

Board of Directors Meeting

February 22, 2022 2:15pm



BOARD OF DIRECTORS

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

- DATE: February 22, 2022
- LOCATION: Virtually via ZOOM
- **TIME:** 2:15 p.m.

AGENDA

- 1. CALL TO ORDER
- 2. STATEMENT FROM THE CHAIR
- 3. MINUTES OF PREVIOUS BOARD MEETING a. Minutes of Regular Board Meeting on January 25, 2022
- 4. RECOGNITION
- 5. EXECUTIVE DIRECTOR'S REPORT
- 6. ITEMS FROM THE PUBLIC
- 7. RESPONSES TO PUBLIC COMMENTS

8. CONSENT AGENDA

- a. Staff Report on Finance
- b. Staff Report on Operations
- c. Staff Report on Ongoing Projects
- d. Staff Report on Wholesale Metering
- e. Award Construction Contract and Amend Capital Improvement Plan MCAWRRF Electrical Infrastructure Improvements – Pyramid Electrical Contractors, LLC
- f. Award Construction Contract and Amend Capital Improvement Plan Scottsville WTP Lagoon Liners Replacement – Haren Construction Company
- g. Award Construction Contract FY 22-23 Sanitary Sewer Rehabilitation Contract -Insituform Technologies, LLC

h. Award Term Contract for Professional Engineering Services - Sewer Evaluation, Rehabilitation, and Repairs; Frazier Engineering

9. OTHER BUSINESS

- a. Presentation and Approval: Buck Mountain Property Management Update; Andrea Bowles, Water Resources Manager
- b. Presentation and Approval: Introduction of the FY 2023 2027 Capital Improvement Plan; Bill Mawyer, Executive Director

10. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

11. CLOSED MEETING

12. ADJOURNMENT

GUIDELINES FOR PUBLIC COMMENT AT VIRTUAL RIVANNA BOARD OF DIRECTORS MEETINGS

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

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

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

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

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

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

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 February 22, 2022 meeting of the Board of Directors to order.

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

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

ROLL CALL:

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

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

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

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

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

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

And I am Mike Gaffney, located at _____.

Joining us today electronically are the follow Authority staff members and consultants:

Bill Mawyer, Lonnie Wood, David Tungate, Jennifer Whitaker, John Hull, Andrea Bowles, Deborah Anama, and Attorney Valerie Long (Williams Mullen).

We are also joined electronically by Carrie Stanton, counsel to the Authority.



1 2 3 4 5	RWSA BOARD OF DIRECTORS Minutes of Regular Meeting January 25, 2022
6 7	A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, January 25, 2022 at 2:15 p.m. via Zoom.
8 9 10	Board Members Present: Mike Gaffney, Jeff Richardson, Lauren Hildebrand, Gary O'Connell, Ann Mallek, Brian Pinkston.
.1 .2 .3	Board Members Absent: Samuel Sanders, Jr.
_4 _5	Rivanna Staff Present: Bill Mawyer, Lonnie Wood, Deborah Anama, Betsy Nemeth, David Tungate, John Hull, Michelle Simpson, Jennifer Whitaker.
_6 _7	Attorney(s) Present: Valerie Long.
20 21	<i>1. CALL TO ORDER</i> Mr. Gaffney called the January 25, 2022, regular meeting of the Rivanna Water and Sewer Authority to order at 2:30 p.m.
22 23 24	<i>2. STATEMENT FROM THE CHAIR</i> Mr. Gaffney read the following statement aloud:
25 26 27	"This is Mike Gaffney, Chair of the Rivanna Water and Sewer Authority. I would like to call the January 25, 2022 meeting of the Board of Directors to order.
29 30 31 32 33 34	"Notwithstanding any provision in our Bylaws to the contrary, as permitted under the City of Charlottesville's Continuity of Government Ordinance adopted on March 25, 2020, Albemarle County's Continuity of Government Ordinance adopted on April 15th, 2020, and revised effective October 1, 2020 and Chapter 1283 of the 2020 Acts of the Virginia Assembly effective April 24, 2020, we are holding this meeting by real time electronic means with no Board member physically present at a single, central location.
5 36 37 38 39 40 41 42 43	"All Board members are participating electronically. This meeting is being held pursuant to the second resolution of the City's Continuity of Government Ordinance and Section 6 of the County's revised Continuity of Government Ordinance. All Board members will identify themselves and state their physical location by electronic means during the roll call which we will hold next. I note for the record that the public has real time audio-visual access to this meeting over Zoom as provided in the lawfully posted meeting notice and real time audio access over telephone, which is also contained in the notice. The public is always invited to send questions, comments, and suggestions to the Board through Bill Mawyer, the Authority's Executive Director, at any time."
±4 15 16	Mr. Gaffney called the roll.

47 48	Ms. Lauren Hildebrand stated she was located at 305 4th Street Northwest in Charlottesville, VA.
49 50	Ms. Ann Mallek stated she was located at her home in Earlysville, Albemarle County.
50 51 52	Mr. Gary O'Connell stated he was located at the ACSA offices at 168 Spotnap Road.
53 54	Mr. Brian Pinkston stated he was located at his residence in Charlottesville, VA.
55 56 57	Mr. Jeff Richardson stated he was located at the County Office Building at 401 McIntire Road in Charlottesville, VA.
58 59	Mr. Mike Gaffney stated he was located at 3180 Dundee Road in Earlysville, VA.
60 61 62	Mr. Gaffney stated the following Authority staff members were joining the meeting electronically: Bill Mawyer, Lonnie Wood, David Tungate, Jennifer Whitaker, John Hull, Betsy Nemeth, Michelle Simpson, and Deborah Anama.
63 64 65	Mr. Gaffney stated they were also joined electronically by Ms. Valerie Long, Counsel to the Authority.
60 67	3 MINUTES OF PREVIOUS BOARD MEETING
68 69	a. Minutes of Regular Board Meeting on December 14, 2021
70 71	Mr. Gaffney asked if there were any comments, questions, or changes to the Board minutes.
72 73 74	Mr. Richardson moved that the Board approve the minutes of the December 14, 2021 meeting. The motion was seconded by Mr. O'Connell and passed unanimously (4-0). (Mr. Sanders was absent. Mr. Pinkston and Ms. Mallek abstained from the vote.)
75	A DECOCNITIONS
76 77 70	There were no recognitions.
70 79	5 EXECUTIVE DIRECTOR'S REPORT
80	Mr. Mawyer stated two employees earned their CDL Class A driver's license through the DMV.
81	He stated they worked hard, studied, and put forth a lot of effort to do so. He stated this is part of
82	the Authority's "grow our own" CDL group because they are hard to find and hire. He stated
83 84	they appreciate Mr. Tony Fusco and Mr. Josh Powell, who are both in the Maintenance group.
85	Mr. Mawyer stated a Water Operator gained his Class I water license. He stated Mr. Jodi
86	Schwake works at the Crozet Water Treatment Plant and has been with Rivanna for five and a
87 88	half years.
89	Mr Mawyer stated Rivanna appreciates the efforts that these three gentlemen put forth to
90	improve their credentials, which also helps Rivanna.
91 92	Mr. Mawyer stated Rivanna participates in the Department of Labor Registered Apprenticeship
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Program, and there are a number of employees listed who are taking technical classes and 93 training through PVCC, Valley Vo-Tech or CATEC. He stated Rivanna is growing its own and 94 helping staff improve their credentials so that they can be qualified to take on additional 95 responsibilities for Rivanna. He stated they appreciate all the efforts that Josh Powell, Tyrone 96 Hughes, David Jefferies, Matt Walker, Blake Shifflett, Steve Minnis, Tony Fusco, Richard 97 McElfresh, and Brian Baird (registered Master Electrician), and Kenny Lawhorne (Journeyman 98 maintenance mechanic). 99 100 Mr. Mawyer stated Rivanna recognizes the thousands of hours that it takes to gain some of these 101 credentials and appreciates the effort staff puts forward. 102 103 Mr. Mawyer stated there was good news about the drinking water –all the reservoirs are full. He 104 stated 2021 ended with a precipitation deficit of almost 8 inches (a 20% deficit), but 2022 is off 105 to a wet start, and the hope is that this continues. He stated Rivanna will continue to monitor 106 stream flow and reservoir levels. 107 108 Mr. Mawyer stated Rivanna has completed its draft 2023-2027 Capital Improvement Program. 109 He stated this was reviewed with the subcommittee, which is Mr. O'Connell and Ms. 110 Hildebrand. He stated it totals about \$205 million, and the details will be presented to the full 111 112 Board in February. 113 Mr. Mawyer stated Rivanna continues to try to get all the easements in place for the South Fork 114 Rivanna Reservoir to the Ragged Mountain Reservoir Water Line. He stated the map on the 115 screen shows black lines that represent easements obtained, and the green line is on a private 116 farm that Rivanna is trying to coordinate with to acquire the easement. He stated the blue line 117 near "St. Anne's Belfield" is property owned by the University Foundation, and Rivanna is 118 working with them to get that easement in place. 119 120 Mr. Mawyer stated a small black section below the red marker on the map is a section on which 121 Rivanna hopes to start construction in the summer that would cross under Route 250, go under 122 Garth Road and the railroad track. He stated the next section with the green line is one section of 123 pipe that has already been installed, which is by the edge of the Birdwood Golf Course and was 124 125 completed several years ago. 126 Mr. Mawyer stated moving to the lower part of the map, to the south, there is another section 127 (blue line) that is owned by UVA Foundation, and Rivanna is working with them to acquire that 128 129 easement. He stated moving to the east, there is a green section that is owned by Regents School, and Rivanna is working with them to grant an easement. He stated the yellow line to the right is 130 131 VDOT property, and Rivanna has an agreement and understanding with them of where they need to go under VDOT facilities. He stated VDOT does not grant easements. 132 133 Mr. Mawyer stated the orange line is owned by UVA, going around Observatory Mountain and 134 connecting to the Observatory Treatment Plant. He stated Rivanna is working with UVA to 135 acquire that easement. 136 137 Mr. Mawyer stated Rivanna has accomplished quite a bit, with a ways to go, and they will have a 138

139 full court press this calendar year to get all of the easements completed and consider the timing

- 140 of when they build this project.
- 141

Mr. Mawyer stated Rivanna thought they had finished the exterior lighting project at Moores
Creek they have been working on for the last two years, at least from a design and construction
standpoint. He stated this was in response to some of the safety concerns on campus, as well as
having not been in compliance with the Albemarle County Zoning Ordinance on lighting. He

- stated the new fixtures installed were quite bright around the aeration basins.
- 147

Mr. Mawyer stated Rivanna will replace the fixtures around the aeration basins. They are working with a consultant who will help with the financing of that effort to put in fixtures that are less bright and that still comply with the County's ordinance. He stated there were some comments from the neighborhood about how bright the lights were, so Rivanna is turning about half of them off at night to keep the light level down in the neighborhood, as well as on

153 Monticello Mountain, until they can get the correct fixtures installed. He apologized for the

- issue, adding that they have it in hand to get it corrected, and it is moving forward.
- 155

Mr. Mawyer stated he provided quarterly updates to the City Council and the Albemarle Board of Supervisors last week about Rivanna's ongoing projects and plans for the future for both the

- 158 Solid Waste Authority and the Water and Sewer Authority.
- 159

160 Mr. Gaffney asked if there were questions or comments.

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Mr. Pinkston stated he wanted to make sure they closed the loop on the lighting concerns that were raised. He stated there were obviously a number of emails that came through, and though

he could not claim to have fully read or thought through every comment that was made, the

public would like some assurance that this has been listened to and heard and that the consultant

has a good plan going forward. He asked if they were confident that the revised specifications forthe lighting will be acceptable.

167 168

169 Mr. Mawyer replied Rivanna is confident that the new lighting fixtures will meet the Albemarle

170 County ordinance, which limits the light level to 0.5 footcandles at the perimeter of the property.

- He stated they are putting shields on the fixtures and mounting them in the horizontal position to
- have full downlighting. They are hopeful this will resolve any issue with the neighborhood. He
- stated this is a bit subjective as far as resolving neighborhood concerns, but they will be
- 174 compliant with the County requirements while at the same time, meeting their own lighting and
- safety requirements.
- 176

177 Mr. Mawyer stated the aeration basin is like a football field, and it is filled with millions of

- 178 gallons of wastewater all the time. He stated operators are working around those basins 24/7/365, 170 under all conditions including rain and snow, and Rivanna wants to make sure the basing are
- under all conditions including rain and snow, and Rivanna wants to make sure the basins aresafely lighted so that the staff is in a safe work environment.
- 181

182 Mr. Mawyer stated the estimate is three to six months to complete the replacement due to the

- 183 current supply chain challenges of getting fixtures and other construction materials delivered. He
- 184 stated they hope it is towards three months, but it could be longer if the new light fixtures are not

readily available. 185 186 Mr. Pinkston asked if his understanding was correct that Rivanna had turned some lights off. 187 188 189 Mr. Mawyer replied this was correct. He stated they have 20 light poles surrounding the aeration basins, and they have turned about half of them off at night. He stated this will reduce light levels 190 until they can get the correct fixtures installed. 191 192 Mr. Gaffney asked if he was correct in saying that the consultants who chose the lights that were 193 incorrect are paying for the new lighting to correct the issue. 194 195 Mr. Mawyer replied this was correct. 196 197 198 Mr. Gaffney stated he would assume that the consultants are making every possible outcome where they do not have to purchase a third set of lights. 199 200 Mr. Mawyer agreed. He stated the consultants have a lighting model they use that calculates how 201 much light will be on the ground depending on what fixture is used and at what height the fixture 202 is mounted. He stated the model works fine, but the consultants did not set one of the parameters 203 in the model correctly, and this led to the incorrect fixture. He stated that as Mr. Gaffney pointed 204 out, he thinks the consultants will be very careful to run their model correctly this time. 205 206 Ms. Mallek stated she thinks Albemarle County has great experience with its ordinance and if the 207 ordinance is actually followed, and the fully cutoff shielded lights aimed the right way are put in, 208 it will be very dark outside. She stated they have had great experience even with very high poles 209 at softball fields in neighborhoods where she has to get out her flashlight to find her car because 210 it is so dark within 10 feet of the edge of the field. She stated she would expect the same thing to 211 happen here. She stated there may be some elevation difference between where the houses are 212 and where the lights are that will be a problem where hopefully, the consultants will take extra 213 care to think about that. 214 215 Ms. Mallek stated she looked forward to hearing more, and County staff can provide many good 216 217 experiences with the Musco lighting company and others. She stated there are probably multiple providers and that she was sure they could make it work. 218 219 220 Mr. Mawyer thanked Ms. Mallek, adding that Rivanna is working with the County's Zoning staff to review this new fixture. 221 222 223 6. ITEMS FROM THE PUBLIC Mr. Gaffney opened the meeting to the public. He asked speakers to identify their name and 224 where they live, and to keep in mind the three-minute time limit. 225 226 227 Mr. Hull stated there were three people with comments. 228 229 Ms. Kimber Hawkey, a Charlottesville resident, stated she is on the board of her neighborhood association, which is why she was contacted by a few concerned citizens. She stated however, 230

she was speaking as a concerned citizen regarding the problematic way that the Rivanna Water 231 and Sewer Authority has apparently chosen a southern route for the new Central Water Line. 232 233 Ms. Hawkey stated she was a bit surprised as she had heard nothing about it, which is part of the 234 problem as it appears to be a behind-closed-doors decision that was made without any public 235 outreach or involvement. She stated this has been brought to her attention, as well as the fact that 236 it appears that the southern route was chosen when it is a longer, more expensive route, and it 237 does not appear to necessarily benefit the south as the goal appears to link the north side of town 238 and Pantops. She stated the question is why this is being pushed upon the neighbors to the south 239 when it benefits the north of town and the County. 240 241 Ms. Hawkey stated this also appears discriminatory on a lot of grounds. She stated the 242 presentation refers to neighborhoods to the north, but it does not mention the same affected 243 neighborhoods to the south. She stated the south has established neighborhoods, parks, schools, 244 and back access to UVA Hospital that will be disrupted. She stated the two places that the line 245 crosses the tracks to the south are well-trafficked areas, so this would cause significant traffic 246 jams. She stated the project does not seem to coordinate with the reconstruction of the Belmont 247 Bridge, which would seem logical as a cost-saver. 248 249 Ms. Hawkey stated the southern route has more impacted neighborhoods than the alternatives, 250 and it disproportionately impacts vulnerable populations as it passes by some public housing 251 areas. 252 253 Ms. Hawkey stated the big question is why there has been no outreach to the affected neighbors, 254 and the public seems to be excluded from this decision. She asked that this be put forth to the 255 public for discussion and to City Council. 256 257 Ms. Hawkey thanked the Board for their time, adding that she is impressed with all that they do. 258 She stated it is very interesting to hear it all. 259 260 Mr. Bill Emory (1604 East Market Street) stated he lives a half-mile north of the Moores Creek 261 Administration Building. He stated he is proud to live in a community served by an authority that 262 263 does such an excellent job of removing nutrients from the wastewater, and he is delighted with the quality of the drinking water that comes out of his tap. 264 265 Mr. Emory stated the RWSA is a recognized leader in environmental stewardship and, as such, 266 he would like to suggest an area where he feels there is room for improvement at the Moores 267 Creek facility. He stated that back in 2020, he was pleased to hear that the RWSA was 268 redesigning the Moores Creek site lighting. He stated in the same way that Robert Booker and 269 Associates provided the expertise necessary to keep the smell plume onsite, he assumed that the 270 lighting design engineers would keep light onsite and adjust the intensity of that light to be 271 suitable for the tasks at hand. 272 273 Mr. Emory stated that during the night, there is a need to control the light added to the outdoor 274 275 environment. He stated some people want it dark for sleeping, stargazing, or privacy. He stated

when this need for darkness conflicts with other people's need for light, the control of light

- 277 becomes critical.
- 278

279 Mr. Emory stated he is not an engineer, but he recognizes poorly designed lighting when he sees

it. He stated the lighting at Moores Creek produces glare, and the site is, in his opinion, over lit.

He stated he would submit that the lighting redesign at Moores Creek is not up to RWSA's

- standard of environmental leadership, nor to the standard of care they have shown in the past to neighbors.
- 283 1 284

Mr. Emory stated he knows that technology allows for area lighting intensity to be adjusted automatically on an as-needed basis. He stated he wonders if such technology is being employed in the new plan.

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Mr. Emory stated he feels strongly that children living adjacent to Moores Creek and Monticello deserve to see the stars, and people living adjacent to the Moores Creek site should not have to deal with light trespass or sky glow from the facility. He stated it is his hope that RWSA will ask

- Hazen to have their plans reviewed and modified by engineers specializing in light design and
- that Hazen will cover the associated costs. He stated the Authority and rate payer shouldn't have
- to bear the costs of a flawed plan.
- 295

Mr. Emory stated the redesign would feature light pollution sensitivity, addressing light trespass issues while providing for the safety of the mechanics and operators, the security of the facility, best equipment location and function, and economics. He stated such an evaluation should be carried out by a firm whose engineers are members of the Illuminating Engineering Society. He stated he sent the Board an email earlier that day that listed Hazen's 40 specialties, and lighting was not amongst them.

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Mr. Gaffney stated before moving onto the next speaker, he would request that Mr. Emory return after all the lighting has been changed to give the Board feedback as to how it looks once it is done.

306

Ms. Dede Smith (City resident) stated she would speak about the Central Water Line on the 307 308 agenda. She stated the Central Water Line is described as the third of the "three-legged stool" for the Community Water Plan. She stated for those (like herself) who are veterans of the 309 Community Water Plan, the Board would recall that when Rivanna was planning those other two 310 "legs," there were countless community meetings – at least 14 for the choice of where the 311 expanded reservoir would go. She stated now, with this third leg, the golden question is where 312 the 24-inch pipe will go, yet not a single community forum has been organized, and not a single 313 neighborhood association has been contacted. She stated City Council was not even told about 314 the decisions being made that impact their constituents. 315 316

Ms. Smith stated this has been planned entirely behind closed doors in a city that prides itself on community involvement. She stated as far as who lost in that situation, the southern border runs

- through the highest concentration of Black and Brown neighborhoods in Charlottesville, in a city
- that prides itself on equity.
- 321

- Ms. Smith stated what makes this so much worse is the fact that the choice of the Southern
- 323 Corridor makes no sense. She stated it is already well-connected to Observatory. She stated it is
- the only option as well that does not cross the West Main Water Line a link identified by
- Rivanna's own consultants as a key feature in order to get Observatory water to the north side of
- Charlottesville, and which will require a spur up Roosevelt Brown Boulevard as well an
- 327 important corridor to UVA Hospital.
- 328
- Ms. Smith stated the Southern Corridor goes through literally miles of neighborhoods, past two
- schools, two large urban parks, Mt. Zion Baptist Church, First Street and Sixth Street public
- housing, and Friendship Court, yet the Southern Corridor gets virtually nothing from this pipe
- other than the bill. She stated this pipe is being routed south for the benefit of the north side ofCharlottesville and the County.
- 334
- Ms. Smith stated Rivanna presented their plan in a closed-door, private meeting to UVA and other power brokers in September, but when she asked for information in October, she was told
- that she had to wait until it was posted. She stated she asked for these maps two months ago, and
- it appears now that Rivanna did not want the public to see them. She stated even the presentation that day would tell nothing about how the Southern Corridor was chosen, including costs, which
- that day would tell nothing about how the Southern Corridor was chosen, including costs have skyrocketed from \$13 million to more than \$30 million in just the last few months.
- 341

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- Ms. Smith asked the Board to stop and rethink this as it had gone off the rails.
- 344 Mr. Gaffney closed Items from the Public.
- 345346 7. RESPONSES TO PUBLIC COMMENT
- 346 347

7. RESPONSES TO PUBLIC COMMENT

- 348 Mr. Gaffney asked Mr. Mawyer if he had a response.
- 349

Mr. Mawyer stated the speakers were correct that Rivanna had not had a lot of public outreach at that point. He stated the meeting that day with the Board is the first time the Board will have seen the recommended route, and this was to get started with public comment. He stated for the last many months, Rivanna has worked with the City staff and ACSA staff, who have coordinated on their ends. He stated he has had it in his quarterly report to City Council for over a year and, in fact, the week prior, he gave City Council a brief discussion of this project.

- Mr. Mawyer stated they were not saying that today was the end of the opportunity to talk to people about the route. He stated this is a new beginning after Rivanna's staff and consultants
- have been able to come up with what they will call a "recommended route." He stated they are
- planning to talk with the neighborhoods once they have input from the Board.
- 361
- 362 Mr. Mawyer stated there has been a webpage with information on this project since November or
- 363 December to try to get information out to the neighborhoods. He stated he did a presentation
- with the Land Use and Environmental Planning Committee (LUEPC) in September to preview
- the project, as that committee is supposed to preview regional projects to see if there were
- comments from UVA, City, County, and UVA Foundation partners who are all part of the
- 367 committee.

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369	Mr. Mawyer stated they are not trying to keep t	he project under cover, but it is now at a new	
370	phase of communicating what they think the project should be and where it should be located.		
371	He stated Ms. Michelle Simpson would do a go	od job presenting the factors that have been	
372	considered and the communications that have t	aken place to determine the recommended route.	
373	Mr. Mawver stated as Mr. Gaffney noted regar	ling Mr. Emory's comment, the hope is that Mr	
375	Emory would return to take a look after Rivan	a finishes its work with the lighting to see what	
376	he thinks of it at that time.		
377			
378	Mr. Gaffney asked other Board members if the	y wished to comment.	
379 380	Mr. Pinkston stated he assumed that after the n	resentation on the Central Water Line, there	
381	would be opportunity to ask questions.	esentation on the central water Ene, there	
382			
383	Mr. Gaffney replied yes.		
384			
385	Mr. Gaffney closed responses to public comme	nt.	
386	CONSENT ACENDA		
388	8. CONSENT AGENDA		
389	a. Staff Report on Finance		
390			
391	b. Staff Report on Operations		
392			
393	c. Staff Report on Ongoing Projects		
394			
395	d. Staff Report on Wholesale Metering		
396	a Approval of Cost of Living Increase		
398	e. Approval of Cost-of-Living increase		
399	f. Contract Award - Crozet Interceptor S	vstem Odor Control – Evoqua Water	
400	Technologies, LLC		
401	0		
402	g. Biosolids Transportation Contract Aw	ard	
403			
404	h. Construction Change Order Authoriza	tion - Moores Creek AWRRF Lighting	
405	Improvements Project - Pyramid Elect	rical Contractors, LLC	
406			
407	Mr. Gaffney noted that they would pull Item 86	, "Approval of Cost-of-Living Increase," and	
408	move this to Item 9b with the joint session.		
409			
410	Mr. Gaffney asked the Board if there were any	items on the consent agenda they wished to speak	
411	to or ask questions about.		
4⊥∠			

413	Ms. Mallek stated she was trying to find information that she must have missed when she read
414	the packet. She asked if they would be having more presentation that day about the more
415	granular approach on the map, or if that would be at some time in the future, in February. She
416	stated she would like very much to see things in greater detail than she had been able to do on
417	her laptop.
418	
419	Mr. Gaffney asked Ms. Mallek if she was referring to the Central Water Line project.
420	
421	Ms. Mallek replied ves.
422	
423	Mr. Gaffney stated this would be the first item under "Other Business."
424	
425	Mr. O'Connell moved that the Board approve the Consent Agenda, Ms. Hildebrand
426	seconded the motion, which passed unanimously (6-0), (Mr. Sanders was absent.)
427	
428	9. OTHER BUSINESS
429	a Central Water Line Project Michelle Simpson Sr. Civil Engineer
122	a. Commun trater Enter Project, intenente Sumpson, Sri Civit Engineer
430	Ms. Michelle Simpson, Senior Civil Engineer, stated she has been with Rivanna for 17 years and
431	was happy to talk about the Central Water Line project.
432	115
433	Ms. Simpson stated she would start with an overview of the Urban Water System. She stated as
434	shown on the map on the screen, the areas shown in pink are the urban areas served which
435	include the City of Charlottesville as well as the surrounding County areas, which are served by
436	the Albemarle County Service Authority. She stated there are three water treatment plants that
437	serve the area, including North Rivanna Water Treatment Plant, South Rivanna Water Treatment
438	Plant, and Observatory Water Treatment Plant. She stated the combined capacity of all three
439	plants is about 21 MGD.
440	
441	Ms. Simpson provided background information, stating that Rivanna started the Avon to Pantops
442	Water Line Study in 2017, which is a spinoff of the Southern Loop Agreement. She stated that
443	project was put on hold in August of 2018 as Rivanna decided to take a step back and look at a
444	Finished Water Master Plan in a more holistic manner. She stated they started on the Finished
445	Water Master Plan then, with the goal to address operational hydraulic efficiencies in moving
446	water across the distribution system and improve system flexibility. She stated the result of the
447	project was the determination that there was a lack of connectivity across the Urban Service
448	Area, which was primarily caused by gaps in the system.
449	
450	Ms. Simpson presented a map, explaining that the yellow line showed all the large-diameter
451	transmissions mains. She stated in the northern and eastern side of the map, one could see that
452	the South Rivanna Water Treatment Plant is well-connected to all the northern and eastern water
453	lines, including Pantops. She stated on the south and west sides of the City, one can see where
454	the Observatory Water Treatment Plant is well-connected to the large-diameter water mains
455	including the Southern Loop Water Line. She stated one could see a large gap between those
456	vellow lines, along Emmet Street in the City, and in the southern parts of the City, which is a
457	hydraulic gap between all the water transmission lines.
458	

Ms. Simpson stated regarding how to connect all those gaps, Rivanna started with the Finished 459 Water Master Plan at a high level and with a lot of modeling. She stated they looked at trying to 460

- complete those gaps and how it would impact the hydraulic connectivity across the City and in 461
- the Service Authority areas. She stated they looked at a Seminole-Emmet connector, adding that 462
- on the map shown, the blue lines are transmission mains, and the yellow lines are the proposed 463 lines that they modeled. 464
- 465

Ms. Simpson stated Rivanna looked into filling in the gap at Seminole-Emmet. She stated 466

looking at the south side of the City, they looked into filling in a gap on Avon Street (shown in 467

pink). She stated in the bottom-right area, the Avon-to-Pantops Southern Loop Line was 468

modeled, and they also modeled a Central Water Line corridor across the center of the City to fill 469

- in the gaps in the water lines. She stated the modeling showed them that the water line corridor 470
- with the best hydraulic connectivity across the water system was the Central Water Line 471 Corridor.
- 472
- 473

Ms. Simpson stated the Central Water Line Project objectives were to improve flow, pressure, 474 and redundancy, and effectively convey water from the Observatory Water Plant to the City, the 475

- County, and UVA and strengthen the overall Urban Water System. 476
- 477

Ms. Simpson presented a map, stating that the key components that make the Central Water Line 478 work and make it the most efficient for the system is that it connects points A to B to C, where 479 "A" is the Observatory Water Plant, "B" is the end of the urban 24-inch water line in Downtown, 480 and "C" is the end of the Pantops Water Line at the intersection of East High Street and Long 481

Street. 482

483

Ms. Simpson stated once Rivanna had the overall concept for the Central Water Line, and they 484 knew they had to connect A to B to C, they looked at multiple options to accomplish that goal. 485 She stated the first map on the screen showed the Northern Corridor concept, which is named as 486 such as it is effectively north of Main Street, where Main Street is used as the City center. She 487 stated there are some pros to this alternative, which included being able to upgrade the 16-inch 488 cast iron water main that is in Emmet Street. She stated challenges include many narrow and 489 congested neighborhood streets, a lot of traffic downtown, and that it did not provide the best 490 491 hydraulic connectivity within the water distribution system.

492

Ms. Simpson stated the Middle Corridor Concept is called the "middle concept" because it 493 essentially follows Main Street. She stated early on, Rivanna recognized that there was the 494 potential for the Main Street Streetscape project, and this concept would also take advantage of 495 co-locating with other projects happening in the City. She stated the City project was put on 496 497 hold, so it is no longer an advantage of the concept. She stated there are many challenges with this concept because although it is the shortest route, there are many heavily trafficked roads in 498 Downtown, presenting many traffic and construction challenges. 499

500

501 Ms. Simpson stated the Southern Concept would be south of Main Street in the southern part of

- the City. She stated this concept takes advantage of some of the larger right-of-way-width streets 502
- 503 in the City, and it also provides better hydraulic connectivity in the water distribution system
- than any of the other options. She stated that in the southern corridor, they connect to the existing 504

12-inch water lines in Avon Street and 5th Street (shown in the darker green color on the map
that was presented). She stated the concept provides a stronger hydraulic connectivity to the
water distribution piping south of the City, which connects to the Southern Loop Water Line and
the Avon tank.

509

Ms. Simpson stated Rivanna had also originally looked at a railroad concept. She stated this was 510 one of the shortest routes as it followed the railroads from near the Observatory Water Plant all 511 the way to Downtown, to the vicinity of the Belmont Bridge and over to East High Street. She 512 stated in looking at this, there were a lot of challenges with grade due to many slopes around the 513 railroads, and there would be a lot of challenges with permitting this option. She stated for the 514 area in between the first railroad crossing and Downtown, there is a tree buffer in between the 515 homes and the railroad, and because it is such a tight squeeze, a lot of the tree buffer would have 516 to be taken down, so this was another challenge with that option. 517

518

Ms. Simpson stated Rivanna also took a high-level look at a hybrid option (shown in yellow on the map). She stated this option would merge the western half of the project in a northern corridor, going from "A" with a northern corridor route over to "B," then taking a southern route to "C." She stated they also looked at a Route 250 Bypass corridor (shown in orange). She stated both of these routes were very long and would be the costliest, and they also had many impacts, especially on the Route 250 bypass traffic.

525

Ms. Simpson stated ultimately following multiple workshops and lots of coordination with City utilities, traffic engineer, and the Service Authority, the Southern Corridor was, in coordination with Rivanna's engineer, deemed the most viable and was selected for further evaluation. She stated after all the high-level looks at all the options that were reviewed previously, Rivanna decided to embark on the Central Water Line Routing Study in 2021, for which a copy is located

- 531 on Rivanna's website, <u>https://rivanna.org</u>.
- 532

533 Ms. Simpson stated the routing study was a much deeper dive into all of the options that Rivanna 534 evaluated. She stated they looked at a lot of different criteria including constructability, impacts 535 to traffic, parking, sidewalks, neighborhoods, railroad crossings, utility congestion, easement 536 access, construction costs, opportunities to coordinate with other City projects, and permitting. 537

Ms. Simpson stated that as detailed in the routing study, this was broken up into west, middle, and east segments of the City. She pointed out the west segment of the map, noting that Rivanna looked at all the alternatives, and each road was reviewed at a much more granular level. She stated they looked at GIS utility data, and they went out to look at all the roads. She stated they evaluated the widths of all the rights-of-way.

543

Ms. Simpson stated Rivanna looked at the different railroad crossing areas, which there were
multiple areas they looked at for crossing the railroad, including Piedmont Street, Lewis Street,
and Shamrock Road on the west side. She stated the inset charts on the screen demonstrated how
they dissected each segment.

548

549 Ms. Simpson stated there were multiple categories used for the evaluation, and the engineer had 550 a ranking system. She stated for all the highest-ranked options, the engineer developed charts and

- evaluated each option as far as length, cost, impacts, the number of easements that would be needed, and more, which helped the group come up with the recommended alternative.
- 553
- Ms. Simpson stated there are also multiple other projects going on whether there are VDOT or City projects, and a few of those were listed on the slide. She stated they did coordinate
- extensively with the City, and the one project that was able to be incorporated into the Central Water Line Project is the Fact Lick Street Water Main and Streetware Project on the mill be
- 557 Water Line Project is the East High Street Water Main and Streetscape Project, so they will be 558 co-locating water lines with the City on that project.
- 559
- 560 Ms. Simpson stated the Belmont Bridge is under construction now, and the water line will go 561 under the bridge and cross the railroad at a location outside of the right-of-way of the bridge, so 562 there was no impact or no opportunity to coordinate with that project.
- 563
- 564 Ms. Simpson stated they are also coordinating with the Fontaine Streetscape Project, and where 565 Rivanna's water line crosses Fontaine Avenue is being coordinated. She stated these were some 566 of the mutually beneficial projects that were explored.
- 567
- 568 Ms. Simpson presented a map of the overall recommended alignment. She stated she actually 569 had a drone video of the alignment. She stated the streets listed on the slide would be easier to 570 see with the drone video that she would show later.
- 571
- Ms. Simpson stated currently, Rivanna has started design and is starting surveying, with
 underground utility exploration to determine if there are any conflicts with existing utilities. She
 stated this is anticipated over the next three years, and construction is anticipated 2024-2029
 based on current CIP funding. She stated the overall cost is in the range of \$25 million to \$31
 million.
- 577
- 578 Ms. Simpson presented the drone video, prefacing by saying that it would start at the west side of
- 579 the City at Stadium Road. She stated the drone zooms down Stadium Road, turning onto Diadmont Avenue, then ante Drive Avenue, then ante Lewis Street, She stated it then areases
- 580 Piedmont Avenue, then onto Price Avenue, then onto Lewis Street. She stated it then crosses 581 over Fontaine and comes to the end of Lewis Street, at the railroad crossing. She stated they
- haven't quite figured out how they will connect with JPA from this location.
- 583
- Ms. Simpson stated the video shows how JPA is a nice, wide street with bike lanes, parking lanes, sidewalks, and lots of room to work. She stated the water line then turns onto Cleveland Avenue, which has low traffic and wider roads. She stated it then turns onto Cherry Avenue. She noted that Johnson Elementary and Buford Middle Schools are along this stretch, and Rivanna
- noted that Johnson Elementary and Buford Middle Schools are along this stretch, and Rivann
 would be coordinating with the City of Charlottesville Schools as well as the neighborhoods.
- 589
- 590 Ms. Simpson stated the drone then turns onto Roosevelt Brown Boulevard, noting that there are 591 several options about getting around the Hampton Inn, whether they go directly to Main Street or 592 go around the Hampton Inn tie-in to the water line at Main Street.
- 593
- Ms. Simpson stated the drone then goes back to Cherry, with Tonsler Park on the right. She
- stated Rivanna would be coordinating with City Parks. She stated it then goes across Elliott, with
- ⁵⁹⁶ Oakwood Cemetery on the left, turning onto Sixth Street SE.

597 Ms. Simpson noted how the video showed the work on the Belmont Bridge occurring. She stated 598 they would go under the bridge and into some parking lots where there are private businesses. 599 She stated they would cross over to Water Street and/or 10th Street. She stated they have not 600 decided between 10th Street and 11th Street as far as which would be a better option. 601 602 Ms. Simpson stated the drone then goes down East High Street, noting that Rivanna would be 603 co-locating its water line with the City's water line upgrade. She stated the drone then comes to 604 Long Street, and they would be tying in to an existing water pipe at the intersection. 605 606 Ms. Simpson stated this concluded the quick view of the route. She asked if there were any 607 questions. 608 609 610 Mr. Mawyer asked Ms. Simpson if she could explain the cost changes that have evolved through the project. 611 612 Ms. Simpson replied that the original \$13 million was the budget years ago as just a placeholder. 613 She stated when Rivanna started the Avon-to-Pantops Water Line Study in 2017, that cost was 614 really a starting point for the CIP budget. She stated no engineering evaluation had been done so 615 that is where the number came from. 616 617 Mr. Mawyer asked where we originally envisioned a pipe would be located. 618 619 Ms. Simpson replied that the original project was envisioned from the Avon Street tank in the 620 Mill Creek and Monticello High School area, running relatively in the southeast part of the City, 621 skirting along Moores Creek and then crossing the river into the vicinity of State Farm and the 622 hospital, tying into the Pantops Water Line. She stated this was the vision back then and was a 623 completely different project than it is now. 624 625 Mr. Mawyer stated the \$13 million was based on that original alignment and not the current 626 alignment. 627 628 629 Ms. Simpson stated this alignment had not been well defined at that point, and it was really just a placeholder. She stated that over time, as they have looked at various options, they realized that 630 the costs would increase to closer to \$20 million to \$25 million, as they refined a more central 631 corridor. She stated as prices have been increasing for pipe and all the other materials, the cost 632 has been adjusted to around \$31 million. 633 634 635 Mr. Pinkston thanked Ms. Simpson for her presentation. 636 Mr. Pinkston stated he enjoyed the presentation and thought it was good. He stated he couldn't 637 keep up with the drone footage, however. 638 639 Ms. Simpson stated the 20-minute version of the video was much easier to follow. 640 641 Mr. Pinkston stated he supposed there was a link someplace that he watches. He stated as he was 642

projects that talked more about the genesis of it. He mentioned Item 15 in the project report. 644 645 Mr. Pinkston stated this was part of the consent agenda in terms of reporting on projects. 646 647 Ms. Simpson stated this was under Ongoing Projects. 648 649 Mr. Pinkston stated yes. He stated he brought this up because it helps provide some history, 650 particularly for a new person like himself. He asked Ms. Simpson if she could speak about how, 651 in 1987, the County and City developed the Southern Loop Agreement (which laid out two key 652 phases) and what this means. 653 654 Ms. Simpson presented the slide "Finished Water Master Plan Modeling." She stated that in 655 1987, there was the original Southern Loop Agreement that outlined two phases, the Western and 656 Eastern Branches of the Southern Loop Water Line. She stated the Western Branch was built in 657 1988-89. 658 659 Ms. Simpson stated to the left of the Observatory Water Treatment Plant is the Observatory 660 water storage tank. She stated from the Observatory tank, the water line extends to the south and 661 then to the east. She stated this whole section, in addition to where it ends at the Avon tank, was 662 the original Western Branch Phase of the Southern Loop Water Line. 663 664 Ms. Simpson stated the second phase of the Southern Loop Water Line envisioned connecting 665 the Avon tank to the Pantops area. She stated this part of the agreement was revived with the 666 Avon-to-Pantops evaluation that started in 2017. She stated this was the starting point for how 667 they wanted to connect the western part to the eastern part of the water distribution system. She 668 stated the Avon-to-Pantops project was put on hold in 2018, as Rivanna took a more holistic 669 approach in looking at the entire Urban water system in the Finished Water Master Plan. She 670 stated the modeling showed that the original Avon-to-Pantops water line did not provide the 671 desired hydraulic connectivity improvements. 672 673 Mr. Pinkston asked if this was the light green rectangle on the map shown with the Southern 674 675 Loop. 676 Ms. Simpson replied yes. She stated this was part of the Avon-to-Pantops project, but the 677 modeling showed that this did not provide the connectivity that Rivanna was looking for. She 678 stated ultimately, the Central Water Line Corridor connecting the A, B, and C points in the water 679 line is really what provides the hydraulic connectivity that is needed. 680 681 Mr. Pinkston stated he knew a little bit about hydraulics and looking at the whole network, he 682 assumed this was all plugged into some kind of modeling software. He asked what sort of criteria 683 Rivanna is using or if it is able to be explain simply in terms of what makes better hydraulic 684 connectivity versus another. He asked if it includes reliability, time between failure, or pumping 685 losses, and if Ms. Simpson could speak to this at all. 686 687 Ms. Simpson replied that one of the main challenges they had is moving water around the Urban 688

looking in the package that was submitted, there was a notion in the History section of the

She stated the South Rivanna Water Plant on the other leg is well connected to the Pantops tank 692 (shown on the far right of the map). She stated Rivanna has a hard time moving water between 693 the tanks and essentially across the system. 694 695 Ms. Simpson stated that when Rivanna has to move water during a hot day, or on a peak water 696 demand day, or if there is a fire flow, or if a major water line is shut down, or a water line breaks, 697 these gaps in the system make it very challenging to move water between tanks or between the 698 plants. She stated building the Central Water Line provides a lot of extra connectivity between 699 all the major water lines, and it gives Rivanna much more operational flexibility and efficiency 700 so they can move water and make changes as needed. 701 702 Mr. Pinkston stated this was very helpful and interesting. He stated going back to the piece about 703 the history, in 1987, the first phase of this water line project went from the Observatory water 704 storage tank to the Avon water storage tank. 705 706 707 Ms. Simpson stated yes. 708 Mr. Pinkston stated there had been some plan to go all the way around the bottom-righthand side 709 of the City, up to Pantops, and after Rivanna had done further modeling, the consensus of experts 710 and engineers was that it makes more sense to go through the City. 711 712 Ms. Simpson replied yes, to go through the central portion of the City and improve the 713 connectivity of those three main water lines. She stated things changed over time, and from 1987 714 to present, the location of where growth and water demands occurred are different than those 715 envisioned in 1987. 716 717 Mr. Pinkston stated this was very helpful. 718 719 Ms. Mallek stated she appreciated all the detail with the bigger picture, and it was helpful. She 720 721 stated she was reaching back into her memory regarding the Water Supply Plan discussions of 15 to 20 years ago, and she remembered there was a concern for the southern half of the City that 722 there was not sufficient redundancy if there was a failure and that large sections of the City 723 would have no water because there was no way to bring water from some other place. She asked 724 if she had this completely backwards or if this was an actual fact. 725 726 727 Ms. Simpson asked if it was relative to the finished water supply or the raw water supply. 728

water system. She presented a slide, noting that in the big network, the spaghetti-shaped piece on

the lower-left section of the map was the Observatory Water Treatment Plant, Observatory tank,

and the Avon tank. She stated those tanks are well connected to the Observatory Water Plant.

