



Board of Directors Meeting

July 28, 2020

2:15pm



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www.rivanna.org

BOARD OF DIRECTORS

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

DATE: July 28, 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 June 23, 2020*
- 4. RECOGNITION**
- 5. EXECUTIVE DIRECTOR'S REPORT**
- 6. ITEMS FROM THE PUBLIC**
- 7. RESPONSES TO PUBLIC COMMENTS**
- 8. CONSENT AGENDA**
 - a. Staff Report on Finance*
 - b. Staff Report on Operations*
 - c. Staff Report on Ongoing Projects*
 - d. Staff Report on Wholesale Metering*
 - e. Sewer Use Regulations Update*
 - f. Construction Contract Award – MC Slide Gate Improvements Project – Waco, Inc.*
 - g. Capital Improvement Plan Amendment– Scottsville Water Treatment Plant LT2 Improvements*
 - h. Construction Contract Award and Capital Improvement Plan Amendment– Crozet Flow Equalization Tank – Anderson, Inc.*

9. OTHER BUSINESS

- a. Presentation: Bond Rating & Reserves Review; Lonnie Wood, Director of Finance and Administration*
- b. Presentation: Bond Rate Reset Resolution – 2014a Bond And 2005a Bond; Lonnie Wood, Director of Finance and Administration*
- c. Presentation: Annual Reservoir Report; Andrea Terry, Water Resources Manager*
- d. Presentation: Approval of the Observatory WTP Lease, Alderman PS License, and Piping Easement, all with UVA; Bill Mawyer, Executive Director*

10. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

11. CLOSED MEETING

12. ADJOURNMENT

GUIDELINES FOR PUBLIC COMMENT AT VIRTUAL RIVANNA BOARD OF DIRECTORS MEETINGS

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

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

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 July 28, 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 Chapter 1283 of the 2020 Acts of the Virginia Assembly effective April 24, 2020, and the Resolution of the Authority authorizing the adoption of procedures for electronic public meetings and public hearings, adopted by the Authority on May 26, 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(e) of the County's Continuity of Government Ordinance. All board members will identify themselves and state their physical location by electronic means during the roll call which we will hold next. I note for the record that the public has real time audio-visual access to this meeting over Zoom as provided in the lawfully posted meeting notice and real time audio access over telephone, which is also contained in the notice. The public is always invited to send questions, comments, and suggestions to the Board through Bill Mawyer, the Authority's Executive Director at any time.

ROLL CALL:

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

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.

Dr. 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, Executive Director

Lonnie Wood, Director of Finance & Administration

Jennifer Whitaker, Director of Engineering and Maintenance

Dave Tungate, Director of Operations

Andrea Terry, Water Resources Manager

Katie McIlwee, Communications Manager & Executive Coordinator

John Hull, Software Analyst

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



RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
June 23, 2020

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, June 23, 2020 at 2:34 p.m. via Zoom.

Board Members Present: Mike Gaffney, Dr. Tarron Richardson, Lloyd Snook, Dr. Liz Palmer, Jeff Richardson, Gary O'Connell.

Board Members Absent: Lauren Hildebrand.

Rivanna Staff Present: Bill Mawyer, Katie McIlwee, Lonnie Wood, Jennifer Whitaker, David Tungate, Michelle Simpson, Betsy Nemeth, John Hull

Attorney(s) Present: Kurt Krueger.

Also Present: Access to the meeting was available via Zoom for members of the public and media representatives.

1. CALL TO ORDER

Mr. Gaffney called the June 23, 2020 regular meeting of the Rivanna Water and Sewer Authority to order at 2:34 p.m.

2. STATEMENT FROM THE CHAIR

Mr. Gaffney stated that this meeting was being held via real-time electronic means, with no board member physically present at a single central location, pursuant to the COVID-19 resolution of the Authority authorizing the adoption of procedures for electronic public meetings, and board and public hearings, adopted by the board on May 26, 2020.

Mr. Gaffney stated that all Board members are participating electronically. He stated that, in addition to the Authority's May 26 COVID-19 resolution, this meeting was being held pursuant to, the second resolution of the City's Continuity of Government Ordinance and Section 6(e) of the County's Continuity of Government Ordinance. He stated that all Board members will identify themselves and state their physical location by electronic means during the roll call, which would be held next.

Mr. Gaffney noted, 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. He stated that the public is always invited to send questions, comments, and suggestions to the Board through Mr. Bill Mawyer, the Authority's Executive Director, at any time.

Mr. Gaffney called the roll call. He stated that Ms. Lauren Hildebrand was absent.

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

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

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

Dr. Tarron Richardson stated that he was located at 605 East Main Street in Charlottesville.

Mr. Lloyd Snook stated that he was located at 408 East Market Street in Charlottesville.

Mr. Mike Gaffney stated that he was located at 415 Wild Horse Lane in Corolla, North Carolina.

Mr. Gaffney stated that 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), David Tungate (Director of Operations), Betsy Nemeth (Human Resources Manager), Katie McIlwee (Communications Manager and Executive Coordinator), and Michelle Simpson (Senior Civil Engineer).

Mr. Gaffney stated that 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 May 26, 2020

Mr. Gaffney asked board members if they had comments or changes.

It was noted that Ms. Hildebrand had submitted a correction that her address should read 305 4th Street Northwest.

Dr. Palmer moved that the board approve the minutes of the previous board meeting, as amended. The motion was seconded by Mr. O'Connell and passed unanimously (6-0). (Ms. Hildebrand was absent.)

4. RECOGNITIONS

There were no recognitions.

5. EXECUTIVE DIRECTOR'S REPORT

Mr. Mawyer stated that he wanted to recognize one of the water operators, Chris Weigel, who earned his Class I Water Operator's License. He stated Mr. Weigel has been with the RWSA less than three years, starting as an unlicensed operator, and has been diligent about getting the experience and taking the tests required by the state to acquire his Class I license, which is the highest level license available. He stated that this makes Mr. Weigel extremely valuable, as both the South Rivanna and Observatory Water Treatment Plants are required to have a Class I Water Operator on site on a 24/7, 365 days per year basis.

93
94 Mr. Mawyer stated that RWSA appreciates Mr. Weigel's efforts, noting that he does receive
95 small pay increases each time he gains a new license. He stated that it starts with unlicensed,
96 then goes to Classes IV, III, II, and I. He stated that Mr. Weigel has progressed up the ladder and
97 has a degree in Chemical and Life Science Engineering from VCU, making him a high-qualified
98 Water Operator.
99

100 Mr. Mawyer presented a group photo. He stated that he, Dr. Richardson, Mr. Richardson, Mr.
101 Trevor Henry, and Ms. Whitaker recently took a tour of the Sugar Hollow Reservoir and walked
102 up to the Blue Hole and back. He noted how he was soaked in water in the photo, as they had
103 several streams to cross. He stated that it was a good trip, and they got to see firsthand what the
104 attraction is to visit the Blue Hole at Sugar Hollow. He stated that he appreciated the group's
105 willingness to take the tour. He stated that they did not jump in the Blue Hole, but saw some
106 younger people doing so, adding it is a very popular location.
107

108 Dr. Palmer asked if Mr. Mawyer fell in.
109

110 Mr. Mawyer replied that it was the day after it rained, and the stream was 6-12 inches deep, and
111 20-30 feet wide. He stated that one could walk on the rocks but ultimately, it seemed as though
112 stepping in the water was required to get across.
113

114 Mr. Mawyer stated that RWSA continues to work on its South Rivanna to Ragged Mountain
115 waterline easements. He presented a map. He stated that starting at the South Rivanna Water
116 Treatment Plant, the map shows a black area, which is an area where the easement has been
117 obtained. He stated that moving to the south, the yellow color on the map shows that they need to
118 come down Woodburn Road, Rio Road, and then Lambs Lane at Albemarle, which is all under
119 VDOT control. He stated that behind Albemarle High School, Jouett, and Greer is in School
120 Board control and the RWSA is working with them. He indicated on the map to a private
121 property they are working on acquiring easements.
122

123 Mr. Mawyer stated that the pipe will go along Barracks Road and Colthurst Drive, to the UVA
124 Foundation property, with which RWSA has not come to an agreement. He stated that there is a
125 property between the railroad tracks and Route 250 where they are planning to put the pipe on
126 the property line between Virginia Tractor and the Weedon Company. He stated that they have
127 acquired an easement from the Virginia Tractor owners and are working with the Weedon
128 Company for an easement on the west side of the easement.
129

130 Mr. Mawyer stated that the green color on the map represents the Birdwood water line, which is
131 complete. He stated that moving farther to the south and west, they have acquired an easement
132 from private landowners there. He indicated farther left on the map where another easement has
133 been acquired.
134

135 Mr. Mawyer stated that they are working with Ms. Hildebrand to get on the City Council
136 meeting agenda for an easement on City properties farther to the west.
137

138 Mr. Mawyer stated that traversing back to the east, there is another leg of the pipeline that will be
139 replaced from Ragged Mountain all the way to the Observatory Water Treatment Plant. He stated
140 that RWSA is in meetings with UVA and VDOT about those properties.

141
142 Mr. Mawyer stated that he was trying to give a visual of how the progress is going with the
143 easement negotiations. He stated that last month, he had stated they had agreements with eight
144 property owners. He stated that with one owner, they had to resume negotiations, and are still
145 talking with them. He stated that they had thought they had an agreement and now, they are
146 revisiting some of the topics, so they have reduced the agreed-upon property numbers to seven.
147 He stated that these are going well.

148
149 Mr. Mawyer stated that regarding the Observatory Water Treatment Plant, they continue to talk
150 with UVA staff about the lease. He stated that there is currently a survey crew there resurveying
151 the boundary of the plant. He stated that they think they have agreement on what that boundary
152 shape will now be. He stated that they are now talking about whether they will use electronic
153 signatures or not on the actual lease, noting this was good and that they have made it this far,
154 after three years.

155
156 Dr. Palmer asked when Mr. Mawyer stated there are 7 of the 11 private property owners where
157 there is an agreement, where these are on that line.

158
159 Mr. Mawyer replied that these were the ones on the map with the black outline. He indicated to
160 the properties on the map. He stated that each black area could be more than one property owner.
161 He stated near the South Rivanna Water Treatment Plant, there is an agreement with the property
162 owners close to the plant.

163
164 Dr. Palmer asked if 11 was the total number of private property owners with which RWSA needs
165 to negotiate.

166
167 Mr. Mawyer replied that there are 12 private property owners, but that one of those is the UVA
168 Foundation. He explained that the yellow color on the maps shows much of the length they are
169 dealing with VDOT on. He stated that most of the red color represented private land, although
170 the County School Board owns where the map stated, "Albemarle High School."

171
172 Mr. Mawyer stated that the UVA Foundation is counted as "private," and they also own
173 property south of Birdwood. He stated that going back to the east from that intersection, they
174 have VDOT and UVA through the Fontaine Research Park, and then where it turns back to the
175 northeast is going around Observatory Mountain and the UVA dormitories to the Observatory
176 Water Treatment Plant.

177
178 Mr. Mawyer stated that RWSA has made offers to all the private property owners, except for the
179 UVA Foundation. He stated that the Foundation has a lot of properties, and they are trying to
180 come to a total offer on all those properties. He stated that they have agreements with 7 of the 11
181 private property owners, which he holds as good news and progress made.

183 Mr. Mawyer stated that he would try to use this map in the future to continue to give the board
184 updates.

185
186 Mr. O'Connell stated that the map was a good depiction and was helpful. He asked if the section
187 from the Observatory Water Treatment Plant to where the main line is was all UVA property.

188
189 Mr. Mawyer replied no. He stated that it could be in VDOT property as it comes under the 29
190 Bypass bridge, or they may go to the south of the bridge, which would be private property. He
191 stated that it then gets back onto UVA property in the Research Park.

192
193 Mr. O'Connell asked if this was under negotiation as well.

194
195 Mr. Mawyer replied that much of this is UVA property, and that the RWSA is trying to get with
196 all of the property owners. He stated that it is sometimes a slow process. He stated that VDOT is
197 selling properties back to private property owners where they were part of the Western Bypass,
198 which is at the South Rivanna Water Treatment Plant end and the RWSA must deal with that
199 issue. He stated that they have had families with personal issues, which have delayed some of the
200 negotiations. He stated that Ms. Victoria Fort and Ms. Whitaker are doing a good job of keeping
201 these negotiations moving forward, and they are making progress.

202
203 Mr. Mawyer stated that last month, he mentioned that they received a \$341,000 grant from the
204 Natural Resources Conservation Service. He stated that they reported last month that they
205 expected the grant to be 40%, but now, they understand that it can be as much as 70% of the cost
206 of the design and construction, which is even better news. He stated that RWSA will have a
207 meeting with the NRCS next week.

208
209 Mr. Mawyer stated that they are also poised to start the Albemarle Berkley Wastewater Basin
210 demolition, which is near Albemarle High School. He stated that there is an old wastewater
211 concrete basin and an existing sewer pump station that serves all the schools in that area, but they
212 do not use the overflow basin at all. He stated that they have been meeting with Schools'
213 facilities, and schools would like to use that area after they demolish the basin. He stated that in
214 July and August, they expect to complete this work, adding that it is a smaller job.

215
216 Mr. Mawyer stated that RWSA requested about \$70,000 from the City and County in COVID-19
217 related expenses, if any of the CARES Act funding becomes available.

218
219 Mr. Mawyer presented a picture, noting that RWSA received a grant for \$19,200 from the
220 Virginia Department of Health. He stated that Ms. Andrea Terry (Water Resources Manager) did
221 a good job working with that organization to get the grant so that they can put up eight signs
222 around two reservoirs and one river saying that people have entered the watershed area, which is
223 a drinking water source, and to please keep it clean. He stated that he did not know if the sign
224 would be exactly as depicted, and they are working with VDOT to make sure they comply with
225 their size, color, shape, and location requirements for the signs. He stated that they appreciate
226 Ms. Terry doing a good job getting the grant.

Mr. Mawyer stated that after much ado, they completed the Wholesale Meter Project last year. He presented a graph, noting it has been informative in showing what the City's usage is, as well as the usage of the Albemarle Service Authority. He stated that the dotted line represents last year's average. He stated that the City, for example, averaged 4.48 million gallons of water per day, and are currently averaging 3.7 million gallons per day in May. He stated that the Ragged Mountain Dam project agreement allocates 6.71 million gallons per day to the City.

Mr. Mawyer stated that these meters keep track of how much the City and Service Authority are using and compares that result to the contract agreement. He stated that should either partly exceed the agreed-upon allocation, there would be a true-up in the cost allocation between building the dam and building the pipeline.

Mr. Mawyer stated that in May, the Service Authority was right on their average of 4.7 million gallons per day. He stated that the dotted line above this shows that the Service Authority, by contract, is allocated about 12 million gallons per day. He stated that there would be much growth needed in the County service area before the demand would get close to its water allocation resulting from building the Ragged Mountain Dam.

Mr. Mawyer stated that they were pleased that this project went well and is going well. He stated that during that week and next, they are doing the first annual recalibration of all the meters. He stated that Ms. Fort has had a contractor out there, and most of the meters have been well-calibrated and do not require any significant adjustment, which is good news.

Mr. Mawyer stated that RWSA has been monitoring water production in view of the COVID-19 circumstances and with UVA shutting down. He stated that for this fiscal year, they expect to produce almost 3% more water in the urban service area than they did last year, over 6% more for the Crozet service area, and over 9.5% more for Scottsville. He stated that the community is using more water than ever, despite the COVID-19 circumstances.

Mr. Mawyer noted that for the last few months, water usage has been down in the City. He presented a graph showing that the City usage has been down, but the Service Authority usage is more typical of average.

6. ITEMS FROM THE PUBLIC

Mr. Gaffney opened the meeting to the public. He noted that this was for general items from the public, and not for comments on the public hearing of the budget and adoption of rates.

Hearing no comments, Mr. Gaffney closed Items from the Public.

7. RESPONSES TO PUBLIC COMMENT

As there were no public comments, there were no responses.

8. CONSENT AGENDA

a. Staff Report on Finance

b. Staff Report on Operations

275 c. *Staff Report on Ongoing Projects*

276
277 d. *Staff Report on Wholesale Metering*

278 e. *FY 2021 Personnel Management Plan Revisions*

279
280 f. *Purchasing Manual and Policy Updates*

281
282 g. *Construction Contract Award – Removal and Disposal of Solids from Holding Ponds – Merrill*
283 *Bros, Inc*

284
285 **Dr. Palmer moved that the board approve the Consent Agenda. The motion was seconded**
286 **by Mr. O’Connell and passed unanimously (6-0). (Ms. Hildebrand was absent.)**

287
288 **9. OTHER BUSINESS**

289 a. *Presentation and Public Hearing: Adoption of FY 2020 – 2021 Budget and FY 2021-*
290 *2025 CIP; Approval of Preliminary Rate Schedule Resolution: Bill Mawyer, Executive*
291 *Director*

292
293 Mr. Mawyer stated that last month, he talked in more detail about the Capital Improvement Plan
294 (CIP) for FY 21-25. He stated that he would briefly review it again.

295
296 Mr. Mawyer stated that the FY 21-25 CIP includes 51 projects totaling about \$132.5 million over
297 the five years. He stated that they have about \$75 million in urban water projects, \$29.7 million
298 in nonurban, \$22.7 million in urban wastewater, only about \$400,000 in nonurban water. He
299 stated that they also have about \$4.8 million for technology projects that they do not allocate
300 specifically to any of the service centers.

301
302 Mr. Mawyer stated that there was a goal to get their rates down to \$0 increase for the City and
303 County that year. He stated that part of that effort was to defer some CIP projects, and they
304 deferred 5 projects and part of a sixth project for about \$2.7 million that was deferred from the
305 FY 21-25 CIP into at least FY 26.

306
307 Mr. Mawyer stated that the CIP budget for FY 21-25, at \$132.5 million, is fairly consistent with
308 the average CIP budget over the last 20 years. He stated that it is slightly below average, but not
309 far off. He stated that they are working on deferred maintenance that was perhaps deferred in the
310 early 2000s, and they are trying to get caught up.

311
312 Mr. Mawyer stated that the 15-year CIP is what was told to the board last month. He stated that
313 they shifted \$2.7 million out of FY 21-25 into FY 26-30, and then FY 31-35 stayed the same,
314 with a total 15-year CIP of about \$275 million. He noted that as they get closer to these years and
315 decades, these budgets may increase, but that this was the current estimate of what they have
316 planned for the next 15 years.

317
318 Mr. Mawyer stated that while they did defer part of six projects, they did not defer any of the
319 water supply projects associated with the Community Water Supply Plan. He stated that those
320 projects are still on the schedule RWSA has for them.

321

Mr. Mawyer stated that in summary, there are 51 projects totaling \$132.5 million for FY 21-25 as the RWSA's CIP.

Mr. Mawyer stated that he also could present the operating budget and rates, and if it were the board's pleasure, they could approve all of these at the same time.

Mr. Gaffney asked if anyone on the board objected to this and heard no objections.

Mr. Mawyer stated that they reviewed the operating budget in more detail, and that for the upcoming fiscal year, it is \$37.1 million. He presented a pie chart, explaining that the yellow segment is the largest slice, which is the debt service for the debt the Authority carries. He stated that the blue slice represents labor and benefits, and that the 18% (or \$6.5 million) is for building repairs and chemicals. He stated that \$4.1 million is for general services, including professional and nonprofessional services, utilities, insurance, and permits.

Mr. Mawyer stated that the total operating budget is \$37.1 million, which is 2.6% higher than the current year. He stated that this was mostly because of debt service (an increase of \$783,000) for bonds that have been issued and projects that are underway, and that they must make the debt service payments. He stated that they have a small increase in operating expenses, largely related to health insurance costs.

Mr. Mawyer stated that they estimate the City's charges to be about \$14.8 million next year. He stated that the Service Authority charges would be \$18.5 million.

Mr. Mawyer stated that they have other revenues from private septage haulers, and interest in other accounts like this, of \$2.1 million.

Mr. Mawyer stated that the RWSA is contributing \$1.7 million out of their reserve fund to help balance the budget and to get the rates down to a \$0 increase.

Mr. Mawyer stated that they have major projects ongoing and that will continue in FY 21. He stated that there are three treatment plants under construction at Crozet, South Rivanna, and Observatory, which total over \$50 million. He stated that they have talked about the easement from the Rivanna Reservoir to Ragged Mountain and that they will continue that effort.

Mr. Mawyer stated that there will be an Urban Finished Water Master Plan to present to the board in a few months to talk about the third leg of the "water availability stool" where they must be able to distribute the water they have in supply and treatment.

Mr. Mawyer stated that they are starting a wastewater flow study that they are required to do every 5 years to estimate how much wastewater is coming from the Service Authority system versus the City's system and allocate costs.

Mr. Mawyer stated that there is a project currently out to bid in Crozet for a wastewater flow equalization tank, which will take excess wastewater out of the piping and hold it in a tank until flow recedes. He stated that this typically could occur after a large rainstorm, and when rainwater

368 gets into the sewage pipes (which it is not supposed to, but it does), rather than risking flow out
369 of manholes between Crozet and Moores Creek, they will hold it in the equalization tank and put
370 it back in the system when the flow recedes.

371
372 Mr. Mawyer stated that there is a Buck Mountain Property Master Plan that is almost finished
373 and likely in August, the presentation will be brought to the board.

374
375 Mr. Mawyer stated that RWSA is working with the regulators for new water withdrawal permits
376 for the Crozet water system as well as the Urban water system.

377
378 Mr. Mawyer stated that the operating budget of \$37.1 million is higher than the average has been
379 over the last 15 years. He stated that there is deferred maintenance at all the water treatment
380 plants that they are trying to complete.

381
382 Mr. Mawyer stated that there are capital assets of facilities and equipment of \$257 million. He
383 stated that they have reservoirs, treatment plants, piping, and the stormwater facility at Licking
384 Hole. He stated that they manage all these facilities, as well as 93.4 employees, with the funds
385 the board provides.

386
387 Mr. Mawyer stated that the RWSA is using reserve funds of \$1.7 million to supplement expenses
388 and help keep the rates in FY 21 at a \$0 increase for both the City and the Service Authority.

389
390 Mr. Mawyer presented a chart of the RWSA's outstanding debt. He stated that they have about
391 \$200 million in debt -- hence, why the slice of the pie chart is so large in the operating budget for
392 debt service payment.

393
394 Mr. Mawyer stated that the charges the RWSA propose in FY 21 include a \$0 increase to the
395 City and a \$0 increase to the Service Authority. He noted that in FY 22, those increases are much
396 more significant, and they will be working with Mr. O'Connell and Ms. Hildebrand that
397 Thursday on some alternatives on how they can perhaps bring those rates down and help level
398 them through a few years.

399
400 Mr. Mawyer stated that RWSA does anticipate having to issue more debt in FY 22 to fund the
401 CIP, and potentially every 2-3 years thereafter.

402
403 Mr. O'Connell thanked Mr. Mawyer for setting up the meeting about the future rates.

404
405 Mr. Mawyer stated that in summary, the budget for RWSA is \$37.1 million. He stated that this is
406 a 2.6% increase over the current year with the City, Service Authority, and other charges, along
407 with Rivanna's contribution from reserves, to help not have any cost increases to the City and
408 Service Authority in FY 21.

409
410 Dr. Palmer asked Mr. Mawyer to go back to slide 34. She asked if Crozet Treatment Plant,
411 although in one of the Development Areas, was one of the nonurban areas counted in the six
412 treatment plants. She asked if Red Hill was included in that as well.

Mr. Mawyer replied that this was correct. He stated that the Observatory, South Rivanna, and North Rivanna treatment plants are in the urban area.

Dr. Palmer stated that she wanted to bring up that one thing RWSA does is operate the small treatment facility in Red Hill as the result of a bad gasoline spill from long ago. She stated that she likes to make sure RWSA gets credit for running that facility.

Mr. Mawyer stated that this was a switch they made with the Service Authority and Mr. O'Connell a year or so ago. He stated that it seemed more logical for RWSA to manage that treatment plant than the Service Authority. He stated that while ACSA still manages the customers and distribution lines, RWSA manages the treatment plant. He stated that RWSA has an operator that visits that plant every day, 7 days a week. He stated that it does take some effort, even for a small plant that has 10 connections, plus Red Hill School. He thanked Dr. Palmer for recognizing the effort required to manage the Red Hill plant.

Mr. Gaffney opened the public hearing on the preliminary rate schedule. Hearing no comments, he closed the public hearing.

Dr. Palmer moved the board approve the rate schedule, CIP, and operating budget for FY 20-21. She was seconded by Mr. O'Connell, and the motion carried unanimously (6-0). (Ms. Hildebrand was absent.)

Mr. O'Connell thanked Mr. Mawyer and Mr. Wood for all their work in quickly changing the budget where they have presented a wholesale rate of no increase to their customers. He stated that this was a quick turnaround during COVID-19 and he appreciated the work.

Mr. Richardson echoed Mr. O'Connell's comments. He stated that this involved a significant amount of additional work for staff during a very unsettling time, while at the same time, being expected to maintain day-to-day operations. He stated that RWSA has several people in the field every day who are in the community and being exposed. He thanked staff for continuing to operate. He stated that they have made it look easy, even though it is extremely hard.

b. Presentation: Urban Water Supply and Demand Report: Bill Mawyer, Executive Director

Mr. Mawyer stated that this is the Water Supply and Demand Report that the Ragged Mountain agreement requires RWSA to do every 10 years. He stated that he would provide some history and background of how they got where they are, then talk about water supply analysis, water demand analysis, bring the two together into a supply-versus-demand analysis, then talk about some options to increase water supply.

Mr. Mawyer stated that the Urban Water Supply System is based on Sugar Hollow Reservoir, Rivanna Reservoir, and Ragged Mountain Reservoir, totaling 2.6 billion gallons. He stated that water flows from Sugar Hollow Reservoir through the Moormans River, to South Rivanna Reservoir, which is the water they use at the South Rivanna Water Treatment Plant (the largest water treatment plant to serve the urban area).

Mr. Mawyer stated that water from Sugar Hollow also supplies the Ragged Mountain Reservoir.

He stated that there is a 100-year-old pipe they use to convey water from Sugar Hollow to Ragged Mountain whenever needed. He stated that Ragged Mountain is their largest water supply reservoir, at 1.4 billion gallons, which is connected to the Observatory Hill Water Treatment Plant, which is not the largest treatment plant.

Mr. Mawyer stated that there is also the North Fork Rivanna River . He stated that they take water out of that river and treat it at the North Fork Water Treatment Plant.

Mr. Mawyer stated that collectively, these three plants serve the urban water system.

Mr. Mawyer indicated to a pink area on a map, explaining that it represents what they call the Urban Area. He stated that the Urban Area is defined in the four-party agreement. He stated that there are the three water treatment plants (North Rivanna, South Rivanna, and Observatory).

Mr. Mawyer stated that within those three water treatment plants, there is a treatment capacity of 21 million gallons per day. He stated that South Rivanna and Observatory are currently under renovation, which will increase the treatment capacity at Observatory from 7.7 to 10 million gallons per day.

Mr. Mawyer stated that the Virginia Administrative Code requires RWSA to do water supply planning, ensure they have adequate and safe drinking water available, and promote conservation. He stated that this came into focus around 2000 to 2001, when there was a major drought in Central Virginia. He stated that it took 10 years, but the community got together and crafted a Community Water Supply Plan, which required RWSA to construct a new dam at the Ragged Mountain Reservoir. He stated that this was an existing reservoir and had two existing dams. He stated that they demolished the two dams and built a larger one, which was completed in 2014.

Mr. Mawyer stated that the other part of the project was to build a new waterline from the Rivanna Reservoir over to Ragged Mountain so that they could fill Ragged Mountain at its new capacity. He stated that this is currently planned for final design and construction between 2027 and 2040.

Mr. Mawyer stated that next, they will renovate the two water treatment plants and replace the piping between Ragged Mountain Reservoir and Observatory Water Treatment Plant. He stated that much of this was on the map he just presented to the board about the easements.

Mr. Mawyer stated further, that the Ragged Mountain Dam project agreement that was put together in 2012 defined who will pay for all the construction, between the City and the Service Authority. He stated that there is a component to raise the Ragged Mountain Reservoir water level 12 feet when the community demand equals 85% of the water supply. He stated at that point, either the Service Authority or the City can require RWSA to raise the water in the reservoir.

Mr. Mawyer stated that RWSA had to get two environmental permits, one of which was from the Army Corps of Engineers, which is a 10-year permit that expired in 2018. He stated that the

Corps of Engineers gave RWSA a one-time 5-year renewal to 2023. He stated that the project also required a permit from the Virginia Department of Environmental Quality, which was a 15-year permit that expires in 2023. He stated that RWSA must submit a new application, called a joint permit application, to both agencies by May of 2022. He stated that the board approved an engineering contract last month to get started on preparation of the joint permit application.

Mr. Mawyer presented a map about Community Water Supply projects. He stated that the Ragged Mountain Dam has been completed. He stated that the South Rivanna Water Treatment Plant is under construction and renovation now. He stated that the Observatory Water Treatment Plant renovation is contracted and will start next year, to be completed by 2023. He stated that the Raw Waterline (Project #4) between Ragged Mountain and the Observatory Water Treatment Plant is programmed to be completed by 2027. He stated that there is the Central Waterline, which is a new finished waterline between Observatory Treatment Plant and the City and urban area to help strengthen the spine of the distribution system, and is to be completed by 2027.

Mr. Mawyer stated that Project #6 is the Raw Waterline from Rivanna to Ragged Mountain. He stated that at some point, they would raise the water level 12 feet for 700 million gallons in the Ragged Mountain Reservoir.

Mr. Mawyer stated that the first part of the project was to complete a water supply analysis, which starts with figuring out how much water there is in the three reservoirs that serve the urban area: Ragged Mountain, Sugar Hollow, and South Rivanna, totaling 2.6 billion gallons. He stated that they did a measurement called a bathometric survey in 2018 of Ragged Mountain and South Rivanna. He stated that they completed a survey at Sugar Hollow in 2015.

Mr. Mawyer presented a graph that is representative of the South Rivanna Reservoir. He stated that when talking about supply, some of the concern relates to how much of the total usable water sedimentation taking away from them. He stated that the graph shows that the South Rivanna Reservoir was built in 1966 at a capacity of about 1.7 billion gallons, but that by 2001-2002, the capacity had decreased to about 1.2 billion gallons. He stated that thus, it lost about 500 million gallons in those 36 years. He stated that this is the issue to monitor when talking about water supply.

Mr. Mawyer stated further, that around 2002, RWSA began differentiating between total water in a reservoir versus usable water. He stated that because of the topography of the bottom of the reservoir, as well as the limitations of the intake piping, they cannot pull every gallon out of a reservoir. He stated that this is where one sees a difference between total storage and the useable storage on the graph.

Mr. Mawyer stated that in effect, in 1966, there were 1.7 billion gallons and by 2002, they realized they had just over 800 million gallons. He stated that they completed the bathometric survey in 2018, and it shows a flat line, meaning not much storage volume changed between 2009 and 2018 and that they only lost 2 million gallons of capacity in South Rivanna. He stated that this is one of the metrics RWSA is using now related to supply.

Mr. Mawyer stated that their consultant, Hazen and Sawyer, had to look at the local rainfall over

the last 100 years, relating to how much water RWSA has in supply. He stated that they looked at how much of that rainwater makes its way into the reservoirs, and at how quickly the reservoirs can refill once they are pumped down (or when the water level goes down, how quickly it can recover). He stated that they also looked at the local weather data during the drought of record (2001-2002). He stated this drought lasted around 18 months.

Mr. Mawyer stated that the consultant put all this data together and calculated what water is available for the next 50 years. He stated that they calculate what is called “safe yield” from the reservoirs. He stated that with the update, the consultant calculated the safe yield to be around 18.6 million gallons per day (MGD). He stated that this safe yield is how much water is available during the worst drought of record from the reservoirs.

Mr. Mawyer stated that the consultant reviewed water supply with RWSA, and they talked about how the issue is not safe yield, but what they call “operational yield” for the urban water system. He stated that when looking at the reservoirs, treatment capacity, and piping distribution capacity, the operational yield is how much water RWSA can get to the City and Service Authority customers on a given day, consistently, during a drought of record. He stated that they calculate this to be 12.8 MGD.

Mr. Mawyer stated that they did not want the community thinking there is plenty of water (18 MGD) and if there is a drought, they are in good shape. He stated that they are in good shape, but it is more like 12.8 MGD they can dependably deliver, not 18.6 MGD.

Mr. Mawyer stated that he has spoken before about the “three-legged stool,” which is a simple analogy. He stated that the calculated operational yield is synonymous with available water supply, or how much water the customers can have at their faucets. He stated that to have available water, they must have the supply in the reservoirs, treatment capacity at the plants, and distribution capacity in piping to be able to deliver the drinking water.

Mr. Mawyer stated that RWSA has forecasted what they will have for the next 50 years as the available water supply. He stated that in 2020, they have 12.8 MGD. He stated that as soon as the two urban water treatment plants (South Rivanna and Observatory) are upgraded (around 2023), that capacity will increase to about 15.1 MGD that RWSA feels they can deliver to the urban water system, dependably, during a drought of record, without exhausting the water supply. He stated that what they then see for the next 47 years is a decline in the capacity of the water supply. He stated that this is due to sedimentation of the reservoirs (primarily, South Rivanna Reservoir).

Mr. Mawyer stated that the graph previously shown demonstrated that they averaged about 14-15 million of gallons per year that are lost due to sedimentation in the reservoirs. He stated that they think that, when they had the significant rain in 2018 and 7 feet of water was going across the South Rivanna Dam, this helped to scour out a lot of sediment and improved the capacity.

Mr. Mawyer presented a graph showing what RWSA forecasts to be the available water supply for the next 50 years, until 2070.

599 Dr. Palmer stated that Mr. Mawyer mentioned previously that for the South Fork Rivanna
600 Reservoir, they suddenly started to understand the distinction between usable storage and total
601 storage at some point in time, and she was somewhat confused by that as she has been listening
602 to usable storage for so many years. She asked if Mr. Mawyer could explain that change, and if it
603 was a result of the bathometric studies conducted, or something else.

604
605 Mr. Mawyer stated that he did not have firsthand knowledge, but that it was his understanding
606 that it was an epiphany to staff, and perhaps to the regulators, that it was not accurate to measure
607 the total volume of a reservoir, as can be done with a bathometric survey, when in fact, the
608 reality is that they cannot get to a lot of that water because of the contour at the bottom and the
609 limitations of where they have the gates on the intake structure.

610
611 Mr. Mawyer stated that they do not have the gates down on the bottom of the reservoir because
612 they would then get covered up with silt. He stated that the gates are off the bottom, and the
613 bottom area is what they would call the “unusable pool.” He stated that he believed this was the
614 change around 2002, when they thought there was 1.2 billion, and then this dropped to 800
615 million.

616
617 Dr. Palmer stated that she was talking about when the epiphany came because she had never
618 heard it any differently than the distinction between usable storage and total storage. She stated
619 that it goes back a long way.

620
621 Dr. Palmer stated that in terms of the operational and safe yields, she has often heard that
622 RWSA’s water supply situation is more complicated than what other communities generally
623 have. She stated that if there is a community with one treatment plant, for instance, and one
624 reservoir, then as long as they keep their treatment plant operating at a certain capacity, the safe
625 yield and operational yield will be similar. She asked if RWSA is particularly unusual with their
626 setup of having one large reservoir only attached to one treatment plant. She asked if there are
627 other communities with this type of setup.

628
629 Mr. Mawyer replied that there are other communities that have multiple reservoirs and treatment
630 plants, so he did not know that RWSA was so unusual. He stated that they have a great
631 advantage, if they can complete the plan and build the pipeline to connect the two reservoirs
632 because they will then have the flexibility to use either reservoir, both reservoirs, and either of
633 the largest treatment plants. He stated that this will be a great benefit. He stated that it adds the
634 complication of which one to use and how to coordinate them, but that this is all a benefit as
635 opposed to only having one plant and one reservoir without many options.

636
637 Mr. Mawyer stated that even in a one plant to one reservoir setup, there is still the operational
638 yield issue of how much water is available to their customers. He stated that they could have a
639 huge reservoir, but if they do not have enough treatment capacity, they cannot deliver it to their
640 customers. He asked Dr. Palmer if this answered her questions.

641
642 Dr. Palmer replied yes. She stated that she was just wondering how unique RWSA is, and
643 apparently they are not particularly unique.

644

645 Mr. O'Connell stated that Mr. Mawyer's last point explains why the current supply can jump to
646 15.1 MGD as the new Observatory Water Treatment Plant expands.

647
648 Mr. Mawyer stated that this was correct. He stated that they have, in effect, plenty of water in the
649 reservoirs available in Ragged Mountain, but they can only treat a limited amount. He stated that
650 Observatory has a 7-MGD capacity, but it will rise to 10 MGD with the renovation. He stated
651 that this is why the available water supply to the customers will increase when the treatment
652 plant renovations are complete, as well as the central waterline.

653
654 Dr. Palmer stated that she suspected Mr. Mawyer would cover this later in his presentation, but
655 given the particular setup, once they start utilizing the Observatory Hill Treatment Plant
656 increased production, without the pipeline, they cannot refill the Ragged Mountain Reservoir.
657 She stated that she assumed Mr. Mawyer would talk about this later.

658
659 Mr. Mawyer replied yes.

660
661 Mr. Mawyer stated that the second phase of this analysis is to look at demand. He stated that this
662 is how much water the community needs. He stated that the consultant started this analysis with
663 a population forecast. He stated that they dealt with Weldon Cooper, the TJPDC, Albemarle
664 County Community Development, the City Neighborhood Development Services Department,
665 UVA Facilities staff, and the Office of the University Architect to find out about development
666 plans, zoning, density, comprehensive plans, and how much each locality sees its area growing
667 from a population standpoint. He stated that they also received information from the Virginia
668 Employment Commission and looked at the US Department of Labor data.

669
670 Mr. Mawyer presented a graph of the City's growth. He stated that in 2015, the City had 48,000
671 people, and now, there are just under 50,000. He stated that they project through all the data the
672 consultant gathered that City growth will be about 65,000 people by the year 2070. He stated that
673 this was the entire City because essentially everyone in the City is a public utility customer.

674
675 Mr. Mawyer presented another graph showing how many people in the County will be in the
676 urban service area, receiving public water. He stated that while they were at 61,000 back in 2015,
677 they project that there will be about 106,000 people using public water in 2070 for the Service
678 Authority.

679
680 Mr. Mawyer stated that adding those two numbers, RWSA's demand analysis for what they need
681 to supply is water for 171,000 people by 2070.

682
683 Mr. Mawyer stated that the graph shows different quantities along the way. He stated that the
684 gray line above this number is what AECOM predicted in 2011. He stated that at this point, he
685 would say that their predictions were accurate -- up to around 2045, where now, they predict
686 152,000 people, while AECOM was predicting 160,000 people for RWSA to serve. He stated
687 that they do start to diverge in the graphs at a point, and right now, RWSA would say there will
688 be 162,000 people in 2060, whereas AECOM had stated 184,000. He stated it was no surprise
689 that the longer one goes down the projection forecast, the greater inaccuracy there could be.

691 Mr. Mawyer stated that they looked at how much water the City uses and how much water the
692 Service Authority uses, which are represented on the graph by the blue lines. He stated that in
693 1983, the City was using just over 4 MGD, and now, the City is just under 3 MGD. He stated
694 that the gold line shows the per-capita usage. He stated that while there are many more people
695 now, they do not need as much water because people are not using as much water as they used
696 to. He stated that around 1990, the information indicates that the per-person usage was about 115
697 gallons per person, per day. He stated that now, the data indicates that the per-person usage per
698 day for the City is about 60 gallons per day, which is almost half of what it was.

699
700 Mr. Mawyer stated that similarly, for the Service Authority, the blue lines on the graph
701 demonstrate an upward trend where in 1983, they were above just 2 MGD usage total and in
702 2018, they were up to about 4 MGD usage. He stated that the gold line Service Authority data is
703 similar to what is seen on the City graph from 2006 to 2018. He stated that the Service Authority
704 per-capita usage has declined from just over 80 gallons per person, per day down to almost 60
705 gallons per day.

706
707 Mr. Mawyer stated that RWSA looked at UVA particularly because they are the largest single
708 user of water in the community. He stated that being cognizant of the scale, back in 1995, their
709 average daily usage through the City meter was about 1.65 MGD. He stated in 2015, they were
710 down below 1.1 MGD. He stated that through their sustainability objectives and water
711 conservation objectives, despite adding about 200,000 square feet of building space per year,
712 UVA (and RWSA) predict and project that UVA's usage will be down to just under 1 MGD by
713 2035, which is when their water usage trend starts upward again.

714
715 Mr. Mawyer stated that there is information in the report about how the Charlottesville area
716 compares to other localities in the country. He stated that the Charlottesville area is one of the
717 most conservative communities in their gallons per capita, per day usage. He stated that there
718 are some differences in these numbers, whether it is raw water or finished water, and exactly
719 what year the readings were taken.

720
721 Mr. Mawyer stated that these give a relative comparison that the Charlottesville area, served by
722 RWSA, is very conservative in its gallons per capita, per day and that this is good news. He
723 stated that it is probably a reflection, in part, about the lack of major industries and water users in
724 the area who could influence how much water the community uses. He stated that it is also a
725 compliment to the community that they are very conservative.

726
727 Mr. Mawyer stated that the report also notes that because the community is and has been very
728 conservative, there is not confidence that the per gallon, per capita, per day will continue to
729 decline significantly. He stated that at some point, the per capita usage will stabilize.

730
731 Mr. Mawyer stated that the urban water demand analysis says that in 2070, they will have a
732 demand of 14.3 MGD from the community. He stated that the light blue line on the graph
733 represents the 2011 report from AECOM to provide some comparison. He explained how the
734 line diverges fairly significantly after 2040, and that everyone would say that this is because the
735 amounts of water individuals are using has dropped a lot more than anyone would have guessed
736 when the study was conducted in 2011. He stated that conservation and sustainability are having

737 an impact on how much water the community needs.

738
739 Dr. Palmer stated that when AECOM did the demand analysis, there was a huge amount of
740 discussion in the community at that time about how much conservation would take place. She
741 stated that AECOM stated at many community meetings that she attended that they incorporated
742 significant conservation numbers into their demand analysis. She stated that clearly, it was not
743 enough. She stated that she knows AECOM does demand analysis for many other communities,
744 and that the Charlottesville area is particularly conservative. She asked if RWSA were to do a
745 demand analysis now with a company like AECOM if those guidelines would have changed
746 significantly.

