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4 **RWSA BOARD OF DIRECTORS**
5 **Minutes of Regular Meeting**
6 **July 24, 2018**
7
8

9 A regular meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was
10 held on Tuesday, July 24, 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. Gary O’Connell; Dr. Liz Palmer; and Mr. Jeff Richardson.
15

16 **Board Members Absent:** Mr. Maurice Jones.
17

18 **Staff Present:** Mr. Wayne Barnes, Mr. Tim Castillo, Ms. Victoria Fort, Mr. Tom Freeman, Mr.
19 Austin Marrs, Mr. Bill Mawyer, Ms. Katie McIlwee, Mr. Bill Morris, Ms. Betsy Nemeth, Ms.
20 Jamie Orrell, Ms. Angela Ott, Ms. Courtney Ott, Mr. Scott Schiller, Ms. Michelle Simpson, Ms.
21 Andrea Terry, Mr. David Tungate, Ms. Jennifer Whitaker, Mr. Lonnie Wood, and Ms. Devon Yi.
22

23
24 **1. CALL TO ORDER**
25

26 Mr. Gaffney called the regular meeting of the Board of Directors of the Rivanna Water and
27 Sewer Authority at 2:14 p.m.
28

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

30 *a. Minutes of Regular Board Meeting on June 26, 2018*
31

32 Mr. Gaffney stated that he had left early from the June 26, 2018 meeting during the closed
33 session, but he had read the closed meeting certification resolution and approved it with respect
34 to the portion of the closed meeting he attended.
35

36 Mr. O’Connell noted that he had been absent from the last meeting and thus would abstain from
37 approval of the minutes.
38

39 Mr. Mawyer reported that at the last meeting, there had been a presentation on the storm event of
40 May 30, and Dr. Palmer had asked a question about what would constitute a dam safety issue. He

41 stated that staff had answered at that time that it would be 12 feet of water going over the dam,
42 but had since updated it to 18 feet (line 413).

43
44 Mr. O'Connell mentioned that the storm event caused those levels to rise to about 8 feet.

45
46 Mr. Mawyer confirmed that it was 7+ feet.

47
48 **Dr. Palmer moved to approve the minutes of June 26, 2018 as amended. Mr. Richardson**
49 **seconded the motion, which passed 5-0-1. Mr. O'Connell abstained from the vote as he had**
50 **been absent from that meeting. Mr. Jones was absent from the meeting and the vote.**

51
52 **3. RECOGNITION**

53 a. Joint Resolution of Appreciation for Maurice Jones

54
55 Mr. Gaffney read the following resolution into the record for Maurice Jones:

56
57 WHEREAS, Mr. Jones has served as a member of the Rivanna Water & Sewer
58 Authority and Rivanna Solid Waste Authority Boards of Directors since 2010; and

59
60 WHEREAS, over that same period Mr. Jones has demonstrated leadership in
61 water and sewer, solid waste and recycling services; and has been a valuable member of
62 the Boards of Directors and a resource to the Authorities; and

63
64 WHEREAS, Mr. Jones's understanding of the water, sewer, solid waste and
65 recycling operations of the City of Charlottesville, the Water & Sewer Authority and the
66 Solid Waste Authority has supported a strategic decision-making process that provided
67 benefits to the customers served by the City of Charlottesville as well as the community
68 as a whole. During Mr. Jones's tenure and through his efforts, major projects were
69 completed including:

- 70 - a Community Water Supply Plan, to ensure an adequate water supply for the
71 next 50 years
72 - the Expanded Ragged Mountain Reservoir Dam
73 - the Rivanna Sewer Pumping Station
74 - Odor Control Improvements at the Moores Creek Advanced Water Resource
75 Recovery Facility
76 - Granular Activated Carbon Filters for the water treatment plants
77 - a Strategic Plan for both Authorities; and

78
79 WHEREAS, the Water & Sewer Authority and Solid Waste Authority Boards of
80 Directors are most grateful for the professional and personal contributions Mr. Jones has
81 provided to both Authorities and to the community; and

82
83 NOW, THEREFORE, BE IT RESOLVED that the Rivanna Water & Sewer
84 Authority and the Rivanna Solid Waste Authority Boards of Directors recognizes, thanks,
85 and commends Mr. Jones for his distinguished service, efforts, and achievements as a
86 member of the Rivanna Water & Sewer Authority and the Rivanna Solid Waste

87 Authority, and presents this Resolution as a token of esteem, with its best wishes in his
88 future endeavors.

89
90 BE IT FURTHER RESOLVED that this Resolution be entered upon both the
91 permanent Minutes of the Rivanna Water & Sewer Authority and the Rivanna Solid
92 Waste Authority.

93
94 **Dr. Palmer moved to adopt the resolution of appreciation as presented. Ms. Hildebrand**
95 **seconded the motion, which passed unanimously (6-0). Mr. Jones was absent from the**
96 **meeting and the vote.**

97
98 Ms. Galvin thanked the Board for acknowledging Mr. Jones' efforts and for noting his many
99 accomplishments.

100
101 Mr. Mawyer indicated that Rivanna would be sending a plaque to Mr. Jones along with a copy of
102 the resolution. Mr. Mawyer mentioned that Mr. Jones had a legal meeting to attend and was
103 therefore not present at the Board meeting.

104 105 **4. EXECUTIVE DIRECTOR'S REPORT**

106
107 Mr. Mawyer reported that Thomas Corrice had completed his wastewater operator class four
108 license and had moved up from trainee. Mr. Mawyer stated that Wayne Barnes was promoted to
109 assistant water manager, having served Rivanna for more than 39 years.

110
111 Mr. Mawyer stated that there had been three interns working with Rivanna over the summer, and
112 they would be gone before the August meeting so he wanted to recognize Jamie Orrell, Courtney
113 Ott, and Devon Yi at this point. He asked the interns to highlight what they had done to support
114 Rivanna.

115
116 Ms. Jamie Orrell, a rising 4th year environmental science student at UVA, stated that she was
117 interning with RWSA and had been doing sampling at the reservoirs and the water treatment
118 plant, as well as in the community. Ms. Orrell stated that had been doing condition reports for the
119 reservoirs and had also been working in the lab on different tests, now being certified to test for
120 orthophosphate.

121
122 Ms. Courtney Ott, the administration intern, stated that she would be transferring to UVA in the
123 fall to study psychology. Ms. Ott stated that she had worked at Rivanna with the accountant and
124 had been involved with record retention and organization, and this had been a good learning
125 experience for her.

126
127 Ms. Devon Yi, a rising 4th year student at UVA, stated that she was the IT intern and had been
128 updating and configuring routers and working with the network, as well as researching various
129 documents and writing up documentation for them.

130
131 Mr. Mawyer recognized Betsy Nemeth for organizing the intern program and having another
132 successful year.

