




Board of Directors Meeting


November 17, 2020


2:15pm



695 Moores Creek Lane | Charlottesville, Virginia 22902-9016

434.977.2970 

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www.rivanna.org 

BOARD OF DIRECTORS

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

DATE: November 17, 2020

LOCATION: Virtually via ZOOM

TIME: 2:15 p.m.

AGENDA

1. CALL TO ORDER

2. STATEMENT FROM THE CHAIR

3. MINUTES OF PREVIOUS BOARD MEETINGS

a. Minutes of Regular Board Meeting on October 27, 2020

4. RECOGNITION

a. Resolution of Appreciation for Guy Maupin

5. EXECUTIVE DIRECTOR'S REPORT

6. ITEMS FROM THE PUBLIC

7. RESPONSES TO PUBLIC COMMENTS

8. CONSENT AGENDA

a. Staff Report on Operations

b. Staff Report on Ongoing Projects

c. Staff Report on Wholesale Metering

d. Approval of Merit Pool

e. Approval of Term Contract for Professional Land Management, Planning and Engineering Services – LPDA, Inc.

f. Approval of Professional Services – Implementation of Computerized Maintenance Management System – GHD, Inc.

g. Approval of Term Contract for Non-Professional Environmental Health, Safety, and Industrial Hygiene Services – ECS Mid-Atlantic

h. Approval of Calendar Year 2021 Meeting Schedule

9. OTHER BUSINESS

- a. Presentation: Comprehensive Annual Financial Report Fiscal Year Ending June 30, 2020; Mr. Matthew McLearen, Principal of Robinson, Farmer, Cox Associates,*

(JOINT SESSION WITH THE RSWA)

- b. Presentation: Safety Program Update; Liz Coleman, Safety Manager*

(ADJOURN RSWA MEETING)

10. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

11. CLOSED MEETING

12. ADJOURNMENT

GUIDELINES FOR PUBLIC COMMENT AT VIRTUAL RIVANNA BOARD OF DIRECTORS MEETINGS

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

Members of the public who submit comments will be recognized during the specific time designated on the meeting agenda for “Items From The Public.” The comment(s) will be read aloud to the Board of Directors only during this agenda item, so comments must be received prior to the end of this agenda item. The comments will be read by the Rivanna Authority’s Executive Coordinator/Clerk of the Board.

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

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

- Submit your comment prior to the start of or during the “Items from the Public” section of the Agenda.
- In your comment, state your full name and address and your organizational affiliation if commenting for a group;
- Address your comments to the Board as a whole;
- State your position clearly and succinctly and give facts and data to support your position;
- Be respectful and civil in all interactions at Board meetings;
- The Board will have the opportunity to address public comments after the public comment session has been closed;
- At the request of the Chairman, the Executive Director may address public comments after the session has been closed as well; and
- As appropriate, staff will research questions by the public and respond through a report back to the Board at the next regular meeting of the full Board. It is suggested that commenters who have questions for the Board or staff submit those questions in advance of the meeting to permit the opportunity for some research before the meeting.

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

CALL TO ORDER

STATEMENT OF CHAIR TO OPEN MEETING

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

I would like to call the November 17, 2020 meeting of the Board of Directors to order.

Notwithstanding any provision in our Bylaws to the contrary, as permitted under the City of Charlottesville's Continuity of Government Ordinance adopted on March 25, 2020, Albemarle County's Continuity of Government Ordinance adopted on April 15th, 2020, and revised effective October 1, 2020 and Chapter 1283 of the 2020 Acts of the Virginia Assembly effective April 24, 2020, we are holding this meeting by real time electronic means with no board member physically present at a single, central location.

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

ROLL CALL:

Mr. Blair: Please state your full name and location.

Ms. Hildebrand: Please state your full name and location.

Mr. O'Connell: Please state your full name and location.

Dr. Palmer: Please state your full name and location.

Mr. Richardson: Please state your full name and location.

Mr. Snook: Please state your full name and location.

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

Joining us today electronically are the follow Authority staff members:

Bill Mawyer, Lonnie Wood, Jennifer Whitaker, David Tungate, Elizabeth Coleman, John Hull, and Katie McIlwee

We are also joined electronically by Kurt Krueger, counsel to the Authority.



RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
October 27, 2020

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, October 27, 2020 at 2:00 p.m. via Zoom.

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

Board Members Absent: Lloyd Snook.

Rivanna Staff Present: Bill Mawyer, Katie McIlwee, Lonnie Wood, Jennifer Whitaker, Scott Schiller, Katie McIlwee, and John Hull.

Attorney(s) Present: Kurt Krueger.

1. CALL TO ORDER

Mr. Gaffney called the October 27, 2020 regular meeting of the Rivanna Water and Sewer Authority to order at 2:00 p.m.

2. STATEMENT FROM THE CHAIR

Mr. Gaffney read the following statement aloud:

“Notwithstanding any provision in our Bylaws to the contrary, as permitted under the City of Charlottesville’s Continuity of Government Ordinance adopted on March 25, 2020, Albemarle County’s Continuity of Government Ordinance adopted on April 15th, 2020, and revised effective October 1, 2020 and Chapter 1283 of the 2020 Acts of the Virginia Assembly effective April 24, 2020, we are holding this meeting by real time electronic means with no board member physically present at a single, central location.

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Mr. Gaffney called the roll.

Ms. Lauren Hildebrand said she was located at 305 4th Street Northwest in Charlottesville.

Mr. John Blair said he was located at 605 East Main Street in Charlottesville.

Mr. Mawyer noted that Mr. Snook was absent.

Dr. Elizabeth Palmer said she was located at 2958 Mechum Banks Drive in Albemarle County.

Mr. Jeff Richardson said he was located at 401 McIntire Road (Albemarle County Office Building) in Charlottesville.

Mr. Gary O'Connell said he was located at the ACSA offices at 168 Spotnap Road.

Mr. Mike Gaffney said he was located at 3180 Dundee Road in Earlysville. He noted that Dr. Tarron Richardson and Mr. Lloyd Snook had not joined the meeting.

Mr. Gaffney said the following Authority staff members were joining the meeting: Bill Mawyer (Executive Director), Lonnie Wood (Director of Finance and Administration), Jennifer Whitaker (Director of Engineering and Maintenance), Dave Tungate (Director of Operations), Scott Schiller, Katie McIlwee (Communications Manager and Executive Coordinator), and John Hull (Software Analyst).

Mr. Gaffney said they were also joined electronically by Mr. Kurt Krueger (Counsel to the Authority).

3. MINUTES OF PREVIOUS BOARD MEETINGS

a. Minutes of Regular Board Meeting on September 22, 2020

Dr. Palmer moved that the board approve the minutes of the previous board meeting. The motion was seconded by Ms. Hildebrand and passed unanimously (5-0). (Mr. Snook was absent. Mr. Blair abstained, as he did not attend the September 22, 2020 meeting.)

4. RECOGNITIONS

There were no recognitions.

5. EXECUTIVE DIRECTOR'S REPORT

Mr. Mawyer said he wanted to recognize one of his staff, Mr. Tom Corrice, who is a Wastewater Operator who recently earned his Class II Wastewater Operator's license. He said Mr. Corrice joined RWSA three years earlier as an unlicensed operator and each year, he has gained a license. He said he gained license levels IV, III, and now II in those three years. He said RWSA is proud of Mr. Carese in his efforts to gain these licenses. He said Mr. Carese not only holds a bachelor's degree, but a master's in education as well. He said Mr. Carese brings a lot to the table in RWSA's operations, which is appreciated.

Mr. Mawyer said regarding RWSA's strategic plan goal of communication and collaboration, they actually did provide two in-person tours of the Observatory Water Treatment Plant for students from UVA. He said they took all the proper precautions.

Mr. Mawyer said several RWSA members virtually attended the Crozet Community Advisory Committee meeting a few weeks earlier and gave an annual report on the projects that are

93 underway in the Crozet area such as the water treatment plant upgrade, the wastewater flow
94 equalization tank project (which is currently starting), and the Beaver Creek Dam pump station
95 and piping project. He said additionally, he always uses this as an opportunity to talk about the
96 South Rivanna to Ragged pipeline project, as this seems to be a frequent topic of the media, and
97 so he wants to keep the community informed.
98

99 Mr. Mawyer said on the subject of the Rivanna-to-Ragged pipeline, RWSA did reach agreement
100 with one of the commercial property owners near Route 250 on an easement for the pipeline. He
101 said they have not yet signed the papers, but do have an agreement, in principle, with them. He
102 said RWSA expects the County School Board to consider granting easements for the pipeline
103 behind Greer Elementary School in November.
104

105 Mr. Mawyer said RWSA has reduced the pending list to three private property owners, with two
106 being located near the South Rivanna Water Treatment Plant. He said those are properties that
107 were previously purchased by VDOT for the Western Bypass, and then VDOT sold them back to
108 the original owners, who are now selling them to a different owner. He explained it is sometimes
109 difficult to determine who owns the property, but RWSA is dealing with those two property
110 owners as well as the future property owner.
111

112 Mr. Mawyer said there is one property near Albemarle High School while indicating to a green
113 section on the presented map. He said this property is Sugar Day Farm and that RWSA is
114 working with those owners in granting the easement.
115

116 Mr. Mawyer said RWSA is also talking with UVA Foundation, who owns the blue sections on
117 the map near St. Anne's Belfield, as well as properties further to the south, past the Birdwood
118 section. He said RWSA is coordinating with the Foundation on easements and the details for
119 those properties, and thus are continuing to make progress.
120

121 Mr. Mawyer said there is a construction project beginning at Sugar Hollow to replace the rubber
122 gate or bladder that sits atop the concrete dam. He said he believed the contractors moved a crane
123 there, and over the next 8-10 months, they will be replacing the rubber bladder that inflates and
124 controls the normal water level in the reservoir. He said when there is a large storm and a lot of
125 inflow to the reservoir, the bladder will deflate to allow water to pass in a controlled manner
126 across the bladder and the top of the dam. He said this equipment reached its service life, and so
127 a contractor is underway with this bladder replacement project.
128

129 Mr. Mawyer said RWSA put together a webpage to give the public information and will soon be
130 issuing a press release to let people know what is going on there and to ask them to stay away
131 from the construction area.
132

133 Mr. Mawyer said RWSA received a nice letter from the Jack Jouett Magisterial District
134 representatives (Supervisor Diantha McKeel, Ms. Kate Acuff from the School Board, and
135 Planning Commissioner Julian Bivins) thanking them for removing the sanitary sewer overflow
136 basins that were located on Lambs Lane. He said the representatives appreciated the
137 improvements to the viewscape achieved by this project. He said Mr. Schiller would be showing

the board some before and after pictures later in his presentation. He said the letter was nice and appreciated, and that this was a small but positive project for RWSA and the neighborhood.

Mr. Mawyer said RWSA will also be working on the gates at South Rivanna that presented a struggle a few years earlier, and will have a contractor inside the dam working on those gates. He said this will hopefully happen in December, if the materials arrive in time.

Mr. Mawyer said he had another success story to share. He said in August, RWSA started a project to clean out the sediment ponds in Moores Creek that hold excess wastewater during large storms. He said when the wastewater sits in those ponds, sediment will settle out, and that this sediment has been building up in the ponds for decades. He said in August, the board asked if there would be odors from the sediment removal, as water had to be taken off the top and sludge had to be dug, pressed, and hauled away. He said he is glad to say that the project is now substantially complete, with no odor complaints from the neighborhood.

Mr. Mawyer said he looked forward to next month's meeting and that there would be a short turnaround in that it will be held on the third Tuesday of November, November 17, in order to stay away from Thanksgiving week. He said both boards (RSWA and RWSA) will attend that meeting, and RWSA will be giving a presentation on their safety program and optimization of legal support services.

Mr. Mawyer concluded his report and offered to answer questions.

Mr. Gaffney said with the Sugar Hollow Dam and the storm coming from the remains of Hurricane Zeta (whenever it should arrive), plus the rains coming from the southwest, he had heard talk of 4 or more inches of rain. He asked if this was enough to normally cause the bladder to go down.

Mr. Mawyer replied that if it does rain and the water builds up in the reservoir (which it will), then the bladder will deflate in a controlled manner to let that water pass over the dam spillway so that it does not hold it all back and then cause a huge overflow of the dam.

Mr. Mawyer said this is a similar concept to what RWSA plans to do at Beaver Creek in that this spillway does not meet the regulation size of how much water it can pass. He said they are having to rebuild the spillway and have a larger one so that they can safely control and pass the amount of rainwater they need to, which will be close to 30 inches per day into the reservoir at Beaver Creek, but with a larger spillway in order to control that overflow.

Dr. Palmer said on the same subject, the Board of Supervisors received an email that said that the fire road at the Sugar Hollow Reservoir would probably be cut off down to the parking lot below at some points due to the construction. She asked Mr. Mawyer if he could speak more about this and if there will be some parking control or police there during those periods of time to try to keep people from parking in people's driveways and the like, which is what happened last time.

Mr. Mawyer asked Ms. Whitaker if she knew anything more about RWSA cutting off the road there.

184
185 Ms. Whitaker replied that the intent is not to cut off traffic, nor the road. She said they have to
186 bring in some fairly large equipment, which will have to be driven in and will be on lowboys.
187 She said this equipment moves relatively slowly and has to navigate the bridges and topography.
188 She said there will be times where people will be flagged around. She said at the dam itself,
189 where the equipment will be brought in, there will be times where they will have to pull
190 equipment in and do a 27-point turn in order to make into the driveways and spaces where they
191 need to store the equipment.

192
193 Ms. Whitaker said they do not intend to close the Sugar Hollow road at any point other than for
194 the short, temporary inconveniences of being able to get equipment in and out. She said she did
195 not think this would be very long at all, and that most of this would be a rolling effort. She said
196 they did want to make people aware that because of the construction, there will be equipment
197 moving around in the area.

198
199 Mr. Mawyer added that they will lower the reservoir water level on purpose from time to time
200 when the work is being done, which is part of the reason for the media release. He said they do
201 not want anyone to think there is a hole in the reservoir or a problem with it. He said there will
202 likely be a barge and crane working out in the reservoir.

203 204 **6. ITEMS FROM THE PUBLIC**

205 Mr. Gaffney opened the meeting to the public.

206
207 Mr. Matthew Lucas said he lives at 1966 Buck Mountain Road with his wife and kids and
208 purchased their home about 18 years ago from the estate of John Via. He said he was there to
209 talk about Lot 13, which RWSA owns as part of the Buck Mountain Reservoir. He said Lot 13 is
210 about 60 acres and originally formed the 100-acre farm.

211
212 Mr. Lucas said RWSA condemned Lot 13 involuntarily. He said his farm is a beautiful farming
213 property of which they put a large portion into conservation via the County's ACE program. He
214 said this is a selective program that only takes lots that are important to the County, and his lot
215 sits on about a quarter mile of road frontage enjoyed by everyone.

216
217 Mr. Lucas said the second reason the lot was involuntarily condemned was because there was an
218 1820s farmhouse on the property. He said he put his life savings and work into restoring it, and
219 one should never develop the area because it would harm the character of the house and its
220 history. He said the community loves the house, and the house is a defining feature of Free
221 Union.

222
223 Mr. Lucas said the third reason was from a functional perspective. He said the property line
224 between his house and Lot 13 zigzags like a heartbeat because it follows the contours of the
225 ground, which makes sense if you're taking it for the purpose of building a reservoir. He said this
226 spot would make sense for farm operations or subdividing, and there is no clean boundary or
227 setback from his barn and outbuilding. He said in fact, it backs directly up to his house.
228

Mr. Lucas said he knows that RWSA is looking into selling or leasing some properties. He said every one of those properties is different, and so he would not speak to them, but only to Lot 13. He said he thinks Lot 13 should be reconnected with his property to form the original farmhouse, and that Lot 13 should never be developed by him, RWSA, or anyone else. He said he tried to buy it back about 15 years earlier and RWSA had no interest in that. He said his proposal then, as it stands now, would be to put Lot 13 in a conservation easement with Albemarle County's ACE program and sell it back to him. He said he would do all the legwork.

Mr. Lucas said if RWSA will not sell the property to him, they could lease it to him. He said he approached them 15 years earlier about that and they were not taking leases at that time. He said he would take great care of the property, and his mother does invasive species removal in her club. He said his son planted about 100 trees on his property and would love to do that. He said he would take the trash out. He said it would still be able to be used for hunting, horseback, and walking.

Mr. Lucas asked that RWSA consider longer-term leases so that the lessee can think about investing in the longer term to make improvements to the property.

Mr. Lucas said his greatest concern was that RWSA will sell the lot to a developer or have the lot studied for windmills, parks, or hunting. He begged them before doing this to make a boundary line adjustment, as he needs a buffer and a clean boundary for a fence. He said otherwise, there will be hunters and passersby in his backyard, which is much too close and would be totally unfair to him. He said a property line adjustment is easy, and no blocks are created, nor any political implications. He said it is fair and reasonable, and that they can connect with the conservation easement or a historic easement on the house. He said if they can do the zoning, he will do all the legwork.

Mr. Lucas said there is a copy of a presentation with pictures if the board is interested in learning more about this, and that Ms. Andrea Terry can forward this along to them.

Mr. Gaffney closed Items from the Public.

7. RESPONSES TO PUBLIC COMMENT

Mr. Mawyer said the board may recall that RWSA made a presentation to them several months earlier about what to do with the Buck Mountain property and a proposed master plan. He said they came away from that with a plan to create a property management plan and that RWSA is in the process of doing this. He said they are interviewing consultants that week to make a selection to get a term contract with a consultant who can help them put together a property management plan.

Mr. Mawyer said one aspect RWSA informed the board of before was that there were some parcels that had division rights. He said they will find out how this would or would not work. He said at this point, they plan to come back to the board around February with a property management plan and an outline of more details based on the master plan provided to the board a few months back. He said this plan will include whether or not they sell any properties, which properties these would be, and how property lines might be set up.

Mr. Mawyer said RWSA would be glad to coordinate with Mr. Lucas, share his thoughts with the board, and give him fair consideration as they move forward with the property management plan.

8. CONSENT AGENDA

a. Staff Report on Finance

b. Staff Report on Operations

c. Staff Report on Ongoing Projects

d. Staff Report on Wholesale Metering

Dr. Palmer moved that the board approve the Consent Agenda. The motion was seconded by Mr. O'Connell and passed unanimously (6-0). (Mr. Snook was absent.)

9. OTHER BUSINESS

a. Presentation: Disposition of FY 2020 Rate Center Results

Mr. Lonnie Wood, Director of Finance/Administration, said the board may recall that in July, there was a presentation made to the board on RWSA's reserves, how they are related to the bond ratings and criteria and, overall, how they relate to the financial policies that the board has adopted and updated in the last several years. He said this agenda item deals with one of those financial policies which is that, at the end of the fiscal year after the audit is performed, RWSA looks at its operating cash balance and compares it to their target, which is 60 days' worth of operating cash on hand, which is compared to where the June 30 balance ended up after the audit.

Mr. Wood said in 2020, they had a small deficit of about \$95,000 overall. He said the operating account has all the financial transactions from each of the six rate centers funneled through it all year long. He said the operating account can actually accumulate some surpluses in one rate center and deficits in another. He said the slide on the screen showed the two rate centers that did end the year in a deficit, with the remaining four rate centers ending in a surplus.

Mr. Wood said they then reconcile the reserves and the operating account to bring the operating account back to full. He said the Urban Water reserve account and the Glenmore Wastewater reserve account will fund the operating account with this board action, and the remaining four rate centers will actually see their reserves increased from the operating account, which will bring the operating account back to its 60-day target.

Mr. Wood said the third page of the memo showed the adjusted ending balance of the reserve balance, and there are ample reserves to fund this transfer to the operating account.

317
318 Mr. Wood said RWSA has done this for about 15 years, and this is part of their financial policy.
319 He said it has been a good policy to keep the various rate centers separated out, as they should
320 be. He asked if there were questions.

321
322 Mr. O'Connell said on the third page, it shows total reserves. He asked if this includes the 60-day
323 target working cash balance.

324
325 Mr. Wood replied that it does not. He said this was simply showing the reserve balance, with the
326 operating cash being about \$6 million. He said one would add the \$6 million to the \$32.5 to get
327 the total cash balance.

328
329 Mr. Wood said in July, there was discussion about how they do have a significant amount of
330 cash reserves and operating cash on hand because some of the other metrics they use, in relation
331 to their bond rating, are somewhat weak. He said they have weak debt service ratio, which is the
332 amount of excess revenue they have and overall, they have a large amount of debt they are
333 holding for the size of the authority that they are. He said one of the things to mitigate that is to
334 have a strengthened position in their cash balances.

335
336 Mr. Gaffney asked if a board member would make a motion to approve the transfer funds.

337
338 **Mr. O'Connell moved that the board approve the transfers to the respective reserves, as**
339 **outlined in the report the board received. The motion was seconded by Dr. Palmer and**
340 **passed unanimously (6-0).**

341 *b. Capital Projects Update*

342 Mr. Scott Schiller, Engineering Manager, said he would provide a construction update on the
343 major capital projects and talk about some design projects that are getting started and being
344 moved towards construction.

345
346 Mr. Schiller said he would start with the recently completed projects. He said the first was the
347 Albemarle-Berkley Pump Station Basin Demo project, which were some basins that were part of
348 an old treatment plant that were on that site. He said as the pump station came online, those
349 basins were only really used for overflow purposes. He said once an emergency power generator
350 was put on the site, there was no need for these basins.

351
352 Mr. Schiller said the picture on the upper left side of the screen showed the basins. He said the
353 picture on the lower left showed the demolition of the concrete, and the middle picture showed
354 where everything had been backfilled. He said there is now greenspace just behind the pump
355 station.

Mr. Schiller said RWSA is also in the process of analyzing that pump station, since it was created in 1975. He said they thought it was a good idea to add some bypass connections as well so that if there is a problem with the pump station, they can bring in a portable pump and maintain service.

Mr. Schiller said the work was completed in September for a value of \$200,000.

Mr. Schiller said the next project was Phase 2 of the Valve Repair-Replacement project, which continues the replacement of some malfunctioning valves in the finished water system. He said RWSA installed 12 new valves, and there was an insertion valve that was added, making the total 13, as well as a new air release valve.

Mr. Schiller said a good majority of these valves were located in roads, in VDOT's rights-of-way, and so a good amount of work was done at night. He said the lower left picture on the screen was an example of what they were dealing with. He said the first night they would go out, break the asphalt, dig down on the pipe, and then actually do the repair work the following night.

Mr. Schiller said there was a lot of coordination with the City and the ACSA in this process, and so RWSA was thankful for their help through it all. He said the top three pictures on the screen were all related to one particular replacement where the South Rivanna Waterline and the Urban Waterline come together. He said it is just downstream of the water treatment plant, and they needed to maintain some water flow through the system during the valve replacement project.

Mr. Schiller said the picture in the upper left portion of the screen was of a large line stop that was placed on either side of the arrangement, and there was a bypass pipe built into that as well so it could maintain some flow through the area even while the section was under construction. He said the middle picture was of the workers removing the old T pipe fitting and a couple valves, and the righthand picture was of them bringing in a new piping assembly. He said it was a major effort, with a lot of work going into this project over the past couple years. He said RWSA is thankful to have it off the books. He said it finished up in August for a value of around \$1 million.

Mr. Schiller said the next project is in Scottsville, where RWSA installed a new finished water flow meter. He said previously, finished water values were determined by calculations using pump runtime as well as clear well volume, which can fluctuate depending on the pressure in the system, and so they wanted a more exact method of measuring flows. He said they proceeded with installing a new finished flow meter as well as some new discharge piping and valves.

Mr. Schiller said the picture on the left side of the screen showed the original arrangement of the discharge piping. He said on the right was the image that showed the revised piping arrangement.

397 He said it was an interesting way of putting in the piping because they had to get the proper
398 lengths on either side of the flow meter to get the right value, and so they had to go up and
399 around to get it in, but they did a good job doing so. He said this was done by Anderson
400 Construction and finished in February at a value of around \$145,000.

401
402 Mr. Schiller said he would move onto some projects that are currently under construction. He
403 said the Crozet Water Treatment Plant Expansion is an expansion of the plant from 1 million
404 gallons per day (mgd) to 2 mgd by modernizing the existing plant processes and systems. He
405 said an example of this was shown in the picture on the lower left portion of the screen, which
406 was the addition of plate settlers into the sedimentation basins. He said the picture on the right
407 showed the original chemical building, and the picture on the left showed how it was expanded
408 for more chemical storage, which is now liquid lime storage.

409
410 Mr. Schiller said they also built a backwash storage tank in the place of one of the lagoons,
411 which was shown in the lower-right image. He said this will allow them to take backwash water
412 or water drawn from basins and discharge it into the local sewer system, as opposed to having to
413 wait for solids to settle, then decant the water and discharge it into Beaver Creek. He said they
414 would have someone come in and pump out the solids to do that, and so this new way is a much
415 more efficient way of handling backwash water.

416
417 Mr. Schiller said they also rebuilt the filters and put in a blower for an air wash. He said there
418 was a fair portion of work done at this site, which started back in December of 2018. He said this
419 was done by Orders Construction and that completion is expected in March of 2021 at a budget
420 of \$8.5 million.

421
422 Mr. Schiller said the next project is the Observatory and South Rivanna Water Treatment Plants
423 Rehabilitation and Expansion Project. He said this project looks to increase the capacity at
424 Observatory to 10 mgd and the reliability of South Rivanna to meet their capacity of 12 mgd for
425 an extended period of time.

426
427 Mr. Schiller said at Observatory, the work has included installation of plate settlers in the
428 sedimentation basins similar to what is being done at Crozet, but on a larger scale. He said they
429 will be building a new chemical building at Observatory to house all the chemicals onsite. He
430 said they will also add four GAC vessels, which is a major component of the project.

431
432 Mr. Schiller said at South Rivanna, they will build a new alum and fluoride building, and add
433 two filters as well as a number of other improvements. He said the top-right photo on the screen
434 was a picture of the excavation work for the two new filters in order to get the foundation in for
435 the filters. He said there was some pipe replacement work that had to be done as well. He said
436 the photo on the left showed pipe relocation for what will be the alum and fluoride building. He

437 said the lower-left picture was a maze of conduit going in for an electrical building. He said the
438 lower-right picture was a new building going up around the liquid lime storage tanks to better
439 protect them during freezing temperatures in the winter.

440
441 Mr. Schiller said English Construction is the contractor for this work. He said RWSA gave them
442 notice to proceed back in May and expect completion in March of 2023, with a total project
443 budget of \$43 million.

444
445 Mr. Schiller said next was the South Rivanna Dam Gate Repairs project that Mr. Mawyer had
446 mentioned. He said they had some leakage through the 36-inch mud gates on both the north and
447 south abutments. He said Bander Smith (RWSA's on-call maintenance contractor) went there
448 and inspected the gates.

449
450 Mr. Schiller said the picture on the upper-left portion of the screen showed a view of the top of
451 the chamber, which is the actuator for the gate. He said down inside are two chambers – one
452 where one can isolate the sluice gate chamber with a bulkhead fitting.

453
454 Mr. Schiller said the picture on the right showed a diver going down to get a view of the gates
455 and to inspect the stems and stem guides. He said what they found was that there were some
456 missing stem guides and some other issues that needed to be resolved. He said there were some
457 issues with some of the actuators as well. He said it is a fairly deep chamber and if some of the
458 stem guides are missing and one tries to close the gate, they will get a bit of a bow in that stem,
459 which makes it difficult to put the force needed on the gate to seal it correctly. He said RWSA is
460 hopeful that replacing some of the stem guides and working on the actuator will resolve the
461 issue.

462
463 Mr. Schiller said as Mr. Mawyer alluded to, there has been an issue with getting the materials
464 delivered, but it looked as though they should arrive in mid-December. He said the contractor is
465 ready to install them as soon as they are in. He said assuming no issues, this work should
466 complete in December. He said the overall budget is \$900,000.

467
468 Mr. Schiller said the next project is Sugar Hollow Rubber Crest Gate Replacement, which is the
469 rubber bladder or gate that Mr. Mawyer mentioned. He said this will help control the level of the
470 reservoir by inflating and deflating to max the elevation and to slowly release water. He said it is
471 at the end of its useful life, and so they will be replacing the rubber gate as well as some of the
472 mechanical and electrical equipment. He said there is a blower that helps maintain the air
473 pressure as well as a programmable logistics controller (PLC) and some other control panels.

474
475 Mr. Schiller said Allegheny Construction was low bidder for this work and, as mentioned, are
476 starting to mobilize some of their equipment to the site. He said RWSA gave them a notice to

477 proceed at the beginning of October and are looking for a completion in Fall 2021 at a budget of
478 \$2 million.

479
480 Mr. Schiller said next was the Crozet Flow Equalization Tank and Pumping Station Upgrade. He
481 said RWSA performed a comprehensive sanitary sewer analysis, which determined that it was
482 more efficient and cost-effective to store wet weather flow out in Crozet than to try to pump it
483 through pump stations all the way to Moores Creek. He said they wound up with a 1 mgd
484 capacity storage tank, as well as some improvements to the existing pump station to get the
485 wastewater in and out of the tank.

486
487 Mr. Schiller said Anderson Construction was awarded the project and were given notice to
488 proceed on October 9. He said they have begun mobilizing and doing some clearing on the site,
489 so the work is underway. He said RWSA is looking for this to hopefully complete in November
490 of 2022, with a total project budget of \$5.4 million.

491
492 Mr. Schiller said also as mentioned is the holding pond cleanout work at Moores Creek. He said
493 the basins pictured on the screen were used to store excess flows during storms as they came into
494 the plant. He said the solids settle and take up some of the capacity of the ponds. He said the
495 intent is to remove those solids to regain that capacity.

496
497 Mr. Schiller said the upper-left picture on the screen showed the draining of the water down. He
498 said the contractor (Merrill Brothers) would then liquify the solids and pump it into a series of
499 belt filter presses to remove the water, then remove the solids offsite. He said there was also a
500 fair amount of grit there, which was able to be removed. He said there was a skid steer and a
501 long-neck excavator there to scoop it out.

502
503 Mr. Schiller said this went well and, as Mr. Mawyer mentioned, there were no reports of odors.
504 He said the work completed last week, which was ahead of schedule. He said the overall budget
505 for this was \$975,000.

506
507 Mr. Schiller said in Scottsville, there is a project to install a ultraviolet light (UV) disinfection
508 system to meet the Long Term 2 Enhanced Surface Water Treatment Rule. He said the intent is
509 to remove additional E. coli and Cryptosporidium from the water. He said a UV unit is used to
510 do this.

511
512 Mr. Schiller said the picture on the lower left side of the screen showed the GAC building at
513 Scottsville, and the middle picture showed the existing GAC effluent line. He said RWSA will
514 be modifying that piping (as shown in the righthand picture) to insert a UV system as well as a
515 bypass pipe. He said there are also chemical feed lines that have to be relocated. He said it is a

516 fair amount of piping in somewhat of an odd arrangement, but this was the best way to fit
517 everything in and still have access to the UV unit for maintenance purposes.

518
519 Mr. Schiller said the work was awarded to Littleton Construction, which was given notice to
520 proceed in September. He said completion is expected in June of 2021, with a total budget of
521 \$190,000.

522
523 Mr. Schiller said he would talk about some projects that are beginning design, or are currently in
524 design and will move into construction in the near future. He said the first is the Moores Creek
525 Lighting Improvements. He said as the board could see from the night image on the right side of
526 the screen, the facility is well lit. He said unfortunately, it is also well lit by some stadium-type
527 lighting, which is not in accordance with County regulations and needs to be modified.

528
529 Mr. Schiller said a fair number of lights on the plant need to be replaced with what are
530 considered full cutoff light fixtures. He said some of the stadium lights radiate outside of the
531 intended areas, whereas the full cutoff fixture focuses the light only on the spot it is intended for.

532
533 Mr. Schiller said RWSA developed an engineering report as well as a minor site plan amendment
534 and submitted those to the County. He said they are nearing approval on this design.

535
536 Mr. Schiller said the intent is to have some of the fixtures replaced by RWSA's maintenance
537 department – at least the ones that are accessible and can be readily addressed. He said they will
538 also be bidding out some of the replacement work. He said expected completion is February
539 2022, with a budget of \$1.9 million.

540
541 Mr. Schiller said also at Moores Creek is the 5kv Electrical System Upgrade. He said RWSA is
542 currently undergoing a facility master plan with Hazen Engineers for this facility, and one of the
543 things that came up is that the 5kv electrical system is past its serviceable life. He said it is the
544 lifeblood to quite a number of the facilities, as it is the electrical supply for them. He said RWSA
545 has been working with Hazen to develop a scope of work for this project. He said Hazen has
546 started design and basically, they will be running new 5kv wiring and conduit, adding a new
547 switchgear building, replacing some of the motor control centers (MCCs), and adding and
548 replacing transformers, making for a major electrical project with a great deal of work to be done
549 on the design side.

550
551 Mr. Schiller said the project is expected to complete by 2024, with a budget of \$4.6 million.

552
553 Mr. Schiller said next is the Airport Road Pump Station and Piping project. He said this is in the
554 Forest Lakes/Hollymead area at the Route 29/Airport Road intersection. He said the intent is to
555 more reliably connect the urban pressure zone with the Piney Mountain pressure zone. He said in

556 the past when either the North Rivanna treatment plant has been down, or they have had issues
557 otherwise, they bring out a portable pump to the Kohls shopping center, which takes a good deal
558 of effort to get there, and its operation is not as reliable as they would like it to be. He said this
559 would essentially be a permanent fixture of that pump station.

560
561 Mr. Schiller said it is also intended to work with the Airport Road pressure zone in the future as
562 well, and so there are multiple purposes for this site.

563
564 Mr. Schiller said design is underway and is at about 30-40%. He said they are looking for the
565 construction to be completed in 2022 for a budget of \$7.6 million. He said they are working
566 through some renderings of the pump station and some County approval procedures.

567
568 Mr. Schiller said next was the South Rivanna River Crossing and a short section of the North
569 Rivanna Transmission Main. He said the intent of the project is for reliability by having a second
570 crossing under the South Rivanna River. He said the crossing to the east of Route 29 is the
571 existing one, which is the main and only feed to the northern portion of the urban zone, just north
572 of the river. He said they want to make sure they have a second crossing (shown as the red line
573 on the map) at the river to more reliably feed the northern zone.

574
575 Mr. Schiller said design is kicking off for the project, and that it will be an interesting project to
576 get under the river. He said they are looking at different options to possibly open cut or to bore
577 and go underneath the river. He said they look for this to be completed in 2024, with a budget of
578 \$3.65 million.

579
580 Mr. Schiller said next was the Central Water Line, which is part of the current Finished Water
581 Master Plan that is being worked through. He said the Central Water Line is a major component
582 of that particular analysis. He said the general intent of the project is to approve water flow,
583 pressure, and redundancy in the Urban System. He said there are three legs of transmission
584 mains that come down into the City, and RWSA is looking to essentially hydraulically
585 interconnect those so they can more efficiently move water from one side of the system to the
586 other.

587
588 Mr. Schiller said the Finished Water Master Plan is working through the general alignment for
589 the Central Water Line and how it can interact with some existing City CIP projects. He said
590 RWSA would love to have an "as the crow flies" alignment, but this is not the way it works in
591 reality, so they are working through all of this with the City to make sure that this is timed
592 appropriately with City projects. He said the completion schedule is very approximate, and as
593 they work through this with the City, they will fine-tune the schedule to make sure it meets all
594 their needs. He said the overall budget for the project is \$13 million.

596 Mr. Schiller said finally, there is the Beaver Creek Dam Pump Station and Piping Modifications
597 project. He said the purpose of the project is to upgrade the spillway to meet the DCR dam safety
598 standards and regulations. He said the middle picture on the slide showed the labyrinth spillway
599 RWSA is proposing and that in order to do this, they unfortunately have to relocate the existing
600 raw water pump station. He said they have been working through some environmental
601 investigations as well as some site review work associated with the site selection process for the
602 raw water pump station. He said much of this work is required for the joint permit application
603 with DEQ for the project.

604
605 Mr. Schiller said RWSA is also working with the federal Natural Resources Conservation
606 Service (NRCS) on a two-year planning study associated with the entire project, with the intent
607 to get everything set up and then progress into design in 2022. He said it is a long process for
608 many people involved, and the planning study is being funded by NRCS. He said as they get
609 through the planning study, RWSA will have an opportunity to go after additional funding from
610 NRCS for the rest of the project as well. He said they are looking for overall completion of this
611 project in 2026, with an overall project budget of \$27 million.

612
613 Mr. Schiller concluded his presentation and asked if there were any questions.

614
615 Mr. O'Connell said this was a great presentation.

616
617 Dr. Palmer said Mr. Schiller answered many of her questions. She said when she was reading the
618 packet, she jotted down many questions, and Mr. Schiller answered them. She said she did still
619 have one question, however. She asked if RWSA is still talking with the people who live
620 adjacent to the pump station at Beaver Creek. She recalled that a young lady came to speak to the
621 RWSA board at their meeting a month or two ago.

622
623 Mr. Schiller said this was the Clark family.

624
625 Dr. Palmer said yes. She asked if RWSA was still working with them, or if they have not come
626 up with anything yet because there has not been enough time to do so.

627
628 Mr. Schiller replied that they have expanded some of the site selection reviews and
629 environmental investigation to look at all of the sites. He said they added Sites 1 and 2 back into
630 the evaluation after listening to some of the comments and reanalyzing the sites in general. He
631 said they have also been talking to VDOT about some of the concerns they had with Sites 1 and
632 2 and access to them and are working through some of that information as well. He said they are
633 working towards answers for the Clarks and as they get through the process, they will reach back
634 out to the family and update them on all the information.