689

690

- Ms. Mallek stated it was the finished water supply that she was asking about and not having taps
 run dry if they had something major break somewhere.
- Ms. Jennifer Whitaker stated Ms. Simpson had done a fantastic job explaining a difficult concept
- of how the system operates and is connected. She stated Ms. Mallek was right that one of the
- concerns during the water supply process is that they have South Rivanna Water Treatment

- Plant, which only has access to water in the South Rivanna Reservoir and Sugar Hollow, and this
 water can really only go in the network of pipes that Ms. Simpson pointed out to the north and to
- the east of the Urban system. She stated they have the Observatory Water Treatment Plant,
- which gets water from Ragged Mountain Reservoir, and it goes into the pipes that go to the southand the west of the Urban system.
- 740
- Ms. Whitaker stated that because of the poor connectivity in the Urban water distribution system, during those stress events (e.g., fires, one plant needs to be shut down for maintenance, a line breaks), it becomes almost impossible to move water from one part of the Urban water system to
- breaks), it becomes almost impossible to move water from one part of the Urban water system to
 the other, which then makes the use of the raw water supply and the treatment capacity that they
 are building right now very limited.
- 746
- Ms. Whitaker stated Rivanna built these beautiful water treatment plants and reservoirs that
 allow their operators to meet lots of different redundant situations, but they are tying their hands
 because our facilities are not well connected. She stated frankly, there is just a tiny network of
 pipes that runs between these different sections. She stated there have been situations where they
 struggled to move water from one side of town to the other on a very hot day or under stress
- 752 conditions.
- 753

Ms. Whitaker stated that by building this pipe, it not only improves finished water connectivity,
but it allows Rivanna to fully utilize the treatment plants in all situations, and it allows them to
fully utilize the raw water from reservoirs in different situations as well. She stated it frees their
Operations staff to be able to provide the best water under many, many more conditions without
having to go to extreme measures. She stated she hoped this answered the question.

759

Ms. Mallek thanked Ms. Whitaker and stated that this helped to straighten it out in her mind. She
stated it sounded like there were benefits to everyone who is on the ground, though there had
been a concern about why they were getting the pipe if they were not going to get any benefit.
She stated it sounded like there is considerable benefit for the residents, however, in that whole
section who might have nothing.

764 765

Mr. O'Connell asked Ms. Whitaker if she could talk about how, since they have enlarged the
 Ragged Mountain Reservoir that serves the Observatory Plant, the expansion is going on and
 how the new Central Water Line will take advantage of that expansion as otherwise, it would
 not.

- 770
- 771 Ms. Whitaker replied that currently, the pipes that are around Observatory Water Treatment Plant have a hydraulic limitation on how much water they can convey out of the Observatory 772 Water Treatment Plant. She stated Rivanna built an expanded Ragged Mountain Reservoir, and 773 they are in the process of designing and building a new piping connection to the Observatory 774 Water Treatment Plant so that they will be able to bring 10 MGD from the reservoir to the plant. 775 776 She stated the treatment plant is being expanded, so they can increase from 7 MGD now to 10 MGD in the future and then, this Central water pipe will allow them to fully utilize the 10 MGD 777 into the system. She stated without it, they will be limited on how much water they would be 778 779 able to get out of the plant and into the distribution system at any given time.
- 780

786 Ms. Whitaker replied this was correct. She stated it will allow Rivanna to use the full capacity of 787 both water treatment plants, meaning that under stress events, they will be able to use the full 788 hydraulic capacity at all times throughout the Urban Water System. 789 790 791 Mr. Gaffney asked Ms. Simpson and Ms. Hildebrand if they could provide more detail as to how the City has participated in the studies and the evolution of what is being presented to the Board. 792 793 794 Ms. Hildebrand replied that it was herself and the utilities engineering manager who participated in multiple meetings with ACSA staff and engineers from the beginning of the project 795 (conception) to where they are today, and to give input. She stated as they were looking through 796 alternative routes, they included input from the City's traffic engineer to have him ensure what 797 they were seeing was accurate, as he has more insight into streets and roadways as they look at it 798 from a utilities standpoint. She stated the traffic engineer was brought in, as the alternatives were 799 800 developed, to give input on the impact of this project on traffic in the various corridors under consideration. 801 802 Ms. Hildebrand stated what they discovered is that no route is ideal, but they had to keep in mind 803 what they were trying to achieve with hydraulic connectivity to the south, trying to connect all 804 the lines that Rivanna has currently through the City. She stated this proved to be somewhat 805 challenging when looking at the various routes and what route achieves the greatest benefit. 806 807 808 Mr. Gaffney asked if there were other comments or questions from the Board. 809 Mr. O'Connell asked Mr. Mawyer about next steps. 810 811 Mr. Mawyer replied that Rivanna was providing the presentation that day, which was the 812 813 Board's first view of the recommended route. He stated if the Board is comfortable with this route, then staff's intent would be to continue with the more detailed design and the sub-surface 814 investigations to determine where existing utilities are underground so that they can get a better 815 idea of where exactly the new pipe might be located. 816 817 Mr. Mawyer stated they have identified the street, with Cherry Avenue as an example, but the 818 question is where the pipe will go in Cherry Avenue (the left side, right side, or down the 819 middle), which is somewhat dependent on the conflicts they determine from the sub-surface 820 investigation. He stated there could also be conflicts at the surface from structures which might 821 be in the way. 822 823

Ms. Whitaker stated if one were to envision opening up the pipe to allow+ water to escape,

the whole system would be improved and not just the northern part or some other section.

Mr. O'Connell stated this creates improvements for both City and County customers. He asked if

currently, there is a hydraulic bottleneck at the Observatory Treatment Plant.

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782 783

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- Mr. Mawyer stated this was staff's plan, and the hope was that if the Board is comfortable with what was presented that day, staff would continue with this investigation and the more detailed
- design. He stated they plan to get out to the neighborhoods along the route and give them

- information to let them know what they are doing, but as their schedule indicates, they are 827 several years away from starting construction. He stated the next steps are to get the Board's 828 concurrence, and if Mr. Pinkston has comment or the Council would like Rivanna to do any 829 further neighborhood informational presentations, Rivanna would be glad to. 830 831 Mr. Pinkston asked the team if they could speak more about the Preston Avenue route as 832 opposed to the Cherry Avenue route, in terms of high-level reasons why the Preston Avenue 833 route (going north up Emmet, then catching Grady and taking Preston) and being sensitive to the 834 issue of where the pipe is being routed in historically impacted neighborhoods. 835 836 Mr. Pinkston stated that as he looked at the drone footage and as he is familiar with those roads, 837 Cherry Avenue certainly has more space to work in. He asked if this was one of the main 838 criterion Rivanna was using when they thought about cost and how they will build this. 839 840 Mr. Mawyer replied yes. 841 842 Mr. Pinkston stated he was just trying to get a sense in terms of one of the challenges that was 843 noted, which is the narrow and congested neighborhood streets and traffic. He stated to Ms. 844 Hildebrand that it sounded like when the traffic engineer looked at this, they provided some input 845 as to which would be easier to actually do the install. 846 847 Mr. Mawyer stated this was correct – that it was about constructability and to be able to work on 848 the pipeline in the street while they maintain traffic. He stated there has to be a certain amount of 849 width in the street to be able to complete a job in this manner. He stated they like to avoid total 850 shutdowns of a street where they can. He added this is a five-mile-long piping project, but they 851 will clearly shut down just small segments of that length as they complete it, and the contractor 852 would work through it in a phased manner. He stated they would not have all five miles impacted 853 at the same time. 854 855 Mr. Mawyer stated constructability, narrow streets, and the impact on neighborhoods are issues 856 that the traffic engineer and Ms. Hildebrand, along with City and Rivanna's staff are all sensitive 857 858 to. 859 Ms. Simpson reiterated that this northern corridor does not have strong connectivity to the 860 southern part of the City where the Southern Loop is located. She stated the map showed south 861 of Main Street in darker green lines, which are all larger City lines that have stronger 862 connectivity down to the Southern Loop line and to the Avon tank. She stated the Northern 863 Corridor does not provide that benefit of strong connectivity to the Avon tank. 864 865 Mr. Pinkston stated to recap, the route that Rivanna, experts, consultants, and engineers is 866 suggesting is the one that they feel will have the most net benefit on connectivity of the options 867 presented. He asked if this was correct. 868 869 Ms. Simpson replied yes. 870 871
- 872 Mr. Mawyer stated as Ms. Hildebrand mentioned, it merges different criteria of connectivity,

- constructability, impact to traffic and the neighborhoods, and comes up with this as thecollective, integrated, recommended route.
- 875

Mr. Pinkston stated they looked at the overall Central Water Line concept compared to the other ones, and he asked now that they are drilling into northern versus southern, if the sense was still that the route being taken gives them the best overall flexibility with the water system.

879

Mr. Mawyer replied yes. He stated to Mr. Gaffney's question, if the Board is satisfied with this information and the recommended route, staff could move forward. He stated if the Board has suggestions or other communications that staff could address, they would be glad to do so. He stated they have all of this information on their webpage, and they will put the drone videos on the webpage. He stated they welcome comments from the public or others.

885

Mr. Pinkston asked Ms. Hildebrand what the normal process is in terms of notifying the publicand getting input.

888

Ms. Hildebrand replied that this is a rather big project. She stated when they do smaller

replacement projects, they reach out directly to the neighborhood that is affected to make sure

residents are all informed and their questions are answered. She stated this project is different in

that it affects multiple neighborhoods, but she would suggest that they get with those

neighborhood associations that are affected by the route to make sure they understand the project

- and the complexity and to give some input.
- Mr. Pinkston asked if when RWSA does projects within the City, they liaise with City staff to do the management of it.
- 898

895

Mr. Mawyer replied yes. He stated they start with City Council, and they partner at

neighborhood meetings with City staff. He stated this is so the residents feel they are talkingdirectly to their representatives as well as to Rivanna staff.

902

Ms. Hildebrand stated she had envisioned they would partner on this, even though Rivanna is
taking the lead on the management of this project.

905

Mr. Mawyer added that they had talked about the 1987 Southern Loop Agreement, and they are currently working on an amendment to that agreement that will say they are no longer going to take the pipe from Avon and around the south side to Pantops but rather, they are going through the Central Corridor. He stated they will amend the agreement and the funding formula for the project. He stated he has been working with Mr. O'Connell and Ms. Hildebrand on this for a while.

912

913 Mr. Gaffney asked Mr. Mawyer what he was looking to the Board for at that time.

914

915 Mr. Mawyer replied that if the Board did not have suggestions for changes, Rivanna would take

this as an endorsement of the recommended route and move forward to coordinate with Ms.

917 Hildebrand on neighborhood meetings so they can start getting the information out more broadly

to residents who may feel like they do not know about the project. He stated this would be the

919	plan.
920	
921	Ms. Mallek stated from what she knows now and what they know now, this seemed like a good
922	time to share this level of information with the impacted neighborhoods in ways that were
923	described. She stated as they discover more detail as they do these next phases of investigations,
924	they may learn things that they may not want to know but will have to deal with. She stated she
925	was okay with where they were and the plan to be able to share the information they have now.
926	She stated there is nothing scarier to the public than having big, empty places on the map and not
927	having information to share with them. She stated this presentation helped the Board to
928	understand what was going on.
929	
930	Mr. O'Connell stated to Mr. Mawyer that it seemed like he had a good set of next steps.
931	
932	Mr. Mawyer stated this was how they would proceed.
933	
934	Mr. Pinkston asked Mr. Gaffney if there was a need for a vote.
935	
936	Mr. Gaffney replied that there did not appear to be. He asked Ms. Long if there was any reason
937	they would need to vote on this. He stated it is a project that the Board approved in 2017, and he
938	believed this was taking that to the next step to go to the neighborhoods and move forward with
939	some of the engineering.
940	
941	Ms. Long replied that her opinion was that no vote was needed, and she would note that on the
942	agenda, the item was advertised as a presentation as opposed to listed for action. She stated she
943	would not recommend a vote, but this could certainly be put on a future agenda if the Board
944	wished to do so, to allow more time for discussion or public input. She stated given it has already
945	been approved by the Board, however, this was not necessary.
946	
947	Mr. Mawyer stated Rivanna would talk with the neighborhoods, then come back to the Board
948	with an update in the future, once ready.
949	
950	Mr. Gaffney stated this was a great idea. He asked to bring the RSWA Board of Directors back
951	to order so they could have a joint session.
952	
953	(reconvene RSWA for a JOINT SESSION with the RWSA)
954	
955	At 3:55 p.m., Mr. Pinkston moved to reconvene the Rivanna Solid Waste Authority Board.
956	Mr. Andrews seconded the motion, which passed unanimously (6-0). (Mr. Sanders was
957	absent.)
958	
959	Mr. Mawyer asked that the Strategic Plan Update presentation be given first.
960	
961	c. Presentation: Strategic Plan Update; Deborah Anama, Executive Assistant
962	
963	Ms. Deborah Anama stated she would give a brief Strategic Plan update. She stated Rivanna is
964	currently in Year 4 of their FY 2018-2023 Strategic Plan, which is their guiding document. She
965	stated the Rivanna Water and Sewer Authority and Solid Waste Authority are committed to the

following values: integrity, teamwork, respect, and quality. She stated their vision is to serve the 966 community and be a recognized leader in environmental stewardship by providing exceptional 967 water and solid waste services. She stated their mission has remained the same. 968 969 970 Ms. Anama stated there are six goal teams: Workforce Development, Operational Optimization, Communication and Collaboration, Environmental Stewardship, Solid Waste Services, and 971 Infrastructure and Master Planning. 972 973 Ms. Anama stated the goal teams are about two-thirds of the way through the fourth year, and the 974 strategies being worked on at the moment include Workforce Development is conducting 975 training needs assessments and enhancing training programs. She stated they have expanded 976 leadership coaching programs at PVCC as well as licensing through the state with the 977 apprenticeship programs. She stated the next steps include working with PVCC for additional 978 leadership training and also offering a CDL training at PVCC. 979 980 Ms. Anama stated Workforce Development has also completed a compensation and 981 classification study, which was completed in December of 2021. She stated they also reviewed 982 benefit offerings during the peer survey. She stated the next steps are to adopt the 983 recommendations from the study, issue a proposal for the healthcare offerings, and review 984 985 performance evaluations. 986 Ms. Anama stated the Operational Optimization goal team is continually evaluating, prioritizing, 987 and improving key business and operational processes, including a sampling program for better 988 data to trend and analyze the GAC backwash project. She stated polymer dosing has been 989 installed and is ready to be tested. She stated there is a good deal of progress on the lab 990 certification for TKN on the SEAL instrument, and there is improved oxygen control in the 991 Scottsville Wastewater Plant. 992 993 Ms. Anama stated the next steps would be to work with assessing the lab results and improving 994 with the GAC backwash, as well as continuing to work with the instruments and polymer dosing. 995 996 Ms. Anama stated an additional strategy that the Operational Optimization goal team is working 997 998 on is always to protect the workforce and the public through continually growing Rivanna's culture of safety. She stated safety upgrades have been made at the Glenmore influent pump, 999 which increase air exchanges and make it safer for staff to work. She stated security cameras 1000 have been added to Observatory, and there will be more cameras added to South Rivanna. 1001 1002 Ms. Anama stated the team continues to work on safety and complete training, and they review 1003 1004 the safety manual annually. 1005 1006 Ms. Anama stated that the Communication and Collaboration goal team has been working on creating and maintaining internal communications, as well as switching and migrating 1007 documents from Laserfiche to DocLink. She stated they are also publishing a newsletter and will 1008 be continuing working on implementing DocLink. 1009 1010 Ms. Anama stated an additional strategy for the Communication and Collaboration goal team is 1011

creating and implementing a comprehensive public outreach plan. She stated they created project-specific webpages and community events such as "Imagine a Day Without Water" with 1013 the City and the ACSA. She stated they will continue to plan and schedule project and facility 1014 videos, and they will continue maintenance of the website and social media to share information 1015 with the public. 1016 1017 Ms. Anama stated a third strategy with the Communication and Collaboration team is to enhance 1018 internal and external communication and have conducted virtual facility tours of water treatment 1019 plants. She stated they will continue to livestream the Board meetings. She stated they have 1020 researched continuing to be able to offer the meetings virtually once they resume in person. 1021 1022 Ms. Anama stated the next steps are to continue to work with peer work groups with the City, the 1023 County, and Public Works. 1024 1025 Ms. Anama stated the Environmental Stewardship goal team has three strategies they are 1026 currently working on. She stated they are increasing internal environmental engagement. She 1027 stated staff participated in United Way Day of Caring, and they continue to work with the 1028 Rivanna Review newsletter. She stated they also developed an internal sustainability working 1029 group. She stated the next steps are to continue to look at opportunities such as stream cleanups 1030 or tree plantings. 1031 1032 Ms. Anama stated providing regional leadership in environmental stewardship is another strategy 1033 the team is working toward. She stated they are continuing stormwater partnership with the 1034 James River Consortium, as well as a tour of the wetland mitigation site with James River. She 1035 stated they participated in the County stream study and climate action study. She stated the team 1036 will continue to look for opportunities for collaboration. 1037 1038 1039 Ms. Anama stated another strategy is that the team is evaluating potential opportunities for additional environmental activities with Rivanna Water and Sewer facilities. She stated they 1040 continue to develop the Buck Mountain Property Management Plan and coordinate with the 1041 neighbors. She stated as next steps, they are evaluating the potential for silviculture and solar at 1042 Buck Mountain, and they are evaluating the potential for solar at the Rivanna Water and Sewer 1043 1044 facilities. 1045 Ms. Anama stated Solid Waste Services completed a customer appreciation event at Ivy MUC, 1046 increased public awareness in working toward establishing translations on signs in Spanish for 1047 Spanish-speaking customers. She stated they also added a visual buffer in the entryway at Ivy 1048 and started a new tactic to evaluate the service fee structure. She stated these are the tactics along 1049 1050 the strategies of the community needs and service levels in partnership with UVA, local governments, and best-in-practice service practices. 1051 1052 Ms. Anama stated other activities with Solid Waste Services include working with Nelson 1053 County on glass collection and working with the City and County on the vegetative waste service 1054 fee that was discussed earlier. She stated they increased the permitted tonnage and operating 1055 1056 hours at Ivy. 1057

- 1058 Ms. Anama stated next steps are continuing the designs for Keene Convenience Center and the 1059 new paper sort facility, expanding the vegetative waste collection and processing, and 1060 developing the Large Project Clean Fill program.
- 1061

Ms. Anama stated Infrastructure and Planning is the sixth goal team. She stated they are implementing an authority-wide asset management program. She stated the Technical Asset Management Plan is complete, and the team is working on implementing updates to the facility geodatabase and completion of workshops associated with the software integration. She stated they have begun Phase 3 to complete the asset registry for use in Cityworks.

- 1067
- Ms. Anama stated the next steps will be to continue with Cityworks and anticipate going live in the summer. She stated they would take the results of the asset management plan and review it against the Strategic Asset Management Plan.
- 1071

Ms. Anama stated another team strategy is that they are working on developing and maintaining
long-term master plans for all critical assets. She stated they have completed the analysis at
Moores Creek and performed follow-up for analysis there for more recent flow data collected,

and they are continuing with the master plan needs at Glenmore and at the Stone RobinsonWastewater Treatment Plant.

1077
1078 Ms. Anama stated the next steps would be to finalize the master plan for Glenmore and Stone
1079 Robinson, perform an amendment to the Moores Creek Master Plan, and update the matrix
1080 gathered from the annual gap assessment.

1081

1083

1086

1082 Ms. Anama asked the Board if they had any questions.

1084 Mr. Gaffney stated they are about to complete the five-year Strategic Plan period and asked if 1085 they are doing a second five years.

Mr. Mawyer replied yes. He stated they will start shortly with another RFP to get a consultant to facilitate the process for Rivanna, with the intent that by the end of the calendar year, they would have the second five-year Strategic Plan in place. He stated they started around May of 2018, so they may be a little ahead. He stated in the present calendar year, they plan to get a consultant to create the second five years of the Strategic Plan.

1091

Ms. Mallek stated Ms. Anama briefly mentioned the work with Nelson County on glass
collection. She asked if there was a brief update or if the Board would be getting one in another
month or so.

1096

1097 Mr. Mawyer replied that Mr. McKalips has been coordinating with Greene, Nelson, and others to 1098 create enough volume to have a successful glass collection program. He stated they have a 1099 vendor who picks up glass at Ivy, but they could have a better service and program if they had 1100 more volume. He stated Mr. McKalips is working on that, and they will have a more detailed 1101 update likely in March.

1103b.Presentation: Classification and Compensation Study; Lonnie Wood, Director of Finance1104& Administration and Betsy Nemeth, Human Resources Manager

Mr. Lonnie Wood, Director of Finance & Administration, stated that every three to five years,
the authorities conduct a compensation study, which Ms. Betsy Nemeth (HR Manager) would
give the Board a brief presentation on how that was conducted and the results of it.

Mr. Wood stated February of 2018 was the last time they had presented to the Board and they had approved the recommendations of a similar compensation study, making this about four years ago. He stated this is a management best practice that keeps the compensation plan competitive, updated, and modern. He stated it meets Rivanna's strategic goals of retaining and attracting highly skilled workers.

Mr. Wood stated the recommendations resulting from this agenda item do not increase employee pay, with the exception of maybe two or three employees who are brushing against the bottom of the pay scale. He stated it does not have a budget impact this year or next year. He stated it is a separate item from the cost-of-living increase that Mr. Mawyer would review next.

1119

1108

Mr. Wood stated Rivanna views this as a strategic, big-picture item as opposed to a tactical issue, where the cost-of-living increase was to deal with a specific issue. He asked Ms. Nemeth to give her presentation.

1123

Ms. Betsy Nemeth, Human Resources Manager for the Rivanna Authorities, stated this was
under the Workforce Development Strategic Plan goal of attracting, developing, and maintaining
a professional, highly skilled, dedicated, and versatile team.

1127

1128 Ms. Nemeth stated the study began in May of 2021, and Rivanna selected Evergreen Solutions,

1129 LLC to do a classification and compensation for both authorities (Water & Sewer and Solid Wate) She stated the cools they had were to review the surrent classification and compensation

1130 Waste). She stated the goals they had were to review the current classification and compensation 1131 system to ensure internal equity, to do a survey of local peers and utility peer organizations to

1132 ensure external equity, and to maintain competitiveness in the local labor marketplace.

1133

Ms. Nemeth stated the consultants' assessment of current conditions resulted in points including that Rivanna currently has an open-range pay plan with 25 pay grades spanning from Grade 10 to Grade 250. She stated the difference between the minimum and maximum for each individual grade is 66%, and there is a 5% difference between each pay grade. She stated 60% of Rivanna's employees' salaries currently fall below the midpoint of their pay grades.

1139

Ms. Nemeth stated in August, there was a market survey. She stated listed on the screen were the organizations that surveys were sent out to. She stated those in blue on the slide were the ones who actually answered and sent data back to Rivanna, so there were four organizations that chose not to participate.

1144

1145 Ms. Nemeth presented the survey results. She stated Rivanna's pay scale is 4.4% below market

1146 minimums, with minimums being entry-level salaries. She stated they are 3.6% below market 1147 midpoints, with midpoints being what people are paid who are fully proficient at their job. She

stated it is 3.8% below the market maximum, with maximums being those paid to people with 1148 long tenure, who have a lot of experience and are highly performing employees. She stated they 1149 did add to the survey a survey on benefits, and to summarize, Rivanna is competitive with their 1150 peers. She stated there were nine peers who responded to this part of the survey. 1151 1152 Ms. Nemeth presented the recommendations from Evergreen. She stated one is to increase the 1153 current pay scale by 4% to help with hiring and retention of current employees. She stated there 1154 are three employees in Water & Sewer who would fall below the minimum if they did this, so 1155 the annual costs for this would be about \$6,600. She stated there is no cost to the Solid Waste 1156 Authority. 1157 1158 Ms. Nemeth stated another recommendation is to remove grades 10 and 20 from the pay scale. 1159 She stated one of the requests made by Rivanna was to get them to where they have a minimum 1160 wage of \$15 per hour, or a living wage, and this was deemed the best way to do it. 1161 1162 Ms. Nemeth stated the third recommendation is to regrade certain positions to provide internal 1163 and external equity for all water and wastewater operators, all mechanics, and Solid Waste 1164 drivers and equipment drivers (which are somewhat challenging to recruit for). 1165 1166 Ms. Nemeth stated the next slide showed the current pay scale on the left, and the recommended 1167 pay scale on the right. She noted that grades 10 and 20 were no longer on the recommended pay 1168 scale, which gets them to a minimum wage of \$15 per hour. 1169 1170 Ms. Nemeth presented the specific positions where pay grades have changed. She pointed out 1171 that because they eliminated grades 10 and 20, they had to push some positions up to grade 30, 1172 which caused them to have to push a few other positions for internal equity based on complexity 1173 of the position and the job. 1174 1175 Ms. Nemeth stated staff was asking the Board to approve the recommended pay scale with the 1176 4% increase and the pay grade changes to the specific positions that were listed, to be effective in 1177 February. 1178 1179 1180 Ms. Nemeth asked if there were any questions. 1181 Mr. Gaffney asked if the only change in cost to the Rivanna Authorities between now and the 1182 end of the fiscal year was \$6,600. 1183 1184 Ms. Nemeth replied that this was actually a complete 12-month change, so it was about \$3,300. 1185 She stated that by changing the pay scale, this is the only cost that would be incurred. ' 1186 1187 Mr. Pinkston asked to again see the list of various positions. He asked if this was what staff was 1188 asking specifically for the Board's approval on. 1189 1190 Ms. Nemeth replied it was for this slide and the one previous to it, to move the entire pay scale 1191 1192 4% and to regrade the specific positions. She stated on the left-hand side was the current pay scale, and the one that was recommended by Evergreen was the one on the right. She stated staff 1193

- 1194 was asking for approval for the recommended pay scale, as well as for the reslotting of the pay 1195 grades for the specific positions.
- 1196
- Mr. Pinkston asked if it were premature to ask about what sorts of impacts this would have onrates at some point.
- 1199
- 1200 Mr. Wood replied that it would not have any impact on the rate. He stated it would not this year 1201 nor the next year.
- 1202

Mr. Gaffney stated he saw that both Albemarle County and Charlottesville were respondents to the survey. He asked how this compares with similar jobs in the City and County, and if they are still comparable to those. He stated he knows they have always strived over many years for pay grades, pay scales, and salaries to be equivalent to the City and County so that Rivanna employees are not looking at other jobs within the community that are similar but pay more.

- Mr. Wood replied that it was probably a mixture of both because the City and County do not have water or wastewater operators, so there are no comparables to that. He stated some positions such as accountants, accounting techs, administrative assistants, and GIS coordinators will sometimes be a little higher and other times be a little lower. He stated the results of the
- survey are averages, so it is not comparing Rivanna just to the four respondents, but to the entire group.
- 1215
- Mr. Andrews stated he wanted to follow up on Mr. Pinkston's question and asked for an example of what this means, choosing a category in the range of where there are people who are currently in the scale and what it means for a director going from a grade 230 to a grade 240 in the future.
- Ms. Nemeth replied that this essentially moves up the highest level that the person can go, and it also moves up the lowest so that they cannot hire below it. She stated there is the Director of Solid Waste at grade 230, and based on the survey and on internal equity (as there are three other directors who are at grade 250), the thought process is that this gives Rivanna a little more from a pay perspective in terms of internal equity around this position as well as around the complexity of work that is done. She stated it does not affect the director's actual salary and if this is approved, he does not get a pay raise because of this.
- Mr. Wood stated this proposal shifts the pay grade. He stated it does not move as far as pay, but it gives the person more room to grow because the job has gotten more complex. He stated that between 2018 and present, Rivanna has rewritten quite a few job descriptions, so part of the consultant's job is to say that a job description changed from the last time, and 15 more people have been added to the director's organizational structure. He stated it looks at the complexity of each position and how it fits on the pay scale. He stated all of these adjustments are addressing this issue that the consultant came up with.
- 1235
- 1236 Mr. Pinkston asked if they could return to the slide that had the bottom-line percentages on it.
- Mr. O'Connell asked if the point of this was if they had a vacancy, they are competitive in the marketplace to attract someone who has the skills to be able to fill that job, plus maintaining

1240	current employees.
1241	
1242	Ms. Nemeth replied that it is twofold: to attract people to fill the positions they have, and to
1243	retain the experienced people that they currently have. She stated in a more competitive market
1244	than she has seen in a long time, this is to bring talent into the organization as well.
1245	
1246	Mr. Andrews asked if he was correct that this was last adjusted in 2018.
1247	
1248	Ms. Nemeth replied that the last time they readiusted positions through a survey was in February
1249	of 2018. She stated they have had some adjustments by the Board in subsequent years based on
1250	the CPI-U and inflation rate
1251	
1252	Mr. Mawyer stated if the Board were ready two separate motions would be needed – one from
1253	the Solid Waste Board and one from the Water and Sewer Board – to take action on this
1254	recommendation
1255	
1255	Mr. Gaffney asked if there were other comments or questions from the Board
1257	wir. Garmey asked if there were other comments of questions from the board.
1250	Mr. O'Connell stated he believed this was a thorough thoughtful proposal and it does not have a
1250	budgetary impact. He stated they must stay competitive in the marketplace
1259	budgetary impact. The stated they must stay competitive in the marketplace.
1261	Mr. Richardson moved that the Rivanna Solid Waste Authority Roard accent the
1262	recommendations as outlined in the market survey results that were completed and
1263	provided Mr Andrews seconded the motion which passed upanimously (6.0) (Mr
1203	Sanders was absent)
1265	Sanders was absent.)
1205	Mr. O'Connell moved that the Rivenne Water & Sewer Authority Reard enprove the
1267	recommended new scale and position changes that would be affective February 1, 2022. Ms
1207	Mellek seconded the motion which passed unanimously (6.0) (Mr. Sanders was absort)
1200	Manek seconded the motion, which passed unanimously (0-0). (MI. Sanders was absent.)
1209	10 OTHED ITEMS EDOM DOADD/STAEE NOT ON ACENDA
1270	a Approval of Cost of Living Increase (from Consent Agenda)
1271	a. Approval of Cost-of-Living Increase (from Consent Agenaa)
1072	Mr. Monwar stated there was a fair amount of discussion over the past weak or so about this and
1074	as they were monitoring the market and changes in compensation difficulties recruiting and the
1075	as they were monitoring the market and changes in compensation, difficulties fectuating, and the
12/5	they they at a construction of the twith the consumer price index at the highest it has been in 40
1276	they thought conectively that with the consumer price index at the ingliest it has been in 40
12//	ware at 70% from December of 2020 to December of 2021, that this was a reasonable proposal to
1.1.7.0	years, at 7% from December of 2020 to December of 2021, that this was a reasonable proposal to
12/0	years, at 7% from December of 2020 to December of 2021, that this was a reasonable proposal to bring to the Board to give a 6% cost of living increase, (COLA) to Water & Sewer and Solid
1278	years, at 7% from December of 2020 to December of 2021, that this was a reasonable proposal to bring to the Board to give a 6% cost of living increase, (COLA) to Water & Sewer and Solid Waste staff.
1278 1279 1280	years, at 7% from December of 2020 to December of 2021, that this was a reasonable proposal to bring to the Board to give a 6% cost of living increase, (COLA) to Water & Sewer and Solid Waste staff.
1278 1279 1280 1281	years, at 7% from December of 2020 to December of 2021, that this was a reasonable proposal to bring to the Board to give a 6% cost of living increase, (COLA) to Water & Sewer and Solid Waste staff.Mr. Mawyer stated they did look locally, and the City approved a similar 6% increase plus a \$2,500 here a family stated the Country proved a similar 6% increase plus a
1278 1279 1280 1281 1282	years, at 7% from December of 2020 to December of 2021, that this was a reasonable proposal to bring to the Board to give a 6% cost of living increase, (COLA) to Water & Sewer and Solid Waste staff.Mr. Mawyer stated they did look locally, and the City approved a similar 6% increase plus a \$3,500 bonus for its staff in January. He stated the County approved a 6% increase for its staff in December 14 stated are of Biverney's examplifying the August of Several Action is the base of the August of Several Action in the Several Action is staff in the Several Action in the Seve
1278 1279 1280 1281 1282 1283	 years, at 7% from December of 2020 to December of 2021, that this was a reasonable proposal to bring to the Board to give a 6% cost of living increase, (COLA) to Water & Sewer and Solid Waste staff. Mr. Mawyer stated they did look locally, and the City approved a similar 6% increase plus a \$3,500 bonus for its staff in January. He stated the County approved a 6% increase for its staff in December. He stated one of Rivanna's competitors, the Augusta Service Authority, had a 5%
1278 1279 1280 1281 1282 1283 1284	 years, at 7% from December of 2020 to December of 2021, that this was a reasonable proposal to bring to the Board to give a 6% cost of living increase, (COLA) to Water & Sewer and Solid Waste staff. Mr. Mawyer stated they did look locally, and the City approved a similar 6% increase plus a \$3,500 bonus for its staff in January. He stated the County approved a 6% increase for its staff in December. He stated one of Rivanna's competitors, the Augusta Service Authority, had a 5% increase for its utility staff in December. He stated the Western Virginia Service Authority had a

- 1286 recommendation.
- 1287

Mr. Mawyer stated Rivanna has committed that there will be no cost increase to the City, County, or Service Authority in this current year. He stated they have a 20% turnover rate in the Solid Waste Authority and an 11% turnover rate in the Water & Sewer Authority, which is for only half of the fiscal year, so these percentages will likely rise by July. He stated they have vacancy savings that they would use to offset the increase for the rest of this fiscal year.

1293

Mr. Mawyer stated Rivanna has estimated that the cost to the Solid Waste Authority in FY 23 would be about \$69,000 of its total. He stated they will have about a \$6 million budget in Solid Waste, of which the County's allocation is estimated to currently be about \$3 million and the City's allocation estimated to be about \$550,000. He stated they estimate that this COLA will increase the County's allocation by \$59,000 and the City's allocation by \$10,000.

1299

Mr. Mawyer stated they estimate that in FY 23, the 6% salary increase will increase the estimated charges to the City by about 1.2%, from 5.6% to 6.8% which, in his estimation, would add about \$1 per month to the City's water and sewer bill.

1303

Mr. Mawyer stated they have estimated that charges to the Service Authority will increase also
by 1.2%, from 8.3% to 9.5%, which Rivanna estimates would increase the Service Authority's
retail bill by about 65 cents per month, per account.

1307

Mr. Mawyer stated he also understands that the Albemarle County School Board has decided to
approve a 4% increase in March. He stated there are many different data points. He stated the
Social Security Administration approved a 5.99% increase for all retirees in January.

1311

Mr. Mawyer stated Rivanna does not like the concept of adding to their budgets and impacting
their three customers (County, City and Service Authority) midyear, but with the highest
inflation rate in 40 years, and in following the lead of their local partners as well as other

regional utilities in the area, they felt that this was an appropriate recommendation to ask the Board to consider.

1316 1317

1318 Mr. Mawyer offered to answer any questions.

Ms. Mallek stated she was of two minds, with questions for each. She stated she would like to
have more detail about the specific workforce issues. She stated she does understand completely
that turnover is crippling, and hiring and training is expensive, so avoiding this (albeit at some
cost) is important. She stated without their skilled workforce, their wonderful water is in
jeopardy.

1325

Ms. Mallek stated the other side of her says that all of her training in 20 years has been even from ancient trainers, including a 90-year-old finance director who worked in the County in the 50s and 60s and summoned her to his kitchen after she was elected in 2007 and laid down the law with her, that they never use one-time money for salaries and ongoing expenses, and they never get themselves in such a pickle that they have to borrow money to do payroll.

1332 Ms. Mallek stated these were imprinted strongly on her brain, and she would like to have extra 1333 information provided to help understand those issues.

1334

Mr. Mawyer replied that regarding the workforce issue, Rivanna has licensed water operators that they are required to have onsite 24/7/365. He stated Class I Operators at the largest plants, Observatory and South Rivanna, have attained the highest level of certification, training, and experience and have taken tests to prove their credibility and retain these licenses. He stated if Rivanna does not have those people, they would be in violation of the Virginia Department of Health regulations on having qualified, licensed people on the work site. He stated the licensed person has to be on the site when the plant is operating.

Mr. Mawyer stated similarly, in the wastewater world, the Operator in charge has to be licensed, but they do not necessarily have to be onsite. He stated if they have a Class I Operator in charge of Moores Creek, he/she does not have to be there all the time, but they do have to have a Class I Operator on staff who is in charge of the plant, sign all monthly reports, and be responsible for what goes on.