133
134 Mr. Mawyer reported that several Rivanna staff members had recently attended an emergency
135 operations center function at UVA, which included a hypothetical scenario in which a plane
136 carrying hazardous materials crashed into the South Rivanna Reservoir and contaminated the
137 water. He stated that the scenario involved a regional exercise with the City, County, FEMA, and
138 the emergency management agency. Mr. Mawyer stated that the water supply was big issue in
139 the exercise, and he had made the point that the proposed Rivanna to Ragged Mountain waterline
140 would have provided duplication and allowed for water to be piped from Ragged Mountain
141 Reservoir to the South Rivanna Water Treatment Plant – thus lessening the severity of the
142 incident and not having to put the South Rivanna Treatment Plant out of service because of the
143 water.

144
145 Mr. Mawyer reported that Rivanna staff had also attended their first annual facilities
146 coordination meeting with UVA Facilities Management, which hosted it, the UVA Foundation,
147 the Albemarle County Service Authority, the County’s Community Development department,
148 and City representatives from their utility and Neighborhood Development Services. He stated
149 they had all done presentations on upcoming projects for the coming years to help one another
150 coordinate and to foster their work as a connected network.

151
152 Mr. Mawyer stated that Andrea Terry had given a presentation on “Optimizing System
153 Performance in our Reservoirs” at the American Waterworks Association conference in
154 Richmond. He stated that Ms. Terry’s presentation had included information about Rivanna’s
155 utilization of DiNatale reservoir consultant and a water sampling program, with upcoming plans
156 for a hypolimnetic system in the Beaver Creek Reservoir.

157
158 Mr. Mawyer reported that our Director of Solid Waste, Phil McKalips, had given Lafayette
159 School students a tour of the recycling center, and our Wastewater Manager, Tim Castillo, gave
160 one of the Moores Creek Wastewater Plant – as well as a tour to the Environmental Biology
161 class from PVCC.

162
163 Mr. O’Connell thanked Mr. Castillo for a tour of Moores Creek for members of the ACSA Board
164 and staff, stating that the odor control project was quite impressive.

165
166 Mr. Mawyer reported that with the addition of FY19 projects, there were now 34 projects in our
167 report – with the construction list dwindling as odor, GAC, and other projects have been
168 completed. He stated that planning and studies for the urban finished water system, urban water
169 demand, safe yield analysis, etc. were underway and were setting the table for the next round of
170 construction projects.

171
172 Mr. Mawyer stated that they continue to appreciate the outstanding performance that the new
173 GAC system is providing in lowering disinfection byproducts in the system, and staff had
174 provided a graph to the Board in June that showed the reduction in each of the water treatment
175 plants. He stated that as a follow-up and continuation of our review of water restrictions the
176 previous fall, we are assessing issues with the Mechums River gauge that the USGS owns and
177 DEQ manages, which indicate how much water is coming into the South Fork Rivanna reservoir.
178 He stated that Rivanna met with DEQ in Richmond on July 23 and took Hydrologics, our

179 watershed modeler, adding that they started discussing the correlation between the gauge and
180 how much water was coming into the reservoir, in an effort to make the data more accurate. Mr.
181 Mawyer stated that the correlation calculated what was actually flowing into the reservoir versus
182 what the gauge indicated was coming in. He stated they read the gauge one day and adjust the
183 gate to ensure that the outflow is no less than 70% of the inflow – but DEQ will sometimes come
184 back days or weeks later with a recalibration of the gauge that may indicate Rivanna’s readings
185 and releases were not accurate.

186
187 Mr. Mawyer commented that this encouraged Rivanna to look at the watershed modeling and the
188 last 100 years of rainfall, along with how it was being recorded over the drought of record – and
189 they were having a discussion with DEQ of whether they would update the correlation formula,
190 which Ms. Whitaker would discuss in her presentation.

191
192 Mr. Mawyer clarified an item from a *Cville Weekly* in July, as the article quoted him as saying
193 the DEQ gauge was broken. He emphasized that the gauge was not broken, but when DEQ came
194 back and wanted to recalibrate and adjust it, Rivanna had already let the water out of the
195 reservoir – so the original information from the gauge may have caused them to release more
196 than necessary. He added that he expressed his apologies to DEQ for stating that the gauge was
197 “broken.”

198
199 Mr. Mawyer reported that in the Board’s discussion of Beaver Creek Dam and the labyrinth
200 spillway, they had asked how tall the spillway would be from ground level to the bottom – and
201 the answer is about 16 feet.

202
203 Mr. O’Connell stated that typically the labyrinth would be dry.

204
205 Mr. Mawyer confirmed this, stating that this was trying to address significant amounts of storm
206 water – up to 31 inches a day, which was 3 to 4 times worse than the May 30, 2018 storm. He
207 stated that this was when the water level would be high enough, when it would go through the
208 spillway, but ordinarily it would not and was below the normal pool of the reservoir at the
209 bottom of the spillway.

210
211 Mr. Richardson applauded staff for managing the intern program and making it successful.

212
213 Mr. Mawyer thanked him and stated that two interns had previously been hired onto Rivanna
214 staff once they graduated from college, adding that the program is a good investment.

215
216 **5. ITEMS FROM THE PUBLIC**

217
218 Mr. Gaffney opened the floor to items from the public.

219
220 Mr. Richard Collins addressed the Board, stating that he had been a resident of Charlottesville
221 since 1971 and was at the meeting to talk about the report in *Cville Weekly* entitled “Leaky gate:
222 RWSA official resigns in protest.” Mr. Collins stated that this caught his attention, as he had
223 some experience and knowledge with this issues, having once served as chair of RWSA and

224 having been a professor at UVA, where he taught resource planning. He noted that he had also
225 been an active opponent to the current water supply plan.

226
227 Mr. Collins stated that he had never met Dr. Richard Gullick, the subject of the article, and
228 explained that he called Dr. Gullick and asked him what the most important issue was that led
229 him to resign. Mr. Collins stated that Dr. Gullick had relayed his version of what he felt was an
230 unfair public disclosure, particularly related to the demand/supply function and what he believed
231 were erroneous particulars of this event. He stated that Dr. Gullick indicated that if the public felt
232 the planning for the water supply restrictions was due to decreased rainfall or limited capacity,
233 they had an incomplete account of the issues – the most important being safe yield that came
234 from the figures of the 1990s when there was a high increase in water consumption, versus the
235 reduced consumption patterns since.

236
237 Mr. Collins commented that he was very impressed with Dr. Gullick and had read his
238 documents, although he did not necessarily agree with everything he stated and wrote. Mr.
239 Collins emphasized that this was a very important issue that could have great implications for the
240 community, and he was skeptical that anything he could do would make it more likely to change
241 the strategic planning process. He stated that he would come to this meeting and express his
242 interest in the potential for the planning process Rivanna would be undergoing in the next year,
243 and would encourage them to make the process more translatable, visible, – and something of
244 this important would thus be widely distributed to the public.