747
748 Mr. Mawyer replied that he believes that through the American Waterworks Association, who
749 gives guidance to localities and consultants on how to do water demand analyses, the
750 conservation steps that have been taken through the decades are becoming well-entrenched in the
751 standards now. He stated that people have seen the results (as the graphs show), and that no one
752 is estimating 100 gallons per person anymore, but now it is down to 60-80 gallons per person,
753 which he thinks is a fairly well-accepted metric.

754
755 Mr. Mawyer presented a graph that pulls together the supply and demand information. He stated
756 that the supply was represented by gray bars, and demand was the green line. He stated that what
757 was significant there is that in 2060, the demand and supply are essentially equal, which is the
758 point at which the community would either have to reduce demand or increase supply in order to
759 be sufficient thereafter.

760
761 Mr. Mawyer stated further, that what the Ragged Mountain Dam project agreement talks about is
762 when the community demand equals 85% of the supply is when they should raise the water in
763 the Ragged Mountain Reservoir. He stated that they calculated that this would happen around
764 2045, based on the available safe yield where they would reach the point where the community
765 supply was equal to 85% of the demand.

766
767 Mr. Mawyer stated that he would show the board some options, and asked if there were any
768 questions, noting that this was the crux of the study in terms of when demand and supply cross
769 on the graphs (which their information shows is in 2060).

770
771 Dr. Palmer stated that she remembered years ago when they were doing the water supply plan
772 that there was a state requirement to have a plan in place when one was reaching 80% of the safe
773 yield. She asked if this was correct.

774
775 Mr. Mawyer replied that there are requirements that they need to expand the water treatment
776 plants. He asked Ms. Whitaker if she knew about water supply and reservoirs.

777
778 Ms. Whitaker stated that typically, both on the water and wastewater side, the triggers are at the
779 85%, 90%, and 95%. She stated that they typically have to be planning, then in design, then in
780 construction. She stated that she did not know that 80% is a hard and fast water supply planning
781 rule. She stated that because it takes so long to get permitting for water supply, sometimes people
782 start earlier to be in action mode once the 85% actually hits.

783
784 Dr. Palmer asked if it was then 85% where they will need to be in planning mode.
785

786 Ms. Whitaker replied that typically, for DEQ on the water and wastewater side, 85% is when one
787 needs to be in planning mode and that at 90%, one needs to be in design and construction.
788

789 Dr. Palmer stated that because they are particularly prudent and recognize that they need to be
790 looking at operational yield, they were saying that 85% of that operational yield is when they
791 should be taking steps.
792

793 Mr. Mawyer stated that this was right -- raising the reservoir level as a minimum but getting
794 ready to build the pipeline at a maximum.
795

796 Dr. Palmer stated that raising the reservoir does not help them much with the refill time.
797

798 Mr. Mawyer stated that this was correct and that he was going to explain this.
799

800 Mr. Mawyer stated that in summary, the study says that by 2070, they will have a service
801 population of just over 170,000 people. He stated that there is available water supply that
802 includes supply, treatment, and capacity of piping of about 12.8 MGD. He stated that they will
803 have a water demand that exceeds the supply at 14.3 MGD, and therefore, the additional water
804 supply or a water demand decrease would be required by 2060. He stated that the demand will
805 equal 85% of the supply by 2045.
806

807 Mr. Mawyer stated that there are a couple options and information about increasing the available
808 water supply. He stated that he had graphs to show the board as well. He stated that the
809 recommended option is to build the Rivanna to Ragged Mountain pipeline and raise the pool by
810 2035 as the Service Authority recommends. He stated that it is close to what the City and RWSA
811 came up with (2040).
812

813 Mr. Mawyer stated that in addition to capacity, this option adds redundancy and resiliency,
814 meaning they can interconnect their two largest reservoirs and two largest treatment plants. He
815 stated that they can be resilient, if the community would have some kind of disaster, in helping to
816 recover more quickly.
817

818 Mr. Mawyer stated that they will have operational benefits where they can pick and choose
819 whether they want to use the Ragged Mountain Reservoir or the South Rivanna Reservoir. He
820 stated that if there is a large rain, for instance, and South Rivanna is full of muddy water, they
821 would not have to treat that water out of the South Rivanna Treatment Plant, but could switch
822 over and provide water to both Observatory and South Rivanna from Ragged Mountain during
823 periods like this. He stated that this would help them with operational expenses.
824

825 Mr. Mawyer stated that there are environmental benefits, which were of high concern during the
826 permitting process, that the Moormans River supporters and the Nature Conservancy advocated
827 that the pipeline should be built between the reservoirs and stop taking water out of Sugar
828 Hollow to supply Ragged Mountain.

829
830 Mr. Mawyer stated that if RWSA gets another 15-year permit in 2023, it would expire by 2038,
831 and then they would have to go through the process again. He stated that there is some advantage
832 to getting the pipeline project completed before they would have to go through a third permitting
833 process after 2038.

834
835 Mr. Mawyer stated that another option is to build a pipeline in 2045, which is when they would
836 reach the 85% of supply threshold, and raise the pool after that, which they project would be
837 about 15 years later. He stated that with the pipeline in place, they would be able to raise the pool
838 more quickly than having to trickle it out of Sugar Hollow. He stated that he gave the example
839 some time ago that while it would take days to fill a deficit in the Ragged Mountain Reservoir
840 from the Rivanna Reservoir, while it takes months to fill Ragged Mountain from Sugar Hollow
841 Reservoir when they can only get 3 MGD out of that pipe.

842
843 Mr. Mawyer stated that the third option (which, in RWSA's minds, was not a very attractive
844 option) is that they could wait until around 2045, then raise the Ragged Mountain pool. He stated
845 that this gives little benefit, however, and they would need the pipeline 5 years later.

846
847 Mr. Mawyer stated that all three options extend the available water supply, to 2120. He stated
848 that right now, they are saying they have adequate available water supply until 2060.

849
850 Mr. O'Connell asked if the current capital program at least financially starts looking at having
851 the pipeline and the pool level raised by 2035.

852
853 Mr. Mawyer replied yes.

854
855 Mr. O'Connell asked why other options were being presented.

856
857 Mr. Mawyer replied that raising the pool was based on the 85% of supply criteria of the Service
858 Authority or the City. He stated that they would have to reach that criteria. He stated the Service
859 Authority has advocated that when the pipe is built, the reservoir should be raised, and that this is
860 likely what would happen. He stated RWSA may have to get concurrence from the City on that.

861
862 Mr. O'Connell asked if this were done, if the supply would be extended by 60 years to 2120. He
863 stated that this was basically extending it 100 years from present day.

864
865 Mr. Mawyer replied this was correct. He stated that it becomes a 100-year plan from present day.

866
867 Mr. O'Connell stated that it was incredibly good news, to be able to follow the water supply plan
868 that was adopted in 2010 and be able to get out to another 100 years.

869
870 Dr. Palmer stated that she wanted to expand on something Mr. Mawyer mentioned for anyone
871 listening. She stated that Mr. Mawyer gave such a good explanation last November, when he
872 stated that if the Ragged Mountain Reservoir was down 10%, currently they are treating 1.5
873 MGD at the Observatory Hill Treatment Plant, and can only bring 3 MGD through the Sugar
874 Hollow pipeline. She stated that when they are producing water at Observatory Hill at 1.5 MGD,

875 they can only refill the Ragged Mountain Reservoir with 1.5 MGD.

876
877 Dr. Palmer stated that these were simple numbers where many people remarked on how
878 important it was that it would take about 90 days to refill the 10% at Ragged Mountain through
879 the Sugar Hollow Reservoir, but only about 6 days through the new pipeline.

880
881 Dr. Palmer stated that she brings this up to expand on this because if they are treating more water
882 at Observatory Hill (e.g. 3 MGD) and do not have the new pipeline in from South Fork to
883 Ragged Mountain, they cannot put any more water back in to refill Ragged Mountain without
884 stopping production at the Observatory Hill Treatment Plant, which will be a very important
885 treatment plant to supply water to the urban area. She stated that this gets back to Mr. Mawyer's
886 explanation of operational yield.

887
888 Dr. Palmer stated that she knew that the board had already heard that, as well as the Board of
889 Supervisors, but that these are simple numbers to point out to those listening that once they
890 increase the treatment at Observatory Hill, they do not have the extra capacity to refill Ragged
891 Mountain.

892
893 Mr. Mawyer stated that this was correct, and thanked Dr. Palmer for mentioning this.

894
895 Mr. Mawyer presented a map of what the South Rivanna to Ragged Mountain Pipeline Project.
896 He stated that the project is estimated to be about \$80 million.

897
898 Mr. Mawyer stated that they have talked about the benefits of increasing the drinking water
899 supply, including that it improves the redundancy and resiliency in the drinking water system in
900 that they can switch between reservoirs and between the two largest water treatment plants. He
901 stated that they can pump up to 25 MGD from Rivanna to Ragged Mountain (referring to Dr.
902 Palmer's points), versus 3 MGD coming from Sugar Hollow. He stated that it provides a better
903 balance of the community and environmental needs in that more water would be in the
904 Moormans and Rivanna Rivers. He stated that it would promote economic and recreational
905 opportunities in and along those rivers.

906
907 Mr. Mawyer presented a graph, noting the board had probably seen it in the past. He stated that
908 the RWSA Board and City Council stated that while they used to have the Schedule A timeline
909 (which was earlier) and Schedule D (which was later), both of those boards started to focus on
910 Schedules B and C, which is where they have the 2027-2040 plan. He stated that the Service
911 Authority was somewhat more aggressive and liked Schedule B. He stated that RWSA endorsed
912 this schedule, which would start around 2027 and be finished in 2035.

913
914 Mr. Mawyer stated that currently in the CIP, RWSA has it slated to start in 2027 and be finished
915 at least by 2035, if not 2033.

916
917 Mr. Mawyer presented a graph of what they called Option 1 where, in 2035, they would have the
918 pipeline completed and would raise the Ragged Mountain pool. He stated that the supply would
919 increase from 14.8 MGD to almost 21.4 MGD, which is well above the green line (demand line)
920 on the graph. He stated that this goes beyond 2070 and, when extended out, they project that the

921 available water supply would go until 2120.

922
923 Mr. Mawyer stated that if they wait until 2045 and build the pipe by then, but they do not add
924 water in the reservoir, they will not need to add water in the reservoir until 2060. He stated that
925 there was not as much resiliency and redundancy between 2035 and 2060, however, as there
926 would be with Option 1.

927
928 Mr. Mawyer stated that the consultant was looking at the drought of record over the last 100
929 years. He stated that climate change and conditions are current issues, and that the next drought
930 could be worse than the one that happened in 2002. He stated that this is where resiliency and
931 redundancy are important to a community.

932
933 Mr. Mawyer stated that the third option was raising the water level at Ragged Mountain in 2045.
934 He stated that this gives a very small increase in the available water supply, and it only lasts
935 about 5 years until they would have to then build the pipeline. He stated that RWSA does not see
936 this as an attractive option.

937
938 Mr. Mawyer presented a graph that shows that around 2031, RWSA starts having capacity in its
939 debt service to add more debt, which was one component of the logic for Schedules B and C of
940 the pipeline project. He stated that the current debt profile still holds true.

941
942 Mr. Mawyer stated that the Strategic Plan guidance talks about planning, delivering, and
943 maintaining dependable infrastructure in a financially responsible way. He stated that the
944 pipeline project does meet those goals and is clearly an important part of the Community Water
945 Supply Plan.

946
947 Mr. Mawyer stated that the next update of the supply and demand study is scheduled for 2030.
948 He stated that every 10 years, they update the plan.

949
950 Mr. Snook stated that it may not matter in the grand scheme of things but may highlight a
951 problem at some of the intermediate points. He stated that his guess was that the consultant's
952 estimates of Charlottesville's population and population growth were low. He stated that they
953 were saying, for example, that Charlottesville would not hit 52,000 people until 2030. He stated
954 that he thinks they will probably hit it no later than 2025, and perhaps even before then. He
955 stated that this highlights, to him, the fact that if they are basing all these plans on projections of
956 what will happen in the future, there is so much uncertainty around those projections that he
957 would be very leery of trying to cut things very closely.

958
959 Mr. Mawyer stated that as an engineer, he would appreciate this mantra. He stated that they want
960 to be early, not late. He stated that they need to have facilities before they are needed and not
961 after, so they try to be conservative. He stated that he thinks the consultants do try to be
962 conservative, but when it comes to population projection, they used what the County and City
963 documents told them, although they did anticipate higher-than-projected growth within a half-
964 mile of the University Hospital as an exception from the data provided by County and City staff
965 and UVA.

Mr. Snook stated that his guess was that the current Census (if it is accurate, and the problem is that it is unknown whether the Census will be accurately done, given the difficulties they are having getting responses due to COVID-19) will show Charlottesville already being at 50,000 people. He stated that the notion that it would take 10 years to increase by another 2,000, given the rate of increase the City is seeing in terms of building applications, is not realistic. He stated this this does not cause him to say to vote one way versus another, but to say to be careful to not be too cute with assumptions.

Dr. Palmer stated that when they were discussing this several years ago, they talked a lot about climate change, and the predictions and models indicated at that point that they would probably have a similar total amount of rain from year to year, on average, but that it would be more intermittent, heavier rains and longer droughts. She recalled Mr. Mawyer's mention of how muddy the South Fork Rivanna gets with heavy rains and how that will decrease the operational costs if they do not have to use that.

Dr. Palmer stated that the pump storage situation, with one large reservoir with little drainage area, would protect it from these very heavy rains and protect them with the pump storage ability during long periods of drought. She asked if Mr. Mawyer is going to meetings and keeping track of the modeling as it goes forward for this area for climate change, if this was still the thought with the models, that they will continue to have a similar amount of rain year to year on average, but that it will be expected to be more intermittent rather than as it had been in the past.

Mr. Mawyer replied that the consultant looked back 100 years at the weather patterns. He stated that they do look forward to a certain degree, along with the climate issues that are prevalent now. He stated that he could not articulate exactly how much they contributed in the data analysis with that issue, but he believed that they did consider the climate issue in the report. He stated that they will have to ask the consultant more specifically about how they integrated that thinking into the data.

Dr. Palmer stated that she certainly very much appreciates the ACSA Board and staff being on the more aggressive side with Schedule B, and she hoped they could stick to that as much as possible, going forward. She stated that she thinks this is the most prudent and reasonable thing to do.

Dr. Palmer stated that in the materials, it says RWSA expects it would take about 8 years to put in the pipe. She asked if this was from start of design to finish.

Mr. Mawyer replied yes. He stated that they would say 6-8 years, but that this is from start of design to finish construction. He stated that they are doing preliminary design now, acquiring easements, and have built the Birdwood section. He stated that they are leaning more towards the 6 years than 8 years, but that 8 years was the timeline they started with.

Mr. O'Connell asked if the report talks about how all this fits in with the permit process. He stated that his understanding is that they are starting the renewal for the permit. He asked if this is a 15-year permit that takes them to 2038, it would mean that the timing to stay within that permit would be critical as well.

1013
1014 Mr. Mawyer replied that he thinks it would be important. He stated that it is a 15-year permit
1015 from DEQ. He stated that it is probably another 10-year permit from the Army Corps. He stated
1016 that in the first joint permit application (JPA), RWSA had to look at all the alternatives, such as
1017 taking water from the James River and dredging. He stated that to some degree, RWSA will be
1018 asked to look at all of this again and see if the options have changed.

1019
1020 Mr. Mawyer stated that they will want to say to the DEQ that this is the same project that was
1021 approved back in 2008. They have built the dam and part of the pipeline, and have it in the CIP
1022 to finish the pipeline. He stated that they acquired the easements for the pipeline. They have not
1023 ignored the project or put it too far aside but are continuing to work on it in hopes that they will
1024 essentially get a renewal of the same permit.

1025
1026 Mr. O'Connell asked if any action was required from the board on this or if it was informational.

1027
1028 Mr. Mawyer replied that it was for information and that no action was needed. He stated that he
1029 included the pipeline discussion because it is a related topic. He stated that the pipeline is in the
1030 CIP from 2027 to 2033. He stated that unless the board chooses to change it, that is where it will
1031 stay.

1032
1033 Mr. Richardson stated that related to Mr. O'Connell's question about the permits, Mr. Mawyer
1034 had showed the board something around 2038.

1035
1036 Mr. Mawyer replied this was right.

1037
1038 Mr. Richardson stated that since they have a 6 to 8-year buildout, with 6 years being optimistic
1039 and 8 years with some unplanned delays, if they are in the 2027 design stage and if it were to be
1040 pushed back to 2029 or 2030, they were still planning to get everything wrapped up by 2038.

1041
1042 Mr. Mawyer stated yes. He stated that there is some flexibility in that schedule to be finished by
1043 2038, though not a lot.

1044
1045 Mr. Richardson stated that Mr. Mawyer had showed the board the affordability and the debt
1046 service where they begin to see some headroom and fiscal capacity around 2031-2032. He stated
1047 that the planning for 2027 start, which he agrees with the staff and what Dr. Palmer stated about
1048 the Albemarle County Service Authority looking at Option B, makes prudent sense to him. He
1049 stated that much like when starting a huge infrastructure project, there is a 20% contingency and
1050 planning for the unknown. He stated that in this scenario, he applauds staff, and thinks that the
1051 2020 study continues to align with the planning that the staff at the Authority have stated needs
1052 to get worked on.

1053
1054 Mr. Richardson stated that Sugar Hollow is less than 30% of the capacity of Ragged Mountain,
1055 and so this water line will be absolutely needed in the timeframe they are talking about for the
1056 community to enjoy a maximized water system. He stated that by 2035-2040, they will need to
1057 have the capability to manage and maximize the water system that they will, at that point in time,

1058 have in place. He stated that he predicts that people will look back on this infrastructure and will
1059 be happy that people took the time to look at this and plan for the infrastructure in this way.
1060

1061 Mr. Richardson stated that in terms of the CIP and being able to afford the pipeline and being
1062 able to plan for it as debt is retired in the 2030 timeframe, this looks like it continues to align as
1063 hoped. He asked if he was missing something.
1064

1065 Mr. Mawyer replied no.
1066

1067 Mr. Richardson expressed that things were steady at this point and they were continuing to plan
1068 for this just like they have. He stated that he did not see anything in the presentation to suggest
1069 that anything was off track in any way.
1070

1071 Mr. Gaffney stated that this was a great presentation and discussion. He stated that he agreed
1072 with Mr. Richardson's summary. He stated that they will certainly want to get this done before
1073 2038 and before the next permit expires.
1074

1075 ***10. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA***

1076 Mr. Mawyer thanked Mr. John Hull, who was helping facilitate the meeting.
1077

1078 ***11. CLOSED MEETING***

1079 There was no closed meeting.
1080

1081 ***12. ADJOURNMENT***

1082 **At 4:11 p.m., Dr. Palmer moved to adjourn the meeting of the Rivanna Water and Sewer**
1083 **Authority. The motion was seconded by Dr. Richardson and passed unanimously (6-0).**
1084 **(Ms. Hildebrand was absent.)**
1085



MEMORANDUM

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

FROM: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: EXECUTIVE DIRECTOR'S REPORT

DATE: JULY 28, 2020

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

Recognitions

We would like to congratulate Brian Haney, who was recently promoted to the Wastewater Assistant Manager position. Brian has been a valuable member of our wastewater team for 18 years.

STRATEGIC PLAN GOAL: INFRASTRUCTURE AND MASTER PLANNING

S. Rivanna to Ragged Mtn Reservoir Water Line Easements

Progress continues in our efforts to acquire the necessary easements. Offers have been made to 11 of 12 private property owners, and through negotiations, agreements have been reached with 8 property owners. City Council is scheduled to consider easements on four properties located near Ragged Mtn in August. Progress is also being made on easements from 3 public property owners (VDOT, City, County School Board) and the UVA Foundation.

Negotiations with two private owners, UVA, the UVA Foundation and the Virginia Department of Forestry are also ongoing for water line easements between Ragged Mtn Reservoir and the Observatory Water Treatment Plant.

STRATEGIC PLAN GOAL: OPERATIONAL OPTIMIZATION

Laboratory Equipment

An automated instrument was purchased for our laboratory in February 2020 to test for certain water and wastewater nutrients. As of June 15th, the lab has officially been certified by Virginia Department of Consolidated Laboratory Services to run wastewater nitrate-nitrite (NO_x) samples on the instrument. The certification was a process that involved learning and perfecting the testing technique, writing a Standard Operating Procedure,

performing an initial demonstration of capability, passing a blind proficiency test, and then running samples side-by-side with the old method for about two months. This new analyzer will save us approximately 16 hours of employee time every month, give us more flexibility in when we run samples, and allow us to generate both compliance and operational data more quickly. Lab Manager, Dr. Bill Morris, is also pursuing certification for the lab to perform wastewater total kjeldahl nitrogen (TKN) and ammonia testing on the instrument in the next six months.

STRATEGIC PLAN GOAL: ENVIRONMENTAL STEWARDSHIP, COMMUNICATION & COLLABORATION

Wastewater Sampling for SARS COV 2

We are providing access to our facilities for two research groups from UVA who are investigating the prevalence of SARS COV 2 in wastewater as an indicator of community health and infection rate. The teams are looking for a baseline level of SARS COV 2 in the wastewater before UVA students come back and before public schools start again. The teams are replicating a study completed by researchers at Yale University.



MEMORANDUM

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

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

REVIEWED: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: JUNE MONTHLY FINANCIAL SUMMARY – FY 2020

DATE: JULY 28, 2020

Urban Water flow and rate revenues are 1.3% under budget estimates for this fiscal year, and Urban Wastewater flow and rate revenues are 5.7% over budget. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authority
Operations				
Revenues	\$ 7,764,069	\$ 9,170,527	\$ 2,319,547	\$ 19,254,143
Expenses	(8,086,253)	(8,917,552)	(2,110,490)	(19,114,295)
Surplus (deficit)	<u>\$ (322,184)</u>	<u>\$ 252,975</u>	<u>\$ 209,057</u>	<u>\$ 139,848</u>
Debt Service				
Revenues	\$ 6,655,213	\$ 8,661,212	\$ 1,490,105	\$ 16,806,530
Expenses	(6,668,248)	(8,648,053)	(1,489,146)	(16,805,447)
Surplus (deficit)	<u>\$ (13,035)</u>	<u>\$ 13,159</u>	<u>\$ 959</u>	<u>\$ 1,083</u>
Total				
Revenues	\$ 14,419,282	\$ 17,831,739	\$ 3,809,652	\$ 36,060,673
Expenses	(14,754,501)	(17,565,605)	(3,599,636)	(35,919,742)
Surplus (deficit)	<u><u>\$ (335,219)</u></u>	<u><u>\$ 266,134</u></u>	<u><u>\$ 210,016</u></u>	<u><u>\$ 140,931</u></u>

When reviewing the Authority as a whole, operating revenues are \$530,300 under budget and operating expenses are \$390,500 over budget for the fiscal year. The two Urban rate centers had significant unbudgeted expenses for professional services, utility costs, and pipeline repairs. A more detailed summary is as follows:

- A. Personnel Costs (Administration, Engineering – pages 8, 11) – The Administration and Engineering departments went over budget on personnel cost this year due to health insurance enrollment changes and a shift in a mechanic position to Engineering.

- B. Professional Services (Urban Water, Administration, Engineering – pages 2, 8, 11) – Urban Water legal fees are over budget related to the Observatory plant lease negotiations and Buck Mountain land issues, and Administration incurred extra legal fees related to COVID-19 issues. Engineering incurred unbudgeted expenditures for engineering and technical services for an addition to the engineering trailer. Urban Water also incurred unbudgeted engineering/technical services related to the Buck Mountain Master Plan.
- C. Other Services and Charges (Urban Water, Urban Wastewater, Maintenance – page 2, 5, 9) – Utilities are running high for Urban Water and Urban Wastewater. Urban Water is over budget on pipeline costs due to emergency line break repairs at Observatory, Meriwether, McIntire Park, and Georgetown/Hydraulic and Pen Park Lane, but this is currently offset by being under budget on chemical costs. The Maintenance department is over budget on safety supply purchases related to COVID-19.
- D. Communications (Urban Water – page 2) – Urban Water telephone and data services went over budget due to needed upgrades to data lines.
- E. Information Technology (Glenmore Wastewater, Engineering – pages 6, 11) – Glenmore had some unbudgeted expenditures for SCADA maintenance and support. Engineering went over budget on the purchase of a computer program to assist with capturing data from engineering/inspector personnel while in the field into the GIS system.
- F. Operations & Maintenance (Urban Wastewater, Glenmore Wastewater, Maintenance – pages 5, 6, 9) – Urban Wastewater incurred \$340,000 unbudgeted expenses in this category, including temporary flow meter instrumentation costs of \$223,000, chemical purchases of \$45,000 and other maintenance costs of \$72,000. Glenmore Wastewater went over budget on equipment maintenance and repair costs for blower replacement and actuator control repairs. The Maintenance department had some unbudgeted vehicle repairs and pipeline maintenance costs.
- G. Equipment Purchases (Urban Wastewater, Maintenance, Lab – pages 5, 10, 11) The Lab made a \$42,000 unbudgeted purchase of an analyzer to be used for wastewater nutrient and drinking water quality testing. The Maintenance department and Urban Wastewater also incurred some unbudgeted equipment purchases.

Please note that the budget and these monthly budget vs. actual statements are prepared on a different basis than the comprehensive annual financial report (CAFR). Year-end adjustments are recorded every year in order to conform to the accounting principles required for the CAFR. These monthly statements were prepared prior to recording those year-end adjustments.

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020
Fiscal Year 2020

Consolidated**Revenues and Expenses Summary****Operating Budget vs. Actual**

Notes

Revenues

	<i>Budget</i> <i>FY 2020</i>	<i>Budget</i> <i>Year-to-Date</i>	<i>Actual</i> <i>Year-to-Date</i>	<i>Budget</i> <i>vs. Actual</i>	<i>Variance</i> <i>Percentage</i>
Operations Rate Revenue	\$ 17,381,293	\$ 17,381,293	\$ 17,749,911	\$ 368,618	2.12%
Lease Revenue	100,000	100,000	110,079	10,079	10.08%
Admin., Maint. & Engineering Revenue	478,000	478,000	496,467	18,467	3.86%
Other Revenues	562,478	562,478	916,751	354,273	62.98%
Use of Reserves	667,000	667,000	446,600	(220,400)	-33.04%
Interest Allocation	31,500	31,500	30,802	(698)	-2.22%
Total Operating Revenues	\$ 19,220,271	\$ 19,220,271	\$ 19,750,610	\$ 530,339	2.76%

Expenses

Personnel Cost	A	\$ 8,760,078	\$ 8,760,079	\$ 8,576,007	\$ 184,073	2.10%
Professional Services	B	666,050	666,050	853,564	(187,514)	-28.15%
Other Services & Charges	C	2,980,612	2,980,612	3,222,474	(241,862)	-8.11%
Communications	D	142,593	142,593	163,391	(20,798)	-14.59%
Information Technology	E	352,750	352,750	278,459	74,291	21.06%
Supplies		46,180	46,180	32,616	13,564	29.37%
Operations & Maintenance	F	5,069,478	5,069,478	5,210,796	(141,318)	-2.79%
Equipment Purchases	G	359,550	359,550	430,456	(70,906)	-19.72%
Depreciation		843,000	843,000	843,000	-	0.00%
Reserve Transfers		-	-	-	-	
Total Operating Expenses		\$ 19,220,291	\$ 19,220,292	\$ 19,610,762	\$ (390,470)	-2.03%
Operating Surplus/(Deficit)		\$ (20)	\$ (21)	\$ 139,847		

Debt Service Budget vs. Actual**Revenues**

Debt Service Rate Revenue	\$ 15,861,022	\$ 15,861,022	\$ 15,861,024	\$ 2	0.00%
Septage Receiving Support - County	109,440	109,440	109,441	1	0.00%
Buck Mountain Surcharge	125,900	125,900	102,500	(23,400)	-18.59%
Buck Mountain Lease Revenue	1,600	1,600	4,747	3,147	196.66%
Trust Fund Interest	158,200	158,200	179,532	21,332	13.48%
Reserve Fund Interest	690,000	690,000	549,286	(140,714)	-20.39%
Total Debt Service Revenues	\$ 16,946,162	\$ 16,946,162	\$ 16,806,530	\$ (139,632)	-0.82%

Debt Service Costs

Total Principal & Interest	\$ 14,473,236	\$ 14,473,236	\$ 14,473,236	\$ -	0.00%
Reserve Additions-Interest	690,000	690,000	549,286	140,714	20.39%
Debt Service Ratio Charge	725,000	725,000	725,000	-	0.00%
Reserve Additions-CIP Growth	1,057,925	1,057,925	1,057,925	-	0.00%
Total Debt Service Costs	\$ 16,946,161	\$ 16,946,161	\$ 16,805,447	\$ 140,714	0.83%
Debt Service Surplus/(Deficit)	\$ 1	\$ 1	\$ 1,082		

Summary

Total Revenues	\$ 36,166,433	\$ 36,166,433	\$ 36,557,139	\$ 390,706	1.08%
Total Expenses	36,166,452	36,166,453	36,416,210	(249,756)	-0.69%
Surplus/(Deficit)	\$ (19)	\$ (20)	\$ 140,930		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020

Urban Water Rate Center
Revenues and Expenses Summary

<i>Budget FY 2020</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$ 7,118,541	\$ 7,118,541	\$ 7,028,174	\$ (90,367)	-1.27%
Lease Revenue	70,000	70,000	81,284	11,284	16.12%
Miscellaneous	-	-	252,966	252,966	
Use of Reserves	600,000	600,000	388,800	(211,200)	-35.20%
Interest Allocation	13,200	13,200	12,844	(356)	-2.70%
Total Operating Revenues	\$ 7,801,741	\$ 7,801,741	\$ 7,764,069	\$ (37,672)	-0.48%

Expenses

Personnel Cost	\$ 1,861,134	\$ 1,861,134	\$ 1,812,518	\$ 48,616	2.61%
Professional Services	207,200	207,200	396,316	(189,116)	-91.27%
Other Services & Charges	574,963	574,963	781,412	(206,449)	-35.91%
Communications	65,100	65,100	85,845	(20,745)	-31.87%
Information Technology	77,000	77,000	49,692	27,308	35.46%
Supplies	6,100	6,100	5,990	110	1.80%
Operations & Maintenance	2,356,590	2,356,590	2,291,942	64,648	2.74%
Equipment Purchases	50,500	50,500	60,644	(10,144)	-20.09%
Depreciation	300,000	300,000	300,000	-	0.00%
Reserve Transfers	-	-	-	-	
Subtotal Before Allocations	\$ 5,498,587	\$ 5,498,587	\$ 5,784,358	\$ (285,772)	-5.20%
Allocation of Support Departments	2,303,155	2,303,155	2,301,895	1,260	0.05%
Total Operating Expenses	\$ 7,801,742	\$ 7,801,742	\$ 8,086,253	\$ (284,511)	-3.65%
Operating Surplus/(Deficit)	\$ (1)	\$ (1)	\$ (322,184)		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 6,178,598	\$ 6,178,598	\$ 6,178,596	\$ (2)	0.00%
Trust Fund Interest	54,000	54,000	61,220	7,220	13.37%
Reserve Fund Interest	387,000	387,000	308,150	(78,850)	-20.37%
Buck Mountain Surcharge	125,900	125,900	102,500	(23,400)	-18.59%
Lease Revenue	1,600	1,600	4,747	3,147	196.66%
Total Debt Service Revenues	\$ 6,747,098	\$ 6,747,098	\$ 6,655,213	\$ (91,885)	-1.36%

Debt Service Costs

Total Principal & Interest	\$ 5,223,498	\$ 5,223,498	\$ 5,223,498	\$ -	0.00%
Reserve Additions-Interest	387,000	387,000	308,150	78,850	20.37%
Debt Service Ratio Charge	400,000	400,000	400,000	-	0.00%
Reserve Additions-CIP Growth	736,600	736,600	736,600	-	0.00%
Total Debt Service Costs	\$ 6,747,098	\$ 6,747,098	\$ 6,668,248	\$ 78,850	1.17%
Debt Service Surplus/(Deficit)	\$ -	\$ -	\$ (13,035)		

Rate Center Summary

Total Revenues	\$ 14,548,839	\$ 14,548,839	\$ 14,419,281	\$ (129,558)	-0.89%
Total Expenses	14,548,840	14,548,840	14,754,501	(205,661)	-1.41%
Surplus/(Deficit)	\$ (1)	\$ (1)	\$ (335,219)		
Costs per 1000 Gallons Operating and DS	\$ 2.30		\$ 2.41		
	\$ 4.28		\$ 4.40		
Thousand Gallons Treated or Flow (MGD)	3,397,700	3,397,700	3,354,737	(42,963)	-1.26%
	9.309		9.166		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020

Crozet Water Rate Center
Revenues and Expenses Summary

<i>Budget FY 2020</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$ 1,028,808	\$ 1,028,808	\$ 1,028,808	\$ -	0.00%
Lease Revenues	30,000	30,000	28,795	(1,205)	-4.02%
Use of Reserves	52,000	52,000	42,800	(9,200)	-17.69%
Interest Allocation	1,800	1,800	1,786	(14)	-0.75%
Total Operating Revenues	\$ 1,112,608	\$ 1,112,608	\$ 1,102,190	\$ (10,418)	-0.94%

Expenses

Personnel Cost	\$ 300,589	\$ 300,589	\$ 290,174	\$ 10,415	3.46%
Professional Services	12,850	12,850	2,630	10,220	79.53%
Other Services & Charges	137,816	137,816	108,874	28,942	21.00%
Communications	4,950	4,950	5,637	(687)	-13.88%
Information Technology	2,600	2,600	1,811	789	30.36%
Supplies	1,395	1,395	707	688	49.28%
Operations & Maintenance	398,400	398,400	302,332	96,068	24.11%
Equipment Purchases	6,500	6,500	9,633	(3,133)	-48.20%
Depreciation	30,000	30,000	30,000	-	0.00%
Reserve Transfers	-	-	-	-	-
Subtotal Before Allocations	\$ 895,100	\$ 895,100	\$ 751,798	\$ 143,302	16.01%
Allocation of Support Departments	217,513	217,513	216,722	791	0.36%
Total Operating Expenses	\$ 1,112,613	\$ 1,112,613	\$ 968,520	\$ 144,093	12.95%
Operating Surplus/(Deficit)	\$ (5)	\$ (5)	\$ 133,670		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 1,311,312	\$ 1,311,312	\$ 1,311,312	\$ -	0.00%
Trust Fund Interest	5,500	5,500	6,284	784	14.25%
Reserve Fund Interest	21,500	21,500	17,028	(4,472)	-20.80%
Total Debt Service Revenues	\$ 1,338,312	\$ 1,338,312	\$ 1,334,623	\$ (3,689)	-0.28%

Debt Service Costs

Total Principal & Interest	\$ 1,230,815	\$ 1,230,815	\$ 1,230,815	\$ -	0.00%
Reserve Additions-Interest	21,500	21,500	17,028	4,472	20.80%
Reserve Additions-CIP Growth	86,000	86,000	86,000	-	0.00%
Total Debt Service Costs	\$ 1,338,315	\$ 1,338,315	\$ 1,333,843	\$ 4,472	0.33%
Debt Service Surplus/(Deficit)	\$ (3)	\$ (3)	\$ 781		

Rate Center Summary

Total Revenues	\$ 2,450,920	\$ 2,450,920	\$ 2,436,813	\$ (14,107)	-0.58%
Total Expenses	2,450,928	2,450,928	2,302,363	148,565	6.06%
Surplus/(Deficit)	\$ (8)	\$ (8)	\$ 134,450		
Costs per 1000 Gallons	\$ 5.59		\$ 4.43		
Operating and DS	\$ 12.31		\$ 10.54		
Thousand Gallons Treated	199,053	199,053	218,503	19,450	9.77%
Flow (MGD)	0.545		0.597		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020

Scottsville Water Rate Center
Revenues and Expenses Summary

<i>Budget FY 2020</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$ 520,812	\$ 520,812	\$ 520,812	\$ -	0.00%
Use of Reserves	15,000	15,000	15,000	-	0.00%
Interest Allocation	800	800	801	1	0.11%
Total Operating Revenues	\$ 536,612	\$ 536,612	\$ 536,613	\$ 1	0.00%

Expenses

Personnel Cost	\$ 197,349	\$ 197,349	\$ 192,589	\$ 4,761	2.41%
Professional Services	20,000	20,000	2,774	17,226	86.13%
Other Services & Charges	33,318	33,318	27,286	6,032	18.10%
Communications	3,430	3,430	4,997	(1,567)	-45.69%
Information Technology	800	800	880	(80)	-10.04%
Supplies	410	410	172	238	58.06%
Operations & Maintenance	121,340	121,340	77,102	44,238	36.46%
Equipment Purchases	3,200	3,200	7,107	(3,907)	-122.09%
Depreciation	20,000	20,000	20,000	(0)	0.00%
Reserve Transfers	-	-	-	-	-
Subtotal Before Allocations	\$ 399,847	\$ 399,847	\$ 332,907	\$ 66,941	16.74%
Allocation of Support Departments	136,770	136,770	134,973	1,798	1.31%
Total Operating Expenses	\$ 536,617	\$ 536,618	\$ 467,879	\$ 68,738	12.81%
Operating Surplus/(Deficit)	\$ (5)	\$ (6)	\$ 68,733		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 128,749	\$ 128,749	\$ 128,748	\$ (1)	0.00%
Trust Fund Interest	1,700	1,700	1,795	95	5.61%
Reserve Fund Interest	8,400	8,400	6,591	(1,809)	-21.53%
Total Debt Service Revenues	\$ 138,849	\$ 138,849	\$ 137,135	\$ (1,714)	-1.23%

Debt Service Costs

Total Principal & Interest	\$ 129,524	\$ 129,524	\$ 129,524	\$ -	0.00%
Reserve Additions-Interest	8,400	8,400	6,591	1,809	
Reserve Additions-CIP Growth	925	925	925	-	
Total Debt Service Costs	\$ 138,849	\$ 138,849	\$ 137,040	\$ 1,809	1.30%
Debt Service Surplus/(Deficit)	\$ -	\$ -	\$ 94		

Rate Center Summary

Total Revenues	\$ 675,461	\$ 675,461	\$ 673,748	\$ (1,713)	-0.25%
Total Expenses	675,466	675,467	604,920	70,547	10.44%
Surplus/(Deficit)	\$ (5)	\$ (6)	\$ 68,828		
Costs per 1000 Gallons	\$ 29.56		\$ 26.18		
Operating and DS	\$ 37.21		\$ 33.85		
Thousand Gallons Treated	18,151	18,151	17,873	(278)	-1.53%
or					
Flow (MGD)	0.050		0.049		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020

Urban Wastewater Rate Center
Revenues and Expenses Summary

<i>Budget FY 2020</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$ 8,033,620	\$ 8,033,620	\$ 8,492,604	\$ 458,984	5.71%
Stone Robinson WWTP	22,478	22,478	16,610	(5,868)	-26.11%
Septage Acceptance	450,000	450,000	567,913	117,913	26.20%
Nutrient Credits	90,000	90,000	78,763	(11,237)	-12.49%
Miscellaneous Revenue	-	-	500	500	
Interest Allocation	14,400	14,400	14,138	(262)	-1.82%
Total Operating Revenues	\$ 8,610,498	\$ 8,610,498	\$ 9,170,527	\$ 560,029	6.50%

Expenses

Personnel Cost	\$ 1,281,463	\$ 1,281,463	\$ 1,264,147	\$ 17,316	1.35%
Professional Services	175,000	175,000	137,910	37,090	21.19%
Other Services & Charges	C 2,030,825	2,030,825	2,094,807	(63,982)	-3.15%
Communications	10,430	10,430	10,307	123	1.18%
Information Technology	62,500	62,500	34,014	28,486	45.58%
Supplies	2,700	2,700	1,851	849	31.44%
Operations & Maintenance	F 1,724,650	1,724,650	2,064,559	(339,909)	-19.71%
Equipment Purchases	G 77,500	77,500	86,867	(9,367)	-12.09%
Depreciation	470,000	470,000	470,000	(0)	0.00%
Reserve Transfers	-	-	-	-	
Subtotal Before Allocations	\$ 5,835,068	\$ 5,835,068	\$ 6,164,462	\$ (329,394)	-5.65%
Allocation of Support Departments	2,775,430	2,775,431	2,753,089	22,341	0.80%
Total Operating Expenses	\$ 8,610,498	\$ 8,610,499	\$ 8,917,552	\$ (307,052)	-3.57%
Operating Surplus/(Deficit)	\$ (0)	\$ (1)	\$ 252,976		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 8,229,143	\$ 8,229,143	\$ 8,229,144	\$ 1	0.00%
Septage Receiving Support - County	109,440	109,440	109,441	1	0.00%
Trust Fund Interest	96,900	96,900	110,053	13,153	13.57%
Reserve Fund Interest	266,900	266,900	212,574	(54,326)	-20.35%
Total Debt Service Revenues	\$ 8,702,383	\$ 8,702,383	\$ 8,661,212	\$ (41,171)	-0.47%

Debt Service Costs

Total Principal & Interest	\$ 7,880,079	\$ 7,880,079	\$ 7,880,079	\$ -	0.00%
Reserve Additions-Interest	266,900	266,900	212,574	54,326	20.35%
Debt Service Ratio Charge	325,000	325,000	325,000	-	0.00%
Reserve Additions-CIP Growth	230,400	230,400	230,400	-	0.00%
Total Debt Service Costs	\$ 8,702,379	\$ 8,702,379	\$ 8,648,053	\$ 54,326	0.62%
Debt Service Surplus/(Deficit)	\$ 4	\$ 4	\$ 13,159		

Rate Center Summary

Total Revenues	\$ 17,312,881	\$ 17,312,881	\$ 17,831,739	\$ 518,858	3.00%
Total Expenses	17,312,877	17,312,878	17,565,604	(252,726)	-1.46%
Surplus/(Deficit)	\$ 4	\$ 3	\$ 266,135		
Costs per 1000 Gallons	\$ 2.54		\$ 2.49		
Operating and DS	\$ 5.11		\$ 4.90		
Thousand Gallons Treated	3,390,400	3,390,400	3,584,890	194,490	5.74%
or					
Flow (MGD)	9.289		9.795		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020

