398,151	3,428,385	5,437,670	2,197,000	2,035,000	16,938,265	
SUBTOTAL			442,059	$4,148,151	3,928,385	5,437,670	2,197,000	2,035,000	18,188,265	
TOTAL URBAN WASTEWATER FUNDING			**$ 15,148,945**	**$ 4,148,151**	**$ 3,928,385**	**$ 5,437,670**	**$ 2,197,000**	**$ 2,035,000**	**$ 32,895,151**	
Estimated Bond Issues					**$ 7,268,600**		**$ 9,669,700**			

Non-Urban Wastewater System	**Current CIP**	**Proposed Changes**	**Current Capital Budget**	**FY19**	**FY20**	**FY21**	**FY22**	**FY23**	**Recommended CIP**	**Work-in - Progress**
PROJECT COSTS										
Glenmore WWTP	$ 61,000	$ 50,000	$ -	$ 25,000	$ 25,000	$ 61,000	$ -	$ -	$ 111,000	$ -
Scottsville WWTP	-	100,000	-	-	30,000	70,000	-	-	100,000	-
Total Rural Wastewater Systems	**$61,000**	**$150,000**	**$ -**	**$ 25,000**	**$ 55,000**	**$ 131,000**	**$ -**	**$ -**	**$ 211,000**	**$ -**
FUNDING SOURCES RURAL SYSTEM - NEEDS										
Future Cash Reserve			$ -	$ 25,000	$ 55,000	131,000			211,000	
TOTAL RURAL WASTEWATER FUNDING			**$ -**	**$ 25,000**	**$ 55,000**	**$ 131,000**	**$ -**	**$ -**	**$ 211,000**	
Estimated Bond Issues			$ -		$ -					

	2019 - 2023 Proposed CIP	2017-2021 Adopted CIP	Change $
Project Cost			
Urban Water Projects	$ 88,612,500	$ 60,829,494	$ 27,783,006
Urban Wastewater Projects	32,895,150	58,968,070	(26,072,920)
Non-Urban Projects	31,174,400	16,072,890	15,101,510
Total Project Cost Estimates	**$ 152,682,050**	**$ 135,870,454**	**$ 16,811,596**
Funding in place			
Work-in-Progress (paid for)	$ 33,501,100	$ 37,841,713	(4,340,613)
Debt Proceeds Used	11,230,300	41,251,626	(30,021,326)
Cash-Capital Available	6,949,000	9,682,421	(2,733,421)
	$ 51,680,400	$ 88,775,760	$ (37,095,360)
Financing Needs			
Possible Future Reserves	$ 4,861,000	7,830,344	(2,969,344)
New Debt	96,140,650	39,264,350	56,876,300
	$ 101,001,650	$ 47,094,694	$ 53,906,956
Total Funding	**$ 152,682,050**	**$ 135,870,454**	**$ 16,811,596**
Percentage of funding in place	33.8%	65.3%	
Ratio of debt to expense	92.3%	87.1%	
Ratio of cash to expense	7.7%	12.9%	

Rivanna Water and Sewer Authority
CIP 2019-2023
Summary Information - Proposed2/20/2018

Detail by Major Systems	Total Proposed 1/31/2018 CIP	Urban Water Projects	Urban Wastewater Projects	Water Non-Urban Projects	Wastewater Non-Urban Projects
Project Cost					
Urban Water Projects	$ 88,612,500	$ 88,612,500	$ -	$ -	$ -
Urban Wastewater Projects	32,895,150	-	32,895,150	-	-
Non-Urban Projects	31,174,400	-	-	30,963,400	211,000
Total Project Cost Estimates	**$ 152,682,050**	**$ 88,612,500**	**$ 32,895,150**	**$ 30,963,400**	**$ 211,000**
Funding in place					
Work-in-Progress (paid for)	$ 33,501,100	$ 21,712,200	$ 7,286,900	$ 4,502,000	$ -
Debt Proceeds available	11,230,300	6,363,100	3,598,000	1,269,200	-
Cash-Capital Available	6,949,000	3,127,000	3,822,000	-	-
	$ 51,680,400	$ 31,202,300	$ 14,706,900	$ 5,771,200	$ -
Financing Needs					
Possible Future Reserves	$ 4,861,000	3,000,000	1,250,000	400,000	211,000
New Debt	96,140,650	54,410,200	16,938,250	24,792,200	-
	$ 101,001,650	$ 57,410,200	$ 18,188,250	$ 25,192,200	$ 211,000
Total Funding	**$ 152,682,050**	**$ 88,612,500**	**$ 32,895,150**	**$ 30,963,400**	**$ 211,000**
Percentage of funding in place	33.8%	35.2%	44.7%	18.6%	0.0%
Ratio of debt to expense	92.3%	68.6%	62.4%	84.2%	0.0%
Ratio of cash to expense	7.7%	6.9%	15.4%	1.3%	100.0%

	Urban Water	Urban Wastewater	Non-Urban	Total
Current Adopted CIP 2017 - 2021	$ 60,829,494	$ 58,968,070	$ 16,072,890	$ 135,870,454
Changes:				
Completed or Closed Projects	(5,626,000)	(32,359,746)	(557,500)	(38,543,246)
Adjustments on existing Projects	17,543,000	(1,008,173)	15,509,000	32,043,827
New Projects	15,866,000	5,845,000	1,600,000	23,311,000
Total Changes	27,783,000	(27,522,919)	16,551,500	16,811,581
Total Proposed CIP 2019 - 2023	$ 88,612,494	$ 31,445,151	$ 32,624,390	$ 152,682,050

Rivanna Water and Sewer Authority
CIP 2019-2023
Summary Information - Proposed2/20/2018

PROPOSED 5-YEAR CIP
CHARGE ANALYSIS ESTIMATES

Note - this fixed rate (charge) analysis is intended to show the effect of the draft CIP on the current adopted debt service charges. It is meant to provide a comparison of the next five years. It is not setting fixed rates for the next 5 years.

