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4 **RWSA BOARD OF DIRECTORS**
5 **Minutes of Regular Meeting**
6 **June 26, 2018**
7
8

9 A regular meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was
10 held on Tuesday, June 26, 2018 at 2:15 p.m. in the 2nd floor conference room, Administration
11 Building, 695 Moores Creek Lane, Charlottesville, Virginia.
12

13 **Board Members Present:** Mr. Mike Gaffney, Chair; Ms. Kathy Galvin; Ms. Lauren
14 Hildebrand; Mr. Maurice Jones; Dr. Liz Palmer; and Mr. Jeff Richardson.
15

16 **Board Members Absent:** Mr. Gary O'Connell.
17

18 **Staff Present:** Mr. Mark Brownlee, Mr. Matt Bussell, Mr. Tim Castillo, Ms. Victoria Fort, Mr.
19 Tom Freeman, Mr. Kenny Lawhorne, Mr. Austin Marrs, Mr. Bill Mawyer, Ms. Katie McIlwee,
20 Mr. Philip McKalips, Mr. Bill Morris, Ms. Teresa Napier, Ms. Betsy Nemeth, Mr. Scott Schiller,
21 Ms. Michelle Simpson, Ms. Andrea Terry, Mr. David Tungate, Ms. Jennifer Whitaker, and Mr.
22 Lonnie Wood.
23

24 **Also Present:** Mr. Kurt Krueger, RWSA counsel, and members of the public.
25

26 **1. CALL TO ORDER**
27

28 Mr. Gaffney called the regular meeting of the Board of Directors of the Rivanna Water and
29 Sewer Authority at 2:32 p.m.
30

31 **2. MINUTES OF PREVIOUS BOARD MEETINGS**

32 *a. Minutes of Regular Board Meeting on May 22, 2018*
33

34 Mr. Mawyer mentioned that staff would like to amend certain parts of page 7 of the minutes, and
35 he provided clarifications as to the changes.
36

37 **Ms. Galvin moved to approve the minutes of May 22, 2018 with the amendments proposed**
38 **by Mr. Mawyer. Mr. Richardson seconded the motion, which passed 5-0-1. Dr. Palmer**
39 **abstained from the vote as she had been absent from that meeting. Mr. O'Connell was**
40 **absent from the meeting and the vote.**
41

42 **3. RECOGNITION**

43 a. Resolution of Appreciation for Carol Sue Wiles

44
45 Mr. Gaffney read the following recognition into the record for Carol Sue Wiles:

46
47 WHEREAS, Ms. Wiles has served as an Administrative Assistant for the
48 Rivanna Water and Sewer Authority since July of 1997; and

49
50 WHEREAS, over the same period of 21 years, Ms. Wiles has demonstrated
51 leadership in her field and has been a valuable resource to the Authority and its
52 employees; and

53
54 WHEREAS, Ms. Wiles' understanding of the Authority's operation and
55 dedication and loyalty to the Authority has positively impacted the Authority, its
56 customers and its employees; and

57
58 WHEREAS, the Rivanna Water and Sewer Authority Board of Directors is most
59 grateful for the professional and personal contributions Ms. Wiles has provided to the
60 Rivanna Water and Sewer Authority and to its customers and its employees; and

61
62 NOW, THEREFORE, BE IT RESOLVED that the Rivanna Water and Sewer
63 Authority Board of Directors recognizes, thanks and commends Ms. Wiles for her
64 distinguished service, efforts and achievements as a member of the Rivanna Water and
65 Sewer Authority, and presents this Resolution as a token of esteem, with its best wishes
66 in her retirement.

67
68 BE IT FURTHER RESOLVED that this Resolution be entered upon the
69 permanent Minutes of the Rivanna Water and Sewer Authority.

70
71 **Dr. Palmer moved to adopt the resolutions of recognition as presented. Ms. Hildebrand**
72 **seconded the motion, which passed unanimously (6-0).**

73
74 Mr. Mawyer announced that Teresa Napier had been hired to replace Ms. Wiles and had started
75 on June 25.

76
77 b. Resolution of Appreciation for Frederick A. Lanzon

78
79 Mr. Gaffney read the following recognition into the record for Frederick A. Lanzon:

80
81 WHEREAS, Mr. Lanzon has served as a Wastewater Operator for the Rivanna
82 Water and Sewer Authority since July of 1997; and

83
84 WHEREAS, over the same period of 21 years, Mr. Lanzon has demonstrated
85 leadership in his field and has been a valuable resource to the Authority and its
86 employees; and

88 WHEREAS, Mr. Lanzon's understanding of the Authority's operation and
89 dedication and loyalty to the Authority has positively impacted the Authority, its
90 customers and its employees; and
91

92 WHEREAS, the Rivanna Water and Sewer Authority Board of Directors is most
93 grateful for the professional and personal contributions Mr. Lanzon has provided to the
94 Rivanna Water and Sewer Authority and to its customers and its employees; and
95

96 NOW, THEREFORE, BE IT RESOLVED that the Rivanna Water and Sewer
97 Authority Board of Directors recognizes, thanks and commends Mr. Lanzon for his
98 distinguished service, efforts and achievements as a member of the Rivanna Water and
99 Sewer Authority, and presents this Resolution as a token of esteem, with its best wishes
100 in his retirement.
101

102 BE IT FURTHER RESOLVED that this Resolution be entered upon the
103 permanent Minutes of the Rivanna Water and Sewer Authority.
104