Glenmore Wastewater Rate Center
Revenues and Expenses Summary

<i>Budget FY 2020</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$	370,524	\$	370,524	\$	370,524	\$	-	0.00%
Interest Allocation		700		700		678		(22)	-3.19%
<i>Total Operating Revenues</i>	\$	371,224	\$	371,224	\$	371,202	\$	(22)	-0.01%

Expenses

Personnel Cost	\$	95,340	\$	95,340	\$	93,397	\$	1,943	2.04%
Professional Services		-		-		2,345		(2,345)	
Other Services & Charges		35,210		35,210		35,026		184	0.52%
Communications		3,000		3,000		3,304		(304)	-10.12%
Information Technology	E	3,700		3,700		12,780		(9,080)	-245.41%
Supplies		100		100		-		100	100.00%
Operations & Maintenance	F	119,450		119,450		135,340		(15,890)	-13.30%
Equipment Purchases		2,900		2,900		2,400		500	17.24%
Depreciation		5,000		5,000		5,000		0	0.00%
<i>Subtotal Before Allocations</i>		\$ 264,700		\$ 264,700		\$ 289,592		\$ (24,892)	-9.40%
Allocation of Support Departments		106,527		106,527		104,532		1,995	1.87%
<i>Total Operating Expenses</i>		\$ 371,227		\$ 371,227		\$ 394,124		\$ (22,897)	-6.17%
<i>Operating Surplus/(Deficit)</i>		\$ (3)		\$ (3)		\$ (22,922)			

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$	3,778	\$	3,778	\$	3,780	\$	2	0.05%
Trust Fund Interest		-		-		-		-	
Reserve Fund Interest		3,100		3,100		2,746		(354)	-11.41%
<i>Total Debt Service Revenues</i>	\$	6,878	\$	6,878	\$	6,526	\$	2	0.03%

Debt Service Costs

Total Principal & Interest	\$	1,578	\$	1,578	\$	1,578	\$	-	0.00%
Reserve Additions-CIP Growth		2,200		2,200		2,200		-	0.00%
Reserve Additions-Interest		3,100		3,100		2,746		354	11.41%
<i>Total Debt Service Costs</i>	\$	6,878	\$	6,878	\$	6,524	\$	354	5.14%
<i>Debt Service Surplus/(Deficit)</i>	\$	-	\$	-	\$	2			

Rate Center Summary

Total Revenues	\$	378,102	\$	378,102	\$	377,728	\$	(374)	-0.10%
Total Expenses		378,105		378,105		400,648		(22,543)	-5.96%
Surplus/(Deficit)	\$	(3)	\$	(3)	\$	(22,920)			
Costs per 1000 Gallons	\$	9.31			\$	10.99			
Operating and DS	\$	9.48			\$	11.18			
Thousand Gallons Treated or Flow (MGD)		39,892		39,892		35,851		(4,041)	-10.13%
		0.109				0.098			

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020

Scottsville Wastewater Rate Center
Revenues and Expenses Summary

<i>Budget FY 2020</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Operations Rate Revenue	\$ 308,988	\$ 308,988	\$ 308,988	\$ -	0.00%
Interest Allocation	600	600	554	(46)	-7.60%
Total Operating Revenues	\$ 309,588	\$ 309,588	\$ 309,542	\$ (46)	-0.01%

Expenses

Personnel Cost	\$ 95,366	\$ 95,366	\$ 93,397	\$ 1,969	2.07%
Professional Services	2,000	2,000	151	1,849	92.47%
Other Services & Charges	28,000	28,000	21,742	6,258	22.35%
Communications	3,930	3,930	3,492	438	11.16%
Information Technology	1,700	1,700	44	1,656	97.42%
Supplies	25	25	-	25	100.00%
Operations & Maintenance	58,850	58,850	43,815	15,035	25.55%
Equipment Purchases	3,200	3,200	2,400	800	25.00%
Depreciation	18,000	18,000	18,000	-	0.00%
Subtotal Before Allocations	\$ 211,071	\$ 211,071	\$ 183,039	\$ 28,032	13.28%
Allocation of Support Departments	98,523	98,523	96,929	1,594	1.62%
Total Operating Expenses	\$ 309,594	\$ 309,594	\$ 279,967	\$ 29,627	9.57%
Operating Surplus/(Deficit)	\$ (6)	\$ (6)	\$ 29,575		

Debt Service Budget vs. Actual

Revenues

Debt Service Rate Revenue	\$ 9,442	\$ 9,442	\$ 9,444	\$ 2	0.02%
Trust Fund Interest	100	100	180	80	79.54%
Reserve Fund Interest	3,100	3,100	2,197	(903)	-29.12%
Total Debt Service Revenues	\$ 12,642	\$ 12,642	\$ 11,821	\$ (821)	-6.50%

Debt Service Costs

Total Principal & Interest	\$ 7,742	\$ 7,742	\$ 7,742	\$ -	0.00%
Reserve Additions-Interest	3,100	3,100	2,197	903	29.12%
Estimated New Principal & Interest	1,800	1,800	1,800	-	0.00%
Total Debt Service Costs	\$ 12,642	\$ 12,642	\$ 11,739	\$ 903	7.14%
Debt Service Surplus/(Deficit)	\$ -	\$ -	\$ 82		

Rate Center Summary

Total Revenues	\$ 322,230	\$ 322,230	\$ 321,363	\$ (867)	-0.27%
Total Expenses	322,236	322,236	291,707	30,529	9.47%
Surplus/(Deficit)	\$ (6)	\$ (6)	\$ 29,657		
Costs per 1000 Gallons	\$ 14.28		\$ 13.44		
Operating and DS	\$ 14.87		\$ 14.00		
Thousand Gallons Treated	21,677	21,677	20,832	(845)	-3.90%
or					
Flow (MGD)	0.059		0.057		

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020

Administration

<i>Budget FY 2020</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Payment for Services SWA	\$	466,000	\$	466,000	\$	466,000	\$	(0)	0.00%
Miscellaneous Revenue		2,000		2,000		16,409		14,409	720.45%
Total Operating Revenues	\$	468,000	\$	468,000	\$	482,409	\$	14,409	3.08%

Expenses

Personnel Cost	A	\$	1,841,351	\$	1,841,351	\$	1,874,099	\$	(32,748)	-1.78%
Professional Services	B		229,000		229,000		249,536		(20,536)	-8.97%
Other Services & Charges			106,400		106,400		104,228		2,172	2.04%
Communications			18,500		18,500		18,905		(405)	-2.19%
Information Technology			174,250		174,250		140,628		33,622	19.30%
Supplies			21,500		21,500		18,646		2,854	13.28%
Operations & Maintenance			64,500		64,500		62,687		1,813	2.81%
Equipment Purchases			24,000		24,000		14,340		9,660	40.25%
Depreciation			-		-		-		-	
Total Operating Expenses		\$	2,479,501	\$	2,479,501	\$	2,483,070	\$	(3,569)	-0.14%

Department Summary

Net Costs Allocable to Rate Centers **\$ (2,011,501) \$ (2,011,501) \$ (2,000,661) \$ (10,840) 0.54%**

Allocations to the Rate Centers

Urban Water	44.00%	\$	885,060	\$	885,061	\$	880,291	\$	4,770
Crozet Water	4.00%	\$	80,460		80,460		80,026		434
Scottsville Water	2.00%	\$	40,230		40,230		40,013		217
Urban Wastewater	48.00%	\$	965,520		965,521		960,317		5,203
Glenmore Wastewater	1.00%	\$	20,115		20,115		20,007		108
Scottsville Wastewater	1.00%	\$	20,115		20,115		20,007		108
	100.00%	\$	2,011,501	\$	2,011,501	\$	2,000,661	\$	10,840

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020

Maintenance

<i>Budget FY 2020</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual

Notes

Revenues

Payment for Services SWA	\$	10,000	\$	10,000	\$	-	\$	10,000	100.00%
Miscellaneous Revenue		-		-		8,122		8,122	
Total Operating Revenues	\$	10,000	\$	10,000	\$	8,122	\$	18,122	

Expenses

Personnel Cost	\$	1,345,633	\$	1,345,633	\$	1,212,770	\$	132,863	9.87%
Professional Services		-		-		-		-	
Other Services & Charges	C	14,500		14,500		34,418		(19,918)	-137.36%
Communications		17,600		17,600		17,263		337	1.91%
Information Technology		6,500		6,500		2,367		4,133	63.59%
Supplies		2,000		2,000		579		1,421	71.06%
Operations & Maintenance	F	77,400		77,400		104,247		(26,847)	-34.69%
Equipment Purchases	G	147,150		147,150		157,135		(9,985)	-6.79%
Depreciation		-		-		-		-	
Total Operating Expenses		\$ 1,610,783	\$	1,610,783	\$	1,528,779	\$	82,004	5.09%

Department Summary

Net Costs Allocable to Rate Centers		\$ (1,600,783)	\$	(1,600,783)	\$	(1,520,657)	\$	(63,883)	3.99%
Allocations to the Rate Centers									
Urban Water	30.00%	\$ 480,235	\$	480,235	\$	456,197	\$	24,038	
Crozet Water	3.50%	56,027		56,027		53,223		2,804	
Scottsville Water	3.50%	56,027		56,027		53,223		2,804	
Urban Wastewater	56.50%	904,442		904,443		859,171		45,271	
Glenmore Wastewater	3.50%	56,027		56,027		53,223		2,804	
Scottsville Wastewater	3.00%	48,023		48,023		45,620		2,404	
	100.00%	\$ 1,600,783	\$	1,600,783	\$	1,520,657	\$	80,126	

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020

Laboratory

Budget FY 2020	Budget Year-to-Date	Actual Year-to-Date	Budget vs. Actual	Variance Percentage
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Operating Budget vs. Actual

Notes

Revenues

N/A

Expenses

Personnel Cost		\$ 394,222	\$ 394,222	\$ 379,307	\$ 14,915	3.78%
Professional Services		-	-	-	-	
Other Services & Charges		9,230	9,230	6,894	2,337	25.31%
Communications		1,153	1,153	1,245	(92)	
Information Technology		2,500	2,500	113	2,387	95.46%
Supplies		2,150	2,150	833	1,317	61.25%
Operations & Maintenance	F	61,500	61,500	80,721	(19,221)	-31.25%
Equipment Purchases	G	2,200	2,200	44,202	(42,002)	-1909.18%
Depreciation		-	-	-	-	
Total Operating Expenses		\$ 472,955	\$ 472,955	\$ 513,315	\$ (40,360)	-8.53%

Department Summary

Net Costs Allocable to Rate Centers		\$ (472,955)	\$ (472,955)	\$ (513,315)	\$ 40,360	-8.53%
<u>Allocations to the Rate Centers</u>						
Urban Water	44.00%	\$ 208,100	\$ 208,100	\$ 225,859	\$ (17,758)	
Crozet Water	4.00%	18,918	18,918	20,533	(1,614)	
Scottsville Water	2.00%	9,459	9,459	10,266	(807)	
Urban Wastewater	47.00%	222,289	222,289	241,258	(18,969)	
Glenmore Wastewater	1.50%	7,094	7,094	7,700	(605)	
Scottsville Wastewater	1.50%	7,094	7,094	7,700	(605)	
	100.00%	\$ 472,955	\$ 472,955	\$ 513,315	\$ (40,360)	

Rivanna Water & Sewer Authority
Monthly Financial Statements - June 2020

Engineering

<i>Budget FY 2020</i>	<i>Budget Year-to-Date</i>	<i>Actual Year-to-Date</i>	<i>Budget vs. Actual</i>	<i>Variance Percentage</i>
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Operating Budget vs. Actual**Revenues**

Payment for Services SWA

Total Operating Revenues

\$ -	\$ -	\$ 5,937	\$ 5,937	
\$ -	\$ -	\$ 5,937	\$ 5,937	

Expenses

Personnel Cost

Professional Services

Other Services & Charges

Communications

Information Technology

Supplies

Operations & Maintenance

Equipment Purchases

Depreciation & Capital Reserve Transfers

Total Operating Expenses

A	\$ 1,347,631	\$ 1,347,631	\$ 1,363,609	\$ (15,978)	-1.19%
B	20,000	20,000	61,904	(41,904)	-209.52%
	10,350	10,350	7,788	2,562	24.75%
	14,500	14,500	12,396	2,104	14.51%
E	21,200	21,200	36,130	(14,930)	-70.43%
	9,800	9,800	3,838	5,962	60.84%
	86,798	86,798	48,051	38,747	44.64%
	42,400	42,400	45,727	(3,327)	-7.85%
	-	-	-	-	
	\$ 1,552,679	\$ 1,552,679	\$ 1,579,443	\$ (26,764)	-1.72%

Department Summary

Net Costs Allocable to Rate Centers

\$ (1,552,679)	\$ (1,552,679)	\$ (1,573,506)	\$ 32,700	-2.11%
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Allocations to the Rate Centers

Urban Water

Crozet Water

Scottsville Water

Urban Wastewater

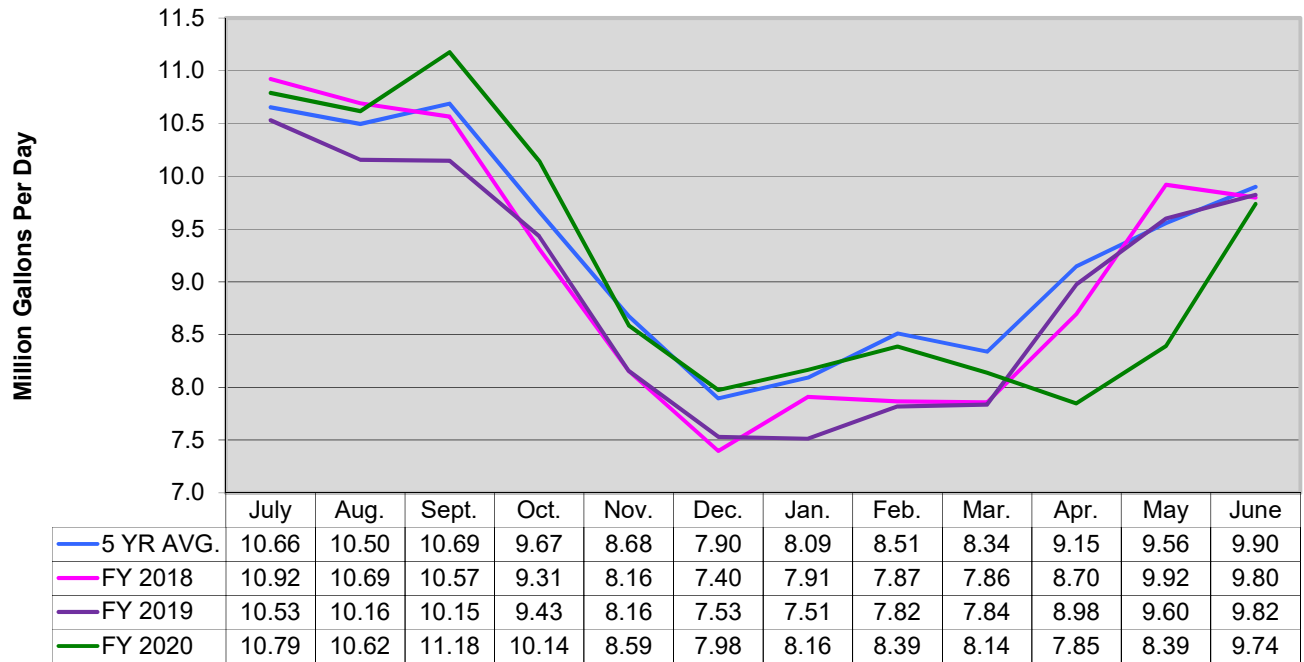
Glenmore Wastewater

Scottsville Wastewater

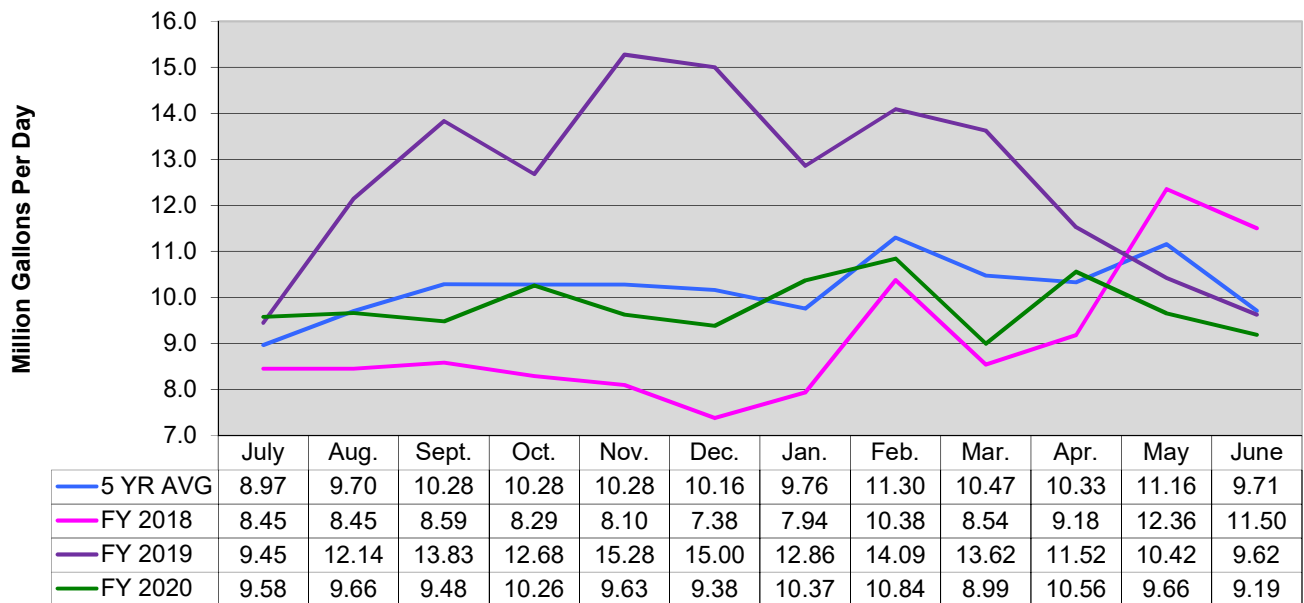
47.00%	\$ 729,759	\$ 729,759	\$ 739,548	\$ (9,789)
4.00%	62,107	62,107	62,940	(833)
2.00%	31,054	31,054	31,470	(417)
44.00%	683,179	683,179	692,343	(9,164)
1.50%	23,290	23,290	23,603	(312)
1.50%	23,290	23,290	23,603	(312)
100.00%	\$ 1,552,679	\$ 1,552,679	\$ 1,573,506	\$ (20,827)

**Rivanna Water and Sewer Authority
Flow Graphs**

Urban Water Flows



Urban Wastewater Flows





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 JUNE 2020

DATE: JULY 28, 2020

WATER OPERATIONS:

The average daily/monthly total water distributed for June 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	0.91	27.18	2.25 (06/30/20)
South Rivanna	8.43	252.95	9.27 (06/15/20)
North Rivanna	<u>0.40</u>	<u>12.07</u>	0.59 (06/29/20)
Urban Total	9.74	292.20	11.24 (06/30/20)
Crozet	0.65	19.44	0.80 (06/10/20)
Scottsville	<u>0.056</u>	<u>1.69</u>	0.10 (06/15/20)
RWSA Total	10.45	313.33	---

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

Status of Reservoirs (as of July 20, 2020):

- Urban Reservoirs: 97.83 % of Total Useable Capacity
- Ragged Mountain Reservoir is -1.01 feet (95.98 %)
- Sugar Hollow Reservoir is full (100%)
- South Rivanna Reservoir is full (100%)
- Beaver Creek Reservoir is full (100%)
- Totier Creek Reservoir is full (100%)

WASTEWATER OPERATIONS:

All RWSA Water Resource Recovery Facilities (WRRFs) were in regulatory compliance with their effluent limitations during May 2020. Stone-Robinson School was closed for the month of May and had zero discharge. Performance of the WRRFs in June was as follows compared to the respective VDEQ permit limits:

WRRF	<i>Average Daily Effluent Flow (mgd)</i>	<i>Average CBOD₅ (ppm)</i>		<i>Average Total Suspended Solids (ppm)</i>		<i>Average Ammonia (ppm)</i>	
		<i>RESULT</i>	<i>LIMIT</i>	<i>RESULT</i>	<i>LIMIT</i>	<i>RESULT</i>	<i>LIMIT</i>
Moore's Creek	8.98	1.0	10	2.4	22	<QL	2.2
Glenmore	0.104	4.0	15	7.0	30	NR	NL
Scottsville	0.052	4.0	25	2.0	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 June 2020.

<i>State Annual Allocation (lb./yr.) Permit</i>		<i>Average Monthly Allocation (lb./mo.) *</i>	<i>Moore's Creek Discharge May (lb./mo.)</i>	<i>Performance as % of monthly average Allocation*</i>	<i>Year to Date Performance as % of annual allocation</i>
Nitrogen	282,994	23,583	5,594	24%	15%
Phosphorous	18,525	1,544	603	39%	11%

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

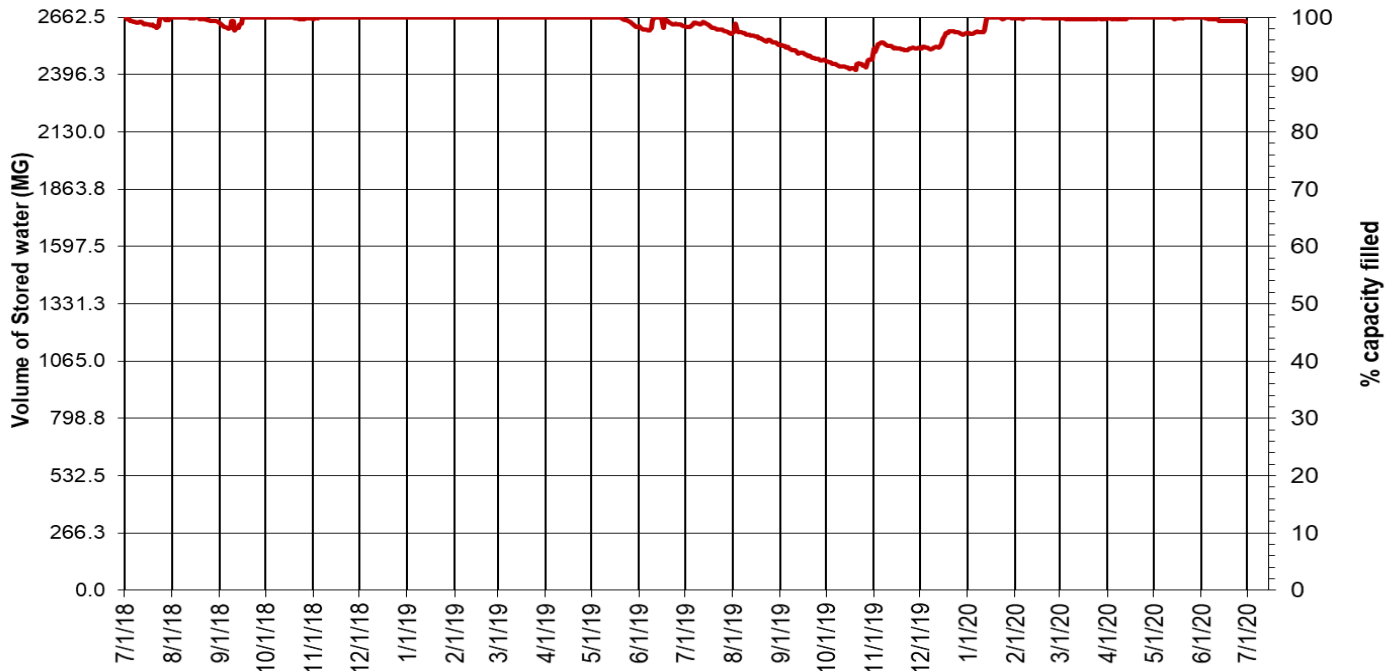
WATER AND WASTEWATER DATA:

The following graphs are provided for review:

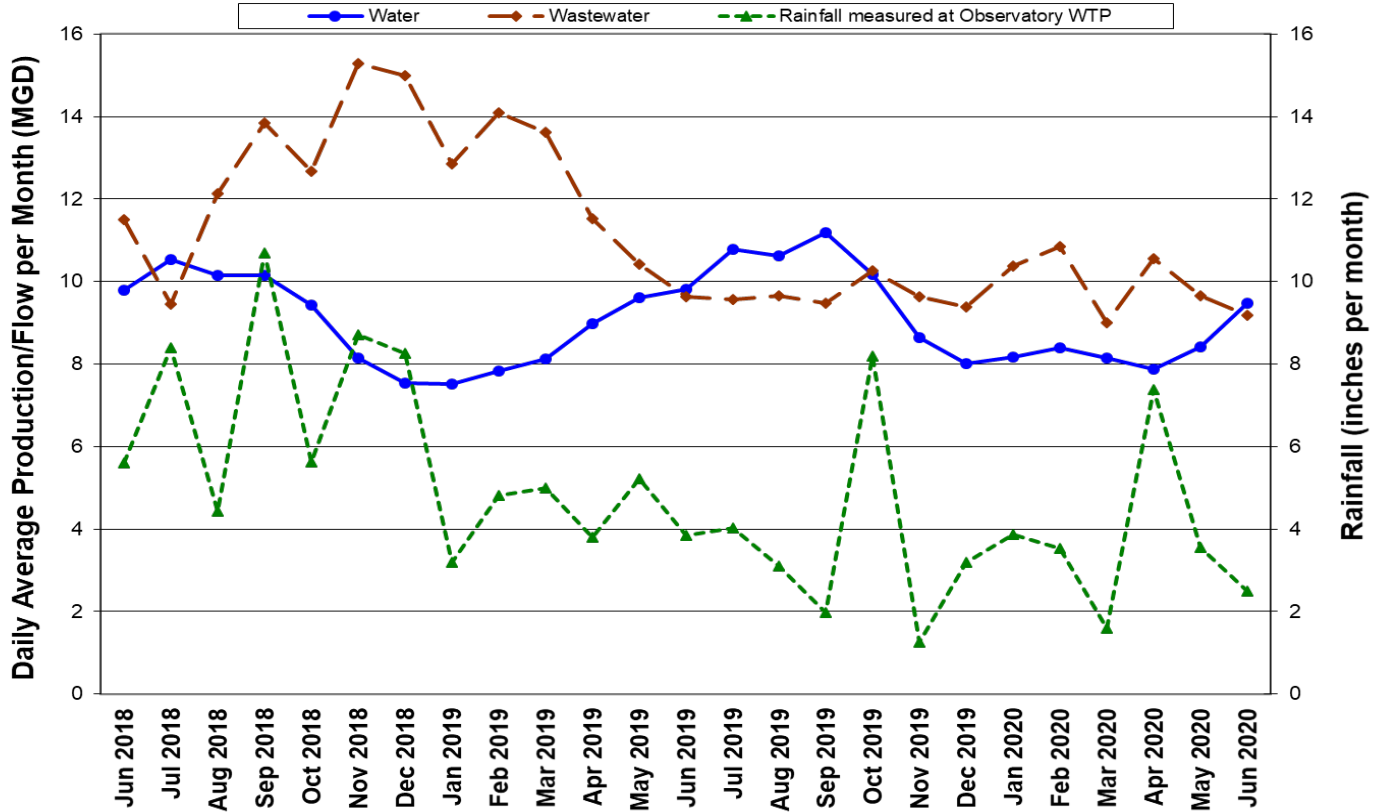
- Usable Urban Reservoir Water Storage
- Urban Water and Wastewater Flows versus Rainfall

Usable Urban Reservoir Water Storage

Maximum 2,662.5 MG after 5/1/19



Urban Water and Wastewater Flows versus Rainfall



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: JULY 28, 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. MC Holding Ponds, Solids Removal and Disposal - Odor Control Phase 2
4. Crozet Flow Equalization Tank
5. MC Aluminum Slide Gate Replacements
6. South Rivanna Dam – Gate Repairs

Design and Bidding

7. Ragged Mtn Reservoir to Observatory WTP Raw Water Line and Pump Station
8. Beaver Creek Dam and Pump Station Improvements
9. MC Digester Sludge Storage Improvements
10. Sugar Hollow Dam – Gate Replacement and Intake Tower Repairs
11. Airport Road Water Pump Station and Piping
12. South Fork Rivanna River Crossing
13. MC Cogeneration Upgrades
14. MC Clarifier and Silo Demolition
15. MC Generator Fuel Expansion
16. MC Facility Renovations
17. MC Exterior Lighting Improvements

18. Glenmore WRRF Influent Pump & VFD Addition

Planning and Studies

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

Other Significant Projects

- 27. Urgent and Emergency Repairs
- 28. Interceptor Sewer & Manhole Repair
- 29. 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:	70%
Base Construction Contract +	
Change Order to Date = Current Value:	\$7,170,000- \$225,600.80 = \$6,944,399.20
Completion:	May 2021
Total Capital Project Budget:	\$8,500,000

Current Status: Work continues on the expansion of the Chemical Building, improvements to the sedimentation basins and filters, and backwash tank construction.

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:	5%
Base Construction Contract +	
Change Orders to Date = Current Value:	\$36,748,500
Completion:	March 2023
Total Capital Project Budget:	\$43,000,000

Current Status: Construction of the liquid lime enclosure, filter building expansion and yard piping modifications at the South Rivanna Water Treatment Plant is underway.

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

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Merrell Bros., Inc. (Indiana)
Construction Start:	August 2020
Percent Complete:	0%
Base Construction Contract + Change Orders to Date = Current Value:	\$839,785
Completion:	March 2021
Total Capital Project Budget:	\$975,000

Current Status: Contractor is in the process of executing the contract and preparing bonds and insurance.

4. Crozet Flow Equalization Tank

Design Engineer:	Schnabel Engineering
Project Start:	October 2016
Project Status:	Contract Award
Construction Start:	September 2020
Completion:	November 2022
Total Capital Project Budget:	\$5,400,000
Approved Capital Budget:	\$4,860,000

Current Status: Construction Bids were received on July 16, 2020. A recommendation for award is being brought to the Board this month.

5. MC Aluminum Slide Gate Replacements

Design Engineer:	Hazen and Sawyer
Project Start:	November 2018
Project Status:	Contract Award
Construction Start:	August 2020
Completion:	August 2021
Approved Capital Budget:	\$470,000

Current Status: A recommendation for award is being brought to the Board this month.

6. South Rivanna Dam – Gate Repairs

Design Engineer:	N/A
Contractor:	Bander Smith, Inc.
Construction Start:	Fall 2020
Project Status:	0%
Completion:	December 2020
Approved Capital Budget:	\$900,000

Current Status: A condition assessment of the 36” mud gates has been completed. Gate repairs are expected to be completed in the fall of 2020.

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:	2022
Completion:	2026
Approved Capital Budget:	\$3,877,000
Current Project Estimate:	\$18,000,000

Current Status: Easement discussions with private owners and UVA are underway.

8. Beaver Creek Dam and Pump Station Improvements

Design Engineer:	Schnabel Engineering (Dam)
Design Engineer:	Hazen & Sawyer (Pump Station)
Project Start:	February 2018
Project Status:	5% Design and Permitting Underway
Construction Start:	2023
Completion:	2026
Approved Capital Budget:	\$9,036,000
Current Project Estimate:	\$27,000,000

Current Status: A site selection study for the new Raw Water Pump Station and Intake has been completed. Hazen is moving forward with environmental investigations required for development of a Joint Permit Application to be submitted to the VDEQ in the fall of 2020. A federal grant totaling \$341,000 was secured from the Natural Resources Conservation Service (NRCS) to cover the costs of an Environmental Assessment for the dam modifications. Staff will continue to pursue federal funding in the later phases of the project to cover a portion (up to 70%) of final design and construction costs.

9. MC Digester Sludge Storage Improvements

Design Engineer:	TBD
Project Start:	Summer 2019
Project Status:	Preliminary Design
Construction Start:	Fall 2020
Completion:	Spring 2021

Approved Capital Budget: \$313,000

Current Status: Staff is reviewing the Digester No. 4 Condition Assessment and overall scope of this project.

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

Design Engineer:	Schnabel Engineering
Project Start:	January 2019
Project Status:	Bidding
Construction Start:	Spring 2021
Completion:	Fall 2021
Approved Capital Budget:	\$1,140,000

Current Status: Construction Bids are due August 22, 2020. The project has an expected notice to proceed in October of 2020 and construction will be completed by fall of 2021.

11. Airport Road Water Pump Station and Piping

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	July 2019
Project Status:	10% Design
Construction Start:	Spring 2021
Completion:	2022
Approved Capital Budget:	\$5,800,000

Current Status: Preliminary Engineering Report is being reviewed and preliminary design is underway.

12. South Fork Rivanna River Crossing

Design Engineer:	Michael Baker International (Baker)
Project Start:	August 2020
Project Status:	0% Design
Construction Start:	Fall 2021
Completion:	Summer 2023
Approved Capital Budget:	\$2,800,000

Current Status: A work authorization for design, bidding, and construction services will be brought to the Board in August.

13. MC Cogeneration Upgrades

Design Engineer:	Short Elliot Hendrickson (SEH)
Project Start:	August 2020
Project Status:	0% Design
Construction Start:	Summer 2021
Completion:	Summer 2022

Approved Capital Budget: \$1,865,000

Current Status: A Work Authorization covering design, bidding, and construction services will be brought to the Board in August.

14. MC Clarifier and Lime Silo Demolition

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

Current Status: Hazen is developing a Work Authorization for design, bidding and construction administration services.

15. MC Generator Fuel Storage Expansion

Design Engineer:	TBD
Project Start:	August 2020
Project Status:	Project Planning
Construction Start:	Winter 2020/2021
Completion:	Summer 2021
Approved Capital Budget:	\$100,000

Current Status: Staff is reviewing background information and discussing equipment needs with the Maintenance Department.

16. MC Facility Renovations

Design Engineer:	Dewberry Engineering, Inc.
Project Start:	August 2020
Project Status:	0% Design
Construction Start:	Winter 2020/2021
Completion:	Summer 2021
Approved Capital Budget:	\$375,000

Current Status: Negotiating a work authorization with Dewberry for design, bidding and construction administration services for renovations to the Duty Pump Station.

17. MC Exterior Lighting Improvements

Design Engineer:	Hazen and Sawyer
Project Start:	May 2019

Project Status:	50% Design
Construction Start:	December 2020
Completion:	February 2022
Approved Capital Budget:	\$1,000,000

Current Status: Coordinating a Site Plan Amendment and ARB approval with Albemarle County.

18. Glenmore WRRF Influent Pump and VFD Addition

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

Current Status: Developing scope of work.

Planning and Studies

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

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

Current Status: Acquisition efforts continue. Offers have been made to 11 of 13 private property owners, and eight easements have been acquired. Most of the remaining easements are on publicly owned property (VDOT, City, County School Board,). Negotiations with two private owners, UVA, the UVA Foundation and the Virginia Department of Forestry are also ongoing for water line easements between Ragged Mtn Reservoir and the Observatory Water Treatment Plant.

20. Urban Finished Water Infrastructure Master Plan

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2018
Project Status:	70% complete
Completion:	October 2020
Approved Capital Budget:	\$253,000

Current Status: Baker is developing and conducting hydraulic model runs to indicate infrastructure piping and storage tank requirements at specific locations.

21. Upper Schenks Branch Interceptor, Phase II

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

Current Status: Discussions about the pipe alignment have been renewed with the County and the City.

22. Asset Management Plan

Design Engineer:	GHD, Inc.
Project Start:	July 2018
Project Status:	Phase 2 – 60% Complete
Completion:	2020
Approved Capital 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 request for quotations for procurement of computerized maintenance management software (CMMS) is being finalized and demonstrations have been scheduled with software vendors.

23. Albemarle-Berkley PS Capacity Analysis

Design Consultant:	GHD, Inc.
Project Start:	September 2019
Project Status:	15% Complete
Completion:	December 2020
Approved Capital Budget:	\$40,000

Current Status: Capacity analysis is underway.

24. Buck Mountain Master Plan

Design Consultant:	LPDA (Charlottesville)
Project Start:	November 2019
Project Status:	95% Complete
Completion:	July 2020
Budget:	\$56,000

Current Status: Study results may be presented to the Board in August.

25. MC Facilities Master Plan

Design Consultant:	Hazen and Sawyer
Project Start:	August 2019
Project Status:	50% Complete
Completion:	March 2021
Budget:	\$275,000

Current Status: Study is underway and multiple workshops have been held with staff.

26. SRR to RMR Pipeline – Pretreatment Pilot Study

Design Consultant:	TBD
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.

Other Significant Projects

27. 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
2020-07	Stillhouse Waterline Exposure @ Ivy Creek	\$182,000
2020-10	Erosion along access road to South Rivanna RWPS	\$10,000
2020-12	NRW-093 Valve Failure	\$150,000
2020-13	SRW-ARV-16 Failure	\$5,000

- South Rivanna Dam Apron and River Bank Repairs: Repairs to the north and south concrete aprons will be designed by Schnabel Engineering and those services will be procured from the on-call 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. 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 in the late Summer/Fall.
- 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 is currently evaluating the repair and coordinating with the applicable regulatory agencies, and has also coordinated a site visit with Faulconer Construction to begin reviewing the logistics of this repair. The repair work is tentatively scheduled for the late Summer/Fall time frame.
- STW Exposure @ Ivy Creek: While performing routine line inspections in April, the RWSA Maintenance Department identified that RWSA's 12" Stillhouse Waterline (STW) had become exposed on the bank of Ivy Creek. Maintenance Department staff was able to temporarily protect the waterline with nearly 500 sandbags, and Engineering Department staff began coordination with the U.S. Army Corps of Engineers, Virginia Marine Resources Commission, and RWSA's On-Call Maintenance Contractor, Faulconer Construction. All appropriate regulatory approvals were received, and Faulconer Construction mobilized to the site to begin the placement of 175-200 LF of large rip-rap along the creek bank on May 11th. The creek bank armament/repairs were completed in June, and Faulconer Construction is performing final site touch-up/restoration efforts.
- Erosion along access road to South Rivanna Raw Water Pump Station/Dam: Staff was notified in April that the access road to the South Rivanna Raw Water Pump Station and Dam had become undermined, caused by the lack of an armored v-ditch. RWSA Maintenance staff has installed fresh fill and a rip-rap v-ditch along the road, in order to fill in the undermined locations and allow for better control of stormwater. Staff is evaluating the need for additional improvements, which may be required to ensure that the stormwater makes it to the culvert located adjacent to the pump station.
- NRW-093 Valve Failure: On Friday Morning, May 29, following the successful replacement of NRW-096 under RWSA's ongoing Valve Repair-Replacement Project, RWSA Maintenance and Engineering staff was slowly refilling the 24" South Rivanna and 12" North Rivanna Waterlines (SRW and NRW, respectively), when RWSA valve NRW-093 unexpectedly failed after being completely opened. Using the brand new NRW-096, the issue was quickly isolated to the 12" NRW, and RWSA mobilized its On-Call Maintenance Contractor, Faulconer Construction.

Extensive efforts by Faulconer Construction, as well as RWSA Maintenance and Engineering staff, continued on the necessary line repairs overnight into Saturday Morning, when the line was reopened by RWSA and ACSA Maintenance staffs. This work also required extensive efforts to repave approximately 150' of Route 29, which was completed by S.L. Williamson as a subcontractor to Faulconer Construction. Faulconer recently finished the necessary sidewalk repairs, as well as final grading and seeding after receiving the required permitting from VDOT.

- **SRW-ARV-16 Failure:** On Wednesday afternoon, July 15th, the RWSA Maintenance Department was working to upgrade SRW-ARV-16, an existing, 1960s-vintage, Manual ARV, to a new Automatic ARV assembly. While working around the valve box structure, the valve box unexpectedly shifted, causing debris to become pinched against the old ARV and ultimately a failure (breakage) of the assembly. The RWSA and ACSA Maintenance Departments responded quickly to isolate the necessary section of water main in the Rio Road Corridor, and the RWSA Maintenance Department was able to access the Corporation Stop, end the leakage, and begin placing the line back into service shortly thereafter.

28. **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:	\$1,244,337.19
Expected Completion:	June 2021
Total Capital Project Budget:	\$1,088,330 (Urban) + \$625,000 (Crozet) = \$1,713,330

Current Status: Repairs to the Upper Morey Creek Interceptor remain underway, with one final section of sewer remaining to be lined, as well as one new manhole to be installed (with a slight sewer realignment to rectify an existing utility conflict). Staff is continuing to coordinate in order to complete rehabilitation of this portion of MRI, as well as evaluate the current condition of the overall interceptor system and prioritize for the next round of repairs.

29. **Security Enhancements**

Design Engineer:	N/A
Construction Contractor:	Security 101
Construction Start:	March 2020
Percent Complete:	50%
Based Construction Contract +	
Change Orders to Date = Current Value:	\$744,136.80 - \$25,708.80 = \$718,428.00 (WA #1)
Completion:	2021
Approved Capital Budget:	\$1,000,000

Current Status: Access control system installation is underway for all exterior doors at MCAWRRF,

as well as all WTP motorized gates. Conduit and panel installation at MCAWRRF remain underway, with Security 101 also having installed downstream devices inside of many panels across the facility. The main server was installed in June, and door hardware is slated to be installed in July.

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.

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 contractors 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.

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.

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.

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.

Design and Bidding

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

A Work Authorization was executed in December 2018 with Michael Baker International for the raw water line routing study, preliminary design, plat creation and the easement acquisition process for this portion of the project. Raw water is transferred from the Ragged Mountain Reservoir (RMR) to the Observatory Water Treatment Plant (WTP) by way of two 18-inch cast iron pipelines, which have been in service for more than 110 and 70 years, respectively. The increased frequency of emergency repairs and expanded maintenance requirements are one impetus for replacing these pipelines. The proposed water line will be able to reliably transfer water to the expanded Observatory plant. The new pipeline will be constructed of 36-inch ductile iron and will be approximately 2.6 miles feet in length. The segment of the project immediately east of the RMR will constitute a portion of the proposed South Rivanna Reservoir to RMR raw water main project as part of the approved 50-year Community Water Supply Plan.

