



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

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

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

Board Members Absent: Lauren Hildebrand.

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

Attorney(s) Present: Kurt Krueger.

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

1. CALL TO ORDER

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

2. STATEMENT FROM THE CHAIR

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

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

Mr. Gaffney noted, for the record, that the public has real-time audio/visual access to this meeting over Zoom as provided in the lawfully posted meeting notice, and real-time audio access over telephone, which is also contained in the notice. He stated that the public is always invited to send questions, comments, and suggestions to the Board through Mr. Bill Mawyer, the Authority’s Executive Director, at any time.

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

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

48
49 Dr. Lizabeth Palmer stated that she was located at 2958 Mechum Banks Drive in Albemarle
50 County.

51
52 Mr. Jeff Richardson stated that he was located at 401 McIntire Road (Albemarle County Office
53 Building) in Charlottesville.

54
55 Dr. Tarron Richardson stated that he was located at 605 East Main Street in Charlottesville.

56
57 Mr. Lloyd Snook stated that he was located at 408 East Market Street in Charlottesville.

58
59 Mr. Mike Gaffney stated that he was located at 415 Wild Horse Lane in Corolla, North Carolina.

60
61 Mr. Gaffney stated that the following Authority staff members were joining the meeting: Bill
62 Mawyer (Executive Director), Lonnie Wood (Director of Finance and Administration), Jennifer
63 Whitaker (Director of Engineering and Maintenance), David Tungate (Director of Operations),
64 Betsy Nemeth (Human Resources Manager), Katie McIlwee (Communications Manager and
65 Executive Coordinator), and Michelle Simpson (Senior Civil Engineer).

66
67 Mr. Gaffney stated that they were also joined electronically by Mr. Kurt Krueger (Counsel to the
68 Authority).

69
70 **3. MINUTES OF PREVIOUS BOARD MEETINGS**

71 *a. Minutes of Regular Board Meeting on May 26, 2020*

72
73 Mr. Gaffney asked board members if they had comments or changes.

74
75 It was noted that Ms. Hildebrand had submitted a correction that her address should read 305 4th
76 Street Northwest.

77
78 **Dr. Palmer moved that the board approve the minutes of the previous board meeting, as**
79 **amended. The motion was seconded by Mr. O’Connell and passed unanimously (6-0). (Ms.**
80 **Hildebrand was absent.)**

81
82 **4. RECOGNITIONS**

83 There were no recognitions.

84
85 **5. EXECUTIVE DIRECTOR’S REPORT**

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

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

99
100 Mr. Mawyer presented a group photo. He stated that he, Dr. Richardson, Mr. Richardson, Mr.
101 Trevor Henry, and Ms. Whitaker recently took a tour of the Sugar Hollow Reservoir and walked
102 up to the Blue Hole and back. He noted how he was soaked in water in the photo, as they had
103 several streams to cross. He stated that it was a good trip, and they got to see firsthand what the
104 attraction is to visit the Blue Hole at Sugar Hollow. He stated that he appreciated the group's
105 willingness to take the tour. He stated that they did not jump in the Blue Hole, but saw some
106 younger people doing so, adding it is a very popular location.

107
108 Dr. Palmer asked if Mr. Mawyer fell in.

109
110 Mr. Mawyer replied that it was the day after it rained, and the stream was 6-12 inches deep, and
111 20-30 feet wide. He stated that one could walk on the rocks but ultimately, it seemed as though
112 stepping in the water was required to get across.

113
114 Mr. Mawyer stated that RWSA continues to work on its South Rivanna to Ragged Mountain
115 waterline easements. He presented a map. He stated that starting at the South Rivanna Water
116 Treatment Plant, the map shows a black area, which is an area where the easement has been
117 obtained. He stated that moving to the south, the yellow color on the map shows that they need to
118 come down Woodburn Road, Rio Road, and then Lambs Lane at Albemarle, which is all under
119 VDOT control. He stated that behind Albemarle High School, Jouett, and Greer is in School
120 Board control and the RWSA is working with them. He indicated on the map to a private
121 property they are working on acquiring easements.

122
123 Mr. Mawyer stated that the pipe will go along Barracks Road and Colthurst Drive, to the UVA
124 Foundation property, with which RWSA has not come to an agreement. He stated that there is a
125 property between the railroad tracks and Route 250 where they are planning to put the pipe on
126 the property line between Virginia Tractor and the Weedon Company. He stated that they have
127 acquired an easement from the Virginia Tractor owners and are working with the Weedon
128 Company for an easement on the west side of the easement.