245
246 Mr. Collins stated that he would inform Dr. Gullick of what happened at this meeting, as he had
247 been unable to attend. Mr. Collins stated that Dr. Gullick was very cordial and was impressed
248 with Rivanna’s work in general, but he felt that the planning process was confused and he did not
249 want to get into internal issues. Mr. Collins noted that it was evident to him that Dr. Gullick was
250 interested in those things. He added that he and the public in general would be interested in how
251 the next year and strategic planning would proceed.

252
253 Ms. Dede Smith addressed the Board and commended Rivanna on its minutes, particularly those
254 from the June meeting. Ms. Smith stated that years ago, she had been at a public water meeting
255 and a DEQ official – in response to a question she had about sediment in the South Fork – had
256 stated that the real problem was during a storm because that reservoir became a huge mixing
257 bowl that threw sediment over the dam. She stated that the minutes were the first time she had
258 ever seen it quantified, and it was incredible to her to see the numbers put to the volume of
259 sediment versus what normally went over the dam. Ms. Smith stated that this also illustrated an
260 environmental issue that came with that reservoir, and Dr. Gullick’s pipeline concerns were often
261 framed in terms of environmentalism.

262
263 Ms. Smith stated that she has a question as to whether the pipeline was being put in for water
264 supply or for environmental reasons. She also stated that she had recalled that it was illegal to
265 plan beyond 50 years, and there were 40 years left in the community’s 50 years, with the premise
266 that you could only build up for 50 years and could not hoard water. Ms. Smith commented that
267 this spoke very directly to the issues that were brought up, particularly to the pipeline as it related
268 to demand and the upcoming demand study. She stated that she was also very concerned about
269 who would pay for the pipeline, and if it was going to be put in for reasons other than being

270 required for the water supply and the 50-year timeframe, she had questions as to whether the
271 urban ratepayer should get the bill. Ms. Smith stated that if it was being put in for other reasons,
272 the question was, shouldn't everyone be paying.

273
274 **6. RESPONSES TO PUBLIC COMMENTS**
275

276 Mr. Mawyer stated that there had been a speaker in June (Dr. Richard Gullick) who made
277 comments about misinformation, a coverup, a conspiracy, a deception equal to malfeasance, etc.
278 He stated that he found those terms to be very concerning and disappointing to him, as he felt
279 that staff and the Board had tried to be very open and up front with all the reasons the project
280 was being contemplated, the purpose and what the benefits were. He stated that Rivanna had
281 been to many meetings with City Council, the Board of Supervisors, and the ACSA Board – as
282 well as holding a public meeting with people in the Hydraulic Road area, as they were along the
283 path of the project. Mr. Mawyer noted that there was also information on Rivanna's website and
284 he had done interviews with several reporters, adding that he found it disappointing that the
285 information was either not getting out there or was getting out as misinformation.

286
287 Mr. Mawyer stated that over the past several weeks, Rivanna staff compiled five pages of
288 information to supplement the one-page project overview, which was posted online in April. He
289 stated that some of the key points to note were that the purpose of the waterline project was to
290 ensure the community had an adequate drinking water supply for the next 50 years, and the
291 process the community went through was extensive. He stated that in 2001 and 2002 there was a
292 "harsh and extensive" 18-month drought that generated mandatory water restrictions on residents
293 and businesses – even to the extent of restaurants serving food on paper plates and car washes
294 needing to be shut down. Mr. Mawyer stated that there had even been anecdotal discussion of
295 asking UVA to send its students home, and the drought was now considered the drought of
296 record back to the 1960s or even the 1930s.

297
298 Mr. Mawyer stated that when the drought was over in 2002, the community demanded that the
299 water providers fix the problem and come up with a plan so they didn't have to go through the
300 severe restrictions again. He stated that elected and appointed officials all worked collectively
301 with the community, with 10 years of public meetings and planning, to develop the community
302 water supply plan that was to address the supply of water for the next 50 years. Mr. Mawyer
303 stated that the minutes provide insight into the vast breadth of opinions and views of what the
304 solutions were, adding that there were 33 alternatives discussed in the community – from
305 dredging the South Rivanna Reservoir to bringing water from the James River to expanding the
306 Ragged Mountain Reservoir. He noted that the Upper and Lower Ragged Mountain Dams were
307 rated insufficient and unsafe by the dam safety agencies, and work had to be done on them, and
308 the Ragged Mountain Reservoir was filled with a pipe from Sugar Hollow that was almost 100
309 years old.

310
311 Mr. Mawyer explained that ultimately, the community devised a community water supply plan
312 and stated they would build a new Ragged Mountain Dam, with a pipeline from the Rivanna
313 Reservoir over to Ragged Mountain so they could fill the new, larger reservoir; and even though
314 they were going to build a dam at a certain height, they were not going to fill it fully. He stated
315 that the City had been insistent that the natural area around Ragged Mountain be maintained and

316 not inundated with water until the community needed it. Mr. Mawyer stated that the Ragged
317 Mountain Dam agreement was written between the City, the County, the Service Authority, and
318 Rivanna – and it directed the RWSA to put the pipeline in and raise the water level in Ragged
319 Mountain Reservoir only when the demand equaled 85% of the supply.¹

320
321 Mr. Mawyer stated that regarding the question of why they just can't add the 12 feet of water
322 now, the answer is that contractually they cannot do that. Mr. Mawyer stated that they have an
323 agreement with the City and the ACSA that Rivanna would only do it when one of them asked
324 that it be done, when the demand equaled 85% of the safe yield. Mr. Mawyer stated that this
325 further required Rivanna to assess safe yield and demand with the first assessment being
326 completed by the year 2020 and every 10 years thereafter. He stated that Rivanna's staff was
327 currently in the process of doing a new demand study and safe yield study of South Rivanna
328 Reservoir and Ragged Mountain, with safe yield measuring how much siltation had come in,
329 what volume was left, and what safe yield they have. He noted that safe yield measured how
330 much water could be taken out of the reservoir every day during the drought of record without
331 depleting the water in the reservoir. Mr. Mawyer emphasized that Rivanna has an obligation to
332 follow that contract.

333
334 Mr. Mawyer stated that the community water supply plan was also very specific about safe yield
335 and about achieving other community values, including using existing infrastructure and
336 replacing aging infrastructure, and was specific about regaining the natural conditions in the
337 Moormans River and the South Rivanna watershed. He stated that while the plan was formally
338 approved in 2012, it and was practically completed in 2006, because Rivanna applied to the
339 Army Corps and the VDEQ in 2006 for the permit to build the new dam and the pipeline. Mr.
340 Mawyer stated that the community had already effectively already approved it, City Council had
341 endorsed it and had held two additional years of hearings about the issue but ultimately approved
342 the plan in 2008.