105 **Dr. Palmer moved to adopt the resolutions of recognition as presented. Mr. Jones seconded**
106 **the motion, which passed unanimously (6-0).**
107

108 c. Resolution of Appreciation for Richard Graham Bond
109

110 WHEREAS, Mr. Bond has served as a Water Operator for the Rivanna Water
111 and Sewer Authority since August of 1978; and
112

113 WHEREAS, over the same period of almost 40 years, Mr. Bond has
114 demonstrated leadership in his field and has been a valuable resource to the Authority and
115 its employees; and
116

117 WHEREAS, Mr. Bond's understanding of the Authority's operation and
118 dedication and loyalty to the Authority has positively impacted the Authority, its
119 customers and its employees; and
120

121 WHEREAS, the Rivanna Water and Sewer Authority Board of Directors is most
122 grateful for the professional and personal contributions Mr. Bond has provided to the
123 Rivanna Water and Sewer Authority and to its customers and its employees; and
124

125 NOW, THEREFORE, BE IT RESOLVED that the Rivanna Water and Sewer
126 Authority Board of Directors recognizes, thanks and commends Mr. Bond for his
127 distinguished service, efforts and achievements as a member of the Rivanna Water and
128 Sewer Authority, and presents this Resolution as a token of esteem, with its best wishes
129 in his retirement.
130

131 BE IT FURTHER RESOLVED that this Resolution be entered upon the
132 permanent Minutes of the Rivanna Water and Sewer Authority.
133

134 **Dr. Palmer moved to adopt the resolutions of recognition as presented. Mr. Richardson**
135 **seconded the motion, which passed unanimously (6-0).**
136

137 Mr. Mawyer commented that the three retiring employees represent a total of 82 years of service
138 to the authorities, and replacements for all three had been hired.
139

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

141

142 Mr. Mawyer reported that Kenneth Lawhorne had recently completed 8,000 hours of
143 apprenticeship work and had obtained his journeyman certification as a maintenance mechanic.
144

145 Mr. Mawyer noted that Board members had suggested that Rivanna put together a video of
146 facilities, and staff was in discussions with Shurtleff Photography about creating some narrative
147 short films on the Observatory, South Rivanna, and Crozet water treatment plants. He stated that
148 they may also add a drone video of the Rivanna to Ragged Mountain water pipeline alignment as
149 proposed. Mr. Mawyer noted that the videos would be 3-5 minutes each and would provide some
150 history and commentary of the projects.
151

152 Mr. Mawyer reported that the granular-activated carbon (GAC) update is included in the
153 operations report but is provided again, and the graph demonstrated that GAC was helping water
154 quality. He noted the disinfection byproducts that were removed from drinking water, noting that
155 in comparing May 2017 to May 2018 results from Scottsville, 70% more of byproducts were
156 removed from the water; Crozet was in the 40% range; North Rivanna was over 70% for halo
157 acetic acids and 40% on trihalomethanes; and Observatory was not in the graph because the
158 GAC material had not been put in the contactors due to access issues with the road. Mr. Mawyer
159 emphasized that this data was a testimonial to the fact that GAC filters reduced the disinfection
160 by-product precursors, which in turn reduced the disinfection byproducts and improved the water
161 quality.
162

163 Ms. Galvin thanked staff for monitoring the impact of GAC in the water system.
164

165 Mr. Mawyer responded that staff would provide updates as more data became available.
166

167 Mr. Mawyer presented that he had provided an overview to City Council on the Rivanna-Ragged
168 Mountain waterline project on June 4, including benefits and challenges, and also presented four
169 option timelines as presented to the RWSA Board in January. He stated that City Council voted
170 to approve options B and C as the preferred options. Mr. Mawyer noted that Rivanna staff had
171 met with County administration staff and Board of Supervisors members Diantha McKeel and
172 Ned Gallaway regarding the pipeline alignment and had met with Albemarle County Schools
173 facility staff about it, as well as held a community information meeting on June 19 to provide an
174 overview of the project and proposed water line alignment.
175

176 Mr. Mawyer referenced a map as presented to the RWSA Board that showed multiple route
177 options, but Rivanna had since eliminated some of the candidates and was focusing on a route up
178 Woodburn Road, Rio, and Hydraulic -- then down Lambs Road behind Albemarle High School
179 behind the school's bus facility and behind Greer Elementary, across VDOT property behind

180 Ingleridge Farm. He explained that it then crossed Barracks Road at Colthurst Farm, going down
181 Colthurst Drive to Birdwood across Route 250 en route to Reservoir Road. He stated that they
182 have a second alternative that traverses the front of the school property, but that was much less
183 preferred.

184
185 Ms. Galvin asked for a summary of comments from the School Board and Supervisors, as
186 Albemarle County residents had come to City Council meetings and expressed concern about the
187 impact of the pipeline pathway to County schools.

188
189 Mr. Mawyer responded that the construction would take place from 2030-2040 and thus was in
190 the somewhat distant future, but going down Lambs Road would put the route over 100 feet from
191 the high school and 700 feet away from Greer Elementary. He noted that their intent would be to
192 do the work in the summer to avoid conflict with school operations, emphasizing that staff felt
193 the preferred route encountered less conflict. He noted that the school facilities personnel were in
194 favor of this route, but the School Board had not yet approved it. Mr. Mawyer noted that they
195 had discussed creating a trail as part of the project through the easement, making it an amenity to
196 the schools for the track team, etc. He stated that going around Georgetown Green would impact
197 the viewshed there and was a tight fit, so the Lambs Road route was viewed as less conflicting.

