



RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
February 28, 2023

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, February 28, 2023 at 2:15 p.m. in the Conference Room, Administration Building, 695 Moores Creek Lane, Charlottesville, Va.

Board Members Present: Michael Gaffney, Michael Rogers, Brian Pinkston, Ann Mallek, Lauren Hildebrand, Jeff Richardson, and Gary O'Connell.

Board Members Absent: None

Rivanna Staff Present: Bill Mawyer, Lonnie Wood, Deborah Anama, Betsy Nemeth, David Tungate, Victoria Fort, Michelle Simpson, Jennifer Whitaker.

Attorney(s) Present: Valerie Long.

1. CALL TO ORDER

Mr. Gaffney called the February 28, 2023, regular meeting of the Rivanna Water and Sewer Authority to order at 2:16p.m.

2. AGENDA APPROVAL

Mr. Gaffney asked if there were any comments or questions on the agenda from the Board members. Hearing none, he asked for a motion.

Ms. Mallek moved that the Board approve the agenda as presented. The motion was seconded by Mr. O'Connell and passed unanimously (7-0).

3. MINUTES OF PREVIOUS BOARD MEETING

a. Minutes of Regular Board Meeting on January 24, 2023

Mr. Gaffney asked if there were any comments, questions, or changes to the Board minutes.

Mr. Rogers moved that the Board approve the minutes of the January 24, 2023 meeting. The motion was seconded by Ms. Mallek and passed 6-0. (Mr. O'Connell abstained from the vote.)

4. RECOGNITIONS

There were no recognitions.

5. EXECUTIVE DIRECTOR'S REPORT

Mr. Mawyer stated that he had the opportunity to serve on a Utility Management Committee panel discussion, which met in Chesterfield earlier in the month, along with the Assistant Director of the Chesterfield Utilities Department and the Director of the Henrico Utilities Department. He stated that they had questions for the panelists to answer about topics including

47 the long-term water supply and what their thoughts were about the issue in the central Virginia
48 area, as well as regional partnerships, water reuse, emergency preparedness, workforce retention,
49 cybersecurity, and other topics. He stated that approximately 40 people attended the meeting as
50 well as many virtual attendees.

51
52 Mr. Mawyer stated that their insurance carrier, Virginia Risk Sharing Association, completed a
53 video that spotlighted Rivanna Authorities and how they had reduced reportable injuries by 82%
54 over the last three years. He stated that the video could be viewed online, with a part of the video
55 featuring our Safety Manager, Ms. Liz Coleman.

56
57 Mr. Mawyer stated that the Observatory Water Treatment Plant renovation continued to
58 progress. He stated that they closed around December 1, and it would likely be until April when
59 they were able to reopen the water treatment plant, but in the meantime, the South Rivanna and
60 North Rivanna Water Treatment Plants carried the load for the urban water system, including the
61 City and developed areas surrounding the City within the County.

62
63 Mr. Mawyer stated that they continued to work on major piping projects including the South
64 Rivanna Reservoir to Ragged Mountain Reservoir water line and the Ragged Mountain
65 Reservoir to Observatory Treatment Plant water line. He stated that Mr. Gaffney, some staff
66 members, and he were going to meet with the UVA Foundation on Friday to discuss the plans for
67 completing the acquisition of easements to get the pipes built.

68
69 Mr. Mawyer stated that the map displayed on the slide showed a black line of obtained
70 easements, and two remaining sections to be acquired from the UVA Foundation. He stated that
71 an acre of property would be acquired on Reservoir Road to build the pump station.

72
73 Mr. O'Connell asked what the orange section on the map indicated.

74
75 Mr. Mawyer stated that the orange section was UVA property.

76
77 Mr. O'Connell asked if there was more legal work to be done related to that.

78
79 Mr. Mawyer stated that our Senior Engineer, Ms. Victoria Fort, was working on the terms of the
80 easement with UVA. UVA wanted to confirm how wide the easement would be and to address
81 other issues such as trees that required protection along the way. He stated that the easement
82 extended from Fontaine Research Park to the Observatory WTP. He stated that there had been a
83 number of previous easements acquired from UVA, so it was not a new topic. He stated that with
84 the two new easements from UVAF and with easements from UVA, they would be fully able to
85 proceed into final design and construction.

86
87 Mr. Mawyer recognized Blake Shifflett and Maurice Whitlow, who both obtained their Class A
88 Commercial Driver's Licenses, which allowed them to operate large equipment on the public
89 roads. He stated that a team building event was held to celebrate the Super Bowl that went very
90 well, with Mr. David Jeffries winning the chili cook-off with his spicy beef chili. He stated that
91 thankfully, there were no outbreaks of Covid-19 after the event.