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

8. Beaver Creek Dam and Pump Station Improvements

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

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

Turnpike to cross over the new spillway.

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

9. MC Digester Sludge Storage Improvements

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

10. 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 will include repairs to the intake gate valves and tower walls, including repair or replacement of intake trash racks, and sealing/grouting of minor concrete wall cracks.

11. 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.

12. 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.

13. MC Cogeneration Upgrades

The MCAWRRF has an existing cogeneration facility that was constructed in 2011. The purpose of the facility was to provide a beneficial purpose for using the gas produced by the digester process at the plant, and in doing so provide both process heating fluid to the digester tanks and electrical energy to the plant's electrical distribution system. Unfortunately, the existing cogeneration facility requires expensive recurring maintenance services, has proprietary equipment which further complicates servicing needs, and has had a number of operational issues that have impeded the benefit this facility was intended to provide. As a result, a Cogeneration System Analysis was performed to determine a recommended approach for proceeding with improvements to the existing facility, installation of a new cogeneration facility without the issues of the previous facility or removing the cogeneration facility altogether and providing a backup boiler. This project includes costs of installation of a new cogeneration facility as described in the Cogeneration System Analysis.

14. 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.

15. 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.

16. 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.

17. 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 photometric plan of existing lighting was submitted to the county for review. RWSA is currently compiling 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

18. 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.

Planning and Studies

19. 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.

20. 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.

21. 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.

22. Asset Management Plan

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

23. 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.

24. Buck Mountain Master Plan

The purpose of this Master Plan is to consider alternatives for use of the 1300 acre property purchased in the 1980's for a water supply reservoir, which was never built. 600 acres are currently under deed restrictions to mitigate the environmental impacts of the expanded Ragged Mountain Dam. Development of the Buck Mountain Master Plan will consider past and current uses of the property, identify alternatives, and provide recommendations for strategic use of the property into the future.

25. 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.

26. 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, this intent of this project is to update the pretreatment needs anticipated.

Other Significant Projects

27. 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.

28. 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.

29. 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 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 JUNE 2020

DATE: JULY 28, 2020

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

	<i>Month</i>	<i>Daily Average</i>	
City Usage (gal)	127,638,562	4,254,619	43.7%
ACSA Usage (gal)	164,559,804	5,485,327	56.3%
Total (gal)	292,198,366	9,739,946	

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 July 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:

*Usage data through October 2019 are based on retail metered flows due to the unavailability of wholesale metering data. Data shown from November 2019 forward represents the usage calculated through the RWSA Wholesale Metering program. Meter site 26 (located in Seminole Trail) is currently experiencing reporting issues, so data for that site for June 2020 was calculated using the average of the prior three months, in accordance with the *RWSA Wholesale Metering Administrative and Implementation Policy*.

Figure 1: City of Charlottesville Monthly Water Usage

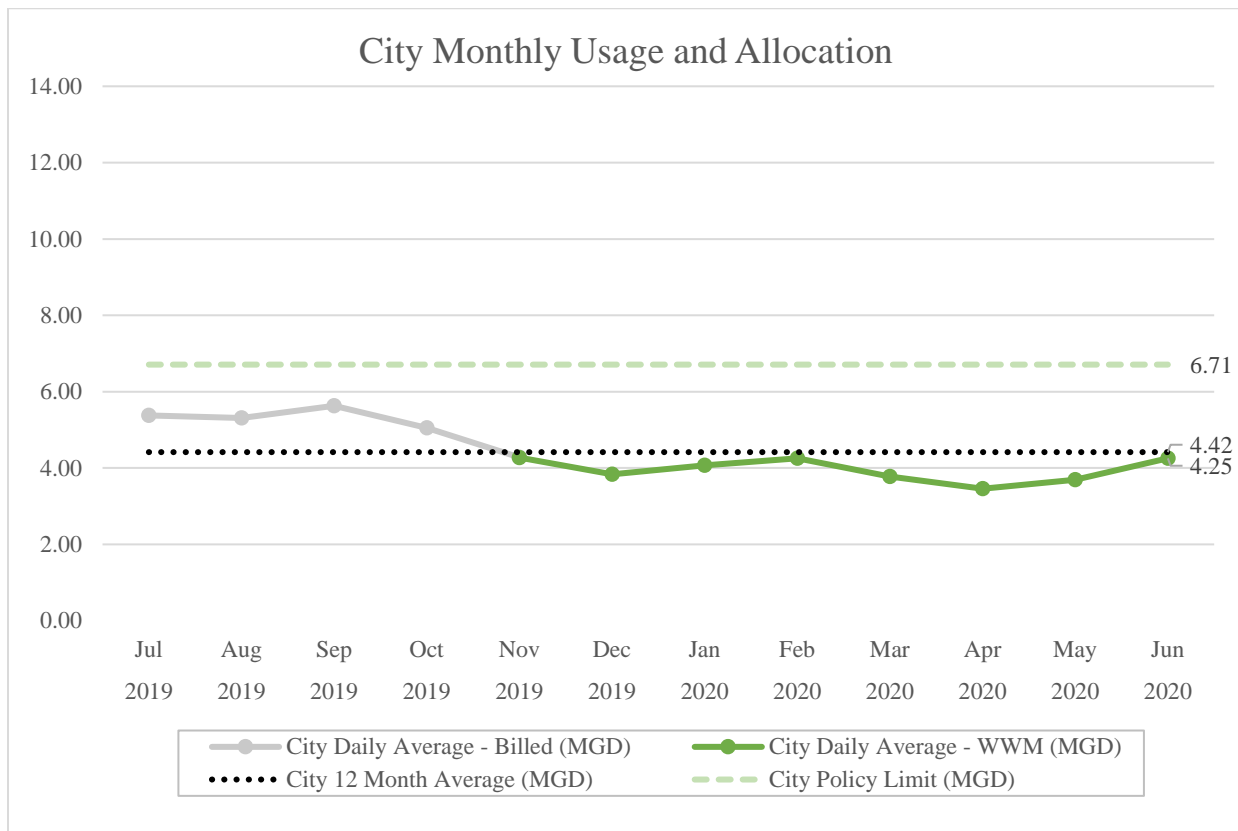
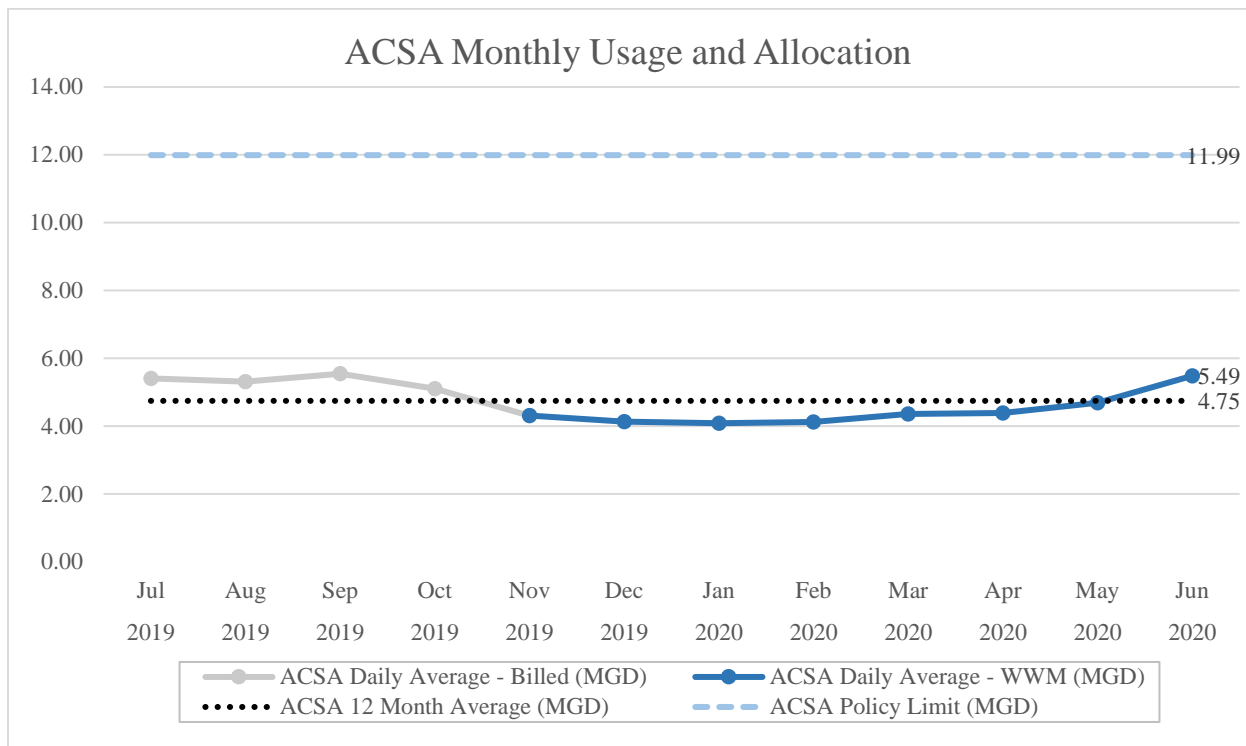




Figure 2: Albemarle County Service Authority Monthly Water Usage and Allocation






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MEMORANDUM

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

FROM: DAVID TUNGATE, DIRECTOR OF OPERATIONS

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: SEWER USER REGULATIONS UPDATE

DATE: JULY 28, 2020

As the wastewater treatment provider for this community, our Authority is required by the Virginia Department of Environmental Quality to have Sewer Use Regulations. These regulations must comply with State and Federal environmental requirements, and provide information and guidance to our customers about the quantity, character and rate of discharge of sewage into the Authority's sewerage system, and the issuance of Industrial Waste Discharge Permits. Certain products, including Fats, Oils and Grease, can create stoppages and the resulting sewer overflows, while hazardous materials including metals and acids, could impact our biological wastewater treatment process.

This 2020 revision to the regulations focuses on updating citations from the Virginia Administrative Code, 11 sewer definitions, and federal testing procedures.

Board Action Requested:

These regulations are being provided for information only.

Attachment

SEWERAGE USER REGULATIONS

RIVANNA WATER & SEWER AUTHORITY

Effective September 15, 1975

Revised April 4, 1984

Revised January 1991

Revised June 1997

Revised June 2006

Revised December 2007

Reviewed March 2010

Revised February 2020

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SEWERAGE USER REGULATIONS

RIVANNA WATER & SEWER AUTHORITY

PART I. PREAMBLE

Section 1. Purpose

These Regulations set forth uniform requirements for direct and indirect discharges into the wastewater collection and treatment systems of the Rivanna Water & Sewer Authority (hereinafter called the Authority); enable the Authority to comply with all applicable State and Federal laws; and provide for the protection of the sewerage systems and their respective receiving streams.

Section 2. Scope

These Regulations provide for controlling the quantity, character and rate of discharge of sewage into the Authority's sewerage system and the issuance of Industrial Waste Discharge Permits and shall apply to all dischargers, direct or indirect, into any part of the sewerage system of the Authority.

Section 3. Authority

These Regulations are authorized and required by Section 5.6 of the agreement dated June 12, 1973 by and between the City of Charlottesville, Albemarle County Service Authority, Board of County Supervisors of Albemarle County, and Rivanna Water & Sewer Authority, paragraph 15.1 - 1250, Code of Virginia and the Federal Water Pollution Control Act, as amended.

Section 4. Definitions

Unless the context specifically indicates otherwise, the following words, phrases, and abbreviations used in these Regulations shall be defined as follows:

- a. Act or "the Act." The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. section 1251 et seq.
- b. Approving Authority. The Executive Director of the Rivanna Water & Sewer Authority jointly with the Director of Public Works, City of Charlottesville, or the Executive Director of the Albemarle County Service Authority as appropriate, or their duly authorized representative.
- c. Authorized or Duly Authorized Representative of the User.

- (1) If the User is a corporation:

(a) The president, secretary, treasurer, or a vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(b) The manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiate and direct other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; can ensure that the necessary systems are established or actions taken to gather complete and accurate information for individual wastewater discharge permit requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) If the User is a partnership or sole proprietorship: a general partner or proprietor, respectively.

(3) If the User is a Federal, State, or local governmental facility: a director or highest official appointed or designated to oversee the operation and performance of the activities of the government facility, or their designee.

(4) The individuals described in paragraphs (1) through (3), above, may designate a Duly Authorized Representative if the authorization is in writing, the authorization specifies the individual or position responsible for the overall operation of the facility from which the discharge originates or having overall responsibility for environmental matters for the company, and the written authorization is submitted to the Authority.

d. Authority. Rivanna Water & Sewer Authority

e. Best Management Practices or BMPs means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to implement the prohibitions listed in Part II Section 1 and 3 [40 CFR 403.5(a)(1) and (b)]. BMPs include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage. [Note: BMPs also include alternative means (i.e., management plans) of complying with, or in place of certain established categorical Pretreatment Standards and effluent limits.]

f. Board. The Board of Directors of the Rivanna Water & Sewer Authority

g. BOD (Biochemical Oxygen Demand). The laboratory determination of the quantity of oxygen by weight, expressed in parts per million, utilized in the biochemical oxidation of organic matter under standard laboratory conditions in five (5) days at 20°C. The laboratory determination shall be in accordance with 40 CFR Part 136.

h. Categorical Pretreatment Standard. Any regulation containing pollutant discharge limits promulgated by EPA in accordance with sections 307(b) and (c) of the Act (33 U.S.C. section 1317) that apply to a specific category of Users and that appear in 40 CFR Chapter I, Subchapter N, Parts 405-471.

i. COD (Chemical Oxygen Demand). The laboratory determination of the oxygen equivalent expressed in parts per million of that portion of the organic matter that is susceptible to oxidation by the standard dichromate reflux method. The laboratory determination shall be in accordance with 40 CFR Part 136.

j. Daily Maximum Limit. The maximum allowable discharge limit of a pollutant during a calendar day. Where Daily Maximum Limits are expressed in units of mass, the daily discharge is the total mass discharged over the course of the day. Where Daily Maximum Limits are expressed in terms of concentration, the daily discharge is the arithmetic average measurement of the pollutant concentration derived from all measurements taken that day.

k. Domestic Sewage. Waterborne wastes normally discharging from the sanitary conveniences of dwellings (including apartment houses and hotels), office buildings, factories and institutions, free from storm surface water and industrial wastes.

l. Indirect Discharge or Discharge. The introduction of pollutants into the POTW from any nondomestic source.

m. Industrial User or User. A source of indirect discharge.

n. Industrial Wastes. All waterborne solids, liquids, or gaseous wastes resulting from any industrial, manufacturing, trade, business or food processing operation or processes, or from the development of any natural resource, exclusive of domestic sewage.

o. Instantaneous Limit. The maximum concentration of a pollutant allowed to be discharged at any time, determined from the analysis of any discrete or composited sample collected, independent of the industrial flow rate and the duration of the sampling event.

p. Interference. A discharge that, alone or in conjunction with a discharge or discharges from other sources, inhibits or disrupts the POTW, its treatment processes or operations or its sludge processes, use or disposal; and therefore, is a cause of a violation of Authority's NPDES permit or of the prevention of sewage sludge use or disposal in compliance with any of the following statutory/regulatory provisions or permits issued thereunder, or any more stringent State or local regulations: section 405 of the Act; the Solid Waste Disposal Act, including Title II commonly referred to as the Resource Conservation and Recovery Act (RCRA); any State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the Solid Waste Disposal Act; the Clean Air Act; the Toxic Substances Control Act; and the Marine Protection, Research, and Sanctuaries Act.

q. National Pretreatment Standard, Pretreatment Standard or Standards. Pretreatment Standards shall mean prohibited discharge standards, categorical Pretreatment Standards, and Local Limits.

r. New Source.

(1) Any building, structure, facility, or installation from which there is (or may be) a discharge of pollutants, the construction of which commenced after the publication of proposed Pretreatment Standards under section 307(c) of the Act that will be applicable to such source if such Standards are thereafter promulgated in accordance with that section, provided that:

(a) The building, structure, facility, or installation is constructed at a site at which no other source is located; or

(b) The building, structure, facility, or installation totally replaces the process or production equipment that causes the discharge of pollutants at an Existing Source; or

(c) The production or wastewater generating processes of the building, structure, facility, or installation are substantially independent of an Existing Source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the Existing Source, should be considered.

(2) Construction on a site at which an Existing Source is located results in a modification rather than a New Source if the construction does not create a new building, structure, facility, or installation meeting the criteria of paragraphs (1)(b) or (c) above but otherwise alters, replaces, or adds to existing process or production equipment.

(3) Construction of a New Source as defined under this paragraph has commenced if the owner or operator has:

(a) Begun, or caused to begin, as part of a continuous onsite construction program

(i) any placement, assembly, or installation of facilities or equipment; or

(ii) significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or

(b) Entered into a binding contractual obligation for the purchase of facilities or

equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under this paragraph.

s. Parts per Million. A weight to weight ratio.

t. Pass Through. A discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of Authority's NPDES permit, including an increase in the magnitude or duration of a violation.

u. Person. Any individual, association, partnership, corporation, municipality, State, Federal agency, or any agent or employee thereof.

v. Permit. An Industrial Waste Discharge Permit issued pursuant to these Regulations.

w. pH. The logarithm (base 10) of the reciprocal of the hydrogen ion concentration.

x. Point of Discharge. The point at which waste is discharged to the publicly owned sewerage system.

y. Pollutant. Any man-made or man-induced material that alters the physical, chemical, biological or radiological integrity of water.

z. Pretreatment Requirements. Any substantive or procedural requirement related to pretreatment imposed on a User, other than a Pretreatment Standard.

aa. Public Sewer. Either sanitary or storm sewer in which all owners of abutting properties shall have equal rights and is controlled by public authority.

bb. Publicly Owned Treatment Works or POTW. A treatment works, as defined by section 212 of the Act (33 U.S.C. section 1292), which is owned by the Authority. This definition includes any devices or systems used in the collection, storage, treatment, recycling, and reclamation of sewage or industrial wastes of a liquid nature and any conveyances, which convey wastewater to a treatment plant.

cc. Radioactive Material or Isotope. Any material containing chemical elements that spontaneously change their atomic structure by emitting any particles or rays.

dd. Sanitary Sewer. A sewer which carries sewage and to which storm, surface and ground waters are not intentionally admitted.

ee. Septic Tank Wastes. Sewage from domestic septic tank treatment systems.

ff. Sewage. A combination of water-carried wastes from residential, commercial, institutional and industrial establishments, together with such ground, surface and storm waters as may be present.

gg. Sewage Treatment Plant. Any arrangement of devices and structures used for treating sewage.

hh. Sewer. A pipe or conduit used to collect and carry away sewage or storm water run-off from the generating source to sewage treatment plants or receiving streams.

ii. Sewerage. The system of sewers and appurtenances for the collection, transportation, pumping and treatment of sewage.

jj. Shall and May. "Shall" wherever used in these Regulations will be interpreted in its mandatory sense; "may" is permissive.

kk. Significant Industrial User (SIU). Any industrial user who:

(1) Is subject to categorical Pretreatment Standards; or

(2) Discharges an average of twenty-five thousand (25,000) gpd or more of process wastewater to the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); or

(3) Contributes a process wastestream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW plant; or

(4) Is designated as such by the Authority on the basis that it has a reasonable potential for adversely affecting the POTW's operation, for violating any Pretreatment Standard or Requirement, for pass through of pollutants contaminate sludge, or to endanger collection/treatment workers.

ll. Slug Load or Slug Discharge. Any discharge at a flow rate or concentration, which could cause a violation of the prohibited discharge standards in Part II Section 1 and 3 of this ordinance. A Slug Discharge is any Discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch Discharge, which has a reasonable potential to cause Interference or Pass Through, or in any other way violate the POTW's regulations, Local Limits or Permit conditions.

mm. Wastewater Manager. The person designated by the Authority to supervise the operation of the POTW, and who is charged with certain duties and responsibilities by this ordinance. The term also means a Duly Authorized Representative of the Wastewater Manager.

nn. Surcharge. The additional charge for treating sewage containing concentrations of BOD and/or

suspended solids in excess of 240 parts per million.

oo. Suspended Solids. Solids that either float on the surface of, or are in suspension in water, sewage, or other liquids, and which are removable by laboratory filtering. Quantitative determination of suspended solids shall be made in accordance with 40 CFR Part 136.

pp. Toxic Substances. Any substance whether gaseous, liquid or solid, of such character or in such quantity that when discharged to the sanitary sewer will interfere with any sewage treatment process, cause a hazard to any portion of the sewerage system, constitute a hazard to any living organism, a hazard in the stream or watercourse receiving the effluent from the sewage treatment plant, or interfere with sludge disposal.

qq. Trade Secrets. Any formula, plan, pattern, process, tool, mechanism, material, compound, procedure, production data, or compilation of information which is not patented, which is known only to certain individuals within a commercial concern who are using it to fabricate or produce a compound, an article of trade, or a service having commercial value and which gives its users an opportunity to obtain a business advantage over competitors who do not know or use it.

PART II. DISCHARGE REQUIREMENTS

Section 1. Prohibited Waste Discharges

No person shall discharge or cause to be discharged into any portion of the sewerage system, directly or indirectly, any pollutant or wastewater which will interfere with the operation or performance of the collection system or sewage treatment plant; constitute a hazard to human life or health, interfere with or impede the disposal of treatment by-products such as scums and sludges; pass through the treatment system so as to violate any local, State or Federal stream standard; or create a public nuisance.

Section 2. National Categorical Pretreatment Standards

Users must comply with the categorical Pretreatment Standards found at 40 CFR Chapter I, Subchapter N, Parts 405–471.

a. Where a categorical Pretreatment Standard is expressed only in terms of either the mass or the concentration of a pollutant in wastewater, the Wastewater Manager may impose equivalent concentration or mass limits only if the Industrial User meets all of the conditions set forth in Part II Section 2.a and Part II Section 2.d below.

(1) To be eligible for equivalent mass limits, the Industrial User must:

- (a) Employ, or demonstrate that it will employ, water conservation methods and technologies that substantially reduce water use during the term of its individual wastewater discharge permit;
- (b) Currently use control and treatment technologies adequate to achieve compliance

with the applicable categorical Pretreatment Standard, and not have used dilution as a substitute for treatment;

(c) Provide sufficient information to establish the facility's actual average daily flow rate for all wastestreams, based on data from a continuous effluent flow monitoring device, as well as the facility's long-term average production rate. Both the actual average daily flow rate and the long-term average production rate must be representative of current operation conditions;

(d) Not have daily flow rates, production levels, or pollutant levels that vary so significantly that equivalent mass limits are not appropriate to control the Discharge; and

(e) Have consistently complied with all applicable categorical Pretreatment Standards during the period prior to the Industrial User's request for equivalent mass limits.

(2) An Industrial User subject to equivalent mass limits must:

(a) Maintain and effectively operate control and treatment technologies adequate to achieve compliance with the equivalent mass limits;

(b) Continue to record the facility's flow rates through the use of a continuous effluent flow monitoring device;

(c) Continue to record the facility's production rates and notify the Wastewater Manager whenever production rates are expected to vary by more than 20 percent from its baseline production rates determined in paragraph Part II Section 2.a.(1)(c) of this Section. Upon notification of a revised production rate, the Wastewater Manager will reassess the equivalent mass limit and revise the limit as necessary to reflect changed conditions at the facility; and

(d) Continue to employ the same or comparable water conservation methods and technologies as those implemented pursuant to paragraphs Part II Section 2.a.(1)(a) of this Section so long as it discharges under an equivalent mass limit.

(3) When developing equivalent mass limits, the Wastewater Manager:

(a) will calculate the equivalent mass limit by multiplying the actual average daily flow rate of the regulated process(es) of the Industrial User by the concentration-based Daily maximum and Monthly Average Standard for the applicable categorical Pretreatment Standard and the appropriate unit conversion factor;

(b) Upon notification of a revised production rate, will reassess the equivalent mass limit and recalculate the limit as necessary to reflect changed conditions at the facility; and

(c) May retain the same equivalent mass limit in subsequent individual wastewater discharger permit terms if the Industrial User's actual average daily flow rate was reduced solely as a result of the implementation of water conservation methods and technologies, and the actual average daily flow rates used in the original calculation of the equivalent mass limit were not based on the use of dilution as a substitute for treatment pursuant to Part II Section 3.m.

b. When the limits in a categorical Pretreatment Standard are expressed only in terms of mass of pollutant per unit of production, the Wastewater Manager may convert the limits to equivalent

limitations expressed either as mass of pollutant discharged per day or effluent concentration for purposes of calculating effluent limitations applicable to individual Industrial Users.

c. When wastewater subject to a categorical Pretreatment Standard is mixed with wastewater not regulated by the same Standard, the Wastewater Manager may impose an alternate limit in accordance with 9 VAC 25-31-780.E.

d. The Wastewater Manager may convert the mass limits of the categorical Pretreatment Standards of 40 CFR Parts 414, 419, and 455 to concentration limits for the purposes of calculating limitations applicable to individual Industrial Users. The conversion is at the discretion of the Wastewater Manager.

Section 3. Local Limits

The Wastewater Manager is authorized to establish Local Limits pursuant to 40 CFR 403.5(c).

Section 4. Specific Prohibitions

Discharges of the following are expressly prohibited:

a. Any waste having a temperature greater than 150 degrees F at the point of discharge or of such temperature and quantity to cause the sewage treatment plant influent temperature to exceed 104 degrees F.

b. Any water or waste containing more than 100 parts per million of fat, oil, or grease, as determined by procedure 1664 N-Hexane Extractable Material (HEM), EPA Methods and Guidance for Analysis of Water April 1995. An analytic value of greater than 100 parts per million shall require further testing utilizing the Silica Gel Treated (SGT-HEM) procedure and compliance will be determined based on the two test results.

c. Any petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through.

d. Any gasoline, benzene, naphtha or other hydrocarbon solvents or oils, or other flammable or explosive liquids, solids or gases with a closed cup flashpoint of less than 140 degrees F.

e. Any waters or wastes having a stabilized pH lower than 6.0 or higher than 9.0 or having properties capable of causing damage to structures and equipment of the sanitary sewerage system.

f. Any noxious or malodorous gas or substance capable of creating a public nuisance, or any substance or compound, which, when introduced into a reducing environment such as might exist in the sewer system, might cause the evolution of a malodorous gas and thereby create a public nuisance.

- g. Any discharge of pollutants which result in the presence of toxic gases, vapors, or fumes in a quantity that may cause acute worker health and safety problems.
- h. Any trucked or hauled wastes except as provided for in Part II, Section 6 of these Regulations.
- i. Any waters or wastes having objectionable color which is not removable by the existing sewage treatment plant processes.
- j. Any waters or wastes containing BOD, COD, or suspended solids of such character and quantity that unusual attention or expense is required in the handling of such materials in the sewerage system.
- k. Any stormwater, surface water, ground water, roof run-off, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process waters.
- l. Any wastes containing any radioactive materials or isotopes of such half-life or concentration as may exceed any limits established by applicable State or Federal regulations.
- m. Any water added for the purpose of diluting wastes which would otherwise exceed applicable maximum concentration limits set for any pollutant at the point of discharge, but which would accumulate to undesirable quantities in the collection and/or treatment systems.
- n. Any wastes containing concentrations of phenols, arsenic, barium, cadmium, chromium, copper, cyanide, iron, lead, mercury, nickel, silver, zinc or other substances in excess of concentrations which may be adopted by the Board.
- o. Any slug discharges.
- p. Any wastes requiring the introduction of a quantity of chlorine or any other compound beyond the range normally required for sewage treatment purposes.
- q. Any solid or viscous substances capable of causing obstruction to flow in sewers or interference with proper operation of the sewage treatment facilities.
- r. Any lime sludges resulting from the pretreatment and/or removal of metals.

Section 5. Construction and Interpretation

The omission of any particular waste from the standards outlined herein does not imply that discharge of such waste to the sanitary sewer system will be permitted. Any liquid waste of peculiar character and volume, or of toxic or unusual nature shall be subject to review by the Approving Authority and standards deemed applicable established by the Approving Authority.

The requirements set forth herein are generally applicable but are not absolutely fixed. Such

requirements may be made more restrictive and more stringent by the Board if a survey of the sanitary sewer system and/or analyses of sewage treatment plant operating data, or standards set by the Virginia State Water Control Board for receiving streams indicate that such action is necessary for the protection of the sewerage system. Such requirements may be made more liberal only by Resolution of the Board, duly adopted, and based upon satisfactory evidence and proof that the discharge of a particular waste having concentration of particular substance, compound, or element in excess of those outlined herein has no adverse effect on the sewerage system, sludge disposal, or the quality of the receiving stream. No such Resolution may allow contravention of any State or Federal regulation or standard.

Section 6. Notification of Violation

Dischargers shall notify the Authority immediately by telephone or in person upon discharging wastes in violation of these Regulations accidentally or otherwise. Such notification shall be followed within five (5) days of the day of occurrence by a detailed written statement to the Authority describing the causes of the discharge and the measures being taken to prevent future occurrences. Dischargers are required to take all reasonable counter-measures to stop the discharge and to neutralize its effect, if possible.

Section 7. Acceptance of Off-Site and Septic Tank Wastes

Wastes from sites not served by the public sewerage system may be considered for disposal on a case by case basis. Any person requesting such disposal shall first obtain a Letter of Acceptance from the Authority by submitting the appropriate information contained in Part III Section 2 (a)-(l) of these Regulations. A separate request must be made for each discharge unless it can be demonstrated that the wastes are routinely produced and of such quality that individual consideration can be waived. The Letter of Acceptance issued to haulers of septic tank wastes shall be in the form of a Permit subject to all the provisions of Part III, Industrial Waste Discharge Permits. The conditions of the Letter of Acceptance may include, but need not be limited to the following:

- a. Maximum permissible composite concentration of wastewater constituents;
- b. Limits on rate and time of discharge or requirements for flow regulation;
- c. Requirements for inspection and sampling;
- d. Requirements for recording, maintaining and reporting information concerning the origin of each tank truck load and identification of contributor(s);
- e. Prohibition of discharge of certain wastewater constituents;
- f. Other conditions as deemed appropriate by the Authority to insure compliance with these Regulations.

Section 8. Accidental Discharge/Sludge Discharge Control Plans

The Wastewater Manager shall evaluate whether each SIU needs an accidental discharge/sludge discharge control plan or other action to control Slug Discharges at least once during the term of the SIU permit or within 1 year of being identified as a SIU. The Wastewater Manager may require any User to develop, submit for approval, and implement such a plan or take such other action that may be necessary to control Slug Discharges. Alternatively, the Wastewater Manager may develop such a plan for any User. An accidental discharge/sludge discharge control plan shall address, at a minimum, the following:

- a. Description of discharge practices, including nonroutine batch discharges;
- b. Description of stored chemicals;
- c. Procedures for immediately notifying the Wastewater Manager of any accidental or Slug Discharge, as required by Part II Section 5 of this ordinance; and
- d. Procedures to prevent adverse impact from any accidental or Slug Discharge. Such procedures include, but are not limited to, inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site runoff, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants, including solvents, and/or measures and equipment for emergency response.

PART III. INDUSTRIAL WASTE DISCHARGE PERMITS

Section 1. Permits Required

Any person desiring to discharge industrial wastes into the public sanitary sewer system shall notify the Approving Authority of the nature and characteristics of their proposed wastewater discharge prior to commencing said discharge. The Approving Authority may, upon receiving notice of a proposed discharge, require application for a Permit. It shall be unlawful for any significant industrial user to discharge any industrial wastes, either directly or indirectly, into the public sewerage system without first obtaining a Permit.

Section 2. Permit Applications

Any person notified by the Approving Authority of the requirement to apply for a Permit shall complete and file with the Approving Authority the following information as appropriate:

- a. Name, address, and telephone number of applicant and contact person, and the name and current mailing address of the owner of the premises from which industrial wastes are intended to be discharged;

b. Standard Industrial Classification (SIC) code of both the industry as a whole and any processes for which Federal categorical pretreatment standards have been promulgated;

c. Wastewater constituents and characteristics including any pollutants in the discharge which are limited by any Federal, State, or local standards. Sampling and analysis will be undertaken in accordance with 40 CFR Part 136;

d. Time and duration of the discharge;

e. Daily maximum, daily average, and monthly average wastewater flow rates, including daily, monthly, and seasonal variations, if any;

f. Description of activities, facilities, and plant processes on the premises, including a list of all raw materials and chemicals used at the facility which are or could accidentally or intentionally be discharged to the sewerage system;

g. The site plans, floor plans and mechanical and plumbing plans and details to show all sewers, floor drains, and appurtenances by size, location and elevation and all points of discharge;

h. Each product produced by type, amount, process or processes and rate of production;

i. Type and amount of raw materials processed (average and maximum per day);

j. Number and type of employees, hours of operation, and proposed or actual hours of operation of the pretreatment system;

k. Whether additional operation and maintenance (O&M) and/or additional pretreatment is required for the user to meet all applicable Federal, State, and local standards. If additional pretreatment and/or O&M will be required to meet the standards, then the industrial user shall indicate the shortest time schedule necessary to accomplish installation or adoption of such additional treatment and/or O&M. The completion date in this schedule shall not be longer than the compliance date established for the applicable pretreatment standard. The following conditions apply to this schedule:

(1) The schedule shall contain progress increments in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the user to meet the applicable pretreatment standards (such events include hiring an engineer, completing preliminary plans, completing final plans, executing contracts for major components, commencing construction, completing construction, beginning operation, and conducting routine operation). No increment referred to above shall exceed nine (9) months, nor shall the total compliance period exceed eighteen (18) months;

(2) No later than fourteen (14) days following each date in the schedule and the final date for

compliance, the user shall submit a progress report to the Approving Authority including, as a minimum, whether or not it complied with the increment of progress, the reason for any delay, and if appropriate, the steps being taken by the user to return to the established schedule. In no event shall more than nine (9) months elapse between such progress reports to the Approving Authority; and

(3) Any other information as may be deemed necessary to evaluate the Permit application.

l. All applications must be signed and certified in accordance with Part III, Section 1.

m. A list of any environmental control permits held by or for the facility.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Section 3. Processing and Issuance of Permits

The Approving Authority will evaluate the Permit application and determine the need for issuing a Permit. If a Permit is required, a draft Permit may be issued within sixty (60) days after all data required by these Regulations have been furnished to and accepted by the Approving Authority. The applicant shall then be allowed a thirty (30) day comment period. Upon the expiration of the comment period, or upon the expiration of ninety (90) days from the date the data have been furnished and accepted, the Approving Authority shall issue or deny a Permit. A Permit may contain appropriate restrictions. Issuance of a Permit shall not relieve the discharger from complying with all applicable laws, regulations, and ordinances promulgated by other government authority, nor shall the issuance of a Permit be construed as a representation by the Approving Authority that the discharge permitted therein complies with such laws, regulations and ordinances. No Permit is transferable.

Section 4. Denial of a Permit

Should the waste from an applicant's operations be deemed to be inadmissible into the sanitary sewer system because of objectionable character as defined by these Regulations, or because of flow characteristics incompatible with the best use of the receiving sewer, the Approving Authority will not approve the discharge of such waste into the sanitary sewer system until such person has employed, at his own expense, methods and processes of pretreatment as will render the waste admissible to the sanitary sewer system in accordance with these Regulations. The Approving Authority will not specify, suggest, or recommend equipment, structures, or arrangements comprising the pretreatment processes. The methods and procedures of the

pretreatment to be employed shall be reviewed and approved with the same procedure as stipulated for Permit applications. Approval of discharge of industrial wastes by any person will be given only on the basis of performance of pretreatment processes, if pretreatment should be required.

Section 5. Permit Conditions

Permits shall include such conditions as are reasonably deemed necessary by the Approving Authority to prevent pass through or interference, protect the quality of the stream receiving the sewage treatment plant's effluent, protect worker health and safety, facilitate sludge management and disposal, and protect against damage to the sewerage system. Permits must contain, but need not be limited to, the following:

- a. Limits on the average and/or maximum rate of discharge, time of discharge, and/or requirements for flow regulation and equalization;
- b. Limits on the average and/or maximum concentration, mass, or other measure of identified wastewater constituents or properties;
- c. Requirements for the installation of pretreatment technology or construction of appropriate containment devices designed to reduce, eliminate, or prevent the introduction of pollutants into the sewerage system;
- d. Development and implementation of spill control plans or other special conditions including additional management practices necessary to adequately prevent accidental, unanticipated, or routine discharges;
- e. Requirements for installation and maintenance of inspection and sampling facilities;
- f. Specifications for self-monitoring programs which may include sampling locations, frequency of sampling, number, types, and standards for tests, and reporting schedules;
- g. Compliance schedules;
- h. Requirements for submission of technical reports or discharge reports;
- i. Requirements for record keeping relating to wastewater discharges and access thereto;
- j. Requirements for notification of any new wastewater constituents or of any substantial change in the volume or character of the wastewater being introduced into the sewerage system;
- k. Requirements for the notification of any change in the manufacturing and/or pretreatment process used by the discharger;
- l. Requirements for notification of excessive, accidental, or slug discharges;

- m. Requirements to control Slug Discharge, if determined by the Wastewater Manager to be necessary; and
- n. Other conditions as deemed appropriate to ensure compliance with these Regulations and State and Federal laws, rules and regulations.
- o. A Statement of applicable civil and criminal penalties for violation of Pretreatment Standards and Requirements, and any applicable compliance schedule. Such schedule may not extend the time for compliance beyond that required by applicable Federal, State, or local law.
- p. Effluent limits, including Best Management Practices, based on applicable Pretreatment Standards.
- q. A Statement that indicates the wastewater discharge permit issuance date, expiration date and effective date.
- r. A statement that the permit is nontransferable without prior notification to the Authority.

Section 6. Duration of Permits

Permits shall be issued for a period of time not to exceed three (3) years. An expired Permit will continue to be effective and enforceable until the Permit is reissued if the failure to reissue the Permit, prior to expiration of the previous Permit, is not due to any act or failure to act on the part of the industrial user.

Section 7. Modification of Permits

The terms and conditions of any Permit may be subject to modification and change by the Approving Authority during the life of the Permit to accommodate changed conditions and as local, State and Federal laws, rules and regulations are modified or amended, or as new National Categorical Pretreatment Standards are promulgated. Permit holders shall be informed of any proposed changes in their respective Permits at least sixty (60) days prior to the effective date of change and shall be allowed a comment period relating to any of the proposed changes in their Permits within the first thirty (30) days after issuance of such proposed changes by the Approving Authority. The Approving Authority shall allow a discharger a reasonable period of time to comply with any changes in the Permit required by the Approving Authority unless otherwise required by emergency or governmental regulations. Nothing in these Regulations is intended to preclude the Approving Authority from taking immediate action to temporarily modify a Permit when there is imminent risk of injury to the sewerage system or to the health and welfare of the public or to the environment.

Section 8. Separate Permits Required

A separate Permit shall be required for each wastewater connection discharging, directly or indirectly, into the sewerage system. For each discharger having multiple connections at a single plant or facility, a single Permit will be required which may set forth specific effluent limitations and conditions for discharge from each separate connection.

Section 9. Non-Transferability

Permits are issued to a specific user for a specific operation and are not assignable to another user or location.

a. In the event of any change in ownership of facilities from which the discharge is permitted, the permittee shall notify the succeeding owner of this Permit by letter with a copy forwarded to the Authority. The succeeding owner must apply for a new Permit within thirty (30) days of assuming ownership and comply with the terms of this Permit until a new Permit is issued.

b. Any anticipated facility expansion, production increases, or process modifications which will result in new, different or increased discharges of pollutants must be reported to the Authority.

(1) If any changes will not violate the discharge limitations specified in this Permit, the Permit may be modified to specify and limit any pollutants not previously limited.

(2) If such changes violate the discharge limitations specified in this Permit, this Permit will become void and a new Permit application must be submitted.

PART IV. ADMINISTRATION

Section 1. Administration

Except as otherwise provided herein, the Executive Director of the Authority shall administer, implement and enforce the provisions of these Regulations. Any power granted, or duties imposed upon the Executive Director may be delegated by the Executive Director to persons in the employ of the Authority.

Section 2. Monitoring

a. The volume or quantity of industrial waste discharged by any person into the sanitary sewer system shall be measured by one or more of the following methods:

(1) If the volume of water used by any person in his industrial or process operations is substantially the same as the volume purchased from the municipal waterworks system, then the volume of water purchased should be considered to be the volume of waste discharged.

(2) If a substantial portion of the water purchased from the City of Charlottesville and/or Albemarle County Service Authority is used for purposes that do not require the discharge of such used water to the sanitary sewer system, such person shall, at his own expense, either:

(a) install a meter(s) of design approved by the Approving Authority on the water supply line(s) to his industrial and/or process operations or,

(b) install a meter(s) of design approved by the Approving Authority on the waste line(s) from his industrial and/or process operations.

The volume of water or waste flow, respectively, as measured through said meters shall be considered to be the volume of waste discharged to the sanitary sewer system.

(3) If any person proposing to discharge industrial wastes into the sanitary sewer system does not secure his entire water supply requirements from the City of Charlottesville and/or Albemarle County Service Authority such person shall, at his own expense, install a meter(s) of design approved by the Approving Authority on the waste line(s) from his industrial and/or process operations. The volume of waste flow, as measured through said meter(s) shall be considered to be the volume of waste discharged to the sanitary sewer system.

b. Samples to determine the character and concentration of industrial wastes discharged into the sanitary sewer system for purposes of determining compliance with these Regulations and calculating surcharges, shall be collected by Authority personnel as may be deemed necessary by the Approving Authority. The methods used to determine the character and concentration of the industrial wastes shall be in accordance with 40 CFR Part 136.

Industries wishing to include samples other than those regularly scheduled may request the Authority to do so. Costs incidental to sampling and analyzing of wastes for purposes of determining compliance with these Regulations, or that are applicable to surcharges shall be paid for by those persons discharging wastes into the sanitary sewers.

c. A Permit holder may be required to construct, at his own expense, a control manhole on the waste line(s) from his industrial and/or process operations for the purpose of facilitating observations, measurements, and sampling of the industrial wastes discharged from such person's establishment. The control manhole shall be constructed in a suitable and satisfactory location downstream from any pretreatment facilities, holding tanks, or other approved works, and ahead of the point of discharge of such waste into the sanitary sewer system. The design of the control manhole shall be in accordance with the requirements of the Approving Authority. The control manhole shall be maintained by such person so as to be safe, accessible and in proper operating condition at all times.

d. Properly identified Authority personnel shall be allowed access at all reasonable times for purposes of inspection and sampling and shall have the right to inspect and copy records.