	Annual Debt Service FY 2018	Current Charge Debt Service FY 2018 Per Month	FY 2019 Per Month	FY 2020 Per Month	FY 2021 Per Month	FY 2022 Per Month	FY 2023 Per Month	Total Per Month
URBAN WATER								
CITY								
Urban Water - Current Adopted	1,920,500	$ 160,039						
Monthly DS Growth Charge (additional)			$ 22,375	$ 22,375	$ 22,375	$ 22,375	$ 22,375	$ 111,875
New Charge estimate			$ 182,414	$ 204,789	$ 227,164	$ 249,539	$ 271,914	$ 271,914
Annual percentage change			14.0%	12.3%	10.9%	9.8%	9.0%	
Total percentage change								69.9%
ACSA								
Urban Water - Current Adopted	3,425,300	$ 285,439						
Monthly DS Growth Charge (additional)			$ 27,918	$ 28,000	$ 28,000	$ 28,000	$ 28,000	$ 139,918
New Rate estimate			$ 313,357	$ 341,357	$ 369,357	$ 397,357	$ 425,357	$ 425,357
Annual percentage change			9.8%	8.9%	8.2%	7.6%	7.0%	
Total percentage change								49.0%
URBAN WASTEWATER								
CITY								
Urban WWater - Current Adopted	4,714,100	$ 392,841						
Monthly DS Growth Charge (additional)			$ 15,710	$ 20,790	$ 12,460	$ 12,460	$ 12,460	$ 73,880
New Rate estimate			$ 408,551	$ 429,341	$ 441,801	$ 454,261	$ 466,721	$ 466,721
Annual percentage change			4.0%	5.1%	2.9%	2.8%	2.7%	
Total percentage change								18.8%
ACSA								
Urban WWater - Current Adopted	2,670,600	$ 222,550						
Monthly DS Growth Charge (additional)			$ 23,570	$ 20,240	$ 10,340	$ 10,340	$ 10,340	$ 74,830
New Rate estimate			$ 246,118	$ 266,358	$ 276,698	$ 287,038	$ 297,378	$ 297,380
Annual percentage change			10.6%	8.2%	3.9%	3.7%	3.6%	
Total percentage change								33.6%

Non-Urban Rate Impacts

(all rates are monthly)

		Current Charges	Monthly Increase						5-Year Avg.
		FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total	Annual Increase
Crozet Water	Operations	$ 76,278							
	Debt Service	57,623							
		$ 133,901	$ 25,768	$ 25,768	$ 25,768	$ 25,768	$ 25,768	$ 128,840	**$ 25,768**
			19.2%	19.2%	19.2%	19.2%	19.2%	96.2%	
Scottsville Water	Operations	34,353							
	Debt Service	10,787							
		$ 45,140	143	143	144	144	145	$ 719	**$ 144**
			0.3%	0.3%	0.3%	0.3%	0.3%	1.6%	
Glenmore Wastewater	Operations	29,362							
	Debt Service	132							
		$ 29,494	122	$ 122	$ 123	$ 123	$ 123	$ 613	**$ 123**
			0.4%	0.1%	0.1%	0.1%	0.1%	0.5%	
Scottsville Wastewater	Operations	23,724							
	Debt Service	686							
		$ 24,410	99	$ 99	$ 100	$ 100	$ 100	$ 498	**$ 100**
			0.4%	0.4%	0.4%	0.4%	0.4%	2.0%	
All Non-Urban Rate Centers Monthly		**$ 163,717**							
		$ 69,228							
		$ 232,945	**$ 26,132**	**$ 26,132**	**$ 26,135**	**$ 26,135**	**$ 26,136**	**$ 130,670**	**$ 26,134**
			11.2%	**11.2%**	**11.2%**	**11.2%**	**11.2%**	**56.1%**	**11.2%**

Summary of Charges - Annually		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total
Current FY2018	**$ 2,795,340**						
Annual Additional Revenue Needs		**$ 313,588**	**$ 313,584**	**$ 313,620**	**$ 313,620**	**$ 313,632**	**$ 1,568,044**
Total Annual Charge for Debt Service		$ 3,108,928	$ 3,422,512	$ 3,736,132	$ 4,049,752	$ 4,363,384	$ 4,363,384
		11.2%	10.1%	9.2%	8.4%	7.7%	56.1%