198
199 Dr. Palmer stated that in 2005 or 2006, there was a series of community meetings held at
200 Albemarle High School regarding the pipeline route, with a lot of comments provided at that
201 time that paralleled the current input. He asked Ms. Whitaker for clarification of that timeframe.

202
203 Ms. Whitaker confirmed that the timeframe Dr. Palmer had recalled was correct.

204
205 Mr. Mawyer reported that Rivanna had also been meeting with the University of Virginia
206 Foundation about the alignment through Birdwood and trying to coordinate efforts, but at this
207 point the Foundation had not yet received a commitment to move forward with the area of the
208 golf course where the pipeline would go.

209
210 Mr. Mawyer stated that Rivanna had been working with its hydrologics consultant regarding safe
211 yield but had not yet completed the study. He noted that preliminarily it was estimated that the
212 waterline would increase the urban safe yield by approximately 3.1 million gallons per day,
213 raising the Ragged Mountain Reservoir level by 12 feet and would add 2.6 MGD and completing
214 both the water line and raising the water level 12 feet would add a collective total of about 5
215 MGD in safe yield. Mr. Mawyer noted that they were still working to finalize the effort and
216 planned to give the board an update in August, including the impact of droughts on the reservoir
217 water levels.

218
219 Mr. Mawyer reported that Rivanna had been studying the Crozet drinking water system for the
220 past year to determine whether there was an adequate long-term water supply to accommodate
221 the growth of that community. He noted that preliminarily, they felt there was adequate water for
222 Crozet, and Rivanna had held a meeting the previous week with the Crozet Community Advisory
223 Committee (CCAC). Mr. Mawyer stated that prior to that, staff had meet with the County to
224 review the findings that there should be adequate water until 2075, or over 50 years.

225

226 He stated that with that in mind, Rivanna was combining several projects: the water supply study
227 and what improvements needed to be made to the Beaver Creek Dam, due to the Department of
228 Conservation and Recreation's requirement that the dam must be upgraded pursuant to its
229 reclassification from a "significant hazard dam" to a "high hazard dam." Mr. Mawyer noted that
230 he had met with the County and reviewed several alternatives, explaining that the preferred
231 alternative presented to the CCAC was the labyrinth spillway going right through the dam and
232 leaving the park area of the existing spillway unaffected and filled in. He stated that they would
233 relocate the existing raw water pump station and would put in the hypolimnetic system -- the
234 bubble diffuser system -- that mixed the water and improved water quality in the Beaver Creek
235 Reservoir.

236
237 Dr. Palmer asked how deep the drop was off the labyrinth spillway.

238
239 Ms. Whitaker responded that it was fairly tall -- between 10 and 20 feet tall.

240
241 Dr. Palmer asked if the park setting made this more dangerous, as there was more surface area
242 for people to be on.

243
244 Ms. Whitaker responded that these spillways were becoming more prevalent across the U.S.,
245 particularly in the Southeast, and she had not heard of that being an issue. She noted that there
246 were some aspects to the Ragged Mountain Dam that she thought might have that potential as
247 well, with the other side of that being that from a dam safety perspective, they must execute
248 some kind of project. She added that this involved posting it, putting up fencing up where
249 appropriate, and deciding what type of signage was needed.

250
251 Mr. Gaffney asked about the information in the staff report that noted "two-stage labyrinth where
252 crest elevation 5.5, 1.4, and 2.3," and asked if that meant it was not one foot.

253
254 Ms. Whitaker responded that she did not have that information in front of her, but she knew it
255 was not a one-foot spillway. She noted that she would review the specs and send them through
256 email.

257
258 Ms. Galvin asked what the advantage of a labyrinth design was.

259
260 Mr. Mawyer explained that it provided more linear surface area over which more water could
261 pass, noting a comparison of about 200-300 feet versus 50 feet for a straight line, allowing more
262 water volume in a shorter section without raising the height.

263
264 Ms. Whitaker stated that there were two ways to pass more water over spillways: to have the
265 water be deeper, or to have the weir be longer. She noted that a combination of the two allowed
266 the same amount of water to pass in a smaller footprint, which also made it less costly.

267
268 Ms. Galvin commented that this may also make it safer because people couldn't access it.

269
270 Ms. Whitaker responded that it would be under the bridge.

272 Mr. Mawyer pointed out that there was already a fishing pier, but he was not aware of any
273 problems that had occurred. He noted that the project was \$20 million total, but staff felt that it
274 protected the park, achieved dam safety requirements, and minimized the amount of property
275 used. He noted they would have to acquire more property at the foot of dam and would move the
276 pump station to the side of the reservoir and put in the hypolimnetic system. Mr. Mawyer noted
277 that they were planning to begin design this year, with construction scheduled to commence in
278 2021.

279
280 Mr. Mawyer reported that Rivanna had been monitoring its reservoirs for algae content and had
281 added treatments to Beaver Creek, while coordinating with the County to address their concerns
282 at Chris Greene Lake. He stated that Mr. Tungate had worked with the 5th grade elementary
283 school class at Crozet Elementary in creating a public service announcement regarding water
284 quality and monitoring efforts, and he presented a video featuring the PSA.

285
286 **5. ITEMS FROM THE PUBLIC**

287
288 Mr. Gaffney opened the floor to items from the public.