1348

Mr. Mawyer stated those are two examples within the workforce where licensing is critical. He stated as he talked about earlier that day, Rivanna is trying to grow their own and help staff get licensed because they cannot recruit and hire them very easily. He stated every large utility like Rivanna is looking for these same skill sets in Virginia and across the country, and Rivanna needs to be salary-competitive for those people.

1354

Mr. Mawyer stated similarly, they need other professionals such as a CPA and professional engineers. He stated these people are highly sought after, difficult to hire, and expensive in the workplace. He stated they have many other professionals such as HR professionals, and they have IT staff that are under extreme demand and who are just as critical as they keep Rivanna going. He stated computers run all of our systems, so without these staff, they are hamstrung.

Mr. Mawyer stated Rivanna has regulatory licensing requirements for many of their core mission
 positions, and they need to stay salary-competitive to retain and hire these people.

Mr. Mawyer stated as far as one-time money, Rivanna is using one-time money only in FY 22
from the savings from vacancies. He stated thereafter, those costs would be in the base budget
for charges to the three customers (County, Service Authority and City Utility Department).

- Ms. Mallek asked if there were any other changes anticipated in the FY 23 budget that would provide some cushion for this increase in the base.
- 1370

Mr. Mawyer replied that they are always looking for opportunities to optimize their systems and save funds, whether this is in chemicals, electricity, or legal services. He stated they reprocured legal services a year ago, when Mr. Krueger was retiring and Rivanna was looking for a new firm. He stated they hired a firm whose rates are half of what they were paying. He stated as soon as the contract year is over at the end of January, he looks forward to reporting to the Board that they have saved some money in legal services this year and expects this in the future as well.

Mr. Mawyer stated this is a tough time. He stated they reprocured transporting biosolids to 1378 McGill Environmental in Waverly, VA and the cost went up. He stated the cost of chemicals 1379 have generally gone up over 4%, and some more than that. He stated this is what people read 1380 about in the papers every day, from chips in cars to food on the shelves – that the supply chain is 1381 a challenge right now, and there is no question that there is pressure and that costs are going up. 1382 1383 Mr. Mawyer stated Rivanna does look for every opportunity to be cost competitive. They 1384 advertise and get multiple prices so that they are getting the best market price for goods, services 1385 and construction. He stated for example, with the biosolids, they had a vendor and were paying 1386 him \$456 to transport per pull to Petersburg, and he wanted to renew at \$750. He stated Rivanna 1387 said no, and they advertised to the public, where they got a new price of \$615. He stated the bad 1388 news was that it was higher than they were paying, but the good news is that it was not as much 1389 as the current vendor at the time wanted to renew. 1390

1391

Mr. Mawyer stated Rivanna tries to use competition to optimize all their processes, bid things 1392 out, and get the best market prices as best they can while staying away from sole-source 1393 procurements. He stated they look at all of their operations, with COVID testing as an example. 1394 He stated they are testing all of their employees that are not vaccinated, and the safety manager 1395 found an in-house testing kit and machine that will hopefully save them about 50% of the costs 1396 of COVID testing. He stated Rivanna tries to capitalize on every opportunity they can to save 1397 money for themselves, which then flows to the County, and to Service Authority and City utility 1398 customers. 1399

1400

Mr. Wood added that he would take a look at some of their bonds coming up in the next year or two that have a call date and see if there are any good candidates to refinance. He stated he would like to probably bring to the next Board meeting a summary of the last three years. He stated Rivanna has refinanced quite a few of their revenue bonds with some substantial savings.

1405

Mr. O'Connell stated he would follow some of Ms. Mallek's comments and then possibly go into this in more detail. He stated he thinks this is a proposal that should be included with the upcoming budget, and he would explain his perspective, adding that he has been in this for a long time. He stated in raising all this, he recognizes that it is like being between a rock and a hard place.

1411

1412 Mr. O'Connell stated he clearly understands the need for good pay for the employees, to retain 1413 and recognize employees, and to recognize the good works that go on. He stated Mr. Mawyer 1414 has mentioned a number of things, and the employees are the backbone of water and wastewater 1415 treatment. He stated he very much supports this concept.

1416

Mr. O'Connell stated what is bothering him is the way this is being done and the timing, and he would state a couple of reasons why. He stated his concern is in the context of future multiyear very large rate increases. He stated next year is likely to be a 10% wholesale rate increase, with similar increases over the next four years. He stated from his perspective, this will be sticker shock for customers. He stated the ACSA is looking for every way they can to try to minimize that increase, and he thinks this has an impact on that.
Mr. O'Connell stated the 6% increase is outside of the normal budgeting process. He stated one 1424 can make arguments one way or the other about that, but he thinks the most telling one is a 1425 double-whammy cost increase proposed from existing vacancy savings, which are one-time 1426 revenues. He stated like Ms. Mallek, this was drilled into his head 48 years ago, when he started. 1427 He stated they are only covering the cost for half the budget year, and it is not funded with any 1428 ongoing revenue, so it will hit the customer rate doubly hard next year by approving it now and 1429 by having to find new rate revenue to offset an unbudgeted expense. 1430 1431 Mr. O'Connell stated if this were proposed by cutting costs (like not filling a vacancy 1432 permanently or some other actual reduction in cost that is permanent and sustainable), this would 1433 get at his bigger concern of not increasing the need for a future customer rate increase, but this is 1434 not the case. He stated to him, this seems to be bad timing. He stated he thinks this needs to be 1435 part of the normal budget process, which will be proposed within a month (less than 30 days). 1436 1437 Mr. O'Connell stated as stated earlier, he wants to support Rivanna employees, and he was 1438 cautious to raise this because of that, but he thinks they have to put the customers first. He stated 1439 he would support such a pay increase as part of the normal budget process. He stated then, he 1440 and the Board can understand the impact on their customers in the context of rates and the 1441 proposed operating budget, and perhaps make some budget changes or reductions to help better 1442 afford a salary increase. He stated they are not even entertaining that conversation right now. 1443 1444 Mr. O'Connell stated that with this, he could not support the proposal as it was presented using 1445 the one-time revenues at this time. 1446 1447 Mr. Gaffney stated he wanted to qualify something that Mr. O'Connell stated. He stated they are 1448 there as Board members of the Rivanna Water & Sewer Authority and the Rivanna Solid Waste 1449 Authority. He stated when Mr. O'Connell referred to his customers, he was acting as the 1450 Executive Director of ACSA and not Rivanna. He stated Rivanna's customers are ACSA, the 1451 City of Charlottesville, and solid waste customers. 1452 1453 Mr. O'Connell stated that in reality, all the City and County residents that are water users are 1454 customers of the Rivanna Water & Sewer Authority and the retail providers, so it has an impact. 1455 He stated 70% of the Service Authority budget is paid to Rivanna, so it has a huge impact on 1456 customer retail rates, which was his point. 1457 1458 1459 Mr. Gaffney agreed with this point. 1460 Mr. Andrews stated he had a clarifying question. He stated he does appreciate the employees and 1461 the cost of living increases that are happening. He stated Mr. Mawyer did talk about using 1462 existing vacancy savings, and Mr. O'Connell and Ms. Mallek both mentioned the accounting 1463 rules or advice they have been given. He asked what happens to this money if it is not used for 1464 this purpose and if it simply carries over. 1465 1466 Mr. Mawyer replied that it goes into Rivanna's reserve fund, which can be used to reduce rates 1467 or charges for the following year, or they can maintain it in the reserves. He stated particularly 1468 on the Water & Sewer side, they have about \$200 million in debt, and 50% of the operating 1469

budget is in debt service payment. He stated this is not so on the Solid Waste side. He stated 1470 Rivanna's reserve fund is very important to their creditors and bond holders because when they 1471 look at Rivanna's financial credibility, they want to see that there are adequate reserves to 1472 warrant their AA+ bond rating. He stated they would like to be AAA because the higher rating 1473 they have, the lower rates they get, and the less cost they have to pay for borrowed funds. 1474 1475 Mr. Mawyer stated any monies that are not used for expenses during the fiscal year would go 1476 into the appropriate reserves. He stated they have different reserves for water, wastewater, and 1477 solid waste, as well as different cost centers that have different funding formulas for recycling 1478 versus operating the landfill. He stated Rivanna allocates the reserves to those cost centers. 1479 1480 Mr. Mawyer stated Mr. Wood would go through the different reserves with the Board in the near 1481 future. He stated some years, Rivanna is in the negative, and they have to take money out of their 1482 reserves to fund their expenses. 1483 1484 Mr. Pinkston stated he wanted to make sure he understood that Mr. Mawyer was hoping to give 1485 his team a 6% increase for roughly six months using vacancies that have not been filled. He 1486 asked if this was correct. 1487 1488 Mr. Mawyer replied yes. 1489 1490 Mr. Pinkston stated then, going forward into the next fiscal year, Mr. Mawyer would want to 1491 make this permanent and have it fully baked into the rates. 1492 1493 Mr. Mawyer stated this was correct. He stated it would be in the base budget and the new 1494 charges for FY 23. 1495 1496 Mr. Pinkston stated the point that Mr. O'Connell raised, which made sense to him, is that they 1497 are getting out of kilter or out of sequence of how this would normally work. He asked if it was 1498 an option to say that they would give people a 6% cost of living increase from now until the end 1499 of this fiscal year, then revisit the conversation at that point, or would that be too convoluted. 1500 1501 1502 Mr. Mawyer replied that he supposed it could be a bonus. He stated the costs to the two customers in FY 23 are the same whether they start them in February or whether they start them 1503 in July. He stated it would be the same cost increase to both the City and the Service Authority 1504 because Rivanna is trying to do a good thing in using existing savings, not to add the cost to their 1505 account in the current fiscal year. 1506 1507 1508 Mr. Pinkston stated his point was that if it helps get past the objection that Mr. O'Connell raised of doing this out of sequence, they could call the six months they are talking about a "bonus" and 1509 say that they will revisit it at the appropriate time. He stated he would think at that point, there 1510 would be a lot of goodwill to go ahead and do it. 1511 1512 Mr. Wood stated one of the issues with the bonus is it does cost more. He stated the 6% is 1513 1514 basically saying, "Here's a 6% annual increase," but they only have to pay it over a five-month period. He stated if they do a six-month bonus, it is a lot more money. 1515

1516 Mr. Mawyer stated Mr. Pinkston could have meant that it would be prorated for the five months. 1517 1518 Mr. Pinkston stated this is what he meant. He stated whatever the net amount is, they would 1519 distribute it out. 1520 1521 Mr. Wood stated this would be like a 2.7% increase. 1522 1523 Mr. Mawyer agreed that it would be, more or less. He stated this could be an idea from Mr. 1524 Pinkston. He stated this is different than what their City and County colleagues did, where they 1525 gave a full salary increase to their employees, and the City even added a \$3,500 bonus on top of 1526 it. He stated as they look for equity regionally, this was part of the logic of what they came up 1527 with. 1528 1529 Mr. Pinkston stated he was only introducing his idea as a way to meet Mr. O'Connell's concerns. 1530 1531 Ms. Mallek stated while she has raised this issue and does understand the dilemma, she also 1532 understands the other side, which is that this is important for operations to continue. She stated 1533 people will not want to hear this, but she thinks that compared to other places, they have 1534 dramatically lower water fees. She stated while they are higher now than they were 15 years ago, 1535 they were ridiculously low back then, and they were held back on their ability to do systemic 1536 improvements, which have been accomplished in the last 15 years because there was more 1537 reality and therefore appreciation of finished water brought into costs. 1538 1539 Ms. Mallek stated she knows the County has used occasional bonuses when it was appropriate, 1540 but also in the last raises, they made that choice because there was new revenue that was coming 1541 that was going to be ongoing, so they were able to see a future consistency with that increased 1542 revenue and persuade themselves that this was okay to do midyear. She stated these were the 1543 mental gymnastics they were all working with here, and perhaps there were other ways this could 1544 be described (e.g., other operations and the recent suggestion from Mr. Pinkston) as she was very 1545 concerned about not doing anything. 1546 1547 1548 Mr. Richardson stated he had questions for staff, but he noticed that Ms. Hildebrand had her hand raised. He stated he did not want to jump ahead but wanted to get in the queue. 1549 1550 1551 Ms. Hildebrand stated she and Mr. O'Connell have had several discussions with Mr. Mawyer about this. She stated she echoed Mr. O'Connell's concerns in looking at City customers and 1552 what the potential impact would be. 1553 1554 Ms. Hildebrand stated she is one of Rivanna's biggest supporters, and she has a utility 1555 background from long ago and loves what she does. She stated she understands the obstacles that 1556 they are up against, but she wants to keep in mind that they need to be thoughtful when, from a 1557 City perspective, Rivanna fees are over 50% of their water and wastewater rates. She stated in 1558 figuring midyear adjustments, it is out of sync from when they normally set rates, and they have 1559 1560 to be thoughtful when they look at potential increases to the water and wastewater rates associated with City customers. She stated that since Mr. O'Connell put this into perspective 1561

1562 1563	with ACSA, she thought she should put it into perspective when it comes to City customer rates.
1564	Mr. Richardson asked Mr. Mawyer if he could have the appropriate staff member talk more
1565	about what they are seeing in Rivanna with turnover and what this looks like in terms of how
1566	they are getting the critical functions of the job done right now. He stated for example, Mr.
1567	Mawyer stated earlier that in solid waste, year to date, they are looking at 20%. He stated he did
1568	not give them a full year, but six months, with 20% turnover. He stated that on the water side,
1569	year to date is 11%. He stated the simple math is that if the next six months are just like the first
1570	six, for the year, they would be looking at a 40% turnover in solid waste and about 22% in water.
1571	He asked if his understanding was correct.
1572	
1573	Mr. Mawyer replied this was correct.
1574	
1575	Mr. Richardson asked if this turnover rate is higher when looking over the last few years. He
1576	asked if they are seeing a spike in turnover based on this current data.
1577	Mr. West dated Mr. Newseth could an array this as the head a short
1578	Mr. wood stated Ms. Nemeth could answer this as she had a chart.
15/9	Mr. Wood stated that 2021 was a sort of anomaly because they were in the middle of the
1580 1501	pandemic, and there was not much hiring or people moving around, so last year was extremely
1501	low. He stated he believed the current trend is slightly higher than it was the last three years
1502	before the pendemic
1503	before the pandenne.
1504	Ms. Nameth stated she would agree with that based on the date she had. She stated in Solid
1505	Waste with the exception of EV 2010, it is already higher than all of the other years, and it will
1500	only go up from there
1588	only go up nom mere.
1589	Mr. Mawyer recalled that there was 15% turnover for the year in FY 21
1590	The four of the four of the four the fo
1591	Ms. Nemeth stated that in FY 21, they did not have turnover in Solid Waste. She stated it was
1592	zero. She stated in Water & Sewer, it was 6.4%.
1593	· · · · · · · · · · · · · · · · · · ·
1594	Mr. Mawyer asked about the year before that.
1595	
1596	Ms. Nemeth stated the year before that, the turnover in Solid Waste was 16.7% and in Water &
1597	Sewer, it was 15%. She stated the 0% and 6.4% were very much COVID-related.
1598	
1599	Mr. Gaffney asked Ms. Nemeth what she was finding out from exit surveys and when they are
1600	hiring new people.
1601	
1602	Ms. Nemeth stated she has lost a couple of licensed operators. She stated to start on the Water &
1603	Sewer side, when she loses a licensed operator, she tends to hire a trainee because licensed
1604	operators are not really on the market. She stated they are starting at the beginning with no
1605	license. She stated she does try to find college graduates because it helps from a licensing
1606	perspective and cuts off experience time that is required to sit for a license. She stated on
1607	average, training is six months out from testing for a license to begin with versus a licensed

- 1608 operator. She stated she has lost a couple of those to higher-paying jobs.
- 1609

Ms. Nemeth stated she lost a CDL driver in Solid Waste to a higher-paying job. She stated she was excited that the Board approved the pay scale because she can offer them more money now,

1612 which is important to a CDL driver.

1613

Ms. Nemeth stated she also lost a Solid Waste attendant to a rather significant pay increase as well (about 20%). She stated she is starting to see things pick up where there are people out there getting better job offers from other places. She stated there are training expenses at that point.

1617

Ms. Nemeth stated regarding CDL drivers, she has to try to hire a person who has a commercial driver's license because as of February 7, Rivanna can no longer do its training of commercial drivers in house. She stated the Federal Motor Carrier Safety Administration now requires them to take formal training, which will cost Rivanna time and money in working with PVCC. She stated she is currently working with PVCC to figure this out. She stated these are significant losses if she cannot replace a driver with another who carries a CDL.

1624

1626

1625 Mr. Gaffney asked if there were other comments from the Board.

Mr. Richardson stated he would make a couple of comments. He stated there was absolutely no disputing Mr. O'Connell's statement that it is not a good budget practice to look at midyear adjustments that are ongoing in nature with one-time money. He stated this is absolutely tried and true.

1631

Mr. Richardson stated what he sees with this discussion topic is what the Board is contemplating 1632 - whether they would support allowing the director to jumpstart the budget process and to make 1633 an adjustment to the base, knowing that with inflation being the highest it has been in 40 years, if 1634 they do not make this decision now, they are just getting further behind as they go towards July. 1635 He stated what the obligation would be to the City and County is if the Board were to make this 1636 decision today, they are obligating themselves that when the budget comes back in FY 23, they 1637 have made this decision ahead of the budget, but it is because the director and his staff feel like 1638 the workforce stabilization issues are too fragile to wait until July. 1639

1640

Mr. Richardson stated the ongoing money in FY 23 would be that if they make the decision today to plow the money into the base, they are starting the budget process knowing that when they go into the FY 23 budget, they have already obligated themselves to the 6%. He stated the would not go back to revisit it and discuss whether they want to continue to do it. He stated the Rivanna employees would depend on the Board making a 6% adjustment to the pay plan as a done decision, and as the Board gets into the budget process, Mr. Mawyer and his team would be coming back to look at anything else in addition to that.

1648

Mr. Richardson stated this is the reason he asked the questions about turnover and recruitment and asking the HR Manager to give her perspective about how tough it is right now. He stated what they do not want to do is when the director is trying to keep an eye on this and keep him in good stead, to wait too late.

1653

Mr. Richardson stated his point was if they delay it to the budget process, when they get to the budget process, they will be looking at a significant raise to address the inflation over the last year. He stated this is what the City and County just did. He stated this is what they would be doing in the budget process and that they would have to address this with worker pay.

1658

Mr. Richardson stated the good news is that there was an entire organizational compensation study done in 2018, and the organization had the discipline to have another one done four years later. He stated the numbers that came back that Mr. Mawyer and his team presented, with 3-4% behind market rate, is very good. He stated he applauds the staff for staying on top of this and trying to take steps with the Board's support to keep their pay plan competitive and be able to recruit and retain.

1665

Mr. Richardson stated respectfully to the Board that if they put this off, this will be a very high priority in the next couple of months. He stated that with the 40-year record of inflation, they will have to address it more, as the 3-4% behind market could quickly slip to 8-12% behind market. He stated these are things they have seen in the County over the last six to eight months - that there is a lot of energy out there with workforce pay in the public sector, and the County very quickly got alarmingly behind in very key areas. He stated he does not want this to happen to Mr. Mawyer and his team.

1673

Mr. Richardson stated if the Board does this now, they are obligating themselves to stick to this in the budget process. He stated if they do not do this now, this is going to be a very high priority that they address in the budget.

1677

Mr. Gaffney stated he wanted to apologize to Mr. O'Connell because he did not mean anything negative when he made the statement that he thought in the moment, he was representing the ACSA Board and not the Rivanna Board. He stated he was actually stating this for many of the new members who come from either the City or County relationships, and it is important for everyone to note that they are acting as the Board members for Rivanna. He stated they are responsible for ensuring that their system is well-staffed, well-maintained, meets all state and federal requirements, and it is prepared to serve the current and future needs of the community.

Mr. Gaffney stated this is who they are as a Board and what they need to focus on in the decisions they make. He stated they all obviously reflect on how this affects the organizations they come from, but he urges the Board members to act in this manner as Board members of Rivanna.

1690

1691 Mr. Gaffney asked if there were other comments from the Board.

1692
1693 Ms. Mallek stated she was finding herself more and more in favor of doing this, with the
1694 understanding of what Mr. Richardson just stated. She stated the loss of licensure and

recognition by state regulators that they are not having their staff sufficient to do the job is far

1696 more impactful to her than what she is certainly concerned about as far as any rate increase. She 1697 stated she liked the way it was just described as far as getting a jump on the budget process and

stated she liked the way it was just described as far aunderstanding that they are committing to this.

1698 understanding that 1699

Ms. Mallek stated these are truly unusual times, and she thinks they need to balance very 1700 carefully. She stated they cannot always be perfect, but they are taking this on with their eyes 1701 wide open, knowing this is what they have to do to keep their staff. She stated they are important 1702 and essential to the operation. She stated she was glad she asked what she did and learned, as this 1703 is helping her to be stronger in wanting to do this. 1704 1705 Mr. Pinkston echoed and agreed with what Ms. Mallek stated. 1706 1707 Mr. Andrews agreed as well, adding that he had a procedural question. He asked if this is likely 1708 to be two motions. He stated it would be awkward if they did not end up the same way. 1709 1710 Mr. Gaffney stated he was thinking about the same thing, and he had a question for Ms. Long. 1711 He stated they do have to take two separate votes, and he would ask Ms. Long what would 1712 happen if they were at odds with one another. 1713 1714 Ms. Long stated this was a good question. She stated technically, if it were to pass through one 1715 Board, then it would be in effect for that Board and, likewise, not in effect for the other. 1716 1717 Mr. Richardson stated he believed the attorney was spot on and, because of that, they may want 1718 1719 to understand before making a formal motion if either both boards support it or if both boards want to delay it. He stated he thinks it would be difficult to figure out what to do if one supports 1720 and one does not as it affects the entire staff of Mr. Mawyer's team. 1721 1722 Mr. Gaffney stated he was happy to ask that question if there were no more comments at that 1723 time. He stated not hearing any other comments, he would ask the RSWA Board if there were 1724 members who did not support a motion that may come forward. 1725 1726 Mr. Stewart stated he supported it with the understanding that at a staff-to-staff level, they will 1727 1728 all have work to do over the next two to three months in looking at the upcoming budget and taking a good, hard look at elective things, opportunities, and creative thinking to try to hold 1729 down the ultimate impact. 1730 1731 1732 Mr. Gaffney stated he would pose the same question to the RWSA Board. He asked if there were members of the Board who would not support the potential motion to come. 1733 1734 1735 Mr. O'Connell stated he could not support it. He stated he tried to listen hard, but he believed it needs to wait. He stated they lose the opportunity to look at other parts of the budget to help 1736 support the salary increase by doing it this way. 1737 1738 Ms. Mallek stated there was plenty of opportunity to look at the future budget in the same way 1739 and figure out which bucket needs more or less money. She stated she did not understand that 1740 connection, but she would take it up another time. 1741 1742 Ms. Hildebrand stated she also could not support it. 1743 1744 Mr. Gaffney stated he believed they should ask the question of the remaining RWSA Board 1745

1746 1747	members, to confirm that there was enough to approve it. He stated Ms. Mallek stated yes. He asked if there were other RWSA Board members who wanted to disclose their opinion.
1748	In the second
1749	Mr. Richardson stated he would support the recommendation for Mr. Mawyer to execute this
1750	COLA increase.
1751	
1752	Mr. Pinkston stated he would do the same.
1753	
1754	Mr. Gaffney stated he believed they were ready for motions, seconds, and votes. He asked if
1755	anyone saw they were not, and he heard no comments.
1756	
1757	Mr. Andrews moved that the RSWA Board approve the cost-of-living increase. Mr.
1758	Stewart seconded the motion, which passed unanimously (6-0). (Mr. Sanders was absent.)
1759	
1760	Ms. Mallek moved that the RWSA Board approve the cost-of-living increase. Mr.
1761	Richardson seconded the motion, which passed by a vote of 4-2. (Mr. O'Connell and Ms.
1762	Hildebrand opposed.)
1763	
1764	Mr. Gaffney stated he appreciated all the discussion. He stated he knew this was a hard decision
1765	especially when working on budgets. He stated the budget would be coming up again very soon
1766	
1767	(Adjournment of RSWA Board)
1768	
1769	Mr. Gaffney asked if there were other items from Board members or staff not on the agenda and
1770	heard none.
1771	
1772	11. CLOSED MEETING
1773	There was no reason for a closed meeting.
1774	
1775	12. ADJOUKNMENT
1776	At 5:11 p.m., Mr. O'Connell moved to adjourn the meeting of the Rivanna Water and
1777	Sewer Authority. Ms. Mallek seconded the motion, which passed unanimously (6-0). (Mr.
4 0	

1778 Sanders was absent.)



MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS

FROM: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: EXECUTIVE DIRECTOR'S REPORT

DATE: FEBRUARY 22, 2022

STRATEGIC PLAN GOAL: WORKFORCE DEVELOPMENT

Recognitions

The professional qualifications of our staff continue to improve and enhance our services. The following employee has successfully completed the requirements for a license from the State: Cary Wingo - Class 2 Water Operator License

New Information Technology Manager

We are pleased to welcome Jeff Southworth to our team as our I.T. Manager. Jeff comes to us from the Roanoke area with over 20 years of experience managing corporate I.T. systems.

STRATEGIC PLAN GOAL: OPERATIONAL OPTIMIZATION

Water Treatment Corrosion Inhibitor

We successfully completed a 22-month conversion process to utilize an orthophosphate product at our water treatment plants. The new corrosion inhibitor product will continue to prevent metals from pipes and plumbing fixtures from leaching into our drinking water. While our prior corrosion inhibitor product provided excellent results, the new product optimizes and updates this treatment technology. This was a team-effort with the VDH, ACSA and City Utilities. No customer concerns were received during the transition.

Emergency Power Generators

As we reported to you during the June 2021 Board meeting, in May 2020, RWSA staff informed VDEQ that the new Rivanna Pump Station generator was not included on the Moores Creek VDEQ Air permit. This generator was installed in 2017 as part of the construction project for the new Pump Station. Design and construction of the pump station and generator were approved by VDEQ before the station was allowed to operate. The pump station generator operated as designed and was not in violation of any environmental limitation. In response to our self-reporting, we received a Notice of Violation (NOV) from the VDEQ Air Permit section in June 2020. We also received a NOV from the VDEQ Air Permit section in April 2021 for late submission (25 calendar

days) of an annual report in March 2021 during the pandemic. After a phone conference with the VDEQ Air Permit staff, we responded to both concerns about the administrative nature of these issues by letter in May 2021. VDEQ recently proposed a Consent Order and monetary fine to resolve these NOVs. Henry Pollard, an attorney with Williams Mullen, is leading our discussions with VDEQ on this matter.

FY 2023 Operating Budget

We completed a review of the proposed FY 23 Operating Budget totaling \$41.8 M with the Board's Subcommittee (City and ACSA) last week. The proposed budget will be presented to the Board in March.

STRATEGIC PLAN GOAL: INFRASTRUCTURE AND MASTER PLANNING

S. Rivanna to Ragged Mtn Reservoir Water Pipe

Easements and agreements (VDOT) have been obtained from all parties along the route except from 1 private owner near Barracks Road and from the UVA Foundation for 2 properties. Preparation of engineering plans and specifications continue for a 0.25-mile section of this 36" raw water pipe from Birdwood to Old Garth Road to be constructed in 2022 - 2023.

Exterior Lighting Project, Moores Creek

This project was substantially completed when we determined the light levels around the aeration basins were too high. After further investigation with our consultant, it was determined that the fixtures were not in compliance with our lighting requirements. Replacement fixtures have been ordered, with installation expected in 3 - 6 months. We have turned-off some of the lights around the aeration basins until the replacement fixtures are installed to reduce light levels and any impact on the adjacent neighborhood.

STRATEGIC PLAN GOAL: COMMUNICATION & COLLABORATION

Central Water Line Project

We will present information about this project to the Fry's Spring Neighborhood Association in March.



MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS

FROM: LONNIE WOOD, DIRECTOR OF FINANCE AND ADMINISTRATION

REVIEWED: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: DECEMBER MONTHLY FINANCIAL SUMMARY – FY 2022

DATE: FEBRUARY 22, 2022

Urban Water flows and rate revenues are 7.75% over budget estimates through December, and Urban Wastewater flows and rate revenues are 0.25% under budget. Revenues and expenses are summarized in the table below:

	Urban Water	Urban Wastewater	Total Other Rate Centers	Total Authoritv
Operations				···· ·
Revenues	\$ 4,487,263	\$ 4,712,089	\$ 1,176,014	\$ 10,375,366
Expenses	(4,138,470)	(4,493,362)	(1,280,329)	(9,912,161)
Surplus (deficit)	\$ 348,793	\$ 218,727	\$ (104,315)	\$ 463,205
Debt Service				
Revenues	\$ 3,824,083	\$ 4,406,018	\$ 1,003,554	\$ 9,233,655
Expenses	(3,830,460)	(4,359,914)	(1,005,044)	(9,195,418)
Surplus (deficit)	\$ (6,377)	\$ 46,104	\$ (1,490)	\$ 38,237
Total				
Revenues	\$ 8,311,346	\$ 9,118,107	\$ 2,179,568	\$ 19,609,021
Expenses	(7,968,930)	(8,853,276)	(2,285,373)	(19,107,579)
Surplus (deficit)	\$ 342,416	\$ 264,831	\$ (105,805)	\$ 501,442

When reviewing the Authority as a whole, operating revenues are \$911,000 over budget and operating expenses are \$448,000 over budget, for a net budget surplus of \$501,442.

A. Annual and Quarterly Transactions

Some revenues and expenses are over the <u>prorated</u> year-to-date budget due to one-time receipts of revenues for the year and quarterly or annual payments of expenses. These transactions appear to be significant impacts on the budget vs. actual monthly comparisons but will even out as the year progresses. Septage receiving support revenue of \$109,441 is

billed to the County annually in July. Annual payments are made for leases, health savings account contributions, and certain maintenance agreements. Insurance premiums are paid quarterly.

- B. Personnel Costs (Urban Water page 2) Urban Water's salaries were a little higher than budgeted for July and August due to some overlap of salaries for the outgoing water department manager and the interim manager, but this is offset by overbudgeted health insurance costs, so total personnel costs are under budget.
- C. Professional Services (Crozet Water, Glenmore Wastewater, Administration pages 3, 6, 8) Crozet Water incurred unbudgeted engineering and technical services expenses for a water demand forecast update. Glenmore Wastewater has spent \$95,000 this year to perform a needs evaluation for Glenmore WRRF, which is an unbudgeted cost. This will cause Glenmore Reserves to be overdrawn, causing the other rate centers to fund Glenmore cost overruns. The Administration department has incurred \$513,000 in unbudgeted bond issuance costs which are paid with bond proceeds.
- D. Information Technology (Scottsville Water, Urban Wastewater pages 4, and 5) These rate centers are over budget on SCADA maintenance and support costs.
- E. Operations & Maintenance (Urban Water, Scottsville Water, Scottsville Wastewater, Maintenance pages 2, 4, 7, 9) Urban Water and Scottsville Water each purchased a GAC media exchange for \$85,600 and \$18,120, respectively, which pushes Chemical costs over the prorated budget. Crozet Water is over budget for Beaver Creek Watershed signs and utility easement clearing costs. We will be reimbursed by a grant from the State for the watershed sign costs. Scottsville Wastewater incurred \$14,000 of unbudgeted repairs to the lagoon intake gates. The Maintenance department is over budget on the cost of fuel, lubricants, and other maintenance supplies.

Attachments

Rivanna Water & Sewer Authority

Monthly Financial Statements - December 2021 Fiscal Year 2022

			Budget		Budget		Actual		Budget	Variance
Consolidated			FY 2022	Y	ear-to-Date	Y	ear-to-Date	,	vs. Actual	Percentage
Revenues and Expenses Summary	/		1,2022	•		•		-	7 3 , Avia.	1 of oonlage
Revenues and Expenses Gummar	Ľ					_				
Operating Budget vs Actual										
Operating budget vs. Actuar										
	Notes									
Revenues										
Operations Rate Revenue		\$	18,810,555	\$	9,405,278	\$	9,702,769	\$	297,492	3.16%
Lease Revenue	~		105,000		52,500		74,262		21,762	41.45%
Admin., Maint. & Engineening Revenue	ι.		53,000 540 589		270,000		80∠,444 402 902		5∠5,944 132 607	190.21%
Use of Reserves-GAC			316,250		158,125		88,850		(69,275)	-43.81%
Rate Stabilization Reserves			200.000		100,000		100.000		(00,2,0,	0.00%
Interest Allocation			8,200		4,100		6,585		2,485	60.60%
Total Operating Revenues		\$	20,533,594	\$	10,266,797	\$	11,177,811	\$	911,014	8.87%
_										
Expenses		-		-		•		<u> </u>		2.000/
Personnel Cost	A,B	\$	9,649,988	\$	4,824,994	\$	4,709,546	\$	115,448	2.39%
Protessional Services	C		712,050		356,025		898,153		(542,128)	-152.27%
Other Services & Charges			3,111,400		1,000,700		1,420,073		129,021 (7 033)	0.2370 8.20%
Loformation Technology	Λ٦		191,412 447 100		223 550		202 699		(7,933) (70,149)	-0.2370 -35 41%
Sunnlies	А, С		447,100		220,000		18,265		2 815	13.35%
Operations & Maintenance	A.E		4 864.235		2 432,118		2 684,522		(252,405)	-10.38%
Equipment Purchases	<i>,</i> ., _		615,250		307,625		121,108		186,517	60.63%
Depreciation			900,000		450,000		450,000			0.00%
Reserve Transfers			-		· _		-		-	
Total Operating Expenses		\$	20,533,595	\$	10,266,797	\$	10,714,605	\$	(447,808)	-4.36%
Operating Surplus/(Deficit)		\$	(1)	\$	(0)	\$	463,206	_		
Debt Service Budget vs. Actual										
Deveryone										
Revenues		ተ	10 102 060	ሳ	0.006.080	¢	0.006.000	ሳ	10	0.00%
Dept Service Rate Revenue		Ф	18,193,900	Ф	9,096,980	\$	9,096,990	ቅ	IU	0.00%
Use of Reserves			109 440		54 720		- 109 441		- 54 721	100 00%
Buck Mountain Lease Revenue			1,600		800		י דד, ניטו -		(800)	-100.00%
Trust Fund Interest			33,700		16,850		1,160		(15,690)	-93.12%
Reserve Fund Interest			80,000		40,000		26,065		(13,935)	-34.84%
Total Debt Service Revenues		\$	18,418,700	\$	9,209,350	\$	9,233,656	\$	24,306	0.26%
Debt Service Costs		•		•		•		•		4.400/
Total Principal & Interest		\$	14,256,077	\$	7,128,039	\$	7,211,039	\$	(83,000)	-1.16%
Reserve Additions-Interest			80,000		40,000		26,065		13,935	34.84%
Dept Service Ratio Unarge			120,000		302,300 1 679 817		302,300 1 505 817		-	0.00%
Total Debt Service Costs		\$	3,307,034 18 /18 711	\$	0 200 356	\$	9 195 420	\$	13 935	4.94 /0
Debt Service Surplus/(Deficit)		\$	(11)	\$	(6)	\$	38,236	ψ	10,000	0.1070
							, -	:		
			Summar	у						
Total Revenues		\$	38.952.294	\$	19.476.147	\$	20.411.467	\$	935.320	4.80%
Total Expenses		¥	38.952,306	¥	19.476,153	Ŷ	19.910,025	4	(433,872)	-2.23%
Surplus/(Deficit)		\$	(12)	\$	(6)	\$	501,442	-	(,	-
• • •		<u> </u>	<u> </u>	<u> </u>	<u> </u>		<u> </u>	-		

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Rivanna Water & Sewer Authority Monthly Financial Statements - December 2021

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<u>Urban Water Rate Center</u> Revenues and Expenses Summary			Budget FY 2022	Ye	Budget ear-to-Date	Y	Actual /ear-to-Date		Budget vs. Actual	Variance Percentage
Operating Budget vs. Actual										
	Notes									
Revenues										
Operations Rate Revenue		\$	7,971,504	\$	3,985,752	\$	4,294,703	\$	308,951	7.75%
Lease Revenue			75,000		37,500		54,235		16,735	44.63%
Use of Reserves-GAC			300 000		-		85 600		(64 400)	-42 93%
Rate Stabilization Reserves			100,000		50,000		50,000		-	0.00%
Interest Allocation			3,400		1,700		2,726		1,026	60.35%
Total Operating Revenues		\$	8,449,904	\$	4,224,952	\$	4,487,263	\$	262,311	6.21%
Expenses										
Personnel Cost	в	\$	2,039,157	\$	1,019,579	\$	1,013,641	\$	5,938	0.58%
Professional Services			279,200		139,600		94,650		44,950	32.20%
Other Services & Charges			734,150		367,075		314,400		52,675	14.35%
			98,670 80,500		49,335		52,697 45 945		(3,302) (5,695)	-0.82%
Supplies			5,100		2,550		3,843		(1,293)	-50.71%
Operations & Maintenance	A,E		2,250,440		1,125,220		1,234,365		(109,145)	-9.70%
Equipment Purchases			15,400		7,700		7,700		0	0.00%
Depreciation			300,000		150,000		150,000		-	0.00%
Subtotal Before Allocations		\$	5 802 617	\$	2 901 309	\$	2 917 240	\$	(15.932)	-0.55%
Allocation of Support Departments		Ŧ	2,647,289	Ŧ	1,323,644	Ŧ	1,221,230	Ŧ	102,415	7.74%
Total Operating Expenses		\$	8,449,906	\$	4,224,953	\$	4,138,470	\$	86,483	2.05%
Operating Surplus/(Deficit)		\$	(2)	\$	(1)	\$	348,793			
Dobt Sorvico Budgot vs. Actual										
Debi Service Budger VS. Actual										
Revenues										
Debt Service Rate Revenue		\$	7,621,725	\$	3,810,863	\$	3,810,864	\$	2	0.00%
Trust Fund Interest			12,000		6,000		421		(5,579)	-92.98%
Reserve Fund Interest			39,300		19,650		12,798		(6,852)	-34.87%
Use of Reserves			- 1 600		- 800		-		- (800)	100.00%
Total Debt Service Revenues		\$	7,674,625	\$	3,837,313	\$	3,824,083	\$	(13,230)	-0.34%
									• • •	
Debt Service Costs		¢	5 215 275	¢	2 607 629	¢	2 683 666	¢	(76 0.29)	2 0 2 0/
Reserve Additions-Interest		φ	39 300	φ	2,007,030	φ	2,003,000	φ	(70,020)	-2.92%
Debt Service Ratio Charge			400,000		200,000		200,000		-	0.00%
Reserve Additions-CIP Growth			2,020,050		1,010,025	\$	933,997		76,028	7.53%
Total Debt Service Costs		\$	7,674,625	\$	3,837,313	\$	3,830,460	\$	6,852	0.18%
Debt Service Surplus/(Deficit)		\$	-	\$	-	\$	(6,377)	:		
		Ra	te Center S	Sun	nmary					
THE		*	40.404.505	<u>^</u>	0.000.005	*	0.044.045	~	0.40,000	0.000
Total Revenues		\$	16,124,529	\$	8,062,265	\$	8,311,346	\$	249,082	3.09%
Total Expenses			10,124,551		0,002,203		7,900,930		93,335	1.1076
Surplus/(Deficit)		\$	(2)	\$	(1)	\$	342,416			
Costs per 1000 Gallons		\$	2.49			\$	2.26			
Operating and DS		\$	4.75			\$	4.35			
Thousand Gallons Treated			3,397,700		1,698,850		1,830,650		131,800	7.76%
or			0.000				0.040			
Flow (MGD)			9.309				9.949			