93 Mr. Mawyer noted that next month, the meetings for RWSA and for RSWA would be virtually
94 held over Zoom.

96 Mr. Gaffney asked if a recording of the utility management committee meeting could be
97 obtained.

99 Mr. Mawyer stated that he would make it available.

101 **6. ITEMS FROM THE PUBLIC**

102 Mr. Gaffney opened the meeting to the public. He asked speakers to identify their name and
103 where they live, and to keep in mind the three-minute time limit.

105 Ms. Dede Smith thanked the Board for allowing virtual participation in the meeting and for
106 publishing the meeting in the newspaper. She stated that on the agenda was the Capital
107 Improvement Program for the next five years, which she was interested in. She stated that there
108 was nearly quarter of a billion dollars in the urban system in the next five years, and she would
109 like for a few questions to be answered.

111 Ms. Smith asked how many customers were in the urban area and whether or not there had been
112 an observed increase in the overall drinking volume, which hovered around 10 million gallons
113 per day, and had for the last 20 years. She stated that she wondered if there had been any rise yet,
114 despite all of the population growth and development.

116 Mr. Gaffney closed items from the public.

118 **7. RESPONSES TO PUBLIC COMMENT**

119 Mr. Gaffney asked Mr. Mawyer if he had a response.

121 Mr. Mawyer stated that approximately 130,000 people were served in the urban system; the City
122 had about 50,000 residents who were all included in the urban system, and about 80,000 people
123 were served by the Albemarle County Service Authority in the urban system.

125 Mr. O'Connell stated that that number included Crozet. He stated that it was likely around
126 70,000 served by ACSA in the Urban water system.

128 Mr. Mawyer stated that there were then 120,000 people in total in the urban system. He stated
129 that in regard to water use, it had been relatively constant, and they had not seen a major increase
130 or decrease from the 10MGD usage.

132 Mr. Gaffney asked if they were only talking about residents, and not about businesses or people
133 who did not reside in the area.

135 Mr. Mawyer stated that included residents and businesses.

137 Mr. O'Connell stated that he did not know how the University was counted, but other than the
138 research parks, it was likely to be mostly residential customers.

139 Ms. Hildebrand stated that in the City there were about 95% residential customers.

140
141 Mr. Gaffney closed responses to public comment.

142
143
144 **8. *CONSENT AGENDA***

145
146 *a. Staff Report on Finance*

147
148 *b. Staff Report on Operations*

149
150 *c. Staff Report on Ongoing Projects*

151
152 *d. Staff Report on Wholesale Metering*

153
154 *e. Approval of Engineering Services – South Fork Rivanna Reservoir to Ragged Mountain*
155 *Reservoir Pipeline Topographic Survey – Kimley-Horn*

156
157 *f. Approval of Betterment Agreement with Victorian Heights, LLC – South Rivanna*
158 *Reservoir to Ragged Mountain Pipeline, Intake, & Facilities Project*

159
160 *g. Award of Term Contract for Geotechnical, Materials Testing, And Professional*
161 *Engineering Services – Schnabel Engineering, LLC*

162 Mr. Gaffney asked if there were any items a Board member wished to discuss or pull from the
163 consent agenda. Hearing none, he asked if there was a motion.

164
165 **Ms. Mallek moved that the Board approve the Consent Agenda. Mr. O’Connell seconded**
166 **the motion, which passed unanimously (7-0).**

167
168 **9. *OTHER BUSINESS***

169 *a. Presentation: Introduction of FY24-28 Capital Improvement Program*
170 *Bill Mawyer, Executive Director*

171 Mr. Mawyer stated that a guiding principle of their strategic plan was to address evolving needs
172 by planning, delivering, and maintaining dependable infrastructure and facilities in a financially
173 responsible manner. He stated that the five-year CIP included 56 projects with a cost of \$326.1M
174 over the five years.

175
176 Mr. Mawyer stated that the program was substantially driven by investment of \$210M in urban
177 systems and major water piping projects, which made up 64% of the CIP. He stated that
178 wastewater projects in the urban system totaled \$58.2M, and non-urban and shared water and
179 wastewater projects that cost \$58.3M.

180
181 Mr. Mawyer stated that the non-urban category would include projects at the water treatment
182 plants, water storage tanks, and reservoirs serving Crozet, Scottsville, and Red Hill areas of the

County. He stated that non-urban wastewater projects were those serving Scottsville, Glenmore, and Stone Robinson School. Non-urban water and wastewater projects were funded 100% by the Albemarle County Service Authority, so those were segregated in their funding and expenses. He stated that shared projects could include asset management and information technology projects. He stated that this year, a flood resilience study was being performed to prepare for changing climate conditions, since most sewer facilities were built near streams in low areas, where there may be more flooding in the future.

Mr. Pinkston asked what the differences between the completed versus available funding items were.

Mr. Mawyer stated that the completed funds were those that had already been paid toward projects that were currently active and included in the \$326.1M total. He stated that the available funding was from bonds or cash for these same projects but had not yet been spent.

Mr. Pinkston asked if completed funding included commitment or encumbered funds.