289
290 Mr. Brendan Hassler, resident of Albemarle County, addressed the RWSA Board and explained
291 that in listening to a presentation of the waterline route at a City Council meeting, he asked that
292 the board consider routes further away from Albemarle County High School. He stated that it
293 was difficult for students to focus when there was construction activity nearby, but he felt better
294 knowing that it was recommended to take place in the summer -- while also holding some doubts
295 as to whether that timeline could be contained in terms of drilling and disruption. Mr. Hassler
296 noted that if parents and teachers were accepting of the route on Lambs Road, he would accept it,
297 but otherwise he would advocate for the second option closer to Hydraulic. He noted that a
298 jackhammer going through pavement produced a noise of about 110 decibels at a one-foot
299 distance, and they would have to get to about 300-500 feet away before it was at a level that it
300 wouldn't be audible over someone in a classroom talking.

301
302 Dr. Rich Gullick addressed the RWSA Board and stated that he was former RWSA Director of
303 Operations and wanted to discuss the reservoir pipeline project. Dr. Gullick submitted a copy of
304 his comments, a flyer, an evaluation of the 2017 reservoir drop, an extensive fact-checking
305 report, a statement he had made to the RWSA Board, and his water supply plan proposal. He
306 stated that Rivanna had a history of trying to solve problems that weren't really problems, while
307 leaving other problems unidentified or unaddressed. Dr. Gullick commented that this was
308 demonstrated by Rivanna's decision to complete the water pipeline project before it was actually
309 needed.

310
311 Dr. Gullick stated that there had been a tremendous amount of misinformation disseminated by
312 the Authority's leadership regarding the project, and noted that he had done his best to work with
313 Mr. Mawyer to correct this information -- but without success. He noted that he resigned his
314 position with Rivanna in protest of the misinformation campaign. Dr. Gullick stated that the
315 pipeline was not needed anytime soon and would not be necessary until sometime well after
316 2062, and it was not needed to prevent a repeat of Fall 2017's low water scare in the South Fork
317 Rivanna Reservoir. He pointed out that it had rained more from August 1--September 20, 2017

318 than it did any of the three previous years, and Rivanna had let the water drain out through the
319 reservoir through leaking dam gates -- dropping 17 MGD in late September, but immediately
320 stopping when the gates were plugged with cat litter and garden mulch.

321
322 Dr. Gullick emphasized that the proof was irrefutable, but Rivanna's officials still claimed that
323 even if the gates had not been leaking, they would have needed mandatory conservation and
324 water restrictions anyway. He noted that the reality was that had the gates not been leaking, the
325 reservoir would have remained full or nearly full all along. Dr. Gullick stated that it was one
326 thing to not admit the severity of mistakes but another thing to "cover up what happened," and
327 something else to spread falsehoods about this self-induced emergency to create fear in the
328 community and rally support for this unrelated and unnecessary pipeline. He noted that fear-
329 mongering had no place in a public water utility, and not correcting the information was the
330 equivalent of covering up from the public the true facts about the lack of need for the pipeline.

331
332 Dr. Gullick asked at what point the deception was considered conspiracy or malfeasance, adding
333 that the recent push for the pipeline was primarily the result of political pressure from one single
334 Rivanna Board member, who wanted to see more flow in the Moorman's River. He stated that
335 once the pipeline was completed, Rivanna would actually be allowed by its permit to discharge
336 less water from Sugar Hollow for most of the time than they were required to discharge now --
337 including any time the discharge was at its lowest, specifically 2.22 MGD. Dr. Gullick noted that
338 this had been an absolute debacle, and no responsible or competent water utility would approach
339 projects in this manner.

340
341 Dr. Gullick urged the RWSA Board to reverse course and start working now to continue filling
342 Ragged Mountain to increase raw water storage, base the timing of the pipeline in actual need as
343 determined by engineering analyses, and change the permit when the time came for the pipeline
344 so that water continued to be transferred from Sugar Hollow directly to Ragged Mountain.

345
346 **6. RESPONSES TO PUBLIC COMMENTS**

347
348 Dr. Palmer thanked Mr. Hassler for coming in and assured him that the RWSA Board would be
349 discussing the route options with Albemarle High School officials and listening to their concerns.

350
351 Ms. Galvin asked Mr. Mawyer to report when the School Board had been contacted about this
352 issue, as they were the elected body to represent the parents and children of the County.

353
354 Mr. Mawyer confirmed that the School Board would have to grant the easements to go on that
355 property.

356
357 Mr. Gaffney commented that Dr. Gullick had provided the board with handouts, and the board
358 and staff would be reviewing them.

359
360 Dr. Gullick thanked them for listening and for their patience.

361
362 **7. CONSENT AGENDA**

363

- 364 *a. Staff Report on Finance*
- 365
- 366 *b. Staff Report on Ongoing Projects*
- 367
- 368 *c. Staff Report on Operations*
- 369
- 370 *d. Approval of FY 2019-2023 Capital Improvement Program*
- 371
- 372 *e. Approval of Resolution of Official Intent to Reimburse Expenditures with Proceeds of a*
- 373 *Borrowing*

374 **Mr. Jones moved to approve the Consent Agenda as presented. Ms. Galvin seconded the**

375 **motion, which passed unanimously (6-0). Mr. O’Connell was absent from the meeting and**

376 **the vote.**

377

378

379 **8. OTHER BUSINESS**

380

- 381 *a. Presentation of Storm Impacts on May 31, 2018: Jennifer Whitaker, Director of Engineering*
- 382 *& Maintenance and David Tungate, Director of Operations*

383

384 Ms. Whitaker reported that staff would report on the RWSA’s activities over the previous three

385 weeks, noting that there had been some long days for staff pursuant to the May 30 and 31 storms.