		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
City of Charlottesville								
Urban Water								
Operating Rate	Per 1000 gal.	1.833	1.969	2.073	2.177	2.285	2.400	2.520
	% Change		7.4%	5.3%	5.0%	5.0%	5.0%	5.0%
Debt Service Charge	Per month	$ 162,968	$ 160,039	182,414	204,789	227,164	249,539	271,914
			-1.8%	14.0%	12.3%	10.9%	9.8%	9.0%
Revenue Requirements:								
Operating Rate Revenue	Annual	$ 3,270,700	$ 3,514,200	$ 3,590,700	$ 3,770,235	$ 3,958,747	$ 4,156,684	$ 4,364,518
Debt Service Revenues	Annual	1,955,600	1,920,500	2,172,100	2,457,468	2,725,968	2,994,468	3,262,968
Total		**$ 5,226,300**	**$ 5,434,700**	**$ 5,762,800**	**$ 6,227,703**	**$ 6,684,715**	**$ 7,151,152**	**$ 7,627,486**
	$ Change		**$ 208,400**	**$ 328,100**	**$ 464,903**	**$ 457,012**	**$ 466,437**	**$ 476,334**
	% Change		**4.0%**	**6.0%**	**8.1%**	**7.3%**	**7.0%**	**6.7%**
Urban Wastewater								
Operating Rate	Per 1000 gal.	1.835	1.951	2.128	2.234	2.346	2.463	2.587
	% Change		6.3%	9.1%	5.0%	5.0%	5.0%	5.0%
Debt Service Charge	Per month	$ 369,037	$ 392,841	408,551	429,341	441,801	454,261	466,721
			6.5%	4.0%	5.1%	2.9%	2.8%	2.7%
Revenue Requirements:								
Operating Rate Revenue	Annual	$ 3,267,300	$ 3,540,600	$ 3,678,900	$ 3,862,845	$ 4,055,987	$ 4,258,787	$ 4,471,726
Debt Service Revenues	Annual	4,428,400	4,714,100	4,899,100	5,152,092	5,301,612	5,451,132	5,600,652
Total		**$ 7,695,700**	**$ 8,254,700**	**$ 8,578,000**	**$ 9,014,937**	**$ 9,357,599**	**$ 9,709,919**	**$ 10,072,378**
	$ Change		**$ 559,000**	**$ 323,300**	**$ 436,937**	**$ 342,662**	**$ 352,319**	**$ 362,459**
	% Change		**7.3%**	**3.9%**	**5.1%**	**3.8%**	**3.8%**	**3.7%**
Total City All Revenues		**$ 12,922,000**	**$ 13,689,400**	**$ 14,340,800**	**$ 15,242,640**	**$ 16,042,314**	**$ 16,861,071**	**$ 17,699,864**
	$ Change		**$ 767,400**	**$ 651,400**	**$ 901,840**	**$ 799,674**	**$ 818,757**	**$ 838,794**
	% Change		**5.9%**	**4.8%**	**6.3%**	**5.2%**	**5.1%**	**5.0%**

		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
ACSA Charges From RWSA								
Urban Water								
Operating Rate	Per 1000 gal.	1.833	1.969	2.073	2.177	2.285	2.400	2.520
	% Change		7.4%	5.3%	5.0%	5.0%	5.0%	5.0%
Debt Service Charge	Per month	$ 284,031	$ 285,439	313,357	341,357	369,357	397,357	425,357
			0.5%	9.8%	8.9%	8.2%	7.6%	7.0%
Revenue Requirements:								
Operating Rate Revenue	Annual	$ 3,019,100	$ 3,243,900	$ 3,449,900	$ 3,622,395	$ 3,803,515	$ 3,993,690	$ 4,193,375
Debt Service Revenues	Annual	3,408,400	3,425,300	3,691,200	4,096,288	4,432,288	4,768,288	5,104,288
Total		**$ 6,427,500**	**$ 6,669,200**	**$ 7,141,100**	**$ 7,718,683**	**$ 8,235,803**	**$ 8,761,978**	**$ 9,297,663**
	$ Change		**$ 241,700**	**$ 471,900**	**$ 577,583**	**$ 517,120**	**$ 526,176**	**$ 535,685**
	% Change		**3.8%**	**7.1%**	**8.1%**	**6.7%**	**6.4%**	**6.1%**
Urban Wastewater								
Operating Rate	Per 1000 gal.	1.835	1.951	2.128	2.234	2.346	2.463	2.587
	% Change		6.3%	9.1%	5.0%	5.0%	5.0%	5.0%
Debt Service Charge	Per month	$ 222,280	$ 222,550	246,118	266,358	276,698	287,038	297,378
			0.1%	10.6%	8.2%	3.9%	3.7%	3.6%
Revenue Requirements:								
Operating Rate Revenue	Annual	$ 3,015,900	$ 3,139,800	$ 3,534,600	$ 3,711,330	$ 3,896,897	$ 4,091,741	$ 4,296,328
Debt Service Revenues	Annual	2,667,400	2,670,600	2,955,700	3,196,300	3,320,380	3,444,460	3,568,540
Total		$ 5,683,300	$ 5,810,400	$ 6,490,300	$ 6,907,630	$ 7,217,277	$ 7,536,201	$ 7,864,868
	$ Change		**$ 127,100**	**$ 679,900**	**$ 417,330**	**$ 309,647**	**$ 318,925**	**$ 328,667**
	% Change		**2.2%**	**11.7%**	**6.4%**	**4.5%**	**4.4%**	**4.4%**
Non-Urban Rate Centers								
Operating Rate Revenue	Annual	$ 1,877,100	$ 1,964,600	2,066,200	2,169,510	2,277,986	2,391,885	2,511,479
Debt Service Revenues	Annual	716,900	830,700	1,134,400	1,429,400	1,724,400	2,019,400	2,314,400
Total		**$ 2,594,000**	**$ 2,795,300**	**$ 3,200,600**	**$ 3,598,910**	**$ 4,002,386**	**$ 4,411,285**	**$ 4,825,879**
				$ 405,300	**$ 398,310**	**$ 403,476**	**$ 408,899**	**$ 414,594**
				14.5%	**12.4%**	**11.2%**	**10.2%**	**9.4%**
Total ACSA All Revenues		**$ 14,704,800**	**$ 15,274,900**	**$ 16,832,000**	**$ 18,225,223**	**$ 19,455,465**	**$ 20,709,465**	**$ 21,988,410**
	$ Change		**$ 570,100**	**$ 1,557,100**	**$ 1,393,223**	**$ 1,230,242**	**$ 1,254,000**	**$ 1,278,946**
	% Change		**3.9%**	**10.2%**	**8.3%**	**6.8%**	**6.4%**	**6.2%**

Capital Improvement Plan 2019 - 2023

February 27, 2018

RIVANNA
WATER & SEWER AUTHORITY

Overview

- Proposed CIP Budget
- New Projects
- Previously Approved Projects with Significant Changes