Section 3. Baseline Monitoring Reports

a. Within either one hundred eighty (180) days after the effective date of a categorical Pretreatment Standard, or the final administrative decision on a category determination under 40 CFR 403.6(a)(4), whichever is later, existing Categorical Industrial Users currently discharging to or scheduled to discharge to the POTW shall submit to the Wastewater Manager a report which contains the information listed in paragraph (2), below. At least ninety (90) days prior to commencement of their discharge, New Sources, and sources that become Categorical Industrial Users subsequent to the promulgation of an applicable categorical Standard, shall submit to the Wastewater Manager a report which contains the information listed in paragraph (2), below. A New Source shall report the method of pretreatment it intends to use to meet applicable categorical Standards. A New Source also shall give estimates of its anticipated flow and quantity of pollutants to be discharged.

b. Users described above shall submit the information set forth below.

(1) All information required in Part III Section 2.a-m. [Note: See 40 CFR 403.12(b)(1)-(7)]

(2) Measurement of pollutants.

(a) The User shall provide the following information:

(i) The categorical Pretreatment Standards applicable to each regulated process and any new categorically regulated processes for Existing Sources.

(ii) The results of sampling and analysis identifying the nature and concentration, and/or mass, where required by the Standard or by the Wastewater Manager, of regulated pollutants in the discharge from each regulated process.

(iii) Instantaneous, Daily Maximum, and long-term average concentrations, or mass, where required, shall be reported.

(iv) The sample shall be representative of daily operations and shall be analyzed in accordance with procedures set out in Part IV Section 15 of this ordinance. Where the Standard requires compliance with a BMP or pollution prevention alternative, the User shall submit documentation as required by the Wastewater Manager or the applicable Standards to determine compliance with the Standard.

(b) The User shall take a minimum of one representative sample to compile that data necessary to comply with the requirements of this paragraph.

(c) Samples should be taken immediately downstream from pretreatment facilities if such exist or immediately downstream from the regulated process if no pretreatment exists. If other wastewaters are mixed with the regulated wastewater prior to pretreatment the User should measure the flows and concentrations necessary to allow use of the combined waste stream formula in 40 CFR 403.6(e) to evaluate compliance with the Pretreatment Standards. Where an alternate concentration or mass limit has been calculated in accordance with 40 CFR 403.6(e) this adjusted limit along with supporting data shall be submitted to the Control Authority;

(d) Sampling and analysis shall be performed in accordance with Part IV Section 15;

(e) The Wastewater Manager may allow the submission of a baseline report which utilizes only historical data so long as the data provides information sufficient to determine the need for industrial pretreatment measures;

(f) The baseline report shall indicate the time, date and place of sampling and methods of analysis, and shall certify that such sampling and analysis is representative of normal work cycles and expected pollutant Discharges to the POTW.

(3) Compliance Certification. A statement, reviewed by the User's Authorized Representative as defined in Part I Section 4 (c) and certified by a qualified professional, indicating whether Pretreatment Standards are being met on a consistent basis, and, if not, whether additional operation and maintenance (O&M) and/or additional pretreatment is required to meet the Pretreatment Standards and Requirements.

(4) Compliance Schedule. If additional pretreatment and/or O&M will be required to meet the Pretreatment Standards, the shortest schedule by which the User will provide such additional pretreatment and/or O&M must be provided. The completion date in this schedule shall not be later than the compliance date established for the applicable Pretreatment Standard. A compliance schedule pursuant to this Section must meet the requirements set out in Part IV Section 4 of this ordinance.

(5) Signature and Report Certification. All baseline monitoring reports must be certified in accordance with Part IV Section 12 of this ordinance and signed by an Authorized Representative as defined in Part I Section 4 (c).

Section 4. Compliance Schedule Progress Reports

The following conditions shall apply to the compliance schedule required by Part IV Section 3 (b)(4) of this ordinance:

a. The schedule shall contain progress increments in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment

required for the User to meet the applicable Pretreatment Standards (such events include, but are not limited to, hiring an engineer, completing preliminary and final plans, executing contracts for major components, commencing and completing construction, and beginning and conducting routine operation);

b. No increment referred to above shall exceed nine (9) months;

c. The User shall submit a progress report to the Wastewater Manager no later than fourteen (14) days following each date in the schedule and the final date of compliance including, as a minimum, whether or not it complied with the increment of progress, the reason for any delay, and, if appropriate, the steps being taken by the User to return to the established schedule; and

d. In no event shall more than nine (9) months elapse between such progress reports to the Wastewater Manager.

Section 5. Reports on Compliance with Categorical Pretreatment Standard Deadline

Within ninety (90) days following the date for final compliance with applicable categorical Pretreatment Standards, or in the case of a New Source following commencement of the introduction of wastewater into the POTW, any User subject to such Pretreatment Standards and Requirements shall submit to the Wastewater Manager a report containing the information described in Part III Section 2(e) and Part IV Section 3(b)(2) of this ordinance. For Users subject to equivalent mass or concentration limits established in accordance with the procedures in Part II Section 2 [Note: See 40 CFR 403.6(c)], this report shall contain a reasonable measure of the User's long-term production rate. For all other Users subject to categorical Pretreatment Standards expressed in terms of allowable pollutant discharge per unit of production (or other measure of operation), this report shall include the User's actual production during the appropriate sampling period. All compliance reports must be signed and certified in accordance with Part IV Section 12 of this ordinance. All sampling will be done in conformance with Part IV Section 16.

Section 6. Periodic Compliance Reports

a. All Significant Industrial Users must, at a frequency determined by the Wastewater Manager submit no less than twice per year (June and December) reports indicating the nature, concentration of pollutants in the discharge which are limited by Pretreatment Standards and the measured or estimated average and maximum daily flows for the reporting period. In cases where the Pretreatment Standard requires compliance with a Best Management Practice (BMP) or pollution prevention alternative, the User must submit documentation required by the Wastewater Manager or the Pretreatment Standard necessary to determine the compliance status of the User.

b. All periodic compliance reports must be signed and certified in accordance with Part IV Section 12 of this ordinance.

c. All wastewater samples must be representative of the User's discharge. Wastewater monitoring

and flow measurement facilities shall be properly operated, kept clean, and maintained in good working order at all times. The failure of a User to keep its monitoring facility in good working order shall not be grounds for the User to claim that sample results are unrepresentative of its discharge.

d. If a User subject to the reporting requirement in this section monitors any regulated pollutant at the appropriate sampling location more frequently than required by the Wastewater Manager, using the procedures prescribed in Part IV Section 16 of this ordinance, the results of this monitoring shall be included in the report. [Note: See 40 CFR 403.12(g)(6)].

Section 7. Reports of Potential Problems

a. In the case of any discharge, including, but not limited to, accidental discharges, discharges of a non-routine, episodic nature, a non-customary batch discharge, a Slug Discharge or Slug Load, that might cause potential problems for the POTW, the User shall immediately telephone and notify the Wastewater Manager of the incident. This notification shall include the location of the discharge, type of waste, concentration and volume, if known, and corrective actions taken by the User.

b. Within five (5) days following such discharge, the User shall, unless waived by the Wastewater Manager, submit a detailed written report describing the cause(s) of the discharge and the measures to be taken by the User to prevent similar future occurrences. Such notification shall not relieve the User of any expense, loss, damage, or other liability which might be incurred as a result of damage to the POTW, natural resources, or any other damage to person or property; nor shall such notification relieve the User of any fines, penalties, or other liability which may be imposed pursuant to this ordinance.

c. A notice shall be permanently posted on the User's bulletin board or other prominent place advising employees who to call in the event of a discharge described in paragraph (1), above. Employers shall ensure that all employees, who could cause such a discharge to occur, are advised of the emergency notification procedure.

d. Significant Industrial Users are required to notify the Wastewater Manager immediately of any changes at its facility affecting the potential for a Slug Discharge.

Section 8. Reports of Changed Conditions

Each User must notify the Wastewater Manager of any significant changes to the User's operations or system which might alter the nature, quality, or volume of its wastewater at least fourteen (14) days before the change.

a. The Wastewater Manager may require the User to submit such information as may be deemed necessary to evaluate the changed condition, including the submission of a wastewater discharge permit application under Part III Section 2 of this ordinance.

b. The Wastewater Manager may issue an individual wastewater discharge permit under Part III Section 3 of this ordinance or modify an existing wastewater discharge permit under Part III Section 7 of this ordinance in response to changed conditions or anticipated changed conditions.

c. All Users are required to notify the Wastewater Manager immediately of any changes at its facility affecting the potential for a Slug Discharge.

Section 9. Notice of Violation/Repeat Sampling and Reporting

If sampling performed by a User indicates a violation, the User must notify the Wastewater Manager within twenty-four (24) hours of becoming aware of the violation. The User shall also repeat the sampling and analysis and submit the results of the repeat analysis to the Wastewater Manager within thirty (30) days after becoming aware of the violation. Resampling by the Industrial User is not required if the Authority performs sampling at the User's facility at least once a month, or if the Authority performs sampling at the User between the time when the initial sampling was conducted and the time when the User or the Authority receives the results of this sampling, or if the Authority has performed the sampling and analysis in lieu of the Industrial User.

Section 10. Requirement to Conduct Representative Sampling

All wastewater samples must be representative of the User's discharge. Wastewater monitoring and flow measurement facilities shall be properly operated, kept clean, and maintained in good working order at all times. The failure of a User to keep its monitoring facility in good working order shall not be grounds for the User to claim that sample results are unrepresentative of its discharge.

Section 11. Notification of the Discharge of Hazardous Waste

a. Any User who commences the discharge of hazardous waste shall notify the POTW, the EPA Regional Waste Management Division Director, and State hazardous waste authorities, in writing, of any discharge into the POTW of a substance which, if otherwise disposed of, would be a hazardous waste under 40 CFR Part 261. Such notification must include the name of the hazardous waste as set forth in 40 CFR Part 261, the EPA hazardous waste number, and the type of discharge (continuous, batch, or other). If the User discharges more than one hundred (100) kilograms of such waste per calendar month to the POTW, the notification also shall contain the following information to the extent such information is known and readily available to the User: an identification of the hazardous constituents contained in the wastes, an estimation of the mass and concentration of such constituents in the waste stream discharged during that calendar month, and an estimation of the mass of constituents in the waste stream expected to be discharged during the following twelve (12) months. All notifications must take place no later than one hundred and eighty (180) days after the discharge commences. Any notification under this paragraph need be submitted only once for each hazardous waste discharged. However, notifications of changed conditions must be submitted under Part IV Section 8 of this ordinance. The notification requirement in this Section does not apply to pollutants already reported by Users subject to categorical Pretreatment Standards under the self-monitoring requirements of Part IV Sections Section 3, Section 5 and Section 6 of this

ordinance.

b. Dischargers are exempt from the requirements of paragraph a above, during a calendar month in which they discharge no more than fifteen (15) kilograms of hazardous wastes, unless the wastes are acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e). Discharge of more than fifteen (15) kilograms of nonacute hazardous wastes in a calendar month, or of any quantity of acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e), requires a one-time notification. Subsequent months during which the User discharges more than such quantities of any hazardous waste do not require additional notification.

c. In the case of any new regulations under section 3001 of RCRA identifying additional characteristics of hazardous waste or listing any additional substance as a hazardous waste, the User must notify the Wastewater Manager, the EPA Regional Waste Management Waste Division Director, and State hazardous waste authorities of the discharge of such substance within ninety (90) days of the effective date of such regulations.

d. In the case of any notification made under this Section, the User shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

e. This provision does not create a right to discharge any substance not otherwise permitted to be discharged by this ordinance, a permit issued thereunder, or any applicable Federal or State law.

Section 12. Certification Statements

Certification of Permit Applications, User Reports and Initial Monitoring Waiver— The following certification statement is required to be signed and submitted by Users submitting permit applications in accordance with Part III Section 2(l); Users submitting baseline monitoring reports under Part IV Section 3(b)(5) [Note: See 40 CFR 403.12 (l)]; Users submitting reports on compliance with the categorical Pretreatment Standard deadlines under Part IV Section 5 [Note: See 40 CFR 403.12(d)]; Users submitting periodic compliance reports required by Part IV Section 6 [Note: See 40 CFR 403.12(e) and (Note: See 40 CFR 403.12(e)(2)(iii))]. The following certification statement must be signed by an Authorized Representative as defined in Part I Section 4(c):

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Section 13. Recordkeeping

Users subject to the reporting requirements of this ordinance shall retain, and make available for inspection and copying, all records of information obtained pursuant to any monitoring activities required by this ordinance, any additional records of information obtained pursuant to monitoring activities undertaken by the User independent of such requirements, and documentation associated with Best Management Practices. Records shall include the date, exact place, method, and time of sampling, and the name of the person(s) taking the samples; the dates analyses were performed; who performed the analyses; the analytical techniques or methods used; and the results of such analyses. These records shall remain available for a period of at least three (3) years. This period shall be automatically extended for the duration of any litigation concerning the User or the Authority, or where the User has been specifically notified of a longer retention period by the Wastewater Manager.

Section 14. Submission of All Monitoring Data

If a User subject to the reporting requirement in this section monitors any regulated pollutant at the appropriate sampling location more frequently than required by the Wastewater Manager, using the procedures prescribed in Part IV Section 16 of this ordinance, the results of this monitoring shall be included in the report.

Section 15. Analytical Requirements

All pollutant analyses, including sampling techniques, to be submitted as part of a wastewater discharge permit application or report shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto, unless otherwise specified in an applicable categorical Pretreatment Standard. If 40 CFR Part 136 does not contain sampling or analytical techniques for the pollutant in question, or where the EPA determines that the Part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analyses shall be performed by using validated analytical methods or any other applicable sampling and analytical procedures, including procedures suggested by the Wastewater Manager or other parties approved by EPA.

Section 16. Sample Collection

Samples collected to satisfy reporting requirements must be based on data obtained through appropriate sampling and analysis performed during the period covered by the report, based on data that is representative of conditions occurring during the reporting period. All Significant Industrial Users must, at a frequency determined by the Wastewater Manager sample no less than twice per year (June and December).

a. Except as indicated in Section b and c below, the User must collect wastewater samples using 24-hour flow-proportional composite sampling techniques, unless time-proportional composite sampling or grab sampling is authorized by the Wastewater Manager. Where time-proportional composite sampling or grab sampling is authorized by the Authority, the samples must be

representative of the discharge. Using protocols (including appropriate preservation) specified in 40 CFR Part 136 and appropriate EPA guidance, multiple grab samples collected during a 24-hour period may be composited prior to the analysis as follows: for cyanide, total phenols, and sulfides the samples may be composited in the laboratory or in the field; for volatile organics and oil and grease, the samples may be composited in the laboratory. Composite samples for other parameters unaffected by the compositing procedures as documented in approved EPA methodologies may be authorized by the Authority, as appropriate. In addition, grab samples may be required to show compliance with Instantaneous Limits.

b. Samples for oil and grease, temperature, pH, cyanide, total phenols, sulfides, and volatile organic compounds must be obtained using grab collection techniques.

c. For sampling required in support of baseline monitoring and 90-day compliance reports required in Part IV Section 3 and Section 5 [40 CFR 403.12(b) and (d)], a minimum of four (4) grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide and volatile organic compounds for facilities for which historical sampling data do not exist; for facilities for which historical sampling data are available, [the Superintendent] may authorize a lower minimum. For the reports required by paragraphs Part IV Section 6 (40 CFR 403.12(e) and 403.12(h)), the Industrial User is required to collect the number of grab samples necessary to assess and assure compliance by with applicable Pretreatment Standards and Requirements.

Section 17. Costs

a. A surcharge for treating wastes with BOD and/or suspended solids concentrations greater than 240 parts per million may be rendered. This surcharge shall be imposed as herein provided in addition to any existing sewer service charges and to any sewer charge imposed after the adoption of these Regulations. The surcharge shall include:

(1) A charge covering the cost incurred by the Authority in treating the wastes in the sewage treatment plants; and

(2) A charge covering the cost incurred by the Authority in sampling and analyzing the discharge.

b. The surcharge, as set forth in Paragraph a. of this Section, shall be shown separately on the regular bill rendered to the proper persons each month by the City of Charlottesville or the Albemarle County Service Authority. The dischargers shall pay in accordance with practices existing for payment of sewer charges.

c. The City of Charlottesville and the Albemarle County Service Authority shall remit to the Authority each month that part of the surcharge attributable to the increased operating and maintenance costs incurred by the Authority in treating the waste.

d. The Authority shall review, at least annually, the basis for determining charges and shall adjust

the unit treatment costs to reflect increases or decreases in wastewater treatment costs based upon the Authority's adopted annual budget.

e. Charges for the disposal of off-site and septic tank wastes as provided for in Part II Section 4 will be paid by the Permittee directly to the Authority in accordance with the current schedule and conditions contained in the Letter of Acceptance. Acceptance of domestic septic tank wastes is further subject to the advance purchase and tender upon delivery for discharge, of a coupon to the operator on duty.

PART V. VIOLATIONS AND ENFORCEMENT

Section 1. Suspension of Permits

a. The Approving Authority may suspend a Permit for a period not to exceed sixty (60) days when suspension is necessary in order to stop a discharge which, in the judgement of the Authority presents an imminent hazard to the public health, safety or welfare, to the local environment, or to any portion of the sewerage system.

b. Any discharger notified of a suspension of his Permit shall immediately cease discharge of all industrial wastewater into the sewerage system. In the event of a failure of a discharger to comply voluntarily with the suspension order, the Authority shall take such steps as are reasonably necessary to ensure compliance. The Permit may be reinstated upon such terms and conditions as may be required if a reinspection by Authority personnel reveals that the effluent is again in compliance with terms and conditions of the Permit.

Section 2. Emergency Suspensions

The Wastewater Manager may immediately suspend a User's discharge, after informal notice to the User, whenever such suspension is necessary to stop an actual or threatened discharge, which reasonably appears to present, or cause an imminent or substantial endangerment to the health or welfare of persons. The Wastewater Manager may also immediately suspend a User's discharge, after notice and opportunity to respond, that threatens to interfere with the operation of the POTW, or which presents, or may present, an endangerment to the environment.

a. Any User notified of a suspension of its discharge shall immediately stop or eliminate its contribution. In the event of a User's failure to immediately comply voluntarily with the suspension order, the Wastewater Manager may take such steps as deemed necessary, including immediate severance of the sewer connection, to prevent or minimize damage to the POTW, its receiving stream, or endangerment to any individuals. The Wastewater Manager may allow the User to recommence its discharge when the User has demonstrated to the satisfaction of the Wastewater Manager that the period of endangerment has passed, unless the termination proceedings in Section 3 of this ordinance are initiated against the User.

b. A User that is responsible, in whole or in part, for any discharge presenting imminent

endangerment shall submit a detailed written statement, describing the causes of the harmful contribution and the measures taken to prevent any future occurrence, to the Wastewater Manager prior to the date of any show cause or termination hearing under Section 3 of this ordinance.

Nothing in this Section shall be interpreted as requiring a hearing prior to any Emergency Suspension under this Section.

Section 3. Revocation of Permits

Permits may be revoked for just cause including but not limited to:

- a. Violation of any terms or conditions of the Permit or of any of these Regulations or any other government Regulations or discharge prohibitions.
- b. Obtaining a Permit by misrepresentation.
- c. Failure to disclose fully relevant facts or to report significant changes in wastewater volume, constituents or characteristics.
- d. False statements or data in any required monitoring report.
- e. Refusal of reasonable access to the discharger's premises for the purpose of inspection or monitoring.
- f. Failure to pay any and all costs as outlined in Section 4 herein or Part IV Sections 2(b) and Section 17(a) preceding.

Section 4. Consequences of Revocation

Before any further discharge of industrial wastewater may be made by a discharger whose Permit has been revoked, the discharger must apply for, and be granted, a reinstatement of the terminated Permit, or a new Permit, as the Approving Authority may require, and pay all delinquent fees, charges and costs occasioned by the violation.

When the Wastewater Manager finds that a User has violated, or continues to violate, any provision of this ordinance, an individual wastewater discharge permit, or order issued hereunder, or any other Pretreatment Standard or Requirement, the Wastewater Manager may petition the Approving Authority for the issuance of a temporary or permanent injunction, as appropriate, which restrains or compels the specific performance of the individual wastewater discharge permit, or other requirement imposed by this ordinance on activities of the User. The Wastewater Manager may also seek such other action as is appropriate for legal and/or equitable relief, including a requirement for the user to conduct environmental remediation. A petition for injunctive relief shall not be a bar against, or a prerequisite for, taking any other action against a User.

Section 5. Criminal/Civil Liability

Any person who willfully or negligently violates any provision of these Regulations may be subject to criminal penalties or a fine of up to \$1000 per day of violation, or by imprisonment for up to twelve months, or by both fine and imprisonment.

Further, any person who violates any provision of these Regulations or any condition or limitation of a Permit, or plan approval related thereto, shall be financially responsible and liable to the Authority, in addition to normal service charges and surcharges, for all costs incurred by the Authority associated with the violation of these Regulations, including, but not limited to the following:

- a. Cost of mileage and labor incurred in detecting and correcting the violation.
- b. Laboratory analysis costs associated with detecting and correcting the violation.
- c. Additional treatment costs caused by the violation or associated with detecting and correcting the violation.
- d. Costs of any additional equipment acquired or expended by the Authority for detecting or correcting the violation.
- e. Repair and/or replacement of any part of the sewage system damaged by the violation.
- f. Any liability, damages, fines or penalties incurred by the Authority as a result of the violation.
- g. Other costs as are associated with the detecting and correcting of the violation.

Section 6. Remedies Nonexclusive

The remedies provided for in this ordinance are not exclusive. The Wastewater Manager may take any, all, or any combination of these actions against a noncompliant User. Enforcement of pretreatment violations will generally be in accordance with the Authority's enforcement response plan. However, the Wastewater Manager may take other action against any User when the circumstances warrant. Further, the Wastewater Manager is empowered to take more than one enforcement action against any noncompliant User.

Section 7. Confidential Information

Information and data on a User obtained from reports, surveys, wastewater discharge permit applications, individual wastewater discharge permits, and monitoring programs, and from the Wastewater Manager inspection and sampling activities, shall be available to the public without restriction, unless the User specifically requests, and is able to demonstrate to the satisfaction of the Wastewater Manager, that the release of such information would divulge information, processes, or

methods of production entitled to protection as trade secrets under applicable State law. Any such request must be asserted at the time of submission of the information or data. When requested and demonstrated by the User furnishing a report that such information should be held confidential, the portions of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public, but shall be made available immediately upon request to governmental agencies for uses related to the NPDES program or pretreatment program, and in enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics and other effluent data, as defined at 40 CFR 2.302 shall not be recognized as confidential information and shall be available to the public without restriction.

Section 8. Publication of Users in Significant Noncompliance

The Wastewater Manager shall publish annually, in a newspaper of general circulation that provides meaningful public notice within the jurisdictions served by the Authority, a list of the Users which, at any time during the previous twelve (12) months, were in Significant Noncompliance with applicable Pretreatment Standards and Requirements. The term Significant Noncompliance shall be applicable to all Significant Industrial Users (or any other Industrial User that violates paragraphs (c), (d) or (h) of this Section) and shall mean:

- a. Chronic violations of wastewater discharge limits defined here as those in which sixty-six percent (66%) or more of all the measurements taken for the same pollutant parameter taken during a six- (6-) month period exceed (by any magnitude) a numeric Pretreatment Standard or Requirement, including Instantaneous Limits;
- b. Technical Review Criteria (TRC) violations, defined here as those in which thirty-three percent (33%) or more of wastewater measurements taken for each pollutant parameter during a six- (6-) month period equals or exceeds the product of the numeric Pretreatment Standard or Requirement including Instantaneous Limits, multiplied by the applicable criteria (1.4 for BOD, TSS, fats, oils and grease, and 1.2 for all other pollutants except pH);
- c. Any other violation of a Pretreatment Standard or Requirement as defined by Part I, Section 4 (Daily Maximum, long-term average, Instantaneous Limit, or narrative standard) that the Wastewater Manager determines has caused, alone or in combination with other discharges, Interference or Pass Through, including endangering the health of POTW personnel or the general public;
- d. Any discharge of a pollutant that has caused imminent endangerment to the public or to the environment, or has resulted in the Wastewater Manager's exercise of its emergency authority to halt or prevent such a discharge;
- e. Failure to meet, within ninety (90) days of the scheduled date, a compliance schedule milestone contained in an individual wastewater discharge permit or enforcement order for starting construction, completing construction, or attaining final compliance;

f. Failure to provide within forty-five (45) days after the due date, any required reports, including baseline monitoring reports, reports on compliance with categorical Pretreatment Standard deadlines, periodic self-monitoring reports, and reports on compliance with compliance schedules;

g. Failure to accurately report noncompliance; or

h. Any other violation(s), which may include a violation of Best Management Practices, which the Wastewater Manager determines will adversely affect the operation or implementation of the local pretreatment program.

PART VI. SEVERABILITY

If any section, clause, provision, or portion of these Regulations shall be held to be invalid or unconstitutional by any court of competent jurisdiction, such holding shall not affect any other section, clause, provision, or portion of these Regulations.



MEMORANDUM

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

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

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

**SUBJECT: CONSTRUCTION CONTRACT AWARD – MC SLIDE GATE
IMPROVEMENTS PROJECT – WACO, INC.**

DATE: JULY 28, 2020

There are four mechanical gates at the Moores Creek ultraviolet light disinfection facility that are deteriorated and will not close properly, causing a reduced capacity of the facility. Replacement of these gates will restore the process to full capacity. Two additional gates in the holding pond pump station from the original 1977 Moores Creek construction are not operational and will be replaced as part of this work. In addition, seven motor operated actuators will be provided for four valves and three gates at the headworks to improve wet weather operations related to the grit facility.

Our design engineer, Hazen and Sawyer, prepared construction documents for this work and the project was advertised on June 10, 2020. Six bids for the Slide Gate Improvements project (RFB No. 369) were received on July 8, 2020 ranging from \$373,600 to \$582,000, and Waco, Inc. from Sandston, VA was the apparent low bidder. The contractor and staff completed a “value optimization” review of the required electrical work, and determined an effective solution could be completed at a lower cost. An overall reduction in electrical work in the amount of \$30,400 was negotiated with the contractor. After reviewing the bid documents, Hazen determined the apparent low bidder responsive and responsible and recommended award of the contract to Waco, Inc. A deductive change order in the amount of \$30,400 will be issued with the award for a total contract amount of \$343,200.

Board Action Requested:

Staff requests the Board of Directors to authorize the Executive Director to award a construction contract to Waco, Inc. for a total value of \$343,200 for the MC Slide Gate Improvements (RFB No. 369), and any change orders not to exceed 10% of the original contract amount.



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: CAPITAL IMPROVEMENT PLAN AMENDMENT–
SCOTTSVILLE WATER TREATMENT PLANT LT2
IMPROVEMENTS**

DATE: JULY 28, 2020

Staff conducts routine regulatory sampling of the raw water from Totier Creek and Totier Creek Reservoir for compliance with the EPA Long Term 2 Enhanced Surface Water Treatment Rule (LT2). The rule provides risk-based guidance on the needed level of treatment for the deactivation of microbial pathogens. This project includes the construction of ultraviolet (UV) disinfection facilities, to supplement existing sodium hypochlorite disinfection facilities, at the Scottsville Water Treatment Plant to meet these requirements.

A Request for Bids was issued on June 23, 2020. A pre-bid conference was held on June 30, 2020, and a follow-up site visit was held on July 13, 2020. Construction bids were opened on July 15, 2020. Three competitive bids were received for the project ranging from \$143,500 to \$153,427. The apparent low bidder was Littleton and Associates, Inc. of Covington, VA with a total bid of \$143,500. Since the value of this construction contract is under \$200,000, and in accordance with the RWSA Purchasing Manual, the Executive Director has documented his intent to award this project to Littleton and Associates, Inc. in the amount of \$143,500.

The current Capital Improvement Plan budget for this project is \$160,000 including an estimated construction cost of \$113,000. During the design process, the orientation of the UV unit was shifted to facilitate access and maintenance, which required additional piping and valves that were not initially anticipated. Based on the range of bid prices received, our consultant engineer (SEH) and staff believe that the pricing provided is in accordance with the current market value for the work. Incorporating Littleton and Associates, Inc.'s bid value of \$143,500 represents an increase to the CIP Budget of \$30,000.

Board Action Requested:

Staff requests the Board of Directors to amend the Capital Improvement Plan for Fiscal Years 2021 - 2025 to include a budget increase for the Scottsville Water Treatment Plant LT2 Improvements Project of \$30,000 in Fiscal Year 2021. This amendment would bring the total budget for the Scottsville Water Treatment Plant LT2 Improvement Project to \$190,000.



MEMORANDUM

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

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

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

**SUBJECT: CONSTRUCTION CONTRACT AWARD AND CAPITAL
IMPROVEMENT PLAN AMENDMENT– CROZET FLOW
EQUALIZATION TANK; ANDERSON CONSTRUCTION**

DATE: JULY 28, 2020

Rehabilitation work in the RWSA and ACSA sewer systems is on-going to meet the Inflow and Infiltration (I/I) reduction goals in the Crozet Interceptor. This is based on the flow metering and modeling results of the Comprehensive Sanitary Sewer Model & Study conducted in 2006 and as part of the Crozet Interceptor CIP project. The results of the 2006 study were updated in 2016 to evaluate I/I reduction goals and future capital project needs. The need to proceed with construction of a flow equalization tank in the Crozet area was confirmed as a result of this study update, which took in to account recent flow monitoring data that had been collected following previous I/I reduction efforts. Based on those results, a preliminary engineering evaluation, siting analysis, and final design of a one MG flow equalization tank upstream of Crozet Pump Station No. 4 was completed to ensure that the facility could be constructed and ready for operation to meet projected two-year storm flow targets.

A Request for Bids was issued in June 2020. A virtual pre-bid conference was held on June 18, 2020, and a follow-up site visit was held on June 25, 2020. Construction bids were opened for the project on July 16, 2020. Five competitive bids were received for the project ranging from \$4,406,300 to \$5,160,501. The apparent low bidder was Anderson Construction Inc. of Lynchburg, VA with a total bid of \$4,406,300.

The current Capital Improvement Plan budget for this project is \$4,860,000 including an estimated construction cost of \$3,825,000. During the design process, the foundation for the tank was further evaluated based on geotechnical information gathered from the field, and this enhanced design may have had in impact on the cost of the project when compared to the original construction cost estimate. Based on the range of bid prices received, Schnabel Engineering, Greeley & Hansen and staff believe the pricing provided is in accordance with the current market value for the work.

Schnabel Engineering and Greeley & Hansen have reviewed the bid documents submitted by Anderson Construction, Inc. and verified that the bid and attached documents are both responsive and responsible. Schnabel Engineering and Greeley and Hansen recommend awarding a

construction contract for \$4,406,300 to Anderson Construction Inc. Incorporating Anderson Construction Inc.'s bid value of \$4,406,300 represents an increase to the CIP Budget of \$540,000.

Board Action Requested:

Staff requests that the Board of Directors to:

1. Authorize the Executive Director to award a construction contract to Anderson, Inc. for a total value of \$4,406,300 for the Crozet Flow Equalization and Pump Station Improvements Project, and any change orders up to 10% of the original contract amount.
2. Amend the Capital Improvement Plan for Fiscal Years 2021 - 2025 to include a budget increase for the Crozet Flow Equalization Tank and Pump Station Improvements Project of \$540,000 in Fiscal Year 2021. This amendment would bring the total budget for the Crozet Flow Equalization Tank and Pump Station Improvements Project to \$5,400,000.

Bond Rating & Reserves Review



Presented to the RWSA Board of Directors

LONNIE WOOD, DIRECTOR OF FINANCE & ADMINISTRATION

JULY 28, 2020

Credit Rating Codes & Classes

- The credit rating is a financial indicator to potential investors of debt securities such as bonds. These are assigned by credit rating agencies such as Moody's, Standard & Poor's, and Fitch, which publish code designations (such as AAA, B, CC) to express their assessment of the risk quality of a bond.
- In addition to the rating codes, agencies typically supplement the current assessment with indications of the chances for future upgrades or downgrades over the medium term. For example, Moody's designates an Outlook for a given rating as Positive (POS, likely to upgrade), Negative (NEG, likely to downgrade), Stable (STA, likely to remain unchanged), or Developing (DEV, contingent on some future event).

Moody's Investors Service

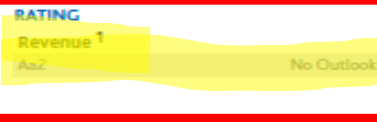
Annual Comment on RWSA

MOODY'S INVESTORS SERVICE

U.S. PUBLIC FINANCE

ISSUER COMMENT

24 April 2020



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CLIENT SERVICES

Americas 1-212-553-1653
Asia Pacific 852-3551-3077
Japan 81-3-5408-4100
EMEA 44-20-7772-5454

Rivanna Water & Sewer Authority

Annual Comment on RWSA

Issuer Profile

RWSA provides water and sewer service to the City of Charlottesville and parts of Albemarle County, Virginia. The county as a whole has a population of 106,355 and a moderate population density of 147 people per square mile. The county's median family income is \$96,157 (1st quartile) and the February 2020 unemployment rate was 2.2% (1st quartile) ². The water utility collects water, treats it, and distributes to customers. The sewer utility collects and treats wastewater.

Credit Overview

The credit position for RWSA is high quality, and its Aa2 rating is a little stronger than the median rating of Aa3 for water and wastewater systems nationwide. Notable credit factors include a sizeable system with an affluent service area, ample liquidity, an elevated debt profile and somewhat narrow debt service coverage.

System Characteristics: Overall, RWSA has a strong system profile that is aligned with the assigned rating of Aa2. The median family income equals a significant 130.5% of the US level. The system size, measured as operating and maintenance expenses (\$18.6 million), is just above the US median.

Financial Strength: The financial position of RWSA is healthy overall but is weak relative to its Aa2 rating. The days cash on hand (765 days) is excellent and greatly exceeds the US median. However, the debt to operating revenues (5.5x) is very heavy and well above other Moody's-rated water and wastewater systems nationwide. Furthermore, the coverage of the annual debt service by net revenues (1.4x) is somewhat narrow and much lower than the US median.

Legal Provisions: Legal provisions, which typically include a rate covenant requiring a minimum of 1.0x coverage of debt service, are adequate across this sector.

Sector Trends - Virginia Water and Sewer

Water, sewer and storm water systems in Virginia tend to be well-maintained and are in line with the national average with respect to asset condition, although they still require ongoing maintenance. Financial metrics are generally stronger than US medians. Median debt service coverage (2.9 times) and liquidity (554 days cash) are of Aaa-caliber quality. Utilities have debt to operating revenues (1.9 times) comparable to the national median. Water supply in the commonwealth is relatively abundant, and the majority of utilities do not face significant supply constraints in the near to medium term. Virginia utilities have unlimited rate-setting autonomy, which supports stability in financial operations.

Moody's Investors Service

Key Indicators

- Debt service coverage a.k.a. Ratio
- Days of Cash on Hand – in Moody's calculation it include restricted and unrestricted cash

EXHIBIT 1
Key Indicators 3.4 RWSA

Credit Metrics	2015	2016	2017	2018	2019	US Median	Credit Trend
Annual Debt Service Coverage (x)	1.55x	1.63x	1.67x	1.51x	1.39x	2.30x	Stable
Days Cash on Hand (Days)	920	918	870	760	765	440	Weakened
Debt to Operating Revenues (x)	4.5x	5.5x	5.7x	5.4x	5.5x	1.9x	Weakened
Median Family Income (% of US Median)	136%	132%	131%	131%	131%	91%	Weakened
Remaining Useful Life of Capital Assets (Years)	43	43	49	48	41	27	Stable

Debt and Financial Data (\$000s)	2015	2016	2017	2018	2019	US Median
Net Funded Debt	\$117,983	\$151,933	\$161,289	\$156,917	\$186,013	\$47,783
Total Revenues	\$26,941	\$28,937	\$29,244	\$30,282	\$36,604	\$29,141
Operating and Maintenance Expenses	\$12,875	\$14,507	\$15,293	\$15,833	\$18,602	\$16,759
Net Revenues	\$14,065	\$14,430	\$13,951	\$14,450	\$18,002	\$12,262
Debt Service	\$9,095	\$8,865	\$8,369	\$9,549	\$12,966	\$5,182

Governance/Legal Provisions	Score
Rate Management	Aa
Regulatory Compliance and Capital Planning	A
Rate Covenant	Ba
Debt Service Reserve Requirement	A

Source: Moody's Investors Service

EXHIBIT 2
Days cash on hand has decreased from 2015 to 2019

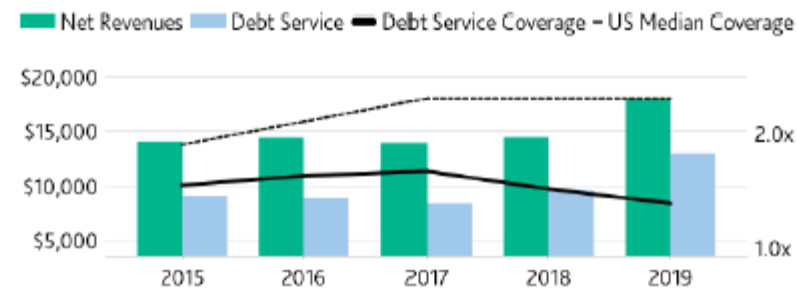


Source: Moody's Investors Service

Moody's Investors Service

EXHIBIT 3

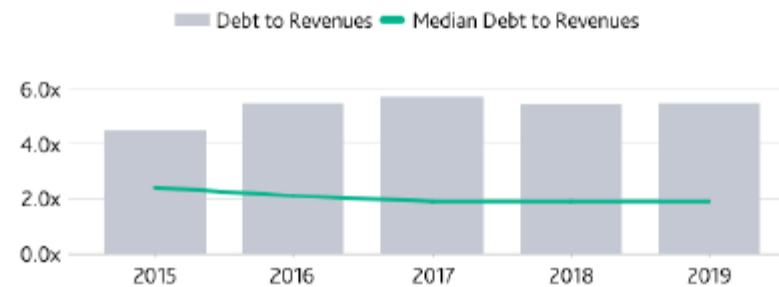
Debt service coverage decreased from 2015 to 2019



Source: Moody's Investors Service

EXHIBIT 4

Debt to operating revenues increased from 2015 to 2019



Source: Moody's Investors Service

Endnotes

- 1 The rating referenced in this report is the rating of the senior most lien on the relevant pledged revenues. Some utilities have bonds separately secured by distinct revenue sources. For these utilities, the rating referenced in this report is the senior most rating only on the relevant revenue pledge (e.g., water); the utility could have a higher rating on a different type of revenue bond (e.g., sewer).
- 2 The demographic data presented, including population, population density, per capita personal income and unemployment rate are derived from the most recently available US government databases. Population, population density and per capita personal income come from the American Community Survey while the unemployment rate comes from the Bureau of Labor Statistics.

The largest industry sectors are derived from the Bureau of Economic Analysis. Moody's allocated the per capita personal income data and unemployment data for all counties in the US census into quartiles. The quartiles are ordered from strongest-to-weakest from a credit perspective: the highest per capita personal income quartile is first quartile, and the lowest unemployment rate is first quartile.

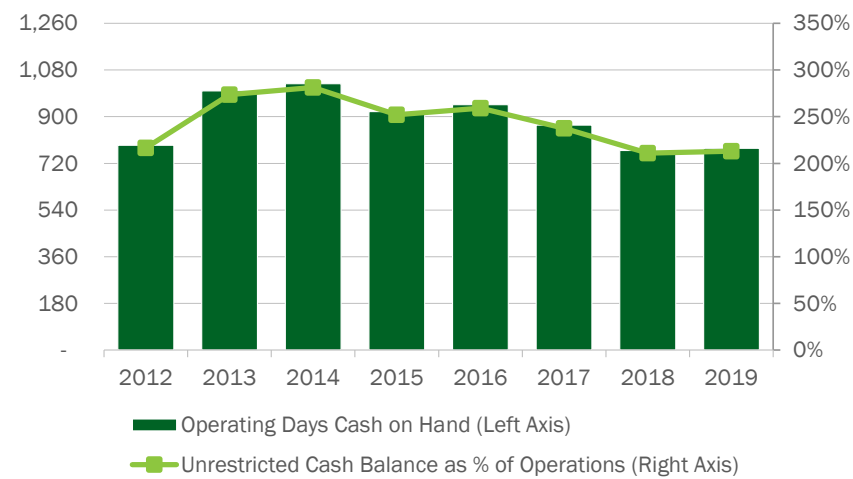
- 3 Moody's calculations of various statistics can be different than calculations reported in audited financial statements or offering documents. Moody's makes standard adjustments to reported financial data, to facilitate comparisons across issuers. For definitions of the metrics in the Key Indicators Table, see our [US Municipal Utility Revenue Debt](#) methodology.
- 4 The medians come from our most recently published report, [Medians - Solid financial metrics, ability to raise rates underpin stable sector](#).