343
344 Mr. Mawyer reported that the permits had been issued from the Army Corps and DEQ in 2008,
345 with the Corps permit expiring in 2018 but being renewed for five more years and the DEQ
346 permit expiring in 2023. He stated that Rivanna had met with DEQ the previous day and asked
347 when they anticipated the pipeline to be built, and their response was in the 15-year timeline of
348 the permit, practically speaking. Mr. Mawyer stated there was some literature indicating the
349 pipeline was expected to be built by 2021 – but that was clearly not possible, and Rivanna had
350 asked the Board in the capital improvement program to consider four separate schedules of when
351 they might want to build the pipeline, so they could put it into the financial planning model and
352 help the Service Authority and the City with their financial models and funding devices to
353 strategically plan for project.

354
355 Mr. Mawyer emphasized that there had been a huge amount of discussion for 10 years in the
356 community, from 2002 to 2012, to come up with the plan that included building the dam and the
357 pipeline. He stated that when people say the drought of 2017 was being used as an excuse to
358 build the pipeline, he wanted it to be clear that the pipeline had been planned since 2006 and was

¹ Editor's Note: Section 3 of the Ragged Mountain Dam Project Agreement specifically provides this 85% trigger for increasing the water level of the Ragged Mountain Dam. Section 2(d) of the Agreement, providing for the SRR-RMR pipeline has no such trigger requirement.

359 not a result of the water restrictions in 2017. Mr. Mawyer stated that people had questions about
360 why the water went out of the reservoir in 2017, and Rivanna has consistently been transparent
361 with its response.

362
363 He stated that there were three primary reasons, including leaking gates that leaked about 3
364 million gallons a day for about two months, which accounted for approximately 180 million
365 gallons of the almost 500 million gallons that went out of the reservoir. Mr. Mawyer stated they
366 had always been up front about it and had never tried to conceal that information. He stated they
367 had also had concerns about the USGS DEQ gauge, which indicated that 70% of the water was
368 being released – and DEQ came back and stated those readings were too high. He noted that the
369 third reason was that the community was in drought conditions, and the Virginia Drought
370 Monitoring Task Force issued a press release October 11, 2017 that stated the Middle James
371 region (includes Albemarle and Charlottesville) was in a drought watch condition, with low
372 rainfall and stream flows. Mr. Mawyer stated that comments have been made that from August
373 to September 2017 our area had more rain than the three prior years. But for the year 2017,
374 rainfall was 11 inches low. He stated that even though they may have had rain over a short
375 period, 2017 was not a high rain year.

376
377 Mr. Mawyer commented that he had done an interview in November 2017 about the leakage
378 from the gates and the possibility that Rivanna could have released less from one gate had the
379 release been monitored more closely. He stated that one person had suggested that switching
380 operations away from South Rivanna to Observatory Water Treatment Plant in August instead of
381 doing it in October, that would have saved a lot of water – but the reservoir had been 77% full
382 on September 17, and the community had been expecting multiple tropical storms coming up the
383 coast. Mr. Mawyer stated that Rivanna had always acknowledged that the reservoir dropped
384 from 77% full to 42% full between September 17 and October 3, with the gates, drought-like
385 conditions, the USGS/DEQ gauge, and possibly other items being factors. He emphasized that
386 Rivanna has always been transparent with that data to anyone who asked.

387
388 Mr. Mawyer stated that the community water supply plan and the drought of 2001-2002 were the
389 drivers for where they were now in building a pipeline. He noted that the RWSA Board would
390 get the demand study and safe yield study in a year or so, and in their routine annual process of
391 reviewing the CIP and the 34 projects within it, they would prioritize those. Mr. Mawyer stated
392 that the plan was to build the pipeline in the timeframe of 2027 to 2040, with an estimated eight
393 years needed to build it – and it could accelerate or decelerate in the future, with the Board
394 having an opportunity to look at reliability and other factors. He stated that the current permit
395 states that in the Sugar Hollow Reservoir, they release 100% of the inflow from Sugar Hollow to
396 the Moormans River below, and the new permit stated that after the pipeline was built only 90%
397 must be released. Mr. Mawyer stated that this had been discussed with the implication of the
398 pipeline being bad for the river. He stated that four million gallons per day were currently
399 transferred out of Sugar Hollow to fill Ragged Mountain, which would no longer be required
400 after the pipeline was built, so the reservoir level as a whole would stay higher and there would
401 be more water to release to the river. Mr. Mawyer added that the 90% was more reflective of
402 natural flow in the Moormans, which was an objective of the original community water supply
403 plan dating to 2006.

404

405 Mr. Mawyer reported that the Ragged Mountain Dam was completed in 2014, and 1 billion
406 additional gallons had been added for a total capacity of 1.5 billion of water storage in the
407 reservoir, which was a big part of the water supply solution. He stated that they were in the
408 process of designing a construction upgrade to the Observatory Water Treatment Plant, which
409 takes water out of the Ragged Mountain Reservoir, and to increase that capacity from 5-6 million
410 gallons per day treatment capacity to 10 MGD. Mr. Mawyer emphasized that the water supply
411 must be treated, piped, and distributed for someone to use it at the tap, which was the ultimate
412 destination. He noted that it was expected for Observatory to be upgraded to more capacity
413 within the next five years, adding that Rivanna had been working on the nine-mile pipeline for
414 the Rivanna to Ragged Mountain route – as well as updating the water demand studies that
415 predicted more water would be needed by 2040.

416
417 Mr. Mawyer mentioned that Rivanna’s graphs support the claim that water demand had slowed
418 down in the community, and in 2006 the demand was 9-12 MGD, with the average monthly
419 demand over the 12 months leading to July 2018 being 9.1 MGD. He noted that the former study
420 had predicted that they would need 14.5 MGD by 2025, but Rivanna felt that this would likely
421 not be the case once the new study was completed. Mr. Mawyer stated that the new data would
422 be brought before the Board, which would make the decision as to when the project would occur,
423 but no one had committed to shovels in the ground at this point. He emphasized that the
424 community water supply plan involved 10 years of discussion, agreement, and disagreement,
425 which yielded the plan on which Rivanna was proceeding.

426
427 Dr. Palmer thanked him for the comprehensive review, and clarified that no one had committed
428 to a time for the shovels in the ground – but that was not the case for whether or not to do the
429 project, as the pipeline was part of the community water supply plan.

430
431 Mr. Mawyer agreed, stating that he meant the timing of when the shovels went in the ground.

432
433 Dr. Palmer stated that during the drought in the fall of 2017, the decision to decrease the release
434 into the South Fork required Rivanna to go to the DEQ, who in turn stated that in order to
435 decrease the release from the reservoir they must place water restrictions on the public drinking
436 water customers.