Mr. Mawyer stated that it was funding already paid for work in progress on projects that had not been completed and were still included in the \$326.1M. He stated that they did not operate on an annual appropriation basis, but rather if the project was still active, it was included in the five-year CIP, so some of the money included was for those ongoing projects. He stated that they had grants totaling \$20.6M and \$10.4M was planned to be used from reserves. He stated approximately \$94M needed to fund the CIP was already available, assuming they received the \$17M grant for the Beaver Creek Reservoir dam modification. He stated that new debt was estimated to be \$232M.

Mr. Mawyer stated that additional priorities of the FY24-28 CIP included completion of the South Fork Rivanna Reservoir to Ragged Mountain Reservoir Pipeline and Pumping project by 2030 rather than 2033. He stated that the reason for this was to enhance the capacity, reliability, and resiliency of our community's drinking water supply. Extended droughts and more intense storms were predicted and increasing the water storage capacity would optimize the infrastructure to mitigate this concern.

Mr. Mawyer stated that other priorities included provision of additional granular activated carbon treatment capacity at Crozet and Red Hill Water Treatment Plants to enhance drinking water quality and serve anticipated growth while utilizing grant funding from VDH, and leveraging of partnerships with the City, UVA, and VDOT on drinking water piping projects in Emmet Street in order to reduce costs and disruption to the public.

Mr. Pinkston asked if there were large water mains on that road and where they ran to and from.

Mr. Mawyer stated they were coming from the South Rivanna and Observatory Water Treatment Plants. He asked Ms. Whitaker if there were any other locations.

Ms. Whitaker stated that there were RWSA water lines from Observatory WTP heading north on Emmet Street past Lambeth Field Apartments, which turned into City water mains and that

229 section was not owned by Rivanna. At Hydraulic Road, the Rivanna water main picked back up.
230 She stated that part of this project was filling in that gap in RWSA water lines in this corridor
231 and replacing 50- or 60-year-old cast iron pipes.

232
233 Mr. Mawyer stated that the final priority of the CIP was to improve drinking water capacity and
234 reliability in the Route 29 North area with additional river crossings at the South Rivanna and
235 North Rivanna rivers, as well as construction of the Airport Pump station to strengthen
236 infrastructure, support growth opportunities, and to allow decommissioning of the North Rivanna
237 Water Treatment Plant.

238
239 Mr. Pinkston asked if this was reflective of the work the UVA Foundation was going to do near
240 North Fork.

241
242 Mr. Mawyer stated that there was a phased plan for utility infrastructure to be built as
243 construction at North Fork progressed, so they would coordinate with UVAF to bring capacity to
244 them on these and other projects. He continued that the charge increases for the City would be
245 9.6% in FY24, 9.7% in FY25, 9.0% in FY26, 9.4% in FY27, and 10% in FY28. He stated that
246 the charge increases for the ACSA would be 13.5% in FY24, 12.4% in FY25, 11.7% in FY26,
247 11.4% in FY28.

248
249 Mr. Mawyer stated that the charges included \$750,000 in grants awarded by Albemarle County
250 in FY22, the VDH grant for GAC filters in FY23 for \$3.17M, with the FY23-26 grant awards
251 pending, the Federal NRCS grant for BCR for the amount of \$17.4M, and the estimated annual
252 increases in operating expenses. He stated that the rates given would not only support the CIP
253 but the general operating expenses as well.

254
255 Mr. Richardson asked if the outyear increases included the expectation of achieving system
256 redundancy and resiliency. He stated that much of the charge increases were associated with the
257 aggressive and thoughtfully prepared CIP.

258
259 Mr. Mawyer stated that was correct. He stated that they had not yet fully completed the plan
260 from 2002 to increase the water supply in the community, which was why they were proposing
261 to build the Rivanna to Ragged Mountain pipeline as soon as possible to provide additional water
262 for drought protection and future development. He stated that the community would have more
263 capacity, resiliency, and opportunity for growth.

264
265 Mr. O'Connell stated that there were not many communities around the country that had the
266 water supply that they were able to provide their customers, and doing so came at a large cost.

267
268 Mr. Mawyer stated that their water quality could be contributed to its source at the foot of the
269 Blue Ridge Mountains. He continued that there was a significant increase to the five-year CIP
270 from last year, in the amount of \$120.3M, which was driven in large part by inflation and scope
271 increases on major projects.

272
273 Mr. Mawyer stated that \$75M of that was attributed to inflation and scope progression, and
274 acceleration of three projects cost \$39.5M. He stated that 17 projects were moved into the FY24-

275 28 CIP, costing \$6.9M, and six new projects were added for a cost of \$7.7M. He added that six
276 existing projects were completed, allowing for a decrease of \$8.8M.

277
278 Mr. Pinkston asked if the scope definition allowed for increased confidence in the costs.