636 Mr. O'Connell asked if there were five options for this.

637
638 Mr. Schiller replied that it includes Sites 1, 2, 3, 4a, and 4b. He said there was another option that
639 was beneath the reservoir that they decided to take off the list because RWSA did not think was a
640 viable option. He said these are all options on the south portion of the reservoir.

641
642 Mr. Gaffney asked if regarding the Airport Road property where the pump station will go, there
643 are still plans to have the tank there at some point.

644
645 Mr. Schiller replied yes. He said currently, they are focused on the pump station site and getting
646 that through County review, but they did identify future tank locations on that site plan as well.
647 He said there may be two ground storage tanks they are planning for on that site, and depending
648 on where the pump station is located, they are making sure they do have the ability to locate
649 tanks on that site.

650
651 Mr. Gaffney requested that when the lighting renovations at Moores Creek are complete, another
652 drone photo is taken to show the before and after.

653
654 Mr. Schiller agreed. He said one thing that has been interesting with this project is not only
655 modifying the lighting to meet the County's requirements, but making sure they take care of
656 lighting on the stie as needed for safety purposes. He said some of the lighting they have is not
657 well-purposed, and so they are going to focus on bringing the lighting where it is needed and
658 have appropriate lighting for walkways for operators. He said they took the opportunity to make
659 it an overall improvement project instead of solely working to meet the County's requirements.

660
661 Dr. Palmer said this was wonderful. She said in a meeting she attended earlier, one of the
662 discussions was about how to work environmental issues and improvements into everything the
663 County does. She said she appreciates Mr. Gaffney's comment about taking the drone pictures
664 because this something the RWSA should be informing the public about. She said it will be a
665 dramatic improvement for environmental reasons as well as a visual improvement.

666
667 Mr. Schiller agreed.

668
669 ***10. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA***

670 There were none.

671 ***11. CLOSED MEETING***

672 There was no closed meeting.

673
674 ***12. ADJOURNMENT***

675 **At 2:49 p.m., Mr. O'Connell moved to adjourn the meeting of the Rivanna Water and**

676 **Sewer Authority. The motion was seconded by Dr. Palmer and passed unanimously (6-0).**
677 **(Mr. Snook was absent.)**

DRAFT



**RIVANNA WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS**

Resolution of Appreciation for Guy Maupin

WHEREAS, Mr. Maupin has served in a number of positions, most recently as a Water Operator Class 1, for the Rivanna Water and Sewer Authority since January of 1997; and

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

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

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

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

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

Michael Gaffney, Chairman
John Blair
Lauren Hildebrand
Gary O'Connell
Liz Palmer
Jeff Richardson
Lloyd Snook



MEMORANDUM

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

FROM: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: EXECUTIVE DIRECTOR'S REPORT

DATE: NOVEMBER 17, 2020

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

Recognitions

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

- Thomas Barger – Class 1 Water Operator's License

STRATEGIC PLAN GOAL: INFRASTRUCTURE AND MASTER PLANNING

S. Rivanna to Ragged Mtn Reservoir Water Line, Pump Station and Sediment Removal Facility

Progress continues in our efforts to acquire 9.5 miles of easements and agreements (with VDOT) for this 36" water line. We recently met with the UVA Foundation to review detailed easement issues, and are finalizing an agreement with a commercial property owner. We expect the County School Board to consider granting an easement in December. Easements have been obtained from 9 private owners, and negotiations continue with the remaining 3 private owners.

Negotiations with two private owners, as well as with UVA, the UVA Foundation and the Virginia Department of Forestry are also ongoing for water line easements located between the Ragged Mtn Reservoir and the Observatory Water Treatment Plant. A map of the pipe alignment with acquisition information is attached.

Buck Mountain Property

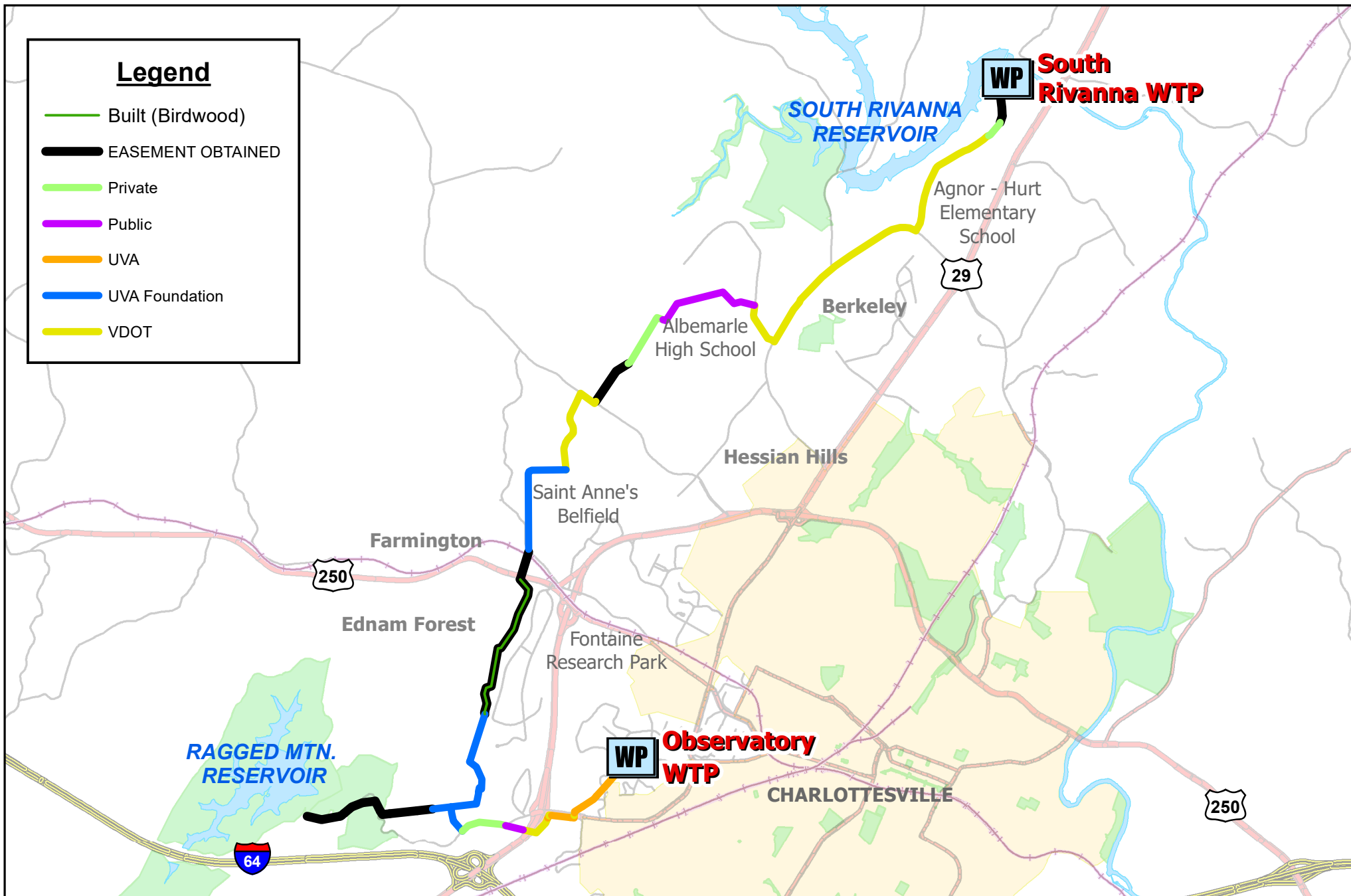
We are moving forward with a property management plan for this property, and will consider the suggestions from Mr. Lucas during the October board meeting.

STRATEGIC PLAN GOAL: Communication and Collaboration

Community Outreach

Ms. Jennifer Whitaker, Director of Engineering and Maintenance, gave a presentation to a UVA Civil Engineering class on “Water Resources and Public Sector Engineering”.

Attachment



Preliminary South Rivanna Reservoir to Ragged Mountain Reservoir Water Line



Miles
0 0.25 0.5



695 Moores Creek Lane
Charlottesville, VA 22902
p.434-977-2970
www.rivanna.org
www.rivannagis.org

Data used in this map was provided by the RWSA, City of Charlottesville, Albemarle Co. GDS, and the UVA FM Dept. Duplication of data or redistribution of this map without permission from the RWSA Engineering Dept. is prohibited.

Date: 10/16/2020

MEMORANDUM

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

FROM: DAVE TUNGATE, DIRECTOR OF OPERATIONS

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: OPERATIONS REPORT FOR OCTOBER 2020

DATE: NOVEMBER 17, 2020

WATER OPERATIONS:

The average daily/monthly total water distributed for October 2020 was as follows:

<i>Water Treatment Plant</i>	<i>Average Daily Production (MGD)</i>	<i>Total Monthly Production (MG)</i>	<i>Maximum Daily Production in the Month (MGD)</i>
Observatory	1.17	36.42	2.05 (10/27/20)
South Rivanna	8.25	255.64	9.19 (10/07/20)
North Rivanna	<u>0.39</u>	<u>12.04</u>	0.53 (10/22/20)
Urban Total	9.81	304.10	11.16 (10/07/20)
Crozet	0.66	20.51	0.88 (10/20/20)
Scottsville	0.055	1.72	0.07 (10/05/20)
Red Hill	<u>0.0016</u>	<u>0.50</u>	0.011 (10/21/20)
RWSA Total	10.53	326.83	---

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

Status of Reservoirs (as of November 6, 2020):

- Urban Reservoirs: 100 % of Total Useable Capacity
- Ragged Mountain Reservoir is full (100%)
- 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 October 2020. Stone-Robinson School was closed for the month of October and had zero discharge. Performance of the WRRFs in October was as follows compared to the respective VDEQ permit limits:

WRRF	Average Daily Effluent Flow (mgd)	Average CBOD₅ (ppm)		Average Total Suspended Solids (ppm)		Average Ammonia (ppm)	
		RESULT	LIMIT	RESULT	LIMIT	RESULT	LIMIT
Moore's Creek	10.78	3.0	10	0.3	22	<QL	2.2
Glenmore	0.116	4.0	15	5.0	30	NR	NL
Scottsville	0.076	4.0	25	4.0	30	NR	NL
Stone Robinson	0.000	NR	30	NR	30	NR	NL

NR = Not Required

NL = No Limit

<QL: Less than analytical method quantitative level (2.0 ppm for CBOD, 1.0 ppm for TSS, and 0.1 ppm for Ammonia).

Nutrient discharges at the Moore's Creek AWRRF were as follows for October 2020.

State Annual Allocation (lb./yr.) Permit		Average Monthly Allocation (lb./mo.) *	Moore's Creek Discharge October (lb./mo.)	Performance as % of monthly average Allocation*	Year to Date Performance as % of annual allocation
Nitrogen	282,994	23,583	3,962	17%	21%
Phosphorous	18,525	1,544	339	22%	22%

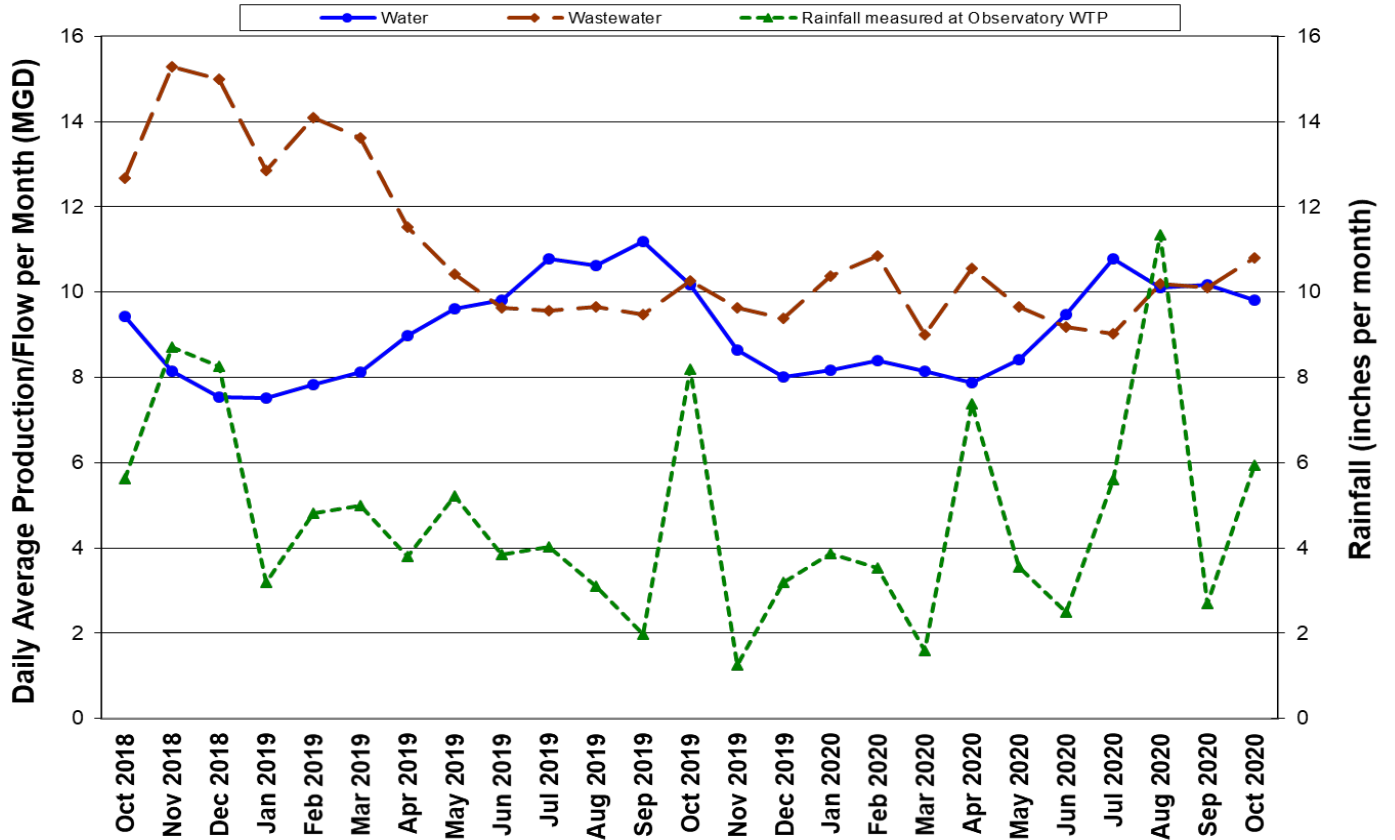
*State allocations are expressed as annual amounts. One-twelfth of that allocation is an internal monthly benchmark for comparative purposes only.

WATER AND WASTEWATER DATA:

The following graphs are provided for review:

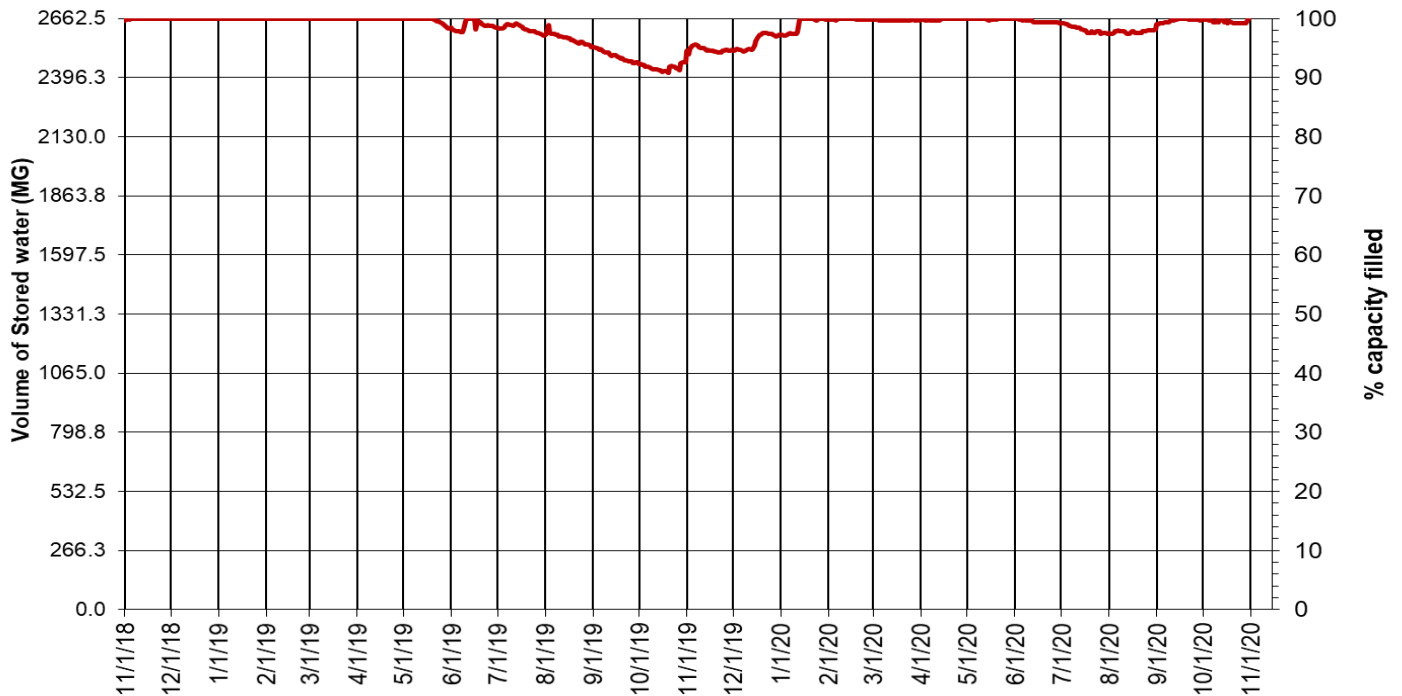
- Usable Urban Reservoir Water Storage
- Urban Water and Wastewater Flows versus Rainfall
- Yearly water production by system

Urban Water and Wastewater Flows versus Rainfall

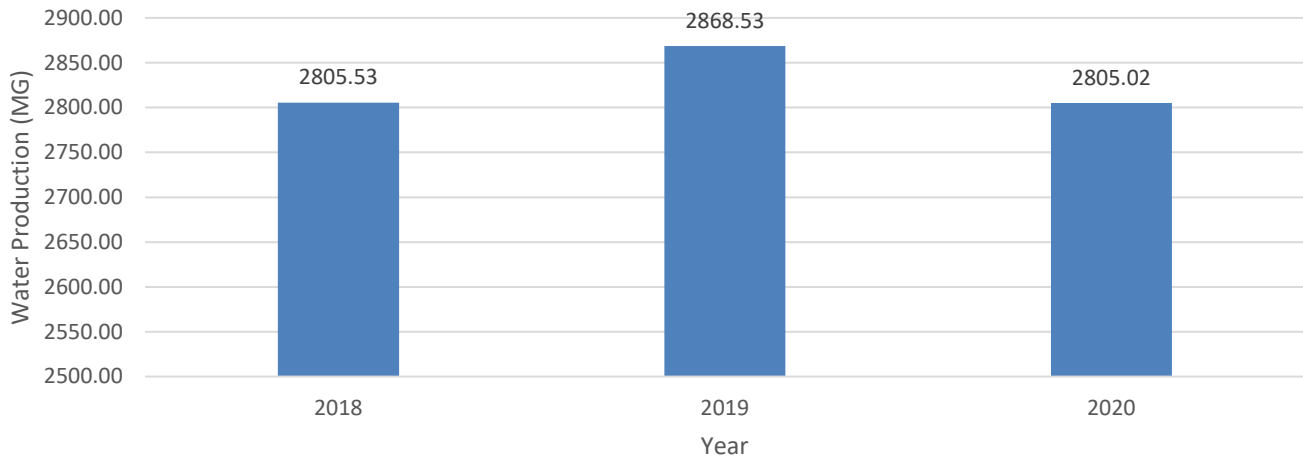


Usable Urban Reservoir Water Storage

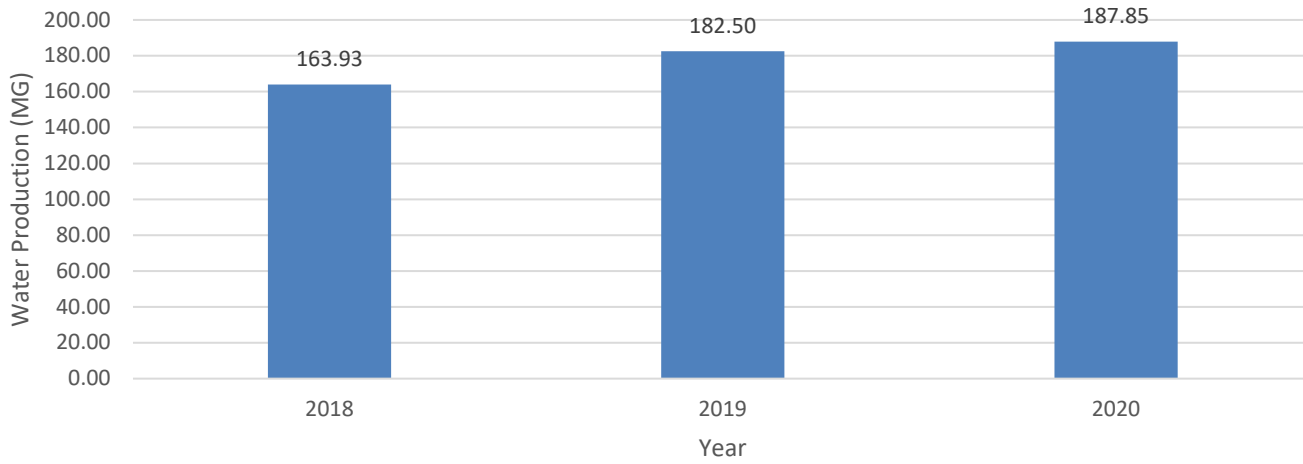
Maximum 2,662.5 MG after 5/1/19



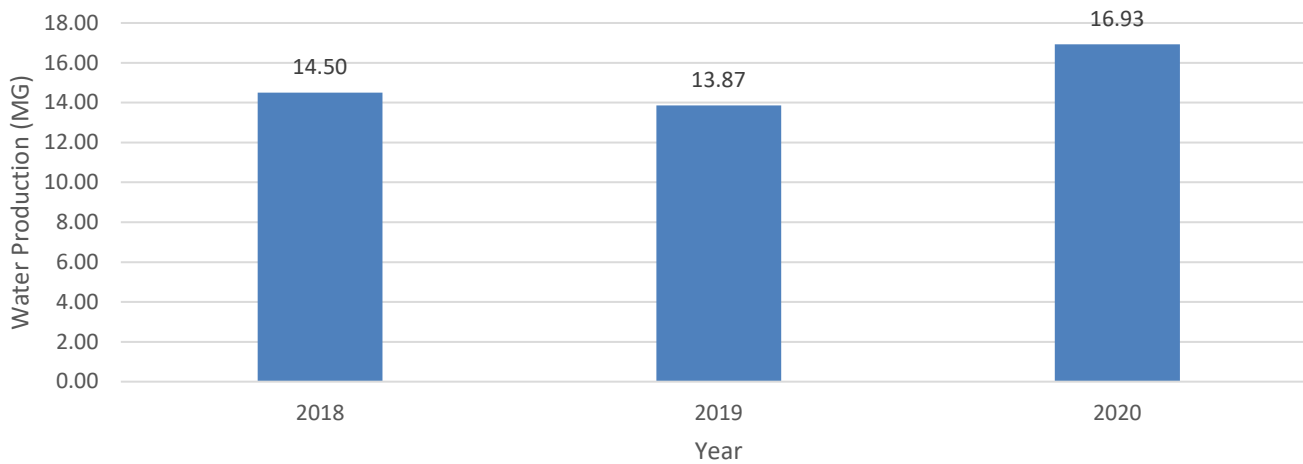
Urban Water Production from 1/1/20 through 10/31/2020 (MG)



Crozet Water Production from 1/1/20 through 10/31/2020 (MG)



Scottsville Water Production from 1/1/20 through 10/31/2020 (MG)



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: NOVEMBER 17, 2020

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

For the current, approved CIP, please visit: <https://www.rivanna.org/wp-content/uploads/2020/06/2021-2025-CIP-Final.pdf>

Under Construction

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

Design and Bidding

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

Planning and Studies

17. South Rivanna Reservoir to Ragged Mtn Reservoir Water Line Right-of-Way
18. Urban Finished Water Infrastructure Master Plan
19. Upper Schenks Branch Interceptor, Phase II
20. Asset Management Plan
21. Albemarle-Berkeley PS Capacity Analysis
22. MC Facilities Master Plan
23. SRR to RMR Pipeline – Pretreatment Pilot Study

Other Significant Projects

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

Under Construction

1. Crozet Water Treatment Plant Expansion

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Orders Construction Co. (WVA)
Construction Start:	December 2018
Percent Complete:	85%
Base Construction Contract + Change Order to Date = Current Value:	\$7,170,000- \$225,600.80 = \$6,944,399.20
Completion:	March 2021
Budget:	\$8,500,000

Current Status: Work continues on the expansion of the Chemical Building with installation of platforms and chemical feed pumps and piping, refurbishment of the lab and control room, final piping connections to the backwash tank, and site improvements including grading and fencing installation.

2. South Rivanna and Observatory Water Treatment Plant Renovations

Design Engineer:	Short Elliot Hendrickson, Inc. (SEH)
Construction Contractor:	English Construction Company (Lynchburg, VA)
Construction Start:	May 2020
Percent Complete:	15%
Base Construction Contract + Change Orders to Date = Current Value:	\$36,748,500
Completion:	March 2023
Budget:	\$43,000,000

Current Status: Work continues at the SRWTP for the liquid lime enclosure and masonry walls as that gets closed up prior to the winter season, filter building expansion including pouring concrete for the building's foundation, yard piping modifications including chemical feed lines and relocation of the backwash waste line for the eventual construction of the Alum and Fluoride Chemical Storage

Building, and excavations for foundations at the Administration Building and the Sludge and Recycle Control/Electrical Room.

3. Crozet Flow Equalization Tank

Design Engineer:	Schnabel Engineering
Construction Contractor:	Anderson Construction (Lynchburg, VA)
Construction Start:	September 2020
Percent Complete:	2%
Based Construction Contract + Change Orders to Date = Current Value:	\$4,406,300
Completion:	November 2022
Budget:	\$5,400,000

Current Status: The contractor has mobilized to the site and begun clearing work and installation of erosion and sediment control measures.

4. MC Aluminum Slide Gate Replacements

Design Engineer:	Hazen and Sawyer
Construction Contractor:	Waco Incorporated (Sandston, VA)
Construction Start:	September 2020
Percent Complete:	2%
Base Construction Contract + Change Orders to Date = Current Value:	\$373,600 - \$30,400 = \$343,200
Completion:	October 2021
Budget:	\$675,000

Current Status: The Notice to Proceed was issued October 6, 2020. Waco has been sending our Engineer submittals for gates and materials. The gates have a long lead time so Waco does not anticipate mobilization until January 2021.

5. South Rivanna Dam – Gate Repairs

Design Engineer:	N/A
Contractor:	Bander Smith, Inc. (Richmond, VA)
Construction Start:	December 2020
Project Status:	30%
Completion:	December 2020
Budget:	\$900,000

Current Status: A condition assessment of the 36” mud gates has been completed. RWSA’s on-call dam maintenance contractor will proceed with replacement of missing stem guides and actuators to improve the seal of the existing gates. This work is anticipated to be completed in December 2020. If

replacement of one or more of the gates is determined to be necessary, that work is expected to take place in early 2021.

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

Design Engineer:	Schnabel Engineering
Contractor:	Allegheny Construction (Roanoke, VA)
Project Status:	0%
Construction Start:	October 2021
Completion:	December 2021
Budget:	\$1,900,000

Current Status: A Notice to Proceed was issued on October 1, 2020 and shop drawing review has begun. The contractor is mobilizing equipment to the site and expects to begin grading and other site work in late November. A project specific web page has been developed to inform the public of impacts to the area as a result of construction areas activities, and a media notification was issued. Channel 29 conveyed information to the public.

Design and Bidding

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

Design Engineer:	Michael Baker International (Baker)
Project Start:	August 2018
Project Status:	Prelim Design & Easement Acquisition in Progress
Construction Start:	2023
Completion:	2026
Budget:	\$18,000,000

Current Status: Easement discussions with private owners, UVAF, and UVA continue.

8. Beaver Creek Dam, Pump Station and Piping Improvements

Design Engineer:	Schnabel Engineering (Dam)
Design Engineer:	Hazen & Sawyer (Pump Station)
Project Start:	February 2018
Project Status:	15% Design and Permitting Underway
Construction Start:	2023
Completion:	2026
Budget:	\$27,000,000

Current Status: A site selection study for the new Raw Water Pump Station, Intake and Piping has been substantially completed. Hazen continues with environmental investigations required for

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

9. Airport Road Water Pump Station and Piping

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	July 2019
Project Status:	45% Design
Construction Start:	May 2021
Completion:	December 2022
Budget:	\$7,600,000

Current Status: SEH has been performing water modeling to verify current and future conditions of the new pump station. The Preliminary Engineering Report submittal to VDH is anticipated this month and development of bid documents has begun. Easement acquisition process required for installation of the water line is ongoing.

10. South Fork Rivanna River Crossing

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2020
Project Status:	0% Design
Construction Start:	Fall 2021
Completion:	Summer 2023
Budget:	\$3,655,000

Current Status: Execution of the work authorization and project kick-off meeting are anticipated this month.

11. MC Clarifier and Lime Silo Demolition

Design Engineer:	Hazen and Sawyer
Project Start:	October 2020
Project Status:	0% Design
Construction Start:	Summer 2021
Completion:	Summer 2022
Budget:	\$655,000

Current Status: A Work Authorization for design, bidding and construction administration services required for this project has been developed with Hazen and Sawyer and is being finalized this month..

12. MC Generator Fuel Storage Expansion

Design Engineer:	SEH, Inc.
Project Start:	August 2020
Project Status:	0% Design
Construction Start:	Winter 2020/2021
Completion:	Summer 2021
Budget:	\$100,000

Current Status: This project is required to increase the amount of diesel storage for the main plant generator from a 22 hour supply to a 72 hour supply. A final work authorization for design services is being finalized this month.

13. MC Facility Renovations

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

Current Status: Staff is developing a work authorization to evaluate the Duty Station for conversion into office space. This conversion will require extensive cleaning and the relocation of load bearing walls. As part of this analysis an updated cost estimate has been developed by SEH for this conversion and these updated costs are being evaluated through the CIP planning process to confirm the viability of the project.

14. MC Exterior Lighting Improvements

Design Engineer:	Hazen and Sawyer
Project Start:	May 2019
Project Status:	70% Design
Construction Start:	December 2020
Completion:	February 2022
Budget:	\$1,900,000

Current Status: Project has received approval from county. Hazen continues working on finalizing design documents, including a quote package for maintenance and a bid package for the rest of the work.. The material selection and procurement process is beginning for lights to be installed by the Maintenance department.

15. MC 5 kV Electrical System Upgrades

Design Engineer:	Hazen and Sawyer
Project Start:	August 2020

Project Status:	0% Design
Construction Start:	March 2022
Completion:	June 2024
Budget:	\$4,600,000

Current Status: Survey work began onsite during the week of October 19, 2020. A site visit was conducted with the Design Engineer, as well as RWSA Engineering and Maintenance Department staffs on November 5, 2020. During this site visit, several Motor Control Centers (MCCs) and Transformers were inspected, as well as a series of conduits and pull boxes located under the bridge between the North and South sides of MC that were previously identified to have corrosion present. The Design Engineer is preparing a Technical Memorandum detailing the condition of these conduits and pull boxes, as well as the recommended rehabilitation (if any).

16. Glenmore WRRF Influent Pump and VFD Addition

Design Consultant:	Wiley Wilson
Project Start:	August 2020
Project Status:	0% Design
Construction Start:	Winter 2020/2021
Completion:	Summer 2021
Budget:	\$65,000

Current Status: Wiley|Wilson has developed a Work Authorization for design, bid, and construction administration services. RWSA is finalizing the Work Authorization.

Planning and Studies

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

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

Current Status: Progress continues in our efforts to acquire the 9.5 miles of easements and agreements (with VDOT) for this 36" water line. City Council approved easements on four properties located near Ragged Mtn reservoir on September 8th. Easements have been obtained from 9 private owners, and negotiations continue with the remaining 3 private owners. We have completed our process to notify VDOT about our planned locations in the streets right-of-way. Discussions continue on remaining easements with the UVA Foundation and the County School Board.

Negotiations with two private owners, as well as with UVA, the UVA Foundation and the Virginia

Department of Forestry are also ongoing for water line easements between the planned Ragged Mtn Reservoir pump station and the Observatory Water Treatment Plant.

18. Urban Finished Water Infrastructure Master Plan

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2018
Project Status:	90% complete
Completion:	December 2020
Budget:	\$253,000

Current Status: Two workshops with ACSA and the City were held in mid-October. All parties are reviewing the data presented.

19. Upper Schenks Branch Interceptor, Phase II

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

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

20. Asset Management Plan

Design Engineer:	GHD, Inc.
Project Start:	July 2018
Project Status:	Phase 2 – 75% Complete
Completion:	2020
Budget:	\$1,115,000

Current Status: Development of an asset register, condition assessment protocols and a pilot study of the asset management process is underway. A workshop on Condition Assessment was held on September 30 and a workshop on Consequences of Failure was held on October 21. An additional workshop on Mitigation Strategies will be held later this month and GHD will also be performing a site Level 2 condition assessment on the Rivanna Pump Station equipment. A request for quotations for procurement of computerized maintenance management software (CMMS) was advertised and quotes were received on September 24th. After a review of the quotes received, Cityworks was identified as the low quote and a draft software license is being reviewed. A Work Authorization for GHD to perform CMMS implementation services is being proposed to the Board this month for approval.

21. Albemarle-Berkley PS Capacity Analysis

Design Consultant:	GHD, Inc.
Project Start:	September 2019
Project Status:	75% Complete
Completion:	December 2020
Budget:	\$40,000

Current Status: A draft report was submitted, and comments were provided to the Design Consultant. They are working to address the initial round of staff comments, as well as implement some new data into the study. A revised draft of the report is anticipated to be provided by the Design Consultant during the week of November 2nd, and an internal RWSA workshop has been scheduled for November 9th. An external workshop including ACSA and ACPS staff will be held once revisions from the internal RWSA workshop are implemented.

22. MC Facilities Master Plan

Design Consultant:	Hazen and Sawyer
Project Start:	August 2019
Project Status:	70% Complete
Completion:	March 2021
Budget:	\$275,000

Current Status: Multiple workshops have been held with staff. Asset management discussions with Hazen have prompted additional projects, such as the MC 5kV Electrical System Upgrades, and structural inspections of our equalization basins, holding ponds, and digesters. A draft report is anticipated in late November.

23. SRR to RMR Pipeline – Pretreatment Pilot Study

Design Consultant:	SEH
Project Start:	August 2020
Project Status:	Project Planning
Completion:	TBD
Budget:	TBD

Current Status: Staff is reviewing previous studies associated with pretreatment needs and project costs. Initial discussions have taken place with SEH related to updating the pretreatment approach. An initial Work Authorization has been finalized with SEH to update existing cost estimates and work on the estimates has begun. A Work Authorization related to the overall pretreatment approach is being developed.

Other Significant Projects

24. Urgent and Emergency Repairs

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

Project No.	Project Description	Approx. Cost
2018-06	South Rivanna Dam Apron and River Bank Repairs	\$200,000
2019-07	Urban Water Line Valve and Blow-off Repair	\$125,000
2020-06	Erosion between WBI MH-22 and MH-23	\$150,000
2020-14	MCWWPS Gate Valve 205 Replacement	TBD
2020-18	NRW Erosion Near Airport Road	\$5,000
2020-19	RMRW Erosion Near RMRW-015	\$5,000
2020-20	Finished Water Sampling Stations	TBD
2020-21	PCI Erosion	\$25,000
2020-22	MCAWRRF 1.5" Effluent Water Line	\$5,000

- South Rivanna Dam Apron and River Bank Repairs: Repairs to the north and south concrete aprons are being designed by Schnabel Engineering and a manufacturer's representative was recently on site to review repair procedures. As this approach is finalized, repair services will be procured from the on-call dam maintenance contractor.
- Urban Water Line Valve and Blow-off Repair: Faulconer Construction has completed the installation of a new drain valve at UWL-017, as well as the associated modifications to the drain line outlet and creek bank. With the installation of the new drain valve on March 18th, any leakage in this location has ceased. Staff continues to coordinate the logistics of the UWL-025 replacement near Gasoline Alley, including the appropriate location of the discharge. CCTV inspections of adjacent stormwater infrastructure are being scheduled, which will inform the overall scope of repairs. Staff has also been notified of a similar (slight leakage) issue at UWL-010 near Route 29. Staff will continue coordinating and planning these repairs with Faulconer Construction, with the repairs tentatively scheduled for completion following the sampling station installations.
- Erosion over WBI Between MH-22 and MH-23: While performing routine line inspections in March, the RWSA Maintenance Department discovered that an adjacent creek had eroded its way over the top of RWSA's 12" Woodbrook Interceptor (WBI). While no infrastructure is exposed at this time, the sewer was not designed to run under the creek (no encasement present), and future high flow events will continue to erode cover from the top of the pipe (currently estimated at 2-4'). Staff has received regulatory approval from the U.S. Army Corps of Engineers, as well as sent notifications to surrounding property owners. Bank repair efforts began during the week of September 14, 2020. A smaller, but necessary bank repair was completed downstream of the main project site on September 29, 2020. The main bank repair, which required a significant shift in the existing stream channel, was completed on October 16, 2020. Two additional, smaller bank

repairs upstream of the main bank repair were completed by October 21, 2020. Site Restoration was completed by October 28, 2020, and the Faulconer crew mobilized to the Powell Creek Interceptor (PCI repairs) discussed below.