437
438 Mr. Mawyer explained that DEQ was charged with protecting the environment of the state and
439 allocating those resources, such as drinking water supply, so DEQ would say they control all the
440 waters of the state – including the Rivanna River. He stated that when the RWSA asked to
441 withdraw water from the Rivanna River and Rivanna Reservoir, they were required to get a
442 permit to do that.

443
444 Dr. Palmer added that to preserve the water in the reservoir, the DEQ must grant permission
445 because Rivanna would be altering permit conditions.

446
447 Mr. Mawyer clarified that when Rivanna applied for the permit to build the new dam, take more
448 water out of the local streams, the Rivanna Reservoir, and the Ragged Mountain Reservoir, DEQ
449 agreed but stated this was a sharing agreement between the environment and the community –
450 with each getting water. He stated that part of Sugar Hollow’s permit requirement is that 100%

451 of water coming in had to be released to the stream, with 70% of water coming into Rivanna
452 Reservoir having to be released to the stream. He explained that when the reservoir level started
453 to decline from September 17 to October 3, they were looking at where all the water was going
454 as they were taking 8 MGD to be treated at the water treatment plant with 3 MGD leaking out
455 through gates – with the level dropping much quicker than anticipated.

456
457 Mr. Mawyer stated that Rivanna called DEQ immediately and stated they needed to stop
458 releasing so much water into the river until they could get the reservoir refilled, and DEQ agreed
459 but stated it was a “balancing situation” that would require the community to share some of the
460 reduced flow into the river by going into mandatory water restrictions. He added that it was
461 DEQ’s requirement prior to granting Rivanna a variance to have the release reduced from 70%
462 down to 10% of inflow, and the RWSA held a special meeting on October 5 to address the issue
463 and the pending water restrictions. Mr. Mawyer added that all three parties – the City, County,
464 and ACSA – approved the mandatory restrictions as required by the DEQ.

465
466 Mr. O’Connell asked what the timeframe was for the demand study that included a bathymetric
467 survey of the reservoirs – particularly the public comment timeframe.

468
469 Mr. Mawyer responded that it would be 12 to 15 months, with a boat to be put on the reservoirs
470 with a device that measured the bottom, then calculations done to assess the reservoirs’ volumes.
471 He stated that there would also be a separate consultant studying population growth and trends
472 over the last few years, what may happen in the future, and the County and City’s information
473 regarding building permits and trends that planning groups use to project growth over the next 50
474 years. He stated that the reservoir studies would look at how much siltation occurred since the
475 last measurement of the reservoirs, and those studies would be completed and combined to create
476 two graphs that show demand trends and projected future water usage.

477
478 Mr. Mawyer stated that this would also include analysis of water conservation measures, low-
479 flow toilets, low-flow shower heads, and other things that are contemporary within a water
480 conservation regimen of what water demand would be and how much water would be available.
481 He noted that they would need to make sure that the water available at least exceeded the water
482 demand; otherwise they would be at much higher risk for mandatory water restrictions if there
483 were another extended drought. Mr. Mawyer mentioned that he had been at a conference where a
484 speaker stated, “The next drought of record could start tomorrow,” especially given
485 unpredictable long-term weather patterns.

486
487 Mr. Mawyer emphasized that they needed to be prepared, and as engineers they wanted to have
488 the facilities in place beforehand – not afterward – and the community would not likely embrace
489 extended mandatory restrictions due to RWSA not being able to fulfill those needs.

490
491 **7. CONSENT AGENDA**

492
493 *a. Staff Report on Finance*

494
495 *b. Staff Report on Ongoing Projects*

496

497 *c. Staff Report on Operations*

498

499 *d. Recommendation: Award Construction Contract for the Crozet Interceptor System Pump*
500 *Station Improvements Project; Anderson Construction, Inc.*

501

502 **Dr. Palmer moved to approve the Consent Agenda as presented. Ms. Galvin seconded the**
503 **motion, which passed unanimously (6-0). Mr. Jones was absent from the meeting and the**
504 **vote.**

505

506 **8. OTHER BUSINESS**

507

508 *a. Presentation: South Rivanna Dam Update - Gates and Meter: Jennifer Whitaker, Director of*
509 *Engineering & Maintenance*

510

511 Ms. Whitaker reported that she would spend time walking through some of the history of the
512 September/October 2017 event and how it ties into the bigger picture and some of the discussions
513 held to date. She stated that she wanted to present all of the work Rivanna had been doing on the
514 downstream side of that equation, and in August she would return to address the upstream side,
515 USGS gauges, inflow, and all the information that is upstream from the dam. Ms. Whitaker stated
516 that the information presented at this meeting would include everything investigated in the dam
517 itself – things that Rivanna largely controlled and would continue to have operational control
518 over.

519

520 Ms. Whitaker stated that the South Fork Dam was built in the mid-1960s and was about 70 feet
521 tall and 700 feet long, and it was under federal jurisdiction because there was a small
522 hydroelectric power plant. She noted that there had been a question about inspection after the
523 flood and there was as FERC inspection, and they came and looked at that facility as part of their
524 routine annual review. She stated that the dam and reservoir were part of the urban water supply,
525 with almost 1,300 million gallons of total storage and just over 880 million gallons of usable
526 storage.

527

528 Ms. Whitaker presented a photo and stated that the reservoir was on the left side, with the raw
529 water pump station being integral to the dam facility itself. She noted that the boat ramp was on
530 the upstream side, hydroelectric went down the slope, and she presented a photo that showed the
531 north and south mud gates and a pipe running from the reservoir side adjacent to the raw water
532 pump station through the bank down to the hydroelectric facility and into the river. Ms. Whitaker
533 presented a photo showing the north tower and north side, south tower and south side, the raw
534 water pump station, the apron, and the hydropower facility. She stated that the picture showed
535 typical dry summer conditions, and that the face of the dam only dried up every several years.

536

537 Ms. Whitaker stated that the tower and gate were the points of control, with the outlet being
538 where water exited the structure – and there were two different locations in all facilities where the
539 gate was controlled and the water exited. Ms. Whitaker noted that in the south tower and south
540 gate, the tower sat on top of the dam and the south mud gate was where the water actually exited.
541 She stated that there was a 36-inch pipe that traveled thru the dam and the top picture was the
542 north mud gate outlet, which was in the bottom of the stairs where the pipe came out to the roller

543 bucket. She noted that the gate was discharging water into the trough, which took water from the
544 top of the dam and directed into the center channel so the embankments were not overflowed.

545

546 Dr. Palmer asked which ones had been a problem in the drought in 2017.

547

548 Ms. Whitaker responded that it was both gates, noting that there were three penetrations in the
549 dam; all of them were an issue.