279
280 Mr. Mawyer stated that estimates were often refined after receiving further involvement and
281 detailed information.

282
283 Mr. Pinkston asked if there was a 30%-40% increase in the estimated cost of the Central Water
284 Line project.

285
286 Mr. Mawyer stated that originally there was an estimate of \$14M which was updated to \$24M
287 when the project was relocated from the southern loop area to the central area of the City, and
288 going from preliminary engineering to detailed engineering, the cost increased to \$41M.

289
290 Mr. O'Connell asked if it had been bid yet.

291
292 Mr. Mawyer stated they expected to have construction bids by next year. He continued that the
293 acceleration of the CIP over the 21-year history was affected in the most recent year by inflation
294 and scope.

295
296 Mr. Gaffney stated that it would be informative to see how inflation over these same years was
297 compared to the costs of the CIP.

298
299 Mr. Mawyer stated that it was estimated that general construction costs had risen by 20% in the
300 last year, but it differed between projects. He stated that the long-range 15-year projection
301 showed \$710M over that time, with the hope that grant amounts would bring the estimates down.
302 He stated that they hoped to hear by the end of this calendar year about the \$50M in additional
303 grants that had been applied for, and would continue to look for other grant opportunities.

304
305 Mr. Mawyer stated that in future years, they may need additional aeration basins at Moores
306 Creek unless the issue could be solved in the community, because they had been receiving high-
307 strength waste, which created a biological oxygen demand on the system. He stated that there
308 was a regulation on how much of this waste could be released back into Moores Creek, and a
309 study was being done to see what must be completed to minimize strong waste at the treatment
310 plant.

311
312 Mr. Pinkston asked to see the previous slide. He asked if the hope was that this current CIP
313 would be the peak.

314
315 Mr. Mawyer stated that that was the hope. He stated that 2020 was the Covid year when no
316 projects were added in order to keep rates at a 0% increase. He reiterated that the current rate of
317 increase was largely due to inflation and supply chain issues.

318
319 Mr. O'Connell stated that there had not been a period of significant increases since the years
320 2009 to 2013, which were largely driven by wastewater improvements.

321
322 Mr. O'Connell stated that this new increase was similar.

323
324 Mr. Mawyer stated that the CIP supported five water supply reservoirs totaling 3.3B gallons, six
325 water treatment plants with a capacity of 24 MGD, four wastewater treatment plants that
326 processed 15.59 MGD, seven wastewater pump stations, 11 water pump stations, 68 miles of
327 water distribution pipe, 117 valves, 44 miles of wastewater collection pipe, 717 manholes, and a
328 stormwater impoundment of the Lickinghole Creek Basin.

329
330 Mr. Mawyer stated that the major programs and projects included \$48M for upgrading water
331 treatment plants; \$100M for reliability and redundancy; \$30M for operations, maintenance, and
332 safety; \$43M for regulatory costs, and \$107M for capacity.

333
334 Mr. Mawyer stated that the South Rivanna and Observatory Water Treatment Plant renovations
335 would be completed in 2023 at a cost of \$43M, followed by the Ragged Mountain Reservoir to
336 Observatory Water Treatment Plant raw water pipe and pump station that cost \$44M over the
337 years 2024-2028, the Central Water Line at a cost of \$41M from 2024-2028, the South Rivanna
338 Reservoir to Ragged Mountain Reservoir raw water pipe proposed at \$80M for the years 2024-
339 2030, and the proposed raising of the Ragged Mountain Reservoir water level for \$2M over the
340 years 2028-2030.

341
342 Mr. Mawyer stated that the proposed timelines for raising the water level in Ragged Mountain
343 Reservoir would need discussion with the City, because the Agreement stated that they could not
344 raise that water level until 10 years before the demand equaled 85% of the supply, and they
345 estimated that would be the year 2035.

346
347 Mr. Pinkston asked why that was the case.

348
349 Mr. Mawyer stated that he understood there was concern over the destruction of the Ragged
350 Mountain nature area and the park that surrounded the reservoir, which was owned by the City.
351 He stated that his understanding was that the final agreement included that they could inundate
352 more land but not until it was absolutely necessary, defined by the demand equaling 85% of the
353 supply.

354
355 Mr. Pinkston asked what the 10 years was.

356
357 Mr. Mawyer stated that the Agreement allowed the project to raise the water level to begin 10
358 years before the demand equaled 85% of the supply.

359
360 Mr. Pinkston stated that they could be close to that now.

361
362 Ms. Mallek stated that 2025 was when they could be there.

363
364 Mr. Mawyer stated that demand was projected to be 85% of the supply in 2045, so 2035 would
365 give them that ten-year window to complete the infrastructure modifications and grading around
366 the reservoir necessary to raise the water.