129
130 Mr. Mawyer stated that the green color on the map represents the Birdwood water line, which is
131 complete. He stated that moving farther to the south and west, they have acquired an easement
132 from private landowners there. He indicated farther left on the map where another easement has
133 been acquired.

134
135 Mr. Mawyer stated that they are working with Ms. Hildebrand to get on the City Council
136 meeting agenda for an easement on City properties farther to the west.

137

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

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

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

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

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

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

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

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

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

182

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

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

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

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

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

202
203 Mr. Mawyer stated that last month, he mentioned that they received a \$341,000 grant from the
204 Natural Resources Conservation Service. He stated that they reported last month that they
205 expected the grant to be 40%, but now, they understand that it can be as much as 70% of the cost
206 of the design and construction, which is even better news. He stated that RWSA will have a
207 meeting with the NRCS next week.¹

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

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

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

227

¹ The grant from NRCS is for the Beaver Creek Dam and Pump Station project.

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

234
235 Mr. Mawyer stated that these meters keep track of how much the City and Service Authority are
236 using and compares that result to the contract agreement. He stated that should either partly
237 exceed the agreed-upon allocation, there would be a true-up in the cost allocation between
238 building the dam and building the pipeline.

239
240 Mr. Mawyer stated that in May, the Service Authority was right on their average of 4.7 million
241 gallons per day. He stated that the dotted line above this shows that the Service Authority, by
242 contract, is allocated about 12 million gallons per day. He stated that there would be much
243 growth needed in the County service area before the demand would get close to its water
244 allocation resulting from building the Ragged Mountain Dam.

245
246 Mr. Mawyer stated that they were pleased that this project went well and is going well. He stated
247 that during that week and next, they are doing the first annual recalibration of all the meters. He
248 stated that Ms. Fort has had a contractor out there, and most of the meters have been well-
249 calibrated and do not require any significant adjustment, which is good news.

250
251 Mr. Mawyer stated that RWSA has been monitoring water production in view of the COVID-19
252 circumstances and with UVA shutting down. He stated that for this fiscal year, they expect to
253 produce almost 3% more water in the urban service area than they did last year, over 6% more
254 for the Crozet service area, and over 9.5% more for Scottsville. He stated that the community is
255 using more water than ever, despite the COVID-19 circumstances.

256
257 Mr. Mawyer noted that for the last few months, water usage has been down in the City. He
258 presented a graph showing that the City usage has been down, but the Service Authority usage is
259 more typical of average.

260 **6. ITEMS FROM THE PUBLIC**

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

263
264 Hearing no comments, Mr. Gaffney closed Items from the Public.

265 **7. RESPONSES TO PUBLIC COMMENT**

266
267 As there were no public comments, there were no responses.

268 **8. CONSENT AGENDA**

269
270 *a. Staff Report on Finance*

271
272 *b. Staff Report on Operations*

273
274

- 275 c. *Staff Report on Ongoing Projects*
- 276
- 277 d. *Staff Report on Wholesale Metering*
- 278 e. *FY 2021 Personnel Management Plan Revisions*
- 279
- 280 f. *Purchasing Manual and Policy Updates*
- 281
- 282 g. *Construction Contract Award – Removal and Disposal of Solids from Holding Ponds – Merrill*
- 283 *Bros, Inc*
- 284

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

287

288 **9. OTHER BUSINESS**

- 289 a. *Presentation and Public Hearing: Adoption of FY 2020 – 2021 Budget and FY 2021-*
- 290 *2025 CIP; Approval of Preliminary Rate Schedule Resolution: Bill Mawyer, Executive*
- 291 *Director*
- 292

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

295

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

301

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

306

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

311

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

317

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

321

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

324
325 Mr. Mawyer stated that he also could present the operating budget and rates, and if it were the
326 board's pleasure, they could approve all of these at the same time.

327
328 Mr. Gaffney asked if anyone on the board objected to this and heard no objections.

329
330 Mr. Mawyer stated that they reviewed the operating budget in more detail, and that for the
331 upcoming fiscal year, it is \$37.1 million. He presented a pie chart, explaining that the yellow
332 segment is the largest slice, which is the debt service for the debt the Authority carries. He stated
333 that the blue slice represents labor and benefits, and that the 18% (or \$6.5 million) is for building
334 repairs and chemicals. He stated that \$4.1 million is for general services, including professional
335 and nonprofessional services, utilities, insurance, and permits.