386 She stated that the storm had created a dynamic situation with 8-10 inches of rainfall, with the

387 intensity of this event making it different from other types of storms typically hitting the area.

388 Ms. Whitaker presented graphs showing a 24-hour total of almost 10 inches. She stated that for

389 5-7 hours, portions of the drainage area -- especially those between Sugar Hollow and the South

390 Fork Rivanna Dam -- received 9-10 inches of rain.

391

392 Ms. Whitaker presented the USGS stream gauges for the Mechums, the Moorman’s, and the

393 North Rivanna River, and staff observed that the Mechums River had jumped from 5 to 17 feet

394 in less than 7.5 hours; the week prior to this storm, about 120 cubic feet per second went down

395 the river, and at the peak of the storm that had jumped to over 8,000 cubic feet per second. She

396 noted that staff believes the gauge may have actually pegged out, as opposed to that being the

397 max. Ms. Whitaker stated that at the Moorman’s, they went from 4 to 15 feet in 5.5 hours, and

398 the cubic feet per second jumped from 90 to 8,000 -- with similar concerns about that being an

399 artificial maximum due to gauge limits. She noted that at the North Fork Rivanna near

400 Earlysville, the level went from 2 to 18 feet in 8 hours, going from 120 to 20,000 cubic feet per

401 second -- with the gauge again probably not registering the maximum.

402

403 Ms. Whitaker stated that the South Fork Rivanna Dam water level prompted calls from staff and

404 she credited the operator who was working that night, as he had many other things to deal with

405 but immediately called out. She explained that when the water levels approach 6.5 feet, staff is

406 supposed to activate an emergency action plan, which alerts everyone that there is a weather

407 event. She stated that the South Fork Rivanna Dam peaked out at just over 7 feet, which was the

408 highest flow she was aware of since the dam was built. She explained that Beaver Creek was

409 about 2.75 feet.

410

411 Dr. Palmer asked what would constitute a dam safety issue.

412

413 Ms. Whitaker responded that it was a level over 18 feet. She noted that the South Fork Rivanna
414 Dam passed more than 40,000 cubic feet of water per second over the dam at peak.

415

416 Ms. Whitaker reported that Ragged Mountain had jumped to 1.75 feet, with Sugar Hollow
417 staying at 0.25 feet, which she would explain later in her report. She stated that Rivanna
418 immediately initiated onsite inspection and had staff start monitoring the conditions of the dams.
419 Ms. Whitaker presented images of Beaver Creek, noting that the intake was flooded and pointing
420 out the volumetric effects of the water coming out on the downstream end. She presented images
421 of Sugar Hollow, stating that the five-foot bladder on top of the dam was actually programmed,
422 and as inflow came up, it started lowering the inflation pressure to hold the water level steady.
423 She noted that the dam reacted exactly as it was supposed to and the water level did not rise to
424 great heights, it stayed steady as it passed over the dam. Ms. Whitaker pointed out the arc of the
425 water versus a straight trajectory, which was caused by the dam inflating because of the drop in
426 water levels.

427

428 Ms. Whitaker reported that Ragged Mountain looked fine and was capable of handling storm
429 events, other than Reservoir Road washing out, with the intent to raise the water level 12 feet at a
430 future point. She mentioned that Sugar Hollow Road had also flooded. Ms. Whitaker presented
431 images of the South Fork Rivanna Dam, noting the levels when there was about 4 feet of water
432 passing over the spillway and peak flows over 7 feet. She pointed out the location of a roller
433 bucket that guided the water to the center of the stream channel, noting that there was a hydraulic
434 there that caused some damage and the water was all the way up to the hydropower facility.

435

436 Ms. Whitaker stated that there had been no structural dam safety issues, and the emergency
437 action plan had worked exactly as intended, with many staff members awake and aware of the
438 situation. She noted that the South Fork Rivanna Dam had since been inspected by the dam
439 safety consultant, and FERC had inspected the dam pursuant to their regularly scheduled annual
440 inspection.

441

442 Mr. Tungate shared with the board a sample of water with 2,100 NTU (Nephelometric Turbidity
443 Units), which measures how dirty the water is, and he noted the sample had been taken the
444 morning of June 1 -- with the previous highest level at 300 NTUs. He stated that there were
445 typically about 75,000 pounds of residuals processed in a week, with solids settling out of the
446 water as it was treated, processed through a belt presser for dewatering -- and since May 31, they
447 had been doing about 175,000 pounds per week. Mr. Tungate noted that the Brian Balsley was
448 the operator on duty that night at 12:45 a.m. when he made the call, and at that point the level
449 was at 6.8 feet. He mentioned that Rivanna was very proud of this response, as they did a lot of
450 drills and practice exercises in anticipation of these types of events.

451

452 Mr. Tungate reported that there were benefits resulting from the GAC process, including upgrade
453 of the lime feed system at South Rivanna. He noted that the existing system that was in place
454 before that project could feed 530 grams per minute of dry lime product, and this event
455 precipitated a need for 1,930 grams per minute of lime -- and the existing system prior to GAC

456 could not have done that. Mr. Tungate emphasized that the decisions the board had made to
457 upgrade the lime feed system at South Rivanna had helped the community have a treated water
458 supply.

459
460 Dr. Palmer noted that this was one of the things that had been mentioned by the public as a
461 “problem that didn’t exist.”