367
368 Ms. Mallek stated that was true so long as it did not stop raining.
369
370 Mr. Rogers asked if there would be an escalation of funds required for that project to raise the
371 water level.
372
373 Mr. Mawyer stated that it would be in the amount of \$2M.
374
375 Mr. Gaffney stated that was the total project cost. He asked what that percentage was for the
376 City.
377
378 Mr. Mawyer stated that it was 20%. He stated that it included raising the water level in the
379 reservoir, but the pipeline to feed the reservoir was proposed to be accelerated, so the cashflow
380 could be required sooner. He stated that it did impact their charges, and the City shared 20% of
381 that cost.
382
383 Mr. O'Connell asked how much more capacity the 12-foot height increase would yield.
384
385 Mr. Mawyer stated that it would increase storage capacity 700MG, which was 50% more water
386 than what was currently held at Ragged Mountain.
387
388 Mr. O'Connell stated that the political agreement was to build the dam facility at the full height,
389 but they still had 12 more feet for water storage to be used at a later date. He stated that there was
390 an attempt to put in place a formula that would make it automatic, but given what had happened
391 over the last ten or 12 years, the formula would not work and the water level was not going to be
392 increased when this Ragged pipeline would be built. There was not a trigger for construction of
393 the pipeline in the Agreement, it would happen when the Rivanna Board approved the schedule.
394
395 Ms. Mallek stated that the cost escalation they were seeing would likely not decrease, so the
396 sooner the larger projects could be accomplished the better off they would all be.
397
398 Mr. Mawyer stated that as part of the climate action initiatives of the City and the County, it was
399 Rivanna's part to provide adequate water supply for the community.
400
401 Ms. Mallek stated that that element was not mentioned as much in 2009 as much as it should
402 have been.
403
404 Mr. Gaffney stated that a local photographer showed him a photograph of the Sugar Hollow
405 Reservoir in 1978, when it was just mud.
406
407 Mr. Mawyer asked if that was due to drought.
408
409 Mr. Gaffney stated yes.
410
411 Ms. Hildebrand stated that from a technical standpoint, it made sense to align raising the water
412 level as the pipeline was being finished.

413
414 Mr. O'Connell stated that the expansion of the Observatory Water Treatment Plant and
415 connection to the Ragged Mountain Reservoir gave the ability to serve the entire urban system if
416 the South Rivanna side failed, so there was ultimate redundancy for emergencies and droughts.

417
418 Mr. Pinkston stated that he would be interested in understanding more about raising the water
419 level if it were time to consider it, and if there was an action by Council necessary, what would
420 be involved. He stated that it was important to base these decisions on climate change, and if
421 they were to have another drought of record when some of the larger projects had been
422 completed, but they did not yet have more capacity at the Rivanna Reservoir and the upgrades to
423 the Observatory, but did have the Ragged Mountain completed, he would like to know what their
424 situation would be.

425
426 Mr. Mawyer stated that they had improved the water supply system by about 900MG, because
427 Ragged Mountain Reservoir had increased in storage capacity from 500MG to 1.4BG and could
428 increase to 2.1BG with the extra 700MG after raising the water level. He stated that based on
429 10MGD of typical usage, they have 90 additional days of supply now, and would have an
430 additional 70 days of storage when the water level is raised. He stated that they could treat the
431 additional water supply at Observatory, but they would have difficulty getting major amounts of
432 water out of Observatory until the Central Water Line was constructed.

433
434 Mr. Pinkston stated that he applauded the attempt to bring forward the schedule by three years
435 for the \$80M major connecting link. He stated that at the same time, he was concerned about the
436 approximate 1/3 of the budget increase that was due to scope definition of existing projects as
437 well as inflation, and with 10% year-over-year, that was exponential growth in rates.

438
439 Mr. Mawyer clarified that those rate increases were in the charges to the City and the ACSA, but
440 may or may not be reflected in the charges to retail customers.

441
442 Mr. Pinkston stated that there was an actual escalation that they had to face of the projects that
443 were already undergoing, versus the escalation of schedule acceleration of the South Rivanna to
444 Ragged Mountain raw water pipe.

445
446 Mr. Gaffney stated that Mr. Pinkston had asked what would happen if they received another
447 drought of record. He stated that the drought of record was a two-year period.

448
449 Mr. Gaffney stated that without a pipeline, they were currently structured so that they would use
450 the South Fork Rivanna Reservoir until it got to a level at which they had to utilize Ragged
451 Mountain. He stated that when South Fork did not refill because no water was coming in, but
452 they were piping it from Sugar Hollow, resulting in Sugar Hollow getting low and subsequently
453 Ragged Mountain going down. He stated that a six-inch rain would fill South Fork, and if they
454 had the pipe, they could put 25MGD into Ragged to fill that reservoir instead of putting only
455 3MGD from Sugar Hollow.

456
457 Mr. Pinkston stated that he appreciated and understood the plan. He stated that his perspective
458 was from risk management, which was that if they did not accelerate this at three years, they had

459 more of a chance of having water supply challenges, but on the other hand it was a significant
460 expenditure on top of the other projects.