336
337 Mr. Mawyer stated that the total operating budget is \$37.1 million, which is 2.6% higher than the
338 current year. He stated that this was mostly because of debt service (an increase of \$783,000) for
339 bonds that have been issued and projects that are underway, and that they must make the debt
340 service payments. He stated that they have a small increase in operating expenses, largely related
341 to health insurance costs.

342
343 Mr. Mawyer stated that they estimate the City's charges to be about \$14.8 million next year. He
344 stated that the Service Authority charges would be \$18.5 million.

345
346 Mr. Mawyer stated that they have other revenues from private septage haulers, and interest in
347 other accounts like this, of \$2.1 million.

348
349 Mr. Mawyer stated that the RWSA is contributing \$1.7 million out of their reserve fund to help
350 balance the budget and to get the rates down to a \$0 increase.

351
352 Mr. Mawyer stated that they have major projects ongoing and that will continue in FY 21. He
353 stated that there are three treatment plants under construction at Crozet, South Rivanna, and
354 Observatory, which total over \$50 million. He stated that they have talked about the easement
355 from the Rivanna Reservoir to Ragged Mountain and that they will continue that effort.

356
357 Mr. Mawyer stated that there will be an Urban Finished Water Master Plan to present to the
358 board in a few months to talk about the third leg of the "water availability stool" where they must
359 be able to distribute the water they have in supply and treatment.

360
361 Mr. Mawyer stated that they are starting a wastewater flow study that they are required to do
362 every 5 years to estimate how much wastewater is coming from the Service Authority system
363 versus the City's system and allocate costs.

364
365 Mr. Mawyer stated that there is a project currently out to bid in Crozet for a wastewater flow
366 equalization tank, which will take excess wastewater out of the piping and hold it in a tank until
367 flow recedes. He stated that this typically could occur after a large rainstorm, and when rainwater

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

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

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

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

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

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

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

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

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

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

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

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

413

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

416
417 Dr. Palmer stated that she wanted to bring up that one thing RWSA does is operate the small
418 treatment facility in Red Hill as the result of a bad gasoline spill from long ago. She stated that
419 she likes to make sure RWSA gets credit for running that facility.

420
421 Mr. Mawyer stated that this was a switch they made with the Service Authority and Mr.
422 O'Connell a year or so ago. He stated that it seemed more logical for RWSA to manage that
423 treatment plant than the Service Authority. He stated that while ACSA still manages the
424 customers and distribution lines, RWSA manages the treatment plant. He stated that RWSA has
425 an operator that visits that plant every day, 7 days a week. He stated that it does take some effort,
426 even for a small plant that has 10 connections, plus Red Hill School. He thanked Dr. Palmer for
427 recognizing the effort required to manage the Red Hill plant.

428
429 Mr. Gaffney opened the public hearing on the preliminary rate schedule. Hearing no comments,
430 he closed the public hearing.

431
432 **Dr. Palmer moved the board approve the rate schedule, CIP, and operating budget for FY**
433 **20-21. She was seconded by Mr. O'Connell, and the motion carried unanimously (6-0).**
434 **(Ms. Hildebrand was absent.)**

435
436 Mr. O'Connell thanked Mr. Mawyer and Mr. Wood for all their work in quickly changing the
437 budget where they have presented a wholesale rate of no increase to their customers. He stated
438 that this was a quick turnaround during COVID-19 and he appreciated the work.

439
440 Mr. Richardson echoed Mr. O'Connell's comments. He stated that this involved a significant
441 amount of additional work for staff during a very unsettling time, while at the same time, being
442 expected to maintain day-to-day operations. He stated that RWSA has several people in the field
443 every day who are in the community and being exposed. He thanked staff for continuing to
444 operate. He stated that they have made it look easy, even though it is extremely hard.

445
446 *b. Presentation: Urban Water Supply and Demand Report: Bill Mawyer, Executive Director*

447
448 Mr. Mawyer stated that this is the Water Supply and Demand Report that the Ragged Mountain
449 agreement requires RWSA to do every 10 years. He stated that he would provide some history
450 and background of how they got where they are, then talk about water supply analysis, water
451 demand analysis, bring the two together into a supply-versus-demand analysis, then talk about
452 some options to increase water supply.

453
454 Mr. Mawyer stated that the Urban Water Supply System is based on Sugar Hollow Reservoir,
455 Rivanna Reservoir, and Ragged Mountain Reservoir, totaling 2.6 billion gallons. He stated that
456 water flows from Sugar Hollow Reservoir through the Moormans River, to South Rivanna
457 Reservoir, which is the water they use at the South Rivanna Water Treatment Plant (the largest
458 water treatment plant to serve the urban area).