462
463 Mr. Tungate noted that there was a tremendous advantage in being able to meet demand, adding
464 that there had been a tremendous strain on resources but they were able to meet it with the new
465 equipment in place.

466
467 Dr. Palmer asked if it was necessary to take water out of the South Fork Rivanna when the water
468 was contaminated during high flood situations like this.

469
470 Mr. Tungate confirmed this.

471
472 Mr. Mawyer commented that they would be strategic on when they pumped water from Rivanna
473 to Ragged, and when Rivanna water versus Ragged was used, so if the pipeline was in when the
474 muddy water was going across Rivanna, they could have transferred water from Ragged -- which
475 was full -- and treated it at the South Rivanna Treatment Plant as well as Observatory. He noted
476 that this provided water quality flexibility as well as volume flexibility.

477
478 Mr. Gaffney stated that the water going over the reservoir would be going over for quite some
479 time, so it would settle out and be clean and be more conducive to pumping.

480
481 Mr. Mawyer noted that if the water flow had caused some sort of structural problem and
482 impacted the reservoir or the dam with the pipeline, they would have had the flexibility to bring
483 water from Ragged Mountain to Rivanna and treat it.

484
485 Mr. Tungate presented images of North Fork Rivanna under normal conditions and on the day
486 after the storm, stating that it had also overflowed its banks on June 22. He noted that at 4:45
487 a.m., a team of staff members had come in to address the situation, deciding to close the valve at
488 the Camelot subdivision -- with everything north of the river being able to use what was left in
489 the Piney Mountain tank. He mentioned that there is a pipe that runs from the water treatment
490 plant, follows the river bank, then ties in at the confluence of Route 29 and the Rivanna River,
491 with the water going south under the river and north up the Piney Mountain tank.

492
493 Mr. Tungate noted that there wasn’t a big break, but it was enough of a break to drain all the
494 water. He stated that Ms. Whitaker’s group and engineering ended up relocating 190 feet of the
495 water main and used restrain joint pipes, which was a more secure fitting. Mr. Tungate explained
496 that once they had the leak isolated, they mobilized the temporary pump to the Kohl’s facility
497 and took water from the South Rivanna and pumped it up into North Rivanna.

498
499 Mr. Mawyer stated that this was where they have plans for a new permanent pump station so
500 they don’t have to have a pump truck-hauled to connect the northern and southern parts of the
501 system.

502
503 Ms. Whitaker mentioned that they had brought a crew of 12 men in at 4:30 a.m. to haul the pump
504 and set it up.
505
506 Mr. Mawyer noted that Rivanna had condemned property to obtain the correct parcel, and there
507 was a temporary pump that hooked the two parts of the system where it was disconnected.
508
509 Mr. Tungate added that the pressure was higher at North Rivanna distribution system than at the
510 South Rivanna Observatory system.
511
512 Mr. Mawyer clarified that this was located at Meeting Street north of Kohl's, where the radio
513 tower was located, and Rivanna now owned the property.
514
515 Mr. Tungate presented pictures of the construction project, stating that they were using 200 feet
516 of 14-inch pipe moved further away from the bank to prevent this type of situation or at least
517 slow it down.
518
519 Mr. Tungate also presented images of waste lagoons at the North Rivanna plant under normal
520 operations, noting that the river rose so high that it put river water in the lagoons. He stated that
521 to put the plant back online, they had to pump out the lagoons -- which hold 200,000 gallons
522 each. He pointed out the damage to the pump station fence from the water and debris. Mr.
523 Tungate presented a photo of Steve Kvetch, Drinking Water Inspector with the Virginia
524 Department of Health, who had come out to look at the situation and the response.
525
526 Mr. Tungate reported that on May 31, Tim Castillo had come into work and made decisions
527 about the treatment plant. Mr. Tungate stated that moving the Rivanna pump station onto the
528 property and increasing its capacity allowed them to meet storm demand and prevent sanitary
529 sewer overflows from this event. He presented images that Mr. Castillo had taken of the
530 Glenmore pump station at 6 a.m. and 9 a.m., noting the overflow of Carroll Creek.
531
532 Mr. Tungate presented images of the Ivy Materials Utilization Center, noting that more than
533 94,000 gallons of storm-related leach had been hauled from Ivy to Moores Creek, and the entire
534 road to the leach pod had to be regraded, with 225 tons of gravel added. He stated that 39 tons of
535 storm-related debris had been collected, and the resiliency of employees and the organization had
536 helped tremendously during the event.
537
538 Ms. Whitaker reported that there were about 100 employees working for Rivanna, with the entire
539 maintenance crew working odd hours, operators working the plants, engineering staff inspecting
540 dams, and wastewater staff responding to the events.
541
542 Ms. Galvin and board members expressed their gratitude to Rivanna staff, adding that excellent
543 technology and equipment can extend the value and effectiveness of their expertise.
544
545 Ms. Whitaker reported that structurally, South Fork was in good shape, but there was quite a bit
546 of damage to some of the aprons and rock faces to the aprons, as well as apron construction
547 joints. She noted that on the far side, the river had created a secondary channel, with "rock dams"

548 of debris that would need to be removed by Rivanna, with the permission of the Army Corps of
549 Engineers. She presented pictures of the river bank that had been eroded, noting that they would
550 also work to reestablish the river corridor to prevent future damage to the dam.
551