<u>Crozet Water Rate Center</u> Revenues and Expenses Summary			Budget FY 2022	Ye	Budget ear-to-Date	Y	Actual ear-to-Date	v	Budget s. Actual	Variance Percentage
Crozet Water Rate Center Revenues and Expenses Summary Operations Rate Revenue Lease Revenues Use of Reserves-GAC Interest Allocation Total Operating Revenue Expenses Personnel Cost Professional Services Other Services & Charges Communications Information Technology Supplies Operations & Maintenance Equipment Purchases Depreciation Reserve Transfers <i>Subtotal Before Allocatia</i> Allocation of Support Departments <i>Total Operating Expent Operating Surplus/(Def Debt Service Rate Revenue Trust Fund Interest Use of Reserves Reserve Fund Interest Use of Reserves Reserve Fund Interest Total Debt Service Rate Revenue Trust Fund Interest Use of Reserves Reserve Fund Interest Cotal Principal & Interest Reserve Additions-Interest Reserve Additions-Interest Reserve Additions-Interest Reserve Additions-Interest Reserve Additions-Interest Reserve Additions-Interest Reserve Additions-Interest Reserve Additions-Interest Reserve Additions-Interest Reserve Surplus/(Def</i>	Notos									
Revenues	Notes									
Operations Rate Revenue		\$	1 058 856	\$	529 428	\$	529 428	\$	-	0.00%
Lease Revenues		Ψ	30,000	Ψ	15,000	Ψ	20,027	Ψ	5,027	33.51%
Use of Reserves-GAC			13,000		6,500		-		(6,500)	-100.00%
Interest Allocation			500		250		382		132	52.76%
Total Operating Revenues		\$	1,102,356	\$	551,178	\$	549,837	\$	(1,341)	-0.24%
Expenses										
Personnel Cost		\$	324,463	\$	162,232	\$	160,311	\$	1,920	1.18%
Professional Services	С		15,100		7,550		24,117		(16,567)	-219.43%
Other Services & Charges			104,450		52,225		52,951		(726)	-1.39%
Communications			17,530		8,765		8,974		(209)	-2.39%
Information Technology			5,250		2,625		9,131		(6,506)	-247.84%
Supplies			1,500		750		522		228	30.43%
Operations & Maintenance			296,900		148,450		140,680		7,770	5.23%
Equipment Purchases			28,000		14,000		1,500		12,500	89.29%
			60,000		30,000		30,000		-	0.00%
Reserve Transfers		¢		¢	426 507	¢	-	¢	- (1 580)	0.37%
Allocation of Support Departments		φ	249 161	φ	124 580	φ	114 939	φ	9.642	-0.37 %
Total Operating Expenses		\$	1.102.354	\$	551.177	\$	543.125	\$	8.052	1.46%
Operating Surplus/(Deficit)		\$	2	\$	1	\$	6,712	Ŧ	-,	
Debt Service Budget VS. Actual Revenues Debt Service Rate Revenue Trust Fund Interest Use of Reserves Reserve Fund Interest Total Debt Service Revenues Debt Service Costs Total Principal & Interest		\$ \$	1,847,832 2,900 - 2,500 1,853,232 1,216,667	\$ \$	923,916 1,450 - 1,250 926,616 608,334	\$ \$	923,916 97 - 808 924,821 608,334	\$ \$	(1,353) (442) (1,795)	0.00% -93.28% <u>-35.36%</u> -0.19% 0.00%
Reserve Additions-Interest			2,500		1,250		808		442	35.36%
Reserve Additions-CIP Growth		_	634,070		317,035	_	317,035		-	0.00%
Total Debt Service Costs		\$	1,853,237	\$	926,619	\$	926,177	\$	442	0.05%
Debt Service Surplus/(Dencit)		\$	(5)	φ	(3)	φ	(1,355)	:		
	R	late	Center Su	mn	nary					
Total Revenues		\$	2,955,588	\$	1,477,794	\$	1,474,658	\$	(3,136)	-0.21%
Total Expenses			2,955,591		1,477,795		1,469,301		8,494	0.57%
Surplus/(Deficit)		\$	(3)	\$	(1)	\$	5,357	:		
Costs per 1000 Gallons		\$ ¢	5.44			\$ ¢	4.10			
Thousand Gallons Treated		Ψ	202.697		101.349	Ψ	132.441		31.093	30.68%
					.,				. ,	
Flow (MGD)			0.555				0.720			

Rivanna Water & Sewer Authority

Monthly Financial Statements - December 2021

<u>Scottsville Water Rate Center</u> Revenues and Expenses Summary			Budget FY 2022	Ye	Budget ear-to-Date	Ye	Actual ear-to-Date	v	Budget s. Actual	Variance Percentage
Operating Budget vs. Actual	Noter									
Beveruee	Notes									
Charactione Date Devenue		¢	E14 704	¢	057 050	¢	057 050	¢		0.00%
Use of Reserves-GAC		φ	3 250	φ	207,302	φ	207,302	φ	- 1 625	100.00%
Interest Allocation			200		100		184		84	84 38%
Total Operating Revenues		\$	518,154	\$	259,077	\$	260,786	\$	1,709	0.66%
Expanses										
Personnel Cost		¢	105 605	¢	07 8/7	¢	97 665	¢	182	0 10%
Professional Services		φ	2 900	φ	97,047 1,450	φ	97,005 7,515	φ	(6.065)	-418 25%
Other Services & Charges			2,000		1,400		16 4 13		(2,363)	-16.82%
Communications			4 930		2 465		3 295		(830)	-33.66%
Information Technology	D		1,250		625		11,914		(11,289)	-1806.30%
Supplies	_		770		385		71		314	81.64%
Operations & Maintenance	Е		87.200		43.600		64,415		(20.815)	-47.74%
Equipment Purchases	_		1.500		750		1.158		(408)	-54.40%
Depreciation			40,000		20,000		20,000		0	0.00%
Reserve Transfers			-		-		-		-	
Subtotal Before Allocations		\$	362,345	\$	181,172	\$	222,445	\$	(41,272)	-22.78%
Allocation of Support Departments			155,813		77,907		71,814		6,093	7.82%
Total Operating Expenses		\$	518,158	\$	259,079	\$	294,258	\$	(35,179)	-13.58%
Operating Surplus/(Deficit)		\$	(4)	\$	(2)	\$	(33,472)			
Revenues Debt Service Rate Revenue Trust Fund Interest Reserve Fund Interest <i>Total Debt Service Revenues</i>		\$ \$	138,888 300 1,200 140,388	\$	69,444 150 <u>600</u> 70,194	\$ \$	69,444 10 <u>391</u> 69,845	\$	(140) (209) (349)	0.00% -93.04% -34.84% -0.50%
Debt Service Costs										
Total Principal & Interest		\$	125,892	\$	62,946	\$	63,942	\$	(996)	-1.58%
Reserve Additions-Interest			1,200		600	•	391		209	
Reserve Additions-CIP Growth		*	13,299	*	6,650	\$	5,654	*	996	0.00%
Total Debt Service Costs Debt Service Surplus//Deficit)			140,391	<u>ֆ</u>	(2)	<u>ֆ</u> \$	(141)	Þ	209	0.30%
Debi del vice dalphas/Dehony		—	(0)	Ψ	(=)	Ψ	(141)			
	R	late	Center Su	Imn	nary					
Total Devenues		¢	650 540	¢	220.074	¢	220 622	¢	1 261	0.410/
Total Expanses		ф	000,042	Φ	329,217	Φ	330,032	Φ	1,301	0.41%
Total Expenses			000,049		329,274		304,243	•	(34,970)	-10.02%
Surplus/(Deficit)		\$	(7)	\$	(3)	\$	(33,613)			
Costs por 1000 Gallons		¢	20 02			¢	20 74			
Operating and DS		φ 2	38.22			φ \$	20.74			
		Ψ	50.22			Ψ	00.07			
Thousand Gallons Treated			17,230		8,615		10,240		1,625	18.86%
Flow (MGD)			0.047				0.056			

<u>Urban Wastewater Rate Center</u> Revenues and Expenses Summary			Budget FY 2022	Y	Budget ear-to-Date	Y	Actual ear-to-Date	v	Budget rs. Actual	Variance Percentage
Operating Budget vs. Actual		_		_		_		_		
	Notes									
Revenues		۴	0 505 405	¢	4 007 500	٠	4 050 400	۴	(44,450)	0.070/
Operations Rate Revenue Stope Robinson WWTP		\$	8,535,195 20,589	\$	4,267,598	\$	4,256,139 8 472	\$	(11,459)	-0.27% -17 70%
Septage Acceptance			475,000		237,500		289,955		52,455	22.09%
Nutrient Credits			45,000		22,500		104,475		81,975	364.33%
Rate Stabilization Reserve			100,000		50,000		50,000		-	0.00%
Miscellaneous Revenue			3 900		- 1 000		- 2 040		-	60 46%
Total Operating Revenues		\$	9.179.584	\$	4.589.792	\$	4.712.089	\$	122.297	2.66%
			-,,	•	.,,	•	.,,	Ŧ	,	
Expenses Bersonnel Cost	^	¢	1 290 471	¢	644 736	¢	659 946	¢	(14 110)	2 10%
Professional Services	A	φ	208.500	φ	104.250	φ	102.279	φ	(14,110)	-2.19%
Other Services & Charges			2,011,700		1,005,850		945,153		60,697	6.03%
Communications			9,800		4,900		6,350		(1,450)	-29.59%
Information Technology	D		56,500		28,250		39,573		(11,323)	-40.08%
Supplies Operations & Maintenance	۸		1,200		836 260		492		108 (184 039)	18.01%
Equipment Purchases	~		294.250		147,125		25.000		122.125	83.01%
Depreciation			470,000		235,000		235,000		(0)	0.00%
Reserve Transfers			-		-		-		-	
Subtotal Before Allocations		\$	6,013,941	\$	3,006,971	\$	3,032,992	\$	(26,021)	-0.87%
Allocation of Support Departments		¢	3,165,643	¢	1,582,822	¢	1,460,370	¢	122,451	<u> </u>
Operating Surplus/(Deficit)		\$	<u> </u>	\$	<u>4,303,732</u> (0)	\$	218,727	Ψ	30,430	2.10/0
Debt Service Budget vs. Actual										
Revenues										
Debt Service Rate Revenue		\$	8,568,221	\$	4,284,111	\$	4,284,114	\$	4	0.00%
Septage Receiving Support - County			109,440		54,720		109,441		54,721	100.00%
Trust Fund Interest			18,500		9,250		630		(8,620)	-93.19%
Use of Reserves Reserve Fund Interest			- 36 300		- 18 150		- 11 833		- (6.317)	-34 80%
Total Debt Service Revenues		\$	8,732,461	\$	4,366,231	\$	4,406,018	\$	39,788	0.91%
							, ,			
Debt Service Costs										
Total Principal & Interest		\$	7,689,212	\$	3,844,606	\$	3,849,835	\$	(5,229)	-0.14%
Reserve Additions-Interest			36,300		18,150		11,833		6,317	34.80%
Reserve Additions-CIP Growth			323,000 681 950		340 975	\$	335 746		- 5 229	0.00%
Total Debt Service Costs		\$	8,732,462	\$	4,366,231	\$	4,359,914	\$	6,317	0.14%
Debt Service Surplus/(Deficit)		\$	(1)	\$	(1)	\$	46,104			
		Rat	e Center S	um	mary					
Total Decomposition		۴	47.040.045	¢	0.050.000	¢	0 440 400	۴	400.005	4.040/
I otal Revenues		\$	17,912,045	\$	8,956,023	\$	9,118,108	\$	162,085	1.81%
			17,912,040		0,950,025		0,000,211	•	102,747	1.1570
Surplus/(Deficit)		\$	(1)	\$	(1)	\$	264,831			
Costs por 1000 Gallons		¢	0.74			¢	2 66			
Operating and DS		φ \$	2.71 5.28			φ \$	2.00 5.24			
		Ψ	0.20			Ψ	0.24			
Thousand Gallons Treated			3,390,400		1,695,200		1,690,957		(4,243)	-0.25%
			0.000				0.400			
			9.269				9.190			

Rivanna Water & Sewer Authority

Monthly Financial Statements - December 2021

<u>Glenmore Wastewater Rate Center</u> Revenues and Expenses Summary			Budget FY 2022	Budget Year-to-Date		Ŷ	Actual Jear-to-Date	V	Budget vs. Actual	Variance Percentage
Operating Budget vs. Actual										
	Notes									
Revenues										
Operations Rate Revenue		\$	404 028	\$	202 014	\$	202 014	\$	-	0.00%
Rate Stabilization Reserve		Ψ		Ψ		Ψ		Ψ	-	0.0070
Interest Allocation			200		100		138		38	38.30%
Total Operating Revenues		\$	404,228	\$	202,114	\$	202,152	\$	38	0.02%
F		<u> </u>			,		,			
Expenses		•		•		•	10.001	•	(0.40)	0.000/
Personnel Cost	-	\$	94,885	\$	47,443	\$	48,391	\$	(948)	-2.00%
Professional Services	C		12,900		6,450		95,000		(88,550)	o 100/
Other Services & Charges			34,300		17,150		17,693		(543)	-3.16%
			3,130		1,565		1,483		82	5.23%
muormation rechnology			2,000		1,000		601		339	33.89%
Supplies			-		-		29 107		(69)	27 200/
			121,050		00,025		30,197		22,020	37.20%
Equipment Purchases			3,000		1,900		1,900		(0)	0.00%
		¢	282.665	¢	1/1 333	¢	208 304	¢	(67.062)	47.45%
Subtotal Before Allocations		φ	202,000	φ	60 782	φ	200,394	φ	(07,002)	-47.45%
Total Operating Expenses		¢	121,000	¢	202 114	¢	264 229	¢	(62 115)	-30 73%
Operating Expenses		\$	404,229	\$	(0)	\$	(62 077)	Ψ	(02,113)	-30.7378
operating Surplus/(Dencir)		Ψ	(1)	Ψ	(0)	Ψ	(02,011)	:		
Dabt Sarvias Budgat vs. Actual										
Debt Service Budget vs. Actual										
Revenues										
Debt Service Rate Revenue		\$	7,412	\$	3,706	\$	3,708	\$	2	0.05%
Trust Fund Interest			-		-	·	-		-	
Reserve Fund Interest			200		100		78		(22)	-21.83%
Total Debt Service Revenues		\$	7,612	\$	3,806	\$	3,786	\$	2	0.05%
Debt Service Costs										
Total Principal & Interest		\$	1,578	\$	789	\$	1,536	\$	(747)	-94.68%
Reserve Additions-CIP Growth			5,834		2,917		2,170		747	25.61%
Reserve Additions-Interest			200		100		78		22	21.83%
Total Debt Service Costs		\$	7,612	\$	3,806	\$	3,784	\$	22	0.57%
Debt Service Surplus/(Deficit)		\$	-	\$	-	\$	2			
	F	Rate	Center Su	ımn	nary					
Total Deversor		¢	444.040	¢	205 000	¢	205 020	¢	40	0.040/
Total Expenses		Φ	411,040	Φ	205,920	Ф	200,900	Ф	(62,002)	0.01%
Total Expenses			411,041		205,920		200,013		(02,093)	-30.15%
Surplus/(Deficit)		\$	(1)	\$	(0)	\$	(62 075)			
		*	(1)	¥	(0)	¥	(02,010)	:		
Costs per 1000 Gallons		2	9.76			2	18 58			
Operating and DS		\$	9.95			\$	18 85			
eponenig und bo		¥	0.00			¥	10.00			
Thousand Gallons Treated			41,401		20,701		14,220		(6,481)	-31.31%
or							, -			
Flow (MGD)			0.113				0.077			

<u>Scottsville Wastewater Rate Center</u> Revenues and Expenses Summary			Budget FY 2022	Ŷ	Budget ear-to-Date	Ŷ	Actual ear-to-Date	v	Budget vs. Actual	Variance Percentage
Operating Budget vs. Actual										
	Notes									
Revenues										
Operations Rate Revenue		\$	326,268	\$	163,134	\$	163,134	\$	-	0.00%
Interest Allocation			100		50		105		55	110.64%
Total Operating Revenues		\$	326,368	\$	163,184	\$	163,239	\$	55	0.03%
Evnonsos										
Personnel Cost		¢	94 875	\$	17 138	\$	48 301	\$	(953)	-2.01%
Professional Services		Ψ	10 250	Ψ	5 125	Ψ	40,091	ψ	(555)	90.60%
Other Services & Charges			21 800		10 000		11 628		(728)	-6.68%
Communications			21,000		1 700		2 021		(720)	-0.00%
			3,400		750		2,021		(321)	-10.00 /0
Supplies			1,500		750		1,073		(1,123)	-149.79%
Operations & Maintenance	F		- 58 100		29.050		- 50 685		- (21.635)	-74 48%
Equipment Purchases	-		3 800		29,000		1 000		(21,033)	0.00%
Depresiation			20,000		1,900		1,900		(0)	0.00%
		¢	20,000	¢	106.863	¢	126.080	¢	(0)	19 93%
Subtotal Before Allocations		φ	213,723	φ	100,003 56 320	φ	51 726	φ	(20,110)	-10.03%
		¢	226 265	¢	163 192	¢	179 717	¢	4,000	0.14%
Total Operating Expenses		φ ¢	320,303	¢ ¢	103,102	¢ ¢	(15 477)	φ	(15,554)	-9.52 /0
Operating Surplus (Dencir)		Ψ	J	Ψ	2	Ψ	(13,477)			
Revenues Debt Service Rate Revenue Trust Fund Interest		\$	9,882 -	\$	4,941 -	\$	4,944 1	\$	3 1	0.06%
Reserve Fund Interest			500		250		156		(94)	-37.42%
Total Debt Service Revenues		\$	10,382	\$	5,191	\$	5,102	\$	(89)	-1.72%
Daht Comica Costa										
Debt Service Costs		•	7 450	•		•	0 707	•		0.000/
Total Principal & Interest		\$	7,453	\$	3,727	\$	3,727	\$	-	0.00%
Reserve Additions-Interest			500		250		156		94	37.42%
Estimated New Principal & Interest			2,431		1,216		1,216		-	0.00%
Total Debt Service Costs		<u>\$</u>	10,384	\$	5,192	\$	5,098	\$	94	1.80%
Debt Service Surplus/(Deficit)		Þ	(2)	\$	(1)	\$	3			
		Pate	Contor Si	um	marv					
		laic			inar y					
Total Revenues Total Expenses		\$	336,750 336,749	\$	168,375 168,374	\$	168,341 183,815	\$	(34) (15,441)	-0.02% -9.17%
Surplus/(Deficit)		\$	1	\$	1	\$	(15,474)			
Costs per 1000 Gallons		¢	13 80			¢	23 04			
Operating and DS		Ψ Φ	11.00			φ ¢	20.84			
		Ψ	14.24			φ	24.02			
Thousand Gallons Treated			23,643		11,822		7,466		(4,356)	-36.84%
Flow (MGD)			0.065				0.041			

Rivanna Water & Sewer Authority Monthly Financial Statements - December 2021

Administration

<u>Administration</u>			Budget FY 2022	Ŷ	Budget ear-to-Date	Ye	Actual ear-to-Date	v	Budget s. Actual	Variance Percentage
Operating Budget vs. Actual										
	Notes									
Revenues		•		•	075 500	•		•		0.550/
Payment for Services SWA	•	\$	551,000	\$	275,500	\$	277,002	\$	1,502	0.55%
Bond Proceeeds Funding Bond Issuance Costs	L L		-		-		513,307		513,307	4050 000/
Miscellaneous Revenue		*	2,000	*	1,000	*	11,562	*	10,562	1056.22%
Total Operating Revenue	es	\$	553,000	\$	276,500	Þ	801,871	\$	525,371	190.01%
Expenses										
Personnel Cost		\$	2,177,998	\$	1,088,999	\$	1,047,886	\$	41,113	3.78%
Professional Services	С		163,200		81,600		570,070		(488,470)	-598.62%
Other Services & Charges			86,200		43,100		52,563		(9,463)	-21.96%
Communications			21,000		10,500		13,025		(2,525)	-24.05%
Information Technology	Α		171,900		85,950		121,528		(35,578)	-41.39%
Supplies			21,500		10,750		9,473		1,277	11.88%
Operations & Maintenance			68,600		34,300		19,288		15,012	43.77%
Equipment Purchases			25,200		12,600		7,600		5,000	39.68%
Depreciation			-		-		-		-	
Total Operating Expense	es	\$	2,735,598	\$	1,367,799	\$	1,841,433	\$	(473,634)	-34.63%

	Depa	rtm	ent Summ	ary	1			
Net Costs Allocable to Rate Centers		\$	(2,182,598)	\$	(1,091,299)	\$ (1,039,561)	\$ (51,737)	4
Allocations to the Rate Centers								
Urban Water	44.00%	\$	960,343	\$	480,171	\$ 457,407	\$ 22,764	
Crozet Water	4.00%	\$	87,304		43,652	41,582	2,069	
Scottsville Water	2.00%	\$	43,652		21,826	20,791	1,035	
Urban Wastewater	48.00%	\$	1,047,647		523,823	498,989	24,834	
Glenmore Wastewater	1.00%	\$	21,826		10,913	10,396	517	
Scottsville Wastewater	1.00%	\$	21,826		10,913	10,396	517	
	100.00%	\$	2,182,598	\$	1,091,299	\$ 1,039,561	\$ 51,737	

Maintenance

<u>Maintenance</u>			Budget FY 2022		Budget Year-to-Date		Actual Year-to-Date	V	Budget s. Actual	Variance Percentage
Operating Budget vs. Actual		<u> </u>								
	Notes									
Revenues										
Payment for Services SWA		\$	-	\$	-	\$	-	\$	-	
Miscellaneous Revenue		\$	<u> </u>	\$	-	\$		\$	-	
iour operating revenue.		<u> </u>		Ť		¥		¥		
Expenses										
Personnel Cost		\$	1,398,597	\$	699,298	\$	684,179	\$	15,119	2.16%
Other Services & Charges			- 61 200		30 600		- 7 998		- 22 602	73 86%
Communications			15,730		7,865		8,718		(853)	-10.84%
Information Technology			9,500		4,750		275		4,475	94.20%
Supplies			2,000		1,000		269		731	73.05%
Operations & Maintenance	E		89,600		44,800		55,498		(10,698)	-23.88%
Equipment Purchases			208,100		104,050		62,750		41,300	39.69%
Depreciation			-		-		-		-	
Total Operating Expenses	S	\$	1,784,727	\$	892,363	\$	819,688	\$	72,675	8.14%
		Dep	artment S	um	nmary					
Net Costs Allocable to Rate Centers		\$	(1,784,727)	\$	(892,363)	\$	(819,688)	\$	(72,675)	8.14%
Allocations to the Rate Centers										
Urban Water	30.00%	\$	535,418	\$	267,709	\$	245,906	\$	21,803	
Crozet Water	3.50%	5	62,465		31,233		28,689		2,544	
Scottsville Water	3.50%)	62,465		31,233		28,689		2,544	
Urban Wastewater	56.50%	5	1,008,371		504,185		463,124		41,061	
Glenmore Wastewater	3.50%	5	62,465		31,233		28,689		2,544	
Scottsville Wastewater	3.00%)	53,542		26,771		24,591		2,180	
	100.00%	\$	1,784,727	\$	892,363	\$	819,688	\$	72,675	

Laboratorv

<u>Laboratory</u>			Budget FY 2022	Ye	Budget ar-to-Date	Ye	Actual ear-to-Date	v	Budget s. Actual	Variance Percentage
Operating Budget vs. Actual										
Revenues	Notes									
N/A										
Expenses										
Personnel Cost Professional Services		\$	411,037	\$	205,518	\$	188,694 -	\$	16,824 -	8.19%
Other Services & Charges			7,900		3,950		1,321		2,629	66.55%
Communications			1,300		650		562		88	
Information Technology			200		100		180		(80)	-80.00%
Supplies			1,300		650		951		(301)	-46.36%
Operations & Maintenance			120,590		60,295		38,127		22,168	36.77%
Equipment Purchases			1,700		850		850		(0)	0.00%
Depreciation			-		-		-		-	
Total Operating Expenses		\$	544,027	\$	272,013	\$	230,685	\$	41,328	15.19%
	Depa	rtm	ent Summ	ary	1					
Net Costs Allocable to Rate Centers		\$	(544,027)	\$	(272,013)	\$	(230,685)	\$	(41,328)	15.19%
Allocations to the Rate Centers										
Urban Water	44.00%	\$	239,372	\$	119,686	\$	101,502	\$	18,184	
Crozet Water	4.00%		21,761		10,881		9,227		1,653	
Scottsville Water	2.00%		10,881		5,440		4,614		827	
Urban Wastewater	47.00%		255,693		127,846		108,422		19,424	
Glenmore Wastewater	1.50%		8,160		4,080		3,460		620	
Scottsville Wastewater	1.50%		8,160		4,080		3,460		620	
	100.00%	\$	544,027	\$	272,013	\$	230,685	\$	41,328	
-										

Engineering

		Budget FY 2022		Budget Year-to-Date		Actual Year-to-Date	v	Budget s. Actual	Variance Percentage
Notes									
	¢		¢		¢	572	¢	572	
	φ \$		φ \$		ۍ \$	573	φ \$	573	
	Ψ.		<u> </u>		¥	0.0	Ÿ		
	\$	1,623,810	\$	811,905	\$	761,542	\$	50,363	6.20%
		20,000		10,000		4,041		5,960	59.60%
		21,600		10,800		6,554		4,246	39.32%
		15,922		7,961		6,515		1,447	18.17%
Α		118,500		59,250		71,618		(12,368)	-20.87%
		8,790		4,395		2,575		1,820	41.41%
		98,635		49,318		22,968		26,349	53.43%
		33,500		16,750		10,750		6,000	35.82%
		-		-		-			
	\$	1.940.757	\$	970.379	\$	886.561	\$	83.817	8.64%
	Notes	Notes \$ \$ A	Budget FY 2022 Notes	Budget FY 2022 Notes \$ - \$ \$ 1,623,810 \$ 20,000 21,600 15,922 A 118,500 8,790 98,635 33,500	Budget FY 2022 Budget Year-to-Date \$ - \$ - \$ - \$ - \$ - \$ - \$ 1,623,810 \$ 811,905 20,000 10,000 21,600 21,600 10,800 15,922 \$ 7,961 8,790 \$ 8,790 4,395 98,635 49,318 33,500 - - -	Budget FY 2022 Budget Year-to-Date Notes \$ - \$ - \$ \$ - \$ - \$ - \$ \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 1,623,810 \$ 811,905 \$ 20,000 10,000 21,600 10,800 15,922 7,961 \$ 8,790 4,395 \$ 8,790 4,395 \$ 98,635 49,318 33,500 16,750	Budget FY 2022 Budget Year-to-Date Actual Year-to-Date \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ - \$ 573 \$ 1,623,810 \$ \$ 1,623,810 \$ \$ 1,623,810 \$ \$ 1,623,810 \$ \$ 1,623,810 \$ \$ 1,623,810 \$ \$ 1,600 10,000 4,041 21,600 10,800 6,554 15,922 7,961 6,515	Budget FY 2022 Budget Year-to-Date Actual Year-to-Date v Notes \$ 	Budget FY 2022 Budget Year-to-Date Actual Year-to-Date Budget vs. Actual Notes \$ -\$ \$ 573 \$ 50,363 3 \$ 50,363 30,000 10,000 4,041<

		-		-				
Net Costs Allocable to Rate Centers		\$	(1,940,757)	\$	(970,379)	\$ (885,989)	\$ (83,245)	8.58%
Allocations to the Rate Centers								
Urban Water	47.00%	\$	912,156	\$	456,078	\$ 416,415	\$ 39,663	
Crozet Water	4.00%		77,630		38,815	35,440	3,376	
Scottsville Water	2.00%		38,815		19,408	17,720	1,688	
Urban Wastewater	44.00%		853,933		426,967	389,835	37,132	
Glenmore Wastewater	1.50%		29,111		14,556	13,290	1,266	
Scottsville Wastewater	1.50%		29,111		14,556	13,290	1,266	
	100.00%	\$	1,940,757	\$	970,379	\$ 885,989	\$ 84,390	

Rivanna Water and Sewer Authority Flow Graphs







434.293.8858 🛍

www.rivanna.org

MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS

FROM: DAVE TUNGATE, DIRECTOR OF OPERATIONS

- **REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR**
- SUBJECT: OPERATIONS REPORT FOR JANUARY 2022
- DATE: FEBRUARY 22, 2022

WATER OPERATIONS:

The average and maximum daily water volumes produced in January 2022 were as follows:

Water Treatment Plant	Average Daily Production (MGD)	Maximum Daily Production in the Month (MGD)
South Rivanna	7.31	8.95 (1/31/2022)
Observatory	0.79	2.56 (1/20/2022)
North Rivanna	0.37	0.50 (1/10/2022)
Urban Total	8.47	9.90 (1/20/2022)
Crozet	0.67	0.82 (1/6/2022)
Scottsville	0.06	0.09 (1/16/2022)
Red Hill	<u>0.0012</u>	0.002 (1/11/2022)
RWSA Total	9.20	-

- All RWSA water treatment facilities were in regulatory compliance during the month of December.
- RWSA has completed the corrosion inhibitor transition. After completing extensive laboratory evaluations in 2019, we transitioned from a poly-phosphate based product to an ortho-phosphate product at all of our water treatment plants over a 22 month period from April 2020 through February 2022. Our VDH (Virginia Department of Health) approved plan required a transitional product with ortho and poly phosphate to be fed for 1 year before feeding an orthophosphate product. All three of the water systems; Crozet, Scottsville, and the Urban System and are now feeding a 100% orthophosphate corrosion inhibitor product. The program was made possible with close collaboration between RWSA, ACSA, and City of Charlottesville Utilities. VDH reviewed all applicable water plant records, residential lead and copper samples, and distribution system water quality data before allowing the orthophosphate product to be fed. This transition was completed with no issues or concerns from any City or ACSA customers.

Status of Reservoirs (as of February 10, 2022):

- ➢ Urban Reservoirs: 100% of Total Useable Capacity
- Ragged Mountain Reservoir is full (100%)
- Sugar Hollow Reservoir is not 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 January 2022. Performance of the WRRFs in January was as follows compared to the respective VDEQ permit limits:

WRRF	Average Daily Effluent	Average (pp	Average CBOD ₅ (ppm)		e Total ed Solids m)	Average Ammonia (ppm)		
Flow (MGD)		RESULT	LIMIT	RESULT	LIMIT	RESULT	LIMIT	
Moores Creek	9.08	2.0	10	<ql< th=""><th>22</th><th>0.18</th><th>2.2</th></ql<>	22	0.18	2.2	
Glenmore	0.102	2.8	15	4.6	30	NR	NL	
Scottsville	0.063	1.8	25	6.2	30	NR	NL	
Stone Robinson	0.001	NR	30	NR	30	NR	NL	

NR = Not Required

NL = No Limit

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

Nutrient discharges at the Moores Creek AWRRF were as follows for January 2022.

State Annual A (lb./yr.) P	Allocation Permit	Average Monthly Allocation (lb./mo.) *	Moores Creek Discharge January (lb./mo.)	Performance as % of monthly average Allocation*	Year to Date Performance as % of annual allocation
Nitrogen	282,994	23,583	7,820	33%	3%
Phosphorous	18,525	1,544	253	16%	1%

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

During the winter months, the Moores Creek Advanced Water Resource Recovery Facility deals with very cold wastewater with high levels of salinity from road chemicals applied for snow and ice control that make their way into our wastewater piping systems. The changes to the wastewater characteristics resulting from the salt can be challenging to treat. The Wastewater Operations staff monitors for increasing influent flow rates on SCADA and decreasing nitrification in the aeration basins from the online analyzers. The staff then makes changes in the aeration basins to increase air flow and keep the treatment system working effectively.

WATER AND WASTEWATER DATA:

The following graphs are provided for review:

- Usable Urban Reservoir Water Storage
- 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: FEBRUARY 22, 2022

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: <u>https://www.rivanna.org/wp-content/uploads/2021/06/2022-2026-CIP-Final.pdf</u>

Under Construction

- 1. South Rivanna and Observatory Water Treatment Plant Renovations
- 2. Crozet Flow Equalization Tank
- 3. MC Aluminum Slide Gate Replacements
- 4. MC Exterior Lighting Improvements
- 5. MC Generator Fuel Expansion
- 6. MC Clarifier and Silo Demolition
- 7. Glenmore WRRF Influent Pump & VFD Addition
- 8. Airport Road Water Pump Station and Piping

Design and Bidding

- 9. Ragged Mtn Reservoir to Observatory WTP Raw Water Line and Pump Station
- 10. South Rivanna to Ragged Mtn. Raw Water Line Birdwood to Old Garth
- 11. Beaver Creek Dam, Pump Station and Piping Improvements
- 12. South Rivanna River Crossing
- 13. MC 5kV Electrical System Upgrades
- 14. Central Water Line
- 15. Upper Schenks Branch Interceptor, Phase II
- 16. Scottville WTP Lagoon Liner Replacement

Planning and Studies

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

- 18. Urban Finished Water Infrastructure Master Plan
- 19. Asset Management Plan
- 20. MC Facilities Master Plan
- 21. SRR to RMR Pipeline Pretreatment Pilot Study

Other Significant Projects

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

Under Construction

1. 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:	50%
Base Construction Contract +	
Change Orders to Date = Current Value:	\$36,748,500 + \$474,849 = \$37,223,349
Completion:	May 2023
Budget:	\$43,000,000

<u>Current Status</u>: Work continues at the SR WTP with completion of the Alum and Fluoride Chemical Storage Building, the Administration Building, and replacement of a clarifier drive. Two new filters have been completed and are in their 30-day demonstration period. Work at the OBWTP includes the foundation associated with the new Chemical Storage Building, installation of backwash pumps, expansion of the existing Filter Building and sedimentation basin improvements.

2. Crozet Flow Equalization Tank

Schnabel Engineering
Anderson Construction (Lynchburg, VA)
September 2020
86%
\$4,406,300 + \$71,916.31 = \$4,478,216.31
June 2022
\$5,400,000

<u>Current Status</u>: Final construction of the tank continues with only completion of the tank dome, a second round of leak testing, and painting remaining. The new pumps are set on bases but the new motors and variable speed drives are not yet complete. SCADA and control work is in progress.

3. MC Aluminum Slide Gate Replacements

Design Engineer:	Hazen and Sawyer
Construction Contractor:	Waco Incorporated (Sandston, VA)
Construction Start:	September 2020
Percent Complete:	90%
Base Construction Contract +	
Change Orders to Date = Current Value:	\$373,600 + \$32,050.02 = \$405,650.02
Completion:	April 2022
Budget:	\$675,000

<u>Current Status</u>: The new 30" mud valve and all actuators are installed at the headworks. Final testing and calibration of the actuators will be completed over the next month.

A quote package for temporary bypass pumping and slide gate inspection for the Moores Creek Pump Station was awarded to Waco in September 2021. The slide gate inspection was conducted February 1st and 2nd. An inspection report will recommend the repairs and budget needed to complete the slide gate repair.

4. MC Exterior Lighting Improvements

Hazen and Sawyer
Pyramid Electrical Contractors (Richmond, VA)
April 2021
90%
\$349,000 + \$17,598.30 = \$366,598.30
May 2022
\$600,000

<u>Current Status</u>: Project was nearing completion, when it was discovered that some additional lighting modifications would be needed to meet County ordinance requirements. These lighting modifications will be completed in 3 - 6 months, depending upon the schedule for delivery of the new light fixtures. Additional fixtures have been ordered.

5. MC Generator Fuel Storage Expansion

Design Engineer:	Short Elliot Hendrickson, Inc. (SEH)
Construction Contractor:	Waco Incorporated (Sandston, VA)
Construction Start:	July 2021
Percent Complete:	50%
Base Construction Contract +	
Change Order to Date = Current Value:	\$168,860
Completion:	March 2022
Budget:	\$220,000

Current Status: The 8,000 gallon, above ground, double-wall steel fuel storage tank will be installed

when received. Tank delivery and installation are anticipated this February/March.

MC Clarifier and Lime Silo Demolition

Design Engineer:	Hazen and Sawyer
Construction Contractor:	Pleasant View Developers (Staunton, VA)
Construction Start:	November 2021
Percent Complete:	15%
Base Construction Contract +	
Change Order to Date = Current Value:	\$649,000
Completion:	August 2022
Budget:	\$790,000

<u>Current Status</u>: Contractor has removed the lime silo and will be rerouting the utilities necessary for the clarifier demolition. Contractor has submitted shoring plans that have been approved and following utility relocations, demolition of the clarifiers will begin.

6. <u>Glenmore WRRF Influent Pump and VFD Addition</u>

Design Engineer:	Wiley Wilson
Construction Contractor:	MEB (Chesapeake, VA)
Construction Start:	September 2021
Percent Complete:	5%
Base Construction Contract +	
Change Order to Date = Current Value:	\$288,000
Completion:	October 2022
Budget:	\$370,000

<u>Current Status</u>: The contractor anticipates mobilizing to the site in the middle of March due to a delay in lead times for equipment and will begin pump installation and the necessary electrical improvements.

7. Airport Road Water Pump Station and Piping

Design Engineer:	Short Elliot Hendrickson (SEH)
Construction Contractor:	Anderson Construction, Inc. (Lynchburg, VA)
Construction Start:	December 2021
Percent Complete:	5%
Base Construction Contract +	
Change Order to Date = Current Value:	\$8,520,312.50
Completion:	December 2023
Budget:	\$10,000,000

<u>Current Status</u>: The contractor continues to submit shop drawings. There is currently a 5-7 month lead time for ductile iron pipe, fittings, and some pump station materials, so contractor mobilization to the site may not be until April/May 2022.

Design and Bidding

8. <u>Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line and Pump</u> <u>Station</u>

Design Engineer:	Michael Baker International (Baker) (Right of Way)
Design Engineer:	Kimley-Horn (Design)
Project Start:	August 2018
Project Status:	Easement Acquisition & Design (9%)
Construction Start:	2025
Completion:	2028
Budget:	\$29,375,000

<u>Current Status</u>: Preparation of engineering plans and specifications is underway. Topographic survey work to the West of the proposed pump station site is nearing completion, with further survey efforts to the East of the site soon to commence. A hydraulic evaluation of the future SRR to RMR transfer system is also underway, which will further inform design of the RMR Pump Station and associated yard piping. Easement negotiations with one private owner, UVA, and the UVA Foundation continue.

9. South Rivanna Reservoir to Ragged Mtn. Reservoir Raw Water Line - Birdwood to Old Garth

Design Engineer:	Kimley-Horn
Project Start:	June 2021
Project Status:	90% Design
Construction Start:	Summer 2022
Completion:	2023
Budget:	\$1,980,000

<u>Current Status</u>: Preparation of engineering plans and specifications is substantially complete for a 0.25-mile section of this 36" raw water pipe from Birdwood to Old Garth Road. One remaining easement is under negotiation with the UVA Foundation for this phase of the project. Design documents have been submitted to local regulatory authorities for review.

10. Beaver Creek Dam, Pump Station and Piping Improvements

Design Engineer:	Schnabel Engineering (Dam)
Design Engineer:	Hazen & Sawyer (Pump Station)
Project Start:	February 2018
Project Status:	73% NRCS Planning Process
Construction Start:	2024
Completion:	2026
Budget:	\$30,870,000

<u>Current Status</u>: Staff are moving forward with development of a Joint Permit Application and supporting documents for submission to DEQ in early 2022. Remaining NRCS requirements, including review and approval of the planning study, are scheduled for completion by October 2022. An application for design funding from NRCS will be submitted in 2022.

11. South Rivanna River Crossing

Design Engineer:	Michael Baker International (Baker)
Project Start:	November 2020
Project Status:	35% Design
Construction Start:	January 2023
Completion:	April 2024
Budget:	\$5,850,000

<u>Current Status</u>: Baker has recommended a water line route that will cross the river parallel to the west side of the Berkmar Bridge and follow Rio Mills Road until it intersects the new 24" water line in Route 29.