Bond Rating

- Moody's
- S&P
- Fitch

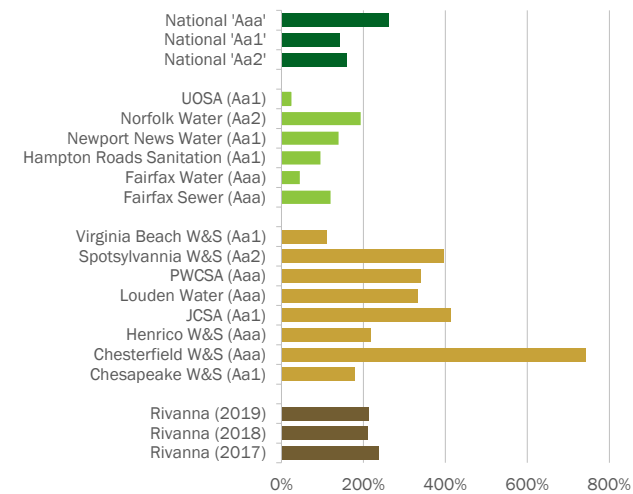
	Moody's	S&P	Fitch	Meaning
Investment Grade	Aaa	AAA	AAA	Prime
	Aa1	AA+	AA+	High Grade
	Aa2	AA	AA	
	Aa3	AA-	AA-	
	A1	A+	A+	Upper Medium Grade
	A2	A	A	
	A3	A-	A-	
	Baa1	BBB+	BBB+	Lower Medium Grade
	Baa2	BBB	BBB	
	Baa3	BBB-	BBB-	
Junk	Ba1	BB+	BB+	Non Investment Grade Speculative
	Ba2	BB	BB	
	Ba3	BB-	BB-	
	B1	B+	B+	Highly Speculative
	B2	B	B	
	B3	B-	B-	
	Caa1	CCC+	CCC+	Substantial Risks
	Caa2	CCC	CCC	Extremely Speculative
	Caa3	CCC-	CCC-	In Default w/ Little Prospect for Recovery
	Ca	CC	CC+	
		C	CC	
			CC-	In Default
	D	D	DDD	

Liquidity (Unrestricted Cash)

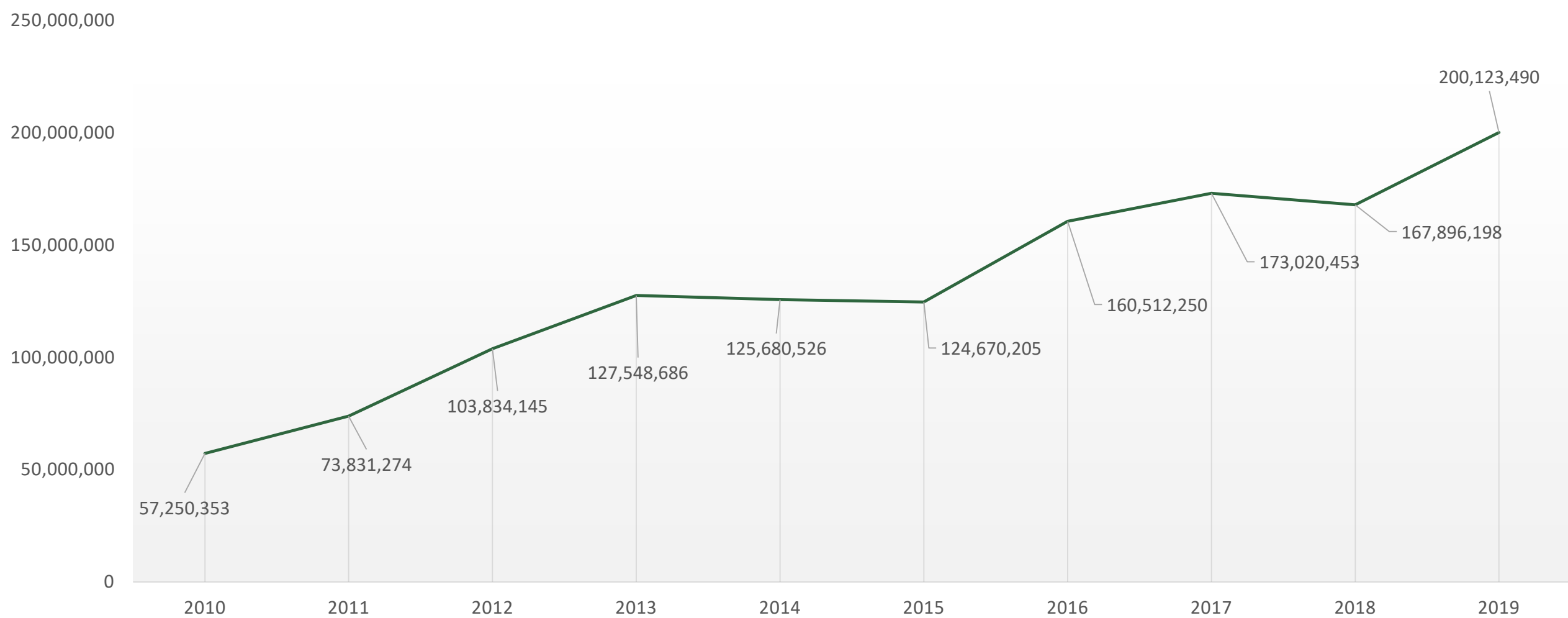


- Cumulative Funds available after Operations and Debt Service needs
- Days Cash on Hand = $\text{Unrestricted Cash} \div (\text{Operating Expenditures} \div 365)$
- Unrestricted Cash as % of O&M = $\text{Unrestricted Cash} \div \text{Operating Expenditures}$

Peer Comparative: Unrestricted Cash as a % of O&M



- Standard and Poor's criteria for Water and Sewer Credit defines categories of Days Cash on Hand as:
 - <30 days: Low
 - 30 - 60 days: Adequate
 - 60 - 120 days: Good
 - > 120 days: Strong
- Moody's criteria for W&S Credits defines categories of Days Cash on Hand as:
 - >250 days: Aaa
 - 150 - 250 days: Aa
 - 35 - 150 days: A
 - 15 - 35 days: Baa
 - 7 - 15 days: Ba
 - <7 days: B and Below

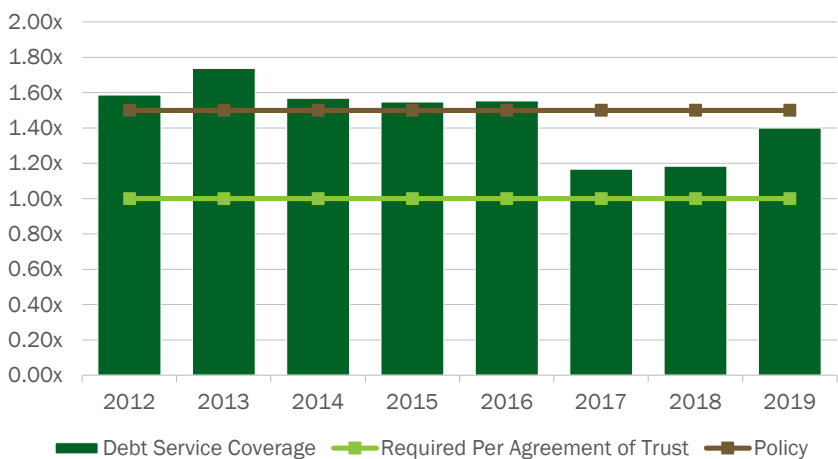


Total Outstanding Debt (increase of 350%)

Debt Service Coverage Ratio (“DSCR”)

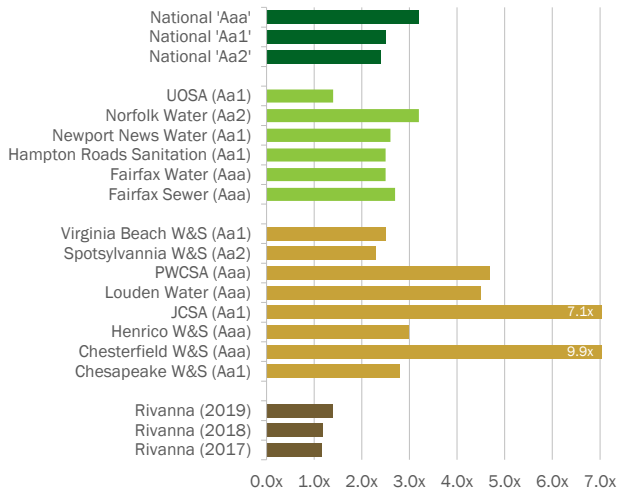


Debt Service Coverage Ratio



- Measure of ability to meet operating and debt service obligations.
- DSCR = Net Revenue Available for Debt service ÷ Annual Debt Service.

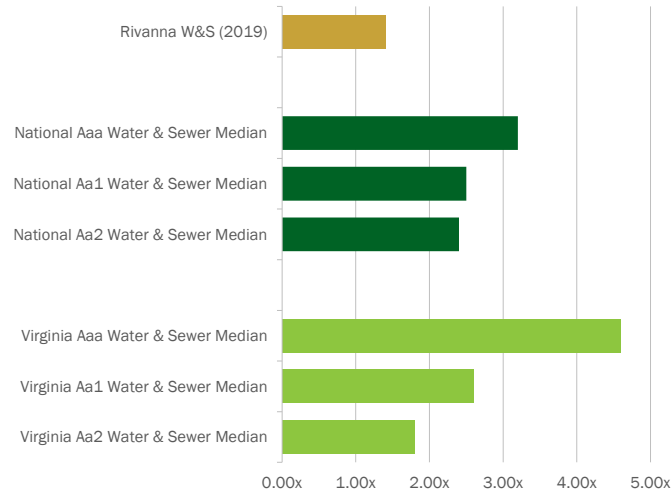
Peer Comparative: Total Debt Service Coverage Ratio



- Standard and Poor’s criteria for Water and Sewer Credit defines categories of Debt Service Coverage Ratio as:
 - <1.0x: Insufficient
 - 1.0x-1.25x: Adequate
 - 1.26x-1.50x: Good
 - >1.50x: Strong
- Moody’s criteria for W&S Credits defines categories of Debt Service Coverage Ratio as:
 - >2.00x: Aaa
 - 1.70x – 2.00x: Aa
 - 1.25x – 1.70x: A
 - 1.00x – 1.25x: Baa
 - 0.70x - 1.00x: Ba
 - <0.70x: B and Below

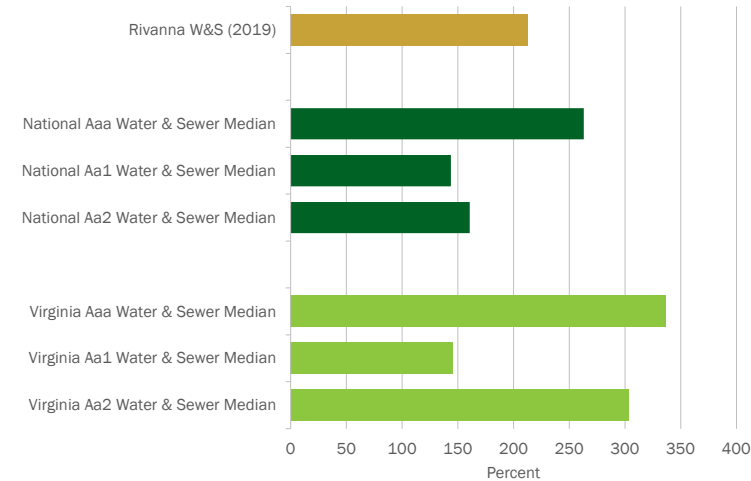
Debt Service Coverage and Liquidity

Peer Comparative: Total Debt Service Coverage (“DSCR”)



- $DSCR = \text{Net Revenue Available for Debt service} \div \text{Annual Debt Service}$.
- Moody's criteria for W&S Credits defines categories of Debt Service Coverage Ratio as:
 - >2.00x: Aaa
 - 1.70x – 2.00x: Aa
 - **1.25x – 1.70x: A**
 - 1.00x – 1.25x: Baa
 - 0.70x – 1.00x: Ba
 - <0.70x: B and Below
- S&P's criteria for W&S Credits defines categories of DSCR as:
 - >1.50x: Strong
 - **1.26x – 1.50x: Good**
 - 1.0x – 1.25x: Adequate
 - <1.0x: Insufficient

Peer Comparative: Unrestricted Cash as a % of O&M



- $\text{Days Cash on Hand} = \text{Unrestricted Cash} \div (\text{Operating Expenditures} \div 365)$.
- $\text{Unrestricted Cash as \% of O\&M} = \text{Unrestricted Cash} \div \text{Operating Expenditures}$.
- Moody's criteria for W&S Credits defines categories of Days Cash on Hand as:
 - **>250 days: Aaa**
 - 150 – 250 days: Aa
 - 35 – 150 days: A
 - 15 – 35 days: Baa
 - 7 – 15 days: Ba
 - <7 days: B and Below
- S&P's criteria for W&S Credits defines categories of Days Cash on Hand as:
 - **> 120 days: Strong**
 - 60 – 120 days: Good
 - 30 – 60 days: Adequate
 - <30 days: Low

Source: Moody's MFRA

Debt Service Coverage Ratio

Rivanna Water & Sewer Authority
Debt Service Coverage
Using budgeted information

	<u>FY 2021</u>	<u>FY 2020</u>	<u>FY 2019</u>
Gross Revenues	\$ 35,383,137	\$ 35,499,433	\$ 33,227,879
Operating Expenses	19,384,418	19,220,291	17,505,306
Depreciation	<u>(860,000)</u>	<u>(843,000)</u>	<u>(843,000)</u>
Direct Operating Expenses	18,524,418	18,377,291	16,662,306
Net Available	16,858,719	17,122,142	16,565,573
Debt Service Payments	14,375,500	14,473,234	12,295,398
*DS Ratio (Debt Service Coverage)	1.17	1.18	1.35

* - Financial policy target is 1.50

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
2010	\$ 24,219,402	\$ 10,218,159	\$ 14,001,243	\$ 5,592,641	2.50
2011	22,671,603	10,620,480	12,051,123	6,962,703	1.73
2012	24,549,651	11,880,393	12,669,258	6,724,261	1.88
2013	26,335,505	12,025,713	14,309,792	8,234,169	1.74
2014	26,664,195	12,401,578	14,262,617	9,089,702	1.57
2015	26,940,652	12,875,366	14,065,286	9,094,732	1.55
2016	28,936,917	14,075,953	14,860,964	9,567,370	1.55
2017	29,244,032	15,348,030	13,896,002	11,912,673	1.17
2018	30,282,369	15,635,287	14,647,082	12,370,197	1.18
2019	36,404,206	18,292,560	18,111,646	13,087,353	1.38

(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

Reserves Summary

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Urban Water								
Discretionary Reserve	\$ 12,707,275							
Rate Stabilization Fund	1,000,000							
GAC Reserve	418,563							
Watershed Management Fund	<u>194,393</u>							
Subtotal	14,320,231	14,320,231	13,077,631	12,757,981	11,687,143	11,396,453	10,305,305	
Previous Year end result		(1,466,200)	-	-	-	-	-	(1,466,200)
FY2021 Budget		-	(756,250)	-	-	-	-	(756,250)
CIP Transfer out		(1,000,000)	(1,000,000)	(1,500,000)	(1,500,000)	(1,500,000)	(500,000)	(7,000,000)
Use of reserves (GAC)		(600,000)	(500,000)	(300,000)	(150,000)	-	-	(1,550,000)
Interest		387,000	100,000	100,000	100,000	339,000	339,000	1,365,000
Depreciation		300,000	300,000	300,000	300,000	300,000	300,000	1,800,000
DS Ratio Charge		400,000	400,000	400,000	400,000	400,000	400,000	2,400,000
CIP Growth		<u>736,600</u>	<u>1,136,600</u>	<u>(70,838)</u>	<u>559,310</u>	<u>(630,148)</u>	-	<u>1,731,524</u>
Net Reserve activity		(1,242,600)	(319,650)	(1,070,838)	(290,690)	(1,091,148)	539,000	(3,475,926)
Ending Reserve Balance		13,077,631	12,757,981	11,687,143	11,396,453	10,305,305	10,844,305	
Urban Wastewater								
Discretionary Reserve	8,455,894							
Rate Stabilization Fund	<u>1,000,000</u>							
Subtotal	9,455,894	9,455,894	11,714,594	11,244,064	10,720,064	10,831,064	11,076,364	
Previous Year end result		1,716,400	-	-	-	-	-	1,716,400
FY2021 Budget			(215,630)	-	-	-	-	(215,630)
CIP Transfer out		(750,000)	(1,500,000)	(1,000,000)	(500,000)	(500,000)	-	(4,250,000)
Use of reserves (Odor control)		-	-	-	-	-	-	-
Interest		266,900	85,000	85,000	85,000	85,000	85,000	691,900
Depreciation		470,000	470,000	470,000	470,000	470,000	470,000	2,820,000
DS Ratio Charge		325,000	325,000	325,000	325,000	325,000	325,000	1,950,000
CIP Growth		<u>230,400</u>	<u>365,100</u>	<u>(404,000)</u>	<u>(269,000)</u>	<u>(134,700)</u>	-	<u>(212,200)</u>
Net Reserve activity		2,258,700	(470,530)	(524,000)	111,000	245,300	880,000	2,500,470
Ending Reserve Balance		11,714,594	11,244,064	10,720,064	10,831,064	11,076,364	11,956,364	

Reserves Summary

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Crozet Water								
Discretionary Reserve	674,973	674,973	680,173	612,540	548,540	497,540	446,540	
Previous Year end result		(80,300)						(80,300)
FY2021 Budget			(198,250)					
CIP Transfer out		-	(200,000)	(100,000)	(100,000)	(100,000)	(100,000)	(600,000)
Use of reserves (GAC)		(52,000)	(26,000)	(13,000)	-	-	-	(91,000)
Interest		21,500	9,000	9,000	9,000	9,000	9,000	66,500
Depreciation		30,000	40,000	40,000	40,000	40,000	40,000	230,000
CIP Growth / DS Ratio Charge		86,000	307,617	-	-	-	-	393,617
Net Reserve activity		5,200	(67,633)	(64,000)	(51,000)	(51,000)	(51,000)	(81,183)
Ending Reserve Balance		680,173	612,540	548,540	497,540	446,540	395,540	
Scottsville Water								
Discretionary Reserve	313,874	313,874	328,012	282,017	228,167	252,567	276,967	
Previous Year end result		1,100	-					1,100
CIP Transfer out		-	(75,000)	(75,000)	-	-	-	(150,000)
Use of reserves (GAC)		(15,000)	(9,220)	(3,250)	-	-	-	(27,470)
Interest		7,113	4,400	4,400	4,400	4,400	4,400	29,113
Depreciation		20,000	20,000	20,000	20,000	20,000	20,000	120,000
CIP Growth / DS Ratio Charge		925	13,825	-	-	-	-	14,750
Net Reserve activity		14,138	(45,995)	(53,850)	24,400	24,400	24,400	(12,507)
Ending Reserve Balance		328,012	282,017	228,167	252,567	276,967	301,367	

Reserves Summary

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
Glenmore Wastewater								
Discretionary Reserve	88,122	88,122	92,292	41,882	52,632	63,382	74,132	
Previous Year end result		25,400	(40,000)					(14,600)
CIP Transfer out		(30,000)	-	-	-	-	-	(30,000)
Use of reserves Ops. Budget		-	(24,540)	-	-	-	-	(24,540)
Interest		1,570	750	750	750	750	750	5,320
Depreciation		5,000	10,000	10,000	10,000	10,000	10,000	55,000
CIP Growth / DS Ratio Charge		2,200	3,380	-	-	-	-	5,580
Net Reserve activity		4,170	(50,410)	10,750	10,750	10,750	10,750	(3,240)
Ending Reserve Balance		92,292	41,882	52,632	63,382	74,132	84,882	
Scottsville Wastewater								
Discretionary Reserve	125,278	125,278	125,978	53,328	75,828	98,328	120,828	
Previous Year end result		33,200						33,200
CIP Transfer out		(60,000)	(100,000)	-	-	-	-	(160,000)
Interest		7,700	2,500	2,500	2,500	2,500	2,500	20,200
Depreciation		18,000	20,000	20,000	20,000	20,000	20,000	118,000
CIP Growth / DS Ratio Charge		1,800	4,850	-	-	-	-	6,650
Net Reserve activity		700	(72,650)	22,500	22,500	22,500	22,500	18,050
Ending Reserve Balance		125,978	53,328	75,828	98,328	120,828	143,328	
Restricted portions	24,978,372							
	(405,319)							
Total Discretionary	24,573,053	26,018,680	24,991,812	23,312,374	23,139,334	22,300,136	23,725,786	

Summary

- ✓ Moody's: Aa2
- ✓ Days Cash on Hand: 765
- ✓ Management: Aa
- Debt to Operating Revenues: 5.5x
- Debt Service Coverage: 1.17
 - Can be improved by increasing Net Revenues (i.e. increase rates)
- Adequate but Declining Reserves

Questions?



MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS

FROM: LONNIE WOOD, DIRECTOR OF FINANCE AND ADMINISTRATION

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: BOND RATE RESET RESOLUTION – 2014A AND 2005A BONDS

DATE: JULY 28, 2020

The Authority has utilized the State Revolving Loan Fund (SRLF) as a debt issuance / bonding vehicle to fund many of our wastewater projects over the last 20 years. The SRLF is managed by the Department of Environmental Quality (DEQ) and the Virginia Resources Authority (VRA). In 2005, the Authority issued the 2005A bond (\$2.34 million principal amount) through the SRLF to fund the Front-End improvements at the head of the Moores Creek plant. In 2014, the Authority issued the 2014A bond (\$29.04 million principal amount) through the SRLF to fund the Rivanna Pump Station and Tunnel project.

These two bonds have an interest rate of 3% to 2.45%, respectively, for the 2005A and 2014A issuances, and are eligible for what is called an “interest rate modification” or rate reset. The bonds will remain in place with a new interest rate effective after October 1, which is our normal payment date on all bonds, along with April 1. This basically refinances the current bonds without having to issue new bonds.

The new interest rates going forward after October 1 will be 1.0% and 1.60%, respectively, for the 2005A and 2014A bonds. The Authority has done similar rate resets several times in the past on six SRLF related bonds. This is an efficient way to lower debt service costs over the remaining term of the existing bonds. The new rates will save the Authority roughly \$120,000 annually for a total net present value savings of \$1.84 million over the remaining term of the existing bonds, which is 2036. The issuance costs will have to be paid up-front on the rate reset so the savings in FY 2021 will be used to pay for those costs.

There are several documents attached which are related to the rate reset. The resolution authorizing Amendments in Connection with the Cost of Funds Reduction on the 2005A and 2014A Bonds and there are two Allonges that amend each bond. The resolution authorizes the execution of the rate modifications, execution of amendments to the related Supplemental Agreement of Trust between the Authority and the Bank of New York Mellon Trust Company and the related Financing Agreement between the Authority and the Virginia Resources Authority. The resolution and form of the Allonges need to be approved by the Board to move forward with the refinancing.

Board Action Requested:

It is requested that the Board of Directors adopt the Resolution Authorizing Certain Amendments in Connection with the Cost of Funds Reduction and the execution of the various rate modification documents related to the existing Series 2005A and 2014A Revenue Bonds of the Rivanna Water and Sewer Authority.

Attachment

- Resolution Authorizing Certain Amendments in Connection with the Cost of Funds Reduction
- Allonges to the 2005A and 2014A Bonds evidencing the Change in the Cost of Funds

COVERING CERTIFICATE FOR RESOLUTION

The undersigned Executive Director of the Rivanna Water and Sewer Authority (the “Authority”), certifies as follows:

1. Attached hereto is a true, correct and complete copy of a resolution entitled “RESOLUTION AUTHORIZING CERTAIN AMENDMENTS IN CONNECTION WITH COST OF FUNDS REDUCTIONS ON THE RIVANNA WATER AND SEWER AUTHORITY’S REGIONAL WATER AND SEWER SYSTEM REVENUE BOND, SERIES 2005A, AND TAXABLE REGIONAL WATER AND SEWER SYSTEM REVENUE BOND, SERIES 2014A” (the “Resolution”), as adopted at a regular meeting of the members of the Authority held on July 28, 2020.

2. Such meeting of the Authority was held at the time and place established by the Authority for such meeting.

3. The minutes of such meeting reflect the attendance of the members and their votes on the Resolution as follows:

Member	Attendance (Present/Absent)	Vote (Aye/Nay/Abstain)
Michael A. Gaffney		
Lauren Hildebrand		
Gary B. O’Connell		
Lizbeth A. Palmer		
Jeff Richardson		
Tarron Richardson		
Lloyd Snook		

4. The Resolution has not been repealed, revoked, rescinded or amended and is in full force and effect on the date hereof.

WITNESS my signature and the seal of the Rivanna Water and Sewer Authority, this ____ day of July, 2020.

(SEAL)

William I. Mawyer, Jr., P.E., Executive
Director, Rivanna Water and Sewer
Authority

**RESOLUTION AUTHORIZING CERTAIN AMENDMENTS IN
CONNECTION WITH COST OF FUNDS REDUCTIONS ON THE
RIVANNA WATER AND SEWER AUTHORITY'S REGIONAL
WATER AND SEWER SYSTEM REVENUE BOND, SERIES 2005A,
AND TAXABLE REGIONAL WATER AND SEWER SYSTEM
REVENUE BOND, SERIES 2014A**

WHEREAS, on November 10, 2005, the Rivanna Water and Sewer Authority (the "Authority") issued its Regional Water and Sewer System Revenue Bond, Series 2005A (the "2005A Bond"), to the Virginia Resources Authority ("VRA"), as Administrator of the Virginia Water Facilities Revolving Fund ("Fund"), pursuant to the terms of (a) an Agreement of Trust dated as of October 1, 1979 (the "Master Trust Agreement"), between the Authority and The Bank of New York Mellon Trust Company, N.A., as trustee (the "Trustee"), as supplemented and amended from time to time including a Seventeenth Supplemental Agreement of Trust dated as of November 1, 2005 (the "Seventeenth Supplemental"), between the Authority and the Trustee, and (b) a Financing Agreement dated as of November 1, 2005, between the Authority and VRA (the "2005A Financing Agreement");

WHEREAS, on March 28, 2014, the Authority issued its Taxable Regional Water and Sewer System Revenue Bond, Series 2014A (the "2014A Bond" and, together with the 2005A Bond, the "Existing Bonds"), to VRA, as Administrator of the Fund, pursuant to the terms of (a) the Master Trust Agreement, as supplemented and amended from time to time including a Twenty-Sixth Supplemental Agreement of Trust dated as of March 1, 2014 (the "Twenty-Sixth Supplemental"), between the Authority and the Trustee, and (b) a Financing Agreement dated as of March 1, 2014, between the Authority and VRA (the "2014A Financing Agreement");

WHEREAS, the Authority, with the consent of VRA and the Virginia Department of Environmental Quality, proposes to amend the 2005A Financing Agreement and the 2014A Financing Agreement to lower the Cost of Funds on the 2005A Bond and the 2014A Bond, respectively, and to reduce the aggregate debt service payments thereunder; and

WHEREAS, there has been presented to this meeting the forms of two Allonges to be attached to the 2005A Bond (the "2005A Allonge") and the 2014A Bond (the "2014A Allonge" and, together with the 2005A Allonge, the "Allonges"), evidencing the reduction in the applicable Cost of Funds and corresponding adjustments to the debt service payments due under the 2005A Bond and the 2014A Bond;

BE IT RESOLVED BY THE RIVANNA WATER AND SEWER AUTHORITY:

1. Authorization of Cost of Funds Reductions. The Authority hereby determines that it is in the best interests of the Authority to authorize (a) a decrease in the Cost of Funds rate applicable to the 2005A Bond from 3.00% per year to 1.00% per year and (b) a decrease in the Cost of Funds rate applicable to the 2014A Bond from 2.45% per year to 1.60% per year. The Executive Director is authorized to approve such amendments to the Existing Bonds as are necessary to give effect to the Cost of Funds reductions, including but not limited to corresponding adjustments to the debt service payments due under the Existing Bonds. The

Authority hereby finds that the reductions of the debt service payments due under the Existing Bonds will promote the governmental purposes for which the Authority was formed.

2. Approval of Allonges. The forms of the Allonges submitted to this meeting are hereby approved. The Chair and Vice-Chair of the Authority, either of whom may act, are hereby authorized and directed to execute and deliver the Allonges in substantially such form to reflect the amended terms of the Existing Bonds as approved by the Executive Director pursuant to Section 1 above, together with such other completions, omissions, insertions and changes not inconsistent with this Resolution as may be approved by the Chair or Vice-Chair, whose approval shall be evidenced conclusively by the execution and delivery thereof. The Secretary-Treasurer is hereby authorized to affix the seal of the Authority on the Allonges and attest thereto.

3. Authorization of Amendments to Existing Financing Agreements and Supplemental Trust Agreements. The Chair and Vice-Chair of the Authority, either of whom may act, are hereby authorized to execute amendments to the 2005A Financing Agreement, the 2014A Financing Agreement, the Seventeenth Supplemental and the Twenty-Sixth Supplemental as may be necessary to reflect the terms of the Existing Bonds, as amended by the Allonges, and such other matters as VRA may reasonably request and be approved by the Chair or Vice-Chair of the Authority. Such amendments shall each be in a form approved by the Chair or Vice-Chair, after consultation with bond counsel and general counsel to the Authority, whose approval shall be evidenced conclusively by the execution and delivery thereof.

4. Other Actions. All other actions of officers of the Authority in conformity with the purposes and intent of this Resolution and in furtherance of the execution and delivery of the Allonges and the amendments to the 2005A Financing Agreement, the 2014A Financing Agreement, the Seventeenth Supplemental and the Twenty-Sixth Supplemental are hereby ratified, approved and confirmed. The officers of the Authority are authorized and directed to execute and deliver all certificates and other instruments considered necessary or desirable in connection with the execution and delivery of the Allonges and the amendments to the 2005A Financing Agreement, the 2014A Financing Agreement, the Seventeenth Supplemental and the Twenty-Sixth Supplemental.

5. Filing of Resolution. The Executive Director is hereby authorized and directed to file a certified copy of this Resolution with the Clerk's Office of the Circuit Court of Albemarle County, Virginia.

6. Effective Date. This Resolution shall become effective immediately.

ALLONGE DATED [_____, 2020], ATTACHED TO
RIVANNA WATER AND SEWER AUTHORITY
REGIONAL WATER AND SEWER SYSTEM REVENUE BOND,
SERIES 2005A, DATED NOVEMBER 10, 2005,
PAYABLE TO VIRGINIA RESOURCES AUTHORITY, AS ADMINISTRATOR OF THE
VIRGINIA WATER FACILITIES REVOLVING FUND

The text of the Bond is hereby amended, and this Allonge shall be executed and authenticated, as follows:

(a) The Cost of Funds on this Bond (RA-1) is reduced from 3.00% per annum to 1.00% per annum beginning on October 1, 2020.

(b) The semiannual installment payments of principal and Cost of Funds due on April 1, 2021 and on each April 1 and October 1 thereafter are changed from \$80,968.29 to \$[____], and the final installment due on October 1, 2026, is changed from \$80,968.18 to \$[____], when, if not sooner paid, all amounts due hereunder and under this Bond shall be due and payable in full.

The Borrower ratifies and confirms the Bond as modified hereby and, except as specifically modified hereby, the terms and provisions of the Bond remain in full force and effect. The Bond as modified hereby shall be interpreted and construed in accordance with Virginia law.

This Allonge shall be physically attached to the Bond, simultaneously with the entry into this Allonge by the parties hereto, to evidence the modification of the provisions of the Bond which are affected hereby.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Rivanna Water and Sewer Authority has caused this Allonge to be signed by its Chair, the seal of the Borrower to be affixed hereto and attested by its Secretary-Treasurer, and this Allonge to be dated as of the date written above.

**RIVANNA WATER AND SEWER
AUTHORITY**

By: _____
Chair

[SEAL]

ATTEST:

Secretary-Treasurer

Virginia Resources Authority, as Administrator of the Virginia Water Facilities Revolving Fund, hereby agrees to the aforementioned amendments set forth in this Allonge.

APPROVED:

VIRGINIA RESOURCES AUTHORITY,
as Administrator of the Virginia Water
Facilities Revolving Fund

By_____

Name_____

Title_____

CERTIFICATE OF AUTHENTICATION

Date Authenticated: [_____, 2020]

The Bond, as amended by this Allonge, is the Bond described in the within-mentioned Trust Agreement.

**THE BANK OF NEW YORK MELLON
TRUST COMPANY, N.A.**

By: _____

Name: _____

Title: _____

ALLONGE DATED [_____, 2020], ATTACHED TO
TAXABLE RIVANNA WATER AND SEWER AUTHORITY
REGIONAL WATER AND SEWER SYSTEM REVENUE BOND,
SERIES 2014A, DATED MARCH 28, 2014,
PAYABLE TO VIRGINIA RESOURCES AUTHORITY, AS ADMINISTRATOR OF THE
VIRGINIA WATER FACILITIES REVOLVING FUND

The text of the Bond is hereby amended, and this Allonge shall be executed and authenticated, as follows:

(a) The Cost of Funds on this Bond (RA-1) is reduced from 2.45% per annum to 1.60% per annum beginning on October 1, 2020.

(b) The semiannual installment payments of principal and Cost of Funds due on April 1, 2021 and on each April 1 and October 1 thereafter are changed from \$941,167.75 to \$[_____], and the final installment due on April 1, 2036, is changed from \$941,167.64 to \$[_____], when, if not sooner paid, all amounts due hereunder and under this Bond shall be due and payable in full.

The Borrower ratifies and confirms the Bond as modified hereby and, except as specifically modified hereby, the terms and provisions of the Bond remain in full force and effect. The Bond as modified hereby shall be interpreted and construed in accordance with Virginia law.

This Allonge shall be physically attached to the Bond, simultaneously with the entry into this Allonge by the parties hereto, to evidence the modification of the provisions of the Bond which are affected hereby.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Rivanna Water and Sewer Authority has caused this Allonge to be signed by its Chair, the seal of the Borrower to be affixed hereto and attested by its Secretary-Treasurer, and this Allonge to be dated as of the date written above.

**RIVANNA WATER AND SEWER
AUTHORITY**

By: _____
Chair

[SEAL]

ATTEST:

Secretary-Treasurer

Virginia Resources Authority, as Administrator of the Virginia Water Facilities Revolving Fund, hereby agrees to the aforementioned amendments set forth in this Allonge.

APPROVED:

VIRGINIA RESOURCES AUTHORITY,
as Administrator of the Virginia Water
Facilities Revolving Fund

By_____

Name_____

Title_____

CERTIFICATE OF AUTHENTICATION

Date Authenticated: [_____, 2020]

The Bond, as amended by this Allonge, is the Bond described in the within-mentioned Trust Agreement.

**THE BANK OF NEW YORK MELLON
TRUST COMPANY, N.A.**

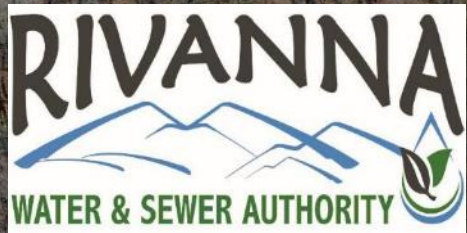
By: _____

Name: _____

Title: _____

Annual Reservoir Report

2019



Presented by:
Andrea Terry, Water
Resources Manager
July 28, 2020

Agenda

- Reservoir monitoring program update
- Summary of bathymetric surveys
- Source Water Protection initiatives
 - Outreach activities
 - Partner coordination



Water Supply Reservoirs

Ragged Mountain



Sugar Hollow



South Fork Rivanna



Totier
Creek
(Scottsville)

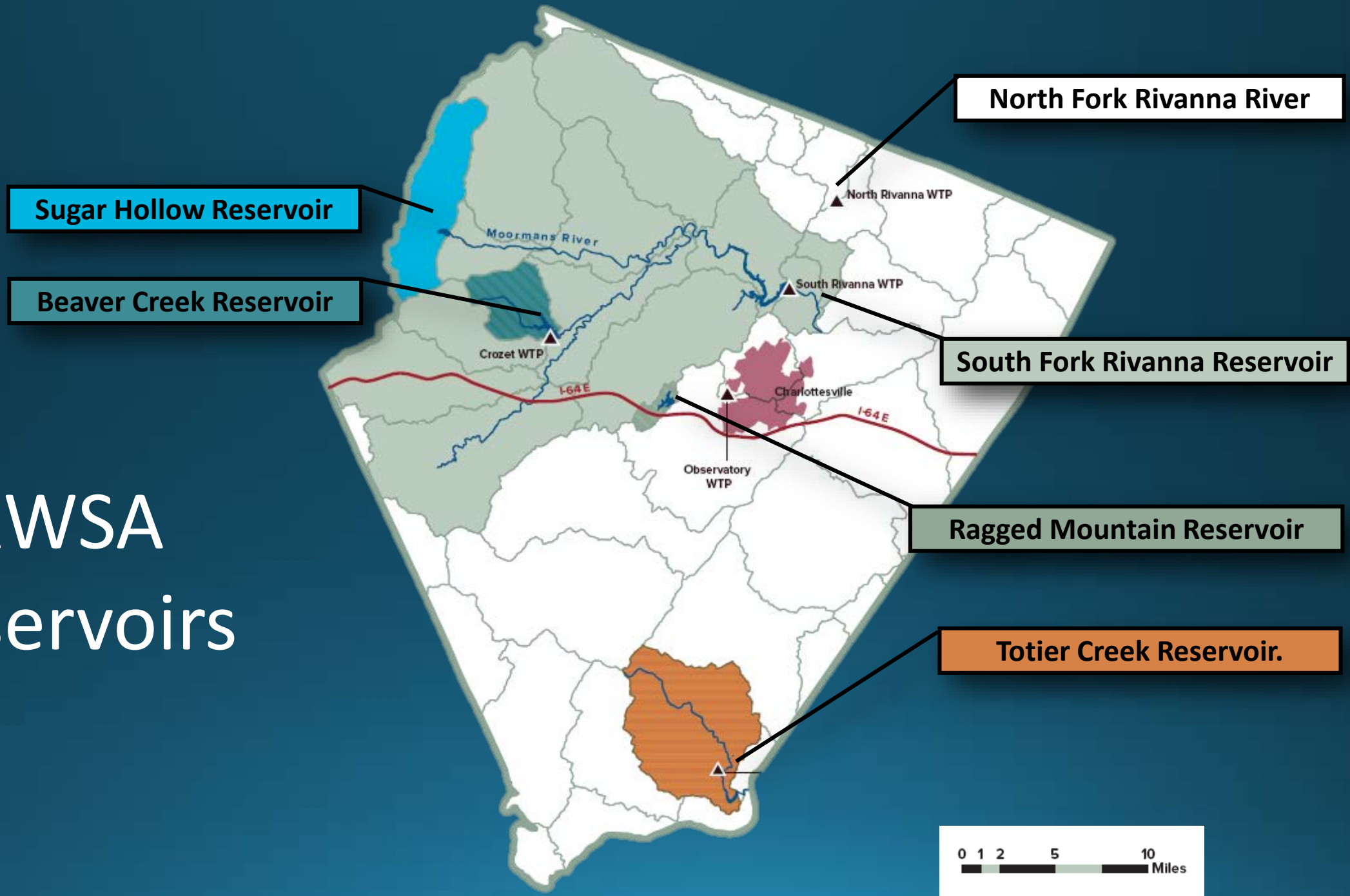


Urban
Area



Beaver
Creek
(Crozet)

RWSA Reservoirs



Reservoir Characteristics

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

* Data Sources

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

Water Quality and Management Assessment

- Phase 1 report in 2016
 - Identified water quality concerns
 - Evaluated potential management methods
- Phase 2 report in 2018
 - Continued reservoir monitoring (with focus on SRR and BCR)
 - Refined recommended reservoir management methods from Phase 1
 - Hypolimnetic oxygenation for BCR has been included as part of upgrade



Reservoir Monitoring Program

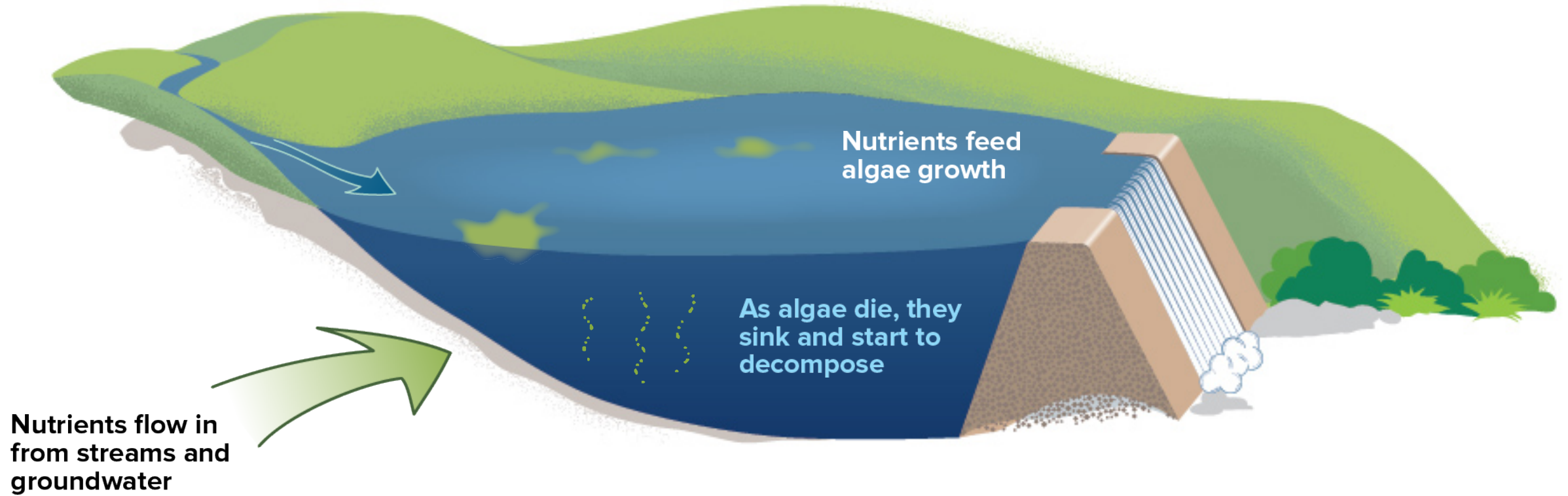
Program Goal: To collect data to understand the biological processes in our reservoirs, and inform water treatment decision-making.