552 Ms. Whitaker reported that the storm event had required expenditures for labor and equipment,
553 emergency pump rentals, repair of the North Rivanna waterline -- with Faulconer Construction
554 responding on call to the emergency and getting that back in service. She stated that there was an
555 estimated \$200,000 in grouting and concrete repairs, stream and restoration work to be done.
556

557 Dr. Palmer asked if it helped that the state had declared an emergency.
558

559 Mr. Mawyer responded that Rivanna was coordinating with Allison Farole about the region's
560 cost, and she was handling that and would let them know about reimbursement.
561

562 Dr. Palmer stated that she had advocated for having Mr. Mawyer and staff to come to the Board
563 of Supervisors to provide a report on this, as she felt it was very important, but she was not sure
564 yet when that might be on an agenda.
565

566 Mr. Mawyer clarified that he had an abbreviated version of this report for the Board of
567 Supervisors meeting the following week.
568

569 Ms. Galvin noted that Mr. Mawyer had just presented to City Council before this event.
570

571 Dr. Palmer mentioned that the two people who had died with the Ivy Creek flood were Bob and
572 Carol Gilges, and they had been very involved with the water supply plan, as well as being active
573 with the Friends of the Moorman's.
574

575 Ms. Galvin noted that this was a personal loss for Dr. Palmer.
576

577 Mr. Mawyer stated that staff wanted to give the presentation about the storm to show how the
578 board's involvement with CIP and master planning, redundancy, facilities, and staffing had come
579 together in responding to this event.
580

581 Ms. Galvin commented that she would like to have this shared with City Council, as it helped
582 officials and the public understand why it was imperative to invest in infrastructure.
583

584 *b. Presentation of 10-Year Financial Model: Lonnie Wood, Director of Finance &*
585 *Administration, Michael Maker, MFSG and Ed Donahue, MFSG*
586

587 Mr. Wood reported that in late 2017, Rivanna had hired Municipal Financial Services Group
588 (MFSG) to work on a 10-year revenue model projection that could be used going forward, with
589 the ability to plug in CIP, financial policies, etc.
590

591 Mr. Michael Maker addressed the board and stated that MFSG had been working on a financial
592 model, built in Excel with assumptions and scenarios added. Mr. Maker stated that the guiding
593 principles and objectives of the study are that the water and wastewater systems must each be

594 self-supporting so that one is not subsidizing the other; the Authority should maintain reserves to
595 provide contingencies and unplanned expenses; water and wastewater rates should be kept as
596 low as possible over time; the Authority should invest annually in regular planned maintenance,
597 rehab, and replacement of infrastructure. He noted that the objective was to ensure operating
598 rates and debt service charges were stable through sound financial management and system
599 maintenance and did so by reviewing the funds and preparing a long-term plan to support capital
600 investments.

601
602 Mr. Maker reported that some of the factors affecting rates and charges for any water utility
603 across the country were operating and maintenance expense changes, with the option in the
604 model to introduce inflation rates; the CIP and debt service -- both existing and future; customer
605 and flow changes, with conservative parameters being used in this model and allocations being
606 shifted more to the County as it grew; miscellaneous revenue charges other than operating and
607 debt charges. He stated that the model recommends at least 90 days of operating expenses in a
608 rainy day fund, and a 1.25 ratio debt service coverage, which did not meet the board's 1.5 goal
609 but was still favorable among rating agencies.

610
611 Mr. Maker stated that the revenue requirements included operating and maintenance expenses,
612 such as salaries, benefits, materials, and service supplies; two capital pieces -- outstanding debt
613 and debt issuance, and upcoming capital projects that would be either reserve or debt funded. He
614 noted that in the model, they have adopted these for all cost centers -- urban water, urban
615 wastewater, and split between City and County, as well as non-urban rate centers. Mr. Maker
616 stated that the first revenue requirement building block was operating and maintenance expenses,
617 and he presented a pie chart for both water and wastewater. He noted that urban water for the
618 City constituted 43% of water, with urban water for the County being the second highest, then
619 Crozet and Scottsville. He stated that on the wastewater side, it was the City, County, then
620 Glenmore and Scottsville. Mr. Maker noted that in forecasting those forward for 10 years,
621 varying inflation rates included 4% increase for the FY19 budget for water, with 8% for
622 wastewater.

623
624 Mr. Maker reported that the current debt payments for water were about \$5 million per year, with
625 wastewater at about \$7-8 million per year, split between the City and County based on either
626 flow or fixed amount agreements. He stated that the entire 10-year plan for water and wastewater
627 showed that water had the bulk of the projects, with the majority to be debt funded. Mr. Maker
628 noted that the total debt payments reflected issuance costs assumed at 5% of principal and 5.5%
629 interest rate, with a maturity of 30 years.