- Moore's Creek WWPS Gate Valve 205 Replacement: In July 2020, RWSA Operations staff identified that MCWWPS Gate Valve 205 had become stuck in nearly the fully closed position, causing a reduction in the discharge capacity of the pumping station (PS), especially during wet weather events where both of the 24" force mains leaving the PS are required. Waco, Inc. was selected to perform the work under an Emergency Declaration by the Executive Director, and staff worked with Waco to plan for the associated force main shutdown and valve replacement. Due to excessive lead times and impending weather, a spool piece of pipe was procured for temporary installation while the replacement valve is procured. The existing gate valve was ultimately replaced with the spool piece of pipe during a planned pumping station shutdown during the early morning hours of August 2, 2020, restoring full pumping capabilities to the PS. In the preliminary attempts to shut down one of the two discharge force mains and replace the No. 205 valve, it was discovered that additional valves inside of the PS are not fully holding when placed in a closed position. Staff is currently evaluating the needs associated with bypass pumping around MCWWPS, which would allow for the permanent installation of the No. 205 Gate Valve Replacement, as well as replacement of the adjacent valves mentioned above and inspections of equipment inside of the PS that normally can't be inspected due to the incoming flows.
- NRW Erosion Near Airport Road: During routine line maintenance activities, the RWSA Maintenance Department identified an area of minor erosion along the North Rivanna Waterline (NRW) near Airport Road. Staff visited this area in October and will begin coordinating the repairs with the RWSA Maintenance Department and/or Faulconer Construction, as well as the property owner.
- RMRW Erosion Near RMRW-015: While marking for a Miss Utility Locate, the RWSA Engineering Department identified an area of minor erosion along the Ragged Mountain Raw Waterline (RMRW) near RMRW-015, which is located along Stribling Avenue. RMRW crosses a small stream, which appears to have caused minor erosion along a pipe joint. Staff is coordinating/planning a repair with the RWSA Maintenance Department and/or Faulconer Construction, which will likely include placement of small rip-rap along the creek bank/pipe joint.
- Finished Water Sampling Stations: As a part of its ongoing Water Quality Monitoring Program, members of the RWSA Water & Laboratory Departments collect water samples from throughout the distribution system to track parameters such as Chlorine Residuals and Disinfection Byproducts. Historically, this has meant that staff must enter local businesses to collect the samples, which takes several minutes and further exposes RWSA staff to members of the public. In order to minimize staff exposure to the public during the COVID-19 pandemic, seven (7) pre-fabricated sampling stations will be installed along ACSA finished water lines throughout the distribution system, which will allow RWSA staff to quickly and safely retrieve water samples. Faulconer Construction will be performing this work for RWSA, with work slated to begin by

mid-November. ACSA and RWSA are closely coordinating this work, since the work will directly involve staff from both organizations.

- PCI Erosion: RWSA Maintenance Department staff recently finished its annual inspection of the Powell Creek Interceptor in early October, and a number of erosion concerns were identified throughout the interceptor alignment. RWSA Engineering and Maintenance Department staff visited the eroded areas on October 14, 2020, and it was determined that two of the repairs were more urgent, and should be performed by Faulconer Construction as soon as possible. Both of the areas in question are large drainage ditches that have caused large wash-outs over the sewer line. RWSA coordinated access through Sutherland Middle School property with ACPS, and Faulconer began these repairs during the week of October 26. The scope of these two repairs will be to backfill the ditches and install a large HDPE culvert pipe to safely and effectively move the storm water across the sewer line while minimizing erosion. The remaining three repairs are at small creek crossings, and will be addressed by Faulconer Construction as schedule permits.
- MCAWRRF 1.5" Effluent Water Line Repair: On October 16th, a leak was discovered on the 1.5" Effluent Water Line near the Digester Building and In-Plant Clarifiers. This water line was believed to provide process water to the Digester Building and Moores Creek Pump Station. RWSA Wastewater, Maintenance, and Engineering Department staff responded to the leak, and staff was able to provide a backup feed for the treatment processes, isolate the leak, and complete the repairs by the end of the afternoon.

25. Interceptor Sewer and Manhole Repair

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

Current Status: Repairs to the Upper Morey Creek Interceptor remain underway. Design efforts for a new manhole to be installed North of Rt. 250 are underway, with Final Design documentation from the Design Engineer expected in early November. Staff continues to coordinate with both the consultant and contractor to get the repairs completed as soon as possible on this portion of MRI. Staff is also coordinating with the Contractor on the bypass requirements for the lower Powell Creek Interceptor, as this is the next high-priority interceptor area to be addressed based upon the latest CCTV footage. The scope of this rehabilitation work is likely to include several sections of Cured in Place Lining, as well as manhole rehabilitation.

26. Security Enhancements

Design Engineer:	N/A
Construction Contractor:	Security 101
Construction Start:	March 2020
Percent Complete:	90%
Based Construction Contract +	
Change Orders to Date = Current Value:	\$744,136.80 - \$25,708.80 = \$718,428.00 (WA#1)
Completion:	March 2021 (WA #1)
Approved Capital Budget:	\$2,730,000

Current Status: Access control system installation is underway for all exterior doors at MCAWRRF, as well as all WTP motorized gates. Device installation has been completed at all buildings across the site, with the exception of the Administration and Engineering Buildings. Staff has finalized the appropriate access rights for RWSA/RSWA staff, and once training is provided by Security 101, badges can be printed and installation can take place in the Administration and Engineering Buildings. This training is scheduled for November 10th, with the Administration/Engineering Building installations scheduled for the week of November 16th. Once the MCAWRRF site has been completed, Security 101 will transition to the WTPs to complete installations on the motorized gates.

History

Under Construction

1. Crozet Water Treatment Plant Expansion

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

2. South Rivanna and Observatory Water Treatment Plant Renovations

An informational meeting with prospective contractors was held on September 26, 2019 to maximize interest in the project. A project kickoff meeting with staff was held on November 14, 2018 and 30% design documents were provided in February. A Value Engineering Workshop took place the week of April 8, 2019, and a memo summarizing the results has been completed. Agreed upon results were incorporated into the project. The project was advertised, and bids were received. English Construction was awarded the contract and a Notice to Proceed was issued on May 18, 2020.

Observatory: This project will upgrade the plant from 7.7 to 10 MGD capacity. Costs to upgrade the plant to 12 MGD were determined to be too high at this time. Much of the Observatory Water Treatment Plant is original to the 1953 construction. A Condition Assessment Report was completed by SEH in October of 2013. The approved Capital Improvement Plan project was based on the findings from this report. The flocculator systems were replaced and upgraded as part of the Drinking

Water Activated Carbon and WTP Improvements project (GAC). Four additional GAC contactors will be included in the design.

South Rivanna: The work herein includes expansion of the coagulant storage facilities; installation of additional filters to meet firm capacity needs; the addition of a second variable frequency drive at the Raw Water Pump Station; the relocation for the electrical gear from a sub terrain location at the Sludge Pumping Station; a new building on site for additional office, lab, control room and storage space; improvements to storm sewers to accept allowable WTP discharges; of new metal building to cover the existing liquid lime feed piping and tanks. The scope of this project will not increase the 12 MGD plant treatment capacity.

3. MC Holding Pond Solids Removal and Disposal – Odor Control Phase 2

Over the last 10 – 20 years, grit and organic material have accumulated in the Wet Weather Holding Ponds and Equalization Basins at the Moores Creek Advanced Water Resource Recovery Facility (MC). Following extensive liquid and vapor phase testing and computer modeling, these solids were identified as a major source of odor in Hazen and Sawyer’s Phase 2 Odor Control Plan, and approved at the January 2015 Board of Directors meeting for incorporation into the 2015-19 Capital Improvement Plan. Now that all other Phase 2 Odor Control projects have been completed, this final phase of the project is to remove these accumulated solids. An RFP was advertised in April 2020 and Merrell Brothers was selected. A Notice to Proceed was provided on August 6, 2020.

4. Crozet Flow Equalization Tank

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

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

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

A work authorization with Schnabel Engineering was finalized and a Project Kick-off Meeting was held on July 12, 2018. The construction bids were received on July 16, 2020. Anderson Construction of Lynchburg, VA was awarded the construction contract. Notice to Proceed on this project was given on October 9, 2020 and now construction is in progress.

5. MC Aluminum Slide Gate Replacements

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

6. South Rivanna Dam – Gate Repairs

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

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

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

Design and Bidding

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

A Work Authorization was executed in December 2018 with Michael Baker International for the raw water line routing study, preliminary design, plat creation and the easement acquisition process for this portion of the project. Raw water is transferred from the Ragged Mountain Reservoir (RMR) to the Observatory Water Treatment Plant (WTP) by way of two 18-inch cast iron pipelines, which have been in service for more than 110 and 70 years, respectively. The increased frequency of emergency repairs and expanded maintenance requirements are one impetus for replacing these pipelines. The

proposed water line will be able to reliably transfer water to the expanded Observatory plant. The new pipeline will be constructed of 36-inch ductile iron and will be approximately 2.6 miles feet in length. The segment of the project immediately east of the RMR will constitute a portion of the proposed South Rivanna Reservoir to RMR raw water main project as part of the approved 50-year Community Water Supply Plan.

The RMR to Observatory WTP raw water pump station is planned to replace the existing Stadium Road and Royal pump stations, which have exceeded their design lives or will require significant upgrades with the Observatory WTP expansion. The pump station will pump up to 10 million gallons per day (MGD) of raw water to the Observatory WTP. The new pump station site selection and design are being conducted in coordination with the South Rivanna Reservoir to RMR pipeline in the interest of improved operational and cost efficiencies. An integrated pump station would also include the capacity to transfer up to 16 MGD of raw water from RMR back to the SR WTP.

9. Beaver Creek Dam and Pump Station Improvements

Dam: RWSA operates the Beaver Creek Dam and reservoir as the sole raw water supply for the Crozet Area. In 2011, an analysis of the Dam Breach inundation areas and changes to Virginia Department of Conservation and Recreation (DCR) *Impounding Structures Regulations* prompted a change in hazard classification of the dam from Significant to High Hazard. This change in hazard classification requires that the capacity of the spillway be increased. This CIP project includes investigation, preliminary design, public outreach, permitting, easement acquisition, final design, and construction of the anticipated modifications. Work for this project will be coordinated with the new relocated raw water pump station and intake and a reservoir oxygenation system project.

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

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

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

to the best quality water at any given time.

10. Airport Road Water Pump Station and Piping

The Rt. 29 Pump Station and Pipeline master plan was developed in 2007 and originally envisioned a multi-faceted project that reliably connected the North and South Rivanna pressure bands, reduced excessive operating pressures, and developed a new Airport pressure zone to serve the highest elevations near the Airport and Hollymead Town Center. The master plan update was completed in June of 2018 to reflect the changes in the system and demands since 2007. This project, along with the South Rivanna River Crossing and North Rivanna Transmission Main project, will provide a reliable and redundant finished water supply to the North Rivanna area. The proposed pump station will be able to serve system demands at both the current high pressure and future low pressure conditions. These facilities will also lead to future phase implementation which will include a storage tank and the creation of the Airport water pressure zone. The North Rivanna Transmission Main improvements included under a separate CIP project have been added to this project to allow connection of the pump station to the distribution system.

11. South Fork Rivanna River Crossing

RWSA has previously identified through master planning that a 24-inch water main will be needed from the South Rivanna Water Treatment Plant (SRWTP) to Hollymead Town Center to meet future water demands. Two segments of this water main were constructed as part of the VDOT Rt. 29 Solutions projects, including approximately 10,000 LF of 24-inch water main along Rt. 29 and 600 LF of 24-inch water main along the new Berkmar Drive Extension, behind the Kohl's department store. To complete the connection between the SRWTP and the new 24-inch water main in Rt. 29, there is a need to construct a new river crossing at the South Fork Rivanna River. Acquisition of right-of-way will be required at the river crossing.

12. MC Clarifier and Lime Silo Demolition

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

13. MC Generator Fuel Expansion

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

14. MC Facility Renovations

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

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

15. MC Exterior Lighting Improvements

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

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

16. MC 5 kV Electrical System Upgrades

After discussions through the Moores Creek Facilities Master Plan, it was identified that several areas of the MCAWRRF, including the Blower Building, Sludge Pumping Building, Grit Removal Building, Moores Creek Pumping Station, and the Administration Building are all still connected to the original 5kV switchgear in the Blower Building. This equipment, including the associated cabling, switchgear, transformers and motor control centers (MCCs), has a useful life expectancy of 20-30 years. Most of this equipment was installed around 1980. With the equipment having well exceeded its useful life expectancy at this point, safety is a concern given the large electric loads that the cabling and other equipment are handling on a day-to-day basis. Failure of the existing 5kV infrastructure could also result in temporary outages of certain treatment processes, and repairs could take weeks to months given the lead times associated with equipment of this age. A technical memo was provided in July 2020 by Hazen & Sawyer, which recommended that a CIP Project be added immediately to encompass replacement of the original 1980s-vintage 5kV cables, switchgear, transformers, and MCCs. A CIP Amendment Recommendation and Engineering Services Work Authorization was approved during the August 2020 Board of Directors Meeting. The Design Work Authorization was executed on October 6, 2020.

A Design Kickoff Meeting was held virtually on October 20, 2020. A site visit was attended on November 5, 2020 by Hazen & Sawyer staff, as well as RWSA Maintenance and Engineering Department staff.

17. Glenmore WRRF Influent Pump and VFD Addition

The 0.381-mgd water resource recovery facility, located within the Glenmore subdivision, is operated by RWSA. The facility includes an influent pumping station located immediately adjacent to the treatment facility. The Glenmore WRRF is predicted to see additional dry and wet weather flows as construction within the service area continues. Future wet weather flows will require higher influent pumping capacity and an additional pump and electrical variable frequency drive will be required to maintain firm capacity. After discussions with the Operations and Maintenance departments, installation of a new exhaust fan in the influent pump station will also be included.

Planning and Studies

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

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

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

19. Urban Finished Water Infrastructure Master Plan

As identified in the 2017 Strategic Plan, the Authority has a goal to plan, deliver and maintain dependable infrastructure in a financially responsible manner. Staff has identified asset master planning as a priority strategy to improve overall system development. Many previously identified projects in the urban finished water treatment and distribution system are in preliminary engineering, design or construction. As such, staff have identified a need to develop a current and ongoing finished water master plan.

20. Upper Schenks Branch Interceptor, Phase II

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

The remaining sections, which are considered the Upper Schenks Branch Interceptor, were split into 2 phases. The first phase has been completed and is located within City-owned Schenks Greenway adjacent to McIntire Road, and the second phase is to be located on County property (baseball field and County Office Building) adjacent to McIntire Road or within McIntire Road.

21. Asset Management Plan

Asset management is the practice of managing our infrastructure to minimize the total cost of owning and operating these assets while providing desired service levels. In doing so, it is used to make sure planned maintenance activities take place and that capital assets are replaced, repaired or upgraded at the right time, while ensuring that the money necessary to perform those activities is available. RWSA has some components of an asset management program in place (i.e. GIS, work order system), but has identified the need to further develop the program as part of our Strategic Planning process. In order to continue to build the program, a consultant has been procured to assist with a three-phase process that will include facilitation and development of an asset management strategic plan, development and management of a pilot study where the results of the strategic plan will be applied to a specific class of assets, and assistance through a full implementation process. As part of this three-phase process, the consultant will also assist RWSA with the procurement of a software package to facilitate the overall program.

22. Albemarle-Berkeley PS Capacity Analysis

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

The Capacity Analysis Study began in Spring 2020, and the first report draft was reviewed by staff in September 2020.

23. MC Facilities Master Plan

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

24. SRR to RMR Pipeline – Pretreatment Pilot Study

As part of the SRR to RMR Pipeline project, the impact of sending raw water from the SRR to RMR has been previously study and a significant amount of pretreatment was initially identified as being needed to avoid reducing the quality of the raw water contained within the RMR. With the pipeline easement

acquisition process well underway and additional information now available associated with the proposed timing of this overall project based on water demand projections, the intent of this project is to update the pretreatment needs anticipated.

Other Significant Projects

25. Urgent and Emergency Repairs

- **South Rivanna Dam Apron and River Bank Repairs**

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

- **Urban Water Line Valve and Blow-off Repair**

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

26. Interceptor Sewer and Manhole Repair

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

Lining work on the Upper Morey Creek Interceptor began in Fall 2019 and was completed in Fall 2020. A critical section of upper Morey Creek Interceptor under Rt. 250 was lined on August 28, 2020.

27. Security Enhancements

As required by the Federal Bioterrorism Act of 2002 and the American Water Infrastructure Act of 2018, water utilities must conduct Vulnerability Assessments and have Emergency Response Plans. RWSA recently completed an updated Risk Assessment of its water system in collaboration with the

Albemarle County Service Authority (ACSA), City of Charlottesville (City), and University of Virginia (UVA). A number of security improvements that could be applied to both the water and wastewater systems were identified. The purpose of this project will be to install security improvements at RWSA facilities including additional security gate and fencing components, vehicle bollards, facility signage, camera system enhancements, additional security lighting, intrusion detection systems, door and window hardening, installation of industrial strength locks, communication technology and cable hardening, and an enhanced access control program.

RWSA Engineering staff held a meeting with Operations staff to discuss overall project needs and priorities in October 2018. Meetings with ACSA and City staff were held in Fall/Winter 2018-2019 to discuss how access control and intrusion detection systems have been implemented into to the day-to-day operations of the two utilities. A Request for Proposal (RFP) for an Implementer to facilitate selection of an access control system, confirmation of design requirements based upon RWSA's facilities and project goals, and installation of the selected system was issued on June 6, 2019. RWSA conducted a Pre-Proposal Meeting on June 14, 2019, and proposals were opened on June 27, 2019. Interviews were conducted on July 15-16, 2019, and a Contract Award Recommendation was approved by the Board on July 23, 2019. Access Control System Installation at MCAWRRF began in March 2020.

MEMORANDUM

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

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

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: WHOLESALE METERING REPORT FOR OCTOBER 2020

DATE: NOVEMBER 17, 2020

The monthly and average daily Urban water system usages by the City and the ACSA for October 2020 were as follows:

	<i>Month</i>	<i>Daily Average</i>	
City Usage (gal)	131,102,625	4,229,117	43.1%
ACSA Usage (gal)	172,990,520	5,580,339	56.9%
Total (gal)	304,093,145	9,809,456	

The *RWSA Wholesale Metering Administrative and Implementation Policy* requires that water use be measured based upon the annual average daily water demand of the City and ACSA over the trailing twelve (12) consecutive month period. The *Water Cost Allocation Agreement (2012)* established a maximum water allocation for each party. If the annual average water usage of either party exceeds this value, a financial true-up would be required for the debt service charges related to the Ragged Mountain Dam and the SRR-RMR Pipeline projects. Below are graphs showing the calculated monthly water usage by each party, the trailing twelve-month average (extended back to November 2019), and that usage relative to the maximum allocation for each party (6.71 MGD for the City and 11.99 MGD for ACSA).

Notes:

Meter Site 1 (Pepsi Place) was repaired on October 20, 2020 and is now reading and communicating flow. Due to incomplete data for the month of October, flows for that site for October 2020 were calculated using the average of the most recent three months of available data in accordance with the *RWSA Wholesale Metering Administrative and Implementation Policy*. Staff will resume use of metered flow data for Site 1 for the month of November, 2020.

Figure 1: City of Charlottesville Monthly Water Usage and Allocation

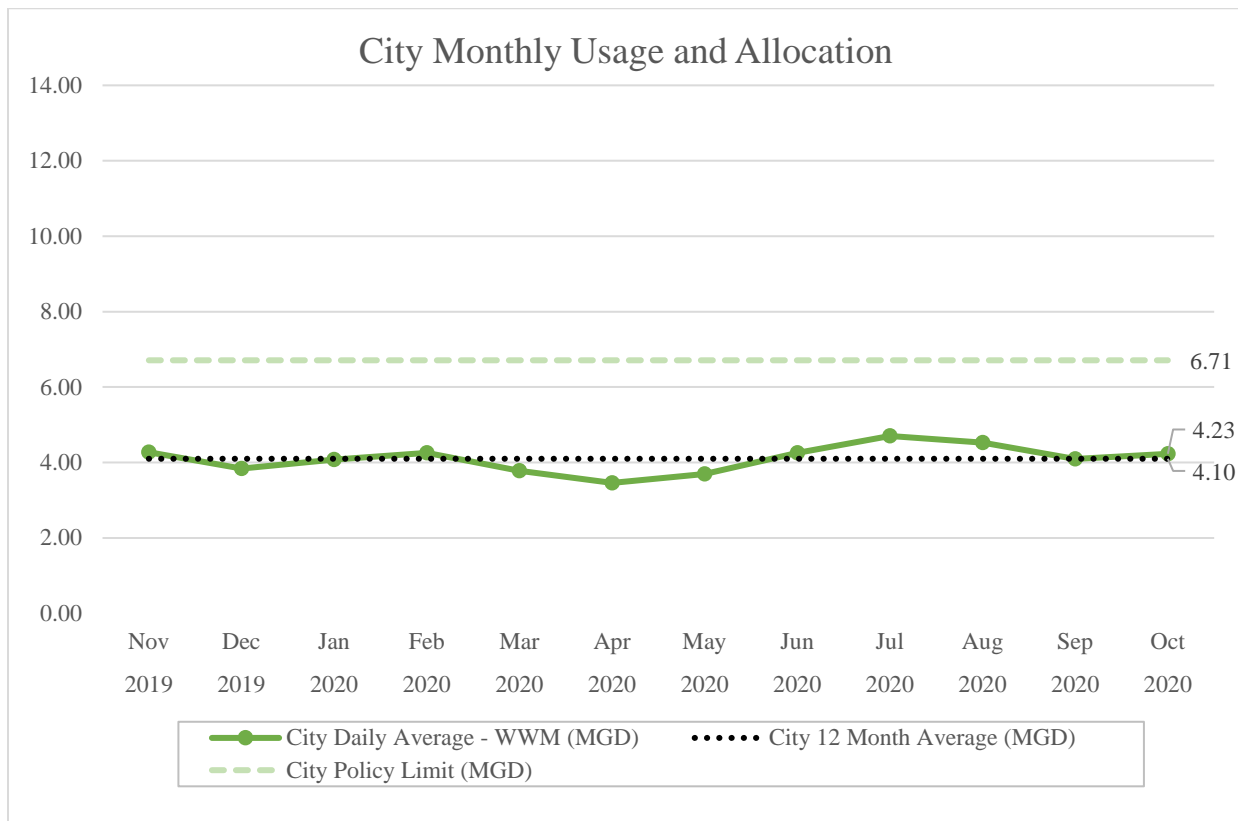
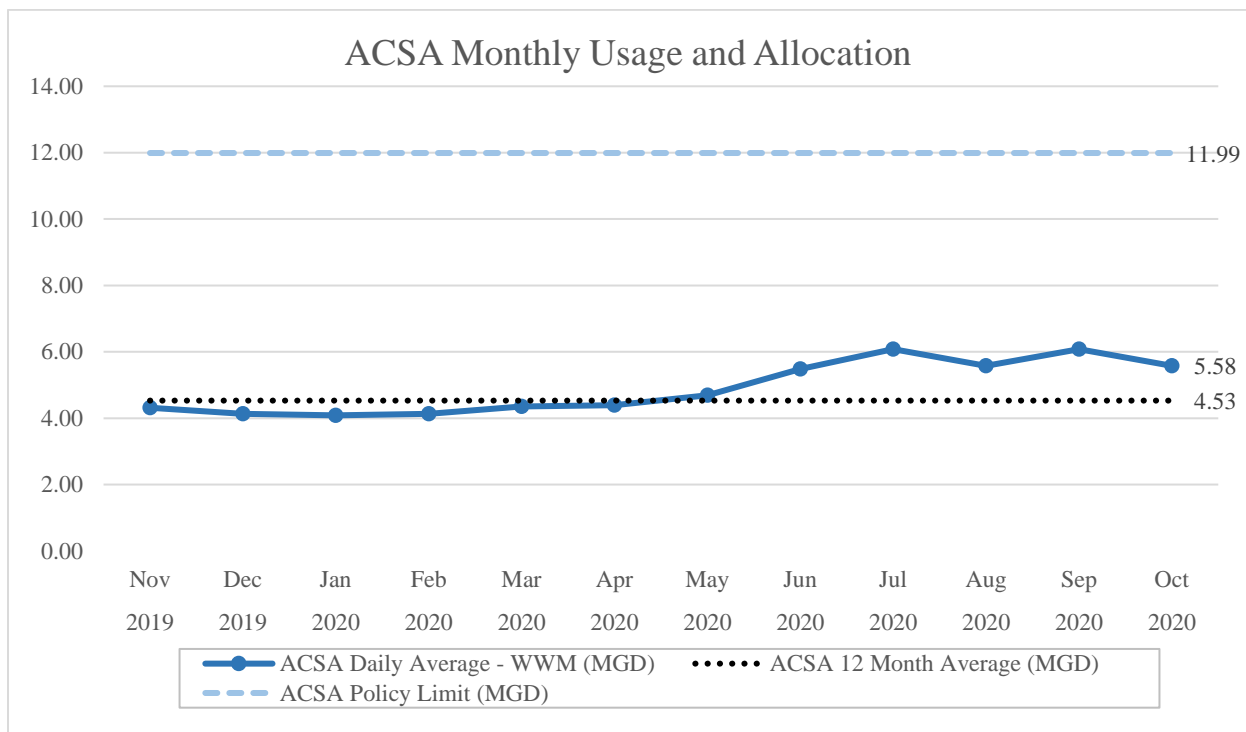


Figure 2: Albemarle County Service Authority Monthly Water Usage and Allocation





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MEMORANDUM

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

FROM: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: APPROVAL OF MERIT POOL

DATE: NOVEMBER 17, 2020

In support of our Strategic Plan goal to “attract, develop and retain a professional, highly skilled, dedicated and versatile team”, a 3% merit pool is requested for eligible RWSA and RSWA staff in January 2021. The proposed merit pool will help us to remain competitive in the utility and solid waste workforce marketplace for the specialized and licensed employee skills we require. A recent survey of 11 water/sewer Authorities in Virginia indicates five approved a merit and/or cola ranging from 3 – 7% between July 1 and November 1, 2020, and three Authorities are considering a merit/cola increase for January/February 2021. Our overall staff turnover rate was 19% in FY 2020, far above our Strategic Plan goal of 10% turnover. The proposed merit pool will increase our anticipated FY 2020-2021 expenditures about \$110,000, or 0.3% for the RWSA, and about \$18,500, or 0.3% for the RSWA. The most recent merit increase for staff was implemented in July 2019.

Most of our staff (80%) are “essential” employees required to provide services to the community at designated locations without regard to pandemics, weather or other challenges. Our essential employees have worked in treatment plants, as well as in our laboratory, landfill and recycling facilities, without interruption throughout the current covid emergency. When our proposed FY 2020-2021 Operating budgets were drafted in January 2020, an annual merit increase was included in the budget for eligible staff. Due to the anticipated financial impacts to our customers resulting from the pandemic, our final FY 2021 Operating budgets were reduced, and merit increases were eliminated. Fortunately, our water/wastewater treatment volumes have remained close to prior year levels over the past seven months, and solid waste transfer tonnages have exceeded those from past years. According to the second quarter Building Report from Albemarle County, building permits were issued for 324 new dwelling units during the April-June 2020 time period. During the same period in the previous year, 198 new dwelling units were permitted, indicating a continued strong housing and construction market. The ACSA reports that it finished FY 2020 in a positive financial position, and remains in solid financial condition through the first quarter of FY 2021. Funds for the merit pool are available in our budgets from health insurance refunds, extra nutrient credits, chemical litigation recoveries, and excess revenues from non-transfer tip fees, and will not impact the approved FY 2020-2021 water, wastewater or solid waste charges.

Board Action Requested:

Authorize a 3% merit pool for all eligible RWSA and RSWA employees to be effective on January 3, 2021.



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MEMORANDUM

**TO: RIVANNA WATER AND SEWER AUTHORITY
RIVANNA SOLID WASTE AUTHORITY
BOARDS OF DIRECTORS**

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

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

**SUBJECT: APPROVAL OF TERM CONTRACT FOR PROFESSIONAL LAND
MANAGEMENT, PLANNING AND ENGINEERING SERVICES –
LPDA, INC.**

DATE: NOVEMBER 17, 2020

The RWSA and RSWA have a need for various professional land management, planning and environmental engineering services for on-going and future projects. A Request for Proposals (RFP 20-10) for a new term contract was developed and advertised on September 24, 2020. Two proposals were received on October 15, 2020.

The RFP selection committee interviewed both firms that submitted proposals. Interviews were conducted on November 2 and November 4, 2020, and the committee determined that Land Planning and Design Associates, Inc., was the top-ranked candidate, and selection of this firm would be in the best interests of the Authority. Typical work tasks under this contract may include the review of property management issues, preparation of property management plans and budget estimates for specific facilities, and implementation of those management plans. The first project to be completed under this contract will be to develop a property management plan and budget for the Buck Mountain properties owned by the Authority.

This Term contract will be awarded for one year, with the option for up to four additional one-year renewals for a total contract length not to exceed five years.

Board Action Requested:

Authorize the Executive Director to execute a Professional Services Agreement, and future work authorizations, with LPDA, Inc. for a Term Contract for Land Planning, Management and Engineering Consulting Services.



MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY
BOARD OF DIRECTORS

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

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: APPROVAL OF PROFESSIONAL SERVICES –
IMPLEMENTATION OF COMPUTERIZED MAINTENANCE
MANAGEMENT SYSTEM – GHD, INC.

DATE: NOVEMBER 17, 2020

Asset management is the practice of managing our infrastructure to minimize the total cost of owning and operating these assets while providing desired levels of service. In doing so, the system 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 funding necessary to perform those activities is available. RWSA has some components of an asset management program in place (i.e. GIS, existing work order system), but has identified the need to further develop the program as part of our Strategic Plan. In order to continue to build the program, GHD, Inc. was procured to assist with a three-phase process that included development of an asset management strategic plan, development and management of a pilot study, and assistance with full implementation of the asset management plan throughout the Authority.

As was identified during development of the Strategic Asset Management Plan, and anticipated during the procurement of GHD, Inc.'s services, incorporation of a complete and fully utilized Computerized Maintenance Management System (CMMS) is an essential framework element for the successful implementation of an asset management program. While RWSA currently utilizes a computerized work order system (Antero), it had a number of shortcomings that did not meet the needs of the asset management program. As a result, a request for quotations was advertised on August 27, 2020 and quotes were received on September 24, 2020. Based on that solicitation process and product demonstrations, "Cityworks" was selected as the Authority's CMMS. Implementing a new CMMS is a complicated process and staff with GHD, Inc. demonstrated their qualifications to perform these services for a number of CMMS packages as part of their existing contract.

In order to proceed with implementation of the Cityworks software, staff has negotiated a scope, fee and schedule with GHD, Inc. to perform those services. The scope of work will include the following tasks: implementation planning, process mapping, data migration, software installation,

configuration planning, system configuration, integration, system testing, training, and deployment and support.

Board Action Requested:

Authorize the Executive Director to execute a work authorization with GHD, Inc. for Computerized Maintenance Management System implementation services, for an amount not to exceed \$345,000, and any amendments needed to complete implementation of the software, not to exceed 10% of the original contract amount.



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MEMORANDUM

**TO: RIVANNA WATER AND SEWER AUTHORITY
RIVANNA SOLID WASTE AUTHORITY
BOARDS OF DIRECTORS**

FROM: ELIZABETH COLEMAN, SAFETY MANAGER

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

**SUBJECT: APPROVAL OF TERM CONTRACT FOR NON-PROFESSIONAL
ENVIRONMENTAL HEALTH, SAFETY, AND INDUSTRIAL
HYGIENE SERVICES – ECS MID-ATLANTIC**

DATE: NOVEMBER 17, 2020

The RWSA and RSWA have a need for various non-professional environmental health, safety, and industrial hygiene consulting services for on-going and future projects. A Request for Proposals (RFP 20-09) for a new term contract was developed and advertised on September 1, 2020. Two proposals were received by September 30, 2020.

The RFP selection committee interviewed both firms who submitted proposals on October 28th and October 30th, 2020. The committee determined that ECS Mid-Atlantic, LLC was the top-ranked candidate, and selection of this firm would be in the best interest of the Authorities. Typical work tasks under this contract may include the assessment of confined space and environmental hazards, chemical concentrations, noise level testing and recommendations on regulatory requirements.

This Term Contract will be awarded for one year, with the option for up to four additional one-year renewals for a total contract length not to exceed five years.

Board Action Requested:

Authorize the Executive Director to execute a Term Contract for Non-Professional Environmental Health, Safety, and Industrial Hygiene Services with ECS Mid-Atlantic.



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MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS

FROM: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: APPROVAL OF BOARD MEETING SCHEDULE FOR CALENDAR YEAR 2021

DATE: NOVEMBER 17, 2020

This memo is to propose a schedule for Board meetings during calendar year 2021, as indicated by the attachment.

Since 2009, the Board has met on the fourth Tuesday of the month at 2:15 p.m. (or upon conclusion of the RSWA Meeting when it is also held), except traditionally the November and December meetings have been advanced to avoid conflicts with the Thanksgiving and Christmas holidays. The proposed schedule follows this practice.

Board Action Requested

Adoption of the attached Board Meeting Schedule for Calendar Year 2021.

Attachment



Board Meeting Schedule

Listed below are the approved RWSA Board of Directors meeting dates for calendar year 2021:

Tuesday, January 26, 2021

Tuesday, February 23, 2021

Tuesday, March 23, 2021

Tuesday, April 27, 2021

Tuesday, May 25, 2021

Tuesday, June 22, 2021

Tuesday, July 27, 2021

Tuesday, August 24, 2021

Tuesday, September 28, 2021

Tuesday, October 26, 2021

Tuesday, November 16, 2021*

Tuesday, December 14, 2021*

* The November and December meetings are advanced to avoid conflicts with the weeks of Thanksgiving and Christmas.

RWSA meetings will start following the RSWA Board Meetings but not earlier than 2:15 p.m. RWSA meetings will be held in the large conference room of the Moores Creek Wastewater Treatment Plant Administration Building, 695 Moores Creek Lane, Charlottesville, VA or virtually via Zoom.



MEMORANDUM

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

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

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

**SUBJECT: COMPREHENSIVE ANNUAL FINANCIAL REPORT
FISCAL YEAR ENDING JUNE 30, 2020**

DATE: NOVEMBER 17, 2020

The Authority's Comprehensive Annual Financial Report for the fiscal year ending June 30, 2020 is included with your Board packet. A large part of preparing the financial statements involves having the financial reports audited for the purposes of obtaining an opinion from an independent Certified Public Accountant as to the accuracy of the information presented in the report.

The audit also reviews internal accounting controls and tests for compliance with relevant laws and regulations as a function of expressing the firm's opinion on the financial information. I am pleased to inform you that the Authority received an unmodified opinion, which is the highest opinion that the financial statements are materially accurate and fairly presented.

Mr. Matthew McLearen, a principal of the Charlottesville office of Robinson, Farmer, Cox Associates, will be at the meeting to give a brief review of the audit and discuss any audit findings the firm may have. A letter communicating several aspects of the review is attached for you as well.

I would also like to thank Kathy Ware, Senior Accountant, who performed much of the detailed work in the preparation of this report. The entire administrative staff deserves management's appreciation for their hard work during the year in processing our transactions and their assistance during the audit.

This report will be submitted to the Certification Program of the Government Finance Officers Association.

Attachment: Comprehensive Annual Financial Report
Communication with Those Charged with Governance



ROBINSON, FARMER, COX ASSOCIATES, PLLC

Certified Public Accountants

Communication with Those Charged with Governance

To the Board of Directors Rivanna Water & Sewer Authority

We have audited the financial statements of financial statements of Rivanna Water & Sewer Authority for the year ended June 30, 2020. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards and *Government Auditing Standards*, as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated July 24, 2020. Professional standards also require that we communicate to you the following information related to our audit.

Significant Audit Matters

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by Rivanna Water & Sewer Authority are described in Note 1 to the financial statements. No new accounting policies were adopted and the application of existing policies was not changed during 2020. We noted no transactions entered into by the entity during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the Authority's financial statements were:

Management's estimate of the useful lives of depreciable assets is based on industry standards. Pension and OPEB estimates were determined by valuations performed by actuaries. We evaluated the key factors and assumptions used to develop the estimates in determining that they are reasonable in relation to the financial statements taken as a whole.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditors' report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated October 26, 2020.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the entity's financial statements or a determination of the type of auditors' opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the entity's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Other Matters

We applied certain limited procedures to management's discussion and analysis and the schedules related to pension and OPEB funding, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were not engaged to report on the introductory section or statistical section which accompany the financial statements but are not RSI. Such information has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

Restriction on Use

This information is intended solely for the use of the Board of Directors and management of Rivanna Water & Sewer Authority and is not intended to be, and should not be, used by anyone other than these specified parties.