- Began detailed monitoring program in 2014
- Bi-weekly sampling at Urban reservoirs (April-Nov)
- Monthly sampling at SHR and TCR
- Valuable information collected which provides a better understanding of each reservoir and in-lake processes



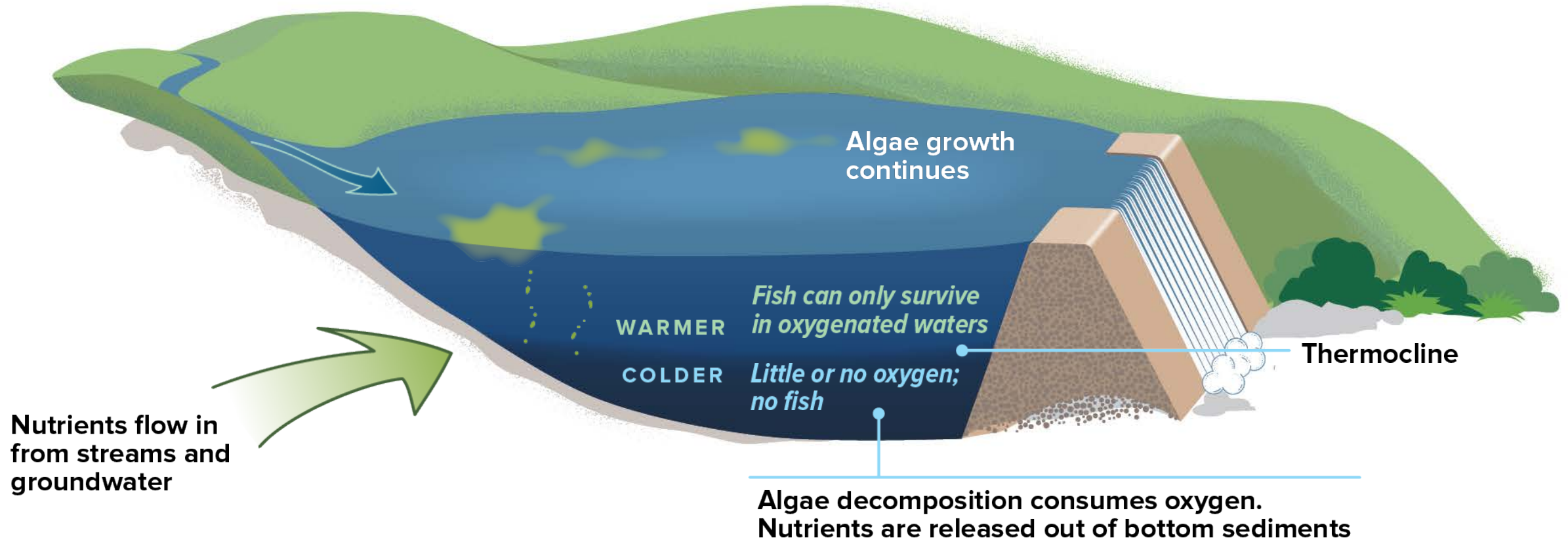
HOW A RESERVOIR CHANGES THROUGH THE SEASONS

SPRING



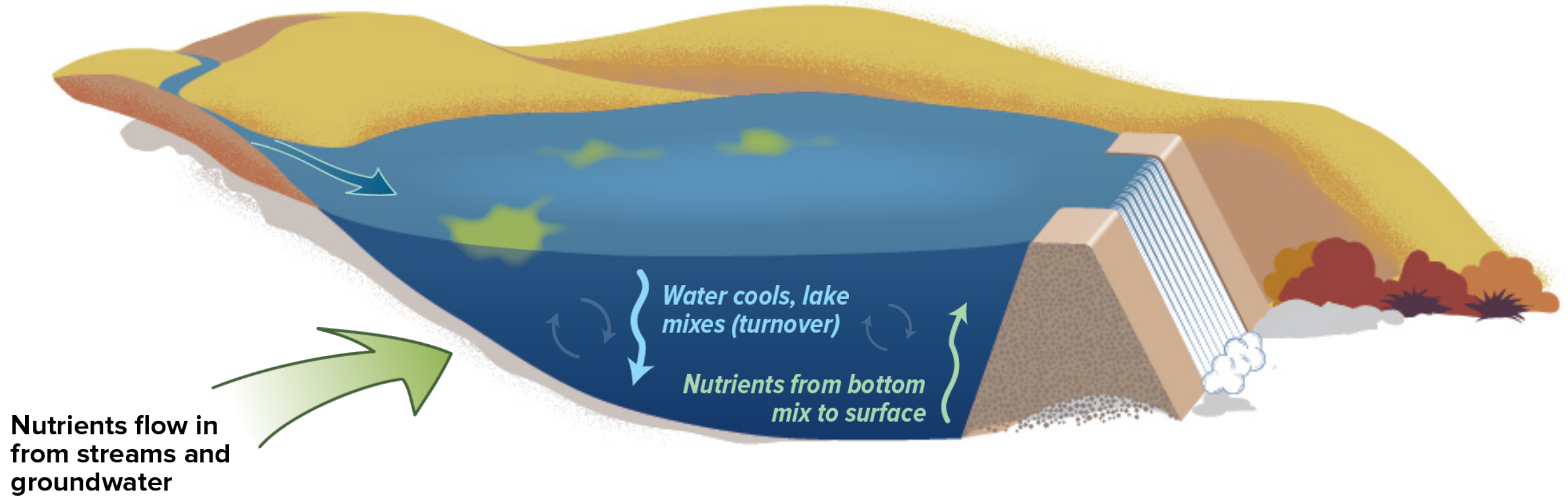
HOW A RESERVOIR CHANGES THROUGH THE SEASONS

SUMMER



HOW A RESERVOIR CHANGES THROUGH THE SEASONS

FALL



Monitoring Trends

- Beaver Creek Reservoir
 - Stratification - early May
 - Turnover – late November
 - Reservoir becomes anoxic at depths in June
 - Phosphorus loading from sediments and inflowing streams
- Ragged Mountain Reservoir
 - “New Reservoir”
 - Stratification – May
 - Turnover – November
 - First blue-green algae bloom observed this year
 - There is sufficient phosphorus in the system to cause algal issues
- South Fork Rivanna Reservoir
 - Run-of-the-River Reservoir
 - Stratification – May
 - Turnover - early October
 - Generally do not have blooms until water goes below the dam crest
- Sugar Hollow and Totier Creek Reservoirs
 - Monitoring less, no blue green algae blooms detected 2019 or 2020, thus far

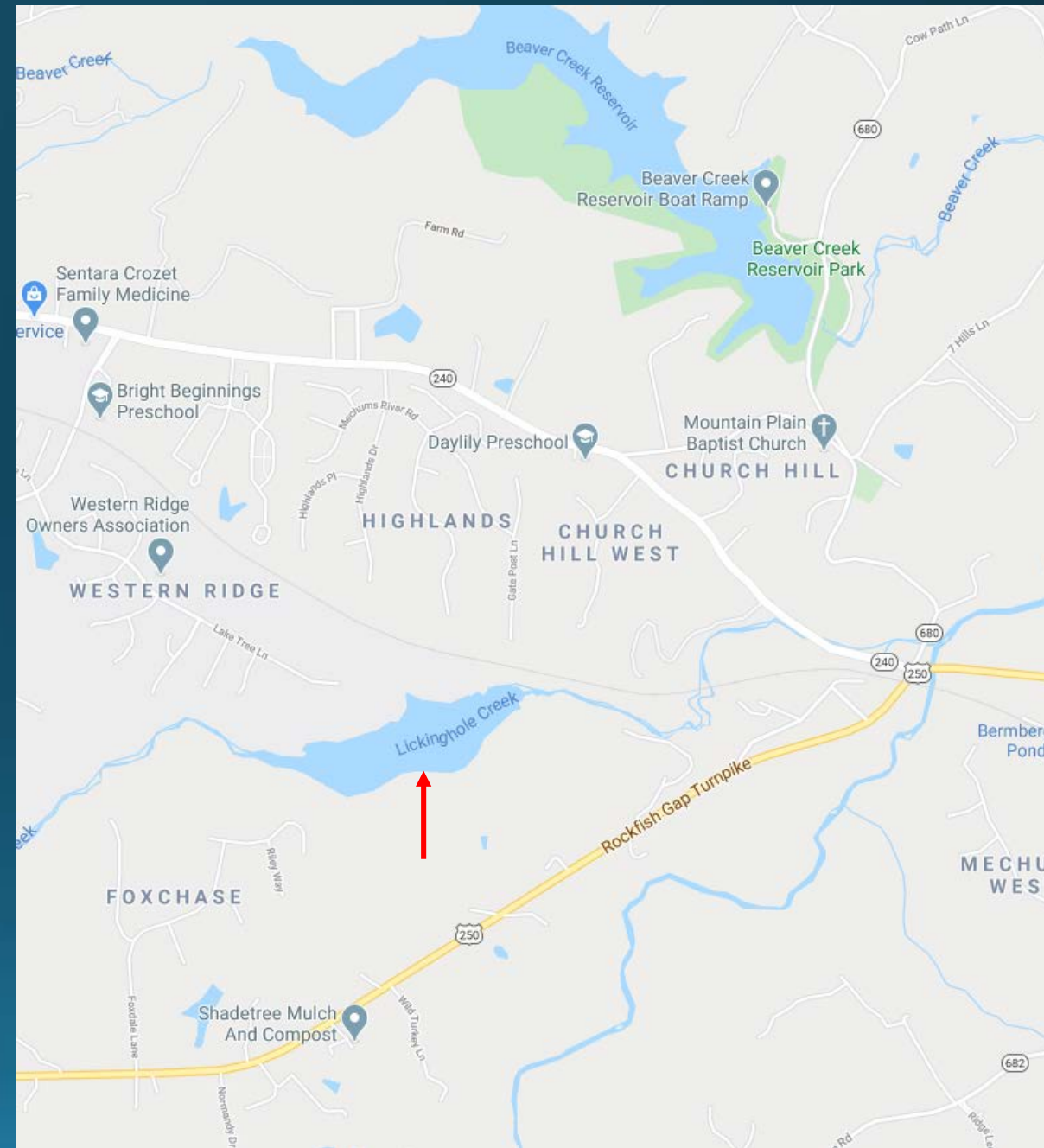
Number of Algaecide Applications for Control of Blue-green Algae

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

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

Lickinghole Creek Stormwater Basin

- Original 1992 Volume: 32.03 MG
- 2019 Volume: 26.43 MG
(Bathymetric survey)
- Decrease in storage: 5.6 MG
(~17%)



Source Water Protection Initiatives

- Source Water Protection Advisory Committee
 - Purpose is to collaborate on potential projects and issues of concern within reservoir watersheds, to improve water quality
 - Members:
 - RWSA
 - Albemarle County (natural resources staff)
 - Albemarle County Service Authority
 - Rivanna Conservation Alliance
 - Thomas Jefferson Soil and Water Conservation District
- Met in person on January 31, 2020
- Continue to meet with individual members online during COVID

Source Water Protection Initiatives

- Updating Source Water Protection Plans for BC and TC reservoirs, and North Fork intake
- Coordinated with Albemarle County and the TJ Soil and Water Conservation District to identify how cows were entering BCR and provided a solution to the issue
- Developed mailings to residents of three source water watersheds with educational info
- Received \$19,200 grant from VDH to establish source water protection signage in three watersheds
- Participated in riparian zone planting and stream cleanups with Rivanna Conservation Alliance

Takeaways

- RWSA has a robust reservoir monitoring program that informs water treatment decision-making
- New this year: Blue-green algae bloom at Ragged Mountain
- Storage volume at Lickinghole Creek Stormwater Basin has decreased by 17% since 1992
- Active Source Water Protection Program and collaboration with partners.

Questions?



MEMORANDUM

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

FROM: BILL MAWYER, EXECUTIVE DIRECTOR

**SUBJECT: APPROVAL OF THE OBSERVATORY WATER TREATMENT
PLANT LEASE, LICENSE AND EASEMENT AGREEMENTS WITH
UVA**

DATE: JULY 28, 2020

This memorandum is to request authorization for the Chair and myself to execute documents with the University of Virginia. After several years of detailed discussions with UVA about a multitude of terms and conditions, we now have agreement on the following documents:

1. A “Deed of Ground Lease” for the Observatory Water Treatment Plant, Royal Raw Water Pumping Station, and the Stadium Road Raw Water Pumping Station properties. RWSA owns these buildings. UVA owns the properties.
2. A “License Agreement” for space within the Alderman Road Finished Water Pumping Station. RWSA owns equipment inside the building. UVA owns the building and the property.
3. A “Deed of Easement” for underground raw and finished water, as well as wastewater and stormwater piping serving the facilities in #1 and #2 above, all located on UVA property.

A summary of the terms of these documents includes:

1. Lease

Properties included:

1. Observatory Water Treatment Plant	6.654 acres
2. Royal Raw Water Pump Station	0.041 acres
3. Stadium Road Raw Water Pump Station	<u>0.169 acres</u>
	6.864 acres

A. Term:

- 49 Years, July 1, 2020 - June 30, 2069
- Renewable for an additional 50 years from 2069 – 2119, unless either party gives notice not to renew. If UVA decides not to renew, RWSA will have 10 years (until 2079) to site and build a new WTP, and demolish the current plant.

B. Cost:

- \$100,000 / year starting on July 1, 2020
- \$175,000/ year starting on July 1, 2021
- Annual increase based on the CPI-U, adjusted every 10 years

2. License for Space in the Alderman Road Finished Water Pump Station: 569 SF
- A. Term:
- Same as for the Observatory Water Treatment Plant
 - 49 Years, July 1, 2020 - June 30, 2069
 - Renewable for an additional 50 years from 2069 – 2119, unless either party gives notice not to renew.
 - Rights end if use discontinues for 1 year
- B. Cost: \$0
3. Easement for raw, finished, waste, and storm piping: 1.28 acres
- A. Term: Perpetual; Rights end if use discontinues for 1 year
- B. Cost: \$0

Completion of these essential long-term documents required a significant and collaborative effort from both teams, and I want to thank the following team members for their efforts throughout this process:

- University of Virginia:
 - Don Sundgren, Chief Facilities Officer
 - Charlie Hurt, Assistant Vice President for Real Estate and Leasing Services
 - Cheryl Gomez, Director of Facilities Management Operations
 - Mary Hughes, University Landscape Architect
 - Julia Monteith, Associate University Planner
 - Alice Raucher, Architect of the University
 - Pam Sellers, Associate General Counsel
 - Colette Sheehy, Senior Vice President for Operations
- RWSA:
 - Jennifer Whitaker, Director of Engineering & Maintenance
 - Lonnie Wood, Director of Administration & Finance
 - Kurt Krueger, RWSA Counsel
 - Mike Gaffney, Chairman of the Board

Board Action Requested:

Authorize the Chair and Executive Director to execute a Lease for the Observatory Water Treatment Plant, License for the Alderman Pumping Station, and an Easement for underground raw, finished, waste and storm pipes, with the University of Virginia, including any changes as may be requested by UVA, after consultation with Authority counsel.

Attachments

This document was prepared by:
Kurt J. Krueger, Esq. (VSB No. 24136)
McGuireWoods LLP
652 Peter Jefferson Pkwy, Suite 350
Charlottesville, Virginia 22911

County of Albemarle

Tax Map and Parcel Numbers:
076A0-00-00-000H0 (Observatory WTP, Stadium Road PS)
07600-00-00-00400 (Royal PS)
07600-00-00-00500 (Royal PS)

The existence of title insurance is unknown

**EXEMPT FROM RECORDATION TAXES UNDER THE CODE OF VIRGINIA (1950),
AS AMENDED, SECTION 58.1-811.A.3. AND SECTION 58.1-811C.4.**

DEED OF GROUND LEASE

This **DEED OF GROUND LEASE** (this “Lease”), dated as of July 1, 2020, is made by and between the **RECTOR AND VISITORS OF THE UNIVERSITY OF VIRGINIA**, a public corporation and educational institution of the Commonwealth of Virginia (“UVA”), as Lessor, and the **RIVANNA WATER AND SEWER AUTHORITY**, a body politic and corporate formed under the Virginia Water and Waste Authorities Act (“RWSA”), as Lessee.

RECITALS

A. UVA and the City of Charlottesville, Virginia (the “City”) are parties to a lease contract dated April 1, 1922, as amended and modified, for approximately 13 acres of land located on what is commonly called Observatory Mountain or Observatory Hill, which acreage included a sand filter water treatment plant and associated pipe lines (the “Observatory WTP”) and access, water line and other easements for a period of 99 years, expiring on March 31, 2021 and recorded in the Clerk’s Office for the Circuit Court of the County of Albemarle (the “Albemarle Clerk’s Office”) in Deed Book 179 at page 385 (as so amended and modified, the “UVA/City Lease”). UVA and the City are also parties to an unrecorded Lease, Water and Sewer Agreement dated November 18, 1981 (the “1981 Lease, Water and Sewer Agreement”), modifying certain provisions of the UVA/City Lease including the expiration date which was changed to April 17, 2021.

B. RWSA was formed in 1972 by the City and the County of Albemarle, Virginia (the “County”) as a water authority under the Virginia Water and Waste Authorities Act for the purpose of providing treated potable water to, and wastewater treatment for the residents and businesses located within the service areas of the City and the Albemarle County Service Authority (“ACSA”).

C. Pursuant to Agreement dated May 12, 1973, among the City, the County, ACSA and RWSA, the City agreed to convey to RWSA and RWSA agreed to accept the City’s rights under the UVA/City Lease; provided, however that the City agreed to continue to furnish water to UVA pursuant to the UVA/City Lease.

D. Pursuant to Deed and Bill of Sale dated June 13, 1983, recorded in the Albemarle Clerk's Office in Deed Book 768, at page 277, and in the Clerk's Office for the Circuit Court of the City of Charlottesville in Deed Book 438, at page 858 (the "1983 Deed and Bill of Sale"), the City conveyed to RWSA the rights granted by UVA to the City under the UVA/City Lease for the Observatory WTP, the Royal Pump Station, the Stadium Road Pump Station, certain waterlines between the Stadium Road Pump Station and the Observatory WTP, the Alderman Road Pump Station and, in addition, its rights under certain easements granted by UVA to the City under the UVA/City Lease.

E. In recognition of the importance of the Observatory WTP as an integral part of the Community Water Supply Plan adopted by the City, the County, ACSA and RWSA to provide a reliable, and together with RWSA's South Rivanna Water Treatment Plant, a redundant source of potable water to the City and the urban ring of the County surrounding the City, RWSA, at the direction of and with the consent of the City, desires to directly lease the land upon which is located the Observatory WTP including land for improvements to and expansion of the capacity of the Observatory WTP, as well as the land upon which the Royal Pump Station and the Stadium Road Pump Station are located, subject to the terms and conditions set forth herein and as shown on the Plat attached as Exhibit A hereto and referred to in Section 1 below.

F. In addition, the parties have agreed to enter into a separate facility use agreement for space in the Alderman Road Pump Station and a separate easement for certain raw waterlines connecting the Stadium Road Pump Station to the Observatory WTP.

AGREEMENT

NOW, THEREFORE, for and in consideration of the rents, and subject to the terms, conditions, covenants, promises and agreements herein made, the parties hereto agree as follows:

1. **Leased Premises.** UVA hereby leases and demises unto RWSA and RWSA takes and hires from the UVA the following described real property and all rights pertaining thereto, subject however to all easements, restrictions and covenants of record (the "Premises"):

All that certain lot, piece or parcel of land with improvements thereon and appurtenances thereunto belonging lying and being in the County of Albemarle, Virginia, upon which the Observatory WTP is located, containing 289,853 sq. ft./6.654 acres, more or less, and more particularly described and shown on Figure 1 of the Plat entitled "Rivanna Water and Sewer Authority Observatory Water Treatment Plant, Pump Stations and Waterlines Leased Parcels", prepared by Draper Aden Associates dated June 30, 2020, attached hereto as Exhibit A and made a part hereof (the "Plat") as the Proposed OWTP Leased Parcel (the "OWTP Leased Parcel"), and it is agreed that the entrance gate to the Observatory WTP may temporarily extend beyond the OWTP Leased Parcel when open, and the permanent stormwater outfall may extend beyond the OWTP Leased Parcel; and

All that certain lot, piece or parcel of land with improvements thereon and appurtenances thereunto belonging lying and being in the County of Albemarle, Virginia, upon which the Royal Pump Station is located, containing 1778 sq. ft./0.041 acres, more or less, as shown on Figure 4 of the Plat as Proposed Royal PS Leased Parcel (the "Royal PS Leased Parcel"); and

All that certain lot, piece or parcel of land with improvements thereon and appurtenances thereunto belonging lying and being in the County of Albemarle, Virginia upon which the Stadium Road Pump Station is located, containing 7352 sq. ft./0.169 acres, more or less, as shown on Figure 4 of the Plat as the Proposed Stadium Road PS Leased Parcel (the “Stadium Road PS Leased Parcel”).

The OWTP Leased Parcel, the Royal PS Leased Parcel, and the Stadium Road PS Leased Parcel are hereinafter collectively referred to as the “Premises”.

2. **Term of Lease.** The Premises are leased to RWSA for a forty-nine (49) year period (the “Initial Term”), beginning on July 1, 2020 (the “Commencement Date”) and terminating on June 30, 2069. This Lease will renew for one (1) additional fifty (50) year term, from July 1, 2069 to June 30, 2119 under the same terms and conditions, unless one of the parties provides notice to the other of a desire to terminate or amend the terms of this Lease. Such notice must be provided no earlier than 48 months and not later than 36 months prior to the end of the Initial Term. Upon receipt of such notice, the parties agree to enter into good faith negotiations to renew this Lease subject to any amendments as may be mutually agreed by the parties. If no agreement has been reached by the parties and memorialized by a duly executed written amendment on or before the end of the Initial Term, this Lease shall automatically be extended under the same terms and conditions for a period of ten (10) years to enable RWSA to decommission the Observatory WTP and restore the Premises to a natural condition as required under Section 15.a. below. In such event, the Initial Term as so extended shall expire on June 30, 2079.

3. **Rent.** RWSA covenants to pay UVA rent (the “Rent”), without setoff or deduction, in the annual amount of One Hundred Thousand and No/100 Dollars (\$100,000.00) in 2020, and One Hundred Seventy Five-Thousand and No/100 Dollars (\$175,000.00) in 2021 and annually thereafter for the remainder of the Term, subject to escalation as provided in Section 3.c. below. Rent shall be paid by September 1st of each year.

a. Rent shall be made payable to the UNIVERSITY OF VIRGINIA and mailed or delivered to:

Facilities Management
Accounts Receivable
University of Virginia
P.O. Box 400726
Charlottesville, Virginia 22904-4726

or to such other party or place as UVA may from time to time designate in writing as provided herein.

b. Rent shall increase every ten (10) years on the anniversary date of the Commencement Date by an amount equal to the Rent payable for the immediately prior ten (10) year period increased by the CPI Percentage (as such term is defined below), with the exception of the rent increase in 2030 which shall be based on the Rent payable for the prior nine (9) year period. As used in this Lease, the term “CPI” shall mean the Consumer Price Index for All Urban Consumers (Base Year 1982-84=100) for the United States, All Items, as published by the United

States Department of Labor, Bureau of Labor Statistics. The term “Current CPI” shall mean the CPI figure for the last complete calendar month for which CPI information is available on the date Rent is to be adjusted pursuant to this Lease, and the term “Base CPI” shall mean the CPI figure for the calendar month that is exactly ten (10) calendar years prior to the calendar month that is represented by the Current CPI. The term “CPI Percentage” shall be the percentage calculated by subtracting the Base CPI from the Current CPI, then dividing the difference by the Base CPI, and then multiplying the quotient by 100; provided, however, that in the event the CPI Percentage so calculated is a negative number, the Rent for the following ten (10) year period shall remain the same.

4. **Triple Net Lease; Additional Rent.**

a. This Lease shall be deemed and construed to be a triple net lease so that all costs relative to the possession, operation and maintenance of the Premises and Improvements (defined in Section 5 below) shall be borne by RWSA. RWSA shall pay Rent and all other payments required under this Lease free of all deductions, diminutions, defenses, claims or other deductions whatsoever. RWSA shall promptly pay all charges and other levies of any nature against the Premises and Improvements, whether ordinary or extraordinary, foreseen or unforeseen, together with any interest or penalties thereon, including without limitation, all applicable real estate taxes and any payments or use charges in lieu thereof, assessments, service charges, water and sewer charges, and utility charges which shall be separately metered. To the extent not lawfully exempt therefrom, RWSA shall pay any and all applicable taxes levied upon or attributable to the operation of the Premises, Improvements or any furniture, fixtures or other personal property of RWSA brought onto the Premises.

b. If RWSA shall fail to make any payment when due or perform any act required of it under this Lease, UVA may (but shall be under no obligation to) make such payment or perform such act. All amounts paid by UVA and all reasonable costs, fees and expenses so incurred as to such payment and performance shall be payable by RWSA as additional rent (the “Additional Rent”).

5. **Use of Premises; Improvements; Approvals.**

a. The Premises are to be used for the purpose of operating, managing, improving and expanding the Observatory WTP, certain pumping stations, waterlines and related infrastructure, whether now in existence or hereinafter constructed by RWSA (collectively, the “Improvements”) for the purpose of potable water treatment and distribution for the City and ACSA (or any authority formed by the City for the purpose of providing treated potable water to its residents and businesses, or any successor authority to the ACSA or to the County for the purpose of providing treated potable water to its customers and/or residents and businesses within its service area), and for no other purpose without UVA’s prior written consent, which consent may be withheld in UVA’s sole determination.

b. The Improvements shall include all buildings, structures, paving and fixtures now or hereafter situated, placed, constructed or installed on the Premises by RWSA (or its predecessor, the City), including, but not limited to, all equipment, apparatus, machinery,

fittings and appliances and any additions to, substitutions for, changes in or replacements of, the whole or any part thereof.

c. All Improvements shall be constructed, operated and maintained in compliance with all applicable laws, codes and ordinances.

d. In recognition of the fact that the Premises are part of the UVA Grounds and adjacent to UVA facilities, all plans for Improvements constructed after commencement of the Term of this Lease, as the same may be extended from time to time, except for those Improvements located entirely within an existing structure without modification to the exterior of such structure, shall be subject to review and prior approval by UVA. UVA may withhold such approvals in UVA's sole determination. Notwithstanding the foregoing UVA may not withhold its approval for (i) Improvements required by applicable federal or state laws, rules and regulations governing the construction, operation and maintenance of the Improvements and compliance with applicable safety and security laws, rules and regulations, (ii) routine maintenance of existing Improvements, or (iii) repairs to existing Improvements. In addition, with respect to the OWTP Leased Parcel, except in cases of emergency, prior to any exterior construction within and around the perimeter of such parcel, RWSA will review erosion control measures, tree protection plans and location of safety fences with the UVA Facilities Management Department and shall make a good faith effort to incorporate any recommendations and to minimize the removal of or damage to any trees, brush, shrubbery or other vegetation in such perimeter.

e. Except in cases of emergency, UVA shall not have access to the Premises without first notifying RWSA and making arrangements to be escorted by RWSA's personnel while on the Premises. In case of emergency, UVA shall endeavor to provide notice of entry as soon as reasonably practicable.

f. RWSA shall have the right, at RWSA's sole expense, from time to time to submit (or cause to be submitted), in its own name (or in the name of those submitting on its behalf), applications for such building permits, rezoning, conditional use permits and all such other permits and approvals as shall be related to the use of the Premises as permitted under subsection a. above, and the construction, operation and maintenance of the Improvements thereon; provided, however, that UVA shall not be required to participate in such applications unless RWSA has submitted to UVA and UVA has reviewed and approved RWSA's plans for such Improvements as required under Section 5.d. above.

g. Before undertaking construction, RWSA shall obtain from its general contractor or contractors (i) a performance bond conditioned upon the faithful performance of the work in strict conformity with the plans, specifications and conditions for the same, and (ii) a payment bond conditioned upon the payment of all persons who have, and fulfill, contracts which are directly with the contractor for performing labor or furnishing materials in the prosecution of the work provided for in such contract or contracts. Such bonds shall each be in a sum not less than one hundred percent (100%) of the estimated cost of the work. Such bonds shall name RWSA and UVA as co-obligee.

h. In the event any condition shall be imposed by any governmental authority with respect to the granting and/or approval of grading permits, building permits, and any and all

other permits or approvals which are required for improvements to be made on or off the Premises, RWSA, at its cost and expense shall comply with such conditions. RWSA acknowledges that the building code official for the UVA Grounds is an employee of the University.

i. RWSA shall not cause or permit any mechanics or other liens or encumbrances to remain against the Improvements, the Premises or any other property of UVA, and if any such liens attach, they shall be released within 30 days.

j. If UVA approves RWSA's request of special use or zoning changes, UVA agrees to cooperate with RWSA, as set forth in subsection a., above, and, to the extent allowed by Virginia law and any other law governing release or confidentiality of information in possession or control of UVA, join RWSA in any special use permits and zoning changes, including the execution of applications and other documents, the provision of information, and the participation in hearings and other proceedings as are necessary in obtaining any special use permits and zoning changes necessary to RWSA's use of the Premises as permitted under subsection a. above.

6. Utilities.

a. UVA acknowledges that easements for additional utility services (electric, communication, etc.) may be necessary in the future to properly operate the Improvements on the Premises and agrees to coordinate with RWSA to determine locations acceptable to both UVA and the utility provider(s) for placement of such easements outside of the Premises. Subject to approval by UVA's Board of Visitors and under terms and conditions acceptable to UVA, UVA will grant to utility providers easements in the mutually agreed upon locations for such utility services. UVA shall in no event be liable or responsible for any cessation of, interruption in, or damage caused by any such utility services provided to the Premises, or for any services provided to third parties supplied by the Improvements located on the Premises, unless such cessation, interruption or damage is caused by or results from UVA's gross negligence or willful misconduct.

b. UVA agrees to provide sewer capacity equal to the existing capacity as of the date hereof of at least 150 gallons per minute to the OWTP Leased Parcel for operation of the Improvements. In the event additional sewer capacity is needed for the OWTP Leased Parcel, UVA shall permit RWSA to upgrade the existing sewer line servicing such parcel at RWSA's sole cost and expense, or as a joint project if UVA also requires additional sewer capacity with the expense shared by UVA and RWSA.

c. RWSA, subject to approval by UVA, shall have the right to install emergency generators of sufficient size to operate the Improvements in the event of interruption of electrical service. UVA's review and approval shall consider but not be limited to noise and emission impacts.

d. UVA shall have the right to require RWSA to relocate any existing utility and service lines at the expense of UVA, provided that such relocation will not unreasonably impact the operation of the Improvements.

7. **Operations, Maintenance and Repairs.**

a. Throughout the Term of this Lease and any renewals thereof, RWSA covenants to keep, operate, maintain and repair, at RWSA's sole cost and expense, the Premises and all Improvements free of waste and in a clean and orderly condition, and in a manner so as to conform to and comply with any present or future laws, ordinances, codes, rules, regulations or requirements of any federal, state or municipal government, department, commission, board or officers having jurisdiction, foreseen or unforeseen, ordinary as well as extraordinary, whether or not such laws, ordinances, codes, rules, regulations or requirements shall necessitate structural changes or improvements or interferes with the use and enjoyment of the Premises or the Improvements or alterations, and to take any and all actions necessary to avoid or eliminate any non-compliance or violation. UVA may, but shall have no obligation to, monitor and enforce, or cause to be enforced, compliance by RWSA or any of its contractors, employees or agents with any safety and other rules, regulations or requirements. RWSA shall use best practices and all commercially reasonable efforts to prevent and minimize hazardous conditions arising as a result of its use of the Premises. RWSA shall promptly correct any unsafe or hazardous condition at the Premises caused by RWSA, its contractors or agents of which RWSA is aware or is made aware. RWSA shall be responsible for safely and properly handling, removing, and disposing of all solid wastes and hazardous materials used, stored or generated in connection with use of the Premises and Improvements.

b. Throughout the Term of this Lease and any renewals thereof, RWSA shall, at RWSA's sole cost and expense, take good care of the Premises and Improvements and, subject to reasonable wear and tear, will keep the same in good order and condition, and make all repairs thereto, interior and exterior, structural and nonstructural. As used herein, the term "repairs" shall include all reasonable replacements and alterations, as well as the correction of construction defects in the Improvements or any alteration, thereto. All repairs made by RWSA shall be substantially equivalent in quality and class to the original work.

c. UVA agrees to cooperate with RWSA in the development of a regional stormwater management plan ("SMP") for future expansion of the Observatory WTP, as required by applicable laws and ordinances. The parties agree to work collaboratively on the design, construction, maintenance and funding of such SMP facilities, which may need to be located outside the OWTP Leased Parcel due to size constraints.

8. **Hazardous Substances.**

a. RWSA, its employees, agents, and contractors shall, at RWSA's sole expense, comply with all applicable current or future state, local or federal law, code, ordinance, directive or regulation (together known as "Laws") applicable to the Premises and the use thereof including, but not limited to, any environmental laws, regulations or directives governing the discharge, emission or disposal of any pollutant or other substance or thing and prescribing methods for storing, handling or otherwise managing Hazardous Substances (as defined below), as such Laws may be amended or modified from time to time. RWSA shall obtain, maintain and comply with all necessary permits, approvals, registrations and licenses. At the request of RWSA, at no out-of-pocket cost to UVA, and to the extent UVA has reviewed and approved RWSA's

plans and applications UVA shall reasonably cooperate, if necessary, with RWSA's efforts to obtain such permits, approvals, registrations and licenses.

b. As used in this Section 8, the term "Hazardous Substances" means any condition or any pollutant, substance, mixture, waste, item or other material considered hazardous, dangerous or toxic under any present or future state, local or federal law, code, ordinance, directive or regulation, applicable to the Premises or use thereof, governing the discharge, emission or disposal of any such Hazardous Substance. By way of example only, currently laws that may govern the definition of Hazardous Substances and Use (as defined below) thereof include the Federal Water Pollution Control Act; the Comprehensive Environmental Response, Compensation and Liability Act; the Solid Waste Disposal Act; the Clean Air Act; the Toxic Substances Control Act; and the Resource Conservation and Recovery Act. For the purposes of this Lease, Hazardous Substances shall also include petroleum, petroleum products (including crude oil), natural gas, natural gas liquids, liquefied natural gas, synthetic gas usable for fuel, and mixtures of natural gas and synthetic gas not specifically listed or designated as a Hazardous Substance under any applicable federal, state law or local laws, ordinances and regulations.

c. RWSA, its employees, agents, and contractors shall not use, possess, generate, release, manufacture, treat, refine, produce, process, store, dump or dispose of (collectively, "Use") any Hazardous Substance on, under, or about the Premises or transport to or from the Premises any Hazardous Substance; provided, however, that notwithstanding anything to the contrary contained in this Section 8, RWSA, its employees, agents and contractors may use and store within the Premises such reasonable quantities of products as may be required in connection with RWSA's use and operation of the Premises for the permitted uses set forth in this Lease; provided further, however, that such substances do not constitute a health or environmental hazard when used, stored and disposed of in accordance with applicable Laws and accepted practices and that RWSA, its employees, contractors, and agents comply with such Laws and practices.

d. RWSA shall, at its expense, make all submissions to, provide all information required by, and comply with all requirements of the appropriate governmental authorities (the "Authorities" or "Authority") related to its use of the Premises under all applicable Laws. RWSA shall provide UVA with copies of any environmental audit prepared by or for RWSA with respect to the Premises and any report(s) or filing(s) made by RWSA with any Authority with respect to the Premises.

e. Should any Authority demand that a clean-up plan be prepared and that a clean-up be undertaken because of any deposit, spill, discharge, or other release of Hazardous Substances that occurs as a result of RWSA's use or occupancy of the Premises, then RWSA shall, at its own expense, prepare and submit to UVA and any applicable Authority the required plans and all related bonds and other financial assurances, and RWSA shall carry out all such clean-up plans following their approval by UVA and all applicable Authorities.

f. RWSA shall promptly provide all information regarding the Use of Hazardous Substances that is reasonably requested by UVA for purposes of allowing UVA to confirm RWSA's compliance with this Section 8. If RWSA fails to fulfill any duty imposed under this Section 8 within ten (10) days after receipt of notice of such failure from UVA (or to have

commenced and diligently pursued fulfillment of any duty the completion of which reasonably requires more than ten (10) days), UVA may fulfill such duty on behalf of RWSA at RWSA's cost and expense. In such case, upon request from UVA, RWSA agrees to cooperate with UVA in order to prepare and execute all documents that UVA reasonably deems necessary or appropriate to determine the applicability of the Laws to the Premises, and RWSA's use thereof, and to determine whether there has been compliance with such Laws. No such action by UVA and no attempt made by UVA to mitigate damages under any Laws will constitute a waiver of any of RWSA's obligations under this Section 8.

g. RWSA shall immediately notify UVA in writing of any deposit, spill, discharge, or other release of any Hazardous Substance, in quantities that would require reporting to a governmental or regulatory agency.

h. RWSA shall also immediately notify UVA in writing of, and shall contemporaneously provide UVA with a copy of:

i. Any written notice of deposit, spill, discharge, or other release of Hazardous Substances in the Premises that is provided by RWSA's or any other occupant of the Premises (other than UVA) to a governmental or regulatory agency;

j. Any notice of a violation, or a potential or alleged violation, of any applicable Law that is received by RWSA or any other occupant of the Premises (other than UVA) from any governmental or regulatory agency;

k. Any inquiry, investigation, enforcement, cleanup, removal, or other action that is instituted or threatened by a governmental or regulatory agency against RWSA or other occupant of the Premises (other than UVA) and that relates to the deposit, spill, discharge, or other release of Hazardous Substances on or from the Premises;

l. Any claim that is instituted or threatened by any third party against RWSA or any other occupant of the Premises (other than UVA) and that relates to any deposit, spill, discharge, or other release of Hazardous Substance on or from the Premises; and

m. Any notice of the loss of any environmental operating permit by RWSA or other occupant of the Premises (other than UVA).

n. Subject to the terms of Section 5, UVA will have the right, but not the obligation, with reasonable prior notice, during the Term to (x) inspect the Premises; (y) enter upon the Premises to conduct tests and investigations and take samples to determine whether RWSA is in compliance with the provisions of this Section 8; and (z) request lists of all Hazardous Substances Used on the Premises. The cost of all such inspections, tests and investigations will be borne by UVA unless such inspections or tests reveal a violation of this Section 8 by RWSA, its employees, agents or contactors, in which event such cost will be borne by RWSA. UVA shall use reasonable efforts in the exercise of its rights under this Section 8 to cause as little disturbance to RWSA's use of the Premises for the purposes permitted under this Lease as is reasonably possible.

o. RWSA obligations and liabilities under this Section 8 will survive the expiration or early termination of this Lease.

9. **Insurance.**

a. RWSA shall maintain a Commercial General Liability insurance policy, providing coverage for bodily injury and property damage, with limits of liability not less than \$1,000,000 per occurrence and \$3,000,000 aggregate with coverage for Premises/Operations, Products/Completed Operations, Contractual Liability, Owners and Contractors Protective Liability coverage, and Personal Injury and Pollution Liability or separate Pollution Liability insurance. RWSA shall also maintain Workers Compensation coverage meeting statutory requirements in the Commonwealth of Virginia, and Employers Liability coverage with limits of at least \$100,000. In addition, RWSA shall maintain Automobile Insurance with a minimum combined single Limit of Liability for bodily injury and property damage of \$1,000,000 per accident, with coverage for: owned, hired, and non-owned automobiles. RWSA agrees to maintain such insurance coverage throughout the term of this Lease with insurers or approved municipal self-insurance pools licensed to do business in the Commonwealth of Virginia and all A.M. Best rated insurance carriers will maintain an A.M. Best financial rating of at least A-, and to furnish evidence to the UVA of such coverage prior to the Commencement Date, and throughout the Term; UVA shall be named on the Commercial General Liability Insurance policy required by this Section 9 as an additional insured, and the proper name to use is: The Commonwealth of Virginia, and the Rector and Visitors of the University of Virginia, its officers, employees, and agents. In regard to buildings and personal property owned by RWSA, it is agreed that it shall maintain property insurance for the Special Causes of Loss perils plus earthquake and flood perils that covers at least 80% of the replacement cost of the building and personal property.

b. RWSA shall ensure that all contractors and subcontractors hired by the RWSA who will be entering onto the Premises for the purpose of demolition or construction shall be sufficiently and appropriately bonded and shall obtain the following commercial insurance policies before and while engaged in such Work: a Commercial General Liability Insurance Policy, providing coverage for bodily injury and property damage, with limits of liability not less than \$2,000,000 per occurrence and \$4,000,000 aggregate with coverage for Premises/Operations, Products/Completed Operations, Contractual, Owners and Contractors Protective Liability coverage, and Personal Injury; and Workers Compensation coverage meeting statutory requirements in the Commonwealth of Virginia, and Employers Liability coverage of at least \$1,000,000 and include the Alternate Employers Endorsement; and Automobile Insurance with a minimum combined single Limit of Liability for bodily injury and property damage of \$1,000,000 per accident, with coverage for owned, hired, and non-owned automobiles; and the general contractor will also maintain an Umbrella Liability Policy with limits of at least \$5,000,000. In addition, RWSA shall ensure that RWSA and UVA shall be named as an "additional insureds" on the Commercial General Liability Insurance Policies of all contractors and subcontractors, and the proper wording for the University is: The Commonwealth of Virginia, and the Rector and Visitors of the University of Virginia, its officers, employees, and agents. RWSA shall ensure that a Special Cause of Loss or "All Risks" Builders Risk Insurance policy is in effect with respect to any construction, renovations, or improvements during the period of time that Work is taking place in an amount equal to the full replacement cost of all materials, equipment, and property related to the construction of the Improvements, with RWSA named on the policy as an "additional named

insured” and that the policy will be endorsed to allow the Builders Risk policy to include “permission to complete and occupy” the Work during construction. Certificates of insurance indicating that the insurance coverage outlined in this Section 9 is in force will be received and maintained by RWSA prior to the start of construction.

10. **Damage or Destruction of Premises.**

a. If the Improvements (other than the Royal Pump Station or the Stadium Road Pump Station) are damaged or destroyed by fire or other insurable casualty customarily insured against, RWSA shall, at its option, promptly rebuild such Improvements as nearly as possible to their condition prior to such damage or destruction or terminate this Lease in whole or in part as required by and described in Section 15.a. and restore the Premises to the condition as described in Section 15.c. In the event RWSA has elected to rebuild such Improvements and RWSA’s insurance proceeds are not sufficient to pay the full cost of either rebuilding or restoration, RWSA shall pay the deficiency.

b. All personal property of RWSA, its agents, employees, independent contractors, licensees and invitees brought upon the Premises or any parts thereof shall be at the sole risk of RWSA, and UVA shall not be liable for any damage thereto or loss of theft thereof, except to the extent such damage, loss or theft is caused by the gross negligence of UVA or UVA’s agents, employees or contractors. Unless RWSA shall have exercised its option to terminate this Lease as described in Section 15.a, if the Improvements on the Premises or any part thereof or the furniture, furnishings, and fixtures therein, shall be destroyed or damaged by fire or other casualty, such event shall not affect the provisions of this Lease and RWSA’s obligations hereunder shall continue without abatement or set-off of any kind.