12. MC 5 kV Electrical System Upgrades

Hazen and Sawyer (Hazen)
August 2020
Bidding
May 2022
June 2024
\$5,050,000

<u>Current Status</u>: Bids were received on February 3, 2022. A recommendation for award is included in this month's Board packet.

13. Central Water Line

Design Engineer:	Michael Baker International (Baker)
Project Start:	July 2021
Project Status:	5% Design
Construction Start:	2024
Completion:	2029
Budget:	\$31,000,000

<u>Current Status</u>: Survey and utility designation work has begun and will continue along the proposed 5-mile alignment through May 2022. A drone survey of the proposed CWL alignment has been posted on our web page. RWSA and City staff will attend the virtual Fry's Spring Neighborhood Association meeting on March 9th to present information on this project.

14. Upper Schenks Branch Interceptor, Phase II

Design Engineer:	Frazier Engineering, P.A.
Project Start:	July 2021
Project Status:	Design
Construction Start:	TBD
Completion:	TBD
Budget:	\$4,725,000

<u>Current Status</u>: A revised draft alignment of the sewer line to be installed within easements and out of the roadway has been completed and provided to the City of Charlottesville and Albemarle County for review.

15. Scottsville WTP Lagoon Liner Replacement

Design Engineer:	Wiley Wilson
Project Start:	January 2021
Project Status:	Bidding
Construction Start:	April 2022
Completion:	May 2023
Budget:	\$540,000

<u>Current Status</u>: Bids were received on February 1, 2022. A recommendation for award is included in this month's Board packet.

Planning and Studies

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

Design Engineer:	Michael Baker International (Baker)
Project Start:	October 2017
Project Status:	Easement Acquisition
Completion:	2022
Budget:	\$2,295,000

<u>Current Status</u>: Progress continues in our efforts to acquire the 8 miles of easements and agreements (with VDOT) for this 36" water line. Discussions continue for remaining easements with the UVA Foundation and one final private property owner.

17. Urban Finished Water Infrastructure Master Plan

Design Engineer:	Michael Baker International (Baker)	
Project Start:	November 2018	
Project Status:	99% complete	
Completion:	February 2022	
Budget:	\$253,000	

Current Status: A final draft of the master plan will be submitted to stakeholders this month for review.

18. Asset Management Plan

Design Engineer:	GHD, Inc. (GHD)
Project Start:	July 2018
Project Status:	CMMS Implementation - 60% Complete
Completion:	Phase 2 – 2021
	CMMS Implementation – June 2022
Budget:	\$1,180,000

<u>Current Status</u>: For implementation of the new CMMS, GHD is completing updates to our facility geodatabase and continuing the software configuration process. Discussions related to Phase 3 of RWSA's overall Asset Management Program have begun with additional work authorizations to follow towards this effort.

19. MC Facilities Master Plan

Design Consultant:	Hazen and Sawyer (Hazen)	
Project Start:	August 2019	
Project Status:	100% Complete	
Completion:	February 2022	
Budget:	\$275,000	

<u>Current Status</u>: The master plan has been finalized. A supplement will be prepared to include the impact of the recent wastewater collection system flow allocation analysis.

20. <u>SRR to RMR Pipeline – Pretreatment Pilot Study</u>

Design Consultant:	SEH
Project Start:	August 2020
Project Status:	100% Complete (Phase 1), 50% Complete (Phase 2)
Completion:	July 2022
Budget:	\$22,969 (Phase 1), \$98,629 (Phase 2)

<u>Current Status</u>: Phase 1, analysis of existing water quality and seasonal weather data, has been completed. SEH and staff have finalized the memo for this portion of the study. Phase 2 of the study is underway and includes detailed reservoir water quality modeling performed by DiNatale Water Consultants. Staff coordinated internally and generated a list of scenarios for DiNatale to run in a excel-based desktop model, which is currently underway. Once these runs have been completed and the technical memo has been finalized, work on a more detailed reservoir model will likely commence, which will help better represent the future conditions at Ragged Mountain Reservoir based upon the known characteristics of the proposed transfer system.

Other Significant Projects

21. Urgent and Emergency Repairs

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

Project	Project Description	Approx. Cost
No.		
2020-08	UWL-010 Leak	\$40,000
2021-08	MCAWRRF Digester Manway Sealing	\$70,000
2021-09	SLW Erosion Near SLW-022	\$20,000
2022-01	PCI-MH-10 Exploratory Excavation and Height Adjustment	\$30,000
- <u>UWL-010 Leak:</u> In 2020, during routine line maintenance, RWSA Maintenance Staff discovered that a blowoff valve on the Urban Waterline, UWL-010, was leaking into an adjacent creek. A blind flange was installed to stop the leakage at that time. Staff is coordinating the replacement of this defective valve with its On-Call Maintenance Contractor for later this Winter.
- <u>MCAWRRF Digester Manway Sealing</u>: Staff has identified the immediate need to repair gas leaks in Digesters #1, #2 and #3 at the MCAWRRF. The gas leaks are a safety concern and are causing significant concrete degradation which has led to Digester #2 being taken out of service thereby reducing solids processing redundancy. Following external and internal inspections by our engineering consultants, it has been decided that installation of rubber seals in the manways and sample ports will mitigate gas leaks into the annular roof space and decrease further concrete degradation. Waco, Inc. was selected to perform the work under an Emergency Declaration by the Executive Director and seals were installed in Digester #2. Unfortunately, the Digester continued to leak gas once back in service so further investigative work is warranted to determine the source of the leaks and evaluate the structural integrity of the annular roof space. Waco has completed the work on Digester #1 and #2 and will complete the work on Digester #3 in February 2022.
- <u>Erosion Near SLW-022</u>: In Spring 2021, staff identified an area of erosion over RWSA's 20" Southern Loop Waterline (SLW), located near Forest View Road in Albemarle County. During subsequent site visits, it was determined that an adjacent creek/stormwater channel has silted in, causing water to become redirected over the RWSA Easement during heavy rain events. Staff is coordinating easement restoration efforts through its On-Call Maintenance Contract for later this winter and is also coordinating with Albemarle County Water Resources staff on potential collaborative efforts to address the issues on the RWSA easement and improve stormwater flow in the area.
- <u>PCI-MH-10 Exploratory Excavation and Height Adjustment:</u> Recently, while performing sewer evaluation of the Powell Creek Interceptor (PCI), RWSA staff identified that PCI-MH-10 appears to be buried just off the shoulder of PCI-MH-10. It is unknown how deep the lid of this MH is buried, but during sewer cleaning efforts, staff could here the equipment in the manhole. RWSA will be working with its On-Call Maintenance Contractor, Faulconer Construction, to hopefully find the manhole, and raise it to grade for future access and maintenance purposes.

22. Interceptor Sewer and Manhole Repair

Design Engineer: Construction Contractor: Construction Start: Percent Complete: Base Construction Contract + Change Orders to Date = Current Value: Expected Completion: Budget: Frazier Engineering Insituform Technologies November 2017 Bidding \$701,125

June 2022 \$1,088,330 (Urban) + \$880,000 (Crozet) = \$1,968,330 <u>Current Status</u>: With the completion of the Upper Morey Creek Interceptor (MRI) Point Repair/New MH Installation, all rehabilitation work on the Upper MRI has been completed. Staff continues coordination on the lower Powell Creek Interceptor and a portion of the Woodbrook Interceptor, as these are the next high-priority areas to be addressed based upon the latest CCTV footage. The scope of this rehabilitation work is likely to include several sections of Cured in Place Piping, as well as manhole rehabilitation. A Notice to Proceed was issued to Tri-State Utilities, LLC on October 4th to perform additional cleaning and CCTV work and that was completed on October 15, 2021. Staff has reviewed the footage with Frazier Engineering, and a bid package was issued to address the highest priority defects on the Powell Creek and Woodbrook Interceptors, as well as the Crozet Interceptor. A recommendation for award is included in this month's Board packet.

23. Security Enhancements

Design Engineer:	N/A			
Construction Contractor:	Security 101			
Construction Start:	March 2020			
Percent Complete:	99% (WA 2 & 3), 80% (WA 4)			
Based Construction Contract +				
Change Orders to Date = Current Value:	\$718,428.00 (WA1) + \$91,130.32 (WA2) +			
	128,166.69 (WA3) + $189,698.95$ (WA4) =			
	\$1,127,423.96 (total)			
Completion:	December (WA 2 & 3), February 2022 (WA 4)			
Budget:	\$2,810,000			

Current Status: Access control system installation has been completed on all exterior doors at MCAWRRF, as well as all WTP motorized gates. The Card Access System is in use at the Administration, Engineering, and Maintenance Buildings at MCAWRRF, as well as at various process buildings across the site and at the WTP gates. The only task that remains is some door and lock hardware improvements under WA #2, which will enhance the functionality of the card access system. These improvements are nearly substantially complete, and staff has provided a punch list to the subcontractor based upon a site walk on February 9. Card access installation at the Crozet and Scottsville WTP exterior doors under WA #3 is substantially complete. Finally, WA #4 includes security conduit at the South Rivanna and Observatory WTPs that was not included in the Improvements Project. This work began on November 2, 2021, with the majority of the work at South Rivanna WTP now complete, except for the Filter Building, which is currently ongoing heavy construction work as part of the Improvements Project. Security 101's subcontractor has also completed most work at Observatory, aside from the Pretreatment Building, which is also currently undergoing heavy renovations. The subcontractor will return as these buildings become more available for the work.

History

Under Construction

1. South Rivanna and Observatory Water Treatment Plant Renovations

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

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

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

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

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

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

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

with ACSA and a final tank location was determined.

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

3. MC Aluminum Slide Gate Replacements

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

4. MC Exterior Lighting Improvements

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

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

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

5. MC Generator Fuel Expansion

The Moores Creek AWRRF south side electrical facilities have a single large system back-up power generator that was installed between 2009 - 2012 during the ENR plant upgrade. The generator has a belly tank that allows for approximately 22 hours of operation. This project will install an ancillary fuel tank that will allow for approximately three days of operation. A Notice of Award was issued to Waco, Inc. Construction of the concrete pad the new tank will rest on as well as electrical connections for the tank are in progress. Tank delivery is expected this winter.

6. 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 plate and frame presses before centrifuges were installed for sludge dewatering purposes. This project will include the complete demolition of the inplant 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. The project was advertised, and bids are due on July 1, 2021. A Notice of Award was issued on August 6, 2021 and a Notice to Proceed was issues on September 28, 2021.

7. Glenmore WRRF Influent Pump and VFD Addition

The 0.381-mgd water resource recovery facility, located within the Glenmore subdivision, is operated by RWSA. The facility includes an influent pumping station located immediately adjacent to the treatment facility. The Glenmore WRRF is predicted to see additional dry and wet weather flows as construction within the service area continues. Future wet weather flows will require higher influent pumping capacity and an additional pump and electrical variable frequency drive will be required to maintain firm capacity. After discussions with the Operations and Maintenance departments, installation of a new exhaust fan in the influent pump station will also be included. A work authorization for this project has been finalized and design is underway. The project was advertised, and bids are due on July 8, 2021. A Notice of Award was issued on August 6, 2021.

8. 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.

Bids were opened on October 7, 2021 and this work was awarded at the October 2021 Board of Directors meeting. The contract was signed, and the pre-construction conference was held on December 9, 2021.

Design and Bidding

9. <u>Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line and</u> <u>Raw Water Pump Station</u>

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.

Both Design Work Authorizations received Board of Directors approval on July 27, 2021. A kickoff meeting was held on September 17, 2021, and a meeting to begin establishing boundary conditions for the RMR Pump Station was held on October 25, 2021.

10. South Rivanna Reservoir to Ragged Mtn. Reservoir Raw Water Line -Birdwood to Old Garth

This project is the continuation of the SRR to RMR 36" raw water pipeline built on the Birdwood Golf Course. Design effort were authorized in June 2021 with construction anticipated in Summer 2022.

11. Beaver Creek Dam and Pump Station Improvements

<u>Dam</u>: A spillway upgrade alternative for the dam has been selected and was presented in a public meeting on October 6, 2021. A new raw water pump station site and pipe access route were selected and approved by the Board in August 2021. RWSA operates the Beaver Creek Dam and reservoir as the sole raw water supply for the Crozet Area. In 2011, an analysis of the Dam Breach inundation areas and changes to Virginia Department of Conservation and Recreation (DCR) *Impounding Structures Regulations* prompted a change in hazard classification of the dam from Significant to High Hazard. This change in hazard classification requires that the capacity of the spillway be increased. This CIP project includes investigation, preliminary design, public outreach, permitting, easement acquisition, final design, and construction of the anticipated modifications. Work for this project will be coordinated with the new relocated raw water pump station and intake and a reservoir oxygenation system project.

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

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

<u>Pump Station</u>: 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.

12. South 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 5 kV Electrical System Upgrades

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

A Design Kickoff Meeting was held virtually on October 20, 2020. A site visit was attended on November 5, 2020 by Hazen & Sawyer staff, as well as RWSA Maintenance and Engineering Department staff. 50% Design Documents were provided in Spring 2021, with staff feedback provided soon thereafter. A follow-up site visit by Hazen was performed in July 2021, in order to confirm the availability of spare conduits across the site and plan for the associated cable replacements. 95% Design Documents were provided by Hazen in September 2021, and staff returned comments in October 2021. Field work was conducted in Fall 2021 to evaluate the condition of conduits within the existing duct bank network, as well as verify pathways and connectivity within the network.

A Request for Bids (RFB) was issued on December 22, 2021, and bids were submitted on February 3, 2022.

14. Central Water Line

Route alignment determination, hydraulic modeling, and preliminary design were underway in 2017. Due to the complicated nature of our finished water systems, it was decided at the August 2018 Board meeting that a more comprehensive approach was warranted, and we should complete the Finished Water Master Plan prior to moving forward with final design and construction of the Central Water Line (formerly referred to as the Avon to Pantops Water Main). The focus of this project was on the southern half of the urban area water system which is currently served predominantly by the Avon Street and Pantops water storage tanks. The Avon Street tank is hydraulically well connected to the Observatory Water Treatment Plant, while the Pantops tank is well connected to the South Rivanna Water Treatment Plant. The hydraulic connectivity between the two tanks, however, is less than desired, creating operational challenges and reduced system flexibility. In 1987, the City and ACSA developed the Southern Loop Agreement which laid out two key phases (with the first being built at the time). The 1987 Agreement and planning efforts were a starting point for this current project. An engineering contract has been negotiated and was approved by the Board of Directors in July 2017. Recent efforts and modeling for the Urban Finished Water Infrastructure Master Plan have determined that a central water line corridor through the City is the best option to hydraulically connect the Observatory Water Treatment Plant to the Pantops area, with connections to City water lines to support the water distribution system in the City and County.

15. Upper Schenks Branch Interceptor, Phase II

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

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

16. Scottsville WTP Lagoon Liner Replacement

The Scottville Water Treatment Plant (WTP) has two lined lagoons that receive filter backwash water, filter-to-waste water, and flow from the sedimentation basin sludge collectors. The lagoons are regulated under the Virginia DEQ VPDES permit program. The earthen lagoons are original to the plant and were lined at the request of DEQ in 2007 to prevent water infiltration out of the lagoons.

Recently, the lagoon liners have shown signs of degradation from ultraviolent sunlight. As such, a liner replacement project was added to the FY 22-26 CIP to begin in FY23 and be completed in FY24. Unfortunately, in early June '21, the liner in one of the lagoons failed during a high flow event. DEQ has been notified and the lagoon taken out of service, leaving the plant with only one remaining lagoon. In order to advance replacement of the liners, bid documents were developed, a Request for Bids was issued on January 4, 2022, and bids were received on February 1, 2022.

Planning and Studies

17. 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.

18. 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.

19. Asset Management Plan

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

20. 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.

21. <u>SRR to RMR Pipeline – Pretreatment Pilot Study</u>

As part of the SRR to RMR Pipeline project, the impact of sending raw water from the SRR to RMR has been previously studied and a significant amount of pretreatment was initially identified as being needed to avoid reducing the quality of the raw water contained within the RMR. With the pipeline easement acquisition process well underway and additional information now available associated with the proposed timing of this overall project based on water demand projections, the intent of this project is to update the pretreatment needs anticipated.

The study is anticipated to be completed in 4 phases: 1. Analysis and Correlation of Existing Water Quality and Seasonal Weather Data 2. Enhanced Water Quality Sampling 3. Pretreatment Piloting 4. Level Setting for the Final Pretreatment Solution. Phase 1 commenced in January 2021 and was completed in July 2021. Phase 2 began in June 2021.

Other Significant Projects

22. Urgent and Emergency Repairs

• South Rivanna Dam Apron and Riverbank 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 riverbank 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 riverbank 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.

23. Interceptor Sewer and Manhole Repair

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

rehabilitation work.

Lining work and manhole rehabilitation on the Upper Morey Creek Interceptor began in Fall 2019 and was completed in Fall 2020. A critical section of upper Morey Creek Interceptor under Rt. 250 was lined on August 28, 2020. 65' of new ductile iron sewer to replace a sagging section of vitrified clay piping was installed in May 2021. Tri-State Utilities completed over 3,000 LF of Sewer Cleaning and CCTV under RFQ No. 1105 in October 2021 on high-priority portions of the Powell Creek and Woodbrook Interceptors.

A bid package was developed to address the highest priority known defects on the Powell Creek, Woodbrook, and Crozet Interceptors. A Request for Bids (RFB) was issued on December 22, 2021, and bids were submitted on February 3, 2022.

24. Security Enhancements

As required by the Federal Bioterrorism Act of 2002 and the American Water Infrastructure Act of 2018, water utilities must conduct Vulnerability Assessments and have Emergency Response Plans. RWSA recently completed an updated Risk Assessment of its water system in collaboration with the Albemarle County Service Authority (ACSA), City of Charlottesville (City), and University of Virginia (UVA). A number of security improvements that could be applied to both the water and wastewater systems were identified. The purpose of this project will be to install security improvements at RWSA facilities including additional security gate and fencing components, vehicle bollards, facility signage, camera system enhancements, additional security lighting, intrusion detection systems, door and window hardening, installation of industrial strength locks, communication technology and cable hardening, and an enhanced access control program.

RWSA Engineering staff held a meeting with Operations staff to discuss overall project needs and priorities in October 2018. Meetings with ACSA and City staff were held in Fall/Winter 2018-2019 to discuss how access control and intrusion detection systems have been implemented into to the dayto-day operations of the two utilities. A Request for Proposal (RFP) for an Implementer to facilitate selection of an access control system, confirmation of design requirements based upon RWSA's facilities and project goals, and installation of the selected system was issued on June 6, 2019. RWSA conducted a Pre-Proposal Meeting on June 14, 2019, and proposals were opened on June 27, 2019. Interviews were conducted on July 15-16, 2019, and a Contract Award Recommendation was approved by the Board on July 23, 2019. Access Control System Installation at MCAWRRF began in March 2020. Access Control System Installation was completed in the Administration and Engineering Buildings by the week of November 30, 2020, completing installation of the physical access control system across the MCAWRRF site. Training for staff was completed on November 10, 2020. RWSA authorized improvements to locks and doors across the MCAWRRF site on May 4, 2021, in order to improve the condition of the hardware and subsequently, operations of the access control system. In addition, installation of the card access system on all exterior doors at the Scottsville and Crozet Water Treatment Plants (SVWTP and CZWTP, respectively) was authorized shortly thereafter. RWSA also authorized installation of security conduits not already included at SRWTP and OBSWTP under the Improvements Project in August 2021.

Access Control on exterior doors at the CZWTP and SVWTP was substantially completed in November 2021.



MEMORANDUM

TO:RIVANNA WATER & SEWER AUTHORITY
BOARD OF DIRECTORSFROM:JENNIFER WHITAKER, DIRECTOR OF ENGINEERING &
MAINTENANCEREVIEWED BY:BILL MAWYER, EXECUTIVE DIRECTORSUBJECT:WHOLESALE METERING REPORT FOR JANUARY 2022DATE:FEBRUARY 22, 2022

The monthly and average daily Urban water system usages by the City and the ACSA for January 2022 were as follows:

	Month	Daily Average	
City Usage (gal)	136,180,673	4,392,925	52.1%
ACSA Usage (gal)	125,042,523	4,033,630	47.9%
Total (gal)	261,223,196	8,426,555	

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 February 2021), and that usage relative to the maximum allocation for each party (6.71 MGD for the City and 11.99 MGD for ACSA).

Notes:

A review of data from Meter Site 15 (Ivy Road) revealed large volumes of water flowing in the reverse direction at this site from January 6-10, 2022. Staff is working closely with ACSA and the City to determine the cause of the anomalous flows, as this had a significant impact on the City's monthly water usage.



Figure 1: City of Charlottesville Monthly Water Usage and Allocation

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





MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS

FROM: JENNIFER WHITAKER, DIRECTOR OF ENGINEERING AND MAINTENANCE

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: AWARD CONSTRUCTION CONTRACT AND AMEND CAPITAL IMPROVEMENT PLAN – MCAWRRF ELECTRICAL INFRASTRUCTURE IMPROVEMENTS – PYRAMID ELECTRICAL CONTRACTORS, LLC

DATE: FEBRUARY 22, 2022

This request is to authorize the Executive Director to execute a construction contract with Pyramid Electrical Contractors, LLC for a total contract amount of \$3,905,000 for the MCAWRRF Electrical Infrastructure Improvements Project, and to amend the FY 2022 - 2026 Capital Improvement Plan to increase the project budget by \$450,000 to a total project budget of \$5,050,000.

Background

During completion of the recent Moores Creek AWRRF Master Plan, it was identified that several areas of the facility are still connected to, or being fed by, the original 5kV electrical switchgear, cables, and transformers. This equipment was installed around 1980 and has a useful life expectancy of 20-30 years. With the equipment having well exceeded its useful life expectancy, safety and reliability are concerns given the large electric loads that the cabling and other equipment are handling on a day-to-day basis. Failure of the existing 5kV infrastructure could result in temporary outages of certain treatment processes, and repairs could take weeks to months given the lead times associated with equipment of this age. A technical memo was provided in July 2020 by Hazen & Sawyer, which recommended that a CIP Project be added immediately to encompass replacement of the original 1980s-vintage 5kV cables, switchgear, transformers, and selected MCCs.

This construction project was advertised for bids on December 22, 2021 (RFB No. 383). One bid of \$5,180,000 was received from Pyramid Electrical Contractors, LLC (Pyramid), making Pyramid the apparent low bidder. Although the total bid of \$5,180,000 exceeds the FY 2022 – 2026 Capital Improvement Plan (CIP) Budget of \$4,600,000, the base bid (which included all necessary cable, switchgear, transformer, and MCC replacements specified by Hazen's July 2020 Technical Memo) was submitted at \$3,800,000. Select additional bid items were also included at a combined value of \$1,380,000, which resulted in a total bid value of \$5,180,000.

While each of these additional bid items would improve the overall reliability and resiliency of the MCAWRRF Electrical System, based on the bid values received and the urgency associated with some of these additional improvements, staff only recommends proceeding with the replacement

of MCC-1A in the Blower Building for a value of \$105,000, along with the base bid.

Hazen staff reviewed the bid submitted by Pyramid and found it to be responsive and responsible to the bidding requirements. Although only one bid was received, Hazen found the pricing provided by Pyramid to be fair and reasonable, especially considering the current supply chain issues and overall bidding market volatility. RWSA has experience working with Pyramid, both on the MC Lighting Improvements Project, as well as during the Crozet WTP Improvements Project as a subcontractor. RWSA staff talked with numerous electrical contractors during the bidding process, and the vast majority were unable to submit bids due to ongoing work commitments and market volatility. As such, it is not recommended by staff to re-bid the project.

Hazen has recommended awarding the construction project to Pyramid Electrical Contractors, LLC in the amount of \$3,905,000, which includes the base bid (\$3,800,000), as well as replacement of MCC-1A in the Blower Building (\$105,000). Change Order No. 1 will accompany the Contract Documents, formally removing the other additional bid items. The proposed contract value of \$3,905,000 represents an increase to the CIP Budget of \$450,000, or a total budget of \$5,050,000. It should be noted that the proposed budget for this project in the FY 2023 – 2027 CIP is equal to the recommended \$5,050,000.

Board Action Requested:

- 1. Authorize the Executive Director to execute a construction contract with Pyramid Electrical Contractors, LLC for a total value of \$3,905,000 for the MCAWRRF Electrical Infrastructure Improvements Project, including issuance of Change Order No. 1 with the executed contract, and any change orders not to exceed 10% of the original contract amount.
- 2. Amend the FY 2022 2026 Capital Improvement Plan to increase the project budget by \$450,000 to a total project budget of \$5,050,000.



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: AWARD CONSTRUCTION CONTRACT AND AMEND CAPITAL IMPROVEMENT PLAN – SCOTTSVILLE WTP LAGOON LINERS REPLACEMENT – HAREN CONSTRUCTION COMPANY

DATE: FEBRUARY 22, 2022

This request is to authorize the Executive Director to award a construction contract to Haren Construction Company for \$448,000 to complete the Scottsville WTP Lagoon Liners Replacement Project, and any change orders up to 10% of the original contract amount, and to amend the Capital Improvement Plan for Fiscal Years 2022 - 2026 to include a budget increase of \$225,000, bringing the total budget for the project to \$540,000.

Background

The Scottville Water Treatment Plant (WTP) has two lined lagoons that receive filter backwash water, filter-to-waste water, and flow from the sedimentation basin sludge collectors. The lagoons are regulated under the Virginia DEQ VPDES permit program. The earthen lagoons are original to the plant and were lined at the request of DEQ in 2007 to prevent water exfiltration out of the lagoons.

Recently, the synthetic lagoon liners have shown signs of degradation from ultraviolent sunlight. As such, a liner replacement project was added to the FY 22-26 CIP to begin in FY 23 and be completed in FY 24. Unfortunately, in early June 2021, the liner in one of the lagoons failed during a high flow event. DEQ has been notified and the lagoon taken out of service, leaving the plant with only one remaining lagoon. A Request for Bids to replace both liners was issued on January 4, 2022, and a pre-bid conference was held on January 11, 2022. Construction bids were opened on February 1, 2022. Two bids were received for the project ranging from \$448,000 to \$530,706.60, with the low bid received from Haren Construction Company.

Our design engineer, Wiley/Wilson, has reviewed the bid received from Haren Construction Company, and finds that the proposal meets the project specifications, and has verified that the bid and attached documents are both responsive and responsible. Therefore, we are recommending award to Haren Construction Company as the apparent low bidder for a contract price of \$448,000.

The current Capital Improvement Plan budget for this project is \$315,000. This project budget was based on costs associated with installation of a new liner in the lagoon at the Crozet WTP in 2019. The price of labor and materials has greatly increased over the past 3 years, especially so during the pandemic. Based on the current status of the industry and the bid prices received, Wiley|Wilson and staff believe the pricing provided is in accordance with the current market value for the work. Incorporating Haren's bid value of \$448,000 represents an increase to the CIP Budget of \$225,000.

Board Action Requested:

Authorize the Executive Director to award a construction contract to Haren Construction Company for a total value of \$448,000 for the Scottsville WTP Lagoon Liners Replacement Project, and any change orders up to 10% of the original contract amount. Amend the Capital Improvement Plan for Fiscal Years 2022 - 2026 to include a budget increase of \$225,000, bringing the total budget for the project to \$540,000.



MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS

- FROM: JENNIFER WHITAKER, DIRECTOR OF ENGINEERING AND MAINTENANCE
- **REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR**

SUBJECT: AWARD CONSTRUCTION CONTRACT- FY 22-23 SANITARY SEWER REHABILITATION CONTRACT - INSITUFORM TECHNOLOGIES, LLC

DATE: FEBRUARY 22, 2021

This request is to authorize the Executive Director to execute a unit price construction contract, and Change Order No. 1, with Insituform Technologies, LLC in the estimated amount of \$701,125, and any additional change orders up to 10% of the contract amount. The final cost of this project will be based on the total quantity of work items completed and the competitively bid unit price costs.

Background

Sewer flow monitoring and modeling under the Comprehensive Sanitary Sewer Study identified specific inflow and infiltration (I&I) concerns in the collection system and resulted in strengthened commitments from the City, ACSA and RWSA to continue the rehabilitation and repair of the sewer collection system. After the previous Sanitary Sewer Rehabilitation Contract expired in June 2021, RWSA prioritized the lower 21" – 27" portion of the Powell Creek Interceptor (PCI), as well as an upstream 10" portion of the Woodbrook Interceptor (WBI), and previously unrehabilitated portions of the Crozet Interceptor (CZI). Professional engineering services from Frazier Engineering were utilized to develop a bid package, following cleaning and closed-circuit television (CCTV) efforts on PCI and WBI in Fall 2021.

This construction project was advertised for bids on December 22, 2021 (RFB No. 389). Two bids of \$785,725 and \$823,415 were received on February 3, 2022. Insituform Technologies, LLC from Chesterfield, MO was the apparent low bidder. After reviewing the bid documents, Frazier Engineering determined the apparent low bidder was responsive and responsible and recommended award of the contract to Insituform Technologies, LLC.

The bid package was set up to provide a total bid based upon the sum of a series of lump sum and unit price bid items. The actual work associated with this contract will be administered through individual construction work authorizations in accordance with the unit price bid items included in the bid package and work to be performed in accordance with the specifications. Recent and previous CCTV footage, as well as manhole inspection data, was used to generally define the scope of the project. However, RWSA staff can modify the scope through the construction work authorizations as appropriate, should new data become available, provided that the modifications

remain within the project budget.

The total bid value of \$785,725 from the apparent low bidder exceeds the available Capital Improvement Plan budgets for the Urban and Crozet Sanitary Sewer Rehabilitation projects. As such, negotiations took place with Insituform that adjusted assumed quantities of unit price items and removed lump sum bid items as appropriate to arrive at a total bid value of \$701,125. Insituform Technologies has agreed to the modified quantities and if the Board of Directors approves the award of this contract to Insituform Technologies, LLC, a Change Order No. 1 will be issued along with the executed Contract Documents formally modifying the total bid value. Based on these conditions, Frazier Engineering has recommended awarding the construction project to Insituform Technologies. The final cost of this project will be based on the total quantity of work items completed and the competitively bid unit price costs.

Board Action Requested:

Authorize the Executive Director to execute a unit price construction contract, and Change Order No. 1, with Insituform Technologies, LLC in the estimated amount of \$701,125, and any additional change orders up to 10% of the 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:AWARD TERM CONTRACT FOR PROFESSIONAL
ENGINEERING SERVICES - SEWER EVALUATION,
REHABILITATION, AND REPAIRS; FRAZIER ENGINEERING

DATE: FEBRUARY 22, 2022

This request is to authorize the Executive Director to execute a Term Engineering Services Agreement, and any necessary Work Authorization, with Frazier Engineering for Sewer Evaluation, Rehabilitation, and Repair Engineering Services.

Background

RWSA has maintained a term contract for sewer evaluation, rehabilitation, and repair engineering services for the past 13 years as part of a program to maintain and improve the collection system. Over the course of that time, the benefit of having expertise related to these tasks available to the Authority has proved invaluable. The scope of services included the assessment of existing facility conditions; locating sources of inflow and infiltration in the sewer collection system; recommending rehabilitation and repair methods; providing inspection services for rehabilitation and repair work; maintaining sewer flow meters; analyzing sewer flow data; and any other services related to the continued or future operation of RWSA's collection system.

A Request for Proposals (RFP) was developed and advertised on December 17, 2021. Four proposals were received on January 26, 2022. The selection committee short-listed and interviewed three firms on February 3-4, 2022. Based upon the qualifications provided in the RFP and quality of previous work efforts, the selection committee found that Frazier Engineering, P.A. was best qualified to provide these services. Over the past 13 years, Frazier Engineering has provided quality, prompt services to RWSA and demonstrated the firm's qualifications to provide a broad range of sewer evaluation, rehabilitation, and repair engineering services. The term of this contract will be one year with the option for four one-year renewals.

Board Action Requested:

Authorize the Executive Director to execute a Term Engineering Services Agreement, and any necessary Work Authorizations, with Frazier Engineering, P.A for Sewer Evaluation, Rehabilitation, and Repair Engineering Services.



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MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS

FROM: ANDREA BOWLES, WATER RESOURCES MANAGER

REVIEWED BY: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: BUCK MOUNTAIN PROPERTY MANAGEMENT UPDATE

DATE: FEBRUARY 22, 2022

This memo and presentation are to provide an update and recommendations on management strategies for the Authority's Buck Mountain property located in the Free Union area of Albemarle County. The 1,314-acre property was originally purchased in the 1980s for construction of a water supply reservoir. However, due to environmental restrictions imposed when an endangered species was located on the property, the James spinymussel, a regulatory permit could not be obtained. A significant portion of the property, about 600 acres, was placed in restrictive-use deeds in 2014 to create vegetated stream buffers and mitigate the environmental impacts from construction of the expanded Ragged Mountain reservoir and dam.

At the April 2019 Board meeting, a former property owner, Dr. Harry Wellons, requested the Board to consider selling him the Buck Mountain property RWSA acquired from him by condemnation in the 1980's. As a follow-up to this request, staff provided a presentation on the Buck Mountain property at the June 2019 Board meeting. During the June meeting, the Board requested staff to prepare a Buck Mountain Master Plan to optimize use of the property. A local planning consultant, Land Planning & Design Associates, was hired to complete the Master Plan. The Master Plan was completed and presented to the Board in August 2020. The Board concurred with a staff recommendation to develop a more detailed Property Management Plan. Our presentation this month will provide an update to the Board on the recommendations from that planning effort.

The primary recommendations to be reviewed include:

1. Offering the "Elliot" house on a 2.2 acre lot from TMP 29-35H for sale to the public.

As we have reported to the Board over the last two years, this house is a documented historical resource (>50 years old), but is not designated as historically significant, and is in major disrepair. Several neighbors have requested the house be preserved, as noted by the attached letter. Another neighbor has expressed an interest in restoring the house. The Virginia Department of Historic Resources also supports restoration of the house, as noted by the attached letter. After a recent discussion with VDHR, that office supports our recommendation to offer the property for sale, preferably to someone who would restore the house. Since house restoration and maintenance are not part of our mission or management plan, we view this strategy to offer the property for sale as the best opportunity for the house to be restored. Any funds from a sale will be used for other

Buck Mtn property expenses (invasive species removal from the restricted stream buffers; fencing, road and bridge maintenance).

- 2. Consider the sale of about 14 acres from TMP 29-36A to an adjacent neighbor. The neighbor has requested a boundary adjustment to provide a buffer for his property, and will maintain the additional 14 acres in an environmentally supportive manner.
- 3. Consider a 2-year lease for TMP 29-33C, 29-33F, 29-36A, 29-35D (about 106 wooded acres) for passive enjoyment activities.
- 4. Renew 2-year property leases at market value. If existing leasees do not want to renew, the parcels will be offered for lease to the public or to adjacent neighbors if access to the property is an impediment.
- 5. Review plans for the pond and dam.
- 6. Review plans for the bridge, private road, and deed-restricted stream buffers.

We should note that the sale of any RWSA property will require approval of our Bond Trustees and may require a public hearing.

Board Action Requested:

Authorize the Executive Director and staff to proceed with the legal, financial and procurement processes required to:

- 1. Offer a 2.2 acre parcel from TMP 29-35H and all improvements including the "Elliot" house for sale to the public.
- 2. Offer about 14 acres from TMP 29-36A for sale to an adjacent neighbor.
- 3. Offer a 2-year lease for TMP 29-33C, 29-33F, 29-36A, 29-35D (about 106 wooded acres) to the public for passive enjoyment activities.
- 4. Renew 2-year property leases at new market rates with existing lessees. Offer any lease which is not renewed to the public, or to an adjacent neighbor if access to the property is an impediment.

Attachments:

- 1. Letter dated January 10, 2022 from Dr. Bateman and 8 neighbors of the Buck Mtn. property
- 2. Letter dated January 13, 2022 from the Virginia Department of Historic Resources



Buck Mountain Property Management Update



Presented by: Andrea Bowles, Water Resources Manager February 22, 2022

Agenda

- Review of History of Buck Mountain Property
- Buck Mountain Master Plan (August 2020)
- Property Management Topics
 - Elliot House and Lot
 - Boundary Adjustment and Sale of 14 Acres
 - Leases Existing and New
 - Pond
 - Allen Farm Lane and Bridge



The Property

- RWSA acquired 38 parcels in the Buck Mountain Creek watershed in 1984 – 87
- Purchased 1,150 acres with agreement of sellers; 2 condemnations, total of approximately 150 acres
- Parcels range from 1 to 160 acres
- 1,314 total acres: Cost = \$6.95 M
- The James spinymussel, a state and federally listed endangered species, prevented construction of the water supply reservoir



Current Uses

- Stream mitigation for Ragged Mtn Reservoir dam impacts in 2014
- Stream restoration of 500 linear feet along Buck Mtn Creek
- Buffer enhancement and preservation of riparian habitat along 80,000 linear feet of stream
- Planted 93 acres with over 40,500 trees
- Placed buffer areas in deed restrictions (approx. 600 acres)



Master Plan completed in 2020

An evaluation of the uses of the Buck Mountain property with respect to the Vision, Mission and Values of RWSA.

Strategic Plan Goals

- Environmental Stewardship
 - Water Quality Protection
- Operational Optimization
 - Efficient and sustainable use of resources
- Infrastructure and Master Planning
 - Water Supply now and in the future



Property Management Elliot House

ISSUES

- House in poor condition and is liability to RWSA
- Documented by the VDHR as an historic resource (age > 50 years), but not historically significant
- VDHR letter stating it is a "valuable resource that should be preserved, if feasible"
- Not in RWSA mission to preserve structures or lease house
- Security requirements
 - Recent break-in

OPTIONS

- Sell 2.2 acre parcel with house (estimated value: \$325,000)
 - ~ Provides best opportunity for preservation~
- Demolish house, retain property



- Proposed sale of 2.2 acre lot and house
- Does not include any of the deedrestricted buffer



Proposed Sale of 14 Acres

- Adjacent property owner to TMP 29-36A has requested a boundary adjustment and purchase of approx. 14 acres adjoining currently owned parcels
- Stated purpose is to provide a buffer to current parcels and conserve the 14 acres
- Funds would support Buck Mountain property maintenance expenses



Parcels Proposed for New Leases

- Consider a 2-year lease for TMP 29-33C, 29-33F, 29-36A and 29-35D (about 106 wooded acres)
- All parcels with exception of 29-35D are landlocked
- Access would be through parcel 29-35D



Renewal of Existing Leases

- 15 parcels leased by 9 leaseholders totaling 484.41 acres: 2-year terms
- 8 parcels are in agriculture (cattle or horses). Remainder are used for passive enjoyment.
- Current leases have been revised to reflect new rates.



Lease Fee Schedule

Land Use	Existing Lease Rates (per acre, per year)	Market (per acre, per year)	New Lease Rates (per acre per year)
Pasture	\$10	\$17.50-\$20.00	\$19
Forested	\$3	\$13.00-\$21.00	\$17
Deed Restricted Area	\$0	\$9.40/acre -\$15.00	\$13
	Administrativ	ve Fee Per 2-year lease term	\$100
Total Lease Value	\$1,900/year	\$6,300-\$8,800	\$8,540

Property Management Pond

<u>ISSUE</u>

- Out of compliance with DCR rules
- Liability for the Authority
- Regular maintenance: mowing, clearing outlet

<u>PLAN</u>

- Complete DCR-required studies of the dam
- Work with previous landowner to consider exchange of pond for an access easement







Property Management Allen Farm Lane and Bridge

<u>ISSUE</u>

- RWSA owns a bridge used by residents of Allen Farm Lane, a private road
- Liability for the Authority
- Requires regular inspection and maintenance





- Legal analysis indicates owners along Allen Farm Ln have a prescriptive easement to use the road and bridge
- Once mitigation plan has been deemed compliant by DEQ in 2024, offer land and bridge for sale to the public




Questions?