Robinson, Farmer, Cox Associates
Charlottesville, Virginia
October 26, 2020



COMPREHENSIVE ANNUAL FINANCIAL REPORT YEARS ENDED JUNE 30, 2020 AND 2019

Serving Charlottesville & Albemarle County, Virginia



**RIVANNA WATER & SEWER AUTHORITY
CHARLOTTESVILLE, VIRGINIA**

COMPREHENSIVE ANNUAL FINANCIAL REPORT

YEARS ENDED JUNE 30, 2020 AND 2019

Prepared By:

Department of Finance and Administration

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RIVANNA WATER & SEWER AUTHORITY

Comprehensive Annual Financial Report Years Ended June 30, 2020 and 2019

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RIVANNA WATER & SEWER AUTHORITY

Comprehensive Annual Financial Report
Years Ended June 30, 2020 and 2019

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BOARD MEMBERS

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

DIRECTOR OF FINANCE/ADMINISTRATION

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Charlottesville, Virginia

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October 26, 2020

To the Board of Directors
Rivanna Water and Sewer Authority
Charlottesville, Virginia

The Comprehensive Annual Financial Report (CAFR) of the Rivanna Water and Sewer Authority (the Authority) for the fiscal year ended June 30, 2020 is submitted herewith. This report has been prepared in conformity with the reporting and accounting standards promulgated by the Government Accounting Standards Board and the Financial Accounting Standards Board and with the accounting and reporting standards for enterprise funds set out by the Government Finance Officers Association of the United States and Canada, with such modifications as apply to our status as an independently chartered corporation.

Based upon a comprehensive framework of internal control that it has established for this purpose, management assumes responsibility for the completeness and reliability of the information contained in this report. The objective of internal control is to provide reasonable, rather than absolute, assurance that the financial statements are free of material misstatements, because the cost of each internal control should not outweigh the potential benefit.

Management's discussion and analysis (MD&A) immediately follows the independent auditors' report and provides a narrative introduction, overview, and analysis of the basic financial statements. MD&A complements this letter of transmittal and should be read in conjunction with it.

ORGANIZATION AND SERVICES PROVIDED

The Rivanna Water and Sewer Authority is a regional non-profit public corporation and political subdivision of the Commonwealth of Virginia chartered in 1972 under the Virginia Water and Waste Authorities Act (1950, as amended), that supplies drinking water to and treats the wastewater of Charlottesville (City) and certain areas of Albemarle County (County). The Authority is a wholesale agency and bills monthly both Charlottesville and the Albemarle County Service Authority, which handle retail distribution of water and collection of sewage in their respective service areas.

The Authority is charged to acquire, finance, construct, operate and maintain facilities for the impoundment, production, storage, treatment and transmission of potable water and for the interception, treatment and discharge of wastewater. The Authority operates under the terms of a Service Agreement signed June 12, 1973 by the officers of the Charlottesville City Council, the Albemarle County Board of Supervisors, the Albemarle County Service Authority and the Rivanna Water and Sewer Authority. The Authority has determined that it is not part of the reporting entity of either the City of Charlottesville or the County of Albemarle and will not be included in the financial report of either (see Note 1 to the Financial Statements).

ORGANIZATION AND SERVICES PROVIDED: (CONTINUED)

The Authority is governed by a seven-member Board of Directors (Board). The Board appoints an Executive Director, who manages Authority operations under its direction. The Authority is now organized in administration, laboratory, engineering, maintenance, water, and wastewater departments. The Authority operates and maintains six water treatment plants and four wastewater treatment plants and the associated water storage facilities, pump stations, transmission mains and interceptor sewers. Retail distribution of water and collection of wastewater is performed by the Authority's two customers: the City of Charlottesville's Utilities Division and the Albemarle County Service Authority.

JOINT ADMINISTRATION

By mutual agreement of the respective Boards of Directors, the Authority currently shares administrative staff and office space with the Rivanna Solid Waste Authority, which is billed monthly for its portion of the costs. Administrative procedures were implemented to ensure proper segregation of funds, purchasing activity, personnel, and similar matters. The Authorities also agreed to administer joint Safety Regulations and a joint Safety Program.

ECONOMIC CONDITION AND PROSPECTS

Both Charlottesville and Albemarle County enjoyed low unemployment rates, steady economic growth and high bond ratings. The local economy was dramatically affected by the Covid-19 pandemic like the rest of the state and nation. In December 2019, the local area unemployment rate was 2.1%. By April of 2020, the unemployment rate jumped to 9.5%. The June employment situation did improve some with the rate of unemployment decreasing to 7.9%.

The water and wastewater services of the Authority are considered an essential service and none of our facilities were closed. The Administrative offices were closed to the public up to June 2020, however, most staff were still working in the office as business continued for such things as deliveries, processing transactions, mail processing, bid openings, employee onboarding, etc. Some employees were on staggered schedules and others in a work-from-home status. The Authority did not have to furlough any of our employees. There were no impacts to our operations and budget. Water production did not decline (annual flows were within budget targets) and vendor supply lines were maintained.

The University of Virginia provides a significant buffer against large swings in the economy of our service area. In addition, the Charlottesville urban area is a major retail trade center for the surrounding region. Housing growth remains steady. According to the second quarter Building Report published by the County of Albemarle, building permits were issued for 324 new dwellings units during the April – June 2020 time period. During the same period in the previous year, 198 new dwelling units were permitted. This shows a continued strong housing and construction market. Although most growth occurs in County developments, in-filling in Charlottesville continues.

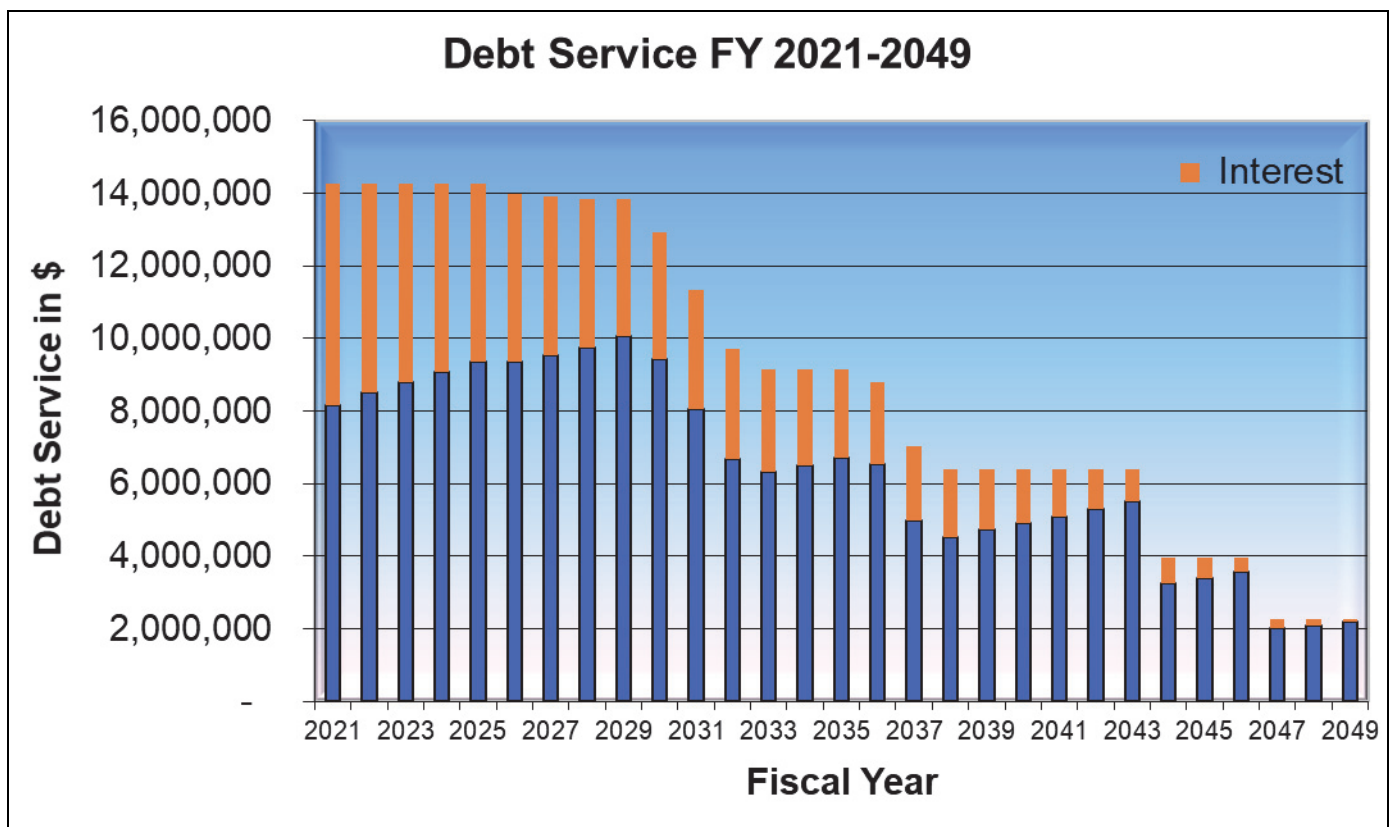
The Charlottesville-Albemarle area attracts many visitors to its historic sites, and the wine industry has been popular and has served to help benefit the tourism sector of the regional economy. The travel and tourism industry make a substantial contribution to the local economy. The hardest hit sector of the economy and employment sector is the leisure and hospitality industry. The number of jobs decreased 35% over the 12-month comparison. An August preliminary report showed this had improved to a drop of 21%. This industry will continue to improve in the coming year.

ECONOMIC CONDITION AND PROSPECTS (CONTINUED)

The University of Virginia's capital projects will continue to be an impetus of growth for water and sewer services. Our current Capital Improvement Program, as discussed below, reflects the Authority's response to the current and projected service demands on our facilities and to the need to respond to regulatory requirements.

LONG-TERM FINANCIAL PLANNING

Despite the significant infrastructure needs identified in the CIP, the Authority is positioned to provide for these needs by using more cash up front for projects and having a debt and rate structure (and a system for increasing debt charges to our customers) that will accommodate more debt in the future. The Authority has slowly but consistently been implementing rate increases to pay for such infrastructure needs in 5-year increments. This practice encourages the creation of reserves for capital spending until a project is started and partially financed with debt proceeds. As shown in the following graph, which represents debt service payments on existing debt, the Authority has a consistent to a declining debt structure for the next 10 years with large declines thereafter. Additionally, the rates are currently programmed to generate \$16.9 million annually in debt service revenues; however, the water and wastewater capital needs will require additional rate increases in the future to maintain solid cash positions and fund future debt service needs.



MAJOR INITIATIVES

The Authority developed and Board of Directors approved a strategic plan several years ago, and our major initiatives are focused on enhancing our strategic goals as shown below:



Several efforts were being worked on during the year such as implementation of a document management system that will create a paperless invoicing system, publishing bi-monthly newsletters to employees, creating a new employee orientation video, establishing a secure work-from-home remote access capability in response to the COVID-19 pandemic, and beginning implementation of a computer maintenance management system (CMMS) that will be a large part of a new asset management program.

There are several capital improvements that were contracted for construction this year with the Observatory, South Rivanna, and Crozet water treatment plant improvements projects. These three projects are estimated to cost \$51.5 million. The plants must stay on-line during the construction process which takes great efforts to plan out the improvements and coordinate with operating staff to meet our production and construction goals. The Observatory lease between the University of Virginia and the Authority was negotiated and approved, along with updating several access easements, for a 49-year term with an option to renew for an additional 50 years. This was a huge effort that involved many staff from both entities.

Future Projects:

Two of the largest projects in the next 5 years.

- Beaver Creek dam and raw water pump station projects. The current dam does not meet dam safety standards and will undergo spillway modifications which will impact the existing raw water pump station. Estimated costs of these projects is \$26.9 million.
- The other large project is a pipeline and pump station replacement for the raw water line from the Ragged Mountain reservoir to the Observatory water treatment plant. The current pipeline is 110 years old in some places. The project is estimated to cost \$24 million.

See the MD&A for more information.

BUDGETARY CONTROLS AND FINANCIAL POLICIES

The Authority is required by the Service Agreement to adopt an annual budget for setting wholesale rates as well as for fiscal guidance to staff. Separate fiscal year budgets are currently prepared for six rate centers to include direct costs and allocations of administrative, engineering, maintenance, lab and debt service expenses. Until the Service Agreement was amended in August 2015, projections of flows and expenses were used to calculate rates per thousand gallons for the two Urban rate centers and flat monthly charges for the other rate centers to cover both operating and debt service costs. Actual flows vary each year from the flows estimated when the rates were set, due to unpredictable weather conditions. Effective with the October 2015 billing, RWSA began charging a fixed monthly rate for the Urban rate center debt service costs while continuing to charge operations rates per thousand gallons. This was a very positive change, because RWSA is required to make fixed debt service payments each fiscal year, and it is important to have a fixed revenue source to pay those expenses.

A proposed budget for each fiscal year is prepared by the Authority Directors and the Executive Director and submitted to the Board of Directors, usually in February, with a public hearing held on the proposed rates in April or May. All budget items lapse at the end of the fiscal year except capital commitments. It should be noted that the budget is prepared for internal use and does not reflect the accrual basis of accounting. An example of this is that principal payments on debt are shown as an expense.

Budgetary compliance is monitored and reported to the Board by the Director of Finance & Administration and the Executive Director. Projections of both revenues and expenses are understood to reflect anticipated service levels and to incorporate a variety of economic, climatic, and demographic forecasts. Variances from budget line items are examined at least monthly to assure a reasonable relation between actual costs and actual service levels, emergencies, or economic conditions. The Authority Board of Directors adopted in August 2011 certain financial policies that help guide the capital and operating budgeting process by defining reserves, reserve goals, uses of discretionary funds, and setting financial targets on debt and capital funding. The financial policy was revised in October 2014 for continuing disclosure and post issuance compliance requirements.

The Authority's accounting records are maintained on the accrual basis of accounting. Under this method, revenues are recognized when earned and expenses are recorded when incurred, without regard to receipt or payment of cash. Current controls provide reasonable assurance that the Authority's assets are properly recorded and protected and that the financial data may be used with confidence in the preparation of historical reports and projections. Accounting control is maintained by segregation of duties and data security systems in all areas of record keeping, disbursements, and purchasing authority. These controls are reviewed regularly by staff and are evaluated as part of the annual financial audit (see Annual Audit section below).

The Authority implemented the financial reporting provisions of Governmental Accounting Standards Board (GASB) Statement No. 89, Accounting for Interest Cost Incurred Before the End of a Construction Period, at the beginning of fiscal year ended June 30, 2019. This Statement requires that interest cost incurred before the end of a construction period be recognized as an expense when incurred instead of being included in the historical cost of constructed capital assets.

ANNUAL AUDIT

The Code of Virginia, the June 12, 1973 Service Agreement, the Trust Agreement and its Supplements require an annual audit of the books and records of the Authority. The opinion of our independent certified public accountants is included in the Financial Section.

AWARDS

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to Rivanna Water and Sewer Authority for its comprehensive annual financial report for the fiscal year ended June 30, 2019. To be awarded a Certificate of Achievement, a governmental unit must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

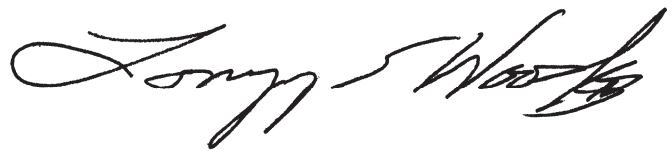
ACKNOWLEDGEMENTS

The help of the Authority's staff, especially Kathy Ware, Senior Accountant, and of our certified public accountants is gratefully acknowledged. Such help and the Board of Directors' support and commitment to financial reporting excellence are essential to the preparation of this report.

Respectfully submitted,



William I. Mawyer, PE
Executive Director



Lonzy E. Wood, III, CPA
Director of Finance and Administration



Government Finance Officers Association

Certificate of
Achievement
for Excellence
in Financial
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Presented to

**Rivanna Water & Sewer Authority
Virginia**

For its Comprehensive Annual
Financial Report
For the Fiscal Year Ended

June 30, 2019

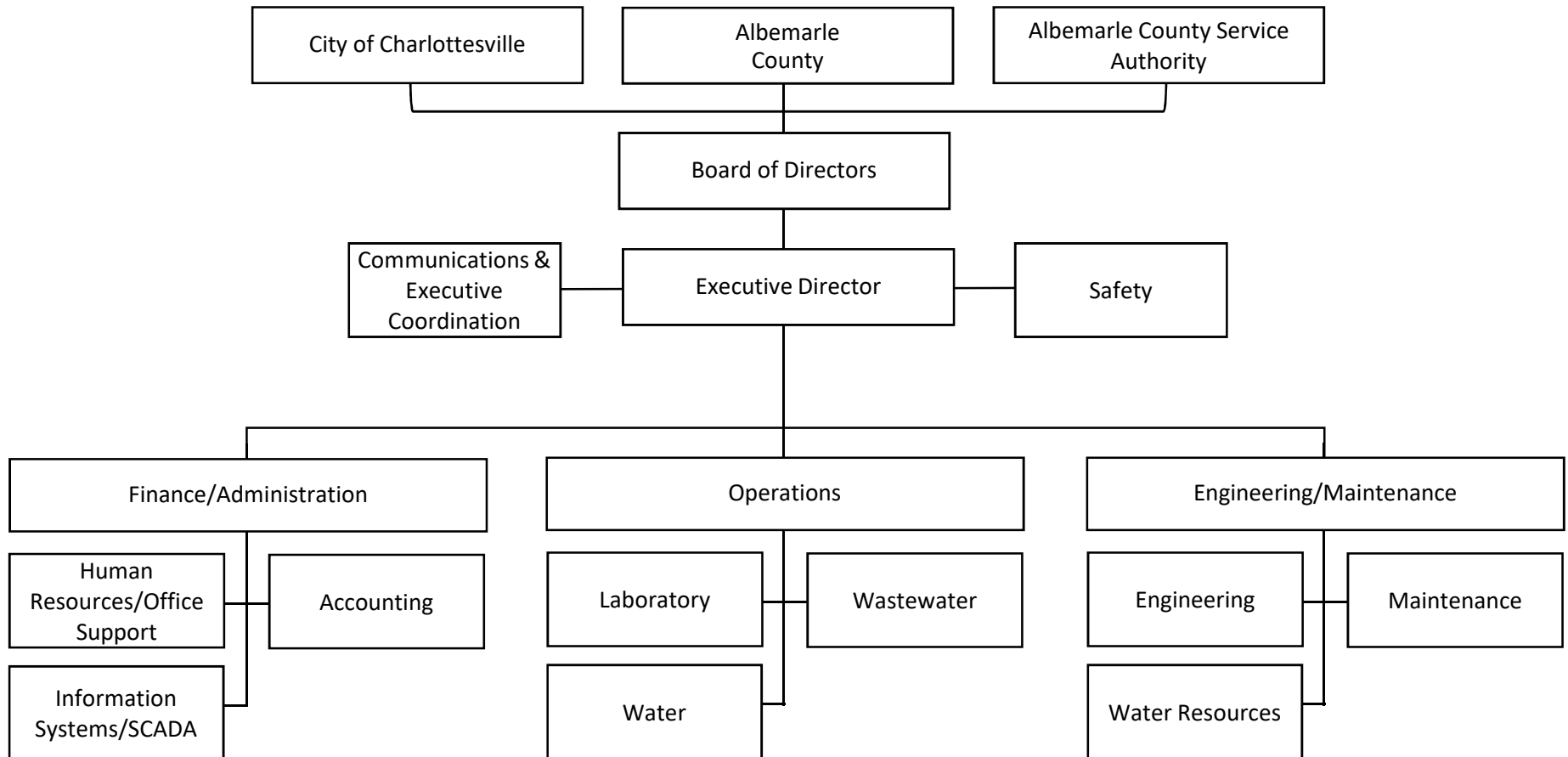
Christopher P. Morill

Executive Director/CEO

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Rivanna Water & Sewer Authority

Organizational Chart



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Independent Auditors' Report

**To the Board of Directors
Rivanna Water & Sewer Authority
Charlottesville, Virginia**

Report on the Financial Statements

We have audited the accompanying financial statements of the business-type activities of Rivanna Water & Sewer Authority, as of and for the years ended June 30, 2020 and 2019, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the *Specifications for Audits of Authorities, Boards, and Commissions*, issued by the Auditor of Public Accounts of the Commonwealth of Virginia. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the business-type activities of Rivanna Water & Sewer Authority, as of June 30, 2020 and 2019, and the changes in financial position, and cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and schedules related to pension and OPEB funding on pages 15-24 and 77-82 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise Rivanna Water & Sewer Authority's basic financial statements. The introductory and statistical sections are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The introductory and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 26, 2020, on our consideration of Rivanna Water & Sewer Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of Rivanna Water & Sewer Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Rivanna Water & Sewer Authority's internal control over financial reporting and compliance.

Robinson, Farney Cox Associates
Charlottesville, Virginia
October 26, 2020

Management's Discussion and Analysis

To the Board of Directors Rivanna Water & Sewer Authority Charlottesville, Virginia

As management of the Rivanna Water & Sewer Authority (the Authority), we offer readers of our financial statements this narrative overview and analysis of the financial activities of the Authority for the fiscal year ended June 30, 2020. We encourage readers to consider the information presented here in conjunction with additional information that we have furnished in our letter of transmittal, which can be found on pages 3 through 8 of this report.

Overview of the Financial Statements:

This discussion and analysis is intended to serve as an introduction to the Authority's basic financial statements. Since the Authority is engaged only in business-type activities, its basic financial statements are comprised of only two components: 1) enterprise fund financial statements and 2) notes to the financial statements. This report also contains required supplementary information in addition to the basic financial statements themselves.

Enterprise fund financial statements. The enterprise fund financial statements are designed to provide readers with a broad overview of the Authority's finances, in a manner similar to a private-sector business.

The statement of net position presents information on the Authority's assets, deferred outflows of resources, liabilities, and deferred inflow of resources with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Authority is improving or deteriorating.

The statement of revenues, expenses, and changes in net position presents information showing how the Authority's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of the cash flows. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods (e.g. earned but unused vacation leave).

The basic enterprise fund financial statements can be found on pages 26 through 29 of this report.

Notes to the financial statements. The notes provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes to the financial statements can be found on pages 31 through 74 of this report.

Required supplementary information. This report also includes required supplementary information concerning the Authority's progress in funding its obligation to provide pension and other postemployment benefits to its employees. It is located immediately following the notes to financial statements.

Financial Highlights:

- The Authority's total net position increased consistently the last two years by \$4.4 million in FY 2020 and by \$5.2 million in FY 2019.
- Construction in progress increased by \$6.9 million this year as new projects were in initial phases of construction. Buildings and operating equipment net of depreciation decreased by \$3.1 million due to normal depreciation.

Financial Highlights: (Continued)

- Regular debt service payments caused noncurrent liabilities to decrease by \$8.5 million this year. No new debt was issued during the current year.
- Operating revenues increased by \$157,000 due to increased rates and the effects of significant wastewater flow from record rainfall in the prior fiscal year.
- Total operating expenses increased \$1.2 million or 5% with half of that being increases in depreciation expense.

Financial Analysis:

The Authority's assets and deferred outflows exceeded its liabilities and deferred inflows (net position) by \$156.7 million at fiscal year end June 30, 2020. Of this amount, \$32.2 million (unrestricted net position) may be used to meet the Authority's normal ongoing operating obligations to customers and creditors while \$4.6 million of net position is restricted for the bondholders. Total net position increased 3% and 4% in each of the past two years respectively, which is an indication that the Authority's overall financial position has improved. The net investment in capital assets increased by \$6.5 million this year primarily due to the construction spending. The largest portion of the Authority's net position (77%) reflects its investment in capital assets, net of depreciation and related debt outstanding that was used to acquire those assets. The Authority uses these capital assets to provide services to its customers; consequently, these assets are not available for future spending. Although the Authority's investment in capital assets is reported net of related debt, the resources needed to repay this debt are derived from the revenue generating capability of these capital assets and not from the capital assets themselves.

	Net Position		
	2020	2019	2018
Current and other assets	\$ 74,615,294	\$ 82,727,243	\$ 47,155,939
Capital assets	281,866,981	278,086,565	275,272,861
Total assets	<u>\$ 356,482,275</u>	<u>\$ 360,813,808</u>	<u>\$ 322,428,800</u>
Deferred outflows of resources	<u>\$ 1,602,441</u>	<u>\$ 1,140,986</u>	<u>\$ 1,315,467</u>
Noncurrent liabilities	\$ 187,362,575	\$ 195,819,731	\$ 164,657,769
Current liabilities	13,236,955	13,398,622	11,447,549
Total liabilities	<u>\$ 200,599,530</u>	<u>\$ 209,218,353</u>	<u>\$ 176,105,318</u>
Deferred inflows of resources	<u>\$ 787,351</u>	<u>\$ 468,212</u>	<u>\$ 565,983</u>
Net position:			
Net investment in capital assets	\$ 119,947,988	\$ 113,396,071	\$ 114,137,186
Restricted for bond covenants	4,552,818	4,278,445	3,794,293
Unrestricted	32,197,029	34,593,713	29,141,487
Total net position	<u>\$ 156,697,835</u>	<u>\$ 152,268,229</u>	<u>\$ 147,072,966</u>

Operating revenues increased by \$157,000 for FY 2020 compared to a \$5.15 million increase last year. Metered water sales increased 6% over last year's charges, or \$980,000, which was slightly below targeted budget projections for FY 2020. For FY 2019, there was an 8% increase in revenues over the previous year which was on budget targets. Wastewater service charge revenues decreased 4% from FY 2019 revenues. The revenues for FY 2019 were much higher than budget target due to higher than normal precipitation for that year. Flows returned to normal in FY 2020 which is why there is a drop in the revenue in this comparison. FY 2020 wastewater revenues were 3% higher than budget estimates.

Financial Analysis: (Continued)

Total operating expenses increased by \$1.2 million or 5%, for FY 2020 primarily due personnel cost and depreciation expense increases. A large number of projects (roughly \$50 million in value) were completed and capitalized in FY 2019 which increased depreciation expense by 9% for FY 2020. There were two new positions added for FY 2020, a 13% increase in health insurance costs and additional GASB pension liability driving the personnel costs increases. Key elements of these changes are explained further in the Review of Operations section.

		Changes in Net Position		
		2020	2019	2018
Revenues:				
Operating revenues				
Metered water sales	\$	16,196,450	\$ 15,216,180	\$ 14,034,080
Wastewater service charges		17,999,007	18,821,857	14,858,101
Nonoperating revenues				
Investment earnings		1,243,884	1,599,486	525,039
Buck Mountain revenue		57,100	111,700	125,900
Administrative reimbursement		471,937	474,246	436,329
Other revenues		588,146	380,737	302,920
Total revenues	\$	<u>36,556,524</u>	\$ <u>36,604,206</u>	\$ <u>30,282,369</u>
Expenses:				
Operating expenses				
Personnel costs	\$	8,693,477	\$ 7,728,340	\$ 7,385,978
Professional services		1,048,839	994,207	738,823
Other services and charges		3,676,790	3,770,051	3,341,421
Operations and maintenance		5,423,447	5,799,962	4,169,065
Depreciation expense		7,330,242	6,704,908	5,773,757
Nonoperating expenses				
Interest expense		5,733,428	5,947,988	2,643,801
Debt issuance costs		220,695	463,487	-
Total expenses	\$	<u>32,126,918</u>	\$ <u>31,408,943</u>	\$ <u>24,052,845</u>
Change in net position	\$	<u>4,429,606</u>	\$ <u>5,195,263</u>	\$ <u>6,229,524</u>
Net position, beginning of year, as restated		<u>152,268,229</u>	<u>147,072,966</u>	<u>140,843,442</u>
Net position, end of year	\$	<u><u>156,697,835</u></u>	\$ <u><u>152,268,229</u></u>	\$ <u><u>147,072,966</u></u>

Capital Asset and Debt Administration:

Capital Assets - The Authority's investment in capital assets net of accumulated depreciation increased 1% in the current year and 1% in the prior year because of costs incurred on construction projects noted below less depreciation on all assets of \$7.3 million and \$6.7 million respectively for FY 2020 and FY 2019. Construction costs incurred were \$10.9 million for FY 2020 and \$9.1 million for FY 2019. More detailed information on the Authority's capital assets is presented in Notes 4 and 5 of the notes to the financial statements and is addressed further in the Review of Operations section below.

Capital Asset and Debt Administration: (Continued)

The various categories of capital assets net of depreciation at the end of the past three fiscal years are as follows:

	<u>2020</u>	<u>2019</u>	<u>2018</u>
Land and improvements	\$ 12,310,763	\$ 12,310,763	\$ 10,604,850
Buildings and operating equipment	253,645,028	256,781,051	210,317,886
Trucks and autos	500,348	519,291	200,137
Office equipment	8,793	11,665	1,001
Construction in progress	15,402,049	8,463,765	54,148,987
Total capital assets, net	<u>\$ 281,866,981</u>	<u>\$ 278,086,535</u>	<u>\$ 275,272,861</u>

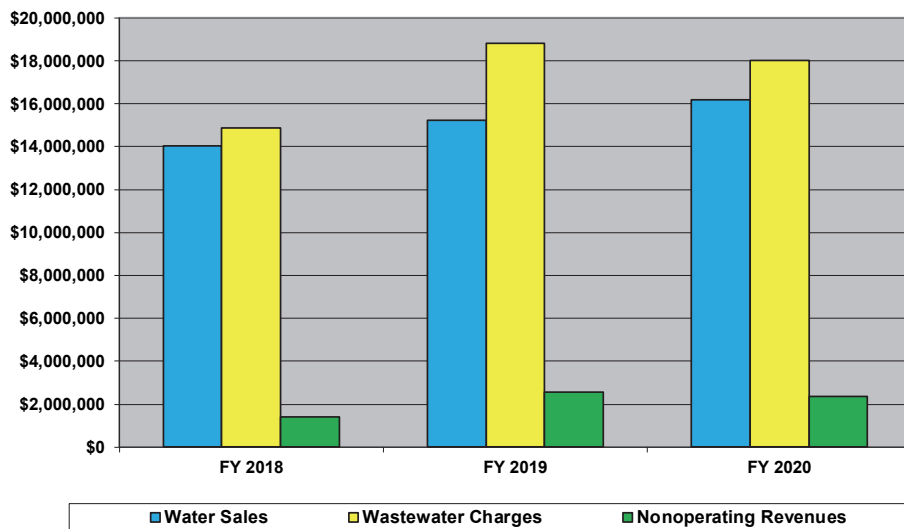
Major capital asset activity for the current fiscal year included:

Crozet WTP Expansion	\$ 4,327,361
S. Rivanna WTP Improvements	1,228,296
Observatory WTP Improvements	868,706
Valve Repair-Replacement (Phase 2)	760,244
S. Rivanna Reservoir to Ragged Mtn. Reservoir Water Line R/W	650,459
Piney Mountain Tank Rehabilitation	397,927
Birdwood Golf Course Waterline	334,679
Moore's Creek AWRRF Odor Control-Phase 2	258,360
Buck's Elbow Ground Storage Tank Chlorination System	212,978
Security Enhancements	203,489
Interceptor Sewer & Manhole Repair-Phase 1	200,170
MCAWRRF Master Plan	157,177
Glenmore Secondary Clarifier Coating	138,307
New Raw Water Pump Station & Intake (BCR)	120,936
Scottsville WTP Finished Water Flow Meter	119,851
Finished Water System Master Plan	118,897
Airport Rd. Pump Stn. & N. Rivanna Transmission Main	108,099
Crozet Flow Equalization Tank	98,837
Asset Management	90,784
Water Demand Projection and Safe Yield Study	85,933
Crozet Interceptor	68,248
SH Dam-Rubber Crest Gate Replacement	66,360
IT Master Plan-Software	55,871
Radio Upgrades	55,390
Other	227,534
Retainage on Construction in Progress	175,356
Total Current Year Construction Costs and Adjustments	<u>\$ 11,130,249</u>

Long-Term Debt - At the end of the current fiscal year, the Authority had \$191 million in bonds outstanding, which is a decrease of \$9 million. Regular principal payments on existing debt caused the decrease. The Authority advance refunded the majority of the Series 2012A Bond during FY 2020. The Series 2019 Bond was issued for a par amount of \$17.6 million to refund \$15.9 million of the 2012A Bond and the related \$2.0 million of unamortized original issue premium. Roughly \$2million of the 2012A Bond remained outstanding, because that portion of the bond was not eligible for refunding before the November 2022 call date. More detailed information regarding the Authority's long-term debt is presented in Note 6 of the notes to the financial statements.

Review of Operations:

Revenues



Total operating revenues increased only \$157,000 in FY 2020 compared to the previous year but were well within budget targets. FY 2019 actual revenues were significantly over budget estimates and increased 18% or \$5.15 million compared to FY 2018 resulting from significant wet weather events. This gives the appearance that FY 2020 revenues were stagnant when in fact they were on target with expectations. There were several large rate increases approved by the Board of Directors for FY 2020. Crozet saw a 39% increase in the overall rates charged to anticipate the increased debt service on several large capital projects on that water system.

Overall, the Authority programed into FY 2020 rates an increase of \$2 million in operating revenues and that target was met.

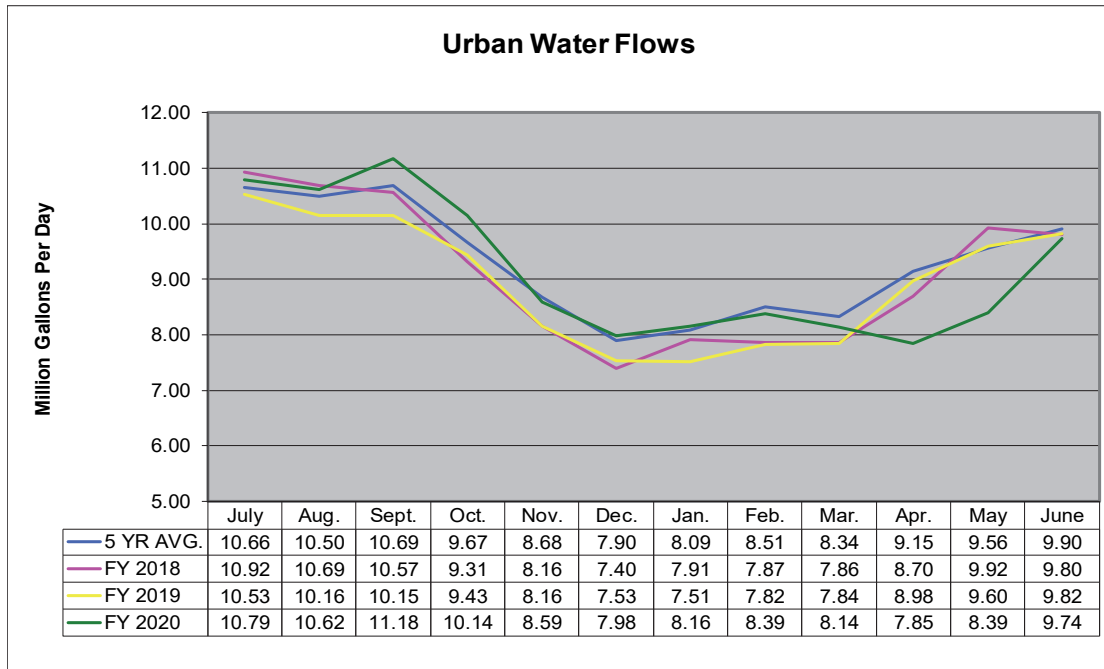
The capital program has been the single largest driver to the Authority's revenue requirements, especially for wastewater rates, for the past several years. Over the past three years, the Authority has invested over \$37 million in capital infrastructure. The majority of that investment was financed with long-term debt. Roughly \$6.5 million of this spending was funded through cash reserves over that same time period. As shown in the chart below, FY 2020 Urban debt service rates increased across most rate centers as the capital program continues to grow. Roughly \$49.7 million in new project costs were added to the 5-year capital plan over the last two years. Operating rates were being affected by new systems coming on-line like the odor control project, the GAC project, which has significant yearly costs for the granular activated carbon used in the new treatment process at all 5 plants, and the wholesale water master metering project, which has yearly calibration and maintenance costs.