Proposed CIP Budget

FY 2019 - 2023	$152.7 M
FY 2017 - 2021	$135.9 M
	+ $ 16.8 M

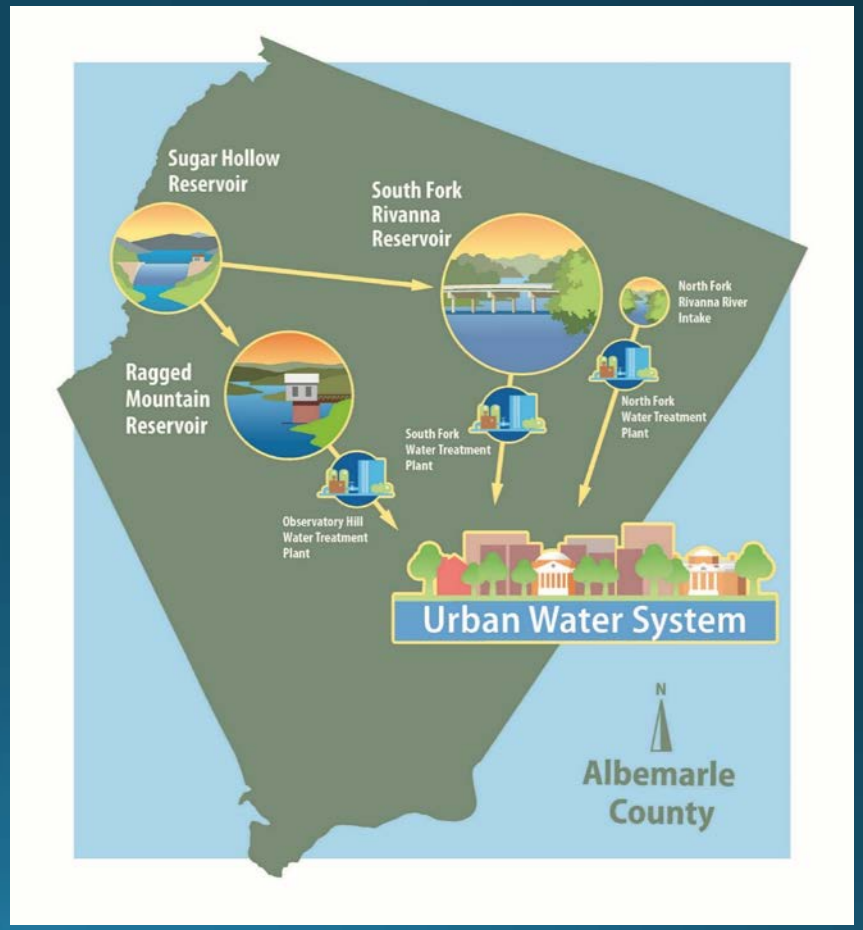
(12.4% increase)

Select New Projects

1. Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line ($4.1 million)
2. Ragged Mountain Reservoir to Observatory Water Treatment Pump Station ($2.4 million)
3. South Fork Rivanna River Crossing and North Rivanna Transmission Main ($5.3 million)
4. Route 29 Pump Station ($2.3 million)
5. Engineering and Administration Building ($3 million)
6. Moores Creek AWRRF Mechanical Thickeners ($1.2 million)
7. Security Enhancements ($2.4 million)

Ragged Mountain Reservoir to Observatory WTP Raw Water Line & Pump Station

- A portion of the Raw Water Supply Plan
- Replacing two 18-inch cast iron mains (70 and 110 years old, respectively)
- Provide reliable delivery of raw water up to 10 mgd to Observatory WTP
- Same pump station capable of supplying water to the South Rivanna WTP in the future (once the SFR to RMR water line is built)