Requested Action:

Authorize the Executive Director and staff to proceed with the legal, financial and procurement processes required to:

- Offer a 2.2 acre parcel from TMP 29-35H and all improvements including the "Elliot" house for sale to the public.
- 2. Offer about 14 acres from TMP 29-36A for sale to an adjacent neighbor.
- 3. Offer a 2-year lease for TMP 29-33C, 29-33F, 29-36A, 29-35D (about 106 wooded acres) to the public for passive enjoyment activities.
- 4. Renew 2-year property leases at new market rates with existing lessees. Offer any lease which is not renewed to the public, or to an adjacent neighbor if access to the property is an impediment.

January 10, 2022

William Mawyer, Jr Executive Director Rivanna Authority 695 Moores Creek Lane Charlottesville, VA 22902

Dear Bill,

Please find enclosed a position comment from 9 property owners living in the Buck Mountain Creek area of Free Union. I had intended to have it signed by each party but my wife contracted Covid -- apparently from our grandchildren. She is doing well and I am negative but it did not feel appropriate to come in contact with people at this time. We leave town on Sunday and therefore I ran out of time to get this done.

Thank you for passing this along to the board.

Sincerely,

Phon Bot. **Bruce G Bateman**

January 10, 2022

To The Attention of: Rivanna Water & Sewer Authority

The parties listed below have lived in Free Union in the Buck Mountain Creek area for an average of 32 years. We choose to live here because of the beauty and rural nature of the area. Collectively we lease 97 acres of land from the RWSA with 36 acres in conservation easement. In order to preserve this environment, we respectfully endorse the following:

* Restoration of the Elliot house 1880 Buck Mountain Rd, Free Union --- as opposed to demolition of the house with construction of a new house on that property

* Preservation of the newly created 2 acre lot across Buck Mountain Rd as undeveloped pasture land ---as opposed to construction of a new house on that site.

David & Ginger Ashcom	Bruce & Diane Bateman
4869 Catterton Rd	1933 Buck Mountain Rd
In residence-37 years	In residence -36 years
Charles & Bertha Durbin	Matt & Trish Lucas
4522 Catterton Rd	1966 Buck Mountain Rd
In residence-43 years	In residence-16 years
Gary & Martha Maclay	Dennis & Beth Palmgren
5231 Catterton Rd	2374 Buck Mountain Rd
In residence-22 years	In residence-30 years
Lawrence & Debbie Miller	Wayne & Phebe Vick
1993 Buck Mountain Rd	1670 Buck Mountain Rd
In residence-36 years	In residence-35 years

Greg & Jan Yaeger 1983 Buck Mountain Rd In residence-33 year (third generation in the area)



COMMONWEALTH of VIRGINIA

Department of Historic Resources

Andrew Wheeler Secretary of Natural and Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan Director Tel: (804) 482-6446 Fax: (804) 367-2391 www.dhr.virginia.gov

January 13, 2022

William Mawyer, Jr. Executive Director Rivanna Authorities 695 Moore's Creek Lane Charlottesville, Virginia 22902

Dear Mr. Mawyer:

The Virginia Department of Historic Resources recently received information regarding the potential sale and demolition of the Elliot House located at 1880 Buck Mountain Road in Free Union. It is our understanding that the dwelling is located within a set of parcels that will likely go on the market in the near future and that the building could be demolished at that time.

The historic dwelling is a valuable resource of vernacular architecture that is increasingly disappearing from the modern built environment. Its form and setting offer an excellent example of the type of regional architecture seen throughout the area at the time of its construction; in this case, a style that has frequently been lost to heavy remodeling, demolition, and/or neglect. The Elliot House is a valuable resource that should be preserved, if feasible.

The Elliot House presents a great opportunity for Rivanna Water and Sewer Authority, or a prospective buyer, to set a solid example for community historic preservation. The Virginia Department of Historic Resources strongly endorses the preservation of the building, and we hope that the Rivanna Water and Sewer Authority undertakes careful consideration of its stewardship of the property.

Western Region Office 962 Kime Lane Salem, VA 24153 Tel: (540) 387-5443 Fax: (540) 387-5446 Northern Region Office 5357 Main Street PO Box 519 Stephens City, VA 22655 Tel: (540) 868-7029 Fax: (540) 868-7033 Eastern Region Office 2801 Kensington Avenue Richmond, VA 23221 Tel: (804) 367-2323 Fax: (804) 367-2391 If you have any questions or would like to discuss this matter further, please contact me at 804-482-6099.

Sincerely, am Mcfug

Joanna McKnight Preservation Specialist, Eastern Region Preservation Office Virginia Department of Historic Resources

Western Region Office 962 Kime Lane Salem, VA 24153 Tel: (540) 387-5443 Fax: (540) 387-5446

Northern Region Office 5357 Main Street PO Box 519 Stephens City, VA 22655 Tel: (540) 868-7029 Fax: (540) 868-7033 Eastern Region Office 2801 Kensington Avenue Richmond, VA 23221 Tel: (804) 367-2323 Fax: (804) 367-2391



MEMORANDUM

TO: RIVANNA WATER & SEWER AUTHORITY BOARD OF DIRECTORS

FROM: BILL MAWYER, EXECUTIVE DIRECTOR

SUBJECT: INTRODUCTION OF THE FY 2023 – 2027 CAPITAL IMPROVEMENT PLAN

DATE: FEBRUARY 22, 2022

We are pleased to present the proposed FY 2023 – 2027 Capital Improvement Plan (CIP) totaling 41 projects and \$205.1 M for your consideration. We continue to strategically plan for the water supply, drinking water, and wastewater treatment facilities required to meet the requirements of Federal and State regulations, as well as the quantity, quality, and reliability expectations of the public drinking water and wastewater customers in our community. Projects to achieve these objectives in a financially responsible manner have been included in this proposed CIP.

During this five-year period, the CIP will significantly strengthen our drinking water systems with expenditures of \$122.5 M for essential projects including:

- Renovations and Upgrades to our largest Water Treatment Plants (S. Rivanna and Observatory)
- Additional Granular Activated Carbon Water Filtering Facilities at the Observatory Water Treatment Plant
- Replacement of Raw Water Piping and Pumping Stations from Ragged Mountain Reservoir to the Observatory Water Treatment Plant
- An Additional Water Pumping Station and Piping located near Airport Road
- Modifications to the Beaver Creek Reservoir Dam, Pump Station and Piping
- A Major Urban Area Water Distribution Pipe, the Central Water Line

We will also complete significant improvements to our wastewater treatment and piping facilities to ensure regulatory compliance and environmental protection. The proposed CIP includes about \$45 M for essential wastewater projects including:

- Replacement of Major Electrical Systems at Moores Creek
- Renovations and Repairs to Wastewater Facilities (Moores Creek, Scottsville, Glenmore, and Crozet Pump Stations and Piping)
- Repairs and Replacement of Wastewater Piping and Manholes (Lower Morey Creek, Powell Creek, Moores Creek, Upper Rivanna Interceptors)

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

Board Action Requested:

The FY 23 – 27 CIP totaling \$205.1 M is provided for review by the Board of Directors.

Capital Improvement Plan Fiscal Years 2023-2027 Draft February 2022





OUR MISSION

Our professional team of knowledgeable and engaged personnel serve the Charlottesville, Albemarle, and UVA community by providing high quality water and wastewater treatment services in a financially and environmentally responsible manner.







Rivanna Water & Sewer Authority 695 Moores Creek Lane Charlottesville, Virginia 22902



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Introduction

The Capital Improvement Plan (CIP) for Fiscal Years 2023-2027 has been prepared as a strategic and financially responsible plan for the Rivanna Water and Sewer Authority (RWSA) to complete major infrastructure construction projects. The projects included in the CIP are necessary to achieve the RWSA's core mission of providing safe, high-quality drinking water and environmentally responsible wastewater treatment services for the City of Charlottesville and the Albemarle County Service Authority (ACSA). The CIP is a 5-year planning document which provides an estimated budget and schedule for projects as they advance through the design and construction process.

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

During the past year, several capital projects were completed, and as such are being removed from the 2023-2027 CIP. These projects account for approximately \$10.7 million or 6% of the FY 2022-2026 CIP. These projects include:

- 7 Sugar Hollow Dam Rubber Crest Gate Replacement
- 17 Crozet Water Treatment Plant Expansion
- 21 Crozet Ground Storage Tank Leak Repair
- 27 Interceptor Sewer and Manhole Repair (Phase 1)
- 42 Moores Creek AWRRF In-Plant Clarifier and Lime Silo Demolition
- 43 Moores Creek AWRRF Generator Fuel Storage Expansion
- 47 Moores Creek AWRRF Lighting Upgrade

The total 5-year 2023-2027 CIP is approximately \$205.1 million, with the previous expenditures on active projects totaling approximately \$20.9 million, leaving a net proposed 5-year projected expenditure of \$184.2 million.

There is one new project added to the CIP this year. The total estimated expenditures for the project equals \$1.5 million and includes:

• 35 Moores Creek AWRRF Gravity Thickener Pumping and Chem Feed Improvements

Three projects were removed from the CIP with a cost equal to \$4.4 million and include:

- 34 Moores Creek AWRRF Digester Sludge Storage Improvements
- 36 Moores Creek AWRRF Mechanical Thickener Improvement
- 45 Moores Creek AWRRF Facility Renovations

Two projects were added mid-year and several other projects had mid-year budget additions for a total of \$1.8 million. The new projects include:

- 6 South Rivanna Reservoir to Ragged Mountain Reservoir Pipeline Intake & Facilities
- 11 Emmet Street Betterment

There were eight projects in the FY 22-26 CIP that, due to budgetary constraints, were moved beyond the current 5-year CIP for a total of \$4.2 million and include:

- 11 Avon, Pantops and Observatory Tank Rehabilitation
- 12 Second North Rivanna River Crossing
- 15 South Rivanna Water Treatment Plant Plate Settlers Addition
- 20 Buck's Elbow Tank and Waterball Painting
- 23 Scottsville Tank Rehabilitation
- 24 Scottsville Water Treatment Plant Upgrade
- 31 Albemarle Berkley Pump Station Upgrade
- 32 Interceptor and Sewer Manhole Repair (Phase 2)

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

- 3 Ragged Mountain Reservoir to Observatory WTP Raw Water Line (\$15.325 million existing / \$16.9 million proposed)
- 4 Ragged Mountain Reservoir to Observatory WTP Raw Water Pump Station (\$5.85 million existing / \$8.84 million proposed)
- 8 Central Water Line (\$9.083 million existing / \$24 million proposed)
- 9 South Rivanna River Crossing (\$3.655 million existing / \$5.85 million proposed)
- 10 Airport Road Pump Station and North Rivanna Transmission Main (\$7.6 million existing / \$10 million proposed)
- 14 North Rivanna WTP Decommissioning (\$2.35 million existing / \$2.425 million proposed)
- 16 Beaver Creek New Raw Water Pump Station & Intake (\$10.8 million existing / \$15.65 million proposed)
- 18 Red Hill WTP Upgrades (\$0.15 million existing / \$0.410 million proposed)
- 19 Upper Schenks Branch Interceptor (\$3.985 million existing / \$4.725 million proposed)
- 23 Interceptor Sewer and Manhole Repair (Phase 2) (\$1.95 million existing / \$0.965 million proposed)
- 24 Moores Creek AWRRF Administration Building (\$0.225 million existing / \$8.5 million proposed)
- 26 Moores Creek AWRRF Shed Roof Rehabilitation (\$0.2 million existing / \$1.36 million proposed)
- 28 Moores Creek AWRRF Cogeneration Upgrades (\$1.865 million existing / \$2.145 million proposed)
- 29 Moores Creek AWRRF Operations and Maintenance Building Upgrades (\$1.325 million existing / \$2.74 million proposed)

- 32 Moores Creek AWRRF 5kV Electrical System Upgrade (\$4.6 million existing / \$5.05 million proposed)
- 34 Moores Creek AWRRF Digester Repair (\$3.62 million existing / \$4 million proposed)
- 37 Glenmore WRRF Influent Pump & VFD (\$0.12 million existing / \$0.37 million proposed)

FINANCIAL SUMMARY

MAJOR SYSTEM CATEGORIES

FINANCIAL SUMMARY Major System Categories – Water

	Five-	Year Capital Progr	am		Projecte					
System Description	Current CIP	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in- Progress
Urban Water (UW)										
Community Water Supply Plan	\$25,895,000	\$6,170,000	\$3,696,000	\$3,704,000	\$1,065,000	\$6,100,000	\$8,800,000	\$10,200,000	\$33,565,000	\$1,566,796
Observatory WTP & Ragged Mountain/Sugar Hollow Reservoir System	\$23,000,000	\$0	\$17,550,000	\$5,450,000	\$0	\$0	\$0	\$0	\$23,000,000	\$3,316,372
Finished Water Storage/Distribution	\$20,338,000	\$22,412,000	\$9,278,000	\$3,957,000	\$8,915,000	\$6,000,000	\$7,300,000	\$7,300,000	\$42,750,000	\$461,409
South & North Fork Rivanna Water System	\$23,050,000	\$100,000	\$18,310,000	\$2,800,000	\$90,000	\$2,300,000	(\$350,000)	\$0	\$23,150,000	\$10,202,370
Subtotal (UW)	\$92,283,000	\$28,682,000	\$48,834,000	\$15,911,000	\$10,070,000	\$14,400,000	\$15,750,000	\$17,500,000	\$122,465,000	\$15,546,947
Non-Urban Water (NUW)										
Crozet Water System	\$26,930,000	\$4,870,000	\$1,343,000	\$935,000	\$7,135,000	\$10,990,000	\$11,397,000	\$0	\$31,800,000	\$699,222
Scottsville Water System	\$465,000	\$260,000	\$175,000	\$550,000	\$0	\$0	\$0	\$0	\$725,000	\$0
Subtotal (NUW)	\$27,395,000	\$5,130,000	\$1,518,000	\$1,485,000	\$7,135,000	\$10,990,000	\$11,397,000	\$0	\$32,525,000	\$699,222
WATER TOTAL	\$119,678,000	\$33,812,000	\$50,352,000	\$17,396,000	\$17,205,000	\$25,390,000	\$27,147,000	\$17,500,000	\$154,990,000	\$16,246,169

FINANCIAL SUMMARY Major System Categories – Wastewater

	Five-	Year Capital Progr	am		Projecte					
System Description	Current CIP	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in- Progress
Urban Wastewater (UWW)										
Wastewater Interceptors and Pumping Stations	\$12,805,000	(\$245,000)	\$10,590,000	\$1,380,000	\$590,000	\$0	\$0	\$0	\$12,560,000	\$2,513,488
Moores Creek AWRRF	\$18,325,000	\$13,485,000	\$5,245,000	\$6,460,000	\$10,150,000	\$7,155,000	\$2,800,000	\$0	\$31,810,000	\$414,027
Subtotal (UWW)	\$31,130,000	\$13,240,000	\$15,835,000	\$7,840,000	\$10,740,000	\$7,155,000	\$2,800,000	\$0	\$44,370,000	\$2,927,515
Non-Urban Wastewater (NUWW)										
Scottsville WRRF	\$200,000	\$0	\$11,000	\$180,000	\$9,000	\$0	\$0	\$0	\$200,000	\$0
Glenmore WRRF	\$120,000	\$250,000	\$370,000	\$0	\$0	\$0	\$0	\$0	\$370,000	\$30,676
Subtotal (NUWW)	\$320,000	\$250,000	\$381,000	\$180,000	\$9,000	\$0	\$0	\$0	\$570,000	\$30,676
WASTEWATER TOTAL	\$31,450,000	\$13,490,000	\$16,216,000	\$8,020,000	\$10,749,000	\$7,155,000	\$2,800,000	\$0	\$44,940,000	\$2,958,191
All Systems Security & Technology	\$5,110,000	\$80,000	\$4,221,000	\$401,000	\$568,000	\$0	\$0	\$0	\$5,190,000	\$1,656,189
TOTAL	\$156,238,000	\$47,382,000	\$70,789,000	\$25,817,000	\$28,522,000	\$32,545,000	\$29,947,000	\$17,500,000	\$205,120,000	\$20,860,549

PROJECT DETAILS

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Completed Projects

During fiscal year 2022, several capital improvement projects were completed, were advanced to the final phases of close-out, or were determined to be no longer necessary. As such they will be removed from consideration in future planning documents. Presented in the table below are the seven (7) completed projects, pertinent information on the adopted budgets, as well as the projected final costs and any anticipated savings. There was a total completed project cost savings of \$10.7 million.

- 7. <u>Sugar Hollow Dam Rubber Crest Gate Replacement:</u> In 1998 the Sugar Hollow Dam underwent a significant upgrade to improve structural stability and spillway capacity following the 1995 flood and landslide. The original metal spillway gates were replaced with a manufactured fivefoot-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 for a controlled release of water from the reservoir. The rubber dam has an approximate service life of twenty years and was therefore due for replacement. In addition to replacement of the rubber crest gate, the project included funding for clearing of vegetation and debris from the south abutment of the dam, improved fencing and water access for RWSA staff, and minor repairs, including replacement of the intake trash racks and cleaning of the foundation drains and drainage gallery.
- 17. <u>Crozet Water Treatment Plant Expansion</u>: The Crozet water treatment system was permitted and rated to supply up to 1.0 MGD of water to the ACSA distribution system. Over the past several years, average day usage of water has increased steadily, with maximum day demand approaching plant capacity. This project expanded the plant capacity infrastructure to 2 MGD and increased the interim pumping capacity from the raw water pump station and through the GAC facility to meet peak day demands prior to completion of the new raw water pump station and reservoir withdrawal permit.
- 21. <u>Crozet Ground Storage Tank Leak Repair</u>: The 500,000-gallon Crozet Ground Storage Tank serves as the wet well for the finished water pumps at the Crozet Water Treatment Plant and is one of two finished water storage tanks in the Crozet Service Area. In late 2017, a small leak at the base of the tank was discovered, and a subsequent inspection by a remotely operated vehicle (ROV) in February of 2018 confirmed that the leak was likely in the floor of the tank near the tank drain pipe. The tank was inspected, cleaned, and repaired using an NSF-approved epoxy designed to stop leaks, negating the need for further repairs to the tank at this time and allowing the work to be performed without draining the tank. Staff will continue monitoring the tank and will schedule subsequent inspections at regular intervals to ensure that the newly installed repairs remain in good condition.
- 27. Interceptor Sewer and Manhole Repair (Phase 1): This project was used to conduct assessments of various interceptors as well as rehabilitation of interceptors that do not have a separate CIP project. Projects completed under Phase 1 include the completion of rehabilitation efforts along the upper Morey Creek Interceptor, as well as high-priority manhole and pipeline rehabilitation on the Powell Creek and Woodbrook Interceptors. Rehabilitation of the Moores Creek, Moores Creek Relief, and Upper Rivanna Interceptors, as well as completion of rehabilitation efforts

along the Morey Creek, Powell Creek, and Crozet Interceptors, will take place during subsequent phases. A condition assessment of all RWSA interceptors (except for the Upper Rivanna Interceptor) has been completed which has helped staff complete the repair work under Phase 1 and plan for repairs under Phase 2. Periodic assessment of all sewer pipe reflects industry best practices and the maintenance expectations of federal and state regulators.

- 42. <u>Moores Creek AWRRF In-Plant Clarifier and Lime Silo Demolition</u>: 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. Various components have significantly deteriorated over time and no additional uses for these tanks have been identified. Due to their out-of-service status, they remained empty and a safety concern for plant staff and visitors. Additionally, there was an abandoned lime silo located adjacent to the Solids Handling Building. Lime was previously used with plate and frame presses before centrifuges were installed for sludge dewatering purposes. This project included complete demolition of the in-plant clarifiers by removing all existing components, backfilling the area and returning the area to open space as well as removal and disposal of the lime silo from the plant.
- 43. <u>Moores Creek AWRRF Generator Fuel Storage Expansion</u>: The Moores Creek AWRRF south side electrical facilities have a single large system back-up power generator that was installed between 2009-2012 during the ENR plant upgrade. The generator has a belly tank that allows for approximately 22 hours of operation. This project installed an ancillary fuel tank that will allow for approximately three days of operation.
- 47. <u>Moores Creek AWRRF Lighting Upgrade</u>: The lighting at the 80-acre MCAWRRF consists of over 300 fixtures installed at various times over the life of the facility's presence. In 2019, Albemarle County investigated the existing and historic lighting at the facility and determined that upgrades were required to bring Moores Creek AWRRF into zoning compliance. RWSA and Albemarle County staff worked together to determine the best way to address the issue. RWSA was able to construct a large-scale replacement of non-compliant fixtures as well as address industrial lighting standards for safety at the entire facility. The Moores Creek AWRRF is now in compliance with the County Lighting Ordinance.

Completed Projects

				Five-Year Capita	Program	
Line No.	Proj. No.	Project Description	Adopted Budget 5/2021	Previous Expenditures (6/30/2021)	Final Projected Costs/Close Out	Savings
7	20.07	Sugar Hollow Dam Rubber Crest Gate Replacement	\$1,900,000	\$1,382,264	\$1,900,000	\$0
17	20.22	Crozet Water Treatment Plant Expansion	\$500,000	\$58,587	\$500,000	\$0
21	21.03	Crozet Ground Storage Tank Leak Repair	\$115,000	\$115,000 \$0		\$10,000
27	20.26	Interceptor Sewer and Manhole Repair (Phase 1)	\$1,088,330	\$659,970	\$1,088,330	\$0
42	21.05	Moores Creek AWRRF Inplant Clarifier and Lime Silo Demolition	\$790,000	\$48,139	\$790,000	\$0
43	21.09	Moores Creek AWRRF Generator Fuel Storage Expansion	\$250,000	\$15,445	\$250,000	\$0
47	21.21	Moores Creek AWRF Lighting Upgrade	\$1,900,000	\$106,275	\$575,000	\$1,325,000
		TOTAL	\$6,543,330	\$2,270,680	\$5,208,330	\$1,335,000

CIP 22-26	CIP 22-26		CIP 23-27	CIP 23-27	
Total	Total CIP 23-27 Completed or Removed		New Funding	New Total	
\$171,938,330	\$19,258,330	\$152,680,000	\$52,440,000	\$205,120,000	

Community Water Supply Plan

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

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

Project Descriptions:

- 1. <u>South Rivanna Reservoir to Ragged Mountain Reservoir Water Line Right-of-Way</u>: The approved 50-year Community Water Supply Plan includes the future construction of a new raw water pipeline from the South Rivanna River to the Ragged Mountain Reservoir. This new pipeline will replace the Upper Sugar Hollow Pipeline along an alternative alignment to increase raw water transfer capacity in the Urban Water System. The project includes a detailed routing study to account for recent and proposed development and road projects in Albemarle County and the University of Virginia. Preliminary design, preparation of easement documents, and acquisition of water line easements along the approved route is also be completed as part of this project.
- 2. South Rivanna Reservoir Dredging: The South Rivanna Reservoir stores raw water for treatment at the South Rivanna Water Treatment Plant and in the future, is proposed to provide water for transfer to the enlarged Ragged Mountain Reservoir. River flow into the reservoir is from a drainage area, almost entirely within Albemarle County, of approximately 259 square miles. Soil erosion from natural events, from land use in the agricultural area, from land disturbances in the developed areas, and from re-suspension of flood plain deposits created during the 19th century (stream bank erosion), are likely the causes of sediment becoming trapped within the reservoir. The initial design of the reservoir anticipated the accumulation of these sediments, and a significant portion of the total storage volume was designated for this purpose. Currently the sediment stored does not exceed the available sediment storage capacity.

The January 2012 Ragged Mountain Dam Project Agreement outlines that "the City and ACSA agree to direct, and RWSA agrees, to perform such dredging projects at the South Fork Rivanna Reservoir as may be specified jointly by the City and ACSA pursuant to the Water Cost Allocation Agreement." The Cost Allocation Agreement stipulates that target maintenance dredging shall be performed, and that the dredging be market driven, cost effective, and opportunistic and shall not exceed \$3.5M. In 2012 and 2013, RWSA, via the Public-Private Education Facilities and Infrastructure Act (PPEA) process, solicited proposals to provide maintenance dredging. In July 2013, the one qualified PPEA proposer withdrew its proposal, citing difficulties in obtaining necessary land agreements.

Future Board decisions on the project contracting approach will dictate the next steps. This project remains in the CIP as the fulfillment of a contractual obligation from the January 2012 Ragged Mountain Dam Cost Allocation Agreement. The project has been moved to FY 2028.

- 3. <u>Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line</u>: Raw water is transferred from the Ragged Mountain Reservoir (RMR) to the Observatory Water Treatment Plant (OBWTP) by way of two 18-inch cast iron water lines which have been in service for more than 110 and 70 years, respectively. In addition to the need to increase transfer capacity between the RMR and OBWTP, increased frequency of emergency repairs and expanded maintenance requirements necessitates replacement of these water lines with a single, new raw water main. This new raw water main is expected to be constructed of 36-inch ductile iron pipe and will span a distance of approximately 3.5 miles, including the connection of the proposed RMR to OBWTP raw water pump station with the Southern terminus of the Birdwood raw water line completed in 2019.
- 4. <u>Ragged Mountain Reservoir to Observatory Raw Water Pump Station</u>: The Ragged Mountain Reservoir (RMR) to Observatory Water Treatment Plant (OBWTP) raw water pump station is planned to replace the existing Stadium Road and Royal Pump Stations, which have exceeded their design lives and would require significant upgrades to reliably meet the upgraded capacity of the OBWTP. The pump station will be designed to pump up to 10 million gallons per day (MGD) to the expanded OBWTP and will be integrated with the planned South Rivanna Reservoir (SRR) to RMR pipeline for improved operational flexibility and cost efficiencies. This integrated pump station will include the capacity to transfer up to 16 MGD of raw water from RMR to the South Rivanna WTP. The pump station property will be purchased as part of the SRR to RMR raw water main preliminary design and right of way acquisition project.
- 5. South Rivanna Reservoir to Ragged Mountain Reservoir WL Birdwood to Old Garth: RWSA is expediting construction of a portion of the future South Rivanna to Ragged Mountain 36-inch raw water main from the northern end of the Birdwood Raw Water Line to the UVA Foundation Westover Property at Old Garth Road. This project will enable pipeline work to proceed ahead of planned redevelopment of the two adjacent Ivy Road Parcels to prevent subsequent disruption to the properties and decrease future construction and site restoration costs. This work includes approximately 1,200 linear feet of 36-inch raw water main, plus two trenchless crossings at Ivy Road and CSX Railroad/Old Garth Road. As of September 2021 this section of pipeline is in design with construction beginning in the summer of 2022.

6. South Rivanna Reservoir to Ragged Mountain Pipeline, Intake and Facilities: The South Rivanna Reservoir (SRR) to Ragged Mountain Reservoir (RMR) Pipeline is a part of the approved and permitted Community Water Supply Plan. The pipeline and associated facilities will give RWSA the ability to move water between the two reservoirs, further enhancing the management capabilities of the Urban System water supply. The SRR to RMR Pipeline, Intake, and Facilities Project is intended to allow for continued analysis on the need and magnitude of pretreatment required in order to remove excess nutrients and convey water between the two reservoirs. Initially, this will include analysis of existing water quality data from the two reservoirs and a detailed nutrient model which will help staff better understand the fate of any nutrients transferred between the reservoirs. Later stages of the analysis may include a pilot study, in which various pretreatment technologies are tested and examined, should it be found that pretreatment is required.

Community Water Supply Plan

Five-Year Capital Program						Projected Future Expenses by Year						
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
1	20.01	South Rivanna Reservoir to Ragged Mountain Reservoir Water Line Right-of-Way	\$2,740,000		\$2,740,000						\$2,740,000	\$1,566,796
2	20.02	South Rivanna Reservoir Dredging									\$0	
3	20.03	Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line	\$15,325,000	\$1,575,000	\$375,000	\$325,000	\$700,000	\$4,000,000	\$5,800,000	\$5,700,000	\$16,900,000	
4	20.04	Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Pump Station	\$5,850,000	\$2,990,000	\$215,000	\$160,000	\$365,000	\$2,100,000	\$3,000,000	\$3,000,000	\$8,840,000	
5	22.01	South Rivanna Reservoir to Ragged Mountain Reservoir Birdwood to Old Garth	\$1,980,000		\$166,000	\$1,814,000					\$1,980,000	
6	20.48	South Rivanna Reservoir to Ragged Mountain Pipeline, Intake & Facilities		\$3,105,000	\$200,000	\$1,405,000				\$1,500,000	\$3,105,000	
		TOTAL	\$25,895,000	\$7,670,000	\$3,696,000	\$3,704,000	\$1,065,000	\$6,100,000	\$8,800,000	\$8,700,000	\$33,565,000	\$1,566,796

Observatory WTP and Ragged Mountain/Sugar Hollow Reservoir System

The Observatory Water Treatment Plant (OBWTP) and Ragged Mountain/Sugar Hollow Reservoir System is comprised of the water treatment facility on Observatory Mountain and the associated raw water infrastructure that stores and conveys source water to the plant. The raw water storage system includes the new Ragged Mountain Dam (constructed in 2014, with a useable raw water storage capacity of 1.44 billion gallons) and the Sugar Hollow Dam (originally constructed in 1947, upgraded in 1999 and downstream discharge improvements completed in September 2014, with a useable raw water storage capacity of 339 million gallons as updated by a 2015 bathymetric survey). The system also includes 17.6 miles of 18-inch raw water cast-iron mains, originally installed in 1908, 1922, and 1946. The Sugar Hollow Raw Water Main historically conveyed water from the Sugar Hollow Dam to the Observatory Water Treatment Plant, however, as a result of the New Ragged Mountain Dam project, the main now discharges directly into Ragged Mountain Reservoir. The remaining downstream section of the Sugar Hollow main now conveys raw water from the Ragged Mountain Reservoir to the treatment plant. The line crosses the Mechums River (where an abandoned pumping station is sited) on its way to Ragged Mountain Reservoir, and eventually passes through the Royal Pumping Station and terminates at the OBWTP. The Ragged Mountain Raw Water Main conveys water from the Ragged Mountain Reservoir through the Stadium Road Pumping Station and terminates at the OBWTP.

Project Descriptions:

7. <u>Observatory Water Treatment Plant Improvements</u>: The Observatory Water Treatment Plant was originally constructed in the mid-1950s, and since very little has been replaced or upgraded at the facility, much of the original equipment remains. As a result, that equipment is inefficient, prone to unexpected failure, and does not have readily accessible replacement parts. Based on a Needs Assessment Study, the plant will undergo a wholesale upgrade including improvements to the flocculators, sedimentation basins, filters, and chemical feed facilities to enhance future reliability. In addition, the existing reinforced concrete flume, which conveys treated water from the sedimentation basins to the filters, is in need of replacement, filter control valves and piping will be replaced, and electrical and SCADA control systems upgraded. A portion of this project was completed during the Granular Activated Carbon (GAC) project, where the flocculator systems were upgraded with new mechanical and electrical equipment, including variable speed drives for optimal efficiency.

In addition to providing needed equipment upgrades, these improvements will increase the plant's capacity from 7.7 million gallons per day to 10 million gallons per day based on a feasibility analysis performed during the Preliminary Engineering phase of the project. It was determined that the capacity upgrades could be performed economically and would provide needed reliability and redundancy in the Urban System. As part of this capacity increase, it was also determined that the plant's GAC treatment capacity should increase as well. As a result, this project also includes efforts required for the addition of four GAC contactors.

It should be noted that the Observatory Water Treatment Plant is sited on land leased to RWSA by the University of Virginia. A new 49-year lease was signed which commenced on July 1, 2020.

Observatory Water Treatment Plant and Ragged Mountain/Sugar Hollow Reservoir System

` Five-Year Capital Program						Projected Future Expenses by Year						
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
7	20.06	Observatory Water Treatment Plant Improvements	\$23,000,000		\$17,550,000	\$5,450,000					\$23,000,000	\$3,316,372
		TOTAL	\$23,000,000	\$0	\$17,550,000	\$5,450,000	\$0	\$0	\$0	\$0	\$23,000,000	\$3,316,372

Finished Water Storage/Transmission – Urban System

The urban finished water storage and transmission system serves to provide transmission of treated water from the three RWSA water plants (Observatory, South Rivanna, and North Rivanna) to the distribution networks of the Albemarle County Service Authority, the City of Charlottesville, and the University of Virginia. The system includes approximately 40 miles of pipeline, six water storage tanks: Avon Street (2 MG), Pantops (5 MG), Piney Mountain (0.7 MG), Stillhouse (0.7 MG), Observatory (3 MG), and Lewis Mountain (0.5 MG), and the Alderman Road and Stillhouse pumping stations.

Project Descriptions:

- 8. <u>Central Water Line</u>: The southern half of the Urban Area water system is currently served by the Avon Street and Pantops storage tanks. The Avon Street tank is hydraulically well connected to the Observatory Water Treatment Plant while the Pantops tank is well connected to the South Rivanna Water Treatment Plant. The hydraulic connectivity between the two tanks, however, is less than desired, creating operational challenges and reducing system flexibility. In 1987, the City and ACSA developed the Southern Loop Agreement, outlining project phasing and cost allocations, as envisioned at the time. The first two phases of the project were constructed shortly thereafter. The third phase, known as the "Eastern Branch" is the subject of the current project. The initial funding for this project was used for route alignment determination, hydraulic modeling, and preliminary design. Due to the complicated nature of our finished water systems, it was decided at the August 2018 Board meeting that a more comprehensive approach was warranted and we should complete the Finished Water Master Plan prior to moving forward with final design and construction of the Avon to Pantops Water Main. The Finished Water Master plan was completed in 2021 and the Central Water Line project was prioritized for design and construction in coordination with the City and ACSA. The project will consist of approximately 5 miles of new 24" and 30" through the City to connect the Observatory Water Treatment Plant to an existing RWSA transmission main at East High and Long St. to ensure the increased hydraulic capacity of 10 MGD from the water treatment plant upgrades can be utilized.
- 9. <u>South Fork Rivanna River Crossing</u>: 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 and along Rio Mills Road.

- 10. Airport Rd. Pump Station and North Rivanna Transmission Main: The Rt. 29 Pipeline and Pump Station master plan was developed in 2007 and originally envisioned a multi-faceted project that reliably connected the North and South Rivanna pressure bands, reduced excessive operating pressures, and developed a new Airport pressure zone to serve the highest elevations near the Airport and Hollymead Town Center. The master plan was updated in 2018 to reflect the changes in the system and demands since 2007. This project, along with the South Rivanna River Crossing project, will provide a reliable and redundant finished water supply to the North Rivanna area. Once the North Rivanna Water Treatment Plant is abandoned, the Airport Road Pump Station will be the primary means to supply water to the North Zone. The proposed pump station will be able to serve system demands at both the current high pressure and a future lowpressure condition. These facilities will also lead to a future phase implementation which will include a storage tank and the creation of the Airport pressure zone. To complete the connection between the new 24-inch water main in Rt. 29 and the pump station, construction will include two "gap" sections of 24-inch water main between the already completed sections in the vicinity of Kohl's. Much of the new water main route is within VDOT right-of-way; however, acquisition of right-of-way will be required on the Kohl's Property at Hollymead Town Center. This project will begin construction in 2022.
- 11. Emmet Street Betterment: The Urban Finished Water Master Plan identified several necessary upgrades to the urban water distribution system to improve system performance and reliability. One of the identified improvements is an upgrade and extension of the existing RWSA water main along the Emmet Street corridor from the UVA Dell Pond to Hydraulic Road. This project will utilize planned road, streetscape, utility, and development projects along the Emmet Street corridor to complete portions of the Emmet Street water main improvements as betterment, with the goal of completing the approximately 2-mile-long water main by 2030. The project scope includes planning and coordination between RWSA, UVA, the City of Charlottesville, and VDOT, design services for the betterment and "gap" sections of water line, construction funding, and construction management services. Current identified projects with betterment opportunities include: the UVA Ivy Corridor Redevelopment, UVA Contemplative Commons, the City of Charlottesville Emmet Streetscape Projects (multiple phases), and intersection improvements at Barracks Road, the US-250/Emmet Street Interchange, and Hydraulic Road.

Finished	Water	Storage/	Transmis	sion –	Urban	System
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			Five-Year Capital Program				Projected Future Expenses by Year						
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)	
8	20.10	Central Water Line	\$9,083,000	\$14,917,000	\$1,838,000	\$1,462,000	\$1,100,000	\$5,000,000	\$7,300,000	\$7,300,000	\$24,000,000	\$191,666	
9	20.12	South Fork Rivanna River Crossing	\$3,655,000	\$2,195,000	\$790,000	\$310,000	\$3,750,000	\$1,000,000			\$5,850,000	\$30,896	
10	20.13	Airport Rd. Pump Station and North Rivanna Transmission Main	\$7,600,000	\$2,400,000	\$5,650,000	\$1,230,000	\$3,120,000				\$10,000,000	\$238,847	
11	23.06	Emmet Street Betterment		\$2,900,000	\$1,000,000	\$955,000	\$945,000				\$2,900,000		
		TOTAL	\$20,338,000	\$22,412,000	\$9,278,000	\$3,957,000	\$8,915,000	\$6,000,000	\$7,300,000	\$7,300,000	\$42,750,000	\$461,409	

South and North Rivanna Water Systems

The South Rivanna Water System is comprised of the source water, storage, conveyance and treatment infrastructure currently serving the urban area from the South Fork Rivanna River. The system includes the South Fork Rivanna Reservoir and Dam (built in 1966). The Dam is colocated with the raw water intake and pump station, as well as a small hydroelectric generation facility. The source water from the South Rivanna Reservoir is treated at the South Rivanna treatment plant (12-mgd rated capacity).

The North Rivanna Water System is comprised of a river intake and raw water pumping station on the North Fork of the Rivanna River, as well as the North Fork Water Treatment Plant (2-mgd rated capacity built in 1973). The North Rivanna System provides water to the ACSA service area located along US Route 29, between Forest Lakes subdivision and Piney Mountain Road.

Project Descriptions:

- 12. South Rivanna Water Treatment Plant Improvements: The South Rivanna Water Treatment Plant recently completed limited upgrades as part of the Urban Granular Activated Carbon project. Over the course of that project, several other significant needs were identified and assembled into a single project within this Capital Plan. The project components include, but are not limited to, the following: a new alum and fluoride storage facility; installation of two additional filters to meet firm capacity needs and new filter control panels; building around the lime storage facilities; the addition of a second variable frequency drive at the Raw Water Pump Station as well as other general pump station improvements; the relocation for the electrical gear from a sub terrain location at the Sludge Pumping Station to a new aboveground enclosure; a new administration building on site for additional office, meeting, and storage space; high service pump improvements and the addition of variable frequency drives to three of the pumps; sedimentation basin improvements; replacement of filter inlet valves and actuators; remodeling of the existing filter building for better lab and control space and painting throughout; new clarifier drives; and incoming electrical system improvements for the facility. Currently this facility operates at 80-90% of capacity and the identified upgrades will improve reliability and resiliency, particularly at higher flow rates.
- 13. <u>South Rivanna Hydropower Plant Decommissioning</u>: The South Fork Hydropower Plant is a small hydroelectric generating facility constructed in 1987. The plant had historically operated intermittently, as river flows allow. The generated power was used at the South Rivanna Water Treatment Plant, thereby reducing power purchased off the electric grid. During an effort to troubleshoot and repair the turbine, a large rain and lightning event caused unexpected flooding into the facility. Insurance paid damages to more recent improvements, but not the pre-existing needs to repair the turbine. Engineering investigations in 2013 associated with the failed mechanical equipment and flood event confirmed the need for further disassembly and inspection of the turbine shaft and blade linkages from a remote factory location.