<u>Urban Rates</u>					
		<u>Water</u>		<u>Wastewater</u>	
Operations Rates - City & ACSA (\$ per 1,000 gallons):					
	FY 2018	\$	1.969	10.8%	\$ 1.951 -2.3%
	FY 2019	\$	2.070	5.1%	\$ 2.146 10.0%
	FY 2020	\$	2.095	1.2%	\$ 2.369 10.4%
Debt Service Rates (\$ per month):					
City:	FY 2018	\$	160,039	-23.2%	\$ 392,841 7.0%
	FY 2019	\$	181,008	13.1%	\$ 408,260 3.9%
	FY 2020	\$	193,580	6.9%	\$ 407,588 -0.2%
ACSA:	FY 2018	\$	285,439	-10.9%	\$ 222,550 -6.0%
	FY 2019	\$	307,598	7.8%	\$ 246,308 10.7%
	FY 2020	\$	321,303	4.5%	\$ 278,174 12.9%

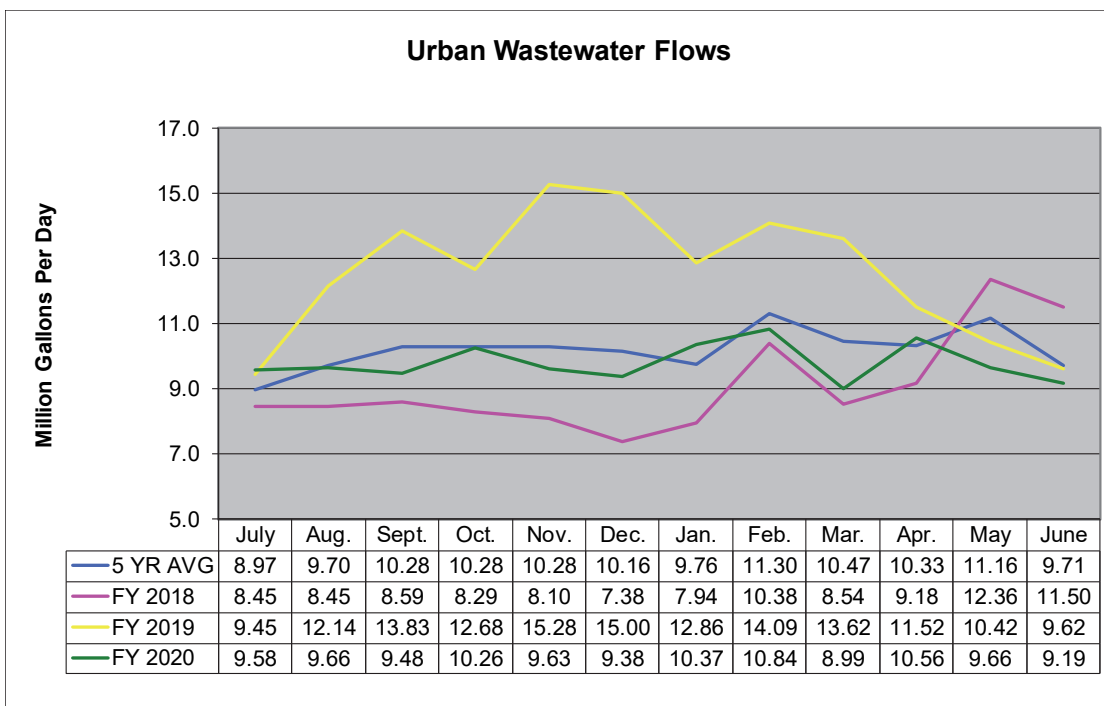
Review of Operations: (Continued)

Flows in the two urban rate centers are the single largest determining factor in the revenues billed to our two customers. The graphs below show the flows for the year compared to the last two years and the five-year average.

Urban Water flows were consistent with the 5-year trend for most of the year with April and May being lower and off that trend. This was mostly due to the COVID-19 impacts from UVa closing down. However, June water demand did pick back up to normal.



Urban Wastewater flows (below) were, for the most part, within the 5-year trend this year. As you can see in the graph and as mentioned above, FY 2019 was an abnormally high flow year. This chart clearly demonstrates how erratic wastewater flow can be compared to the trend due to weather patterns that can significantly affect metered flows and revenues.



Review of Operations: (Continued)

Total operating expenses increased by \$1.2 million for FY 2020. Changes in nonoperating costs for bond issue costs decreased \$243,000 and interest expense decreased \$215,000. Overall, both operating and nonoperating expenses increased \$718,000 over FY 2019 levels. Interest expense increased significantly between FY 2018 and FY 2019 by \$3.3 million. For FY 2019, new accounting guidance under GASB 89 does not allow for interest capitalization effective for reporting periods beginning after December 15, 2019, with earlier application encouraged. The Authority implemented the standard as of July 1, 2018. Essentially, the interest payments didn't change as much as the interest expense would indicate.

Direct operating costs in certain categories experienced overall increases in FY 2020. Personnel costs increased due to adjustments for increased pension liability valuations of roughly \$408,000. There were two new staff positions added with a new chemist and a new construction inspector. New staff along with regular pay increases caused a \$364,000 increase. Health insurance benefits also increased \$148,000. There were some reductions in expenses for FY 2020. Maintenance and treatment costs were less than last year as there were fewer line breaks and the use of GAC was optimized requiring less change out of the material. This was a \$442,000 cost reduction. Interest costs were also less resulting from the bond refunding mentioned before. Depreciation expenses did increase as more projects were completed/capitalized and added to the depreciation schedules.

Change in Expenses FY 2020 vs. FY 2019:

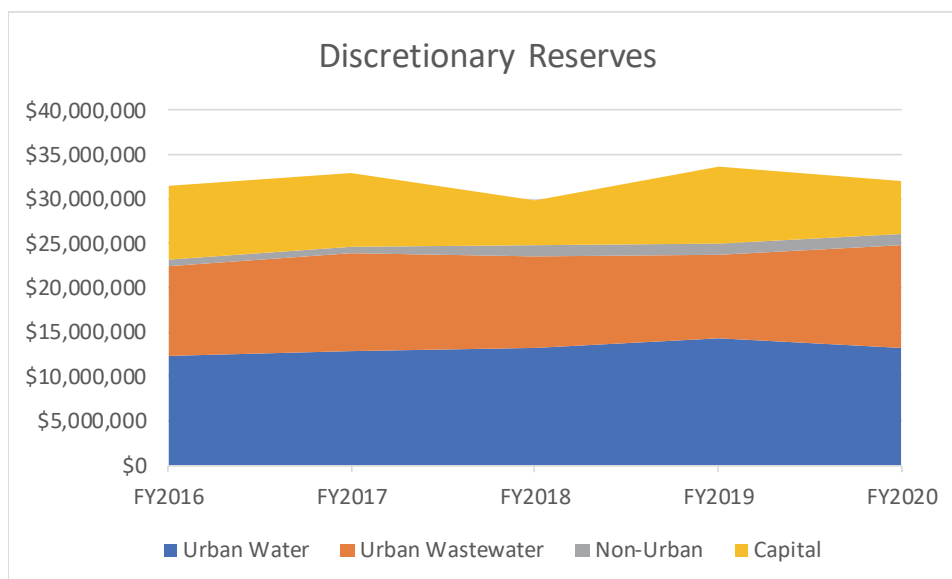
	<u>FY 2020</u>	<u>FY 2019</u>	<u>Change</u>	
Direct Operating*	\$ 18,842,553	\$ 18,292,560	\$ 549,993	3%
Depreciation	7,330,242	6,704,908	625,334	9%
Interest	5,733,428	5,947,988	(214,560)	-4%
Debt issuance costs	220,695	463,487	(242,792)	-52%
	<u>\$ 32,126,918</u>	<u>\$ 31,408,943</u>	<u>\$ 717,975</u>	<u>2%</u>

* - Personnel, Chemicals, Operations & Maintenance, Utilities

Cash balances have been stable for the past few years, maintaining a strong debt service coverage ratio the past several years. (See Table 8 in the Statistical Section.) Unrestricted cash and investments, which represents total discretionary reserves balances, were at \$36.3 million at the end of FY 2020. This was roughly \$2.7 million less than the previous year's balance, because we are using reserves for several of our capital projects. Restricted cash and cash equivalents balances decreased from \$38.9 million in FY 2019 to \$33.2 million in FY 2020. This was due to the bond proceeds being used for capital purposes. There was still \$25.6 million available for future capital spending in the 2018 bond construction fund account. Rate stabilization reserves totaled \$2 million at June 30, 2020, which is part of the unrestricted cash.

For the past decade, the Authority slowly built cash reserves for rate stabilization, unforeseen maintenance issues and support for an aggressive capital replacement program through its rate setting policies. The Board of Directors supports the need for a strong cash position to mitigate unforeseen costs in an aging infrastructure and to better handle wide fluctuations in flow. The aggressive capital construction activities over the past decade will continue into the future and will further necessitate a strong liquidity position as the Authority has over \$191 million in outstanding debt. Recognizing the increase in debt service obligations over the years, the executive management wisely continues to emphasize the need to maintain adequate reserves to provide financial flexibility and maintain an excellent bond rating of AA+ from Standard & Poor's. Below is a chart showing discretionary reserves, which have remained steady for the past five years.

Review of Operations: (Continued)



Over the last several years, financial policies have been adopted and revised as needed to formally support this philosophy. The Authority generally targets to have 60 days of working capital on hand for daily operations, which is roughly \$6.1 million. The Authority has a financial policy goal of funding 10% of our total capital program costs with cash reserves. Over the last ten years, the Authority has used capital cash to fund roughly \$29.4 million in projects. Capital spending using cash and debt financing sources over that same 10-year period was roughly \$206 million, which means our actual cash reserve funding is a little better than the policy targets.

Capital Improvements & Future Long-Term Trends

The Authority generally updates the five-year projection of our Capital Improvement Plan (CIP) annually. The following table shows the changes in the CIP adopted in June 2020 (for FY 2021–2025) compared to the previously adopted capital plan:

Changes in Capital Improvement Plan (CIP)		
FY 2020-2024	\$ 97,203,867	Previously adopted CIP
	(5,096,000)	Budgets for completed or closed projects
	35,793,000	Adjustments on existing projects
	4,608,000	New project budgets added
FY 2021-2025	\$ <u>132,508,867</u>	Total 5-year CIP

The total 5-year CIP is estimated at \$132.5 million in capital spending needs through the year 2025. Of this amount, roughly \$5.4 million is work-in-progress (nearly 4%) and has already been expended and funded at year end. There is \$25.6 million in available bond proceeds from the recent Series 2018 bond to fund future capital work and \$7.6 million in the capital fund to fund the CIP. The future funding needs will be roughly \$81 million in additional debt (revenue bonds) to be issued and \$12.9 million in future reserves to be placed in the capital fund.

Most of the Authority's capital spending investment over the last decade was to bring the wastewater systems into compliance with a DEQ Consent Order and meet nutrient reduction goals for the Chesapeake Bay clean-up programs.

Review of Operations: (Continued)

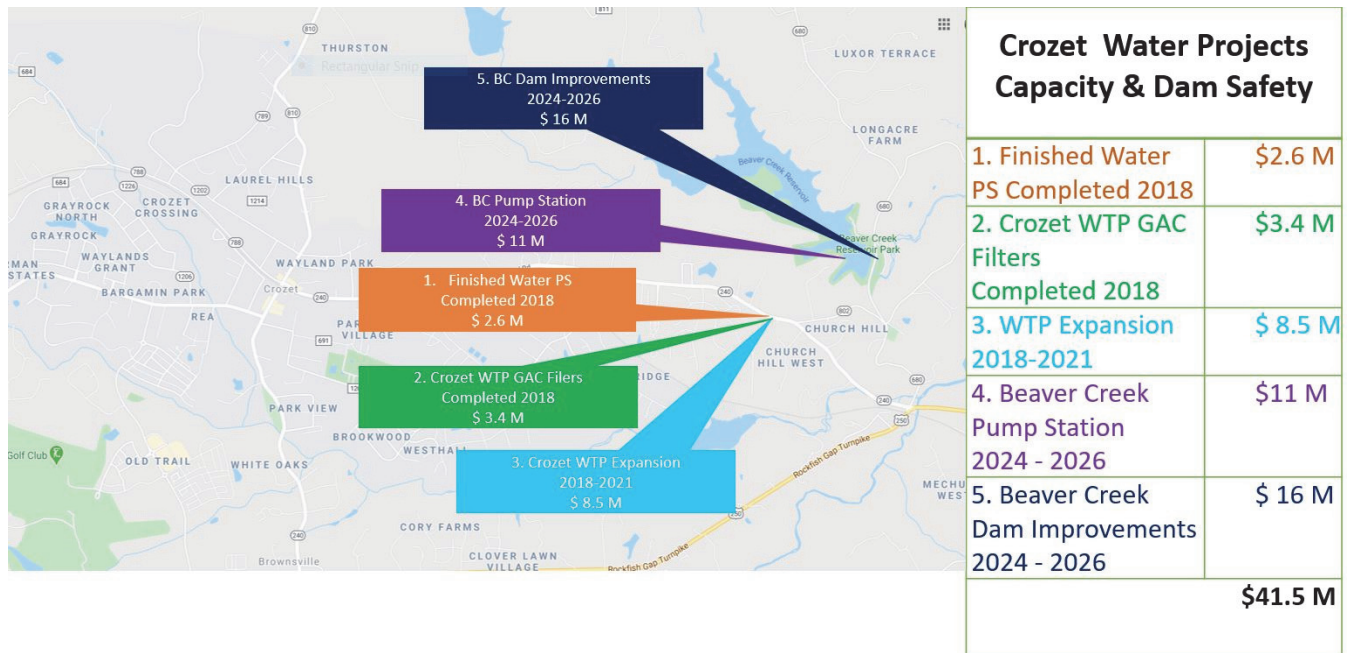
Moore's Creek Advanced Water Resource Recovery Facility at Night



Over the last two years, the Authority completed \$54.2 million in projects (\$4.2 million in FY 2020 and \$50 million in FY 2019). The majority of those projects were related to water quality and regulatory compliance projects, such as the GAC projects. A section of the raw water line (Birdwood Line) between Ragged Mountain and the South Fork Rivanna Reservoirs was completed. The Crozet water system has a newly completed finished water pump station and the improvements to the Bucks Elbow and finished water ball tanks were also completed. The capital program will be more focused on the water infrastructure over the next 10 years.

The Crozet growth area of the County has placed demand needs on the entire system (which is separate from the Urban System) requiring several projects into the future. The Crozet plant has not seen a major upgrade since its original construction in 1966. A Drinking Water Infrastructure Plan conducted in FY 2018 for the Crozet system identified several projects to address capacity needs and treatment improvements to the Crozet system. The plant capacity will increase from 1 mgd to 2 mgd. These projects in addition to the Beaver Creek Dam Alteration to address spillway issues are going to be major future projects for this system. See below for a summary of projects for this growing system:

Review of Operations: (Continued)



Projects 1 & 2 above are complete. The water treatment plant expansion, Project 3, is well underway. With the plant capacity increase anticipated, the Authority will have to seek a new withdrawal permit that will impose new minimum instream flow releases from the reservoir.

There are several major improvements planned for the Urban water systems. The South Rivanna Water Treatment Plant (WTP) had recently gone through upgrades for the granular activated carbon systems, but most of the core treatment facilities were not upgraded. This plant will now go through major upgrades to coagulant storage, new filters to meet firm capacity, changing or adding more variable frequency drives among many other upgrades. The Observatory WTP has seen very few upgrades since its construction in the mid-1950s. This plant will go through a system-by-system upgrade and an increase in production capacity from 7.7 million to 10 million gallons per day. A contract for these two major plant upgrades was awarded at the end of FY 2020. This will provide reliability, resiliency and redundancy improvements for the entire Urban system. These two projects are estimated to have a total cost of \$43 million.

Requests for Information:

This financial report is designed to provide a general overview of the Authority's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the Finance Department at 695 Moores Creek Lane, Charlottesville, Virginia 22902-9016.

Basic Financial Statements

Statement of Net Position
At June 30, 2020 and 2019

	At June 30,	
	2020	2019
ASSETS		
Current assets:		
Cash and cash equivalents (Note 1)	\$ 36,250,097	\$ 38,988,804
Restricted cash and cash equivalents	31,251,824	36,903,973
Accounts receivable	2,898,131	2,759,152
Unbilled accounts receivable	-	45,400
Prepaid expenses	185,299	-
Total current assets	\$ 70,585,351	\$ 78,697,329
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	\$ 1,978,408	\$ 2,032,250
Investments (Note 3)	2,051,535	1,997,694
Total restricted assets	\$ 4,029,943	\$ 4,029,944
Capital assets: (Note 4)		
Land and improvements	\$ 12,310,763	\$ 12,310,763
Buildings and operating equipment	352,807,752	348,680,424
Trucks and autos	1,532,771	1,605,502
Office equipment	101,330	106,760
Less accumulated depreciation	(100,287,684)	(93,080,679)
Subtotal net capital assets	\$ 266,464,932	\$ 269,622,770
Construction in progress (Note 5)	15,402,049	8,463,765
Total net capital assets	\$ 281,866,981	\$ 278,086,535
Total noncurrent assets	\$ 285,896,924	\$ 282,116,479
Total assets	\$ 356,482,275	\$ 360,813,808
DEFERRED OUTFLOWS OF RESOURCES		
Deferred charge on refunding	\$ 610,521	\$ 654,937
Deferred outflows - pension (Note 8)	885,162	424,975
Deferred outflows - OPEB - group life insurance (Note 12)	106,758	61,074
Total deferred outflows of resources	\$ 1,602,441	\$ 1,140,986

The accompanying notes to financial statements are an integral part of this statement.

Statement of Net Position (Continued)
At June 30, 2020 and 2019

	At June 30,	
	2020	2019
LIABILITIES		
Current liabilities:		
Accounts payable and other accrued expenses	\$ 2,604,078	\$ 3,244,636
Compensated absences - current portion (Note 7)	377,000	377,000
Other long-term obligation (Note 9)	178,972	174,093
Revenue bonds - current portion (Note 6)	4,102,759	3,947,065
Subtotal current liabilities	\$ 7,262,809	\$ 7,742,794
Current liabilities (payable from restricted assets):		
Retainage payable	\$ 339,790	\$ 164,434
Accrued interest payable	1,581,538	1,712,949
Revenue bond principal - current portion (Note 6)	4,052,818	3,778,445
Subtotal current liabilities (payable from restricted assets)	\$ 5,974,146	\$ 5,655,828
Total current liabilities	\$ 13,236,955	\$ 13,398,622
Noncurrent liabilities:		
Compensated absences (net of current portion) (Note 7)	\$ 114,718	\$ 52,107
Net OPEB liability (Note 12)	428,948	389,000
Other long-term obligation (Note 9)	311,822	409,829
Net pension liability (Note 8)	3,325,528	2,570,815
Revenue bonds (net of current portion) (Note 6)	183,181,559	192,397,980
Total noncurrent liabilities	\$ 187,362,575	\$ 195,819,731
Total liabilities	\$ 200,599,530	\$ 209,218,353
DEFERRED INFLOWS OF RESOURCES		
Deferred inflows - pension (Note 8)	\$ 250,328	\$ 432,212
Deferred gain on partial bond refunding	509,713	-
Deferred inflows - OPEB - group life insurance (Note 12)	27,310	36,000
Total deferred inflows of resources	\$ 787,351	\$ 468,212
NET POSITION		
Net Position:		
Net investment in capital assets	\$ 119,947,988	\$ 113,396,071
Restricted for bond covenants	4,552,818	4,278,445
Unrestricted	32,197,029	34,593,713
Total net position	\$ 156,697,835	\$ 152,268,229

Statement of Revenues, Expenses, and Changes in Net Position
 Years Ended June 30, 2020 and 2019

	Year Ended June 30,	
	2020	2019
Operating revenues:		
Metered water sales	\$ 16,196,450	\$ 15,216,180
Wastewater service charges	17,999,007	18,821,857
Total operating revenues	\$ 34,195,457	\$ 34,038,037
Operating expenses:		
Personnel costs	\$ 8,693,477	\$ 7,728,340
Professional services	1,048,839	994,207
Other services and charges	3,676,790	3,770,051
Operations and maintenance	5,423,447	5,799,962
Depreciation	7,330,242	6,704,908
Total operating expenses	\$ 26,172,795	\$ 24,997,468
Operating income	\$ 8,022,662	\$ 9,040,569
Nonoperating revenues (expenses):		
Investment earnings	\$ 1,243,884	\$ 1,599,486
Buck Mountain revenue	57,100	111,700
Administrative reimbursement	471,937	474,246
Other revenues	588,146	380,737
Interest expense	(5,733,428)	(5,947,988)
Debt issuance costs	(220,695)	(463,487)
Total nonoperating revenues (expenses)	\$ (3,593,056)	\$ (3,845,306)
Change in net position	\$ 4,429,606	\$ 5,195,263
Net position, beginning of year	152,268,229	147,072,966
Net position, end of year	\$ 156,697,835	\$ 152,268,229

The accompanying notes to financial statements are an integral part of this statement.

Statement of Cash Flows
Years Ended June 30, 2020 and 2019

	Year Ended June 30,	
	2020	2019
Cash flows from operating activities:		
Receipts from customers and users	\$ 35,219,061	\$ 34,918,444
Payments to suppliers of goods and services	(10,710,633)	(10,247,250)
Payments to and on behalf of employees for services	(8,766,101)	(7,842,006)
Net cash provided by (used for) operating activities	\$ 15,742,327	\$ 16,829,188
Cash flows from capital and related financing activities:		
Additions to capital assets	\$ (11,059,309)	\$ (9,083,133)
Principal payments on bonds	(7,725,510)	(7,017,528)
Refunding of bond principal	(15,855,000)	-
(Premium) discount on refunded bonds	(2,034,417)	-
Deferred gain on bond refunding	526,870	-
Proceeds of bonds	17,610,000	36,855,000
Premium (discount) on bonds issued	(33,492)	2,930,097
Debt issuance costs	(220,695)	(463,487)
Interest payments	(6,585,515)	(6,069,825)
Net cash provided by (used for) capital and related financing activities	\$ (25,377,068)	\$ 17,151,124
Cash flows from investing activities:		
(Purchase) of investments	\$ -	\$ (1)
Sale of investments	-	1,266
Maturity of investments	653	638
Interest and dividends received	1,189,390	1,530,084
Net cash provided by (used for) investing activities	\$ 1,190,043	\$ 1,531,987
Increase (decrease) in cash and cash equivalents	\$ (8,444,698)	\$ 35,512,299
Cash and cash equivalents at beginning of year (including \$19,237,445 and \$38,936,223, respectively reported in restricted accounts)	77,925,027	42,412,728
Cash and cash equivalents at end of year (including \$33,230,232 and \$38,936,233, respectively reported in restricted accounts)	\$ 69,480,329	\$ 77,925,027
Reconciliation of operating income (loss) to net cash provided by (used for) operating activities:		
Operating income	\$ 8,022,662	\$ 9,040,569
Adjustments to reconcile operating income (loss) to net cash provided by (used for) operating activities:		
Depreciation	7,330,242	6,704,908
Buck Mountain revenue	57,100	111,700
Other nonoperating revenues	1,060,083	854,983
Changes in operating assets, deferred outflows of resources, liabilities and deferred inflows of resources:		
(Increase) decrease in receivables	(93,579)	(86,276)
Increase (decrease) in net OPEB liability	39,948	13,000
Increase (decrease) in compensated absences	62,611	(9,120)
Increase (decrease) in other long-term obligation	(93,128)	95,996
Increase (decrease) in net pension liability	754,713	(352,768)
(Increase) decrease in deferred outflows of resources - pension	(460,187)	155,489
Increase (decrease) in deferred inflows of resources - pension	(181,884)	(91,771)
(Increase) decrease in deferred outflows of resources - OPEB	(45,684)	(27,562)
Increase (decrease) in deferred inflows of resources - OPEB	(8,690)	(6,000)
(Increase) decrease in prepaid expenses	(185,299)	94,739
Increase (decrease) in operating payables and accrued expenses	(516,581)	331,301
Net cash provided by (used for) operating activities	\$ 15,742,327	\$ 16,829,188
Noncash investing, capital and financing activities:		
Increase (decrease) in fair value of investments	\$ 54,494	\$ 69,402
(Increase) decrease in retainage payable for capital projects	175,356	(278,382)

The accompanying notes to financial statements are an integral part of this statement.

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RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements At June 30, 2020 and 2019

Note 1—Summary of Significant Accounting Policies:

In the interest of efficient water quality management for the upper Rivanna River Basin, the Rivanna Water and Sewer Authority was formed on June 7, 1972 as a joint venture of the City of Charlottesville, the Albemarle County Service Authority, and the County of Albemarle, pursuant to the Virginia Water and Waste Authorities Act (1950 as amended). The Authority is responsible for acquiring, financing, constructing and maintaining facilities for the improvement, treatment, storage and transmission of potable water, and for the interception, treatment and discharge of wastewater for the City and County. The Authority operates under the terms of a Service Agreement among the Authority, the Albemarle County Service Authority, the City of Charlottesville, and the County of Albemarle which was signed June 12, 1973.

A. Financial Reporting Entity

The Rivanna Water & Sewer Authority was established according to the Agreement mentioned above for the purposes stated. The participating entities are City of Charlottesville, County of Albemarle, and Albemarle County Service Authority. The City of Charlottesville and the Albemarle County Service Authority have an ongoing financial responsibility to the Authority because a covenant to pay the Authority's rates and charges is included in the operating agreement.

The Authority's governing body is comprised of three members appointed by the County, three members appointed by the City, and one member who is jointly appointed by the City and County. Therefore, none of the participants appoints a voting majority of board members.

The Authority is perpetual. No participating government has access to its resources or surpluses, nor is any participant liable for the Authority's debts or deficits. The Authority also has the ability to finance its capital projects through user charges or the sale of revenue bonds.

Based on the above representations, the Rivanna Water & Sewer Authority has been determined to be a joint venture of the City of Charlottesville, County of Albemarle and Albemarle County Service Authority. The Authority is not a component unit of any of the participating governments. There are no component units to be included within the Authority's financial statements.

For purposes of reporting entity disclosure, it should be noted that a separate entity, the Rivanna Solid Waste Authority, provides garbage and refuse transfer and disposal services to the City of Charlottesville and Albemarle County. Although certain administrative employees provide services to both Authorities, each Authority is operationally and legally independent.

B. Basis of Accounting

Rivanna Water & Sewer Authority operates as an enterprise fund, uses the flow of economic resources measurement focus and its accounts are maintained on the accrual basis of accounting. Under this method, revenues are recognized when earned, and expenses are recorded as liabilities when incurred, without regard to receipt or payment of cash. The Authority accrues revenue for services rendered but not yet billed at the end of the fiscal year. The Authority accounts have been audited by an independent firm annually since its founding in accordance with the requirements of the Service Agreement, dated June 12, 1973, among the Authority, the City of Charlottesville, Albemarle County, and Albemarle County Service Authority.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 1–Summary of Significant Accounting Policies: (Continued)

B. Basis of Accounting (Continued)

The Authority distinguishes *operating* revenues and expenses from *nonoperating* items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with the Authority's principal ongoing operations. The principal operating revenues of the Authority are charges to customers for sales and services. Operating expenses include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

C. Accounts Receivable

Accounts receivable are stated at book value utilizing the direct write-off method for immaterial uncollectible accounts.

D. Basic Financial Statements

Since the Authority is only engaged in business-type activities, it is required to present only the financial statements required for enterprise funds. For the Authority, the basic financial statements and required supplementary information consist of:

- Management's discussion and analysis
- Enterprise fund financial statements
 - Statement of Net Position
 - Statement of Revenues, Expenses, and Changes in Net Position
 - Statement of Cash Flows
 - Notes to the Financial Statements
- Required Supplementary Information
 - Schedule of Changes in Net Pension Liability and Related Ratios
 - Schedule of Employer Contributions-Pension Plan
 - Notes to Required Supplementary Information-Pension Plan
 - Schedule of Authority's Share of Net OPEB Liability-Group Life Insurance Plan
 - Schedule of Employer Contributions-Group Life Insurance Plan
 - Notes to Required Supplementary Information-Group Life Insurance Plan

E. Capital Assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, and similar items), are reported in the financial statements. Capital assets are defined by the Authority as assets with an initial, individual cost of more than \$10,000 (amount not rounded) and an estimated useful life in excess of one year. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at acquisition value at the date of donation.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 1—Summary of Significant Accounting Policies: (Continued)

E. Capital Assets (Continued)

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend its useful life are not capitalized.

Major outlays for capital assets and improvements are capitalized as projects are constructed. Interest incurred during the construction phase of capital assets of business-type activities is recognized as an expense when incurred instead of being included in the historical cost of constructed capital assets, pursuant to Governmental Accounting Standards Board (GASB) Statement No. 89, Accounting for Interest Cost Incurred Before the End of a Construction Period.

Property, plant, equipment and infrastructure are depreciated using the straight-line method over the following estimated useful lives:

<u>Assets</u>	<u>Years</u>
Buildings & operating equipment	5 to 50
Trucks & autos	5 to 10
Office equipment	5 to 10
Data processing equipment	5

F. Cash and Cash Equivalents

The Authority's Cash and cash equivalents include cash on hand, amounts in demand deposits as well as short-term investments with a maturity date within three months of the date acquired by the government. For purposes of the statement of cash flows, the Authority considers their demand deposits and all highly liquid investments with an original maturity of three months or less when purchased to be cash equivalents.

G. Investments

Investments with a maturity of less than one year when purchased, non-negotiable certificates of deposit, and other nonparticipating investments (external investment pools) are stated at cost or amortized cost. Investments with a maturity greater than one year when purchased are stated at fair value. Fair value is the price that would be received to sell an investment in an orderly transaction at year end.

H. Budgets and Budgetary Accounting

A budget is prepared for information, fiscal planning purposes, and to provide the basis for setting wholesale rates, in accordance with the requirements of the Service Agreement, dated June 12, 1973, among the Authority, the City of Charlottesville, Albemarle County, and the Albemarle County Service Authority. Rates charged by the six rate centers are not subjected to regulatory scrutiny but may be changed at any time by the Authority's Board of Directors, if necessary, in order to adjust revenues. None of the participating entities are required to approve the budget. The budget is adopted as a planning document and is not a legal control on expenses.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 1—Summary of Significant Accounting Policies: (Continued)

I. Inventory

Consumption of materials and supplies is recorded as an expense when used. No inventory amounts are recorded as an asset, as available inventories are not significant.

J. Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

K. Net Position

The difference between assets and deferred outflows of resources less liabilities and deferred inflows of resources is called net position. Net position is comprised of three components: net investment in capital assets, restricted, and unrestricted.

- Net investment in capital assets consists of capital assets, net of accumulated depreciation and reduced by outstanding balances of bonds, notes, and other debt that are attributable to the acquisition, construction, or improvement of those assets. Deferred outflows of resources and deferred inflows of resources that are attributable to the acquisition, construction, or improvement of those assets or related debt are included in this component of net position.
- Restricted net position consists of restricted assets reduced by liabilities and deferred inflows of resources related to those assets. Assets are reported as restricted when constraints are placed on asset use either by external parties or by law through constitutional provision or enabling legislation.
- Unrestricted net position is the net amount of the assets, deferred outflows of resources, liabilities, and deferred inflows of resources that does not meet the definition of the two preceding categories.

L. Restricted Assets

Certain proceeds of the Authority's revenue bonds and certain resources set aside for their repayment are classified as restricted assets on the statement of net position, because they are maintained in separate bank accounts, and their use is limited by applicable bond covenants. The "revenue bond general operating reserve" is used to report resources set aside to subsidize potential deficiencies from the Authority's operation that could adversely affect debt service payments. The "revenue bond payment account" is used to segregate resources accumulated for debt service payments over the next twelve months. The "debt service reserve" is used to report resources set aside to make up potential future deficiencies in the revenue bond payment account. The "repair and replacement reserve" is used to report resources set aside to meet unexpected contingencies or to fund asset renewals and replacements.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 1—Summary of Significant Accounting Policies: (Continued)

M. Long-Term Obligations

Bond premiums and discounts are amortized over the life of the bonds. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are expensed as incurred.

N. Reclassification

Certain amounts in previously issued financial statements have been restated to conform to the current year's classifications.

O. Deferred Inflows and Outflows of Resources

In addition to assets, the statement of net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense) until then. The Authority has three types of items that qualify for reporting in this category. One type is the deferred charge on refunding reported in the statement of net position. A deferred charge on refunding results from the difference in the carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt. Another type of deferred outflow is comprised of certain items related to the measurement of the net pension liability. It is comprised of contributions to the pension plan made during the current year and subsequent to the net pension liability measurement date, which will be recognized as a reduction of the net pension liability next fiscal year, differences between expected and actual experience, and net difference between projected and actual pension plan earnings. A third type of deferred outflow is related to the Group Life Insurance Plan (GLI OPEB Plan). It consists of employer contributions to the OPEB plan in the current year and subsequent to the OPEB liability measurement date, which will be recognized as a reduction of the net GLI OPEB liability next fiscal year, differences between expected and actual experience, and changes in proportionate share between measurement dates.

In addition to liabilities, the statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The Authority has three types of items that qualify for reporting in this category. Items related to the measurement of the net pension liability that are reported as deferred inflows of resources include differences between expected and actual experience, changes in assumptions, and the net difference between projected and actual earnings on pension plan investments. Deferred inflows of resources related to the measurement of the net GLI OPEB liability include differences between expected and actual experience, the net difference between projected and actual earnings on GLI OPEB plan investments, and changes in assumptions. A third type is the deferred charge on refunding reported in the statement of net position. A deferred charge on refunding results from the difference in the carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt.

For more detailed information regarding deferred outflows and inflows of resources related to the pension plan, refer to Note 8. For more information on those related to the GLI OPEB Plan, refer to Note 12.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 1–Summary of Significant Accounting Policies: (Continued)

P. Net Position Flow Assumption

Sometimes the Authority will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted net position and unrestricted net position in the financial statements, a flow assumption must be made about the order in which the resources are considered to be applied. It is the Authority's policy to consider restricted net position to have been depleted before unrestricted net position is applied.

Q. Pensions

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Authority's Retirement Plan and the additions to/deductions from the Authority's Retirement Plan's net fiduciary position have been determined on the same basis as they were reported by the Virginia Retirement System (VRS). For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

R. Other Postemployment Benefits (OPEB)

Group Life Insurance

For purposes of measuring the net GLI Plan OPEB liability, deferred outflows of resources and deferred inflows of resources related to the GLI OPEB, and GLI OPEB expense, information about the fiduciary net position of the VRS GLI Plan OPEB and the additions to/deductions from the VRS GLI OPEB's net fiduciary position have been determined on the same basis as they were reported by VRS. In addition, benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Note 2–Acquisition of Water and Wastewater Facilities:

Under the terms of the Service Agreement (See Note 1), the Authority agreed to purchase certain water production, transmission and storage facilities and wastewater interception and treatment facilities from the City and the Albemarle County Service Authority. The agreement provides that the sale be consummated ten years from the date of the agreement or at such later time as the debts, if any, attributed to each such facility have been paid or provision is made for their payment, and that the Authority will lease the facility until such time as the sale is consummated. The purchase price is the fair value of the facilities as of June 12, 1973, as determined by all payments paid by the Authority during the term of lease applicable to the principal retired on the debt of such facilities. In accordance with generally accepted accounting principles, the aforementioned agreement has been treated as an installment purchase of the facilities, with the purchase price being discounted at an annual rate of 6% for ten years.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 2—Acquisition of Water and Wastewater Facilities: (Continued)

The following tabulation reflects the agreed upon purchase price and accounting thereof:

Fair value as of June 12, 1973:	
Facilities acquired from City of Charlottesville	\$ 6,128,124
Facilities acquired from Albemarle County Service Authority	<u>3,604,384</u>
Total purchase price	\$ 9,732,508
Add: Interest portion of rental payments not applied to principal reduction	<u>1,154,074</u>
Total contracts payable	\$ 10,886,582
Less: Interest included in contract price computed at annual rate of 6% for 10 years	<u>4,940,705</u>
Asset carrying value	\$ <u><u>5,945,877</u></u>

The contracts payable have been reduced by the amount of the annual rental payments on the facilities as outlined in the following tabulation:

	<u>City of Charlottesville</u>	<u>Albemarle County Service Authority</u>
Contracts payable, June 12, 1973	\$ <u>6,354,634</u>	\$ <u>4,531,948</u>
Rental payments and contract adjustments in prior fiscal years	\$ <u>1,760,676</u>	\$ <u>3,680,395</u>
Total rental payments	\$ <u>1,760,676</u>	\$ <u>3,680,395</u>
Final payment on facilities with no outstanding debt as of June 30, 1983	<u>4,593,958</u>	<u>851,553</u>
Total payments	\$ <u><u>6,354,634</u></u>	\$ <u><u>4,531,948</u></u>
Contracts payable, June 30, 2020	\$ <u><u>-</u></u>	\$ <u><u>-</u></u>

The total annual rental payments over the initial ten-year agreement were not sufficient to retire the contracts payable to the Albemarle County Service Authority. The deferred interest was amortized over the initial ten-year period of the agreement and was fully amortized as of June 30, 1983.

Depreciation has been based upon the engineer's estimates of useful lives remaining as of the valuation date (June 12, 1973). Depreciation expense on these facilities amounted to \$52,211 and \$52,658 for the years ended June 30, 2020 and 2019, respectively.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 3—Deposits and Investments:

Deposits

Deposits with banks are covered by the Federal Deposit Insurance Corporation (FDIC) and collateralized in accordance with the Virginia Security for Public Deposits Act (the “Act”) Section 2.2-4400 et. seq. of the Code of Virginia. Under the Act, banks and savings institutions holding public deposits in excess of the amount insured by the FDIC must pledge collateral to the Commonwealth of Virginia Treasury Board. Financial Institutions may choose between two collateralization methodologies and depending upon that choice, will pledge collateral that ranges in the amounts from 50% to 130% of excess deposits. Accordingly, all deposits are considered fully collateralized.

Investments

Statutes authorize local governments and other public bodies to invest in obligations of the United States or agencies thereof, obligations of the Commonwealth of Virginia or political subdivisions thereof, obligations of the International Bank for Reconstruction and Development (World Bank), the Asian Development Bank, the African Development Bank, “prime quality” commercial paper that has received at least two of the following ratings: P-1 by Moody’s Investors Service, Inc.; A-1 by Standard and Poor’s; or F1 by Fitch Ratings, Inc. (Section 2.2-4502), banker’s acceptances, repurchase agreements, and the State Treasurer’s Local Government Investment Pool (LGIP).

The Authority does not have a formal investment policy that addresses credit risk or interest rate risk.

Credit Risk of Debt Securities

The Authority’s rated debt investments as of June 30, 2020 and 2019 were rated by Standard & Poor’s and the ratings are presented below using Standard & Poor’s rating scale.