Ragged Mountain Reservoir to Observatory WTP Raw Water Line & Pump Station

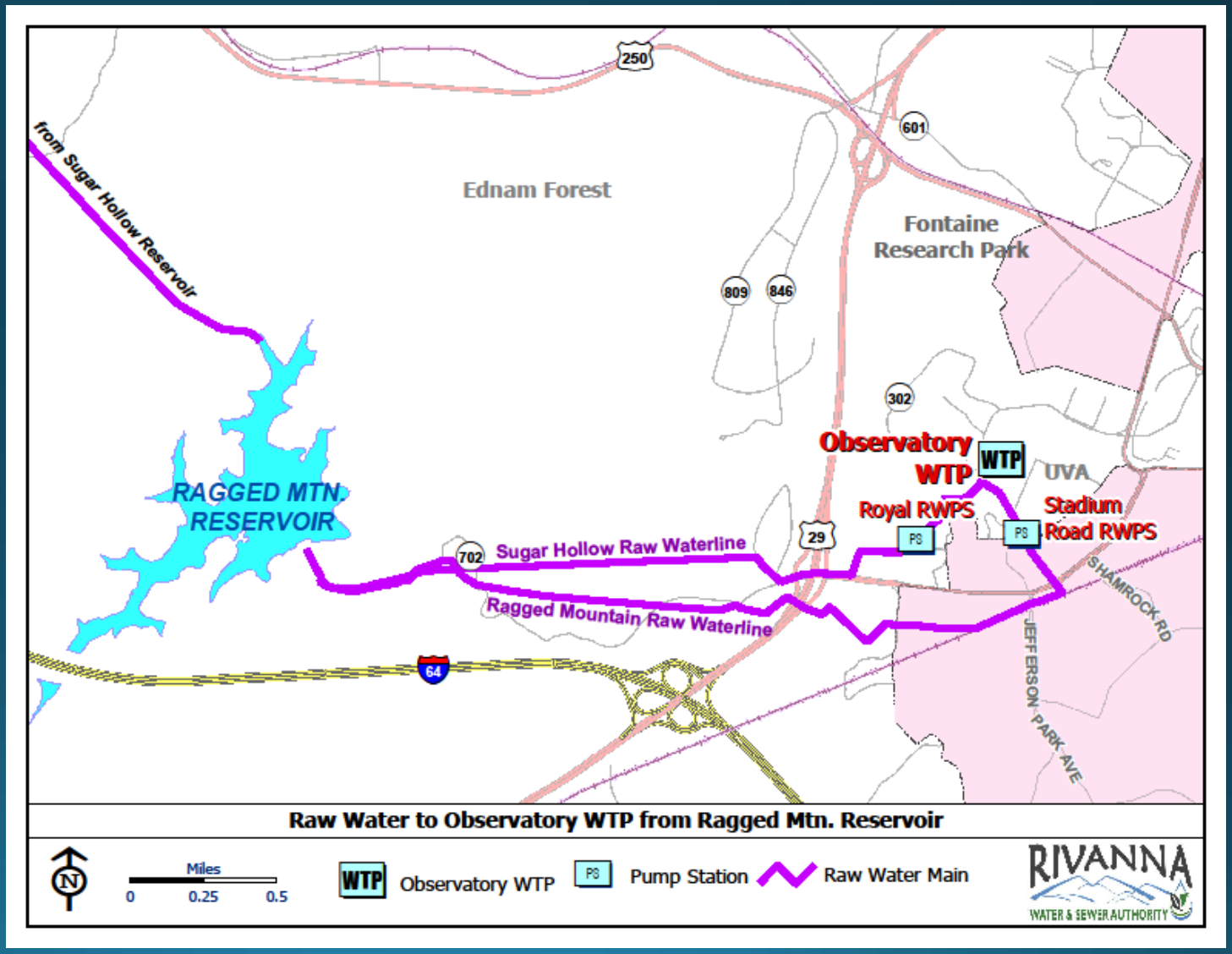
Royal Pump Station - 1920

Stadium Road Pump Station - 1987

Lower Sugar Hollow Raw Water Main – 1925 & 1948
Ragged Mountain Raw Water Main - 1908

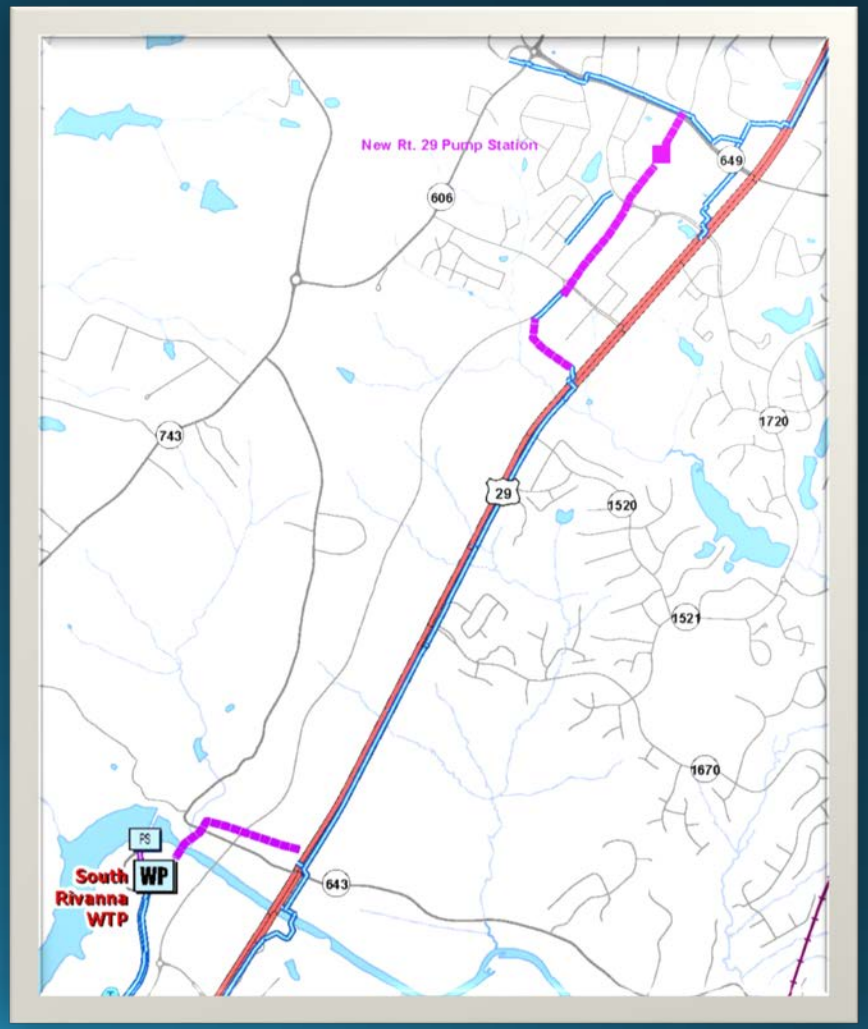
RMR to OWTP Raw Water Line & PS

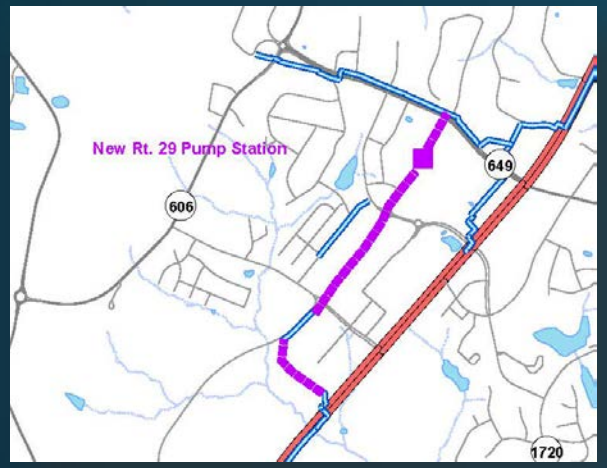
- RMR – OWTP Water Line
  - Replace 3 miles of raw water piping
  - 2022 – 2026
  - $14.3 m
- RMR to OWTP and RMR to SRWTP Pump Station
  - Replaces Stadium and Royal RWPS
  - Provides for future pumping from RMR to SRWTP
  - 2022 – 2026
  - $4.7 m