Due to the complexity of possible rehabilitation, the associated Federal Energy Regulatory Commission (FERC) dam permitting, and the numerous variables in the economic analysis, proposals were solicited from national hydropower experts to initiate a feasibility study to determine the cost effectiveness of rehabilitating the hydropower plant while making sure to account for FERC-related costs and issues. The feasibility study was completed in May 2016 and determined that rehabilitation of the facility had a small likelihood for a positive return on investment. This conclusion was brought to the Board of Directors along with a recommendation to initiate the surrender of the exemption to licensure and decommission the facility. The Board approved this recommendation and staff filed the Surrender Application with FERC. The application was approved in 2020 and the decommissioning of the facility, which includes removing defunct electrical components, abandoning components of the turbine and re-establishment of the penstock as a reservoir drain will follow.

14. <u>North Rivanna Water Treatment Plant Decommissioning</u>: The North Rivanna Water Treatment Plant (NRWTP) has been in use since the 1970's with minimal upgrades aside from the addition of Granular Activated Carbon in 2018. A Needs Assessment was performed that identified additional improvements that would be required for the plant to continue to reliably provide drinking water to the North Rivanna Pressure Zone. Due to the anticipated expense of these proposed improvements, a feasibility study was performed to determine if the NRWTP should be upgraded or decommissioned. The study concluded that the plant should be decommissioned, and expenses saved could be better applied to other improvements throughout the Urban Water System. As a result, this project includes demolition of the plant facilities, removal of the low head dam on the North Fork Rivanna River and returning the property to its pre-existing conditions.

South and North Rivanna	Water	Systems
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			Five-Year Capital Program				Projected					
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
12	20.16	South Rivanna Water Treatment Plant Improvements	\$20,000,000		\$17,200,000	\$2,800,000					\$20,000,000	\$9,967,058
13	20.15	South Rivanna Hydropower Plant Decommissioning	\$725,000		\$725,000						\$725,000	\$178,685
14	20.18	North Rivanna Water Treatment Plant Decomissioning	\$2,325,000	\$100,000	\$385,000		\$90,000	\$2,300,000	(\$350,000)		\$2,425,000	\$56,627
		TOTAL	\$23,050,000	\$100,000	\$18,310,000	\$2,800,000	\$90,000	\$2,300,000	(\$350,000)	\$0	\$23,150,000	\$10,202,370

Crozet Water System

The Crozet Water System includes the source water, raw water conveyance, finished water treatment, transmission and storage infrastructure for the Crozet community in western Albemarle County. The source water for this system is the Beaver Creek Reservoir and Garnett Dam which were built in 1964 with a current useable storage capacity of 521 million gallons. Raw water is treated at the Crozet Water Treatment Plant (1.0 mgd rated capacity, soon to be 2 mgd) and provides finished water to the Albemarle County Service Authority. The system includes the Crozet Elevated (Waterball) Tank (0.05 MG) for water treatment plant backwash; the Crozet Ground Storage Tank (0.5 MG) and pump station, and the Buck's Elbow Storage Tank (2.0 MG).

Project Descriptions:

- 15. <u>Beaver Creek Dam Alteration</u>: RWSA operates the Beaver Creek Dam and reservoir as the sole raw water supply for the Crozet Area. In 2011, an analysis of the Dam Breach inundation areas and changes to the 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. Following the completion of a planning study in 2022, staff will proceed with final design and construction of a labyrinth spillway and chute with a bridge to allow Browns Gap Turnpike to cross over the new spillway. Work for this project will be coordinated with the new relocated raw water pump station and intake. Federal funding through the Natural Resources Conservation Service is being pursued to cover up to 65% of the design and construction costs.
- 16. <u>Beaver Creek New Raw Water Pump Station & Intake</u>: The existing Raw Water Pump Station and Intake at the Beaver Creek Reservoir was constructed in 1964 and is located at the foot of the Beaver Creek Dam. Obligatory dam safety upgrades to the Beaver Creek Dam spillway necessitate moving the pump station away from its current location downstream of the dam. Additionally, the Drinking Water Infrastructure Plan for the Crozet water service area recommends installation of a new Raw Water Pump Station and Intake 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 new pump station will be constructed adjacent to the dam on the Beaver Creek Reservoir. The new intake structure will include enhanced controls as well as a Hypolimnetic Oxygenation System that will serve to enhance water quality within the reservoir.

			Five-Year Capital Program				Projected					
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
15	20.19	Beaver Creek Dam Alteration	\$16,150,000		\$845,000	\$380,000	\$3,210,000	\$5,680,000	\$6,035,000		\$16,150,000	\$459,714
16	20.20 21.15	Beaver Creek New Raw Water Pump Station & Intake	\$10,780,000	\$4,870,000	\$498,000	\$555,000	\$3,925,000	\$5,310,000	\$5,362,000		\$15,650,000	\$239,508
		TOTAL	\$26,930,000	\$4,870,000	\$1,343,000	\$935,000	\$7,135,000	\$10,990,000	\$11,397,000	\$0	\$31,800,000	\$699,222

Crozet Water System

Scottsville Water System

The Scottsville Water System is comprised of the raw water conveyance, finished water treatment, transmission and storage infrastructure for the Town of Scottsville in southern Albemarle County. The source water for this system is the Totier Creek Intake, and the backup supply is the Totier Creek Reservoir, which was built in 1971 with a current useable capacity of 182 million gallons. Raw water is treated at the Scottsville Water Treatment Plant (0.25 mgd rated capacity) and provides finished water to the Albemarle County Service Authority. The system includes the Scottsville Storage Tank (0.25 MG).

Project Description:

- 17. <u>Scottsville Water Treatment Plant Lagoon Liner Replacement</u>: The Scottsville Water Treatment Plant has two waste lagoons that receive filter backwash water, filter-to-waste water and flow from the sedimentation basin sludge collectors. These basins also receive drainage flows from the flocculator and sedimentation basins. The lagoons were initially lined in 2007, but that liner has now reached the end of its useful life and is showing sections of wear and degradation. In order to maintain the integrity of the lagoons, new HDPE liners will be installed.
- 18. <u>Red Hill Water Treatment Plant Upgrades</u>: The Red Hill Water Treatment Plant was constructed in a joint effort of ACSA and RWSA in 2009 and consists of a well, pneumatic tank and pump house that provides treated water to the Red Hill Elementary School and adjoining neighborhood. Originally the facility was operated primarily as a well head and pump house. More recently the facility has operated as a water treatment facility with a well as source water. As such, there have been several chemical process additions, automation, online monitoring and an increase in operator wet chemistry testing. The current building is well beyond its physical capacity and this project will serve to expand the building and improve the configuration of the process and laboratory needs of the WTP.

Scottsville Water System

			Five-Year Capital Program				Projected					
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
17	21.04	Scottsville Water Treatment Plant Lagoon Liner Replacement	\$315,000		\$140,000	\$175,000					\$315,000	
18	22.07	Red Hill Water Treatment Plant - Upgrades	\$150,000	\$260,000	\$35,000	\$375,000					\$410,000	
		TOTAL	\$465,000	\$260,000	\$175,000	\$550,000	\$0	\$0	\$0	\$0	\$725,000	\$0

Wastewater Interceptors/Pumping Stations

The RWSA wastewater interceptors and pumping stations convey wastewater from the collection systems of the City of Charlottesville and Albemarle County Service Authority to the Moores Creek Advanced Water Resource Recovery Facility (MCAWRRF). This grouping includes: the Crozet Interceptor and four associated pumping stations; the Moores Creek Interceptor and Relief Sewer; the Morey Creek, Maury Hills, Powell Creek, Meadow Creek, Schenks Branch, Woodbrook and Rivanna Interceptors; as well as the Albemarle-Berkley Interceptor and associated Albemarle Pumping Station. Also included in this system are the two primary pump stations into the MCAWRRF, the Rivanna and Moores Creek Pump Stations.

Project Descriptions:

- 19. <u>Upper Schenks Branch Interceptor</u>: The Schenks Branch Interceptor is located in the eastern part of the City of Charlottesville and ties into the Meadowcreek Interceptor. The interceptor was constructed in the mid-1950s of 21-inch clay and concrete pipe. The existing interceptor is undersized to serve present and future wet weather flows as determined by the City, and is to be upgraded to 30-inch pipe. The Upper Schenks Branch Interceptor consists of two sections along McIntire Road. Both of these sections have been designed with the first phase of this project located in the City's Schenks Branch Greenway, completed in early 2016. The second phase of the Upper Schenks Interceptor will be replaced by RWSA in coordination with the City of Charlottesville's sewer upgrades as easement negotiations with Albemarle County are completed.
- 20. <u>Crozet Interceptor</u>: The Crozet Interceptor is located in western Albemarle County and serves the Crozet and Ivy areas. Flow metering indicated that the interceptor experienced substantial inflow and infiltration and requires rehabilitation. In order to minimize future infrastructure improvements, ACSA and RWSA have agreed to rehabilitate this interceptor and the sewers that flow to the interceptor. The initial phase of rehabilitation to repair the highest priority defects in manholes and pipelines contributing to the inflow and infiltration in the interceptor upstream of Crozet Pump Station No. 4 has been completed. The current budget accounts for evaluation of the downstream portion of the interceptor, as well as outstanding rehabilitation items on upstream portions of the interceptor. While wet weather flows have moderately improved based on the initial phase of work, the ACSA and RWSA continue to investigate and remediate deficiencies along the entire interceptor. Rehabilitation efforts downstream of Crozet Pump Station No. 4 will take place in Phase 2 of the Interceptor Sewer and Manhole Repair Project.
- 21. <u>Crozet Flow Equalization Tank</u>: 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. Based on those results, a preliminary engineering evaluation and siting analysis of a flow equalization tank upstream of Crozet Pump Station No. 4 was completed to ensure that the facility could be designed,

permitted, constructed and ready for operation to meet projected two-year storm flow targets. The completion of construction is anticipated to be in late 2022.

- 22. <u>Crozet Pump Station 1, 2, and 3 Rehabilitation</u>: The Crozet Interceptor Pump Stations were constructed in the 1980's and many of the components are original. This project includes the replacement of pumps and valves at Pump Station 2 in order to improve pumping capabilities at this location and provide spare parts for the pumps at Pump Station 1. It also includes roof replacements at all four pump stations, siding replacement for the wet well enclosure at Pump Station 3, and installation of new wells at Pump Stations 3 and 4.
- 23. Interceptor Sewer and Manhole Repair Phase 2: This project is used to conduct assessments of various interceptors as well as rehabilitation of interceptors that do not have a separate CIP project. Phase 1 of the Interceptor Sewer and Manhole Repair Project included completion of the baseline evaluation of all RWSA interceptors (except the 42/48" Upper Rivanna Interceptor & those replaced with new pipe), as well as completion of rehabilitation on the Upper Morey Creek Interceptor and high-priority rehabilitation on the Powell Creek and Woodbrook Interceptors. Planned projects for Phase 2 include continuation of rehabilitation on the Powell Creek Interceptor, as well as rehabilitation along the lower Morey Creek, Moores Creek, Moores Creek Relief, and Upper Rivanna Interceptors. Similar to Phase 1, a sewer rehabilitation contract will be developed under this project in order to procure a dedicated contractor for any evaluation and rehabilitation work specified. Rehabilitation of existing sanitary sewer pipe and manholes reduces Inflow & Infiltration (I & I) in the system, thus reducing the chance for sanitary sewer overflows (SSOs) during high flow events. Phase 2 will also include inspections of siphons and force mains, which require specialty equipment in order to inspect due to the vastly different flow conditions present in these types of sewers.
Urban Wastewater Interceptors/Pumping Stations

			Five	-Year Capital Pro	gram		Projected	Future Expense	es by Year			
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
19	20.25	Upper Schenks Branch Interceptor	\$3,985,000	\$740,000	\$3,985,000	\$740,000					\$4,725,000	\$50,787
20	20.27 21.10	Crozet Interceptor	\$880,000		\$880,000						\$880,000	\$255,190
21	20.28	Crozet Flow Equalization Tank	\$5,400,000		\$5,400,000						\$5,400,000	\$2,165,244
22	20.30	Crozet Pump Station 1, 2, 3 Rehabilitation	\$590,000		\$325,000	\$210,000	\$55,000				\$590,000	\$42,267
23	21.07	Interceptor Sewer and Manhole Repair (Phase 2)	\$1,950,000	(\$985,000)		\$430,000	\$535,000				\$965,000	
		TOTAL	\$12,805,000	(\$245,000)	\$10,590,000	\$1,380,000	\$590,000	\$0	\$0	\$0	\$12,560,000	\$2,513,488

Moores Creek Advanced Water Resource Recovery Facility

The Moores Creek Advanced Water Resource Recovery Facility (MCAWRRF) is the largest wastewater treatment facility within the RWSA system. The plant was originally constructed in 1958 and upgraded and expanded in 1981 and 1982, and currently has a rated capacity of 15 mgd. From 2009 thru 2012 the facility was upgraded to provide enhanced nutrient removal, and increased wet weather pumping and treatment capacity. This site includes the infrastructure for the wastewater treatment process as well as the RWSA administration facilities.

Project Descriptions:

- 24. <u>Moores Creek AWRRF Engineering and Administration Building</u>: RWSA currently has its administrative headquarters in two buildings on the grounds of the Moores Creek Advanced Water Resource Recovery Facility. The two-story Administration Building was constructed in the early 1980's and houses offices, IT server space, meeting space and a full-service laboratory. The second building is a series of four trailers installed in between 2003-2010 that house the Engineering department. There is currently a need to house additional staff; increase office and meeting space; plan for the replacement of the trailers; bring the IT server workrooms to modern standards; and provide classroom space for education outreach. This project was coordinated with the recent MCAWRRF Master Plan and expansion of the building will take place in the lower parking lot adjacent to the existing building.
- 25. <u>Moores Creek AWRRF Aluminum Slide Gate Replacement</u>: Several large aluminum slide gates are located at the influent side of the Moores Creek Pump Station. These gates allow staff to stop or divert flow to perform maintenance activities. After repeated attempts to access and repair the gates, it is now necessary to replace and modify the gate arrangement. The replacement includes new gates for greater flexibility and resiliency as well as significant flow bypass pumping. Likewise, there are several gates at the Ultraviolet disinfection facility that leak water, 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 facility construction are broken and non-operational and will be replaced as part of this work. In addition, motor operated valves at the headworks will improve wet weather operations related to the new grit facility. The work will be completed via two multiple construction contracts.
- 26. <u>Moores Creek AWRRF Compost Shed Roof Rehabilitation</u>: In the early 1980's a large metalframed shed roof was constructed to house the biosolids composting operations. Subsequent to stopping composting at Moores Creek AWRRF, the shed serves as a covered equipment maintenance yard, solids handling facility and material storage lock-up. The shed roof is exhibiting signs of rafter deterioration and ongoing drainage issues. This project will evaluate and perform remediation needs at this facility.
- 27. <u>Moores Creek AWRRF Gas Sphere Rehabilitation</u>: The gas sphere was constructed in 1980 and is used to house pressurized methane gas as part of the boiler and cogeneration system at the Moores Creek Advanced Water Resource Recovery Facility (MCAWRRF). An inspection of the sphere determined that the coating system was nearing the end of its serviceable life and

the tank would require some additional minor repairs and safety improvements. The project will include an updated inspection to confirm the necessary improvements, recoating the exterior of the tank, repairs to the grout around the concrete ring wall, installation of a safety climb on the exterior of the tank and other minor repairs.

- 28. <u>Moores Creek AWRRF Cogeneration Upgrades</u>: The MCAWRRF has an existing cogeneration facility that was constructed in 2011. The purpose of the facility was to provide a beneficial use of the methane gas produced by the digester process at the plant, and in doing so provide both digester heating and 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 altogether and providing a backup boiler. This project includes costs of installation of a new cogeneration facility as described in the Cogeneration System Analysis.
- 29. <u>Moores Creek AWRRF Operations and Maintenance Building Space</u>: The Moores Creek Maintenance and Operations Department facilities are over 40 years old and undersized to serve the current staffing and functional needs. The Moores Creek Master Plan recommended increases in space requirements and identified potential locations for the larger Maintenance and Operations spaces. However, major relocation of buildings is not warranted until future process upgrades are needed, approximately 15-20 years from now. Preliminarily, this project will increase and update personnel spaces such as offices, lunchrooms, labs, and locker rooms in the Maintenance, Blower, and Sludge Pumping Buildings. Additionally, the project will construct a new oil and grease storage facility that will meet all current best practices for safety and fire suppression. Lastly, the project will address the need for additional parts storage.
- 30. <u>Moores Creek AWRRF Structural Modifications</u>: The aeration basins located at Moores Creek are a series of chambers that each have uniquely controlled oxygen and nutrient loading conditions. Mid-way thru the basins are ten nitrogen recycle (NRCY) pumps. Due to the corrosive atmosphere, these submersed pumps require being pulled and rebuilt frequently. To remove the pumps, staff must currently hire a long boom crane. This project will provide the permanent means to pull, move, and load the pumps during maintenance activities.

Two of the six pumps in the Rivanna Pump Station are smaller and were designed to be replaced if future average day flows warrant increased capacity. The current configuration resulted in several valves being located approximately 40 feet above the pump floor level. Valve maintenance activities have been challenging due to their height. A project is proposed to install a catwalk from the upper mezzanine level to each valve to provide a safer, walkable access to each valve.

31. <u>Moores Creek AWRRF Meter and Valve Replacements</u>: As part of the 2018 Odor Control Phase II Project, the post digestion clarifiers were eliminated from use and the gravity thickener

overflow was diverted through existing piping directly to the Moores Creek Pump Station at the head of the treatment facility. This resulted in less odor generation, however, the gravity thickener overflow lost its metering location at the post digestion clarifiers. A new metering manhole location was installed near the Moores Creek Pump Station where several plant recycle flows come together. Unfortunately, this meter location has been problematic and is subject to backwater flows from the pump station and meter fouling from grease and solids. This project involves installation of individual meters on each recycle flow line at locations that will provide less operation and maintenance problems.

The circulation of Waste Activated Sludge (WAS) and Return Activated Sludge (RAS) is important in the wastewater process to maintain a healthy balance of microorganisms. The existing WAS and RAS flow meters are original to the 1980's construction of the facility and are nearly 40 years old. These meters can no longer be calibrated and replacement parts are not available. Replacement of these meters is necessary for process and operational efficiency.

- 32. Moores Creek AWRRF 5kV Electrical System Upgrade: Discussions during the Moores Creek Facilities Master Plan process, identified that several areas of the MCAWRRF, including the Blower Building, Sludge Pumping Building, Grit Removal Building, Moores Creek Pumping Station, and the Administration Building are connected to the original 5kV electrical switchgear in the Blower Building. This equipment, including the associated cabling, switchgear, transformers, and motor control centers (MCCs), has a useful life expectancy of 20-30 years. Most of this equipment was installed around 1980. With the equipment having well exceeded its useful life expectancy at this point, safety is a concern given the large electric loads that the cabling and other equipment are handling on a day-to-day basis. Failure of the existing 5kV infrastructure could also result in temporary outages of certain treatment processes, and repairs could take weeks to months given the lead times associated with equipment of this age. In July 2020, staff recommended that a CIP Project be started as soon as possible to encompass replacement of the original 1980s-vintage 5kV cables, switchgear, transformers, and MCCs. All work is being coordinated with the Moores Creek Facilities Master Plan.
- 33. <u>Moores Creek AWRRF Miscellaneous Concrete Repair</u>: The two Holding Ponds and the two Equalization Basins were built with the 1977 Moores Creek Upgrades and are critical to the plant infrastructure to contain wet weather flows. The 40-year old concrete is showing signs of degradation. Following inspections in Fall 2020, Hazen recommended implementation of concrete repairs to extend the life of the concrete basins. Work will include crack repair, spalling repair, joint repair, and coating of miscellaneous metals and valves.
- 34. <u>Moores Creek AWRRF Digester Replacement/Repair</u>: Moores Creek AWRRF has five digester vessels. The two smaller digesters were part of the original 1958 plant construction. The three larger digesters were part of the 1979 plant upgrades following construction of the bridge over Moores Creek and the south side of the plant. Although numerous upgrades have been constructed at the digester complex over the last 11 years (including heating, mixing, gas compression, and roof repairs), the overall condition of the concrete and complex is reaching its useful life. Furthermore, through the Moores Creek master planning process, Hazen has identified future plant improvements which will need to

be installed in this area. This project includes addressing remaining repairs to the existing digester complex, including safety repairs, to extend the useful life approximately 10-15 years while RWSA plans, designs, and constructs a new digester complex at another location on the Moores Creek site.

35. <u>Moores Creek AWRRF Gravity Thickener Pumping and Chemical Feed Improvements</u>: Sludge generated through treatment processes at the MCAWRRF is thickened at the Gravity Thickener and then pumped to the digestion process on the other side of the treatment plant. The existing pumps in the Sludge Pumping Building are capable of conveying the thickened sludge, but not at the preferred water content which then impacts the efficiency of the digestion process. In order to facilitate the thickening of the sludge in the Gravity Thickener, polymer is also added to improve solids capture. This project will evaluate and identified better performing sludge pumps, provide for a more permanent polymer storage and feed system and prepare underutilized space in the Sludge Pumping Building to be repurposed for Operations office space.

Moores Creek Advanced Water Resource Recovery Facility

			Five	-Year Capital Pro	gram		Projected	Future Expense	es by Year			
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
24	20.34	Moores Creek AWRRF Engineering and Administration Building	\$225,000	\$8,275,000		\$225,000	\$875,000	\$4,600,000	\$2,800,000		\$8,500,000	
25	20.36	Moores Creek AWRRF Aluminum Slide Gate Replacements	\$1,350,000		\$1,305,000	\$45,000					\$1,350,000	\$284,337
26	20.39	Moores Creek AWRRF Compost Shed Roof Rehabiliation	\$200,000	\$1,160,000	\$200,000	\$540,000	\$620,000				\$1,360,000	
27	20.40	Moores Creek AWRRF Gas Sphere Rehabilitation	\$840,000			\$90,000	\$750,000				\$840,000	
28	20.67	Moores Creek AWRRF Cogeneration Upgrades	\$1,865,000	\$280,000	\$1,865,000	\$280,000					\$2,145,000	
29	20.68	Moores Creek AWRRF Operations and Maintenance Building	\$1,325,000	\$1,415,000	\$275,000	\$40,000	\$1,700,000	\$725,000			\$2,740,000	
30	20.69 21.06	Moores Creek AWRRF Structural Modifications	\$900,000			\$110,000	\$790,000				\$900,000	
31	21.11 21.17	Moores Creek AWWRF Meter and Valve Replacements	\$750,000	\$25,000	\$750,000	\$25,000					\$775,000	\$7,549
32	21.18	Moores Creek AWRRF 5kV Electrical System Upgrade	\$4,600,000	\$450,000	\$600,000	\$2,830,000	\$1,620,000				\$5,050,000	\$122,141
33	22.11	Moores Creek AWRRF Miscellaneous Concrete Repair	\$2,650,000		\$250,000	\$1,650,000	\$750,000				\$2,650,000	

Moores Creek Advanced Water Resource Recovery Facility (Continued)

			Five	-Year Capital Pro	gram		Projected	Future Expense	es by Year			
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
34	22.12	Moores Creek AWRRF Digester Replacement/Repair	\$3,620,000	\$380,000		\$500,000	\$2,340,000	\$1,160,000			\$4,000,000	
35	23.22	Moores Creek AWRRF Gravity Thickener Pumping and Chemical Feed Improvements		\$1,500,000		\$125,000	\$705,000	\$670,000			\$1,500,000	
		TOTAL	\$18,325,000	\$13,485,000	\$5,245,000	\$6,460,000	\$10,150,000	\$7,155,000	\$2,800,000	\$0	\$31,810,000	\$414,027

Scottsville Wastewater System

The Scottsville Wastewater System includes the influent pumping station, the water resource recovery facility constructed in 1983, and the historical treatment lagoon (now incorporated into the plant operation). The water resource recovery facility has a rated capacity of 0.2 mgd.

Project Descriptions:

36. <u>Scottsville WRRF Whole Plant Generator and ATS</u>: The current back-up power generator at the Scottsville Water Resource Recovery Facility does not power the entire plant. It serves only the facilities needed to send flow to the lagoon for storage. This project will provide back-up power for the entire plant and will offer greater treatment flexibility and monitoring capability for the operations staff, particularly when the plant is unmanned and monitored remotely.

			Five	-Year Capital Pro	gram		Projected	Future Expense	s by Year			
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
36	21.12	Scottsville WRRF Whole Plant Generator and ATS	\$200,000		\$11,000	\$180,000	\$9,000				\$200,000	
		TOTAL	\$200,000	\$0	\$11,000	\$180,000	\$9,000	\$0	\$0	\$0	\$200,000	\$0

Scottsville Water Resource Recovery Facility

Glenmore Wastewater System

The 0.381-mgd water resource recovery facility, located within the Glenmore subdivision, is operated by RWSA. The facility includes an influent pumping station located immediately adjacent to the treatment facility.

Project Descriptions:

37. <u>Glenmore WRRF Influent Pump and VFD Addition</u>: The Glenmore WRRF is owned by ACSA and operated by the RWSA. The facility is an extended aeration treatment facility for domestic wastewater. A 2014 capacity evaluation confirmed that the facility was designed for growth in the Glenmore neighborhood and surrounding jurisdictional areas and could accommodate expansion. The Glenmore neighborhood has reached the point where a third pump is now necessary.

			Five-	-Year Capital Pro	gram		Projected	Future Expense	es by Year			
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
37	20.42	Glenmore WRRF Influent Pump and VFD Addition	\$120,000	\$250,000	\$370,000						\$370,000	\$30,676
		TOTAL	\$120,000	\$250,000	\$370,000	\$0	\$0	\$0	\$0	\$0	\$370,000	\$30,676

Glenmore Water Resource Recovery Facility

All Systems

Project Descriptions:

- 38. <u>Radio Upgrades</u>: The regional 800 MHz Public Safety Communication System, in which the Rivanna Water and Sewer Authority participates to provide internal and emergency radio communication, is nearing the end of its service life. Because of technology changes (software and hardware) the Charlottesville-UVA-Albemarle County Emergency Communications Center (ECC) will need to upgrade or replace the system to keep it useable. This project plans for the upgrade or replacement of major technology components and equipment of the existing system include electronic components at all tower sites and the prime site at the ECC facility; new console equipment at the regional ECC; equipment such as tower site generators and UPS systems; an additional tower site (to improve service in southern Albemarle County); microwave backbone; and replacement of the system recording facilities. RWSA is being apportioned a part of the project cost proportionately based on the number of radios. In addition to this assessment from the ECC, the Authority will replace its fleet of portable radios.
- 39. <u>Asset Management</u>: 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 resources 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 was 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 facility, and assistance through a full implementation process. Procurement of software to facilitate the overall program is also included in this project.
- 40. <u>Security Enhancements</u>: Water utilities are required by federal law to conduct vulnerability assessments (VA) and have emergency response plans. RWSA completed an update of its VA for the water system in collaboration with other regional partners and identified a number of security improvements that could be applied to both its water and wastewater systems. The purpose of this project will be to install security improvements at RWSA facilities, with the initial focus on an enhanced access control program. Other improvements will include: industrial strength door and window components, security gate and fencing modifications, an improved lock and key program, facility signage, closed circuit television (CCTV) enhancements, intrusion detection systems (IDS), additional security lighting, mass emergency notification systems, and emergency call stations/panic buttons. In order to implement an access control system at Authority-owned facilities, staff has procured an Implementer that will finalize system design/requirements, procure all necessary equipment, and install the chosen system. Implementation of the access control system has been completed at the Moores Creek Advanced Water Resource Recovery Facility (MCAWRRF),

Crozet Water Treatment Plant (CZWTP), and Scottsville Water Treatment Plant (SVWTP), and implementation work is underway at several other RWSA water and wastewater facilities.

41. <u>IT Master Plan – Software</u>: The IT Master Plan assessed and identified needed upgrades in the network and busines processes at the Authority. Work is currently underway to reconfigure the Network infrastructure and to install and implement major software initiatives. This project will continue to address those Authority wide needs.

All Systems

			Five	-Year Capital Pro	gram		Projected	Future Expense	es by Year			
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
38	20.44	Radio Upgrades	\$600,000		\$600,000						\$600,000	\$280,607
39	20.45	Asset Management	\$1,180,000		\$915,000	\$97,000	\$168,000				\$1,180,000	\$441,104
40	20.46	Security Enhancements	\$2,730,000	\$80,000	\$2,106,000	\$304,000	\$400,000				\$2,810,000	\$727,020
41	20.47	IT Master Plan - Software	\$600,000		\$600,000						\$600,000	\$207,458
		TOTAL	\$5,110,000	\$80,000	\$4,221,000	\$401,000	\$568,000	\$0	\$0	\$0	\$5,190,000	\$1,656,189

APPENDICES

CIP Financial Summary Water System Summary Wastewater System Summary All Systems Summary

CIP Financial Summary

			Five	-Year Capital Prog	gram		Projecte	d Future Expense	s by Year			
Line No.	Proj. No.	Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
1	20.01	South Rivanna Reservoir to Ragged Mountain Reservoir Water Line Right- of-Way	\$2,740,000	\$0	\$2,740,000	\$0					\$2,740,000	\$1,566,796
2	20.02	South Rivanna Reservoir Dredging	\$0	\$0	\$0	\$0					\$0	
3	20.03	Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Line	\$15,325,000	\$1,575,000	\$375,000	\$325,000	\$700,000	\$4,000,000	\$5,800,000	\$5,700,000	\$16,900,000	
4	20.04	Ragged Mountain Reservoir to Observatory Water Treatment Plant Raw Water Pump Station	\$5,850,000	\$2,990,000	\$215,000	\$160,000	\$365,000	\$2,100,000	\$3,000,000	\$3,000,000	\$8,840,000	
5	22.01	South Rivanna Reservoir to Ragged Mountain Reservoir - Birdwood to Old Garth	\$1,980,000	\$0	\$166,000	\$1,814,000					\$1,980,000	
6	20.48	South Rivanna Reservoir to Ragged Mountain Pipeline, Intake & Facilities	\$0	\$3,105,000	\$200,000	\$1,405,000				\$1,500,000	\$3,105,000	
7	20.06	Observatory Water Treatment Plant Improvements	\$23,000,000	\$0	\$17,550,000	\$5,450,000					\$23,000,000	\$3,316,372
8	20.10	Central Water Line	\$9,083,000	\$14,917,000	\$1,838,000	\$1,462,000	\$1,100,000	\$5,000,000	\$7,300,000	\$7,300,000	\$24,000,000	\$191,666
9	20.12	South Fork Rivanna River Crossing	\$3,655,000	\$2,195,000	\$790,000	\$310,000	\$3,750,000	\$1,000,000			\$5,850,000	\$30,896
10	20.13	Airport Rd. Pump Station and North Rivanna Transmission Main	\$7,600,000	\$2,400,000	\$5,650,000	\$1,230,000	\$3,120,000				\$10,000,000	\$238,847
11	23.06	Emmet Street Betterment	\$0	\$2,900,000	\$1,000,000	\$955,000	\$945,000				\$2,900,000	

CIP Financial Summary (Continued)

			Five	-Year Capital Prog	gram		Projecte	d Future Expenses	s by Year			
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
12	20.16	South Rivanna Water Treatment Plant Improvements	\$20,000,000	\$0	\$17,200,000	\$2,800,000					\$20,000,000	\$9,967,058
13	20.15	South Rivanna Hydropower Plant Decommissioning	\$725,000	\$0	\$725,000	\$0					\$725,000	\$178,685
14	20.18	North Rivanna Water Treatment Plant Upgrade	\$2,325,000	\$100,000	\$385,000	\$0	\$90,000	\$2,300,000	(\$350,000)		\$2,425,000	\$56,627
15	20.19	Beaver Creek Dam Alteration	\$16,150,000	\$0	\$845,000	\$380,000	\$3,210,000	\$5,680,000	\$6,035,000		\$16,150,000	\$459,714
16	20.20 21.15	Beaver Creek New Raw Water Pump Station & Intake	\$10,780,000	\$4,870,000	\$498,000	\$555,000	\$3,925,000	\$5,310,000	\$5,362,000		\$15,650,000	\$239,508
17	21.04	Scottsville Water Treatment Plant Lagoon Liner Replacement	\$315,000	\$0	\$140,000	\$175,000					\$315,000	
18	22.07	Red Hill Water Treatment Plant - Upgrades	\$150,000	\$260,000	\$35,000	\$375,000					\$410,000	
19	20.25	Upper Schenks Branch Interceptor	\$3,985,000	\$740,000	\$3,985,000	\$740,000					\$4,725,000	\$50,787
20	20.27 21.10	Crozet Interceptor	\$880,000	\$0	\$880,000	\$0					\$880,000	\$255,190
21	20.28	Crozet Flow Equalization Tank	\$5,400,000	\$0	\$5,400,000	\$0					\$5,400,000	\$2,165,244
22	20.30	Crozet Pump Station 1, 2, 3 Rehabilitation	\$590,000	\$0	\$325,000	\$210,000	\$55,000	\$0			\$590,000	\$42,267

CIP Financial Summary (Continued)

			Five	-Year Capital Prog	gram		Projecte	ed Future Expense	s by Year			
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
23	21.07	Interceptor Sewer and Manhole Repair - Phs 2	\$1,950,000	(\$985,000)	\$0	\$430,000	\$535,000				\$965,000	
24	20.34	Moores Creek AWRRF Engineering and Administration Building	\$225,000	\$8,275,000	\$0	\$225,000	\$875,000	\$4,600,000	\$2,800,000		\$8,500,000	
25	20.36	Moores Creek AWRRF Aluminum Slide Gate Replacements	\$1,350,000	\$0	\$1,305,000	\$45,000					\$1,350,000	\$284,337
26	20.39	Moores Creek AWRRF Compost Shed Roof Rehabiliation	\$200,000	\$1,160,000	\$200,000	\$540,000	\$620,000				\$1,360,000	
27	20.40	Moores Creek AWRRF Gas Sphere Rehabilitation	\$840,000	\$0	\$0	\$90,000	\$750,000				\$840,000	
28	20.67	Moores Creek AWRRF Cogeneration Upgrades	\$1,865,000	\$280,000	\$1,865,000	\$280,000					\$2,145,000	
29	20.68	Moores Creek AWRRF Operations and Maintenance Building	\$1,325,000	\$1,415,000	\$275,000	\$40,000	\$1,700,000	\$725,000			\$2,740,000	
30	20.69 21.06	Moores Creek AWWRF Structural Modifications	\$900,000	\$0	\$0	\$110,000	\$790,000				\$900,000	
31	21.11 21.17	Moores Creek AWWRF Meter and Valve Replacements	\$750,000	\$25,000	\$750,000	\$25,000					\$775,000	\$7,549
32	21.18	Moores Creek AWWRF 5kV Electrical System Upgrade	\$4,600,000	\$450,000	\$600,000	\$2,830,000	\$1,620,000				\$5,050,000	\$122,141
33	22.11	Moores Creek AWRRF Miscellaneous Concrete Repair	\$2,650,000	\$0	\$250,000	\$1,650,000	\$750,000				\$2,650,000	

CIP Financial Summary (Continued)

			Five	-Year Capital Prog	gram		Projecte	d Future Expenses	s by Year			
Line No.		Project Description	Current CIP Adopted 5/2021	Proposed Changes	Current Capital Budget	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Recommended CIP	Work-in-Progress (Prev. Expenses 6/30/2021)
34	22.12	Moores Creek AWRRF Digester Replacement/Repair	\$3,620,000	\$380,000	\$0	\$500,000	\$2,340,000	\$1,160,000			\$4,000,000	
35	23.12	Moores Creek AWRRF Gravity Thickener Pumping and Chemical Feed	\$0	\$1,500,000	\$0	\$125,000	\$705,000	\$670,000			\$1,500,000	
36	21.12	Scottsville WRRF Whole Plant Generator and ATS	\$200,000	\$0	\$11,000	\$180,000	\$9,000				\$200,000	
37	20.42	Glenmore WRRF Influent Pump & VFD Addition	\$120,000	\$250,000	\$370,000	\$0					\$370,000	\$30,676
38	20.44	Radio Upgrades	\$600,000	\$0	\$600,000	\$0					\$600,000	\$280,607
39	20.45	Asset Management	\$1,180,000	\$0	\$915,000	\$97,000	\$168,000				\$1,180,000	\$441,104
40	20.46	Security Enhancements	\$2,730,000	\$80,000	\$2,106,000	\$304,000	\$400,000				\$2,810,000	\$727,020
41	20.47	IT Master Plan - Software	\$600,000	\$0	\$600,000	\$0					\$600,000	\$207,458
		Total	\$156,238,000	\$48,882,000	\$70,789,000	\$25,817,000	\$28,522,000	\$32,545,000	\$29,947,000	\$17,500,000	\$205,120,000	\$20,860,549

Water System Summary

		Sumr	mar	у						Projec	ted I	Future Expenses	by Ye	ar					
Urban Water System	Cu	rrent CIP		Proposed Changes	Cu	rrent Capital Budget		FY23		FY24		FY25		FY26	FY27	R	ecommended CIP	Woi	rk-in -Progress
PROJECT COSTS																			
Community Water Supply Plan	\$	25,895,000	\$	6,170,000	\$	3,696,000	\$	3,704,000	\$	1,065,000	\$	6,100,000	\$	8,800,000	\$ 10,200,000	\$	33,565,000	\$	1,566,796
Observatory WTP/Ragged Mtn/Sugar Hollow Systems		24,900,000		-		17,550,000		5,450,000		-		-		-	-		23,000,000		4,698,637
Finished Water Storage/Distribution - Urban System		21,828,000		20,922,000		9,278,000		3,957,000		8,915,000		6,000,000		7,300,000	7,300,000		42,750,000		461,410
South & North Fork Rivanna WTP and Reservoir System		23,250,000		(100,000)		18,310,000		2,800,000		90,000		2,300,000		(350,000)	-		23,150,000		10,202,371
Total Projects Urban Water Systems	\$	95,873,000	\$	26,992,000	\$	48,834,000	\$	15,911,000	\$	10,070,000	\$	14,400,000	\$	15,750,000	\$ 17,500,000	\$	122,465,000	\$	16,929,212
FUNDING SOURCES URBAN SYSTEM - TO DATE																			
Work-in-Progress					\$	16,929,000	\$	-	\$	-	\$	-	\$	-	\$ -	\$	16,929,000		
Debt Proceeds - 2018 & 2021Bond						31,405,000		8,400,500		-		-		-	-		39,805,500		
Capital Funds Available						500,000		-		-		-		-	 -		500,000		
SUBTOTAL						48,834,000		8,400,500		-		-		-	-		57,234,500		
FUNDING SOURCES URBAN SYSTEM - NEEDS																			
Future Cash reserve transfer to Capital Fund							\$	1,000,000	\$	1,000,000	\$	500,000	\$	500,000	\$ 1,000,000	\$	4,000,000		
New Debt Needed					_	-	_	6,510,500		9,070,000		13,900,000		15,250,000	16,500,000		61,230,500		
SUBTOTAL						-		7,510,500		10,070,000		14,400,000		15,750,000	17,500,000		65,230,500		
TOTAL URBAN WATER FUNDING					\$	48,834,000	\$	15,911,000	\$	10,070,000	\$	14,400,000	\$	15,750,000	\$ 17,500,000	\$	122,465,000		
																	\$122,465,000		
Estimated Bond Issues									:	\$30,000,000				\$31,230,500			\$61,230,500		