550

551 Ms. Whitaker referenced the hydropower side of the dam, noting the location of the hydropower
552 outlet in the picture, the south mud gate outlet, and the tower and the gate – which were separate
553 from the outlet points. She presented photos showing the reservoir, the drop in elevation, and the
554 recovery. She stated that Rivanna had implemented a few mitigation measures: reducing demand
555 through water restrictions, and they switched in October between the South Rivanna and
556 Observatory water treatment plants from the typical 8 Rivanna/2 Observatory mgd production to a
557 5/5. Ms. Whitaker stated that on any given day, the numbers were slightly up or down from there.
558 She stated that staff identified the leaks from the gates and was able to reduce it to about a 0.5
559 million-gallons per day, and in the process found a flaw in the SCADA system which was
560 registering flow in the meter and corrected it – coordinating extensively with DEQ through the
561 whole process.

562

563 Ms. Whitaker stated that she talked about the three penetrations: north, by Miller's Cottage Lane;
564 south, where the meter is; and the hydropower penetration. She stated that with the north mud
565 gate and hydropower facility, the gates were constructed in 1966, and Rivanna was releasing
566 about 3 MGD. Ms. Whitaker referenced a picture taken during the drought and stated that the
567 water coming out plus what was leaking out of the hydropower facility was about 3 MGD. She
568 stated that in looking at that, it may not seem like a lot of water – but over time, it created a
569 problem. Ms. Whitaker stated that there was a brand new leaf screen with a flow meter on the raw
570 water pump station, and the water coming out dumped into the roller bucket on the south side.
571 She stated that they have visual observations on the roller bucket on the north side and were able
572 to compare a known quantity of water to a known quantity of water on the other side, and make
573 an estimation of how much they were actually releasing. Ms. Whitaker emphasized that it was not
574 a precise measurement but was a comparison to a known measurement, which was how staff was
575 able to estimate it.

576

577 Ms. Whitaker stated that Rivanna had brought in some industrial divers who spent a lot of time
578 working at dams around the Mid-Atlantic region, and they confirmed there were leaking gates –
579 because typically gates around water supplies leaked and were not intended to be completely leak
580 proof. She stated that they looked at ways to address it, and it was recommended by them to put a
581 mix of material in that basically caused a seal. Ms. Whitaker stated that the dive team suggested
582 that Rivanna use a combination of cypress mulch, which doesn't degrade as badly as hardwood
583 mulch or other types of material, and a natural kitty litter comprised of ground clay with some
584 bentonite in it. She explained that the kitty litter was safe for the water supply and was put in on
585 the upstream side, then sucked against the gates to seal them off.

586

587 Mr. O'Connell asked when that happened.

588
589 Ms. Whitaker responded that it was early October 2017 and confirmed that it happened soon after
590 staff realized what was going on in the South Rivanna Reservoir.

591
592 Ms. Whitaker reported that in each of the towers at all three of the penetrations, there was a
593 chamber that revealed the reservoir on the upstream side, with flow coming into the chamber
594 from the reservoir through the concrete in the dam through the bulkhead gate. She explained that
595 a bulkhead gate was a slide gate that sat on rails and had the ability to go up and down, normally
596 sitting in the up position, and the chamber was fairly deep within a confined space.

597
598 Dr. Palmer asked if it was currently open or closed.

599
600 Ms. Whitaker responded that it was open, with water coming into the bottom, and she noted that it
601 was believed to have been open since 1966. She noted the location of the actual mud gate. She
602 indicated that there was a pipe stem attached to the wall that went down into the water, and before
603 the meeting there was a question about the piece that was actually moving – so she pulled up a
604 picture of what was put in at Ragged Mountain, as she wanted the Board to get a feel for what
605 was underwater at the end of the valve stem. Ms. Whitaker explained that what was at the end of
606 the valve stem was a gate that covered the hole, as pictured, with the stem holding the gate up and
607 the gate being pushed down or pulled up as the stem was activated. She stated that the issue was
608 having to go into the dam structure, as there was a bulkhead, a gate underwater, and confined
609 space. Ms. Whitaker stated that when the clay bentonite and cypress mulch material were put in, it
610 could go against the chamber and be sucked against the gate or put in the reservoir and sucked
611 through the bulkhead opening and into the gate.

612
613 Dr. Palmer asked if the divers went into that area.

614
615 Ms. Whitaker responded that they could go either into the reservoir side or into the mud gate side.

616
617 Ms. Galvin asked if the bentonite and cypress mulch were just sucked in to plug the holes through
618 some divets.

619
620 Ms. Whitaker confirmed that this was the case. She explained that water was moving slowly and
621 approached the opening then sped up, and it was a little faster so the material was just sucked in
622 to plug those holes.

623
624 Ms. Galvin asked how often the material must be replaced.

625
626 Ms. Whitaker noted that the north mud gate and hydropower had not leaked at all since the
627 material was put in, in October 2017, as the clay expands and binds with the mulch to create a
628 seal material.

629
630 Ms. Galvin asked if there was resin on the cypress mulch that created the seal.

631
632 Ms. Whitaker responded that it wasn't really resin, it just bonded like concrete – in the same way
633 yard mud and mulch might mix together to form a wet seal.

634
635 Dr. Palmer commented that they would have to go into that side for it to be sucked up against the
636 gate.

637
638 Ms. Whitaker replied that it could also be on the reservoir side, as the water was moving from the
639 reservoir along the flow arrow into the chamber and along the flow arrow into the gate. She
640 confirmed that it needed to be sucked up against the gate, not against the open bulkhead – which
641 would come into play when they began discussing what to do in the future.

642
643 Dr. Palmer commented that it seemed that it would be more difficult to get it to the gate on the
644 other side.

645
646 Ms. Whitaker confirmed that there were some logistical issues that would be mentioned when
647 they discussed diving.

648
649 Mr. O’Connell asked if she was going to cover the permanent fix in this presentation.

650
651 Ms. Whitaker confirmed that they would be.

652
653 She reported that the south mud gate was also constructed in 1966, but Rivanna installed a new
654 meter in 2016 as part of the water supply plan – a band meter that went inside the pipe and was
655 installed by the manufacturer onsite and certified as properly functional. She stated that they
656 started with a theoretical investigation of what was going on in the outlet structure through the
657 meter, shortly after October 2017, and they had people come out and do some measurements and
658 look at the meter and setup. Ms. Whitaker stated that what became quickly obvious was that this
659 was not a theoretical exercise, and from the study they could tell they had reasonable flow
660 measurements at low levels – but high levels, the hydraulics were not performing as a theoretical
661 engineering flow. She stated that they had done all they can do on paper and needed to find
662 another approach, so staff began talking to Rivanna’s consulting reservoir specialist and ended up
663 talking to DEQ’s stream gauging staff, who also calibrated all of the stream gauges and helped
664 with prior issues at Sugar Hollow.