South Rivanna River Crossing and North Rivanna Transmission Main

- Second Crossing of the South Rivanna River
- Connection to the proposed Rt. 29 Pump Station
- Interconnects Pressure Zones
- Allows for Future Creation of the Airport Pressure Zone and Lower Operating Pressures
- 7,500 feet of 24-inch main
- $5.34 million FY 21-23

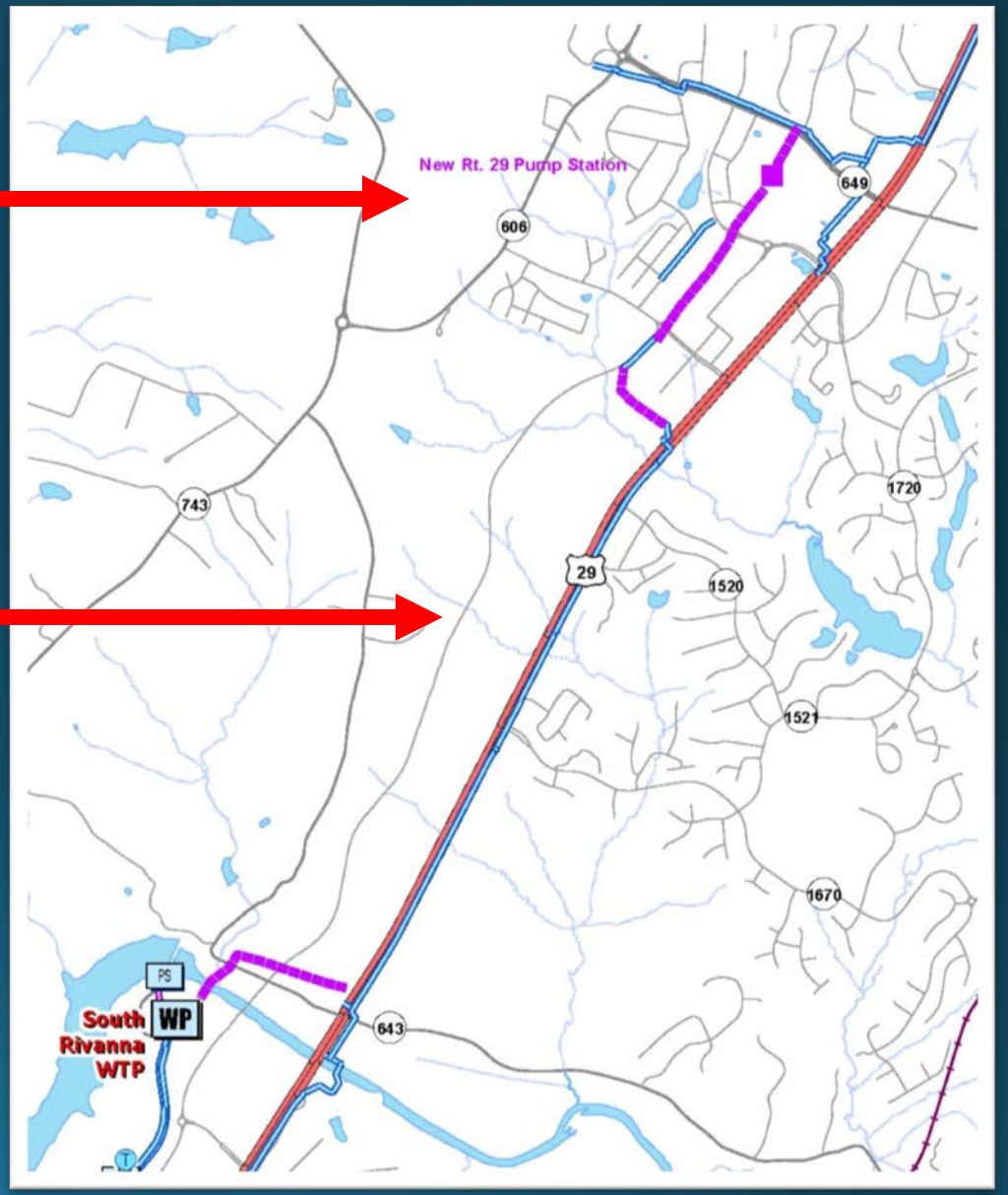




- Complete piping through Hollymead Town Center
- New Rt. 29 Pump Station
- Connect to North Rivanna Pressure Zone