630
631 Mr. Maker pointed out the revenue at current rates in charges, which would be covered in FY19
632 and FY20, but would have a slight shortfall in FY21 -- and expenses would not be covered as
633 new debt was added. He presented revenues and proposed rates and charges, noting that this
634 factored in debt service coverage of 1.25 by 2028. He stated that the wastewater expenses were
635 lower but were still affected by debt and would need to be covered by FY21. Mr. Maker noted
636 that one of the two financial ratios target was the operating and maintenance reserved, combined
637 for water and wastewater, which factored in operating cash on hand (current cash divided by
638 operating expenses times 365 days). He noted the target cash on hand for 90 days versus the

639 current cash on hand. Mr. Maker stated that debt coverage reflected a combined
640 water/wastewater financial ratio.
641
642 Mr. Maker presented the projected rates and charges broken down by City and County, the
643 operating rate per 1,000 gallons, and the debt service charge as a fixed charge per month. He
644 compared current rates and charges to those projected for FY19 through FY28. Mr. Maker also
645 presented the total revenue generated, how much would be brought in, and the dollar and
646 percentage increases.
647
648 Mr. Maker stated that MFSG's conclusions and recommendations show that the Authority
649 needed to increase rates and charges over the planning period to ensure that revenues covered
650 expenses, and they recommended adopting a five-year plan to find the operating reserves and
651 debt service coverage, to be revisited every year or so. He commented that Rivanna was doing a
652 good job and he commended them for doing projection studies.
653
654 Mr. Mawyer pointed out that the Rivanna to Ragged Mountain pipeline construction was not in
655 these numbers because it was beyond the planning timeline of 2028.
656
657 Mr. Gaffney noted that current debt was not decreasing much by 2028, and he wondered when it
658 started to decline.
659
660 Mr. Wood responded that it would be about 2030.
661
662 Mr. Maker stated that the model went out 10 years, but the current debt sheet went out until it
663 was exhausted.
664
665 Dr. Palmer commented that the Albemarle County Service Authority would also be working with
666 MFSG to ensure that the finances meshed.
667
668 Mr. Maker noted that MFSG had done rate studies for both the City and the County, and they
669 had used projections from that in this information.
670
671 Mr. Gaffney stated that it would be hard for them to adopt a five-year rate plan because the City
672 and County would be shifting its percentages.
673
674 Mr. Mawyer noted that with this model, they could go beyond 10 years and run the model to
675 show what the impact would be on rates -- but the further they projected, the less clear it would
676 be.
677
678 Dr. Palmer asked about master planning for the urban area, as they had done for Crozet.
679
680 Mr. Mawyer responded that it was in the CIP to do a finished water master plan, but it was
681 several years out -- and Mr. O'Connell had suggested doing it sooner. He noted that people like
682 Ms. Whitaker may have a master plan in mind, but it would help to get it on paper.
683

684 Ms. Whitaker stated that Rivanna had a wastewater master plan that they started 10 years earlier,
685 with updates every 5 years, but they needed to do this on the finished water side as well.

686
687 Mr. Mawyer commented that this dovetailed with their strategic plan.

688
689 Ms. Hildebrand asked if there were utilities that did more than a yearly rate in place.

690
691 Mr. Maker responded that five years was the maximum, but there were other authorities that set
692 the rates -- with a clause allowing them to change that if necessary.

693
694 **9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA**

695
696 There were no other items presented.

697
698 **10. CLOSED MEETING**

699
700 There was a joint closed meeting held with the Rivanna Solid Waste Authority.

701
702 Mr. Krueger read the following resolution into the record:

703
704 **RESOLVED** that the Board of Directors of the Rivanna Water and Sewer Authority enter
705 into a joint closed meeting with the Rivanna Solid Waste Authority Board to discuss confidential
706 personnel matters as permitted by Section 2.2-3711.A.1 of the Code of Virginia.

707
708 **Dr. Palmer moved to adopt a resolution to enter the joint closed session. Ms. Galvin**
709 **seconded the motion, which passed unanimously (6-0). Mr. O'Connell was absent from the**
710 **meeting and the vote.**

711
712 **The board entered a closed meeting at 3:35 p.m.**

713
714 Mr. Krueger read the following resolution into the record:

715
716 **WHEREAS,** the Rivanna Water and Sewer Authority has convened a joint closed
717 meeting with the Rivanna Solid Waste Authority on this date pursuant to an affirmative recorded
718 vote and in accordance with the provisions of the Virginia Freedom of Information Act; and

719
720 **WHEREAS,** Section 2.2-3712.D of the Code of Virginia requires a certification by the
721 Rivanna Water and Sewer Authority that such closed meeting was conducted in conformity with
722 Virginia law;

723
724 **NOW, THEREFORE, BE IT RESOLVED** that the Rivanna Water and Sewer Authority
725 hereby certifies that, to the best of each member's knowledge, (i) only public business matters
726 lawfully exempted from open meeting requirements by Virginia law were discussed in the
727 executive meeting to which this certification resolution applies, (ii) only such public business
728 matters as were identified in the motion convening the closed meeting were heard, discussed or
729 considered by the Rivanna Water and Sewer Authority.

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Mr. Richardson moved to adopt a resolution for the RWSA to reenter and open meeting. Dr. Palmer, which passed by a roll call vote of 5-0. Mr. O'Connell was absent from the meeting and the vote. Mr. Gaffney had left the meeting and was not present for the vote.

The board reentered into an open meeting at 4:38 p.m.

Dr. Palmer moved for the RWSA to authorize a 5% raise for Mr. Mawyer, bringing his annual salary from \$183,712 to \$192,897.60, and will also reimburse a moving expense tax reimbursement of \$1,950. Ms. Galvin seconded the motion, which passed 5-0. Mr. O'Connell was absent from the meeting and the vote. Mr. Gaffney had left the meeting and was not present for the vote.

11. ADJOURNMENT

Dr. Palmer moved to adjourn the meeting. Mr. Jones seconded the motion, which passed 5-0. Mr. O'Connell was absent from the meeting and the vote. Mr. Gaffney had left the meeting and was not present for the vote.

The RWSA Board adjourned the meeting at 4:41 p.m.

Respectfully submitted,



**Mr. Jeff Richardson
Secretary-Treasurer**