665
666 Ms. Whitaker stated that in April, the DEQ crew brought all of their equipment and worked with
667 Andrea Terry and Victoria Fort of Rivanna staff: running the meter in the south mud gate, taking
668 stream flow measurements, and developing conclusions from that information. She stated the
669 team worked in several places in the stream to set up a cross-section, taking stream flow
670 measurements, reading the SCADA data to see what the meter indicated about what was being
671 released versus what was being physically measured in the stream. She stated that they were able
672 to take different flow readings, what DEQ was able to read, and the percent difference – and at
673 about 9 MGD, with the flow meter currently reading very reasonably.

674
675 Ms. Whitaker noted that they also found that between the 9 and the 20-million per day cap, the
676 higher the velocity the more the meter was off. She stated that they plotted that information and
677 created a calibration curve that showed when the meter read a certain level, what was actually
678 coming out of it. Ms. Whitaker explained that the hydraulics were not going to change in the dam.
679 The idea of drilling or boring another type of discharge structure in the dam was a cost-

680 prohibitive approach, and physically it was challenging to see how they would do that. She
681 emphasized that they needed to use existing facilities and find a way to use those facilities.
682 Additionally, they were working with DEQ to reestablish a river gauging station just under the
683 Berkmar bridge. Ms. Whitaker noted that DEQ approached Rivanna as well as both City and
684 County parks and recreation departments to consider the river gauge, and the Rivanna River
685 Company along with other recreational river users were interested in it.

686
687 Ms. Whitaker stated that RWSA indicated that they would like to partner and offered to pay for
688 the capital and reinstatement costs, which would allow DEQ to have a permanent flow meter in
689 this location. Ms. Whitaker stated that the reason it mattered was because it provided an
690 opportunity to calibrate the meter coming out of the dam and provide a clear picture of what was
691 necessary to keep it calibrated. She explained that one of the findings of the process was that there
692 were times they just stopped spilling over the South Fork spillway – and they were required to
693 release 70% of inflow or a 20 MGD cap. Ms. Whitaker stated that they found that the early phases
694 of the dry period or drought when they were required to release 20 MGD, there were several days
695 when they were releasing more than 30 – 35 MGD. She noted that as they got closer to the 10
696 MGD release rate, they got increasingly more accurate, so it impacted the beginning of the
697 drought and was cited as one of the reasons the reservoir plummeted so quickly.

698
699 Ms. Whitaker explained that in an effort to get a feel for the gates and what should be done long-
700 term, RWSA contracted with Schnabel Engineering, who brought in an industrial diver to come in
701 and dive the facilities and look at the condition of the gates and bulkheads. She stated that they
702 have estimated a cost of \$300-325K to replace the two gates, which was basically to lower the
703 bulkheads in and remove the gates – with some opportunity to refurbish them possible. Ms.
704 Whitaker presented photos of the dive rig, noting that the chambers were very deep and went
705 under the height of the normal reservoir pool. She stated that it would require a full dive rig to do
706 that work. Ms. Whitaker reported that the hydropower facility was currently sealed, with plans to
707 relinquish the exemption – which would require a decommissioning plan. She explained that there
708 was a 72-inch plate that sat in the chamber on the other end of the actuator at 65 feet deep, and
709 that would all come out, with plates and gaskets then permanently sealed.

710
711 Ms. Whitaker summarized her report that the hydropower facility was no longer leaking
712 downstream, there was no water seen or heard coming out of it; the north mud gate was
713 temporarily sealed, the south mud gate meter had been calibrated and would be adjusted via the
714 calibration curve. They determined in the SCADA a more accurate method of calculating the
715 daily total flow coming out of the meter. They were working with DEQ to reestablish the South
716 Rivanna River gauging station, and they were discussing about the cost benefit of going in and
717 physically replacing the two mud gates. She pointed out that they knew that this was a big
718 component of what the problem was and had spent the last nine months deep diving into the
719 causes and the solutions.

720
721 Mr. Gaffney commented that the Board had heard parts of this over the last nine months, but her
722 detailed report had provided great information.

723
724 Ms. Whitaker responded that the reassurance for staff was that they knew they had much more
725 control and knowledge about how all of this worked going forward, so the second the water

726 stopped spilling over the reservoir, there were actionable items in place that would prevent this
727 from being an issue going forward.

728
729 Mr. O'Connell asked when she envisioned the funding or project being in place to make all the
730 repairs.

731
732 Ms. Hildebrand noted that staff would need to come back to the Board with a request for funding,
733 and asked when they anticipated coming back to them with a permanent solution.

734
735 Mr. Mawyer responded that staff would likely have a recommendation for the Board in August,
736 noting that the release requirement only applied when the flow was not going over the reservoir –
737 so it did not happen often. He stated they knew currently that they had a certain amount leaking
738 out of the gates, but that was subtracted out of the amount they were required to release and took
739 credit for it, so in that respect it did not hurt anything. He stated that staff wanted to have that
740 discussion with the Board as to whether they wanted to spend the money to fix a half-million
741 gallon “leak”, or just account for it every day and continue as we are, as it was questionable as to
742 how much that amount could be reduced.

743
744 Ms. Whitaker added that even a brand new gate would have some leakage, and Rivanna's permit
745 allowed that amount to be subtracted out.

746
747 Mr. Mawyer stated that in October 2017, when they came to the realization that there were leaks,
748 staff began subtracting that from the required release immediately once it was quantified.

749
750 Mr. O'Connell asked if DEQ had agreed with all the math they were using.

751
752 Mr. Mawyer confirmed that they had.

753
754 Ms. Whitaker stated that it was important with raw water supply gates to remember that the whole
755 point of them was to hold back 800 million gallons of water. She stated that it did a very good job
756 with that, but with metal sitting in the water over time, there was some deterioration at the edges –
757 and the dive showed there had been a little bit of deterioration, which was where the leak was
758 coming through. She noted that they would never leave a gate that was questionably functional,
759 but this one was completely functional from a dam safety perspective and the question was
760 whether it had served its life and needed to be replaced.

761
762 Mr. Gaffney stated that staff would return with options as opposed to a specific solution.

763
764 Ms. Hildebrand asked if there was concern that the repairs to the north mud gate would not be
765 long term since they were temporarily sealed, but she understood that staff was watching it.

766
767 Mr. O'Connell asked if her question was how long the kitty litter would last.

768
769 Ms. Whitaker clarified that staff was watching it and did work with the divers, who provided a
770 procedure and where to buy the material, and there were other ways to plug it on a temporary
771 basis. She added that there were valid questions as to whether the 1/2 MGD was worth repairing.

772

773 Dr. Palmer asked if they could plug it without diving.

774

775 Ms. Whitaker responded that the divers had done it originally but it could be plugged without
776 diving, noting that the facility was highly dependent on weather so if they were having very high
777 flows, it was hard to get in and around the dam for safety reasons. She explained that bringing the
778 divers in made it much faster because they had all the protective equipment and were able to tie
779 off, with water done from the surface not as effective as subaqueous work. She added that over
780 the course of several days, they could mitigate a leak.