Authority's Rated Debt Investments' Values - 2020				
Rated Debt Investments	Fair Quality Ratings			
	AAAm	AA+	AA+f	
U.S. Agencies Securities	\$ 1,765	\$ -	\$ -	
Local Government Investment Pool	18,137,485	-	-	
VML/VACo Virginia Investment Pool	10,540,185	-	-	
Virginia State Non-Arbitrage Pool	25,617,468	-	-	
U.S. Treasury Notes & Bonds	-	2,049,770	-	
U.S. Treasury & Agency Money Market Funds	7,386,976	-	-	
Total	\$ 61,683,879	\$ 2,049,770	\$ -	
Authority's Rated Debt Investments' Values - 2019				
Rated Debt Investments	Fair Quality Ratings			
	AAAm	AA+	AA+f	
U.S. Agencies Securities	\$ 2,454	\$ -	\$ -	
Local Government Investment Pool	19,759,341	-	-	
VML/VACo Virginia Investment Pool	10,368,384	-	-	
Virginia State Non-Arbitrage Pool	31,412,579	-	-	
U.S. Treasury Notes & Bonds	-	1,995,240	-	
U.S. Treasury & Agency Money Market Funds	7,118,324	-	-	
Total	\$ 68,661,082	\$ 1,995,240	\$ -	

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 3—Deposits and Investments: (Continued)

Interest Rate Risk

Investment Maturities (in years) - 2020

Investment Type	Fair Value	Less Than 1 Year	1-5 Years	6-10 Years
U.S. Agencies Securities	\$ 1,765	\$ -	\$ 1,765	\$ -
Local Government Investment Pool	18,137,485	18,137,485	-	-
VML/VACo Virginia Investment Pool	10,540,185	10,540,185	-	-
Virginia State Non-Arbitrage Pool	25,617,468	25,617,468	-	-
U.S. Treasury & Agency Money Market Funds	7,386,976	7,386,976	-	-
U.S. Treasury Notes & Bonds	2,049,770	-	2,049,770	-
Total	\$ 63,733,649	\$ 61,682,114	\$ 2,051,535	\$ -

Investment Maturities (in years) - 2019

Investment Type	Fair Value	Less Than 1 Year	1-5 Years	6-10 Years
U.S. Agencies Securities	\$ 2,454	\$ -	\$ 2,454	\$ -
Local Government Investment Pool	19,759,341	19,759,341	-	-
VML/VACo Virginia Investment Pool	10,368,384	10,368,384	-	-
Virginia State Non-Arbitrage Pool	31,412,579	31,412,579	-	-
U.S. Treasury & Agency Money Market Funds	7,118,324	7,118,324	-	-
U.S. Treasury Notes & Bonds	1,995,240	-	1,995,240	-
Total	\$ 70,656,322	\$ 68,658,628	\$ 1,997,694	\$ -

External Investment Pools

The Authority invests in the Virginia Investment Pool ("VIP") which is sponsored by VML/VACo Finance and is professionally managed under the governance of the VIP Board of Trustees. The VIP investment strategy is to preserve capital, and it only invests in instruments allowable by the Code of Virginia. The Authority owns shares of the VIP and not the underlying instruments held by the VIP.

The fair value of the positions in the external investment pools (Local Government Investment Pool, State Non-Arbitrage Pool) is the same as the value of the pool shares. As LGIP and SNAP are not SEC registered, regulatory oversight of the pools rest with the Virginia State Treasury. LGIP and SNAP are amortized cost basis portfolios. There are no withdrawal limitations or restrictions imposed on participants in LGIP and SNAP. The VML/VACo Virginia Investment Pool has a limit of two withdrawals per month.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 4—Capital Assets:

Details of changes in capital assets for the year ended June 30, 2020 are as follows:

	Balance July 1, 2019	Increases	Decreases	Balance June 30, 2020
Capital assets not being depreciated:				
Land and improvements	\$ 12,310,763	\$ -	\$ -	\$ 12,310,763
Construction in progress	8,463,765	11,130,249	4,191,965	15,402,049
Total capital assets not being depreciated	<u>\$ 20,774,528</u>	<u>\$ 11,130,249</u>	<u>\$ 4,191,965</u>	<u>\$ 27,712,812</u>
Other capital assets:				
Buildings and operating equipment	\$ 348,680,424	\$ 4,127,327	\$ -	\$ 352,807,751
Accumulated depreciation	<u>(91,899,373)</u>	<u>(7,263,350)</u>	<u>-</u>	<u>(99,162,723)</u>
Buildings and operating equipment, net	<u>\$ 256,781,051</u>	<u>\$ (3,136,023)</u>	<u>\$ -</u>	<u>\$ 253,645,028</u>
Trucks and autos	\$ 1,605,502	\$ 47,333	\$ 120,064	\$ 1,532,771
Accumulated depreciation	<u>(1,086,211)</u>	<u>(64,020)</u>	<u>(117,808)</u>	<u>(1,032,423)</u>
Trucks and autos, net	<u>\$ 519,291</u>	<u>\$ (16,687)</u>	<u>\$ 2,256</u>	<u>\$ 500,348</u>
Office equipment	\$ 106,760	\$ -	\$ 5,429	\$ 101,331
Accumulated depreciation	<u>(95,095)</u>	<u>(2,872)</u>	<u>(5,429)</u>	<u>(92,538)</u>
Office equipment, net	<u>\$ 11,665</u>	<u>\$ (2,872)</u>	<u>\$ -</u>	<u>\$ 8,793</u>
Total other capital assets, net	<u>\$ 257,312,007</u>	<u>\$ (3,155,582)</u>	<u>\$ 2,256</u>	<u>\$ 254,154,169</u>
Total capital assets, net	<u><u>\$ 278,086,535</u></u>	<u><u>\$ 7,974,667</u></u>	<u><u>\$ 4,194,221</u></u>	<u><u>\$ 281,866,981</u></u>

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 4—Capital Assets: (Continued)

Details of changes in capital assets for the year ended June 30, 2019 are as follows:

	Balance July 1, 2018	Increases	Decreases	Balance June 30, 2019
Capital assets not being depreciated:				
Land and improvements	\$ 10,604,850	\$ 1,705,913	\$ -	\$ 12,310,763
Construction in progress	54,148,987	8,902,194	54,587,416	8,463,765
Total capital assets not being depreciated	\$ 64,753,837	\$ 10,608,107	\$ 54,587,416	\$ 20,774,528
Other capital assets:				
Buildings and operating equipment	\$ 297,335,818	\$ 53,203,439	\$ 1,858,833	\$ 348,680,424
Accumulated depreciation	(87,017,932)	(6,719,629)	(1,838,188)	(91,899,373)
Buildings and operating equipment, net	\$ 210,317,886	\$ 46,483,810	\$ 20,645	\$ 256,781,051
Trucks and autos	\$ 1,281,934	\$ 403,293	\$ 79,725	\$ 1,605,502
Accumulated depreciation	(1,081,797)	(84,139)	(79,725)	(1,086,211)
Trucks and autos, net	\$ 200,137	\$ 319,154	\$ -	\$ 519,291
Office equipment	\$ 93,659	\$ 13,101	\$ -	\$ 106,760
Accumulated depreciation	(92,658)	(2,437)	-	(95,095)
Office equipment, net	\$ 1,001	\$ 10,664	\$ -	\$ 11,665
Total other capital assets, net	\$ 210,519,024	\$ 46,813,628	\$ 20,645	\$ 257,312,007
Total capital assets, net	\$ 275,272,861	\$ 57,421,735	\$ 54,608,061	\$ 278,086,535

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements At June 30, 2020 and 2019 (Continued)

Note 5—Construction in Progress:

Details of construction in progress for the year ended June 30, 2020 are as follows:

	Balance July 1, 2019	Cost of Construction	Expense/ Transfer to Capital Assets	Balance June 30, 2020
S. Rivanna Reservoir to Ragged Mtn. Reservoir				
Water Line R/W	\$ 301,054	\$ 650,459	\$ -	\$ 951,513
Birdwood Golf Course Waterline	2,714,728	334,679	3,049,407	-
Observatory WTP Improvements	618,880	868,706	-	1,487,586
SH Dam-Rubber Crest Gate Replacement	-	66,360	-	66,360
Valve Repair-Replacement (Phase 2)	154,219	760,244	-	914,463
Piney Mountain Tank Rehabilitation	88,585	397,927	486,512	-
*Central Water Line	137,749	-	-	137,749
Water Demand Projection and Safe Yield Study	79,106	85,933	165,039	-
Airport Rd. Pump Stn. & N. Rivanna Transmission Main	-	108,099	-	108,099
Finished Water System Master Plan	20,307	118,897	-	139,204
South Fork Rivanna Hydropower Plant Decommissioning	127,081	8,986	-	136,067
S. Rivanna WTP Improvements	619,031	1,228,296	-	1,847,327
South Rivanna Dam-Gate Repair	-	49,981	-	49,981
North Rivanna WTP-Upgrade	-	2,130	-	2,130
Beaver Creek Dam Alteration	279,288	14,027	-	293,315
*Buck's Elbow Ground Storage Tank Chlorination System	6,643	212,978	219,621	-
Crozet WTP Expansion	1,238,717	4,327,361	-	5,566,078
*New Raw Water Pump Station & Intake (BCR)	8,846	120,936	-	129,782
Scottsville WTP Finished Water Flow Meter	12,128	119,851	131,979	-
Scottsville Water LT2 Improvements	-	21,582	-	21,582
Schenks Branch Interceptor	11,187	39,600	-	50,787
*Interceptor Sewer & Manhole Repair-Phase 1	268,367	200,170	-	468,537
Crozet Interceptor	181,975	68,248	-	250,223
Crozet Flow Equalization Tank	255,319	98,837	-	354,156
Albemarle Berkley PS-Basin Demolition	-	30,128	-	30,128
Crozet PS 1,2,3 Rehabilitation	-	15,582	-	15,582
Moore's Creek AWWRF Odor Control-Phase 2	1,000,530	258,360	-	1,258,890
Moore's Creek Digester Sludge Storage Improvements	-	15,450	-	15,450
Aluminum Slide Gate Replacement	6,854	18,418	-	25,272
MCAWWRF Master Plan	-	157,177	-	157,177
Scottsville Air Control Improvements	-	11,650	-	11,650
Glenmore Secondary Clarifier Coating	1,100	138,307	139,407	-
Radio Upgrades	75,352	55,390	-	130,742
Asset Management	92,285	90,784	-	183,069
Security Enhancements	-	203,489	-	203,489
IT Master Plan-Software	-	55,871	-	55,871
Retainage on Construction in Progress	164,434	175,356	-	339,790
Total	\$ 8,463,765	\$ 11,130,249	\$ 4,191,965	\$ 15,402,049

*Note: Project name changed

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements

At June 30, 2020 and 2019 (Continued)

Note 5—Construction in Progress: (Continued)

Details of construction in progress for the year ended June 30, 2019 are as follows:

	Balance July 1, 2018	Cost of Construction	Expense/ Transfer to Capital Assets	Balance June 30, 2019
S. Rivanna Reservoir to Ragged Mtn. Reservoir Water Line R/W	\$ 123,782	\$ 177,272	\$ -	\$ 301,054
Birdwood Golf Course Waterline	-	2,714,728	-	2,714,728
Observatory WTP Improvements	1,154,558	506,520	1,042,198	618,880
Interconnect Lower SH and RM Raw Water Mains	8,076	-	8,076	-
Sugar Hollow to Ragged Mtn Res Transfer Flow Meter	15,311	466,738	482,049	-
Route 29 Pumping Station Site Acquisition	1,042,168	663,745	1,705,913	-
Valve Repair-Replacement (Phase 2)	-	154,219	-	154,219
Urban Water GAC/Water Treatment Plant Improvements	24,089,122	188,019	24,277,141	-
Wholesale Water Master Metering-Urban	2,679,816	558,174	3,237,990	-
Piney Mountain Tank Rehabilitation	51,185	37,400	-	88,585
Avon to Pantops Water Main	126,861	10,888	-	137,749
Water Demand Projection and Safe Yield Study	-	79,106	-	79,106
Finished Water System Master Plan	-	20,307	-	20,307
South Rivanna Hydropower Plant Decommissioning	98,625	28,456	-	127,081
South Rivanna WTP Improvements	46,891	572,140	-	619,031
Beaver Creek Dam Alterations	191,871	87,417	-	279,288
Crozet Water GAC/Water Treatment Plant Improvements	3,250,630	16,505	3,267,135	-
Buck's Elbow & Crozet Waterball Tank Painting	-	6,643	-	6,643
Crozet WTP Expansion	510,377	728,340	-	1,238,717
Crozet WTP Finished Water Pump Station	2,067,760	203,814	2,271,574	-
Crozet Drinking Water Infrastructure Plan	245,223	52,041	297,264	-
New Raw Water PS & Intake, Oxygenation (BCR)	-	8,846	-	8,846
Scottsville Water Granular Activated Carbon	1,569,384	8,130	1,577,514	-
Scottsville WTP Finished Water Flow Meter	-	12,128	-	12,128
Schenks Branch Interceptor	11,187	-	-	11,187
Interceptor Sewer & Manhole Repair	176,434	91,933	-	268,367
Crozet Interceptor	181,725	250	-	181,975
Crozet Flow Equalization Tank	80,092	175,227	-	255,319
Crozet Interceptor PS Bypass Isolation Valves	18,334	415,760	434,094	-
Moore's Creek Bridge Repairs	261,198	18,270	279,468	-
Moore's Creek AWWRF Odor Control-Phase 2	9,151,666	727,096	8,878,232	1,000,530
MCAWRRF Roof Replacements	809,424	166,796	976,220	-
MCAWRRF Second Centrifuge	1,154,719	136,414	1,291,133	-
Aluminum Slide Gate Replacement	-	6,854	-	6,854
Glenmore Secondary Clarifier Coating	-	1,100	-	1,100
Radio Upgrades	28,337	47,015	-	75,352
Asset Management	-	92,285	-	92,285
Capitalized Interest	4,561,415	-	4,561,415	-
Retainage on Construction in Progress	442,816	(278,382)	-	164,434
Total	\$ 54,148,987	\$ 8,902,194	\$ 54,587,416	\$ 8,463,765

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 6—Long-Term Obligations:

A. Changes in Long-Term Obligations

The following is a summary of long-term obligation transactions for the year ended June 30, 2020:

	<u>Balance July 1, 2019</u>	<u>Issuances</u>	<u>Retirements</u>	<u>Balance June 30, 2020</u>	<u>Due Within One Year</u>
Revenue bonds payable					
Public offerings	\$ 22,715,000	\$ -	\$ (650,000)	\$ 22,065,000	\$ 670,000
Direct borrowings and direct placements	<u>167,576,452</u>	<u>17,610,000</u>	<u>(22,930,510)</u>	<u>162,255,942</u>	<u>7,485,577</u>
Subtotal	\$ 190,291,452	\$ 17,610,000	\$ (23,580,510)	\$ 184,320,942	\$ 8,155,577
Add (less) amounts:					
For issuance premiums (discounts)	<u>9,832,038</u>	<u>(33,492)</u>	<u>(2,782,352)</u>	<u>7,016,194</u>	<u>-</u>
Total revenue bonds	\$ 200,123,490	\$ 17,576,508	\$ (26,362,862)	\$ 191,337,136	\$ 8,155,577
VERIP liability	583,922	80,965	(174,093)	490,794	178,972
Compensated absences	429,107	419,435	(356,824)	491,718	377,000
Net OPEB liability	389,000	128,424	(88,476)	428,948	-
Net pension liability	<u>2,570,815</u>	<u>2,703,740</u>	<u>(1,949,027)</u>	<u>3,325,528</u>	<u>-</u>
Totals	<u>\$ 204,096,334</u>	<u>\$ 20,909,072</u>	<u>\$ (28,931,282)</u>	<u>\$ 196,074,124</u>	<u>\$ 8,711,549</u>

The following is a summary of long-term obligation transactions for the year ended June 30, 2019:

	<u>Balance July 1, 2018</u>	<u>Issuances</u>	<u>Retirements</u>	<u>Balance June 30, 2019</u>	<u>Due Within One Year</u>
Revenue bonds payable					
Public offerings	\$ 23,345,000	\$ -	\$ (630,000)	\$ 22,715,000	\$ 650,000
Direct borrowings and direct placements	<u>137,108,980</u>	<u>36,855,000</u>	<u>(6,387,528)</u>	<u>167,576,452</u>	<u>7,075,510</u>
Subtotal	\$ 160,453,980	\$ 36,855,000	\$ (7,017,528)	\$ 190,291,452	\$ 7,725,510
Add (less) amounts:					
For issuance premiums (discounts)	<u>7,442,218</u>	<u>2,930,097</u>	<u>(540,277)</u>	<u>9,832,038</u>	<u>-</u>
Total revenue bonds	\$ 167,896,198	\$ 39,785,097	\$ (7,557,805)	\$ 200,123,490	\$ 7,725,510
VERIP liability	487,926	219,748	(123,752)	583,922	174,093
Compensated absences	438,227	340,860	(349,980)	429,107	377,000
Net OPEB liability	376,000	82,000	(69,000)	389,000	-
Net pension liability	<u>2,923,583</u>	<u>1,929,171</u>	<u>(2,281,939)</u>	<u>2,570,815</u>	<u>-</u>
Totals	<u>\$ 172,121,934</u>	<u>\$ 42,356,876</u>	<u>\$ (10,382,476)</u>	<u>\$ 204,096,334</u>	<u>\$ 8,276,603</u>

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 6—Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations

All of the Authority's bond issues are direct placements with Virginia Resources Authority or with private banks with the exception of Series 2012B, which is a public offering. All bonds are issued in parity with one another under the 1979 Master Trust Agreement. The trust agreement does not specifically identify fixed amounts to be paid in the event of default. The Authority has no unused lines of credit, and none of its assets are pledged as collateral for any of its debt. There are no terms specified in any of the Authority's debt agreements related to significant (a) events of default with finance-related consequences, (b) termination events with finance-related consequences, or (c) subjective acceleration clauses.

	<u>Total Amount</u>	<u>Amount Due Within One Year</u>
<u>Revenue Bonds</u>		
<u>Public Offerings</u>		
\$26,240,000 Water and Sewer System Revenue and Refunding Bonds, Series 2012B - On October 30, 2012, the Authority issued \$26,240,000 in Revenue and Refunding Bonds for purposes of financing various water and sewer capital projects including the design, development and construction of a new dam; the implementation of wetlands and streambank mitigation plans and costs of issuance. The bonds were issued at a premium in the amount of \$646,250.		
The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from April 1, 2013 through October 1, 2042. The bonds bear interest at an annual rate ranging from 2.125% to 4.0%. Total payments due each year range from \$1,337,000 to \$1,342,000. The bonds are subject to federal arbitrage regulations.	\$ 22,065,000	\$ 670,000

Direct Borrowings and Direct Placements

Water and Sewer System Revenue Bonds - Series of 2005A - On November 10, 2005, the Authority issued \$2,340,929 in bonds for purposes of financing the Moores Creek wastewater pre-treatment project. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that these obligations will be repaid from revenue generated by the Authority and are backed by a restricted cash account.

The bond resolution provides a redemption schedule with an interest only payment due in April 2007 and semi-annual payments of principal and interest of \$79,670 from October 2007 through October 2026. The bonds bear interest at 3%.

\$ 934,647 \$ 132,285

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 6—Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	<u>Total Amount</u>	<u>Amount Due Within One Year</u>
<u>Revenue Bonds (Continued)</u>		
<u>Direct Borrowings and Direct Placements (Continued)</u>		
\$24,000,000 Regional Water and Sewer System Revenue Bond - Series 2009A - On August 1, 2009 the Authority issued \$24,000,000 in bonds for purposes of financing the Moores Creek Wastewater Treatment Plant upgrades, including the Enhanced Nutrient Removal project. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account.		
The bond resolution provided a redemption schedule with an interest only payment due in April 2011 and semi-annual payments of principal and 3.35% interest of \$843,077 from October 2011 through October 2030. The interest rate was reduced to 2.65% on October 1, 2014, which reduced the semi-annual payments to \$802,099.	\$ 14,619,868	\$ 1,224,834
\$15,179,718 Regional Water and Sewer System Revenue Bond - Series 2010A - On June 29, 2010 the Authority issued \$15,179,718 in bonds for purposes of financing the acquisition, construction and equipping of improvements to the Authority's water and sewer system, including the replacement of the Meadow Creek Sanitary Sewer Interceptor together with related expenses. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account.		
The bond resolution provided a redemption schedule with an interest only payment due in April 2012 and semi-annual payments of principal and 2.93% interest of \$513,715 from October 2012 through October 2030. Effective October 1, 2016, the interest rate was reduced to 2.05%, reducing semi-annual payments to \$481,261.	9,051,281	780,952

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 6—Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	<u>Total Amount</u>	<u>Amount Due Within One Year</u>
<u>Revenue Bonds (Continued)</u>		
<u>Direct Borrowings and Direct Placements (Continued)</u>		
<p>\$6,982,662 Regional Water and Sewer System Revenue Bond - Series 2011A - On March 17, 2011 the Authority issued \$6,982,662 in bonds for purposes of financing the acquisition, construction and equipping of improvements to the Authority's sewer system including improvements necessary to address the wet weather flows at the Moores Creek Wastewater Treatment Plant. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account.</p> <p>The bond resolution provides a redemption schedule with an interest only payment due in April 2012 and semi-annual payments of principal and 2.93% interest of \$236,308 from October 2012 through October 2031. Effective October 1, 2016, the interest rate was reduced to 2.05%, reducing semi-annual payments to \$221,804.</p>	\$ 4,524,226	\$ 352,660
<p>\$1,017,338 Regional Water and Sewer System Revenue Bond - Series 2011B - On March 17, 2011 the Authority issued \$1,017,338 in bonds for purposes of financing the acquisition, construction and equipping of improvements to the Authority's sewer system including improvements necessary to address the wet weather flows at the Moores Creek Wastewater Treatment Plant. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account.</p> <p>The bond resolution provided a redemption schedule with an interest only payment due in April 2012 and semi-annual payments of principal and 2.93% interest of \$34,429 from October 2012 through October 2031. The interest rate was reduced to 2.05% as of October 1, 2016, reducing semi-annual payments to \$31,666.</p>	645,899	50,347

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 6—Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	<u>Total Amount</u>	<u>Amount Due Within One Year</u>
<u>Revenue Bonds (Continued)</u>		
<u>Direct Borrowings and Direct Placements (Continued)</u>		
\$4,241,488 Regional Water and Sewer System Revenue Bond - Series 2011D - On September 9, 2011 the Authority issued \$4,241,488 in bonds for purposes of financing the acquisition, construction and equipping of improvements to the Authority's water and sewer system. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account. The bond resolution provided a redemption schedule with an interest only payment due in October 2012 and semi-annual payments of principal and 2.93% interest of \$143,541 from April 2013 through April 2032. The interest rate was reduced to 2.05% effective October 1, 2016, and the semi-annual payments were reduced to \$134,475.	\$ 2,848,218	\$ 211,640
\$443,937 Regional Water and Sewer System Revenue Bond - Series 2011E - On September 9, 2011 the Authority issued \$443,937 in bonds for purposes of financing the acquisition, construction and equipping of improvements to the Authority's water and sewer system. These bonds are secured by a supplemental trust agreement between the Authority and trustee for the bondholders. This agreement states that the obligation will be repaid from revenue generated by the Authority and is backed by a restricted cash account. The bond resolution provided a redemption schedule with an interest only payment due in October 2012 and semi-annual payments of principal and interest of \$15,024 from April 2013 through April 2032. The interest rate was reduced to 2.05% effective October 1, 2016, and the semi-annual payments were reduced to \$13,997.	296,467	22,029

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 6—Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	<u>Total Amount</u>	<u>Amount Due Within One Year</u>
<u>Revenue Bonds (Continued)</u>		
<u>Direct Borrowings and Direct Placements (Continued)</u>		
\$25,100,000 Water and Sewer System Revenue and Refunding Bonds, Series 2012A - On June 13, 2012, the Authority issued \$25,100,000 in Revenue and Refunding Bonds for purposes of financing various water and sewer capital projects and to refund Series 2001 bond with an outstanding amount of \$5,490,000 and Series 2003 bond with an outstanding amount of \$4,827,000. The bonds were issued at a premium in the amount of \$3,706,939.		
The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from October 1, 2012 through October 1, 2042. The bonds bear interest at an annual rate ranging from 2.125% to 5.125%. The Authority refunded the 2001 and 2003 Series bonds to reduce its total debt service payments over the next 13 years by \$4.93 million and to obtain a net economic gain (difference between the present values of the debt service payments on the old and new debt) of \$1,079,384 after applying existing reserve funds of \$3.55 million.		
On November 20, 2019, the Authority issued Bond Series 2019 to refund \$15,855,000 of Bond Series 2012A. Annual principal payments of \$630,000 to \$685,000 and semiannual interest payments are due through October 1, 2022.	\$ 1,970,000	\$ 630,000
\$29,043,290 Water and Sewer Revenue Bonds, Series 2014A - On March 28, 2014, the Authority issued \$29,043,290 in revenue bonds for purposes of financing capital improvements and capacity upgrades of the Rivanna Interceptor and pump station at Moores Creek Wastewater Treatment Plant.		
The bond resolution provides a redemption schedule with interest and principal of \$941,168 due semi-annually from April 1, 2017 through April 1, 2036. An interest only payment is due on October 1, 2016. The bonds bear interest at an annual rate of 2.45%.	24,700,501	1,284,996

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 6—Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	<u>Total Amount</u>	<u>Amount Due Within One Year</u>
<u>Revenue Bonds (Continued)</u>		
<u>Direct Borrowings and Direct Placements (Continued)</u>		
\$1,189,672 Water and Sewer Revenue Bonds, Series 2015A - On June 17, 2015, the Authority issued \$1,189,672 in revenue bonds for purposes of financing capital improvements including replacing the final phase of the Schenks Branch Interceptor.		
The bond resolution provides a redemption schedule with an interest payment due October 1, 2016 and interest and principal payments of \$35,296 due semi-annually from April 1, 2017 through April 1, 2036. The bonds bear interest at an annual rate of 1.5%.	\$ 997,835	\$ 55,834
\$44,495,000 Taxable Water and Sewer System Revenue and Refunding Bonds, Series 2015B - On November 18, 2015, the Authority issued \$44,495,000 in Revenue and Refunding Bonds for purposes of financing various water capital projects and to refund Series 2005B bond with an outstanding amount of \$20,455,000. The bonds were issued at a premium in the amount of \$5,329,294.		
The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from April 1, 2016 through October 1, 2045 for total payments of \$1.7 to \$3.3 million per year. The bonds bear interest at an annual rate ranging from 3.094% to 5.125%. The Authority refunded the 2005B Series bonds to reduce its total debt service payments over the next 20 years by \$4.45 million and to obtain a net economic gain (difference between the present values of the debt service payments on the old and new debt) of \$3.51 million.	38,980,000	1,545,000
\$10,000,000 Taxable Regional Water and Sewer Revenue Bonds, Series 2016 - On December 8, 2016, the Authority issued \$10,000,000 in revenue bonds for purposes of financing various capital improvements.		
The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from April 1, 2017 through October 1, 2036. The bonds bear interest at an annual rate of 2.35%. Total debt service payments are approximately \$627,000 per year.	8,782,000	425,000

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 6—Long-Term Obligations: (Continued)

B. Details of Long-Term Obligations (Continued)

	<u>Total Amount</u>	<u>Amount Due Within One Year</u>
<u>Revenue Bonds (Continued)</u>		
<u>Direct Borrowings and Direct Placements (Continued)</u>		
\$36,855,000 Taxable Regional Water and Sewer Revenue Bonds, Series 2018 - On November 14, 2018 the Authority issued \$36,855,000 in revenue bonds for purposes of financing various capital improvements.		
The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from April 1, 2019 through October 1, 2048. The bonds bear interest at a variable annual rate of 4.125% to 5.125%. Total debt service payments are approximately \$2.26 million per year. The bonds were issued at a premium in the amount of \$2,389,821.	\$ 36,295,000	\$ 590,000
\$17,610,000 Taxable Water and Sewer System Revenue and Refunding Bonds, Series 2019 - On November 20, 2019, the Authority issued \$17,610,000 in Revenue and Refunding Bonds for purpose of partially refunding Series 2012A. The bonds were issued at a discount in the amount of \$33,492.		
The bond resolution provides a redemption schedule with interest due semi-annually and principal due annually from April 1, 2020 through October 1, 2042 for total payments of \$0.7 to \$1.4 million per year. The bonds bear interest at an annual rate ranging from 1.952% to 3.424%. The Authority refunded \$15,855,000 of the 2012A Series bonds to reduce its total debt service payments over the next 20 years by \$2.28 million and to obtain a net economic gain (difference between the present values of the debt service payments on the old and new debt) of \$1.64 million.	17,610,000	180,000
Total Revenue Bonds	\$ 184,320,942	\$ 8,155,577
Issuance premiums (discounts)	7,016,194	-
VERIP liability	490,794	178,972
Compensated absences	491,718	377,000
Net OPEB liability	428,948	-
Net pension liability	3,325,528	-
Total	\$ 196,074,124	\$ 8,711,549

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 6—Long-Term Obligations: (Continued)

C. Annual Amortization of Long-Term Debt

The annual requirements to amortize all long-term debt outstanding as of June 30, 2020 are as follows:

Year Ending June 30,	Revenue Bonds			
	Direct Borrowings and Direct Placements		Public Offerings	
	Interest	Principal	Interest	Principal
2021	\$ 5,555,987	\$ 7,485,577	\$ 668,656	\$ 670,000
2022	5,312,339	7,723,975	644,706	695,000
2023	5,049,282	7,990,760	616,306	725,000
2024	4,783,303	8,258,992	586,706	755,000
2025	4,516,210	8,525,730	563,372	775,000
2026-2030	18,498,024	43,851,452	2,519,019	4,185,000
2031-2035	12,626,640	29,707,778	1,877,600	4,820,000
2036-2040	8,279,454	20,146,678	1,084,175	5,610,000
2041-2045	4,383,839	18,705,000	189,475	3,830,000
2046-2049	855,931	9,860,000	-	-
Total	\$ <u>69,861,009</u>	\$ <u>162,255,942</u>	\$ <u>8,750,015</u>	\$ <u>22,065,000</u>

D. Prior Year Defeasance of Debt

In prior years, the Authority defeased certain revenue bonds by placing the proceeds of new bonds in an irrevocable trust to provide for all future debt service payments on the old bonds. Accordingly, the trust account assets and the liability for the defeased bonds are not included in the Authority's financial statements.

Note 7—Compensated Absences:

Authority employees earn vacation leave each month at a scheduled rate in accordance with the years of service and sick leave at the rate of eight hours per month. Accumulated unpaid vacation leave amounts are accrued when incurred. At June 30, 2020 and 2019, the liability for accrued vacation leave was \$491,718 and \$429,107, respectively.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 8—Pension Plan:

Plan Description

All full-time, salaried permanent employees of the Authority are automatically covered by a VRS Retirement Plan upon employment. This is an agent multiple-employer plan administered by the Virginia Retirement System (the System) along with plans for other employer groups in the Commonwealth of Virginia. Members earn one month of service credit for each month they are employed and for which they and their employer pay contributions to VRS. Members are eligible to purchase prior service, based on specific criteria as defined in the Code of Virginia, as amended. Eligible prior service that may be purchased includes prior public service, active military service, certain periods of leave, and previously refunded service.

Benefit Structures

The System administers three different benefit structures for covered employees – Plan 1, Plan 2 and Hybrid. Each of these benefit structures has different eligibility criteria, as detailed below.

- a. Employees hired before July 1, 2010, vested as of January 1, 2013, and have not taken a refund, are covered under Plan 1, a defined benefit plan. Non-hazardous duty employees are eligible for an unreduced retirement benefit beginning at age 65 with at least 5 years of service credit or age 50 with at least 30 years of service credit. Non-hazardous duty employees may retire with a reduced benefit as early as age 55 with at least 5 years of service credit or age 50 with at least 10 years of service credit.
- b. Employees hired on or after July 1, 2010, or their membership date is before July 1, 2010, and they were not vested as of January 1, 2013 are covered under Plan 2, a defined benefit plan. Non-hazardous duty employees are eligible for an unreduced benefit beginning at their normal social security retirement age with at least 5 years of service credit or when the sum of their age plus service credit equals 90. Non-hazardous duty employees may retire with a reduced benefit as early as age 60 with at least 5 years of service credit.
- c. Non-hazardous duty employees hired on or after January 1, 2014 are covered by the Hybrid Plan combining the features of a defined benefit plan and a defined contribution plan. Plan 1 and Plan 2 members also had the option of opting into this plan during the election window held January 1 – April 30, 2014 with an effective date of July 1, 2014. Employees covered by this plan are eligible for an unreduced benefit beginning at their normal social security retirement age with at least 5 years of service credit, or when the sum of their age plus service credit equals 90. Employees may retire with a reduced benefit as early as age 60 with at least 5 years of service credit. For the defined contribution component, members are eligible to receive distributions upon leaving employment, subject to restrictions.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 8—Pension Plan: (Continued)

Average Final Compensation and Service Retirement Multiplier

The VRS defined benefit is a lifetime monthly benefit based on a retirement multiplier as a percentage of the employee's average final compensation multiplied by the employee's total service credit. Under Plan 1, average final compensation is the average of the employee's 36 consecutive months of highest compensation and the multiplier is 1.70% for non-hazardous duty employees. Under Plan 2, average final compensation is the average of the employee's 60 consecutive months of highest compensation and the retirement multiplier is 1.65% for non-hazardous duty employees. Under the Hybrid Plan, average final compensation is the average of the employee's 60 consecutive months of highest compensation and the multiplier is 1.00%. For members who opted into the Hybrid Retirement Plan from Plan 1 or Plan 2, the applicable multipliers for those plans will be used to calculate the retirement benefit for service credited in those plans.

Cost-of-Living Adjustment (COLA) in Retirement and Death and Disability Benefits

Retirees with an unreduced benefit or with a reduced benefit with at least 20 years of service credit are eligible for an annual COLA beginning July 1 after one full calendar year from the retirement date. Retirees with a reduced benefit and who have less than 20 years of service credit are eligible for an annual COLA beginning on July 1 after one calendar year following the unreduced retirement eligibility date. Under Plan 1, the COLA cannot exceed 5.00%. Under Plan 2 and the Hybrid Plan, the COLA cannot exceed 3.00%. The VRS also provides death and disability benefits. Title 51.1 of the Code of Virginia as amended, assigns the authority to establish and amend benefit provisions to the General Assembly of Virginia.

Employees Covered by Benefit Terms

As of the June 30, 2018 actuarial valuation, the following employees were covered by the benefit terms of the pension plan:

	2020	2019
Inactive members or their beneficiaries currently receiving benefits	62	56
Inactive members:		
Vested inactive members	23	17
Non-vested inactive members	21	18
Long-term disability (LTD)	0	0
Inactive members active elsewhere in VRS	34	39
Total inactive members	78	74
Active members	87	83
Total covered employees	227	213

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 8–Pension Plan: (Continued)

Contributions

The contribution requirement for active employees is governed by §51.1-145 of the Code of Virginia, as amended, but may be impacted as a result of funding options provided to political subdivisions by the Virginia General Assembly. Employees are required to contribute 5.00% of their compensation toward their retirement.

The Authority’s contractually required employer contribution rate for the years ended June 30, 2020 and 2019 was 8.14% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2017.

This rate, when combined with employee contributions, was expected to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. Contributions to the pension plan from the Authority were \$403,941 and \$389,097 for the years ended June 30, 2020 and June 30, 2019, respectively.

Net Pension Liability

The net pension liability (NPL) is calculated separately for each employer and represents that particular employer’s total pension liability determined in accordance with GASB Statement No. 68, less that employer’s fiduciary net position. For the Authority, the net pension liability was measured as of June 30, 2019. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation performed as of June 30, 2018 rolled forward to the measurement date of June 30, 2019.

Actuarial Assumptions – General Employees

The total pension liability for General Employees in the Authority’s Retirement Plan was based on an actuarial valuation as of June 30, 2018, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2019.

Inflation	2.5%
Salary increases, including inflation	3.5% – 5.35%
Investment rate of return	6.75%, net of pension plan investment expense, including inflation*

* Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 6.75%. However, since the difference was minimal, and a more conservative 6.75% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 6.75% to simplify preparation of pension liabilities.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 8—Pension Plan: (Continued)

Actuarial Assumptions – General Employees: (Continued)

Mortality rates:

All Others (Non 10 Largest) – Non-Hazardous Duty: 15% of deaths are assumed to be service related

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates at ages 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016, except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

All Others (Non 10 Largest) – Non-Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Lowered rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14.00% to 15.00%
Discount Rate	Decreased rate from 7.00% to 6.75%

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 8—Pension Plan: (Continued)

Long-Term Expected Rate of Return

The long-term expected rate of return on pension System investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension System investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class (Strategy)	Target Allocation	Arithmetic Long-Term Expected Rate of Return	Weighted Average Long-Term Expected Rate of Return
Public Equity	34.00%	5.61%	1.91%
Fixed Income	15.00%	0.88%	0.13%
Credit Strategies	14.00%	5.13%	0.72%
Real Assets	14.00%	5.27%	0.74%
Private Equity	14.00%	8.77%	1.23%
MAPS - Multi-Asset Public Strategies	6.00%	3.52%	0.21%
PIP - Private Investment Partnership	3.00%	6.29%	0.19%
Total	<u>100.00%</u>		<u>5.13%</u>
		Inflation	<u>2.50%</u>
		*Expected arithmetic nominal return	<u>7.63%</u>

* The above allocation provides a one-year return of 7.63%. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 7.11%, including expected inflation of 2.50%. The VRS Board elected a long-term rate of 6.75% which is roughly at the 40th percentile of expected long-term results of the VRS fund asset allocation.