459
460 Mr. Mawyer stated that water from Sugar Hollow also supplies the Ragged Mountain Reservoir.

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

465
466 Mr. Mawyer stated that there is also the North Fork Rivanna River . He stated that they take
467 water out of that river and treat it at the North Fork Water Treatment Plant.

468
469 Mr. Mawyer stated that collectively, these three plants serve the urban water system.

470
471 Mr. Mawyer indicated to a pink area on a map, explaining that it represents what they call the
472 Urban Area. He stated that the Urban Area is defined in the four-party agreement. He stated that
473 there are the three water treatment plants (North Rivanna, South Rivanna, and Observatory).

474
475 Mr. Mawyer stated that within those three water treatment plants, there is a treatment capacity of
476 21 million gallons per day. He stated that South Rivanna and Observatory are currently under
477 renovation, which will increase the treatment capacity at Observatory from 7.7 to 10 million
478 gallons per day.

479
480 Mr. Mawyer stated that the Virginia Administrative Code requires RWSA to do water supply
481 planning, ensure they have adequate and safe drinking water available, and promote
482 conservation. He stated that this came into focus around 2000 to 2001, when there was a major
483 drought in Central Virginia. He stated that it took 10 years, but the community got together and
484 crafted a Community Water Supply Plan, which required RWSA to construct a new dam at the
485 Ragged Mountain Reservoir. He stated that this was an existing reservoir and had two existing
486 dams. He stated that they demolished the two dams and built a larger one, which was completed
487 in 2014.

488
489 Mr. Mawyer stated that the other part of the project was to build a new waterline from the
490 Rivanna Reservoir over to Ragged Mountain so that they could fill Ragged Mountain at its new
491 capacity. He stated that this is currently planned for final design and construction between 2027
492 and 2040.

493
494 Mr. Mawyer stated that next, they will renovate the two water treatment plants and replace the
495 piping between Ragged Mountain Reservoir and Observatory Water Treatment Plant. He stated
496 that much of this was on the map he just presented to the board about the easements.

497
498 Mr. Mawyer stated further, that the Ragged Mountain Dam project agreement that was put
499 together in 2012 defined who will pay for all the construction, between the City and the Service
500 Authority. He stated that there is a component to raise the Ragged Mountain Reservoir water
501 level 12 feet when the community demand equals 85% of the water supply. He stated at that
502 point, either the Service Authority or the City can require RWSA to raise the water in the
503 reservoir.

504
505 Mr. Mawyer stated that RWSA had to get two environmental permits, one of which was from the
506 Army Corps of Engineers, which is a 10-year permit that expired in 2018. He stated that the

507 Corps of Engineers gave RWSA a one-time 5-year renewal to 2023. He stated that the project
508 also required a permit from the Virginia Department of Environmental Quality, which was a 15-
509 year permit that expires in 2023. He stated that RWSA must submit a new application, called a
510 joint permit application, to both agencies by May of 2022. He stated that the board approved an
511 engineering contract last month to get started on preparation of the joint permit application.
512

513 Mr. Mawyer presented a map about Community Water Supply projects. He stated that the
514 Ragged Mountain Dam has been completed. He stated that the South Rivanna Water Treatment
515 Plant is under construction and renovation now. He stated that the Observatory Water Treatment
516 Plant renovation is contracted and will start next year, to be completed by 2023. He stated that
517 the Raw Waterline (Project #4) between Ragged Mountain and the Observatory Water Treatment
518 Plant is programmed to be completed by 2027. He stated that there is the Central Waterline,
519 which is a new finished waterline between Observatory Treatment Plant and the City and urban
520 area to help strengthen the spine of the distribution system, and is to be completed by 2027.
521

522 Mr. Mawyer stated that Project #6 is the Raw Waterline from Rivanna to Ragged Mountain. He
523 stated that at some point, they would raise the water level 12 feet for 700 million gallons in the
524 Ragged Mountain Reservoir.
525

526 Mr. Mawyer stated that the first part of the project was to complete a water supply analysis,
527 which starts with figuring out how much water there is in the three reservoirs that serve the urban
528 area: Ragged Mountain, Sugar Hollow, and South Rivanna, totaling 2.6 billion gallons. He stated
529 that they did a measurement called a bathometric survey in 2018 of Ragged Mountain and South
530 Rivanna. He stated that they completed a survey at Sugar Hollow in 2015.
531