461
462 Mr. O'Connell stated that the same question was asked at the budget committee, and his
463 conclusion was that it was a minimal increase because of the way that Rivanna funded their
464 projects.

465
466 Mr. Gaffney stated that the project had begun in 2002 and was yet to be completed.

467
468 Ms. Mallek stated that although recent amounts of rain had been increasing, there had been
469 notable periods of light rain or drought, which was concerning because people were not focused
470 on conservation, assuming that the rain would come soon. Ms. Mallek stated that in the years
471 preceding the 2002 drought of record the rainfall dropped from the typical 35-40 inches to 16-20
472 inches and then 11-12 inches in 2002. She stated that the County was 9 days away from stopping
473 the issuance of building permits and UVA was 9 days away from sending students home, which
474 would have been a dramatic impact on our local economy. She stated that the impacts on the
475 economy of a critically low water supply would be as bad as the impacts of the worst of the
476 Covid-19 pandemic. She stated that the impacts of population growth were not fully recognized
477 in their discussions about water supply. Ms. Mallek stated that Rivanna has been thorough and
478 thoughtful in their planning, and she was very supportive of the detail and direction of the plans
479 so that people could continue to live in the County.

480
481 Mr. Mawyer stated they had calculated it would be a 0.6% increase in Rivanna's FY 24 charge to
482 the City to accelerate the pipeline project.

483
484 Mr. Richardson asked if the acceleration was for three years.

485
486 Mr. Mawyer stated yes.

487
488 Mr. Richardson stated that there were capacity issues such as staff resources, undergoing
489 multiple projects at the same time, and the optimal time to take on additional debt.

490
491 Mr. Mawyer stated that they would be taking on more debt sooner than initially planned, but that
492 was weighed against the 25 years since the last drought, and wanted to maximize the
493 infrastructure as planned.

494
495 Ms. Mallek stated that in the newspaper this week was information about the Roanoke Reservoir,
496 specifically that the contamination they were dealing with used up the capacity of the GAC than
497 they thought it would, so the amount of PFAS spiked to 35 parts per trillion. She asked if there
498 may be a need to be speed up that regeneration in their own community.

499
500 Mr. Tungate stated that they managed their GAC inventory now focusing on organic carbon
501 removal, so if their primary contaminant of concern transitioned to PFAS, they would have to
502 come up with a new regeneration model.

503
504 Ms. Mallek asked if that would necessitate faster regeneration due to the increased use.

Mr. Tungate stated that was the current thought. He stated that they would have to come up with a model to transition and regenerate the GAC based on the rate of adsorption of the PFAS contaminant.

Mr. Mawyer stated that they regenerated the GAC media, which was a process to ship the media to a facility to have the contaminants removed and then the GAC was returned to be used again. He stated that they had to add some new GAC during this regeneration process.

Mr. Mawyer continued that in addition to the water projects, they were doing other related projects such as the Airport Road water pump station and piping, MC 5kv electrical upgrade system at Moores Creek, the South Fork Rivanna River crossing, the GAC filters for Crozet and Red Hill Water Treatment Plants, the renovation and addition to the administration building, and the Beaver Creek Dam, pump station, and piping modifications.

Mr. Mawyer stated that for Beaver Creek, they were to replace the spillway to meet Virginia dam safety standards, replace the raw water pump station, intake, and pipe to the Crozet Water Treatment Plant. He stated that the spillway was a proposed labyrinth spillway with a bridge.

Ms. Mallek asked how the spillway was oriented in relation to the dam water.

Ms. Whitaker stated that the water would be adjacent to the labyrinth, with the concrete spillway chute below the labyrinth. Our spillway chute would be straight and not angled as in the example shown.

Mr. Mawyer stated that the Emmet Street Water Line Betterment Program was another project to be completed in this CIP and included multiple piping projects to be completed in concert in order to reduce costs and impacts to the public.

Mr. Mawyer stated that the FY24-28 CIP supported the mission and goals of the RWSA. He concluded that the objectives of the CIP were to maintain their drinking water and wastewater infrastructure to provide reliable services which complied with or exceeded regulatory requirements and, to complete the Rivanna Reservoir to Ragged Mountain Reservoir Pipeline and pumping project by 2030 rather than 2033.

Mr. Mawyer stated that the other objectives were to provide additional GAC treatment capacity at Crozet and Red Hill WTPs, to leverage partnership with the City, UVA, and VDOT on drinking water piping projects located on Emmet Street, to improve drinking water capacity and reliability in the Route 29 North area, and to complete the CIP in an environmentally protective and financially responsible manner.

Mr. Mawyer concluded that the FY24-28 CIP contained 56 projects and a total of \$326.1M. He stated that they had drafted four or five CIPs to find the most optimal and affordable plan. He stated that the debt service was about 50% of their operating budget, which he would be presenting next month, and would result in an overall estimated charge increase to the City of 9.6% and to the ACSA of 13.5% in FY24. He stated that no action was requested of the Board

551 today, and this information would be presented in May after the public hearing as a request for
552 approval of the CIP and the operating budget.