Discount Rate

The discount rate used to measure the total pension liability was 6.75%. The projection of cash flows used to determine the discount rate assumed that System member contributions will be made per the VRS Statutes and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Consistent with the phased-in funding provided by the General Assembly for state and teacher employer contributions; the Authority was also provided with an opportunity to use an alternative employer

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 8—Pension Plan: (Continued)

Discount Rate (Continued)

contribution rate. For the year ended June 30, 2019, the alternate rate was the employer contribution rate used in FY 2012 or 100% of the actuarially determined employer contribution rate from the June 30, 2017 actuarial valuations, whichever was greater. From July 1, 2019 on, participating employers are assumed to continue to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total pension liability.

Changes in Net Pension Liability

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2018	\$ 22,627,993	\$ 20,057,178	\$ 2,570,815
Changes for the year:			
Service cost	\$ 416,525	\$ -	\$ 416,525
Interest	1,542,498	-	1,542,498
Differences between expected and actual experience	75,270	-	75,270
Assumption changes	655,287		655,287
Contributions - employer	-	388,000	(388,000)
Contributions - employee	-	239,360	(239,360)
Net investment income	-	1,321,667	(1,321,667)
Benefit payments, including refunds	(1,157,681)	(1,157,681)	-
Refunds of employee contributions	(26,924)	(26,924)	-
Administrative expenses	-	(13,329)	13,329
Other changes	-	(831)	831
Net changes	\$ 1,504,975	\$ 750,262	\$ 754,713
Balances at June 30, 2019	\$ 24,132,968	\$ 20,807,440	\$ 3,325,528

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 8—Pension Plan: (Continued)

Changes in Net Pension Liability: (Continued)

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at June 30, 2017	\$ 21,977,526	\$ 19,053,943	\$ 2,923,583
Changes for the year:			
Service cost	\$ 414,140	\$ -	\$ 414,140
Interest	1,501,555	-	1,501,555
Differences between expected and actual experience	(211,755)	-	(211,755)
Contributions - employer	-	438,811	(438,811)
Contributions - employee	-	227,140	(227,140)
Net investment income	-	1,404,233	(1,404,233)
Benefit payments, including refunds	(995,470)	(995,470)	-
Refunds of employee contributions	(58,003)	(58,003)	-
Administrative expenses	-	(12,231)	12,231
Other changes	-	(1,245)	1,245
Net changes	\$ 650,467	\$ 1,003,235	\$ (352,768)
Balances at June 30, 2018	\$ 22,627,993	\$ 20,057,178	\$ 2,570,815

Sensitivity of the Net Pension Liability to Changes in the Discount Rate as of June 30, 2020

The following presents the net pension liability of the Authority using the discount rate of 6.75%, as well as what the Authority's net pension liability would be if it were calculated using a discount rate that is one percentage point lower (5.75%) or one percentage point higher (7.75%) than the current rate:

Rivanna Water & Sewer Authority's Net Pension Liability	Rate		
	1% Decrease (5.75%)	Current Discount (6.75%)	1% Increase (7.75%)
2020	\$ 6,278,943	\$ 3,325,528	\$ 957,760

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 8—Pension Plan: (Continued)

Sensitivity of the Net Pension Liability to Changes in the Discount Rate as of June 30, 2019

The following presents the net pension liability of the Authority using the discount rate of 7.00%, as well as what the Authority's net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.00%) or one percentage point higher (8.00%) than the current rate:

Rivanna Water & Sewer Authority's Net Pension Liability	Rate		
	(6.00%)	(7.00%)	(8.00%)
2019	\$ 5,341,787	\$ 2,570,815	\$ 248,162

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended June 30, 2020, the Authority recognized pension expense of \$516,583. At June 30, 2020, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 49,581	\$ 67,213
Changes in assumptions	431,640	-
Net difference between projected and actual earnings on pension plan investments	-	183,115
Employer contributions subsequent to the measurement date	403,941	-
Total	\$ 885,162	\$ 250,328

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 8—Pension Plan: (Continued)

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions (Continued)

For the year ended June 30, 2019, the Authority recognized pension expense of \$100,098. At June 30, 2019, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between expected and actual experience	\$ 35,878	\$ 179,904
Changes in assumptions	-	78,766
Net difference between projected and actual earnings on pension plan investments	-	173,542
Employer contributions subsequent to the measurement date	<u>389,097</u>	<u>-</u>
Total	\$ <u><u>424,975</u></u>	\$ <u><u>432,212</u></u>

\$403,941 reported as deferred outflows of resources related to pensions resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the Net Pension Liability in the fiscal year ending June 30, 2021. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense in future reporting periods as follows:

<u>Year ended June 30</u>	
2021	\$ 175,765
2022	47,093
2023	(4,433)
2024	12,468
2025	-
2026	-
Thereafter	-

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 8—Pension Plan: (Continued)

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions (Continued)

\$389,097 reported as deferred outflows of resources related to pensions resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the Net Pension Liability in the fiscal year ending June 30, 2020. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense in future reporting periods as follows:

<u>Year ended June 30</u>		
2020	\$	(96,137)
2021		(86,038)
2022		(197,259)
2023		(16,900)
2024		-
2025		-
Thereafter		-

Pension Plan Data

Information about the VRS Political Subdivision Retirement Plan is also available in the separately issued VRS 2019 Comprehensive Annual Financial Report (CAFR). A copy of the 2019 VRS CAFR may be downloaded from the VRS website at <http://www.varetire.org/Pdf/Publications/2019-annual-report.pdf>, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA 23218-2500.

Note 9—Voluntary Early Retirement Incentive Program:

Rivanna Water and Sewer Authority has a Voluntary Early Retirement Incentive Program (VERIP) which provides for monthly payments to eligible employees for a period of up to five years after early retirement or until age 65, whichever comes first. Participants in the VERIP must be regular full-time employees eligible for early or full retirement under the provisions of the Virginia Retirement System (VRS) who have been employed by the Authority for 10 of the last 13 years prior to retirement. Employees retiring under the disability provisions of VRS and/or Social Security are not eligible for the VERIP. VERIP participants receive a stipend equal to the difference between (1) the annual VRS retirement benefit amount as reduced for early VRS retirement if appropriate and (2) the recomputed annual VRS benefit with the addition of the lesser of five more years of service or the number of additional years needed to reach age 65. The stipend is paid on a monthly basis. The participant may also receive a monthly payment equal to the amount of the Board's contribution toward an employee's health insurance, for as long as the employee is covered by VERIP benefits. Applications for the VERIP must be submitted to the Executive Director for approval. The Authority's estimated VERIP liability as of June 30, 2020 and 2019 was \$490,794 and \$583,922, respectively. The amount payable within the next year is \$178,972.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 10–Risk Management:

The Authority is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The Authority joined together with other local governments in the Commonwealth to form the Virginia Risk Sharing Association, a public entity risk pool currently operating as a common risk management and insurance program for member governments. The Authority pays an annual premium to the pool for its workers compensation coverage, property and liability insurance. The Agreement for Formation of the association provides that the association will be self-sustaining through member premiums. Settled claims have not exceeded pool coverage in any of the past three fiscal years.

Note 11–Other Postemployment Benefits–Health Insurance:

The Authority previously provided post-retirement healthcare benefits for employees who were eligible under a single-employer defined benefit plan. The Plan and benefits have been terminated. Therefore, the Authority has no assets or liabilities to report as of June 30, 2017 or subsequent years.

Note 12–Group Life Insurance (GLI) Plan (OPEB Plan):

Plan Description

The Group Life Insurance (GLI) Plan was established pursuant to §51.1-500 et seq. of the Code of Virginia, as amended, and which provides the authority under which benefit terms are established or may be amended. All full-time, salaried permanent employees of the state agencies, teachers, and employees of participating political subdivisions are automatically covered by the VRS GLI Plan upon employment. This is a cost-sharing multiple-employer plan administered by the Virginia Retirement System (the System), along with pensions and other OPEB plans, for public employer groups in the Commonwealth of Virginia.

In addition to the Basic GLI benefit, members are also eligible to elect additional coverage for themselves as well as a spouse or dependent children through the Optional GLI Plan. For members who elect the optional group life insurance coverage, the insurer bills employers directly for the premiums. Employers deduct these premiums from members' paychecks and pay the premiums to the insurer. Since this is a separate and fully insured plan, it is not included as part of the GLI Plan OPEB.

The specific information for GLI OPEB, including eligibility, coverage and benefits is described below:

Eligible Employees

The GLI Plan was established July 1, 1960, for state employees, teachers, and employees of political subdivisions that elect the Plan. Basic GLI coverage is automatic upon employment. Coverage ends for employees who leave their position before retirement eligibility or who take a refund of their accumulated retirement member contributions and accrued interest.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements

At June 30, 2020 and 2019 (Continued)

Note 12—Group Life Insurance (GLI) Plan (OPEB Plan): (Continued)

Benefit Amounts

The GLI Plan is a defined benefit plan with several components. The natural death benefit is equal to the employee's covered compensation rounded to the next highest thousand and then doubled. The accidental death benefit is double the natural death benefit. In addition to basic natural and accidental death benefits, the plan provides additional benefits provided under specific circumstances that include the following: accidental dismemberment benefit, safety belt benefit, repatriation benefit, felonious assault benefit, and accelerated death benefit option. The benefit amounts are subject to a reduction factor. The benefit amount reduces by 25% on January 1 following one calendar year of separation. The benefit amount reduces by an additional 25% on each subsequent January 1 until it reaches 25% of its original value. For covered members with at least 30 years of service credit, the minimum benefit payable was set at \$8,000 by statute in 2015. This will be increased annually based on the VRS Plan 2 cost-of-living adjustment calculation. The minimum benefit adjusted for the COLA was \$8,463 as of June 30, 2020.

Contributions

The contribution requirements for the GLI Plan are governed by §51.1-506 and §51.1-508 of the Code of Virginia, as amended, but may be impacted as a result of funding provided to state agencies and school divisions by the Virginia General Assembly. The total rate for the GLI Plan was 1.31% of covered employee compensation. This was allocated into an employee and an employer component using a 60/40 split. The employee component was 0.79% (1.31% x 60%) and the employer component was 0.52% (1.31% x 40%). Employers may elect to pay all or part of the employee contribution; however, the employer must pay all of the employer contribution. Each employer's contractually required employer contribution rate for the years ended June 30, 2020 and 2019 was 0.52% of covered employee compensation. This rate was based on an actuarially determined rate from an actuarial valuation as of June 30, 2017. The actuarially determined rate, when combined with employee contributions, was expected to finance the costs of benefits payable during the year, with an additional amount to finance any unfunded accrued liability. Contributions to the GLI Plan from the entity were \$29,203 and \$27,074 for the years ended June 30, 2020 and June 30, 2019, respectively.

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the GLI Plan OPEB

At June 30, 2020, the entity reported a liability of \$428,948 for its proportionate share of the Net GLI OPEB Liability. The Net GLI OPEB Liability was measured as of June 30, 2019 and the total GLI OPEB liability used to calculate the Net GLI OPEB Liability was determined by an actuarial valuation performed as of June 30, 2018, and rolled forward to the measurement date of June 30, 2019. The covered employer's proportion of the Net GLI OPEB Liability was based on the covered employer's actuarially determined employer contributions to the GLI Program Plan for the year ended June 30, 2019 relative to the total of the actuarially determined employer contributions for all participating employers. At June 30, 2019, the participating employer's proportion was 0.02636% as compared to 0.02561% at June 30, 2018.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 12—Group Life Insurance (GLI) Plan (OPEB Plan): (Continued)

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the GLI Plan OPEB: (Continued)

At June 30, 2019, the entity reported a liability of \$389,000 for its proportionate share of the Net GLI OPEB Liability. The Net GLI OPEB Liability was measured as of June 30, 2018 and the total GLI OPEB liability used to calculate the Net GLI OPEB Liability was determined by an actuarial valuation as of that date. The covered employer's proportion of the Net GLI OPEB Liability was based on the covered employer's actuarially determined employer contributions to the GLI Plan for the year ended June 30, 2018 relative to the total of the actuarially determined employer contributions for all participating employers. At June 30, 2018, the participating employer's proportion was 0.02561% as compared to 0.02503% at June 30, 2017.

For the year ended June 30, 2020, the participating employer recognized GLI OPEB expense of \$14,869. For the year ended June 30, 2019, the participating employer recognized GLI OPEB expense of \$6,000. Since there was a change in proportionate share between measurement dates, a portion of the GLI OPEB expense was related to deferred amounts from changes in proportion.

At June 30, 2020, the employer reported deferred outflows of resources and deferred inflows of resources related to the GLI OPEB from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between expected and actual experience	\$ 28,528	\$ 5,564
Net difference between projected and actual earnings on GLI OPEB plan investments	-	8,811
Change in assumptions	27,081	12,935
Changes in proportion	21,946	-
Employer contributions subsequent to the measurement date	<u>29,203</u>	<u>-</u>
Total	<u>\$ 106,758</u>	<u>\$ 27,310</u>

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements

At June 30, 2020 and 2019 (Continued)

Note 12—Group Life Insurance (GLI) Plan (OPEB Plan): (Continued)

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the GLI Plan OPEB: (Continued)

At June 30, 2019, the employer reported deferred outflows of resources and deferred inflows of resources related to the GLI OPEB from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between expected and actual experience	\$ 19,000	\$ 7,000
Net difference between projected and actual earnings on GLI OPEB plan investments	-	13,000
Change in assumptions	-	16,000
Changes in proportion	15,000	-
Employer contributions subsequent to the measurement date	<u>27,074</u>	<u>-</u>
Total	<u>\$ 61,074</u>	<u>\$ 36,000</u>

\$29,203 reported as deferred outflows of resources related to the GLI OPEB resulting from the employer's contributions subsequent to the measurement date will be recognized as a reduction of the Net GLI OPEB Liability in the fiscal year ending June 30, 2021. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to the GLI OPEB will be recognized in the GLI OPEB expense in future reporting periods as follows:

Year Ended June 30

2021	\$ 6,474
2022	6,474
2023	10,206
2024	12,747
2025	11,268
Thereafter	3,076

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 12—Group Life Insurance (GLI) Plan (OPEB Plan): (Continued)

GLI OPEB Liabilities, GLI OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to the GLI Plan OPEB: (Continued)

\$27,074 reported as deferred outflows of resources related to the GLI OPEB resulting from the employer's contributions subsequent to the measurement date will be recognized as a reduction of the Net GLI OPEB Liability in the fiscal year ending June 30, 2020. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to the GLI OPEB will be recognized in the GLI OPEB expense in future reporting periods as follows:

Year Ended June 30

2020	\$	(3,000)
2021		(3,000)
2022		(3,000)
2023		1,000
2024		4,000
Thereafter		2,000

Actuarial Assumptions

The total GLI OPEB liability was based on an actuarial valuation as of June 30, 2018, using the Entry Age Normal actuarial cost method and the following assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2019. Salary increases and mortality rates included herein are for relevant employer groups. Information for other groups can be referenced in the VRS CAFR.

Inflation	2.5%
Salary increases, including inflation	3.5%–5.35%
Investment rate of return	6.75%, net of investment expenses, including inflation*

*Administrative expenses as a percent of the market value of assets for the last experience study were found to be approximately 0.06% of the market assets for all of the VRS plans. This would provide an assumed investment return rate for GASB purposes of slightly more than the assumed 6.75%. However, since the difference was minimal, and a more conservative 6.75% investment return assumption provided a projected plan net position that exceeded the projected benefit payments, the long-term expected rate of return on investments was assumed to be 6.75% to simplify preparation of OPEB liabilities.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 12–Group Life Insurance (GLI) Plan (OPEB Plan): (Continued)

Actuarial Assumptions: (Continued)

Mortality Rates – Non-Largest Ten Locality Employers – General Employees

Pre-Retirement:

RP-2014 Employee Rates to age 80, Healthy Annuitant Rates to 81 and older projected with scale BB to 2020; males 95% of rates; females 105% of rates.

Post-Retirement:

RP-2014 Employee Rates to age 49, Healthy Annuitant Rates at ages 50 and older projected with scale BB to 2020; males set forward 3 years; females 1.0% increase compounded from ages 70 to 90.

Post-Disablement:

RP-2014 Disability Mortality Rates projected with scale BB to 2020; males set forward 2 years, 110% of rates; females 125% of rates.

The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016 , except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14.00% to 15.00%
Discount Rate	Decreased rate from 7.00% to 6.75%

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 12—Group Life Insurance (GLI) Plan (OPEB Plan): (Continued)

Net GLI OPEB Liability

The net OPEB liability (NOL) for the GLI Plan represents the plan's total OPEB liability determined in accordance with GASB Statement No. 74, less the associated fiduciary net position. As of the measurement date of June 30, 2019, NOL amounts for the GLI Plan are as follows (amounts expressed in thousands):

		GLI OPEB Plan
		<hr/>
Total GLI OPEB Liability	\$	3,390,238
Plan Fiduciary Net Position		1,762,972
GLI Net OPEB Liability (Asset)	\$	<hr/> <hr/> 1,627,266
Plan Fiduciary Net Position as a Percentage of the Total GLI OPEB Liability		52.00%

The net OPEB liability (NOL) for the GLI Plan represents the plan's total OPEB liability determined in accordance with GASB Statement No. 74, less the associated fiduciary net position. As of the measurement date of June 30, 2018, NOL amounts for the GLI Plan are as follows (amounts expressed in thousands):

		GLI OPEB Plan
		<hr/>
Total GLI OPEB Liability	\$	3,113,508
Plan Fiduciary Net Position		1,594,773
Employers' Net GLI OPEB Liability (Asset)	\$	<hr/> <hr/> 1,518,735
Plan Fiduciary Net Position as a Percentage of the Total GLI OPEB Liability		51.22%

The total GLI OPEB liability is calculated by the System's actuary, and each plan's fiduciary net position is reported in the System's financial statements. The net GLI OPEB liability is disclosed in accordance with the requirements of GASB Statement No. 74 in the System's notes to the financial statements and required supplementary information.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 12—Group Life Insurance (GLI) Plan (OPEB Plan): (Continued)

Long-Term Expected Rate of Return

The long-term expected rate of return on the System's investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of System's investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimate of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class (Strategy)	Target Allocation	Arithmetic Long-term Expected Rate of Return	Weighted Average Long-term Expected Rate of Return
Public Equity	34.00%	5.61%	1.91%
Fixed Income	15.00%	0.88%	0.13%
Credit Strategies	14.00%	5.13%	0.72%
Real Assets	14.00%	5.27%	0.74%
Private Equity	14.00%	8.77%	1.23%
MAPS - Multi-Asset Public Strategies	6.00%	3.52%	0.21%
PIP - Private Investment Partnership	3.00%	6.29%	0.19%
Total	100.00%		5.13%
		Inflation	2.50%
		*Expected arithmetic nominal return	7.63%

*The above allocation provides a one-year return of 7.63%. However, one-year returns do not take into account the volatility present in each of the asset classes. In setting the long-term expected return for the system, stochastic projections are employed to model future returns under various economic conditions. The results provide a range of returns over various time periods that ultimately provide a median return of 7.11%, including expected inflation of 2.50%. The VRS Board elected a long-term rate of 6.75% which is roughly at the 40th percentile of expected long-term results of the VRS fund asset allocation.

Discount Rate

The discount rate used to measure the total GLI OPEB liability was 6.75%. The projection of cash flows used to determine the discount rate assumed that member contributions will be made per the VRS guidance and the employer contributions will be made in accordance with the VRS funding policy at rates equal to the difference between actuarially determined contribution rates adopted by the VRS Board of Trustees and the member rate. Through the fiscal year ended June 30, 2019, the rate contributed by the entity for the GLI OPEB will be subject to the portion of the VRS Board-certified rates that are funded by the Virginia General Assembly which was 100% of the actuarially determined contribution rate. From July 1, 2019 on, employers are assumed to continue to contribute 100% of the actuarially determined contribution rates. Based on those assumptions, the GLI OPEB's fiduciary net position was projected to be available to make all projected future benefit payments of eligible employees. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total GLI OPEB liability.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 12—Group Life Insurance (GLI) Plan (OPEB Plan): (Continued)

Sensitivity of the Employer's Proportionate Share of the Net GLI OPEB Liability to Changes in the Discount Rate as of June 30, 2020

The following presents the employer's proportionate share of the net GLI OPEB liability using the discount rate of 6.75%, as well as what the employer's proportionate share of the net GLI OPEB liability would be if it were calculated using a discount rate that is one percentage point lower (5.75%) or one percentage point higher (7.75%) than the current rate:

Authority's proportionate share of the GLI Plan Net OPEB Liability	Rate		
	1% Decrease	Current Discount	1% Increase
	(5.75%)	(6.75%)	(7.75%)
2020	\$ 563,519	\$ 428,948	\$ 319,815

Sensitivity of the Employer's Proportionate Share of the Net GLI OPEB Liability to Changes in the Discount Rate as of June 30, 2019

The following presents the employer's proportionate share of the net GLI OPEB liability using the discount rate of 7.00%, as well as what the employer's proportionate share of the net GLI OPEB liability would be if it were calculated using a discount rate that is one percentage point lower (6.00%) or one percentage point higher (8.00%) than the current rate:

Authority's proportionate share of the GLI Plan Net OPEB Liability	Rate		
	1% Decrease	Current Discount	1% Increase
	(6.00%)	(7.00%)	(8.00%)
2019	\$ 509,000	\$ 389,000	\$ 292,000

GLI Plan Fiduciary Net Position

Detailed information about the GLI Program's Fiduciary Net Position is available in the separately issued VRS 2019 Comprehensive Annual Financial Report (CAFR). A copy of the 2019 VRS CAFR may be downloaded from the VRS website at <http://www.varetire.org/Pdf/Publications/2019-annual-report.pdf>, or by writing to the System's Chief Financial Officer at P.O. Box 2500, Richmond, VA, 23218-2500.

Note 13—Related Parties:

Rivanna Solid Waste Authority (RSWA) and Rivanna Water and Sewer Authority (RWSA) share office space and administrative staff. Procedures are in place to ensure proper segregation of funds, purchasing activity, personnel and similar matters. RSWA pays RWSA monthly for its share of joint administrative expenses, which totaled \$466,000 in FY 2020 and \$460,000 in FY 2019 and for leachate acceptance and treatment of \$3,082 in FY 2020 and \$4,285 in FY 2019. Rivanna Solid Waste Authority billed Rivanna Water & Sewer Authority \$16,639 for hauling and tipping fees in FY 2020 and \$40,547 in the previous year. RSWA owed RWSA \$60,766 and \$49,683 at June 30, 2020 and 2019, respectively.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 14—Construction Commitments:

Rivanna Water and Sewer Authority had the following significant construction contract commitments for capital projects as of June 30, 2020:

Project	Remaining Commitment
South Rivanna WTP Improvements	\$ 17,508,403
Observatory WTP Improvements	20,121,101
Crozet WTP Expansion	2,263,943
Interceptor Sewer & Manhole Repair-Phase 1	690,648
Beaver Creek Dam Alterations	677,028
Security Enhancements	514,939

The Authority had the following significant construction contract commitments for capital projects as of June 30, 2019:

Project	Remaining Commitment
South Rivanna WTP Improvements	\$ 979,717
Observatory WTP Improvements	1,172,845
Crozet WTP Expansion	6,488,676
Interceptor Sewer & Manhole Repair and Crozet Interceptor	921,762
Valve Repair-Replacement (Phase 2)	637,113
Beaver Creek Dam Alterations	712,760

These contracts give the Authority the right to terminate the contract for any reason.

Note 15—Fair Value Measures:

Fair value for investments is determined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants at the measurement date. The three-level fair value hierarchy prioritizes the inputs used to measure fair value. This hierarchy requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs. The three levels of inputs used to measure fair value are as follows:

- Level 1 — Quoted prices in active markets for identical assets or liabilities.
- Level 2 — Significant observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 15–Fair Value Measures: (Continued)

- Level 3 — Significant unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This includes certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs.

The Authority is providing the following information related to its investments:

Fair Value Measurements at Reporting Date Using				
		Quoted Prices in Active Markets for Identical Assets	Significant Other Observable Inputs	Significant Unobservable Inputs
	Total June 30, 2020	(Level 1)	(Level 2)	(Level 3)
U.S. Agencies Securities	\$ 1,765	\$ 1,765	\$ -	\$ -
U.S. Treasury & Agency Money Market Funds	7,386,976	7,386,976	-	-
U.S. Treasury Notes & Bonds	2,049,770	2,049,770	-	-
Total by fair value level	<u>\$ 9,438,511</u>	<u>\$ 9,438,511</u>	<u>\$ -</u>	<u>\$ -</u>

Investments measured at the net asset value (NAV)

VML/VACo Virginia Investment Pool	<u>\$ 10,540,185</u>
Total measured at the NAV	<u>\$ 10,540,185</u>

Fair Value Measurements at Reporting Date Using				
		Quoted Prices in Active Markets for Identical Assets	Significant Other Observable Inputs	Significant Unobservable Inputs
	Total June 30, 2019	(Level 1)	(Level 2)	(Level 3)
U.S. Agencies Securities	\$ 2,454	\$ 2,454	\$ -	\$ -
U.S. Treasury & Agency Money Market Funds	7,118,324	7,118,324	-	-
U.S. Treasury Notes & Bonds	1,995,240	1,995,240	-	-
Total by fair value level	<u>\$ 9,116,018</u>	<u>\$ 9,116,018</u>	<u>\$ -</u>	<u>\$ -</u>

Investments measured at the net asset value (NAV)

VML/VACo Virginia Investment Pool	<u>\$ 10,368,384</u>
Total measured at the NAV	<u>\$ 10,368,384</u>

RIVANNA WATER & SEWER AUTHORITY

Notes to the Financial Statements
At June 30, 2020 and 2019 (Continued)

Note 16–COVID-19 Pandemic:

On March 11, 2020, the World Health Organization declared COVID-19 a pandemic, which has caused an economic downturn on a global scale, disrupted global supply chains, and created significant uncertainty, volatility, and disruption across economies and financial markets. The full impact of the COVID-19 outbreak continues to evolve as of the release date of this report. Management is monitoring the situation and impact that it may have on its financial condition, liquidity, operations, suppliers, industry, and workforce. Given the daily evolution of the COVID-19 outbreak and global responses to curb its spread, the Authority is not able to estimate the effects of the COVID-19 outbreak on its results of operations, financial condition, or liquidity for fiscal year 2021.

Note 17–Upcoming Pronouncements:

Statement No. 87, *Leases*, requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. The requirements of this Statement are effective for reporting periods beginning after June 15, 2021.

Statement No. 92, *Omnibus 2020*, addresses practice issues that have been identified during implementation and application of certain GASB Statements. This Statement addresses a variety of topics such as leases, assets related to pension and postemployment benefits, and reference to nonrecurring fair value measurements of assets or liabilities in authoritative literature. The effective dates differ by topic, ranging from January 2020 to periods beginning after June 15, 2021.

Statement No. 93, *Replacement of Interbank Offered Rates*, establishes accounting and financial reporting requirements related to the replacement of Interbank Offered Rates (IBORs) in hedging derivative instruments and leases. It also identifies appropriate benchmark interest rates for hedging derivative instruments. The requirements of this Statement, except for removal of London Interbank Offered Rate (LIBOR) as an appropriate benchmark interest rate and the requirements related to lease modifications, are effective for reporting periods beginning after June 15, 2020. The removal of LIBOR as an appropriate benchmark interest rate is effective for reporting periods ending after December 31, 2021. All requirements related to lease modifications in this Statement are effective for reporting periods beginning after June 15, 2021.

Required Supplementary Information

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RIVANNA WATER & SEWER AUTHORITY

Schedule of Changes in Net Pension Liability and Related Ratios
Pension Plan
For the Measurement Dates of June 30, 2014 through June 30, 2019

	2019	2018	2017	2016	2015	2014
Total pension liability						
Service cost	\$ 416,525	\$ 414,140	\$ 398,833	\$ 420,980	\$ 397,302	\$ 408,618
Interest	1,542,498	1,501,555	1,465,426	1,376,398	1,308,253	1,243,939
Changes in benefit terms	-	-	-	-	-	-
Differences between expected and actual experience	75,270	(211,755)	(123,760)	343,405	43,130	-
Changes of assumptions	655,287	-	(241,172)	-	-	-
Benefit payments	(1,184,605)	(1,053,473)	(912,902)	(825,031)	(725,341)	(742,220)
Net change in total pension liability	\$ 1,504,975	\$ 650,467	\$ 586,425	\$ 1,315,752	\$ 1,023,344	\$ 910,337
Total pension liability - beginning	<u>22,627,993</u>	<u>21,977,526</u>	<u>21,391,101</u>	<u>20,075,349</u>	<u>19,052,005</u>	<u>18,141,668</u>
Total pension liability - ending (a)	<u>\$ 24,132,968</u>	<u>\$ 22,627,993</u>	<u>\$ 21,977,526</u>	<u>\$ 21,391,101</u>	<u>\$ 20,075,349</u>	<u>\$ 19,052,005</u>
Plan fiduciary net position						
Contributions - employer	\$ 388,000	\$ 438,811	\$ 423,473	\$ 448,728	\$ 434,762	\$ 428,309
Contributions - employee	239,360	227,140	237,015	216,819	230,505	204,334
Net investment income	1,321,667	1,404,233	2,098,047	298,454	754,877	2,256,556
Benefit payments	(1,184,605)	(1,053,473)	(912,902)	(825,031)	(725,341)	(742,220)
Administrator charges	(13,329)	(12,231)	(12,137)	(10,631)	(10,246)	(12,143)
Other	(831)	(1,245)	(1,862)	(126)	(160)	119
Net change in plan fiduciary net position	\$ 750,262	\$ 1,003,235	\$ 1,831,634	\$ 128,213	\$ 684,397	\$ 2,134,955
Plan fiduciary net position - beginning	<u>20,057,178</u>	<u>19,053,943</u>	<u>17,222,309</u>	<u>17,094,096</u>	<u>16,409,699</u>	<u>14,274,744</u>
Plan fiduciary net position - ending (b)	<u>\$ 20,807,440</u>	<u>\$ 20,057,178</u>	<u>\$ 19,053,943</u>	<u>\$ 17,222,309</u>	<u>\$ 17,094,096</u>	<u>\$ 16,409,699</u>
Authority's net pension liability - ending (a) - (b)	\$ 3,325,528	\$ 2,570,815	\$ 2,923,583	\$ 4,168,792	\$ 2,981,253	\$ 2,642,306
Plan fiduciary net position as a percentage of the total pension liability	86.22%	88.64%	86.70%	80.51%	85.15%	86.13%
Covered payroll	\$ 5,175,437	\$ 4,868,672	\$ 4,613,774	\$ 4,403,235	\$ 4,232,146	\$ 4,087,133
Authority's net pension liability as a percentage of covered payroll	64.26%	52.80%	63.37%	94.68%	70.44%	64.65%

This schedule is intended to report information for 10 years. Information prior to the 2014 valuation is not available. However, additional years will be included as they become available.

RIVANNA WATER & SEWER AUTHORITY

Schedule of Employer Contributions

Pension Plan

For the Years Ended June 30, 2011 through June 30, 2020

Fiscal Year	Contractually Required Contribution (1)	Contributions in Relation to Contractually Required Contribution (2)	Contribution Deficiency (Excess) (3)	Employer's Covered Payroll (4)	Contributions as a % of Covered Payroll (5)
2020	\$ 403,941	\$ 403,941	\$ -	\$ 5,571,372	7.25%
2019	389,097	389,097	-	5,175,437	7.52%
2018	438,760	438,760	-	4,868,672	9.01%
2017	423,477	423,477	-	4,613,774	9.18%
2016	451,771	451,771	-	4,403,235	10.26%
2015	435,295	435,295	-	4,232,146	10.29%
2014	428,317	428,317	-	4,087,133	10.48%
2013	426,490	426,490	-	4,078,576	10.46%
2012	308,088	308,088	-	3,885,089	7.93%
2011	297,182	297,182	-	3,747,565	7.93%

RIVANNA WATER & SEWER AUTHORITY

Notes to Required Supplementary Information

Pension Plan

For the Year Ended June 30, 2020

Changes of benefit terms – There have been no actuarially material changes to the System benefit provisions since the prior actuarial valuation.

Changes of assumptions – The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016, except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

All Others (Non 10 Largest) – Non-Hazardous Duty:

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered rates at older ages and changed final retirement from 70 to 75
Withdrawal Rates	Adjusted rates to better fit experience at each year age and service through 9 years of service
Disability Rates	Lowered rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14.00% to 15.00%
Discount Rate	Decreased rate from 7.00% to 6.75%

RIVANNA WATER & SEWER AUTHORITY

Schedule of Authority's Share of Net OPEB Liability

Group Life Insurance (GLI) Plan

For the Measurement Dates of June 30, 2017 through June 30, 2019

Date	Employer's Proportion of the Net GLI OPEB Liability (Asset)	Employer's Proportionate Share of the Net GLI OPEB Liability (Asset)	Employer's Covered Payroll	Employer's Proportionate Share of the Net GLI OPEB Liability (Asset) as a Percentage of Covered Payroll (3)/(4)	Plan Fiduciary Net Position as a Percentage of Total GLI OPEB Liability
(1)	(2)	(3)	(4)	(5)	(6)
2019	0.02636% \$	428,948 \$	5,175,437	8.29%	52.00%
2018	0.02561%	389,000	4,868,672	7.99%	51.22%
2017	0.02503%	376,000	4,613,774	8.15%	48.86%

Schedule is intended to show information for 10 years. Information prior to the 2017 valuation is not available. However, additional years will be included as they become available.

RIVANNA WATER & SEWER AUTHORITY

Schedule of Employer Contributions

Group Life Insurance (GLI) Plan

For the Years Ended June 30, 2017 through June 30, 2020

Date	Contractually Required Contribution (1)	Contributions in Relation to Contractually Required Contribution (2)	Contribution Deficiency (Excess) (3)	Employer's Covered Payroll (4)	Contributions as a % of Covered Payroll (5)
2020	\$ 29,203	\$ 29,203	\$ -	\$ 5,571,372	0.52%
2019	27,074	27,074	-	5,175,437	0.52%
2018	25,512	25,512	-	4,868,672	0.52%
2017	24,197	24,197	-	4,613,774	0.52%

Schedule is intended to show information for 10 years. Information prior to 2017 is unavailable. However, additional years will be included as they become available.

RIVANNA WATER & SEWER AUTHORITY

Notes to Required Supplementary Information
Group Life Insurance (GLI) Plan
For the Year Ended June 30, 2020

Changes of benefit terms – There have been no actuarially material changes to the System benefit provisions since the prior actuarial valuation.

Changes of assumptions – The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period from July 1, 2012 through June 30, 2016, except the change in the discount rate, which was based on VRS Board action effective as of July 1, 2019. Changes to the actuarial assumptions as a result of the experience study and VRS Board action are as follows:

Non-Largest Ten Locality Employers - General Employees

Mortality Rates (pre-retirement, post-retirement healthy, and disabled)	Updated to a more current mortality table - RP-2014 projected to 2020
Retirement Rates	Lowered retirement rates at older ages and extended final retirement age from 70 to 75
Withdrawal Rates	Adjusted termination rates to better fit experience at each age and service year
Disability Rates	Lowered disability rates
Salary Scale	No change
Line of Duty Disability	Increased rate from 14.00% to 15.00%
Discount Rate	Decreased rate from 7.00% to 6.75%

Statistical Section

Contents

Tables

Financial Trends

These tables contains trend information to help the reader understand how the the Authority's financial performance has changed over time.

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Revenues, Rates and Usage Information

These tables contain information to help the reader assess the factors affecting the Authority's change in revenues and it's ability to generate revenues.

3-5

Expenses

This table contains comparative information about the Authority's expenses.

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Debt Capacity

These tables present information to help the reader assess the affordability of the Authority's current levels of outstanding debt and the Authority's ability to issue debt in the future.

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Demographic and Economic Information

These tables offer demographic and economic indicators to help the reader understand the environment within which the Authority's financial activities take place and to help make comparisons over time.

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Operating Information

These tables contain information about the Authority's operations and resources to help the reader understand how the Authority's financial information relates to the activities it performs.

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Other Information

These tables contain miscellaneous data from related organizations, Albemarle County Service Authoriy and the City of Charlottesville.

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Sources: Unless otherwise noted, the information in these tables is derived from the comprehensive annual financial reports for the relevant year.