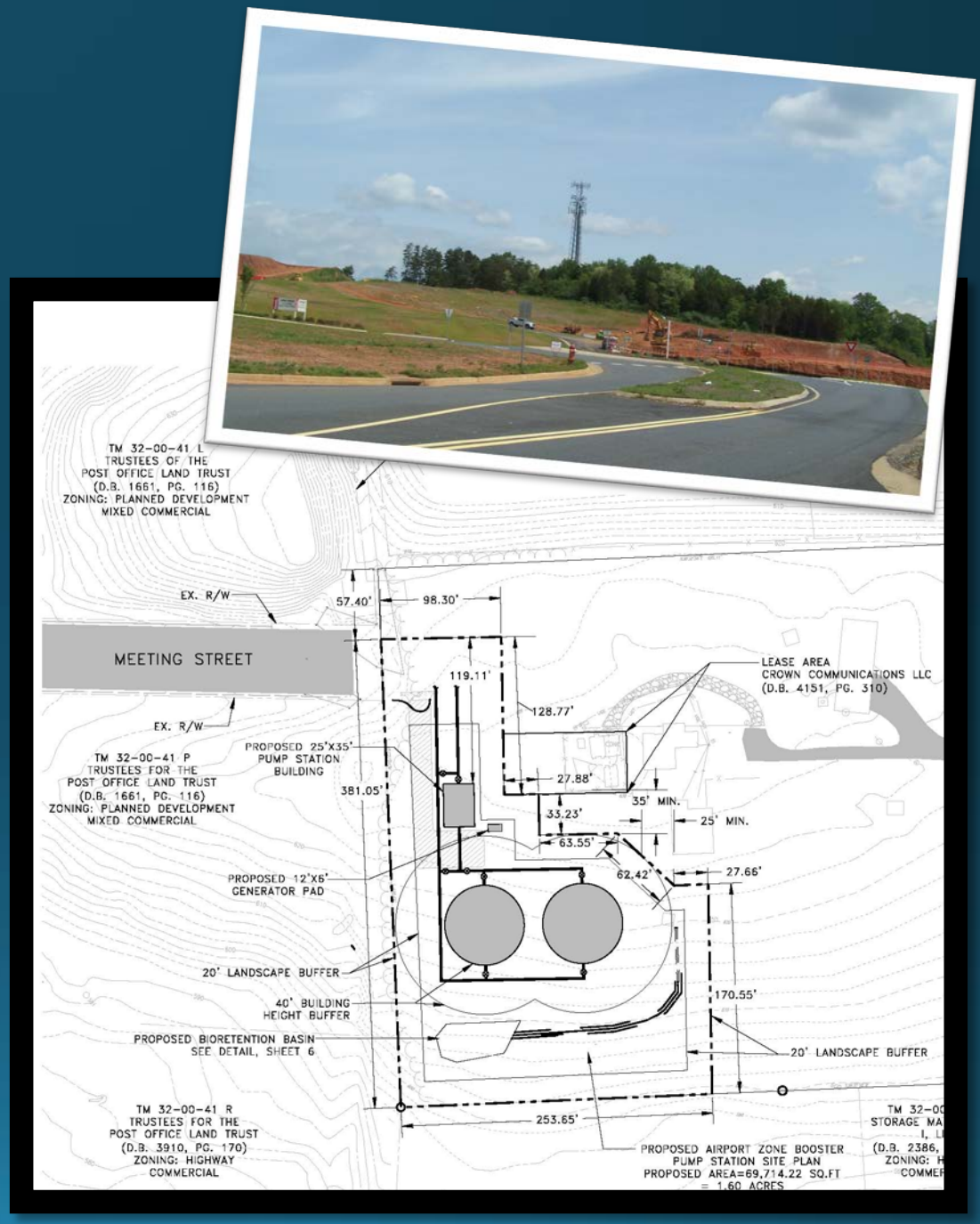
- Existing new 24-inch main built in 2017

- New 24-inch River Crossing
- Connect to new Rt. 29 Pipeline



Rt. 29 Pump Station

- Provide redundant feed to North Rivanna pressure zone
- Provide for future growth in the Places 29 Master Plan Area
- Lead to future creation of Airport Pressure Zone
- Future reduction of high operating pressures
- $2.3 million FY 20-22

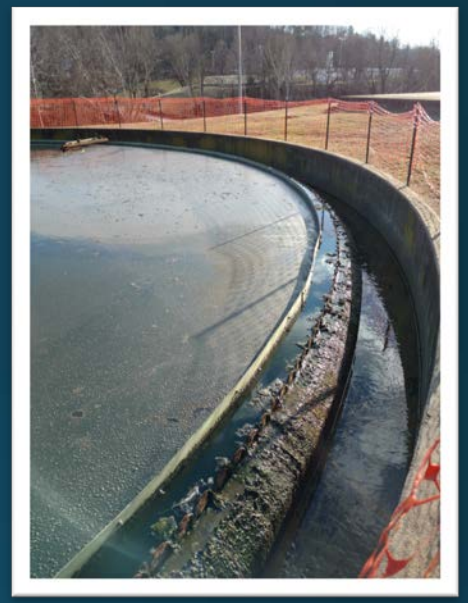


Engineering and Administration Blding

- Additional office & meeting space
- Provide location for educational & environmental outreach
- Modernize IT & Laboratory space
- Improve public meeting space
- Provide for future plant expansion
- Move out of 15 year-old temporary buildings
- $3.0 million FY 20-23

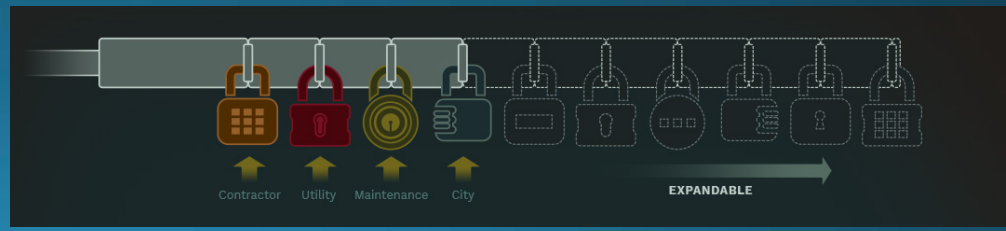
Moores Creek Mechanical Thickeners

- Improve solids handling
- Allow for the permanent removal of the in-plant clarifiers (odor reduction)
- $1.2 million FY 20-21



Security Enhancements

- 2017 Vulnerability Assessment
- Uniform access control system for all facilities
- Improve or replace select locks, doors, windows, gates
- Improve fencing and signage
- Enhance cameras, lighting and surveillance
- $2.4 million FY 19-21