553
554
555 *b. Presentation: Unregulated Contaminant Monitoring Rule 5 & Permanganate Update*
556 *David Tungate, Director of Operations*

557 Mr. Tungate, Director of Operations, stated that there are a series of steps to establishing new
558 National Primary Drinking Water Regulations. The first step is a requirement from the Safe
559 Drinking Water Act amendments of 1996 that the Environmental Protection Agency publishes a
560 Contaminant Candidate List (CCL). This list is published every five years and it is a list of
561 currently unregulated contaminants which may pose risks to human health in drinking water.

562
563 Mr. Tungate stated that the second step of the regulation process was that the EPA must choose
564 no fewer than five contaminants from the CCL to determine whether to regulate them with a
565 National Primary Drinking Water Regulation. The third step was the issuance from the EPA of
566 the list of no more than 30 unregulated contaminants to be monitored by Public Water Supplies
567 in the form of the Unregulated Contaminant Monitoring Rule (UCMR).

568
569 Mr. Tungate stated that the Contaminant Candidate List 5 was published in November 2022 with
570 66 individual chemicals, three groups of chemicals, and 12 microbes. The three chemical groups
571 were cyanotoxins, or chemicals produced by blue green algae; disinfection by-products (DBPs),
572 or chemicals produced during water treatment process when organic matter combined with a
573 disinfectant like chlorine; and per and poly fluoroalkyl substances (PFAS), or a class of synthetic
574 compounds used to make products resistant to water, heat, and stains. There are more than 4,000
575 PFAS compounds used since the 1940s.

576
577 Mr. Tungate stated that Chemical Contaminant Candidate List 5 included 23 unregulated DBPs
578 and PFAS contaminants that met certain carbon-fluoride structures, and 13 microbes. He stated
579 that RWSA will begin sampling for UCMR in May 2023.

580
581 Mr. Tungate stated that usually, these water quality monitoring rules systems only applied to
582 large public water systems because these large systems have the financial ability to pay for these
583 tests. However for UCMR5, the EPA would choose 800 randomly selected small public water
584 systems that served less than 3,000 people, all medium systems that serve between 3,300 and
585 10,000 people and all large water systems that service more than 10,000 people. This was done
586 in order to get a UCMR 5 samples from all sizes of public water systems, He stated that their
587 own systems were over 10,000 people except for the Red Hill and Scottsville systems.

588
589 Mr. Tungate stated that there were only two approved laboratory methods for PFAS analysis,
590 533 and 537.1. Together both of these methods will be able to test for 29 PFAS compounds. He
591 stated that out of the 30 contaminants allowed to be on the UCMR 5 list, 29 of them are PFAS
592 and the other contaminant is Lithium. He stated that the minimum reporting levels for PFAS
593 were 0.002 micrograms/L, or 2 parts per trillion.

594
595 Ms. Mallek asked if both tests could be used to accurately report the 29 PFAS.

596
597 Mr. Tungate stated that between both tests, all 29 would be able to be analyzed. He stated that
598 water samples were collected after the final step in the water treatment process, which was the
599 entry point to the distribution system. He stated that the samples were going to be collected
600 quarterly for one year at our five surface water treatment plants and every six months for one
601 year at Red Hill because it was a groundwater system. He stated that sampling analysis costs
602 were approximated to be \$23,000, and that Scottsville and Red Hill systems were included in the
603 sampling program for parity with all of our water treatment systems.

604
605 Mr. Tungate stated that due to the pervasive nature of PFASs, RWSA samplers must avoid
606 wearing clothing or boots containing Gore-Tex material or fabric softeners, avoid using
607 cosmetics, moisturizer, or insect repellants, and must use PFAS-free sunscreens. He stated that
608 this was meant to avoid potential contamination and subsequent false PFAS detections in the
609 water sample.

610
611 Mr. Tungate stated that the samplers must also only use ballpoint pens for labeling PFAS sample
612 bottles and must wash their hands and immediately put on nitrile gloves at each sampling
613 location. He stated that field reagent blanks were also provided to measure the PFAS
614 contribution from the sampling environment, personnel, and shipping conditions.

615
616 Mr. Tungate explained that the lab would submit PFAS-free water to each sampling site and it
617 would be used to create blanks at every sampling location. He displayed images of the sample
618 containers on the slide. He stated that there would be seven individual bottles for each sample
619 location. He summarized that the data gathered from the UCMR 5 would help EPA regulators
620 determine the prevalence of unregulated contaminants in drinking water, which may eventually
621 lead to additional National Primary Drinking Water Standards.