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RIVANNA WATER & SEWER AUTHORITY

Table 1

Net Position by Component
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Net investment in capital assets	\$ 119,947,988	\$ 113,396,071	\$ 114,137,186	\$ 105,412,275	\$ 101,129,762	\$ 99,020,753	\$ 93,538,673	\$ 87,302,949	\$ 86,135,840	\$ 77,662,172
Restricted	4,552,818	4,278,445	3,794,293	3,729,350	3,335,539	2,940,314	2,870,788	2,782,090	3,173,804	3,048,111
Unrestricted	32,197,029	34,593,713	29,141,487	32,621,982	31,189,295	28,812,875	32,388,908	31,510,133	24,483,936	23,156,625
Total net position	<u>\$ 156,697,835</u>	<u>\$ 152,268,229</u>	<u>\$ 147,072,966</u>	<u>\$ 141,763,607</u>	<u>\$ 135,654,596</u>	<u>\$ 130,773,942</u>	<u>\$ 128,798,369</u>	<u>\$ 121,595,172</u>	<u>\$ 113,793,580</u>	<u>\$ 103,866,908</u>

RIVANNA WATER & SEWER AUTHORITY

Table 2

Changes in Net Position
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Operating revenues:										
Metered water sales	\$ 16,196,450	\$ 15,216,180	\$ 14,034,080	\$ 13,753,977	\$ 13,014,328	\$ 12,555,666	\$ 11,353,630	\$ 11,728,840	\$ 11,058,083	\$ 10,895,551
Wastewater service charges	17,999,007	18,821,857	14,858,101	14,444,159	14,799,741	13,625,855	14,620,353	13,889,105	12,807,628	11,069,488
Total operating revenues	\$ 34,195,457	\$ 34,038,037	\$ 28,892,181	\$ 28,198,136	\$ 27,814,069	\$ 26,181,521	\$ 25,973,983	\$ 25,617,945	\$ 23,865,711	\$ 21,965,039
Operating expenses:										
Personnel costs	\$ 8,693,477	\$ 7,728,340	\$ 7,385,978	\$ 7,483,807	\$ 6,155,243	\$ 5,878,175	\$ 5,756,273	\$ 5,928,994	\$ 5,879,080	\$ 5,525,332
Professional services	1,048,839	994,207	738,823	885,072	602,891	473,193	418,858	282,427	336,166	338,814
Other services and charges	3,676,790	3,770,051	3,341,421	2,764,905	2,607,118	2,532,408	2,683,136	2,430,718	2,463,176	2,341,123
Operations and maintenance	5,423,447	5,799,962	4,169,065	4,214,246	4,710,701	3,991,590	3,543,311	3,383,574	3,201,971	2,415,211
Depreciation	7,330,242	6,704,908	5,773,757	5,411,996	5,396,029	4,983,753	4,662,094	3,601,730	2,965,612	2,962,912
Total operating expenses	\$ 26,172,795	\$ 24,997,468	\$ 21,409,044	\$ 20,760,026	\$ 19,471,982	\$ 17,859,119	\$ 17,063,672	\$ 15,627,443	\$ 14,846,005	\$ 13,583,392
Operating income	\$ 8,022,662	\$ 9,040,569	\$ 7,483,137	\$ 7,438,110	\$ 8,342,087	\$ 8,322,402	\$ 8,910,311	\$ 9,990,502	\$ 9,019,706	\$ 8,381,647
Nonoperating revenues (expenses):										
Investment earnings	\$ 1,243,884	\$ 1,599,486	\$ 525,039	\$ 296,433	\$ 369,675	\$ 82,083	\$ 92,839	\$ 157,526	\$ 124,832	\$ 120,623
Buck Mountain revenue	57,100	111,700	125,900	115,700	84,000	74,900	89,000	78,000	68,200	52,400
Administrative reimbursement	471,937	474,246	436,329	328,000	299,000	265,000	257,000	257,000	276,000	277,000
Other revenues	588,146	380,737	302,920	305,763	370,173	337,148	251,373	225,034	214,908	256,541
Interest expense	(5,733,428)	(5,947,988)	(2,643,801)	(2,248,229)	(4,027,843)	(3,608,072)	(2,336,245)	(2,552,331)	(1,830,696)	(2,607,502)
Debt issuance costs	(220,695)	(463,487)	-	(126,766)	(556,438)	(59,273)	(61,081)	(580,404)	-	-
Amortization expense	-	-	-	-	-	-	-	-	-	(86,827)
Total nonoperating revenues (expenses)	\$ (3,593,056)	\$ (3,845,306)	\$ (1,253,613)	\$ (1,329,099)	\$ (3,461,433)	\$ (2,908,214)	\$ (1,707,114)	\$ (2,415,175)	\$ (1,146,756)	\$ (1,987,765)
Income before capital grants	\$ 4,429,606	\$ 5,195,263	\$ 6,229,524	\$ 6,109,011	\$ 4,880,654	\$ 5,414,188	\$ 7,203,197	\$ 7,575,327	\$ 7,872,950	\$ 6,393,882
Capital grants	-	-	-	-	-	-	-	226,265	3,003,552	6,080,256
Change in net position	\$ 4,429,606	\$ 5,195,263	\$ 6,229,524	\$ 6,109,011	\$ 4,880,654	\$ 5,414,188	\$ 7,203,197	\$ 7,801,592	\$ 10,876,502	\$ 12,474,138

RIVANNA WATER & SEWER AUTHORITY
Table 3

Revenues by Source
Last Ten Fiscal Years

Fiscal Years Ended June 30,	Operating Revenues			Nonoperating Revenues				Other	Total
	Water Sales	Wastewater Service Charges	Total Operating Revenues	Investment Earnings	Buck Mountain Revenue	Other Revenue	Total Nonoperating Revenues	Capital Grants and Contributions	
2011	\$ 10,895,551	\$ 11,069,488	\$ 21,965,039	\$ 120,623	\$ 52,400	\$ 533,541	\$ 706,564	\$ 6,080,256	\$ 28,751,859
2012	11,058,083	12,807,628	23,865,711	124,832	68,200	490,908	683,940	3,003,552	27,553,203
2013	11,728,840	13,889,105	25,617,945	157,526	78,000	482,034	717,560	226,265	26,561,770
2014	11,353,630	14,620,353	25,973,983	92,839	89,000	508,373	690,212	-	26,664,195
2015	12,555,666	13,625,855	26,181,521	82,083	74,900	602,148	759,131	-	26,940,652
2016	13,014,328	14,799,741	27,814,069	369,675	84,000	669,173	1,122,848	-	28,936,917
2017	13,753,977	14,444,159	28,198,136	296,433	115,700	633,763	1,045,896	-	29,244,032
2018	14,034,080	14,858,101	28,892,181	525,039	125,900	739,249	1,390,188	-	30,282,369
2019	15,216,180	18,821,857	34,038,037	1,599,486	111,700	854,983	2,566,169	-	36,604,206
2020	16,196,450	17,999,007	34,195,457	1,243,884	57,100	471,937	1,772,921	-	35,968,378

RIVANNA WATER & SEWER AUTHORITY

Table 4

Water and Wastewater Rates and Flows
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Rates:					*Note 1					
					(7/1-10/31/15)					
Urban Water - City (per 1,000 gallons)	***	***	***	***	\$ 2.756	\$ 2.663	\$ 2.341	\$ 2.443	\$ 2.403	\$ 2.438
Urban Water - ACSA (per 1,000 gallons)	***	***	***	***	\$ 3.795	\$ 3.687	\$ 3.333	\$ 3.465	\$ 3.439	\$ 3.305
Crozet Water (per month)	\$ 195,010	\$ 162,746	\$ 133,901	\$ 124,149	\$ 111,330	\$ 91,942	\$ 84,630	\$ 82,916	\$ 60,853	\$ 50,712
Scottsville Water (per month)	\$ 54,130	\$ 47,717	\$ 45,140	\$ 43,382	\$ 49,012	\$ 41,343	\$ 41,047	\$ 36,280	\$ 31,665	\$ 32,834
Urban Wastewater - City (per 1,000 gallons)	***	***	***	***	\$ 3.954	\$ 3.822	\$ 3.593	\$ 3.565	\$ 3.179	\$ 2.878
Urban Wastewater - ACSA (per 1,000 gallons)	***	***	***	***	\$ 3.560	\$ 3.435	\$ 3.463	\$ 3.732	\$ 3.348	\$ 3.048
Glenmore Wastewater (per month)	\$ 31,192	\$ 31,192	\$ 29,494	\$ 26,694	\$ 25,211	\$ 24,451	\$ 24,189	\$ 23,436	\$ 23,246	\$ 21,806
Scottsville Wastewater (per month)	\$ 26,536	\$ 25,823	\$ 24,410	\$ 21,941	\$ 21,425	\$ 28,879	\$ 28,295	\$ 27,619	\$ 26,579	\$ 25,603

*Note 1:

The Fiscal Year 2016 Urban Water and Urban Wastewater rates were revised from the above stated rates to the following rates, effective 11/1/15-6/30/16:

In FY 2016, the Board of Directors amended the Service Agreement to go from a rate per 1,000 gallons to a fixed monthly charge for all debt service costs.

Urban rates are stated below along with prior years' rates restated below as fixed monthly charges for comparison purposes based on estimated flows.

***Urban Rates:

Urban Water:

Operations - City & ACSA (per 1,000 gallons)	\$ 2.095	\$ 2.070	\$ 1.969	\$ 1.833	\$ 1.713	\$ 1.683	\$ 1.462	\$ 1.320	\$ 1.315	\$ 1.288
Debt Service - City (per month)	\$ 193,580	\$ 181,008	\$ 160,039	\$ 162,968	\$ 158,099	\$ 148,549	\$ 133,156	\$ 173,354	\$ 177,435	\$ 177,607
Debt Service - ACSA (per month)	\$ 321,303	\$ 307,598	\$ 285,439	\$ 284,031	\$ 279,864	\$ 269,379	\$ 251,418	\$ 282,114	\$ 267,054	\$ 265,358

Urban Wastewater:

Operations - City & ACSA (per 1,000 gallons)	\$ 2.369	\$ 2.146	\$ 1.951	\$ 1.835	\$ 1.789	\$ 1.768	\$ 1.827	\$ 1.869	\$ 1.734	\$ 1.637
Debt Service - City (per month)	\$ 407,588	\$ 408,260	\$ 392,841	\$ 369,037	\$ 333,645	\$ 310,678	\$ 272,220	\$ 254,371	\$ 224,549	\$ 192,848
Debt Service - ACSA (per month)	\$ 278,174	\$ 246,308	\$ 222,550	\$ 222,280	\$ 232,493	\$ 223,598	\$ 214,771	\$ 228,557	\$ 189,209	\$ 165,411

	Fiscal Years Ended June 30,									
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Flows (in million gallons per day):										
Urban Water	9.191	8.967	9.100	9.535	9.359	9.540	9.618	9.647	9.454	9.569
Crozet Water	0.599	0.563	0.532	0.544	0.541	0.546	0.566	0.503	0.450	0.436
Scottsville Water	0.049	0.043	0.045	0.050	0.048	0.049	0.056	0.053	0.049	0.056
	9.839	9.573	9.677	10.129	9.948	10.135	10.240	10.203	9.953	10.061
Urban Wastewater	9.822	12.530	9.083	9.483	10.352	9.481	10.566	9.719	10.014	9.442
Glenmore Wastewater	0.098	0.138	0.120	0.107	0.107	0.101	0.114	0.121	0.122	0.137
Scottsville Wastewater	0.057	0.086	0.056	0.053	0.071	0.050	0.066	0.050	0.054	0.054
	9.977	12.754	9.259	9.643	10.530	9.632	10.746	9.890	10.190	9.633

RIVANNA WATER & SEWER AUTHORITY
Table 5

Ten Largest Customers
Current Year and Nine Years Ago

	Fiscal Year 2020 (Current Year)			
	Water Revenue		Wastewater Revenue	
	Amount	%	Amount	%
Albemarle County Service Authority	\$ 10,322,172	63.73%	\$ 8,377,599	46.54%
City of Charlottesville	\$ 5,874,278	36.27%	\$ 9,053,496	50.30%
Others	\$ -	0.00%	\$ 567,912	3.16%
	<u>\$ 16,196,450</u>	<u>100.00%</u>	<u>\$ 17,999,007</u>	<u>100.00%</u>

	Fiscal Year 2011 (Nine Years Ago)			
	Water Revenue		Wastewater Revenue	
	Amount	%	Amount	%
Albemarle County Service Authority	\$ 6,287,772	57.71%	\$ 5,264,520	47.56%
City of Charlottesville	\$ 4,607,779	42.29%	\$ 5,541,730	50.06%
Others	\$ -	0.00%	\$ 263,238	2.38%
	<u>\$ 10,895,551</u>	<u>100.00%</u>	<u>\$ 11,069,488</u>	<u>100.00%</u>

Note: The Authority's two wholesale customers, which are both governmental entities, provided 100% of water revenue and 97% of wastewater revenue in FY 2020 and FY 2011. The remaining wastewater revenue came from septage acceptance customers. Due to lack of materiality, the number of customers by type that provide that revenue is not presented here.

RIVANNA WATER & SEWER AUTHORITY

Table 6

Expenses by Type
Last Ten Fiscal Years

Fiscal Years Ended June 30,	Operations	Depreciation	Interest and Amortization	Bond Issuance Costs	Total
2011	\$ 10,620,480	\$ 2,962,912	\$ 2,694,329	\$ -	\$ 16,277,721
2012	11,880,393	2,965,612	1,830,696	-	16,676,701
2013	12,025,713	3,601,730	2,552,331	580,404	18,760,178
2014	12,401,578	4,662,094	2,336,245	61,081	19,460,998
2015	12,875,366	4,983,753	3,608,072	59,273	21,526,464
2016	14,075,953	5,396,029	4,027,843	556,438	24,056,263
2017	15,348,030	5,411,996	2,248,229	126,766	23,135,021
2018	15,635,287	5,805,362	2,643,801	-	24,084,450
2019	18,292,560	6,704,908	5,947,988	463,487	31,408,943
2020	18,842,553	7,330,242	5,733,428	220,695	32,126,918

RIVANNA WATER & SEWER AUTHORITY

Table 7

Outstanding Debt by Type
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Revenue bonds payable	\$ 191,337,136	\$ 200,123,490	\$ 167,896,198	\$ 173,020,453	\$ 160,512,250	\$ 124,670,205	\$ 125,680,526	\$ 127,548,686	\$ 103,834,145	\$ 73,831,274
Total outstanding debt	<u>\$ 191,337,136</u>	<u>\$ 200,123,490</u>	<u>\$ 167,896,198</u>	<u>\$ 173,020,453</u>	<u>\$ 160,512,250</u>	<u>\$ 124,670,205</u>	<u>\$ 125,680,526</u>	<u>\$ 127,548,686</u>	<u>\$ 103,834,145</u>	<u>\$ 73,831,274</u>
Debt per capita	\$ 1,220	\$ 1,276	\$ 1,078	\$ 1,126	\$ 1,059	\$ 835	\$ 853	\$ 873	\$ 721	\$ 518
Debt as a percentage of personal income	1.6%	1.7%	1.5%	1.7%	1.7%	1.4%	1.5%	1.5%	1.4%	1.0%

Notes:
Debt per capita was calculated based on population figures for the calendar year (CY) ending within the fiscal year (FY) obtained from U.S. Department of Commerce - Bureau of Economic Analysis for the City of Charlottesville and County of Albemarle. See Table 9.

Debt as a percentage of personal income was calculated based on personal income for the CY ending within the FY obtained from U.S. Department of Commerce - Bureau of Economic Analysis for the City of Charlottesville and County of Albemarle. See Table 9.

RIVANNA WATER & SEWER AUTHORITY**Table 8**

Revenue Bond Debt Service Coverage
Last Ten Fiscal Years

Fiscal Years Ended June 30,	Gross Revenue (1)	Direct Operating Expense (2)	Net Available	Required Debt Service Payments (3)	Coverage
2011	\$ 22,671,603	\$ 10,620,480	\$ 12,051,123	\$ 6,962,703	1.7X
2012	24,549,651	11,880,393	12,669,258	6,724,261	1.9X
2013	26,335,505	12,025,713	14,309,792	8,234,169	1.7X
2014	26,664,195	12,401,578	14,262,617	9,089,702	1.6X
2015	26,940,652	12,875,366	14,065,286	9,094,732	1.5X
2016	28,936,917	14,075,953	14,860,964	9,567,370	1.6X
2017	29,244,032	15,348,030	13,896,002	11,912,673	1.2X
2018	30,282,369	15,635,287	14,647,082	12,370,197	1.2X
2019	36,604,206	18,292,560	18,311,646	13,087,353	1.4X
2020	35,968,378	18,842,553	17,125,825	14,473,237	1.2X

(1) Excluding grant revenue

(2) Excluding depreciation expense

(3) Including payments on revenue bonds and excluding any refunding since the payments were not required to be made in that year.

RIVANNA WATER AND SEWER AUTHORITY**Table 9**

Demographic Data for the Service Area
City of Charlottesville & Albemarle County, Virginia
Last Ten Calendar Years

<u>Calendar Year</u>	<u>Population (2)</u>	<u>Personal Income (thousands of \$) (2)</u>	<u>Per Capita Personal Income (\$) (2)</u>	<u>Unemployment Rate (1)</u>
2010	142,659	\$ 7,240,429	\$ 50,753	6.5%
2011	143,960	7,657,164	53,190	5.9%
2012	146,043	8,457,472	57,911	5.5%
2013	147,286	8,328,130	56,544	5.0%
2014	149,265	8,935,308	59,862	4.6%
2015	151,552	9,550,724	63,019	3.9%
2016	153,644	10,091,356	65,680	3.6%
2017	155,690	11,027,861	70,832	3.3%
2018	156,835	11,702,008	74,613	2.8%
2019	not available	not available	not available	2.5%

Sources:

- (1) Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages - for Charlottesville Metropolitan Service Area (MSA)
- (2) U.S. Department of Commerce - Bureau of Economic Analysis - for City of Charlottesville and Albemarle County

RIVANNA WATER & SEWER AUTHORITY

Table 10

Principal Employers in the Charlottesville Area
Current Year and Nine Years Ago

Employer	First Quarter of 2020		Fourth Quarter of 2010	
	Number of Employees	Rank	Number of Employees	Rank
University of Virginia/ Blue Ridge Hospital	1,000 & over	1	1,000 & over	1
University of Virginia Medical Center			1,000 & over	2
County of Albemarle	1,000 & over	2	1,000 & over	3
Sentara Health Care	1,000 & over	3		
Martha Jefferson Hospital			1,000 & over	4
UVA Health Services Foundation	1,000 & over	4	1,000 & over	6
City of Charlottesville	1,000 & over	5	1,000 & over	5
Charlottesville City School Board	500-999	6	500-999	8
U.S. Department of Defense	500-999	7		
Servicelink Management Com Inc	500-999	8		
State Farm Mutual Automobile Insurance	500-999	9	1,000 & over	7
Fluvanna County Public School Board	500-999	10		
Aramark Campus LLC			500-999	9
Northrop Grumman Corporation			500-999	10

Source: Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages - for Charlottesville Metropolitan Service Area (MSA)

Each employer's percentage of total employment is not available.

RIVANNA WATER & SEWER AUTHORITY

Table 11

Number of Employees by Indentifiable Activity Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Number of budgeted full-time equivalent positions:										
Water (2)	26	26	25	23	23	23	22	23	23	23
Wastewater	16	16	16	17	17	17	17	18	18	15
Operations Management (2)	1	1	1	2	2	2	2	2	2	2
Administration & IT (3)	17	17	16	15	13	12	12	12	12	12
Laboratory	4	3	3	3	3	3	3	3	3	3
Director of Engineering & Maintenance	1	1								
Engineering	11	10	11	9	9	9	9	9	9	9
Maintenance (1)	17	17	16	16	17	17	17	16	16	15
Total	93	91	88	85	84	83	82	83	83	79

(1) Maintenance includes mechanics and maintenance workers for Water and Wastewater.

(2) The Water Resources Manager was reclassified from Operations Management to Engineering effective in fiscal year ended June 30, 2018.

(3) Administration staff is shared with Rivanna Solid Waste Authority.

Source: The above information is summarized from annual budgets.

RIVANNA WATER & SEWER AUTHORITY
Table 12

Operating and Capital Indicators
Last Ten Fiscal Years

	Fiscal Years Ended June 30,									
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Water										
Size of watershed (square miles)	766	766	766	766	766	766	766	766	766	766
Raw water safe yield (mgd)										
Urban system	18.8	18.8	18.8	18.8	18.8	12.8	12.8	12.8	12.8	12.8
Rural system	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Miles of pipelines	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
Number of treatment plants	5	5	5	5	5	5	5	5	5	5
Number of pumping stations	7	7	7	7	7	7	7	7	7	7
Number of reservoirs	4	4	4	4	4	4	4	4	4	4
Number of finished water storage tanks	11	11	11	11	11	11	11	11	11	11
Maximum treatment capacity (mgd)	22.750	22.750	22.750	22.750	22.750	22.750	22.750	22.750	22.750	22.750
Water treated (mgd)	9.839	9.573	9.677	10.129	9.948	10.135	10.240	10.203	9.953	10.061
Unused capacity (mgd)	12.911	13.177	13.073	12.621	12.802	12.615	12.510	12.547	12.797	12.689
Percentage of capacity utilized	43.25%	42.08%	42.54%	44.52%	43.73%	44.55%	45.01%	44.85%	43.75%	44.22%
Wastewater										
Miles of pipelines	37	37	37	37	37	37	37	37	37	37
Number of treatment plants	4	4	4	4	4	4	4	4	5	5
Number of pumping stations	7	7	7	7	7	7	7	7	7	7
Maximum treatment capacity (mgd)	15.945	15.945	15.945	15.945	15.945	15.945	15.945	15.945	15.945	15.945
Wastewater treated (mgd)	9.977	12.754	9.259	9.643	10.561	9.632	10.746	9.890	10.190	9.633
Unused capacity (mgd)	5.968	3.191	6.686	6.302	5.384	6.313	5.199	6.055	5.755	6.312
Percentage of capacity utilized	62.57%	79.99%	58.07%	60.48%	66.23%	60.41%	67.39%	62.03%	63.91%	60.41%

Notes: mgd = millions of gallons per day
Safe yield is a measure of raw water resources during a drought of record.

Source: Internal reports and records

Miscellaneous Statistical Data
Albemarle County Service Authority

Year of Incorporation: 1964

Type of Entity:

Independent authority created pursuant to the "Virginia Water & Waste Authorities Act",
Section 15.1-1239, Code of Virginia (1950), as amended

Number of water connections	20,787
Number of sewer connections	17,803
Miles of water lines	358
Miles of sewer lines	301
Number of fire hydrants	2,818

Rates (effective FY 2020) per 1,000 gallons metered consumption

Water

Residential Water Rates and all irrigation usage:

Level 1 (0-3,000 gallons per month)	\$4.48
Level 2 (3,001-6,000 gallons per month)	\$8.98
Level 3 (6,001-9,000 gallons per month)	\$13.46
Level 4 (over 9,000 gallons per month)	\$17.96

Non-Residential and Multi-Family Residential Water Rate
(except irrigation water)

\$8.66

Wastewater

\$9.47

Ten Largest Customers in FY 2020

	Water			Wastewater		
	Billed (in gallons)	Rank	Percentage of Total	Billed (in gallons)	Rank	Percentage of Total
Southwood Mobile Homes	22,749,000	1	1.35%	22,831,462	1	1.58%
University of Virginia	22,140,400	2	1.32%	21,222,700	3	1.47%
SEMF Charleston	21,908,625	3	1.30%	21,908,625	2	1.51%
Old Salem Apts.	20,341,700	4	1.21%	20,341,700	4	1.41%
ACRJ	19,679,000	5	1.17%	18,683,000	6	1.29%
Abbingdon Crossing	19,255,000	6	1.14%	19,255,000	5	1.33%
Martha Jefferson Hospital	18,949,300	7	1.13%			0.00%
Westminster Canterbury	16,708,000	8	0.99%	15,861,000	9	1.10%
Four Seasons Apts.	16,415,000	9	0.98%	16,415,000	7	1.13%
Turtle Creek Apts.	16,023,300	10	0.95%	16,005,700	8	1.11%
Westgate Apts.				14,939,600	10	1.03%
	<u>194,169,325</u>		<u>11.53%</u>	<u>187,463,787</u>		<u>12.95%</u>

RIVANNA WATER & SEWER AUTHORITY
Table 14

Miscellaneous Statistical Data
City of Charlottesville, Virginia

Date of incorporation	1888
Date present charter adopted	1976
Form of government	Council Manager
Area	10.4 square miles
Miles of streets	159.91
Number of water customers	15,307
Number of sewer customers	14,956
Miles of water lines	184
Miles of sanitary sewer lines	172
Number of fire hydrants	1117
Bond Rating	AAA/Aaa

Rates FY 2020 per 1,000 cubic feet:

Water	
May - Sept.	\$ 65.31
Oct. - Apr.	\$ 50.24
Wastewater	\$ 80.14

Ten Largest Customers in Fiscal Year 2020:

	Water			Wastewater		
	Water Consumption (in cubic feet)	Billed Revenue	Percentage of Total Revenue	Wastewater Treated (in cubic feet)	Billed Revenue	Percentage of Total Revenue
University of Virginia	53,400,739	\$ 2,742,450	21.76%	34,813,171	\$ 2,704,059	18.55%
Pepsi Cola	4,094,280	243,759	1.93%	1,045,980	85,218	0.58%
Charlottesville Redevelopment and Housing	3,452,811	201,072	1.60%	3,452,683	282,137	1.94%
City of Charlottesville	1,996,380	134,947	1.07%	1,553,256	135,951	0.93%
Community Housing/Greenstone	1,935,843	126,654	1.00%	1,935,843	160,898	1.10%
Woodard Properties	1,733,867	117,756	0.93%	1,733,867	148,610	1.02%
Pavilion UVA	1,354,450	81,765	0.65%	1,354,450	109,414	0.75%
Omni	1,218,290	76,411	0.61%	1,025,837	83,502	0.57%
Cannon Hearthwood	1,178,023	76,371	0.61%	1,178,023	96,667	0.66%
Allied Concrete	1,157,450	70,884	0.56%	1,157,450	93,660	0.64%
	<u>71,522,133</u>	<u>\$ 3,872,068</u>	<u>30.72%</u>	<u>49,250,560</u>	<u>\$ 3,900,116</u>	<u>26.76%</u>



**Independent Auditors' Report on Internal Control over Financial Reporting and on
Compliance and Other Matters Based on an Audit of Financial Statements
Performed in Accordance with *Government Auditing Standards***

**To the Board of Directors
Rivanna Water & Sewer Authority
Charlottesville, Virginia**

We have audited, in accordance with the auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the *Specifications for Audits of Authorities, Boards, and Commissions*, issued by the Auditor of Public Accounts of the Commonwealth of Virginia, the financial statements of the business-type activities of Rivanna Water & Sewer Authority as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise Rivanna Water & Sewer Authority's basic financial statements and have issued our report thereon dated October 26, 2020.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered Rivanna Water & Sewer Authority's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of Rivanna Water & Sewer Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of Rivanna Water & Sewer Authority's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether Rivanna Water & Sewer Authority's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Robinson, Farmer, Cox Associates
Charlottesville, Virginia
October 26, 2020



SAFETY PROGRAM UPDATE

for the RWSA/RSWA Boards of Directors

November 17, 2020

Presented by Liz Coleman, Safety Manager



Safety is a continuous improvement process that protects staff and reduces the number of workplace deaths, injuries, and illnesses.

The Safety Program is Part of Our Strategic Plan Goal of Operational Optimization:

“To efficiently, reliably, and **safely** provide high quality services, assuring the best value for our customers.”

Strategies to help us meet our safety goals:

- Enhance our culture of safety.
- Protect our workforce and the public through continually growing a culture of safety.
- Completion of a Safety Master Plan.



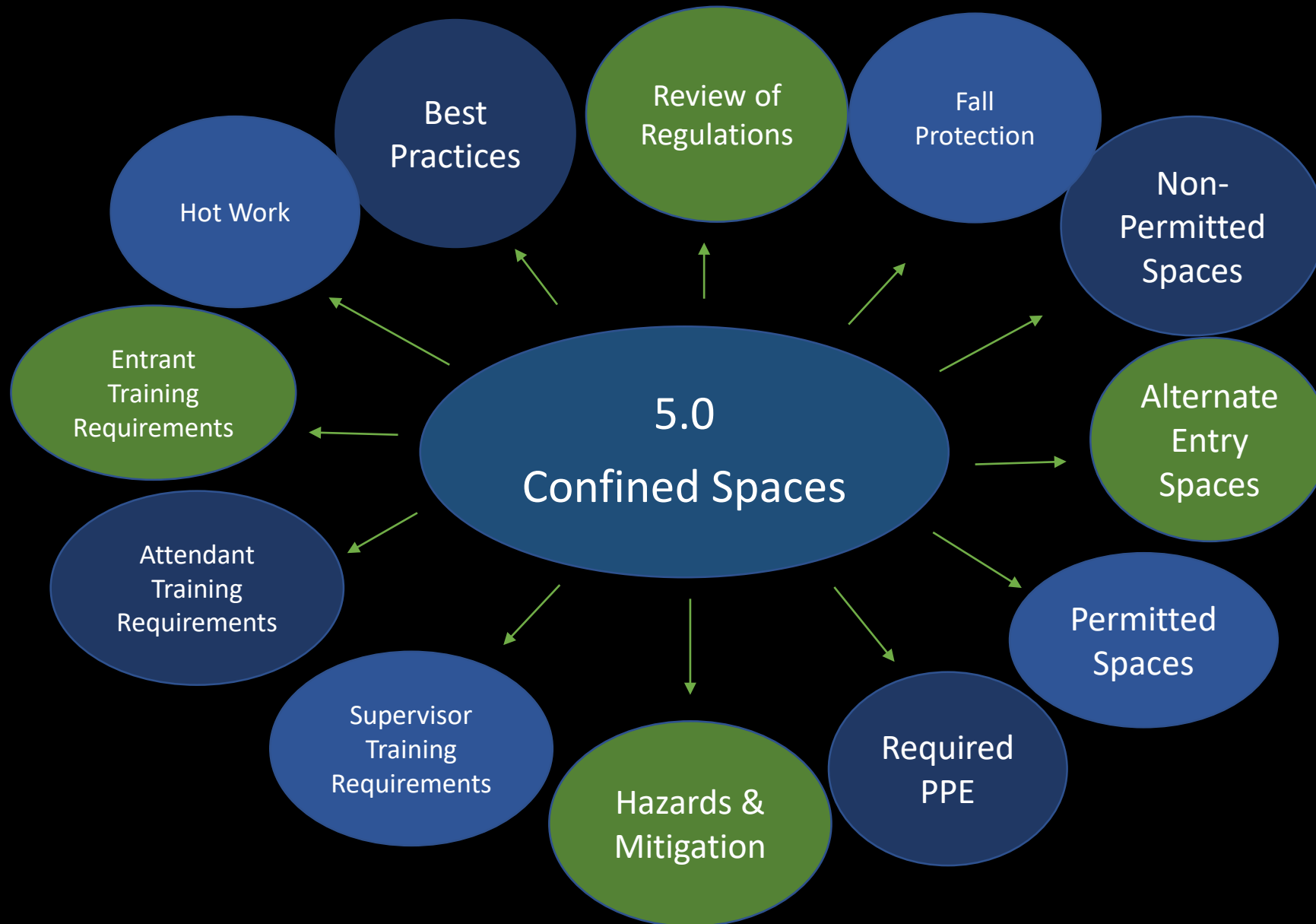
RIVANNA SAFETY MANUAL

- 24 chapters applicable to our work activities and processes.
- Each chapter includes requirements necessary to ensure a safe and compliant workplace.





Example of Chapter Requirements





Virginia Occupational Safety and Health (VOSH) Law Changes:

- As of December 1, 2018 VOSH can fine state and local government employers up to \$12,726.00 per day for each 'Serious Violation'.
- We were audited by VOSH in 2017 with a finding of 4 'Serious Violations'.
- Had this audit occurred after December 1, 2018, we could have been fined up to \$51,000 per day until violations were corrected.

PROGRAM UPDATES

- SAFETY MANUAL

- Updated, 6 added chapters
 - Emergency Action Plans
 - Fire Prevention
 - Excavation and Trenching
 - Asbestos
 - Crane Safety
 - COVID-19 Infectious Disease Prevention

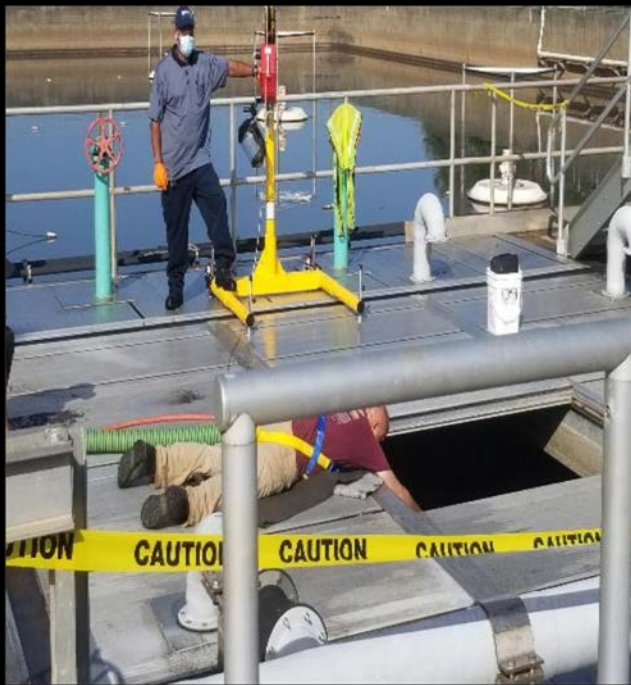
- EMERGENCY MANAGEMENT

- Action Plans Posted for Each Facility
- Use of CODE RED as Staff Notification System
- Fire Drills



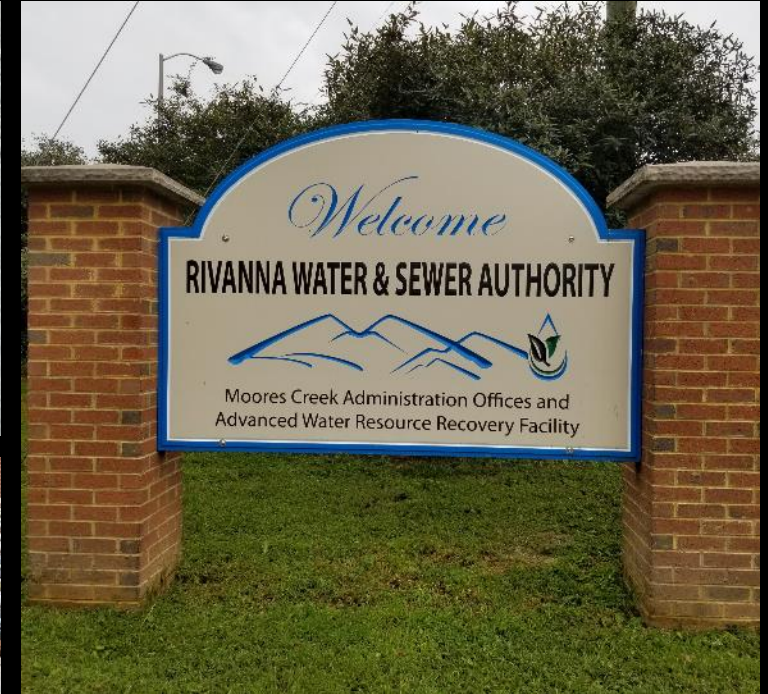
PROGRAM UPDATES

- TRAINING
 - Biweekly Toolbox Safety Talks
 - Free on-line training by Virginia Risk Sharing Association
 - In-person training by PVCC
- EQUIPMENT PURCHASES
 - Automated External Defibrillators (AED)
 - Fall Protection Gear
 - Personal Protective Equipment (PPE)
 - Respirators
 - Hearing Protection
 - Hard Hats
- JOB PROCEDURES
 - Lockout/Tagout
 - Completion of 100 Written Procedures



PROGRAM UPDATES

- OCCUPATIONAL HAZARDS
 - Vaccinations (HEP A, B, and Tetanus)
 - Hearing Conservation
 - Assessment
 - Audiology program updated
 - Combustible Dust
 - Housekeeping plan implemented
 - VOSH assessment
 - Voluntary Respirator Program
- NEW PROGRAMS
 - New Employees Safety Orientation
 - Contractor Safety Program
 - Radio Safety Program Expansion
 - High Priority Hazard Corrections (Safety Master Plan)





IN-PROGRESS UPDATES

- INSTALL SAFETY SHOWERS & EYEWASHES

3.125" x 6.25" FRONT BACK

EYE WASH / SHOWER INSPECTION RECORD

Equipment ID: _____
 Location: _____
 Test: _____

Date	Initials	Comments

CRANE INSPECTION

CRANE NO. _____

CHECK CAREFULLY:

- Controls, alarms, lights
- Limit switch — proper operation
- Look for damage, excessive throat opening
- Hoist rope / chain for excessive wear, broken wires or elongated links

DATE	BY	DATE	BY

- INSPECTIONS AND RECORDKEEPING
 - Combustible Dust
 - Gas Meter Calibrations
 - Fall Protection Hoists
 - Cranes
 - Eyewash and Safety Showers
 - AEDs



IN-PROGRESS UPDATES

- WELDING PROGRAM
 - Certifications
 - Fire Watch training
 - Hot Work Permits
- ARC FLASH LABELING
 - Assessment of Hazard
 - Determination of PPE necessary
- LOCKOUT/TAGOUT PROCEDURES
 - Over 2000 equipment and process shutdown procedures



IN-PROGRESS UPDATES

- **CONFINED SPACES**
 - Verify Space hazards
 - Label Spaces as hazards require
- **CHEMICALS**
 - Ensure accurate inventories
 - Update safety data sheets
 - Storage guidelines

RIVANNA FACILITIES

- 6 Water Treatment Plants
- 4 Wastewater Treatment Plants
- 5 Reservoirs
- Ivy Material Utilization Center
- McIntire Recycling Center
- Paper Sort

SAFETY PROGRAM RESOURCES

One Full Time Safety Manager

Staff Safety Committee

RWSA 2020-2021 Budget
\$114,130

RWSA 2020-2021 Budget
\$26,000

2020-2021 Grants Received
\$6,000

IN SUMMARY

- Many safety program updates have been completed.
- Additional Updates Are Needed To:
 - Protect our valuable human resources by providing a safe workplace.
 - Enhance our safety culture through safe work practices.
 - Maintain VOSH requirements and avoid noncompliance fines.



THANK
YOU