		Sumr	mary					Project	ted F	uture Expenses	by Ye	ar					
Non-Urban Water System	Curr	rent CIP	Pro Ch	posed anges	Curre Bi	nt Capital udget	FY23	FY24		FY25		FY26	FY27	Rec	commended CIP	Work-ii	n -Progress
PROJECT COSTS																	
Crozet Water System	\$ 2	28,275,000	\$	4,140,000	\$	1,343,000	\$ 935,000	\$ 7,135,000	\$	10,990,000	\$	11,397,000	\$ -	\$	31,800,000	\$	757,810
Scottsville Water System		850,000		(125,000)		175,000	550,000	-		-		-	-		725,000		-
Total Rural Water Systems	\$ 2	29,125,000	\$	4,015,000	\$	1,518,000	\$ 1,485,000	\$ 7,135,000	\$	10,990,000	\$	11,397,000	\$ -	\$	32,525,000	\$	757,810
Non-URBAN FUNDING SOURCES																	
Work in Progress					\$	757,800	\$ -	\$ -	\$	-	\$	-	\$ -	\$	757,800		
Capital Funds Available						-									-		
Debt Proceeds - 2018 & 2021Bond						465,000	-	-		-		-	-		465,000		
Future Cash reserve transfer to Capital Fund						295,200	450,000	150,000		54,800		-	-		950,000		
New Debt Needed						-	1,035,000	6,985,000		10,935,200		11,397,000	-		30,352,200		
TOTAL NON-URBAN WATER FUNDING					\$	1,518,000	\$ 1,485,000	\$ 7,135,000	\$	10,990,000	\$	11,397,000	\$ -	\$	32,525,000		
Estimated Bond Issues							\$ 8,020,000					22,332,200		\$3	0,352,200		

Wastewater System Summary

	Sumn	nary	/				Projecte	ed Fu	uture Expenses I	by Ye	ear				
Urban Wastewater System	Current CIP		Proposed Changes	Cu	irrent Capital Budget	FY23	FY24		FY25		FY26	FY27	Rec	commended CIP	Work-in - Progress
PROJECT COSTS															
Wastewater Interceptor/Pumping Stations	\$ 14,345,330	\$	(697,000)	\$	10,590,000	\$ 1,380,000	\$ 590,000	\$	-	\$	-	\$ -	\$	12,560,000	\$ 3,173,458
Moores Creek WWTP	25,380,000		12,485,000		5,245,000	6,460,000	10,150,000		7,155,000		2,800,000	-		31,810,000	599,335
Total Urban Wastewater Systems	\$ 39,725,330	\$	11,788,000		\$15,835,000	\$7,840,000	\$10,740,000		\$7,155,000		\$2,800,000	\$0		\$44,370,000	\$3,772,793
FUNDING SOURCES URBAN SYSTEM - IN PLACE															
Work-in-Progress				\$	3,772,800	\$ -	\$ -	\$	-	\$	-	\$ -	\$	3,772,800	
Debt Proceeds - 2018 & 2021Bond					6,084,750	-	-		-		-			6,084,750	
Capital Funds Available				_	3,500,000	 -	 -		-		-	 -		3,500,000	
SUBTOTAL					13,357,550	-	-		-		-	-		13,357,550	
FUNDING SOURCES URBAN SYSTEM - NEEDS															
Future Cash Reserves				\$	-	\$ 1,000,000	\$ 500,000	\$	500,000	\$	1,000,000	\$ -	\$	3,000,000	
New Debt Needed					2,477,450	 6,840,000	 10,240,000		6,655,000		1,800,000	 -		28,012,450	
SUBTOTAL					2,477,450	\$7,840,000	10,740,000		7,155,000		2,800,000	-		31,012,450	
TOTAL URBAN WASTEWATER FUNDING				\$	15,835,000	\$ 7,840,000	\$ 10,740,000	\$	7,155,000	\$	2,800,000	\$ -	\$	44,370,000	
Estimated Bond Issues							\$ 19,557,500			\$	8,455,000		\$	28,012,500	

	Sum	mary			Project	ed Future Expenses	by Year			
Non-Urban Wastewater System	Current CIP	Proposed Changes	Current Capital Budget	FY23	FY24	FY25	FY26	FY27	Recommended CIP	Work-in - Progress
PROJECT COSTS										
Glenmore WWTP	\$ 120,00	\$ 250,000	\$ 370,000	\$-	\$-	\$ -	\$-	\$-	\$ 370,000	\$ 30,676
Scottsville WWTP	200,00	-	11,000	180,000	9,000	-	-	-	200,000	-
Total Rural Wastewater Systems	\$320,00	0 \$250,000	\$ 381,000	\$ 180,000	\$ 9,000	\$ -	\$ -	\$-	\$ 570,000	\$ 30,676
FUNDING SOURCES RURAL SYSTEM - NEEDS										
Work in Progress			\$ 30,700						30,700	
Debt Proceeds - 2018 & 2021Bond			\$-	\$-					-	
Future Cash Reserve			-	-	-	-			-	
New Debt Needed			350,300	180,000	9,000	-	-	-	539,300	
TOTAL RURAL WASTEWATER FUNDING			\$ 381,000	\$ 180,000	\$ 9,000	\$ -	\$-	\$-	\$ 570,000	
Estimated Bond Issues					\$ 539,300					

All Systems Summary

	Sumi	mary			Projected	Future Expense	es by Year			
Shared Projects - All Rate Centers	Current CIP	Proposed Changes	Current Capital Budget	FY23	FY24	FY25	FY26	FY27	Recommended CIP	Work-in - Progress
PROJECT COSTS										
Asset management/Security/IT Master Plan	\$ 5,110,000	\$ 80,000	\$ 4,221,000	\$ 401,000	\$ 568,000	\$ -	\$-	\$ -	\$ 5,190,000	\$1,656,189
Total Projects Urban Water Systems	\$ 5,110,000	\$ 80,000	\$ 4,221,000	\$ 401,000	\$ 568,000	\$-	\$-	\$-	\$ 5,190,000	\$1,656,189
FUNDING SOURCES										
Work in Progress			\$ 1,656,189						\$ 1,656,189	
Possible Future Reserves			\$ 1,031,000	\$ 401,000	\$568,000				\$ 2,000,000	
New Debt Needed			\$ 1,533,811	\$ -	\$-	\$-	\$-	\$-	\$ 1,533,811	
									-	
TOTAL URBAN WATER FUNDING			\$ 4,221,000	\$ 401,000	\$ 568,000	\$-	\$-	\$-	\$ 5,190,000	
Estimated Bond Issues					\$1,533,811					

Summary Information

		2023 - 2027 Proposed <u>CIP</u>	:	2022 - 2026 Adopted <u>CIP</u>		<u>Change \$</u>
Project Cost						
Urban Water Projects Urban Wastewater Projects Non-Urban Projects & Shared Total Project Cost Estimates	\$ \$	122,465,000 44,370,000 38,285,000 205,120,000	\$ \$	95,873,000 39,725,330 34,555,000 170,153,330	\$ \$	26,592,000 4,644,670 3,730,000 34,966,670
Funding in place						
Work-in-Progress (paid for) Debt Proceeds Available Cash-Capital Available Financing Needs	\$ \$	23,146,700 46,355,250 4,000,000 73,501,950	\$ \$	6,913,000 19,755,100 4,688,000 31,356,100	\$	16,233,700 26,600,150 (688,000) 42,145,850
Thancing Needs						
Possible Future Reserves New Debt	\$ \$	9,950,000 121,668,050 131,618,050	\$ \$	9,700,000 129,097,230 138,797,230	\$	250,000 (7,429,180) (7,179,180)
Total Funding	<u>\$</u>	205,120,000	<u>\$</u>	170,153,330	<u>\$</u>	34,966,670
Percentage of funding in place Ratio of debt to expense Ratio of cash to expense		35.8% 93.2% 6.8%		18.4% 91.5% 8.5%		

Summary Information

	Total			Urban			Water	w	astewater
Detail by Major Systems	Proposed	Urban Water	N	Vastewater	Shared	I	Non-Urban	Ν	on-Urban
	<u>CIP</u>	Projects		Projects	Projects		Projects		Projects
Project Cost									
Urban Water Projects	\$ 122,465,000	\$ 122,465,000	\$	-		\$	-	\$	-
Urban Wastewater Projects	44,370,000	-		44,370,000			-		-
Non-Urban Projects & Shared	 38,285,000	-		-	 5,190,000		32,525,000		570,000
Total Project Cost Estimates	\$ 205,120,000	<u>\$122,465,000</u>	\$	44,370,000	\$ 5,190,000	\$	32,525,000	\$	570,000
Funding in place									
Work-in-Progress (paid for)	\$ 23,146,700	\$ 16,929,200	\$	3,772,800	\$ 1,656,200	\$	757,800	\$	30,700
Debt Proceeds available	46,355,250	39,805,550		6,084,700	-		465,000		-
Cash-Capital Available	 4,000,000	500,000		3,500,000	 -		-		-
Subtotal	\$ 73,501,950	\$ 57,234,750	\$	13,357,500	\$ 1,656,200	\$	1,222,800	\$	30,700
Financing Needs									
Possible Future Reserves	\$ 9,950,000	4,000,000		3,000,000	2,000,000		950,000		-
New Debt	 121,668,050	61,230,250		28,012,500	 1,533,800		30,352,200		539,300
Subtotal	\$ 131,618,050	\$ 65,230,250	\$	31,012,500	\$ 3,533,800	\$	31,302,200	\$	539,300
Total Funding	\$ 205,120,000	<u>\$ 122,465,000</u>	\$	44,370,000	\$ 5,190,000	\$	32,525,000	\$	570,000
Percentage of funding in place	35.8%	46.7%		30.1%	31.9%		3.8%		5.4%
Ratio of debt to expense	93.2%	82.5%		76.8%	29.6%		94.7%		94.6%
Ratio of cash to expense	6.8%	3.7%		14.6%	38.5%		2.9%		0.0%

Summary Information

				<u>Urban</u>						<u>Current</u>
	<u> </u>	Irban Water	V	<u>lastewater</u>	l	Non-Urban	<u>Shared</u>	<u>Total</u>		Adopted
Adopted CIP 2022 - 2026	\$	95,873,000	\$	39,725,330	\$	29,445,000	\$ 5,110,000	\$ 170,153,330		
<u>Changes:</u> Completed or closed projects		(1,900,000)		(8,143,330)		(615,000)	-	(10,658,330)		
Rollover from FY 2026 (roughly)		17,500,000		875,000		-	-	18,375,000		
Adjustments on existing projects New projects		10,992,000		10,413,000 1,500,000		4,265,000	 80,000	25,750,000 1,500,000	*	
New costs		10,992,000		11,913,000		4,265,000	80,000	27,250,000		
Total Changes		26,592,000		4,644,670		3,650,000	80,000	34,966,670		
	<u> </u>				<u> </u>		 	 		
Total Proposed CIP 2023 - 2027	\$	122,465,000	\$	44,370,000	\$	33,095,000	\$ 5,190,000	\$ 205,120,000		170,153,330
Years 6 - 10 (FY 2028-32)								\$ 126,217,000		100,359,000
Years 11 - 15 (FY2033-37)								\$ 193,110,000		52,867,000
				тот		15 YEAR CIP		\$ 524,447,000	\$	323,379,330

Budget and Charges were adjusted in October 20 Summary Info	matic	00 <u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
City of Charlottesville Cha	rges												
Urban Water													
Operating Rate	Per 1000 gal.	2.095	2.346	2.648	2.807	2.975	3.154	3.343	3.5	44 3.756	3.982	4.221	4.474
	% Change		12.0%	12.9%	6.0%	6.0%	6.0%	6.0%	6.0	% 6.0%	6.0%	6.0%	6.0%
Debt Service Charge	Per month	\$ 193,580	\$ 246,188	271,545	303,004	334,553	358,523	390,038					
			27.2%	10.3%	11.6%	10.4%	7.2%	8.8%					
Revenue Requirements:				10.3%	11.6%	10.4%	7.2%	8.8%					
Operating Rate Revenue	Annual	\$ 3,630,500	\$ 3,906,000	\$ 1/08.818	\$ 1673 348	\$ 1 953 7/8	\$ 5 250 973	\$ 5,566,032	\$ 5,800,00	4 \$ 6 253 003	\$ 6,620,233	\$ 7.026.087	\$ 7,448,606
Debt Service Revenues	Annual	φ 3,030,000 2 323 000	2 954 300	3 258 534	3 636 0/5	φ 4,333,740 Λ 01Λ 633	4 302 273	4 680 451	φ 0,000,00	- ψ 0,200,000 -	φ 0,023,233	¢ 1,020,301	φ 7, 44 0,000
Total	Annual	\$ 5,953,500	\$ 6 860 300	\$ 7667352	\$ 9 300 303	¢ 9 069 391	\$ 0,553,246	\$ 10 246 493	\$ 5 800 00	1 \$ 6 253 003	\$ 6,620,222	\$ 7,026,087	\$ 7.449.606
rotar	¢ Change	ψ 3,333,300	\$ 906,800	\$ 807.052	\$ 642.040	\$ 658.989	\$ 584.865	\$ 693,236	\$ 333.06	2 \$ 354,000	\$ 375.240	\$ 397 754	\$ 121 610
	\$ Change		φ 300,000 15.2%	φ 007,032 11.8%	\$ 042,040 8.4%	φ 030,303 7 9%	¢ 504,005	7 3%	φ 333,30	2 4 334,000	ψ 575,240	φ 331,134	φ 421,013
	76 Change		13.270	11.070	0.470	1.570	0.070	1.570					
Urban Wastewater													
Operating Rate	Per 1000 gal	2,369	2.517	2.662	2.848	3.019	3.200	3,392	3.5	96 3.812	4.040	4.283	4.540
• F • • • • • • • • • • • • • • • • • •	% Change		6.2%	5.8%	7.0%	6.0%	6.0%	6.0%	6.0	% 6.0%	6.0%	6.0%	6.0%
	, o onango		0.270	0.070	11070	0.070	0.070	0.070	0.0		0.070	0.070	0.070
Debt Service Charge	Per month	\$ 407.588	\$ 376.036	384,152	396.872	407.882	418,922	431.842					
		• •••,•••	-7.7%	2.2%	3.3%	2.8%	2.7%	3.1%					
Revenue Requirements:													
Operating Rate Revenue	Annual	\$ 3,936,500	\$ 4.096.900	\$ 4.247.915	\$ 4,545,269	\$ 4.817.986	\$ 5,107,065	\$ 5.413.489	\$ 5,738,29	8 \$ 6.082.596	\$ 6.447.551	\$ 6.834.405	\$ 7,244,469
Debt Service Revenues	Annual	4.891.100	4.512.500	4.609.820	4,762,460	4.894.580	5.027.060	5.182.100	-	-	-	-	-
Total		\$ 8.827.600	\$ 8.609.400	\$ 8.857.735	\$ 9.307.729	\$ 9.712.566	\$ 10.134.125	\$ 10.595.589	\$ 5,738,29	8 \$ 6.082.596	\$ 6.447.551	\$ 6.834.405	\$ 7.244.469
	\$ Change		\$ (218,200)	\$ 248,335	\$ 449,994	\$ 404.836	\$ 421,559	\$ 461,464	\$ 324.80	9 \$ 344.298	\$ 364.956	\$ 386.853	\$ 410.064
	% Change		-2.5%	2.9%	5.1%	4.3%	4.3%	4.6%			,	,	• • • • • •
Total all Rate Centers													
Operating Rate Revenue		\$ 7,567,000	\$ 8,002,900	\$ 8,656,734	\$ 9,218,617	\$ 9,771,734	\$ 10,358,038	\$ 10,979,520	\$ 11,638,29	1 \$ 12,336,589	\$ 13,076,784	\$ 13,861,391	\$ 14,693,075
Debt Service Revenues		7,214,100	7,466,800	7,868,354	8,398,505	8,909,213	9,329,333	9,862,551	9,862,55	1 9,862,551	9,862,551	9,862,551	9,862,551
Total City All Revenues		\$14,781,100	\$ 15,469,700	\$ 16,525,088	\$ 17,617,122	\$ 18,680,947	\$ 19,687,371	\$ 20,842,071	\$ 21,500,84	2 \$ 22,199,140	\$ 22,939,335	\$ 23,723,942	\$ 24,555,626
-	\$ Change		\$ 688,600	\$ 1,055,388	\$ 1,092,034	\$ 1,063,825	\$ 1,006,424	\$ 1,154,700	\$ 658,77	1 \$ 698,297	\$ 740,195	\$ 784,607	\$ 831,683
	% Change		4.7%	6.8%	6.6%	6.0%	5.4%	5.9%					
									612,13	4 828,449	566,917	225,230	92,283
10-Year CIP Debt Service					98,795	341,060	734,598	1,266,011	1,878,14	5 2,706,593	3,273,511	3,498,741	3,591,024
Total Estimated Charge	-	\$14,781,100	\$ 15,469,700	\$ 16,525,088	\$ 17,715,917	\$ 19,022,007	\$ 20,421,969	\$ 22,108,082	\$ 23,378,98	7 \$ 24,905,733	\$ 26,212,846	\$ 27,222,683	\$ 28,146,650
% Change			4.7%	6.8%	7.2%	7.4%	7.4%	8.3%	5.7	% 6.5%	5.2%	3.9%	3.4%
		Additional An	nual Revenues	\$ 1,055,388	\$ 1,190,829	\$ 1,306,090	\$ 1,399,962	\$ 1,686,113	\$ 1,270,90	5 \$ 1,526,746	\$ 1,307,113	\$ 1,009,837	\$ 923,967
				6.8%	7.2%	7.4%	7.4%	8.3%	5.7	% 6.5%	5.2%	3.9%	3.4%

1/24/2022

12,676,950 81.9%

Summary Info	rmatio	DN <u>FY 2021</u>		FY 2022*	FY 2023		FY 2024		FY 2025	E	FY 2026		FY 2027		FY 2027		FY 2028		FY 2029	ļ	FY 2030		FY 2031
ACSA Charges																							
Urban Water																							
Operating Rate	Per 1000 gal.	2.0	95	2.346	2.648		2.807		2.975		3.154		3.343		3.544		3.756		3.982		4.221		4.474
	% Change			12.0%	12.9%		6.0%		6.0%		6.0%		6.0%		6.0%		6.0%		6.0%		6.0%		6.0%
Debt Service Charge	Per month	\$ 321,30	з\$	388,956	420,877		463,937		507,716		545,844		587,871										
				21.1%	8.2%		10.2%		9.4%		7.5%		7.7%										
Revenue Requirements:																							
Operating Rate Revenue	Annual	\$ 3,488,10	0\$	4,065,500	\$ 4,588,851	\$	4,864,182	\$	5,156,033	\$	5,465,395	\$	5,793,318		\$ 6,140,918	\$	6,509,373	\$	6,899,935	\$	7,313,931	\$	7,752,767
Debt Service Revenues	Annual	3,855,60	0	4,667,500	5,050,518		5,567,249		6,092,591		6,550,129		7,054,449		-		-		-		-		-
Total		\$ 7,343,70	0\$	8,733,000	\$ 9,639,369	\$	10,431,431	\$	11,248,624	\$ 1	12,015,524	\$	12,847,767		\$ 6,140,918	\$	6,509,373	\$	6,899,935	\$	7,313,931	\$	7,752,767
	\$ Change		\$	1,389,300	\$ 906,369	\$	792,062	\$	817,193	\$	766,900	\$	832,244		\$ 347,599	\$	368,455	\$	390,562	\$	413,996	\$	438,836
	% Change			18.9%	10.4%		8.2%		7.8%		6.8%		6.9%										
l																							
Urban Wastewater			~~										0.005						10/2		1.055		
Operating Rate	Per 1000 gal.	2.3	69	2.517	2.662		2.848		3.019		3.200		3.392		3.596		3.812		4.040		4.283		4.540
	% Change			6.2%	5.8%		7.0%		6.0%		6.0%		6.0%		6.0%		6.0%		6.0%		6.0%		6.0%
		• • • • • • • • • • • • • • • • • • •					~~~~~		~~~~~		~~~~												
Debt Service Charge	Per month	\$ 278,17	4 \$	337,983	354,757		369,387		384,017		398,647		412,857										
				21.5%	5.0%		4.1%		4.0%		3.8%		3.6%										
Devenue Deguinementer																							
Revenue Requirements:		¢ 400740	~ ¢	4 420 200	¢ 4 770 000	¢	E 440 E40	¢	E 400 000	¢	E 74E E40	¢	000.074		¢ C 455 CO4	¢	0.040.000	¢	7 050 044	¢	7 000 004	¢	0.450.464
Operating Rate Revenue	Annual	\$ 4,097,10	0 9	4,438,300	\$ 4,778,983 4 0F7 000	Ф	5,113,512	Ф	5,420,322	Ф	3,743,342	Ф	6,090,274		\$ 0,455,691	Ф	6,643,032	Ф	7,253,014	Φ	7,000,031	Ф	8,150,161
Debt Service Revenues	Annual	\$ 7 425 20		4,055,800	4,237,083	¢	4,432,043	¢	4,008,203	¢ 1	4,783,783	¢	4,954,283	-	¢ 6 455 601	¢	-	¢	7 252 614	¢	-	¢	- 0.150.161
TOTAL		\$ 7,435,20	U 3 ¢	8,494,100	\$ 9,030,000	\$ \$	9,546,155	¢	10,028,525	\$ I	10,529,305 500 770	\$ \$	F1F 252	-	\$ 0,400,091	\$ ¢	0,043,032	\$ \$	1,253,014	ф ф	1,000,031	ф ф	6,150,161
	\$ Change		φ	14 2%	\$ 541,900 6.4%	φ	510,069	φ	402,371	φ	500,779	φ	315,252		\$ 305,410	φ	307,341	φ	410,562	φ	433,217	φ	401,330
	% Change			14.2 /0	0.478		5.078		J.170		5.078		4.370										
Non-Urban Rate Centers																							
Operating Rate Revenue	Annual	\$ 2 229 10	0 \$	2 303 900	2 559 900		2 713 494		2 876 304		3 048 882		3 231 815		3 425 724		3 631 267		3 849 143		4 080 092		4 324 897
Debt Service Revenues	Annual	1.453.30	0 0	2.004.000	2,343,400		2,657,400		2,971,400		3,285,400		3.599.400		-		0,001,201		0,010,110		1,000,002		1,02 1,001
Total		\$ 3.682.40	0 \$	4.307.900	\$ 4,903,300	\$	5.370.894	\$	5.847.704	\$	6.334.282	\$	6.831.215		\$ 3.425.724	\$	3.631.267	\$	3.849.143	\$	4.080.092	\$	4.324.897
				1	\$ 595,400	\$	467,594	\$	476,810	\$	486,578	\$	496,933		\$ 193,909	\$	205,543	\$	217,876	\$	230,949	\$	244,806
					13.8%		9.5%		8.9%		8.3%		7.8%										, i
Total all Rate Centers																							
Operating Rate Revenue		\$ 9,814,30	0\$	10,807,700	\$ 11,927,734	\$	12,691,187	\$	13,452,659	\$ 1	14,259,818	\$	15,115,407		\$ 16,022,332	\$	16,983,672	\$	18,002,692	\$	19,082,853	\$	20,227,825
Debt Service Revenues		8,647,00	0	10,727,300	11,651,001		12,657,292		13,672,194	1	14,619,292		15,608,132		15,608,132		15,608,132		15,608,132		15,608,132		15,608,132
Total ACSA All Revenues		\$18,461,30	0\$	21,535,000	\$ 23,578,735	\$	25,348,479	\$	27,124,853	\$ 2	28,879,110	\$	30,723,539		\$ 31,630,464	\$ 3	32,591,804	\$	33,610,824	\$	34,690,985	\$	35,835,957
	\$ Change		\$	3,073,700	\$ 2,043,735	\$	1,769,745	\$	1,776,373	\$	1,754,258	\$	1,844,429		\$ 906,924	\$	961,340	\$	1,019,020	\$	1,080,162	\$	1,144,971
	% Change			16.6%	9.5%		7.5%		7.0%		6.5%		6.4%										
10-Year CIP Debt Service							148,757		580,566		1,369,364		2,509,360		3,905,324		5,517,497		6,621,947		7,390,342		7,915,793
Total Estimated Charge		\$18,461,30	0\$	21,535,000	\$ 23,578,735	\$	25,497,236	\$	27,705,419	\$ 3	30,248,474	\$	33,232,899		\$ 35,535,788	\$:	38,109,300	\$	40,232,771	\$	42,081,328	\$	43,751,749
% Change				16.6%	9.5%		8.1%		8.7%		9.2%		9.9%		6.9%		7.2%		5.6%		4.6%		4.0%
		1																					
		Additional	Ann	ual Revenues	\$ 2,043,735	\$	1,918,502	\$	2,208,182	\$	2,543,056	\$	2,984,425		\$ 2,302,888	\$	2,573,513	\$	2,123,471	\$	1,848,557	\$	1,670,422
					9.5%		8.1%		8.7%		9.2%		9.9%		6.9%		7.2%		5.6%		4.6%		4.0%

22,216,749 103.2%

Summary Information FY 2021 FY 2	022* FY 2023	FY 2024 F	FY 2025 FY 2026	FY 2027	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
RWSA						······			
Operations Revenues									
Urban Water \$ 7.118.600 \$ 7.9	71.500 \$ 8.997.669	\$ 9.537.529 \$ 1	10.109.781 \$ 10.716.368	\$ 11.359.350	\$ 12,040,911	\$ 12,763,366 \$	13.529.168 \$	14.340.918 \$	15.201.373
Urban Wastewater 8.033.600 8.5	35.200 9.026.898	9.658.781	10.238.308 10.852.606	11.503.763	12,193,988	12.925.628	13,701,165	14.523.235	15.394.629
Other Rate Centers 2.229,100 2.3	03.900 2.559.900	2,713,494	2.876.304 3.048.882	3.231.815	3,425,724	3,631,267	3,849,143	4.080.092	4.324.897
Total \$17.381.300 \$ 18.8	10.600 \$ 20.584.467	\$ 21,909,804 \$ 2	23.224.393 \$ 24.617.856	\$ 26,094,927	\$ 27.660.623	\$ 29.320.261 \$	31,079,476 \$	32,944,245 \$	34,920,899
Change \$ 1.4	29.300 1.773.867	1.325.337	1.314.588 1.393.464	1.477.071	1.565.696	1.659.637	1.759.216	1.864.769	1.976.655
Change %	8.2% 9.4%	6.4%	6.0% 6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Debt Service Charge Revenues									
Urban Water 6,178,600 7,6	21,800 8,309,052	9,203,294 1	10,107,224 10,852,402	11,734,900					
Urban Wastewater 8,229,200 8,5	68,300 8,866,903	9,195,103	9,502,783 9,810,823	10,136,383					
Other Rate Centers 1,453,300 2,0	04,000 2,343,400	2,657,400	2,971,400 3,285,400	3,599,400					
\$15,861,100 \$ 18,7	94,100 \$ 19,519,355	\$ 21,055,797 \$ 2	22,581,407 \$ 23,948,625	\$ 25,470,683	\$ 25,470,683	\$ 25,470,683 \$	25,470,683 \$	25,470,683 \$	25,470,683
Change \$ 2,3	33,000 1,325,255	1,536,442	1,525,610 1,367,218	1,522,058					
Change %	14.7% 7.3%	7.9%	7.2% 6.1%	6.4%					
Total RWSA Customer Revenues \$33,242,400 \$ 37,0	04,700 \$ 40,103,822	\$ 42,965,601 \$ 4	45,805,800 \$ 48,566,481	\$ 51,565,610	\$ 53,131,306	\$ 54,790,944 \$	56,550,159 \$	58,414,928 \$	60,391,582
Change \$ \$ 3,7	62,300 \$ 3,099,122	\$ 2,861,779 \$	2,840,198 \$ 2,760,682	\$ 2,999,129	\$ 1,565,696	\$ 1,659,637 \$	1,759,216 \$	1,864,769 \$	1,976,655
Change %	11.3% 8.4%	7.1%	6.6% 6.0%	6.2%	3.0%	3.1%	3.2%	3.3%	3.4%
Additional for 10-Year CIP		247,552	921,626 2,103,962	3,775,371	5,783,469	8,224,090	9,895,458	10,889,083	11,506,817
Total Estimated Charge \$33,242,400 \$ 37,0	04,700 \$ 40,103,822	\$ 43,213,153 \$ 4	46,727,426 \$ 50,670,443	\$ 55,340,981	\$ 58,914,775	\$ 63,015,034 \$	66,445,617 \$	69,304,011 \$	71,898,399
% Change	0.0% 8.4%	7.8%	8.1% 8.4%	9.2%	6.5%	7.0%	5.4%	4.3%	3.7%
	\$ 40,103,822	\$ 43,213,153 \$ 4	46,727,426 \$ 50,670,443	\$ 55,340,981	\$ 58,914,775	\$ 63,015,034 \$	66,445,617 \$	69,304,011 \$	71,898,399
Additional Annual Re	venues \$ 3,099,122	\$ 3,109,331 \$	3,514,272 \$ 3,943,018	\$ 4,670,538	\$ 3,573,794	\$ 4,100,259 \$	3,430,583 \$	2,858,394 \$	2,594,388
	8.4%	7.8%	8.1% 8.4%	9.2%	6.5%	7.0%	5.4%	4.3%	3.7%



Proposed Capital Improvement Program FY 2023-2027

FOR THE BOARD OF DIRECTORS

BY BILL MAWYER, EXECUTIVE DIRECTOR

FEBRUARY 22, 2022



Strategic Plan Goal

"Infrastructure and Master Planning"

"To plan, deliver, and maintain dependable infrastructure in a financially responsible manner."

FY 23 – 27 Capital Improvement Program

41 Projects, \$205.1 M

<u>Water</u>

<u>Wastewater</u>

Urban: \$122.5 M Non-Urban & Shared W & WW: Urban: \$44.4 M \$38.2 M

Use of Cash Reserves: New CIP Debt Anticipated: \$ 10 M \$ 123 M

Capital Assets: Facilities and Equipment \$390 M

5 Water Supply Reservoirs	3.3 billion gallons	
6 Water Treatment Plants		
 3 Urban 	21.7 = 24 MGD by 2023	
 3 Non-Urban 	2.25 MGD	and the second s
4 Wastewater Treatment Plants		
 1 Urban 	15 MGD	
 3 Non-Urban 	0.588 MGD	
7 Wastewater Pump Stations		
11 Water Pump Stations		
 7 Raw Water 		
 4 Finished Water 		
Water Distribution Pipe	68 miles	
Valves	117	
Wastewater Collection Pipe	44 miles	
Manholes	717	
Stormwater Impoundment	Lickinghole Creek Basin	WICAWWIN









6 Water Treatment Plants



4 Wastewater Treatment Plants



5 Water Supply Reservoirs

	FY 23 – 27		FY 22 - 26
	Projects: 41	In comparison with	Projects: 55
	\$205.1 M		\$172 M
<u>Changes</u>	to the 5-Yr CIP from last year :		\$33.1 M increase
1. FY 2	27 costs transitioned into the FY	(23-27 CIP	+ \$17.5 M
2. Bud a. C b. A c. R d. E e. B f. S	gets for existing projects increa Central Water Line Airport Rd. WPS and Piping RMR to OB WTP WL and Pumping Emmett St WL Betterments Beaver Creek Dam Modifications 5. F. Rivanna River Crossing	ased \$15 M \$2 M \$5 M \$3 M \$5 M \$2 M	+ \$33.4 M
3. 1 ne	ew project was added		+ \$1.5 M
4. 10 p a. S b. C	projects were completed or clos Sugar Hollow Dam Gate Crozet WTP Expansion	sed \$2 M \$8 M	< \$19.3 M >
<u>Goal:</u> Our charge increases to the ACSA and City to be consistent with those forecast in FY 22 – 26 CIP, despite cost increases from extreme inflation

To Meet Goal: Deferred 24 projects, in part or in whole, beyond FY 27

Projects moved out of the initial draft FY 23 – 27 CIP

8 existing projects

1	WW Interceptor and Manhole Repair (Phs 2)	FY 26-27 to 28-31	(-\$985k)
2.	Avon, Pantops, and Observatory Tank Rehabilitation	FY 26-28 to 28-30	(-\$1.045M)
3.	2 nd N. Riv. River Crossing and Pipe Replacement	FY 24-27 to 28-31	(-\$445k)
4.	Buck's Elbow Tank and Waterball Painting	FY 25-27 to 28-30	(-\$730k)
5.	Scottsville Tank Rehabilitation	FY 26-27 to 28-29	(-\$85k)
6.	Scottsville WTP Upgrade	FY 26-29 to 28-31	(-\$300k)
7.	Albemarle – Berkley WWPS Replacement	FY 25-27 to 28-30	(-\$452k)
8.	SR WTP Plates, PAC, Floc Improvements	FY 26-29 to 30-33	(-\$1.9M)
16	new proiects		

1.	SRR – RMR WL, Westover Section	FY 23-25 to 28-30	(-\$3.5M)
2.	RMR, Hypolimnetic Oxygen System	FY 27-30 to 28-31	(-\$480k)
3.	Urban, Addn'l GAC Facilities	FY 27-30 to 35-38	(-\$585k)

Projects moved out of the initial draft FY 23-27 CIP continued

		Total 24 projects	\$17,337,000.
16.	MC Asbestos Remediation	FY 23-24 to 28-29	(-\$735k)
15.	Glenmore WW Polymer Feed Addition	FY 23-24 to 28-29	(-\$275k)
14.	SVL WTP Polymer Feed Addition	FY 23-24 to 28-29	(-\$240k)
13.	SVL WTP Lagoon Outfall Rehab	FY 24-25 to 27-28	(-\$270k)
12.	MC North Septage Improvements	FY 23-24 to 28-29	(-\$175k)
11.	MC Elect Actuators for Clarifier Gates	FY 23-24 to 28-29	(-\$400k)
10.	SVL WTP GAC Dehumidification	FY 24-25 to 28-29	(-\$600k)
9.	RH/SVL WTPs, Addn'l GAC Facilities	FY 27-30 to 35-38	(-\$10k)
8.	Mint Springs WPS Demolition	FY 26-27 to 33-34	(-\$765k)
7.	CZ WTP, Addn'l GAC Facilities	FY 27-30 to 35-38	(-\$240k)
6.	CZ WTP GAC Dehumidification	FY 24-25 to 28-29	(-\$600k)
5.	SR WTP Sewer Connections	FY 27-28 to 33-34	(-\$120k)
4.	GAC Buildings Dehumidification	FY 24-26 to 27-29	(-\$2.4M)

FY 23 – 27 Charge Increases

 RWSA Increases (%): 	FY	23	24	25	26	27
• City		6.8	7.2	7.4	7.4	8.3
~goal: FY 22		7.5	7.2	7.3	6.9	4.7
		0.5	0.4	0.7	0.0	0.0
 ACSA 		9.5	8.1	8.7	9.2	9.9
~goal: FY 22		8.7	8.8	8.9	8.3	5.5
Combined		84	78	8 1	84	9.2
combined		0.7	,	0.1	0	<u> </u>
 ACSA w/ NRCS grant for 	BCR	8.3	7.1	7.8	8.5	9.3

• Includes estimated increases in Operating expenses

RWSA CIP 20-Year History





Outstanding Debt

15 Year CIP Planning

• FY 23-27	\$205.1 M
• FY 23-27	ŞΖU5.1 ΙV

- FY 28-32 \$145.0 M
- FY 33-37 <u>\$172.8 M</u>

\$522.9 M

Major Programs and Projects

- Upgrade Water Treatment Plants: \$43 M
 - South Rivanna
 - Observatory
- Reliability / Redundancy : \$82 M
 - Airport Road Water Pump Station and Piping
 - RMR to OB WTP Piping and Pumping
 - Central Water Line
 - MC 5kv Electrical System Upgrade
 - SR River Crossing
 - Scottsville WWTP Emergency Generator

- Operations and Maintenance / Safety: \$18 M
 - Security Enhancements
 - WW Piping and MH Repairs
 - MC Cogeneration / Sphere Repairs
 - MC Digester Repairs
 - MC Maintenance, Blower, Pumping Building Repairs
 - MC Concrete Repairs, Basins and Holding Ponds
 - MC Gravity Thickener Repairs

- Regulatory: \$37 M
 - Beaver Creek Dam, Pump Station and Piping
 - Crozet Flow Equalization Tank
- Capacity: \$94 M
 - Upper Schenks Branch Interceptor
 - Admin Building Renovation & Addition
 - SRR to RMR Pipeline



wensville 5. SRR to RMR Raw Water Pip	Acoulande Rd	South Rivanna Reservoir Polo Grounds Rd	Community Water Sup Projects (Jan 3, 2022)	pply
\$80 M	Ivy Creek Foundation	40 ⁻	1. SR WTP Renovation 2020-2023	\$20 M
The second	657 Jageste Be Commonwealt	1. South Rivanna WTP Renovation 2020-2023 \$20 M	2. OB WTP Renovation 2020-2023	\$23 M
601 Farmington Country Club	1003 Barracks Road	inole Square oping Center (63) 1445	3. RMR to OB WTP Raw Water Pipe & Pump Station 2025-2028	\$30 M
6. Raise RMR Water Level 2032-2033 Course & 646	Av Ro 302	4. Central Water Pipe 2024-2029 \$31 M	4. Central Water Line 2024-2029	\$31 M
\$1 M	University of Virginia	100	5. SRR to RMR Raw Water Pipe 2027-2033	\$80 M
702 in 702 79 64 78	2 Afference Co	lottesville Rivanna	6. Raise RMR Water Level 2032-2033	\$1 M
3. RMR to OWTP Raw Water Pipe & Pump Station 2025-2028 \$30 M	© 5th Street Station	2. Observatory WTP Renovation 2020-2023 \$23 M		\$185 M

Airport Road Water Pump Station and Piping

- Reliably connect Piney Mtn area and tank with Urban Water System
- Will support future Airport pressure zone
- Completion: 2022 2023
- Budget: \$10 M



MC 5kv Electrical System Upgrade

- Replace major electrical cables and equipment installed in the 1980's which have reached the end of their service lives
- Completion: 2022 2024
- Budget: \$5.1 M



Birdwood to Old Garth Rd. 36" RWL



- Section of SRR RMR raw water piping. Will precede private development and avoid costs
- Completion: 2022 2023 Budget: \$2 M

Beaver Creek Dam, Pump Station & Piping Modifications

- Replace spillway to meet VDCR Dam Safety standards
- Replace the raw water pump station, intake, and pipe to the Crozet WTP
- Completion: 2024 2026
- Budget: \$32 M
- Requesting Federal Funding (up to 65%)







Proposed Labyrinth Spillway thru Dam with Bridge



Existing Raw Water Pump Station to be demolished

South Rivanna River Crossing

 2nd pipe to be installed beneath the river to improve reliability and resiliency in the northern area of the Urban Water System

- Completion: 2024 2025
- Budget: \$6 M



Central Water Line

- Will more efficiently convey drinking water, improve redundancy, and strengthen the Urban Drinking Water System for the benefit of both the City and the ACSA
- Completion: 2024-2029
- Budget: \$31 M



Renovation & Addition Administration Building

- 1st major renovation since constructed in early 1980s
- •Addition will provide office, meeting and educational outreach spaces, and replace 15-year-old "temporary" Engineering trailers
- Modernize information technology & laboratory spaces
- 12,300 sf renovation; 14,700 sf addition
- Completion: 2025 2026
- Budget: \$8.5 M







Summary FY 23 – 27 CIP

▶41 Projects, \$205.1 M

 <u>Water</u> Urban: Non-Urban & Shared W & WW: 			5 M 2 M	<u>Wastewater</u> Urban: \$44.4 M			
 Use of Cash Reserves: 	\$10 M						
• New Debt:	\$123 M						
 RWSA Charge Increases (% City 	6): <u>FY</u>	23 6.8	24 7.2	25 7.4	26 7.4	27 8.3	
 <u>ACSA</u> Combined 		<u>9.5</u> 8.4	7.8	8.1	<u>9.2</u> 8.4	9.9	
 ACSA w/ NRC 	S grant	8.3	7.1	7.8	8.5	9.3	

Notes:

- 1. RWSA has requested \$7.2 M in ARPA funding from Albemarle Co. for projects.
- 2. We are exploring additional federal and state grant opportunities.
 - - Building Resilient Infrastructure and Communities (BRIC)
 - - Bipartisan Infrastructure Law
 - - Hazard Mitigation Programs
 - Cyber and Physical Security Programs

Questions ?