Previously Approved Projects

- Observatory Water Treatment Plant Improvements ($10.0 million existing / $18.6 million proposed)
- Avon to Pantops Water Main ($5.5 million existing / $13.2 million proposed)
- South Rivanna Water Treatment Plant Improvements ($5.43 million /$7.5 million)
- Beaver Creek Dam Alternation ($6.07 million existing / $14.93 million proposed)
- Crozet WTP Expansion ($0.25 million existing / $6.9 million proposed)

Financial Information – Table 2

Rivanna Water and Sewer Authority
CIP 2019-2023
Summary Information - Proposed2/20/2018

2/20/2018

Detail by Major Systems	Total Proposed 1/31/2018 CIP	Urban Water Projects	Urban Wastewater Projects	Water Non-Urban Projects	Wastewater Non-Urban Projects
Project Cost					
Urban Water Projects	$ 88,612,500	$ 88,612,500	$ -	$ -	$ -
Urban Wastewater Projects	32,895,150	-	32,895,150	-	-
Non-Urban Projects	31,174,400	-	-	30,963,400	211,000
Total Project Cost Estimates	**$ 152,682,050**	**$ 88,612,500**	**$ 32,895,150**	**$ 30,963,400**	**$ 211,000**
Funding in place					
Work-in-Progress (paid for)	$ 33,501,100	$ 21,712,200	$ 7,286,900	$ 4,502,000	$ -
Debt Proceeds available	11,230,300	6,363,100	3,598,000	1,269,200	-
Cash-Capital Available	6,949,000	3,127,000	3,822,000	-	-
	$ 51,680,400	$ 31,202,300	$ 14,706,900	$ 5,771,200	$ -
Financing Needs					
Possible Future Reserves	$ 4,861,000	3,000,000	1,250,000	400,000	211,000
New Debt	96,140,650	54,410,200	16,938,250	24,792,200	-
	$ 101,001,650	$ 57,410,200	$ 18,188,250	$ 25,192,200	$ 211,000
Total Funding	**$ 152,682,050**	**$ 88,612,500**	**$ 32,895,150**	**$ 30,963,400**	**$ 211,000**
Percentage of funding in place	33.8%	35.2%	44.7%	18.6%	0.0%
Ratio of debt to expense	92.3%	68.6%	62.4%	84.2%	0.0%
Ratio of cash to expense	7.7%	6.9%	15.4%	1.3%	100.0%

Financial Information – Table 3

Rivanna Water and Sewer Authority
CIP 2019-2023
Summary Information - Proposed2/20/2018

2/20/2018

	Urban Water	Urban Wastewater	Non-Urban	Total
Current Adopted CIP 2017 - 2021	$ 60,829,494	$ 58,968,070	$ 16,072,890	$ 135,870,454
Changes:				
Completed or Closed Projects	(5,626,000)	(32,359,746)	(557,500)	(38,543,246)
Adjustments on existing Projects	17,543,000	(1,008,173)	15,509,000	32,043,827
New Projects	15,866,000	5,845,000	1,600,000	23,311,000
Total Changes	27,783,000	(27,522,919)	16,551,500	16,811,581
Total Proposed CIP 2019 - 2023	$ 88,612,494	$ 31,445,151	$ 32,624,390	$ 152,682,050

Financial Information – Table 4

Rivanna Water and Sewer Authority
CIP 2019-2023
Summary Information - Proposed2/20/2018

2/20/2018

PROPOSED 5-YEAR CIP
CHARGE ANALYSIS ESTIMATES

Note - this fixed rate (charge) analysis is intended to show the effect of the draft CIP on the current adopted debt service charges. It is meant to provide a comparison of the next five years. It is not setting fixed rates for the next 5 years.

	Annual Debt Service FY 2018	Current Charge Debt Service FY 2018 Per Month	FY 2019 Per Month	FY 2020 Per Month	FY 2021 Per Month	FY 2022 Per Month	FY 2023 Per Month	Total Per Month
URBAN WATER								
CITY								
Urban Water - Current Adopted	1,920,500	$ 160,039						
Monthly DS Growth Charge (additional)			$ 22,375	$ 22,375	$ 22,375	$ 22,375	$ 22,375	$ 111,875
New Charge estimate			$ 182,414	$ 204,789	$ 227,164	$ 249,539	$ 271,914	$ 271,914
Annual percentage change			14.0%	12.3%	10.9%	9.8%	9.0%	
Total percentage change								69.9%
ACSA								
Urban Water - Current Adopted	3,425,300	$ 285,439						
Monthly DS Growth Charge (additional)			$ 27,918	$ 28,000	$ 28,000	$ 28,000	$ 28,000	$ 139,918
New Rate estimate			$ 313,357	$ 341,357	$ 369,357	$ 397,357	$ 425,357	$ 425,357
Annual percentage change			9.8%	8.9%	8.2%	7.6%	7.0%	
Total percentage change								49.0%
URBAN WASTEWATER								
CITY								
Urban WWater - Current Adopted	4,714,100	$ 392,841						
Monthly DS Growth Charge (additional)			$ 15,710	$ 20,790	$ 12,460	$ 12,460	$ 12,460	$ 73,880
New Rate estimate			$ 408,551	$ 429,341	$ 441,801	$ 454,261	$ 466,721	$ 466,721
Annual percentage change			4.0%	5.1%	2.9%	2.8%	2.7%	
Total percentage change								18.8%
ACSA								
Urban WWater - Current Adopted	2,670,600	$ 222,550						
Monthly DS Growth Charge (additional)			$ 23,570	$ 20,240	$ 10,340	$ 10,340	$ 10,340	$ 74,830
New Rate estimate			$ 246,118	$ 266,358	$ 276,698	$ 287,038	$ 297,378	$ 297,380
Annual percentage change			10.6%	8.2%	3.9%	3.7%	3.6%	
Total percentage change								33.6%

Questions