781

782 *b. Presentation: Capital Construction Update: Scott Schiller, Engineering Manager, Engineering*
783 *& Maintenance*

784

785 Mr. Schiller reported that Rivanna had been installing GAC systems at the five water treatment
786 plants and had some other general improvements to the plants as well, such as a new chlorine
787 contact tank and new lime feed at South Rivanna, and new chemical feed systems in Crozet. He
788 stated that the GAC project was substantially complete in May 2018, and there were already good
789 indications of reductions of DBPs in the system as a result of that. He stated that the work had
790 been performed by Ulliman Schutte, at a budget of \$29 million, with final completion expected in
791 the next few weeks.

792

793 Mr. O'Connell asked if there had been a delivery to Observatory.

794

795 Mr. Schiller responded that the material had been delivered, and it was a matter of getting it to the
796 vessels that was a challenge.

797

798 Mr. Mawyer noted that it would be installed either this week or next.

799

800 Mr. Schiller added that all of the other facilities were in place and operating.

801

802 Mr. O'Connell asked if it was fair to say that all the others were at 100% operation.

803

804 Mr. Mawyer responded that they were, but North Rivanna had a pressure disk that activated and
805 they were putting in a new disk, so that was technically down but it was being repaired by
806 installation of the new disk.

807

808 Mr. Schiller reported that the Moores Creek odor control project had new grit facilities with
809 covers over headworks and primary clarifiers, and he noted the location of a grit collector in the
810 structures, with the facility actually washing the grit before its discharge.

811

812 Mr. Mawyer asked him to point to the gate on the wastewater system that was up, noting that it
813 could be lowered to cut off flow from going into the wastewater treatment process, so it was
814 similar to the reservoir gate.

815

816 Mr. Schiller reported that it also included a new bio-scrubber, as pictured, and they were able to
817 bypass the EQ tank, which was part of the process as well and was a fairly large source of odors.

818 He stated that the work was substantially complete in May 2018 and had a budget of about \$10.4
819 million.

820
821 Mr. Schiller stated that the Crozet Finished Water Pump Station project replaced the existing
822 pump station, which dated to the 1960s and had served its useful life. He stated the new station
823 would have a higher capacity and was designed to be expanded. He stated that there were VFDs²
824 included so there were a number of different improvements beyond what was there previously. He
825 stated the work was being done by Anderson Construction, and he referenced an image of the new
826 facility and the new generator that would power the entire treatment plant. Mr. Schiller stated that
827 the project was about 90% complete, with final completion scheduled for September and an
828 overall budget of \$2.6 million.

829
830 Mr. Schiller reported that the next project was the roofing project at the Moores Creek facility,
831 with the majority of the roofs being part of the facilities expansion in the early 80s and the
832 administration building being upgraded a few years ago. He stated that the maintenance facilities
833 and pump stations at the plant, as well as the blower building, would be part of this project. Mr.
834 Schiller stated that the work was being done by Triangle Roofing, who also did the administration
835 building, and they would be installing roofs and lightning protection systems at all the structures.
836 He noted that they were about 95% complete at this point, with a few downspouts and work on
837 exhaust fans to be done, but the roof system was pretty much intact.

838
839 Mr. Gaffney asked about the expected lifespan for these roofs.

840
841 Mr. Schiller responded that there was a 20-year watertight warranty on them, with the previous
842 ones lasting close to 40 years. He added that the project was estimated to be completed in
843 September, with an overall budget of \$1.2 million.

844
845 Mr. Schiller reported that the Ivy Transfer Station project involved a new solid waste transfer
846 facility of 11,600 square feet, and he referenced a view of the front entrance and the big collection
847 hopper where the container would be located. He stated the contractor was Lantz, and the project
848 was about 85% complete, with work currently being done on the access roads in that facility –
849 with plan for substantial completion and operation in August. Mr. Schiller noted that once the
850 new facility was up, there would be demolition of the old facility and some additional work
851 onsite, with a total project budget of \$3.06 million.

852
853 Mr. Mawyer mentioned that Rivanna planned for the ribbon-cutting to be held August 23rd.

854
855 Mr. Schiller reported that the wholesale water metering project consisted of 25 new meter vaults
856 to be located at City and County boundaries, with 23 of the 25 vaults installed but some of them
857 having reporting errors, so they were working with the manufacturer to get them resolved. He
858 noted that the two remaining vaults were to be completed, one being worked on by Faulconer
859 Construction. He stated that Linco did the majority of the facilities, but Faulconer had been
860 brought in to do the more difficult site. He noted that the overall project was about 95% complete,

² Editor's Note: VFD's are variable frequency drives.

861 with construction work to be done and the program to be in place in September 2018, with a
862 budget of \$3.6 million.

863
864 Mr. Schiller reported that the project to install a second centrifuge in the solids handling building
865 at Moores Creek was intended to take the place of the old filter press that backed up to the
866 existing centrifuge, which would help improve redundancy, operational efficiency, and odor
867 control. He stated that this was done as a change order to the odor control project, with MEB
868 Contractors doing the work – with the project completed in May 2018 and having a budget of
869 \$1.29 million. He noted that this was above the floor where the containers collected dewatered
870 solids.

871
872 Mr. Schiller reported that the digester coating project was complete at digester #1 to better seal
873 the inside of the structure and contain the methane within the structure itself. He stated the pilot
874 testing of the coatings in digester #1 was successful, with more methane collected and improved
875 odor control, gas collection, and structural integrity of the new basins themselves. He stated that
876 this was done through Lyttle Utilities, with digester #1 finished in April 2018 and work begun on
877 digester #2, with plans to move forward with digester #3 in the near future. Mr. Schiller
878 mentioned that the total overall budget was \$1.54 million.

879
880 Mr. Gaffney asked if there was an estimate on money saved by using the methane versus the gas.

881
882 Mr. Schiller responded that he was not aware of that.

883
884 Mr. Castillo stated that they were capturing about 40% more at digester #1, but they had not yet
885 figured out what that equated to in savings.

886
887 Mr. Mawyer mentioned that they were preparing to do an assessment of that because some of the
888 equipment was due for replacement and they wanted to make sure there was value there before
889 they proceeded.

890
891 Mr. Schiller stated they were moving into a number of design and study projects, but there was
892 also the expansion of the Crozet Water Treatment Plant and the Crozet flow equalization tank
893 coming up in Spring 2019, at the same time as Observatory and South Rivanna improvements.

894
895 **9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA**

896
897 There were no other items presented.

898
899 **10. CLOSED MEETING**

900
901 There was no closed meeting held.

902
903 **11. ADJOURNMENT**

904

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

908
909 **The RWSA Board adjourned the meeting at 3:50 p.m.**

910
911 Respectfully submitted,



Mr. Jeff Richardson
Secretary-Treasurer

912
913
914
915
916
917