11. **Events of Default.** Each of the following events shall be deemed an “Event of Default” under this Lease:

a. If RWSA shall fail to pay when due any installment of the Rent or any other payment required to be made by RWSA hereunder and shall not cure such failure within thirty (30) days after written notice thereof by UVA to RWSA.

b. If RWSA shall fail to comply with any term, provision, promise or covenant of this Lease other than the payment of Rent or any other payment required to be made by RWSA hereunder and shall not cure such failure within thirty (30) days after written notice thereof by UVA to RWSA or in the event such default cannot, in the exercise of reasonable diligence, be cured within such thirty (30) day period, such longer period as reasonably necessary with the exercise of diligence to cure such default, provided RWSA commences with diligence and in good faith to cure such failure within thirty (30) days after written notice thereof.

c. If the Improvements on the Premises or any substantial portion thereof become vacant, abandoned or deserted for a continuous period of two (2) years.

12. **UVA’s Remedies Upon Default.**

a. If UVA gives notice of default pursuant to Section 11 above, and such default is not cured within the specified period following notification, then at the expiration of

such period, UVA shall give RWSA one additional written notice of UVA's intent to terminate this Lease effective thirty (30) days after delivery of such additional notice, which date shall be as complete as if that were the date herein definitely fixed for the expiration of the Term of this Lease. Upon such termination by UVA, RWSA shall then surrender the Premises to UVA as provided in Section 15.c herein. If this Lease is so terminated, UVA may, at its option, without formal demand or notice of any kind, re-enter the Premises by any unlawful detainer action or by any other means remove RWSA therefrom without being liable for any damages therefor. Upon UVA's exercise of such termination, RWSA hereby agrees and covenants to pay any and all of UVA's costs and expenses in thus effecting RWSA's compliance with its obligations under this Lease, including, without limitation, UVA's fees and court costs, and this provision shall survive termination of this Lease. Notwithstanding the foregoing, if the Improvements on OWTP Leased Parcel, the Royal PS Leased Parcel, and the Stadium Road PS Leased Parcel or any substantial portion thereof become vacant, abandoned or deserted for a continuous period of two (2) years, such event shall not be an event of default, but shall terminate this Lease only with respect to such parcel or space, and there shall be no adjustment in the Rent for the remainder of the Premises.

b. Failure by UVA to insist upon the strict performance of any covenant, agreement, term or condition of this Lease or to exercise any permitted right or remedy consequent upon a default therein, and/or acceptance of payment of full or partial Rent or Additional Rent by UVA during the continuance of any such default shall not constitute a waiver of such default or of such covenant, agreement, term or condition:

c. No right or remedy herein conferred upon or reserved to UVA is intended to be exclusive of any other right or remedy, and every right and remedy shall be cumulative and in addition to any other right or remedy given hereunder or now or hereafter existing at law. UVA shall be entitled to injunctive relief in case of the violation, or attempted or threatened violation, of any covenant, agreement, condition or provision of this Lease, or to a decree compelling performance of any covenants, agreements, conditions or provisions of this Lease, or to any other remedy allowed by law or in equity.

13. **Quiet Enjoyment.** So long as RWSA observes and keeps all covenants, agreements and conditions of this Lease, UVA covenants and warrants that RWSA shall have quiet and peaceful use and enjoyment of the Premises throughout the Term of this Lease and any renewal Term, subject, however, to the exceptions, reservations and conditions of this Lease.

14. **Acceptance of Condition of Premises.** RWSA covenants that it has inspected and is fully familiar with the condition of the Premises and Improvements and accepts the Premises and Improvements "as is" without representation or warranty of any kind or nature by UVA as to condition or usefulness of the Premises for any purpose.

15. **Expiration and Termination.**

a. In the event the Improvements are substantially destroyed by uninsurable casualty (an uninsurable casualty shall mean a casualty which is not customarily insured against), RWSA, at its option, may (i) rebuild such Improvements or (ii) in the event of substantial destruction of the Observatory WTP, terminate this Lease, or (iii) in the event of substantial destruction of the Royal Pump Station and/or the Stadium Road Pump Station, terminate this

Lease, with no abatement of Rent, with respect to the Royal PS Lease Parcel and/or the Stadium Road PS Leased Parcel, as applicable, provided RWSA gives written notice of termination to UVA within ninety (90) days after the occurrence of such substantial destruction. RWSA shall within two (2) years of such termination remove all Improvements from the Premises if such termination was in whole, or from the Royal PS Leased Parcel and/or the Stadium Road PS Leased Parcel, as applicable, if such termination was in part, and restore the Premises or such parcels, as applicable, to a natural open space condition, seeded and appropriately stabilized and free of all hazardous materials. This provision shall survive termination of this Lease. For the purpose of this subsection a., the Improvements shall be deemed "substantially destroyed" if the cost of repairing such destruction exceeds twenty-five percent (25%) of the replacement cost of the Improvements as of the date such destruction occurred.

b. This Lease may be terminated by RWSA in whole, or with respect to only the Royal PS Leased Parcel and/or the Stadium Road PS Leased Parcel, at any time upon written notice to UVA by certified or registered mail, return receipt requested, with at least one (1) years' written notice. Upon termination, RWSA shall within two (2) years of such termination remove all Improvements from the Premises, or from the Royal PS Leased Parcel or the Stadium Road PS Leased Parcel, as applicable, and restore the Premises or such parcels, as applicable, to a natural open space condition as provided in subsection a. above.

c. Upon expiration of this Lease at the end of the Term or any extension or renewal thereof, or upon termination of this Lease by UVA upon default by RWSA, RWSA shall within two (2) years of such termination remove all Improvements from the Premises and restore the Premises to a natural open space condition as provided in subsection a. above.

16. **Payment for and Title to Improvements.** Title to all Improvements and alterations when made, erected, constructed, installed or placed upon the Premises shall be and remain in RWSA until the expiration of the Term (or any renewal term), unless this Lease is sooner terminated as herein provided.

17. **Notices.**

a. All notices required or permitted by this Lease to be given to a party to this Lease shall be delivered or mailed to, as the case may be, the following agents for each party who are hereby appointed and designated as such for the purpose of receiving all such notices:

(i) UVA's agent shall be: University of Virginia
Director, Real Estate and Leasing
P.O. Box 400884
Charlottesville, Virginia 22904-4884

With a copy to: University of Virginia
Office of University Counsel
Madison Hall
P.O. Box 400225
Charlottesville, Virginia 22904

- (ii) RWSA's agent shall be: Rivanna Water and Sewer Authority
690 Moores Creek Lane
Charlottesville, Virginia 22902
Attn: Executive Director

Each party shall immediately notify the other party, in writing, of any change of agents, and no change of agents shall be effective until such notice is given.

b. Where under the terms of this Lease a notice is required or permitted to be mailed by certified or registered mail, return receipt requested, and such notice is not mailed in such manner, the notice shall be effective if actually received by the party, or its appointed agent, to whom the notice is directed.

18. **Assignment.** RWSA shall have the right, without consent of UVA, to assign this Lease to the City, the County, any public authority formed by the City and/or the County under the Virginia Water and Waste Authorities Act (as the same may be amended from time to time), ACSA, or any successor authority to ACSA formed by the County under the Virginia Water and Waste Authorities Act (as the same may be amended from time to time) for the purpose of providing treated potable water to its residents, businesses and/or customers (including UVA). Except as provided in the preceding sentence, RWSA shall not assign this Lease without the prior, express written consent of UVA, which consent may be withheld in UVA's sole determination.

19. **Disclosures; Non-Waiver; Appropriations.**

a. Each of the parties understands and acknowledges that the other party is an agency of the Commonwealth of Virginia and with respect to tort liability for acts or occurrences on or about the Premises, including product liability, the such party is either (i) constitutionally immune (or partially immune) from suit, judgment or liability, (ii) insured, or (iii) covered by a financial plan of risk management that is in the nature of self-insurance, all as determined by applicable laws, government policies and practices.

b. Each of the parties understands and acknowledges that the other party has not agreed to provide any indemnification or save harmless agreements running to such party. No provision, covenant or agreement contained in this Lease shall be deemed to be a waiver of the sovereign immunity of either party from tort or other liability.

c. Notwithstanding any other provision of this Lease, if the either party shall cease to exist, and is not replaced by a successor entity with similar powers and purposes, or its powers and authority are limited so as to not permit the continued use of the Premises for the purpose and use for which same are leased, then this Lease and all responsibility or obligations of such party under this Lease shall terminate. In such event, such party will endeavor to give as much notice as is reasonably possible of the event resulting in the termination of this Lease and the anticipated termination date, but failure to give such notice shall not affect the termination.

20. **Governing Law; Consent to Venue.** This Lease and the rights of the parties hereunder shall be governed by and interpreted in accordance with the laws of the Commonwealth

of Virginia. The parties choose the County of Albemarle, Virginia, as the venue for any action instituted pursuant to the terms of this Lease.

21. **Presumptions.** No presumption shall be created in favor of or against any of the parties to this Lease with respect to the interpretation of any term or provision of this Lease due to the fact that this Lease, or any part hereof, was prepared by or on behalf of one of the parties hereto.

22. **Entire Agreement.** This Lease constitutes the entire, full and complete understanding and agreement of the parties with respect to the subject matter hereof. All representations, conditions, statements, warranties, covenants, promises or agreements previously made or given by either party to the other pertaining to the subject matter of this Lease, whether recorded or unrecorded, shall be null, void and without legal effect. This Lease supersedes and replaces, in their entirety, the terms and conditions contained in (i) the UVA/City Lease, (ii) the 1981 Lease, Water and Sewer Agreement, and (iii) any applicable provisions in the 1983 Deed and Bill of Sale (collectively, the "Prior Agreements"), but only to the extent those terms and conditions are expressly related to the lease of the Observatory WTP, the Royal Pump Station, and the Stadium Road Pump Station; and provided further, that this Lease does not supersede or replace any other leases, easements or rights-of-way contained in the Prior Agreements, including, but not limited to (a) the lease or easement from UVA for the City's finished waterline between Stadium Road and its intersection with the southern border of the OWTP Leased Parcel, (b) the lease of the Lambeth Pump Station to the City or (c) the waterline easement from the Lambeth Pump Station to Rugby Road.

23. **Successors and Assigns; No Third Party Beneficiaries.** The covenants, agreements and rights contained in this Lease shall bind and inure to the benefit of each of the parties' respective heirs, personal representatives, successors and assigns, but is not intended to inure to, and shall not inure to, the benefit of any third parties.

24. **Modification.** This Lease shall not be modified, altered or amended except by written agreement executed by the parties hereto with the same formality as this agreement.

25. **Further Assurances.** To the extent permitted by the laws of the Commonwealth of Virginia and any other laws governing the release or confidentiality of information and documentation within the possession or control of UVA, UVA shall cooperate with RWSA to provide information and documentation or engage in such other actions as may be reasonably required to assist RWSA in connection with RWSA's incurrence or securing of any bond or other indebtedness; provided, however, UVA shall in no event be required to incur any indebtedness or other financial obligations in connection therewith or to subordinate or allow the encumbrance of UVA interest in the Premises.

26. **Severability.** Each covenant and agreement contained in this Lease shall be construed to be a separate and independent covenant and agreement. If any term or provision of this Lease or the application thereof to any person or circumstance shall to any extent be found to be invalid and unenforceable by a court of competent jurisdiction, the remainder of this Lease or the application of such term or provision to persons or circumstances, other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term and provision of this Lease shall be valid and shall be enforced to the extent permitted by law.

27. **Section Headings.** Headings to the sections are mere catchwords and are illustrative only; they do not form a part of this Lease nor are they intended to be used in construing same.

28. **Execution.** This Lease shall not be effective or binding unless and until signed by all parties hereto.

[SIGNATURE PAGES FOLLOW]

DRAFT

IN WITNESS WHEREOF, the parties have affixed their signatures and seals.

UVA:

RECTOR AND VISITORS OF THE
UNIVERSITY OF VIRGINIA

By: _____
Angelo Maurelli
Associate Vice President for Financial
Operations

COMMONWEALTH OF VIRGINIA:

COUNTY/CITY OF _____, TO WIT:

I HEREBY CERTIFY that on this ____ day of _____, 2020, before me, a Notary Public for the jurisdiction aforesaid, personally appeared Angelo Maurelli, known to me or satisfactorily proven to be the person whose name is subscribed to the foregoing Deed of Ground Lease, who acknowledged he is the Associate Vice President for Financial Operations of the University of Virginia, an educational institution of the Commonwealth of Virginia, that he has been duly authorized to execute, and has executed, such instrument on behalf of the Rector and Visitors of the University of Virginia for the purposes therein set forth, and that the same is its act and deed.

IN WITNESS WHEREOF, I have set my hand and Notarial Seal, the day and year first above written.

Notary Public _____

My commission expires on _____
My Registration No.: _____

APPROVED AS TO FORM:

By: _____
Pamela H. Sellers
Associate University Counsel/Special Senior Assistant Attorney General

RWSA:

RIVANNA WATER AND SEWER AUTHORITY

By: _____
Michael A. Gaffney
Chairman, Board of Directors

COMMONWEALTH OF VIRGINIA:

COUNTY/CITY OF _____, TO WIT:

I HEREBY CERTIFY that on or about this ____ day of _____, 2020, before me, a Notary Public for the jurisdiction aforesaid, personally appeared Michael A. Gaffney, known to me or satisfactorily proven to be the person whose name is subscribed to the foregoing Deed of Ground Lease, who acknowledged that he is the Chairman of the Rivanna Water and Sewer Authority, that he has been duly authorized to execute, and has executed, such instrument on behalf of the Authority for the purposes therein set forth, and that the same is its act and deed.

IN WITNESS WHEREOF, I have set my hand and Notarial Seal, the day and year first above written.

Notary Public _____

My commission expires on _____
My Registration No.: _____

RECOMMEND APPROVAL:
RIVANNA WATER AND SEWER AUTHORITY

By: _____
William I. Mawyer, Jr., P.E.
Executive Director

Exhibit A

Plat entitled
Rivanna Water and Sewer Authority Observatory Water Treatment Plant,
Pump Stations and Waterlines Leased Parcels
prepared by Draper Aden Associates dated June 30, 2020

COUNTY OF ALBEMARLE
TMP: 076A0-00-00-000E0

PREPARED BY: *The Office of General Counsel
University of Virginia
Charlottesville, Virginia 22902*

This Licence Agreement is exempt from taxation pursuant to Va. Code §58.1-811.A.3 and §58.1.C.4.

LICENSE AGREEMENT

THIS LICENSE AGREEMENT (“Agreement”) is made as of July 1, 2020, by and between **THE RECTOR AND VISITORS OF THE UNIVERSITY OF VIRGINIA**, an educational institution of the Commonwealth of Virginia (“University”), as Licensor, and the **RIVANNA WATER AND SEWER AUTHORITY**, a body politic and corporate formed under the Virginia Water and Waste Authorities Act (“Authority”), as Licensee.

WHEREAS, the University owns a building at 550 Alderman Road commonly known as the **Alderman Road Pump Station** located adjacent to Alderman Road and the University Cemetery (the “Building”) on a parcel consisting of approximately 569 sq. ft./0.139 acres, more or less, as more particularly described as Proposed Alderman Road PS License Agreement Space on Figure 4 of the Plat entitled “Rivanna Water and Sewer Authority Observatory Water Treatment Plant, Pump Stations and Waterlines Leased Parcels”, prepared by Draper Aden Associates dated June 30, 2020, a copy of which is attached hereto as Exhibit A (the “Property”); and

WHEREAS, the University will allow the Authority to use the Property for underground waterlines and to use a portion of the interior of the Building to house pumps, piping and related infrastructure (“Infrastructure”) for the sole use of metering and pumping potable water.

NOW, THEREFORE, for good and valuable consideration, the sufficiency of which are hereby acknowledged, the University hereby grants to the Authority, its designated employees, agents and contractors, this license to access, enter and use the Property and a portion of the space within the Building to install, maintain, repair and replace the Infrastructure subject to the following conditions:

1. Scope of License. This Agreement is limited in scope to permit the Authority and its designated employees, agents and contractors to (i) install, maintain, operate, inspect, rebuild, remove, repair, replace, improve, test and monitor finished waterlines on the Property; (ii) access the Building across lands owned by the University, (iii) enter, and (iv) use a portion of the Building to install, maintain, operate, inspect, rebuild, remove, repair, replace, improve, test and monitor the Infrastructure associated with the metering and pumping of potable water (the “Work.”) The Authority shall be solely responsible for all costs and expenses incurred in connection with the Work, and shall take all action necessary to have any mechanic's and materialmen's liens, judgment liens or other liens or encumbrances filed against the Property or the Building released or transferred to bond within thirty (30) days of the date the Authority receives notice of the filing of such liens or encumbrances.

2. Term. This Agreement shall be executed contemporaneously with the execution of the Deed of Ground Lease of the Observatory Hill Water Treatment Plant, Stadium Road Pump Station and Royal Pump Station between Licenser and Licensee (the "Lease"). If the Authority at any time discontinues use of the Building and Infrastructure for a period of one year, all of the Authority's rights and interest in this Agreement shall immediately terminate and revert to the University, its successors and assigns, and the Authority shall at its expense remove any Infrastructure from the Building, on written request by the University, the Authority shall quitclaim and release same. Underground pipes, valves and connections may be abandoned in place by the Authority. If the University at any time deems it necessary or advisable to relocate for the University's convenience the Building, the Authority shall relocate, at the sole cost of the University, such Infrastructure to a place mutually acceptable to the University and the Authority, provided the University for no additional consideration shall grant unto the Authority such license agreement, lease or easement as may be necessary to effect such relocation, subject to the same rights, privileges and conditions, as herein set forth. Upon relocation of the Infrastructure from the Building, this Agreement shall automatically terminate, and all rights, title and interest therein shall revert to the University.

3. Permits / Plans. The Authority shall obtain all necessary approvals of, and permits for, the Work prior to its commencement. Plans and specifications that fully define the Work shall be reviewed and approved by the University's Facilities Management and Building Code Official.

4. Standard of Work. The Authority shall, at its expense, perform (or cause to be performed) the Work in a good and workmanlike manner, in accordance with all applicable laws and regulations.

5. Restoration. Upon expiration or termination of this Agreement, the Authority shall be responsible for the removal of trash, debris, and Infrastructure from the Building.

6. Payment for Property Damage. Each of the University and the Authority (i) at the other party's election, shall pay for or repair any damage to any of the other party's structures, roads, fences, sidewalks, curbs, existing utilities and other improvements which result from its activities, or the activities of its designated employees, agents or contractors; (ii) shall notify the other party immediately of any such damage; and (iii) shall make payment or repair as soon as possible, but in no event later than thirty (30) days after such damage occurs.

7. Insurance.

a. The Authority shall maintain a Commercial General Liability insurance policy, providing coverage for bodily injury and property damage, with limits of liability not less than \$1,000,000 per occurrence and \$2,000,000 aggregate with coverage for Premises/Operations, Products/Completed Operations, Contractual, Owners and Contractors Protective Liability coverage; and Personal Injury. The Authority shall also maintain Employers Liability of at least \$100,000 and Workers Compensation coverage meeting statutory requirements in the Commonwealth of Virginia. In addition, the Authority shall maintain Automobile Insurance with a minimum combined single Limit of Liability for bodily injury and property damage of \$1,000,000 per accident, with coverage for: owned, hired, and non-owned automobiles. The Authority agrees to maintain such insurance coverage throughout the term of this Agreement with insurers or approved municipal self-insurance pools licensed to do business in Virginia and all

A.M. Best rated insurance carriers will maintain and A.M. Best financial rating of at least A-, and to furnish evidence to the University of such coverage prior to the effective date and throughout the term of this Agreement. In addition, the University shall be named on the Commercial General Liability Insurance policy required by this paragraph as an additional insured, and the proper name to use is: The Commonwealth of Virginia, and the Rector and Visitors of the University of Virginia, its officers, employees, and agents.

b. The Authority shall ensure that any contractor hired by the Authority who will be entering the Building for the purpose of performing the Work will obtain the following insurance policies before engaging in Work, and maintain such insurance coverage while engaged in Work requiring entering onto the Building: a Commercial General Liability Insurance Policy, providing coverage for bodily injury and property damage, with limits of liability not less than \$1,000,000 per occurrence and \$3,000,000 aggregate with coverage for Premises/Operations, Products/Completed Operations, Contractual, Owners and Contractors Protective Liability coverage, and Personal Injury; and Workers Compensation coverage meeting statutory requirements in the Commonwealth of Virginia, and Employers Liability coverage of at least \$1,000,000 and include the Alternate Employers Endorsement; and Automobile Insurance with a minimum combined single Limit of Liability for bodily injury and property damage of \$1,000,000 per accident, with coverage for owned, hired, and non-owned automobiles operated by their employees; and an Umbrella Liability Policy with limits of at least \$5,000,000. All subcontractors must carry these same insurance coverages with limits of liability of not less than \$1,000,000 for each policy. In addition, the Authority shall ensure that the University shall be named as an additional insured on the Commercial General Liability, Automobile Liability, and Umbrella Insurance Policies of all contractors and subcontractors. The official name of the University is: "The Commonwealth of Virginia, and the Rector and Visitors of the University of Virginia, its officers, employees, and agents." To the extent that hazardous substances are present in regard to the Work being done, the general contractor must also maintain Contractors Pollution Liability insurance with a minimum liability limit of \$2,000,000.

8. Assignment. The Authority shall have the right, without consent of the University, to assign this Agreement to the City of Charlottesville, Virginia (the "City"), the County of Albemarle, Virginia (the "County"), any public authority formed by the City and/or the County under the Virginia Water and Waste Authorities Act (as the same may be amended from time to time), the Albemarle County Service Authority ("ACSA"), or any successor authority to ACSA formed by the County under the Virginia Water and Waste Authorities Act (as the same may be amended from time to time) for the purpose of providing treated potable water to its residents, businesses and/or customers (including the University). Except as provided in the preceding sentence, the Authority shall not assign this Agreement without the prior, express written consent of the University, which consent may be withheld in the University's sole determination.

9. Entire Agreement. This Agreement constitutes the entire understanding and agreement of the parties with respect to its subject matter; and there are no representations, promises or agreements between the parties except those found in this Agreement; and, any and all prior agreements, understandings or representations with respect to its subject matter, whether oral or written, are hereby cancelled in their entirety and are of no further force or effect. This Agreement supersedes

and replaces, in their entirety, the terms and conditions contained in (i) the lease contract dated April 1, 1922, between Grantor and the City as amended and modified, for approximately 13 acres of land located on what is commonly called Observatory Mountain or Observatory Hill, which acreage included a sand filter water treatment plant and associated pipe lines (the "Observatory WTP") and access, water line and other easements for a period of 99 years, expiring on March 31, 2021 and recorded in the Clerk's Office for the Circuit Court of the County of Albemarle (the "Albemarle Clerk's Office") in Deed Book 179 at page 385 (as so amended and modified, the "UVA/City Lease"), (ii) an unrecorded Lease, Water and Sewer Agreement dated November 18, 1981 between the Grantor and the City modifying certain provisions of the UVA/City Lease including the expiration date which was changed to April 17, 2021, and (iii) any applicable provisions in the 1983 Deed and Bill of Sale by and between the City and RWSA recorded in the Albemarle Clerk's Office in Deed Book 768 at page 277 (collectively, the "Prior Agreements"), but only to the extent that those terms and conditions are expressly related to the license to use the Building granted hereunder, and provided further, that this Agreement does not supersede or replace any other leases, easements or rights-of-way contained in the Prior Agreements. Any amendments to this Agreement must be in writing and executed and delivered by both parties.

THE RECTOR AND VISITORS OF THE UNIVERSITY OF VIRGINIA,
an educational institution of the Commonwealth of Virginia

By: _____
Angelo Maurelli
Associate Vice President for Financial Operations

Date: _____

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF _____, to-wit:

The foregoing License Agreement was acknowledged before me this ____ day of _____, 2020, by Angelo Maurelli, Associate Vice President for Financial Operations of THE RECTOR AND VISITORS OF THE UNIVERSITY OF VIRGINIA, on behalf of the agency.

My commission expires: _____
Registration No. _____

Notary Public

Review and Approved
As to Legal Form and Sufficiency:

Pamela H. Sellers
Associate University Counsel and
Senior Special Assistant Attorney General

RIVANNA WATER AND SEWER AUTHORITY

By: _____
William I. Mawyer, Jr. P.E.
Executive Director

Date: _____

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF _____, to-wit:

The foregoing License Agreement was acknowledged before me this ____ day of _____, 2020, by William I. Mawyer, Jr., P.E., Executive Director of Rivanna Water and Sewer Authority, on behalf of the authority.

My commission expires: _____

Registration No. _____

Notary Public

Exhibit A

Plat entitled
Rivanna Water and Sewer Authority Observatory Water Treatment Plant,
Pump Stations and Waterlines Leased Parcels,
prepared by Draper Aden Associates dated June 30, 2020

DRAFT

COUNTY OF ALBEMARLE

TMP: 076A0-00-00-000H0

076A0-00-00-000G0

07600-00-00-00400

07600-00-00-00500

076A0-00-00-000E0

PREPARED BY: *The Office of General Counsel
University of Virginia
Charlottesville, Virginia 22902*

This Deed of Easement is exempt from taxation pursuant to Va. Code §58.1-811.A.3 and §58.1.C.4.

DEED OF EASEMENT

This DEED OF EASEMENT is dated as of July 1, 2020, by and among **THE RECTOR AND VISITORS OF THE UNIVERSITY OF VIRGINIA**, hereinafter called “Grantor”, and the **RIVANNA WATER AND SEWER AUTHORITY**, a body politic and corporate formed under the Virginia Water and Waste Authorities Act (“RWSA”), hereinafter called “Grantee”.

WITNESSETH

That for the sum of One Dollar (\$1.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Grantor grants unto Grantee, its successors and assigns, the perpetual right, privilege, and easements, twenty (20) feet in width, to lay, erect, construct, operate, maintain and repair waterlines, sanitary sewer and storm sewer lines and all equipment, accessories and appurtenances necessary in connection therewith, hereinafter called the “Facilities”, for the purpose of transmission and distribution of water, wastewater and storm water discharge over, under, upon and across the lands of the Grantor situated in the County of Albemarle, Virginia, said easements being shown on a plat prepared by Draper Aden Associates, dated June 30, 2020, entitled “Rivanna Water and Sewer Authority Observatory Water Treatment Plant, Pump Stations and Waterlines Lease Parcels”, a copy of which is attached hereto as Exhibit A and made a part of this Deed of Easement (the “Plat”); and more particularly described as (i) Proposed Waterline Easement, 6,428 sq. ft./0.148 acre on the south side of the Proposed OWTP Leased Parcel on Figure 1 of the Plat, (ii) Proposed Combined Waterlines, Sanitary Sewer and Storm Sewer Easement, 53,261 sq. ft./1.223 acres on the south and east sides of the Proposed OWTP Leased Parcel on Figures 1, 2 and 3 of the Plat and (iii) Proposed Waterline Easement, 1333 sq. ft./0.031, Proposed Waterline Easement, 701 sq. ft./0.016 acre and Proposed Waterline Easement, 719 sq. ft., 0.017 acre adjacent to the Proposed Alderman Road PS License Agreement Space on Figure 4 of the Plat.

These easements are subject to all existing easements, rights-of-way, covenants, encumbrances and restrictions of record, and is further subject to the following conditions:

- A. The Facilities shall remain the property of Grantee. Grantee shall have the right to inspect, operate, maintain, rebuild, remove, repair, replace and improve, and make such changes, alterations, additions to or extensions of the Facilities within the boundaries of said easement as are consistent with the purpose expressed herein. All construction, maintenance, equipment and Facilities shall comply with all applicable laws, ordinances, codes and regulations.

- B. Upon completion of any activity by Grantee upon the easements, Grantee shall restore the easement as nearly to its original condition as practicable, including backfilling of trenches, reseeding or resodding of lands, replacement of equipment and utility facilities of Grantor, removal of trash and debris, and removal of any of Grantee's equipment, accessories or appurtenances not consistent with the construction, maintenance or operation of the Facilities or the exercise of any rights or privileges expressed herein. Grantee shall maintain said easements and the Facilities in such repair as not to endanger or otherwise limit the enjoyment or use of Grantor's property and adjacent properties.
- C. Grantee, its successors or assigns, may remove any fences, pavement, or other improvements or obstructions, placed by Grantor within the easements conveyed herein, which interfere with the efficient and safe construction, maintenance and operation of the Facilities; provided, however, that existing utilities or future utilities plans for which have been approved by Grantee pursuant to paragraph E. below located within these non-exclusive easements shall not be considered to be obstructions. Grantee shall also have the right, after reasonable notification to the UVA Facilities Management Department, to trim, cut and remove trees, shrubbery or other natural obstructions on, under or over the easements which interfere with or threaten the efficient and safe construction, maintenance or operation of the Facilities; provided, however, that with respect to such activities within the easements granted hereunder on the eastern side of the Observatory Water Treatment Plant leased parcel, Grantee shall first obtain permission for such activities from the UVA Department of Facilities Management, which permission shall not be unreasonably withheld, delayed or conditioned. All brush, branches, and other debris resulting from any cutting, trimming, or clearing of said easements shall be removed from the lands of Grantor and disposed by Grantee. The Grantee shall have no responsibility to the Grantor, its successors or assigns, to replace, or reimburse for the cost of, said trees, shrubbery, fences, pavement, improvements or obstructions if cut, removed, or otherwise damaged by Grantee, as set forth herein.
- D. Grantee shall have the right of ingress to and egress from said easements and temporary construction easements over the lands of Grantor adjacent to said easements as may be necessary to exercise Grantee's rights herein. Grantee shall exercise such right in such manner as shall not occasion injury or inconvenience to Grantor. Grantee shall at Grantor's election pay for or repair any injury to any of Grantor's land, structures, roads, fences, and other improvements caused by Grantee, its employees, agents or contractors, except as provided in subsection (C) above. Grantee shall notify Grantor immediately of any such injury and shall make said payment or repair within thirty (30) days after such election by Grantor; provided, however, that if such injury results in an on-going hazardous condition or a material loss of use of Grantor's property (such as, by way of illustration and not by limitation, a disruption of any utilities or loss of access to Grantor's property) then Grantee shall immediately remedy the hazardous condition or material loss of use.

- E. Grantor, its successors and assigns, may use said easement for any purpose not inconsistent with the rights hereby granted, provided such use does not interfere with the use of said easements by Grantee for the purposes set forth herein. In recognition of the restricted width of the easements hereby granted, Grantor agrees to submit all plans for such use after the date hereof to Grantee for review and prior approval by Grantee. Grantee may withhold such approval in Grantee's sole discretion. Grantee acknowledges that the City of Charlottesville has an easement for a finished water line running parallel to the Facilities within the easement herein granted running north from Stadium Road through the Stadium Road Pump Station to the intersection with an easement granted hereby to Grantee on the southern and eastern border of the Observatory Water Treatment Plant Leased Parcel as shown on Figures 2 and 3 of the Plat and agrees that such easement does not interfere with the use of easements herein granted, and Grantee further agrees to coordinate all work in such overlapping easement with the City of Charlottesville.
- F. If Grantee at any time discontinues use of all or any portion of the easements herein conveyed for a period of one year, all of Grantee's rights and interest in said easements or portion thereof shall immediately terminate and revert to Grantor, its successors and assigns, and Grantee shall at its expense remove any above ground Facilities and restore Grantor's property as nearly to its original condition as practicable and, on written request by Grantor, Grantee shall quitclaim and release same. Grantee may request from Grantor permission to abandon in place underground pipes, valves and connections.
- G. If Grantor at any time deems it necessary or advisable to relocate for Grantor's convenience any of the Facilities installed and used by Grantee pursuant to this Deed of Easement, Grantee shall relocate, at the sole cost of Grantor, such Facilities to a route or place mutually acceptable to Grantor and Grantee, provided Grantor for no additional consideration shall grant unto Grantee such easements as may be necessary to effect such relocation, subject to the same rights, privileges and conditions, as herein set forth. Upon relocation of any of the Facilities from any portion of the easements hereby granted, the easements granted to Grantee for or over that portion of the land no longer used by Grantee shall automatically terminate, and all rights, title and interest therein shall revert to Grantor.
- H. Grantee shall have the right, without consent of Grantor, to assign this Deed of Easement to the City of Charlottesville (the "City"), the County of Albemarle (the "County"), any public authority formed by the City and/or the County under the Virginia Water and Waste Authorities Act (as the same may be amended from time to time), the Albemarle County Service Authority ("ACSA"), or any successor authority to the ACSA formed by the County under the Virginia Water and Waste Authorities Act (as the same may be amended from time to time) for the purpose of providing treated potable water to its residents, businesses and/or customers (including Grantor). Except as provided in the preceding sentence, Grantee shall not assign this Deed of Easement without the prior, express written consent of Grantor, which consent may be withheld in Grantor's sole determination.

- I. This Deed of Easement constitutes the entire, full and complete understanding and agreement of the parties with respect to the subject matter hereof. All representations, conditions, statements, warranties, covenants, promises or agreements previously made or given by either party to the other pertaining to the subject matter of this Deed of Easement, whether recorded or unrecorded, shall be null, void and without legal effect. This Deed of Easement supersedes and replaces, in their entirety, the terms and conditions contained in (i) the lease contract dated April 1, 1922, between Grantor and the City as amended and modified, for approximately 13 acres of land located on what is commonly called Observatory Mountain or Observatory Hill, which acreage included a sand filter water treatment plant and associated pipe lines and access, water line and other easements for a period of 99 years, expiring on March 31, 2021 and recorded in the Clerk's Office for the Circuit Court of the County of Albemarle (the "Albemarle Clerk's Office") in Deed Book 179 at page 385 (as so amended and modified, the "UVA/City Lease"), (ii) an unrecorded Lease, Water and Sewer Agreement dated November 18, 1981 between the Grantor and the City modifying certain provisions of the UVA/City Lease including the expiration date which was changed to April 17, 2021, and (iii) any applicable provisions in the 1983 Deed and Bill of Sale by and between the City and RWSA recorded in the Albemarle Clerk's Office in Deed Book 768 at page 277 (collectively, the "Prior Agreements"), but only to the extent that those terms and conditions are expressly related to the easements hereby granted, and provided further, that this Deed of Easement does not supersede or replace any other leases, easements or rights-of-way contained in the Prior Agreements.

[SIGNATURE PAGES FOLLOW]

WITNESS the following signatures and seals.

**Grantor: THE RECTOR AND VISITORS OF THE
UNIVERSITY OF VIRGINIA**

By: _____
Jennifer W. Davis
Executive Vice President and
Chief Operating Officer

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF _____, to-wit:

The foregoing Deed of Easement was acknowledged before me this ____ day of _____, 2020, by Jennifer W. Davis, Executive Vice President and Chief Operating Officer of THE RECTOR AND VISITORS OF THE UNIVERSITY OF VIRGINIA, on behalf of the agency.

My commission expires: _____
Registration No. _____

Notary Public

Review and Approved
As to Legal Form and Sufficiency:

Pamela H. Sellers
Associate University Counsel and
Senior Special Assistant Attorney General

Grantee: RIVANNA WATER AND SEWER AUTHORITY

By: _____
William I. Mawyer, Jr., P.E.
Executive Director

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF _____, to-wit:

The foregoing Deed of Easement was acknowledged before me this ____ day of _____, 2020, by William I. Mawyer, Jr., P.E., Executive Director of Rivanna Water and Sewer Authority, on behalf of the authority.

My commission expires: _____

Registration No. _____

Notary Public

EXHIBIT A

Plat entitled
Rivanna Water and Sewer Authority Observatory Water Treatment Plant,
Pump Stations and Waterlines Lease Parcels
prepared by Draper Aden Associates, dated June 30, 2020

130278198_4

Approval of the Observatory WTP Lease, Alderman PS License, and Piping Easement, all with UVA

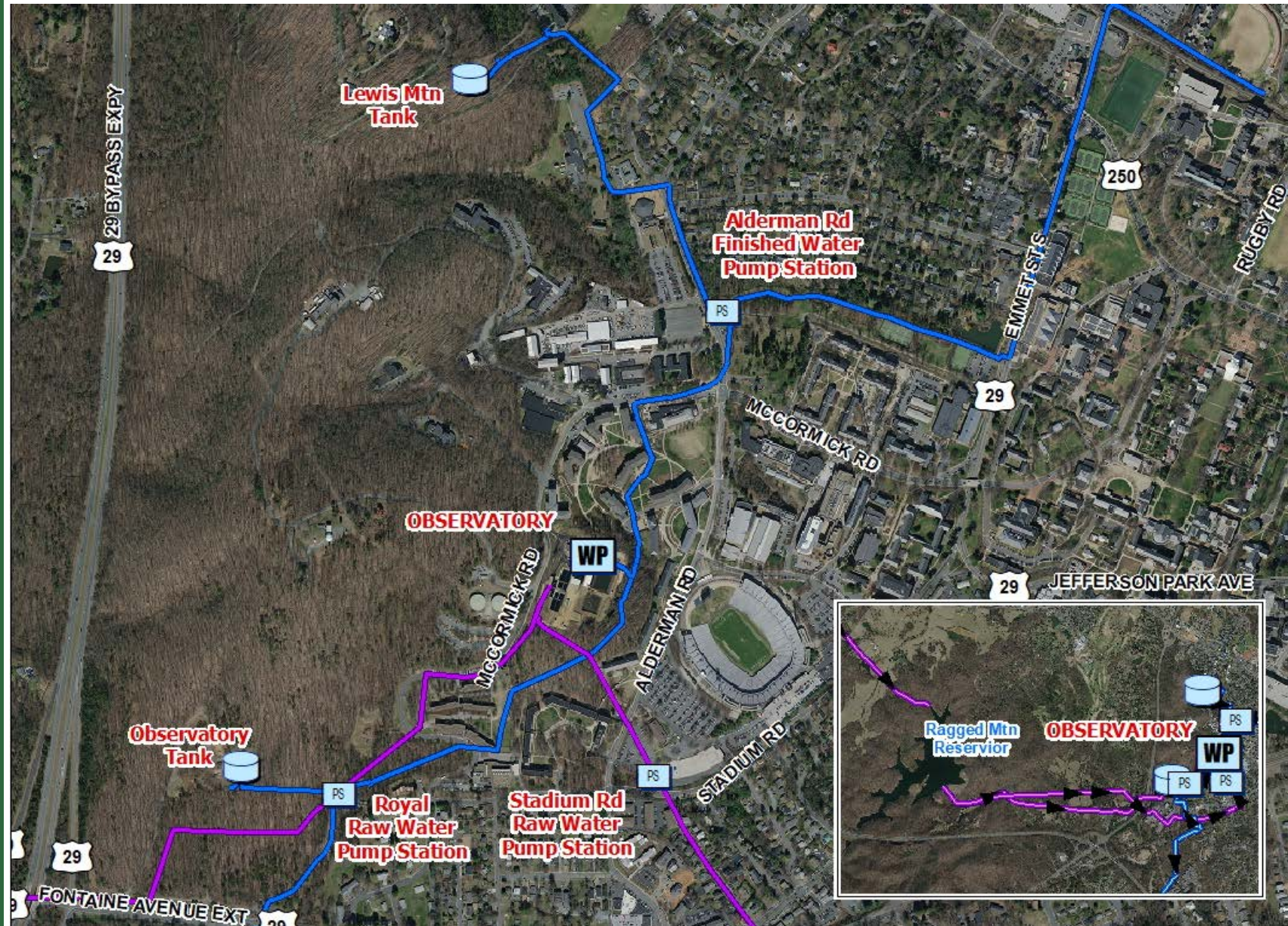


Presented to the RWSA Board of Directors

BILL MAWYER, EXECUTIVE DIRECTOR

JULY 28, 2020

RWSA's Observatory Water System



Water Pump Stations



Royal Raw Water Pump Station

Alderman Road Finished Water Pump Station



Stadium Road Raw Water Pump Station

History of the OBWTP Lease

- Observatory water treatment facilities were built by UVA in the 1850's
- Original lease was granted by UVA to the City in 1922 for a 99 year term
- Lease was amended by UVA and the City several times:
 - 1944, 1949, 1954, 1962, 1981
- City transferred the OBWTP portion of the lease to RWSA in 1973
- Discussion of a new lease with UVA began in 2017.

Major items discussed:

1. Keeping the plant on Observatory Mountain
2. Term, cost, exact location of Lease boundaries, architectural approvals, off-site utilities, vegetated buffer protection; separate Lease, License and Easement documents; separate Easements for RWSA and City
3. Our Master Plan to expand OBWTP facilities to 20 MGD by 2070
4. Adding a paved access road and retaining wall within the site by 2023
5. Reserving current sewer capacity in the existing off-site piping for the plant, and to share sewer piping upgrade costs in the future, if needed
6. Partnering for a regional stormwater facility to serve the site in the future, if needed

Summary

1. Ground Lease for the:

1.	Observatory Water Treatment Plant	6.654 acres
2.	Royal Raw Water Pump Station	0.041 acres
3.	Stadium Road Raw Water Pump Station	<u>0.169 acres</u>
		6.864 acres

A. Term:

- 49 Years, July 1, 2020 - June 30, 2069
- Renew for an additional 50 years from 2069 – 2119, unless either party gives notice not to renew. If UVA decides not to renew, then RWSA will have 10 years (until 2079) to site and build a new WTP, and demolish the current plant.

B. Cost:

- \$100,000 / year starting on July 1, 2020
- \$175,000/ year starting on July 1, 2021
- Annual increase based on the CPI-U, adjusted every 10 years

Summary

2. License for Space in the Alderman Road Finished Water Pump Station

569 SF

A. Term:

- Same as for the Observatory Water Treatment Plant
- 49 Years, July 1, 2020 - June 30, 2069
- Renew for an additional 50 years from 2069 – 2119, unless either party gives notice not to renew.
- Rights end if use discontinues for 1 year

B. Cost: \$0

3. Easement for underground raw, finished, waste and storm water pipes:

1.28 acres

A. Term: Perpetual; Rights end if use discontinues for 1 year

B. Cost: \$0

Questions?



Recommend authorization for the Chair and Executive Director to execute the following documents with UVA, and any changes as may be requested by UVA after consultation with Authority counsel:

1. Observatory Water Treatment plant "Deed of Ground lease".
2. Alderman Road Pump station "License Agreement".
3. "Deed of Easement" for raw, finished, waste and storm water pipes.