622
623 Mr. Tungate stated that establishing the presence and concentrations of these chemicals in public
624 water systems across the United States was one part of the process. The other part of the process
625 was establishing the concentration of the chemicals that causes adverse impact on humans. The
626 other consideration is the practical matters of how to treat the water to the new levels and how
627 public water systems can pay for it; not all systems were forward-thinking and had the resources
628 to treat the chemicals.

629
630 Mr. Pinkston clarified that the point of this testing was to see how much of the chemicals were
631 out in the environment.

632
633 Mr. Tungate stated yes. He stated that RWSA currently tests for PFAS in our water and
634 wastewater systems every six months, and they questioned each time if the contributions of
635 PFAS were from the environment or directly in the water. He stated that the EPA was trying to
636 determine what was a true positive sample and what was introduced from the environment after
637 the sample was taken.

638
639 Mr. Pinkston asked if these were possible carcinogenic materials.

640
641 Ms. Mallek stated that these had been officially declared carcinogenic chemicals.

642
643 Mr. Pinkston asked if this was the issue currently occurring in Roanoke.

644
645 Mr. Tungate stated that the area affected was Spring Hollow reservoir in the Western Virginia
646 Water Authority system.

647
648 Mr. Pinkston asked if there was a specific source of the PFAS.

649
650 Mr. Mawyer stated that the source was a business that cleaned industrial equipment, and their
651 rinse water was getting into the river which was pumped to the reservoir.

652
653 Mr. Gaffney asked if any of our raw water was tested by Rivanna.

654
655 Mr. Tungate stated that yes. We tested raw water as well as finished water for PFAS to assess
656 any contribution from internal operations. He stated that the UCMR 5 will require testing of only
657 finished water.

658
659 Mr. Gaffney asked if there had ever been a test performed at the landfill.

660
661 Mr. Mawyer stated that they tested their raw water, finished water, and landfill leachate as well.
662 He stated that the leachate that came out of the landfill cells was brought back to be treated at
663 Moores Creek, so if PFAS was going out of the treated wastewater, that was one of the potential
664 sources.

665
666 Ms. Hildebrand stated that in that case, it was not in their drinking water supply.

667
668 Mr. Mawyer stated that Moores Creek is not in our drinking water watershed, although the Ivy
669 MUC is within the watershed of the South Rivanna Reservoir.

670
671 Mr. Tungate stated that the next item he would discuss was the Carus Chemical's facility fire and
672 permanganate production status. He stated that Carus Chemical was the largest domestic
673 provider of potassium and sodium permanganate, providing more than 50% of the supply in the
674 United States. It is used as a strong oxidizer and a secondary water treatment chemical for the
675 removal of dissolved iron and manganese as well as taste and odors in drinking water. He
676 indicated the top righthand image on the slide of the immediate application of permanganate, and
677 the lower righthand image of 30 minutes after the application of permanganate, noting the color
678 change from pink to brown.

679
680 Mr. Tungate stated that on January 11, 2023, Carus Chemical had a fire at its permanganate
681 production facility, and due to the fire damage, the company was unable to fill any orders for 90
682 days, which had led to a national shortage of potassium permanganate and sodium
683 permanganate, and were expected to begin permanganate production again by April 1, 2023.

684
685 Mr. Tungate stated that the bulk sodium permanganate tank at South Rivanna held 5,500 gallons,
686 and their typical usage from January through April was 10 gallons per day, and May through
687 December had a usage of 30 gallons per day. He stated that the increased usage was due to the

warmer water in the summer that required more treatment.

Mr. Tungate stated that the current inventory was 5,000 gallons, equal to seven months of product. He stated that they had been successful in leveraging relationships with other wholesale permanganate suppliers to maintain the inventory. He showed an image of the four new GAC vessels added at the Observatory Water Treatment Plant.

Ms. Mallek stated that soot from large fires could be carried downwind into different states, and acid rain had been a historical problem in the area. She asked if there were tests available to test for constituents from the fires in Ohio and Illinois.

Mr. Tungate stated that they could test for those, as it was a simple process. He stated that the prevailing winds from Ohio could go north and not south toward Virginia.

Mr. Mawyer stated that part of the CIP included additional capacity of chemical products needed so that if a catastrophe arose, they would have adequate supplies and their facilities would not be under stress to have consistent product deliveries or from a lack of treatment availability.

Mr. Tungate stated that prior arrangements had not been efficient in regard to truck deliveries, but they now had much better supply systems.

Ms. Mallek stated that she appreciated planning ahead.

10. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

Mr. Mawyer reminded the Board that the meeting next month would be held virtually.

11. CLOSED MEETING

There was no reason for a closed meeting.

12. ADJOURNMENT

At 3:41 p.m., Mr. Pinkston moved to adjourn the meeting of the Rivanna Water and Sewer Authority. Mr. Rogers seconded the motion, which passed unanimously.

Respectfully submitted,



Mr. Jeff Richardson
Secretary - Treasurer