532 Mr. Mawyer presented a graph that is representative of the South Rivanna Reservoir. He stated
533 that when talking about supply, some of the concern relates to how much of the total usable
534 water sedimentation taking away from them. He stated that the graph shows that the South
535 Rivanna Reservoir was built in 1966 at a capacity of about 1.7 billion gallons, but that by 2001-
536 2002, the capacity had decreased to about 1.2 billion gallons. He stated that thus, it lost about
537 500 million gallons in those 36 years. He stated that this is the issue to monitor when talking
538 about water supply.
539

540 Mr. Mawyer stated further, that around 2002, RWSA began differentiating between total water in
541 a reservoir versus usable water. He stated that because of the topography of the bottom of the
542 reservoir, as well as the limitations of the intake piping, they cannot pull every gallon out of a
543 reservoir. He stated that this is where one sees a difference between total storage and the useable
544 storage on the graph.
545

546 Mr. Mawyer stated that in effect, in 1966, there were 1.7 billion gallons and by 2002, they
547 realized they had just over 800 million gallons. He stated that they completed the bathometric
548 survey in 2018, and it shows a flat line, meaning not much storage volume changed between
549 2009 and 2018 and that they only lost 2 million gallons of capacity in South Rivanna. He stated
550 that this is one of the metrics RWSA is using now related to supply.
551

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

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

558
559 Mr. Mawyer stated that the consultant put all this data together and calculated what water is
560 available for the next 50 years. He stated that they calculate what is called “safe yield” from the
561 reservoirs. He stated that with the update, the consultant calculated the safe yield to be around
562 18.6 million gallons per day (MGD). He stated that this safe yield is how much water is available
563 during the worst drought of record from the reservoirs.

564
565 Mr. Mawyer stated that the consultant reviewed water supply with RWSA, and they talked about
566 how the issue is not safe yield, but what they call “operational yield” for the urban water system.
567 He stated that when looking at the reservoirs, treatment capacity, and piping distribution
568 capacity, the operational yield is how much water RWSA can get to the City and Service
569 Authority customers on a given day, consistently, during a drought of record. He stated that they
570 calculate this to be 12.8 MGD.

571
572 Mr. Mawyer stated that they did not want the community thinking there is plenty of water (18
573 MGD) and if there is a drought, they are in good shape. He stated that they are in good shape, but
574 it is more like 12.8 MGD they can dependably deliver, not 18.6 MGD.

575
576 Mr. Mawyer stated that he has spoken before about the “three-legged stool,” which is a simple
577 analogy. He stated that the calculated operational yield is synonymous with available water
578 supply, or how much water the customers can have at their faucets. He stated that to have
579 available water, they must have the supply in the reservoirs, treatment capacity at the plants, and
580 distribution capacity in piping to be able to deliver the drinking water.

581
582 Mr. Mawyer stated that RWSA has forecasted what they will have for the next 50 years as the
583 available water supply. He stated that in 2020, they have 12.8 MGD. He stated that as soon as the
584 two urban water treatment plants (South Rivanna and Observatory) are upgraded (around 2023),
585 that capacity will increase to about 15.1 MGD that RWSA feels they can deliver to the urban
586 water system, dependably, during a drought of record, without exhausting the water supply. He
587 stated that what they then see for the next 47 years is a decline in the capacity of the water
588 supply. He stated that this is due to sedimentation of the reservoirs (primarily, South Rivanna
589 Reservoir).

590
591 Mr. Mawyer stated that the graph previously shown demonstrated that they averaged about 14-15
592 million of gallons per year that are lost due to sedimentation in the reservoirs. He stated that they
593 think that, when they had the significant rain in 2018 and 7 feet of water was going across the
594 South Rivanna Dam, this helped to scour out a lot of sediment and improved the capacity.

595
596 Mr. Mawyer presented a graph showing what RWSA forecasts to be the available water supply
597 for the next 50 years, until 2070.

598

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

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

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

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

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

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

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

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

644

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

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

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

658
659 Mr. Mawyer replied yes.

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

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

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

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

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

690

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

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

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

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

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

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

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

737 an impact on how much water the community needs.

738

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

747

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

754

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

760

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

766

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

770

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

774

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

777

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

783

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

785

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

788

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

792

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

795

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

797

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

799

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

806

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

812

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

817

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

824

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

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

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

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

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

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

852
853 Mr. Mawyer replied yes.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

921 available water supply would go until 2120.

922

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

927

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

932

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

937

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

941

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

946

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

949

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

958

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

966

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

974
975 Dr. Palmer stated that when they were discussing this several years ago, they talked a lot about
976 climate change, and the predictions and models indicated at that point that they would probably
977 have a similar total amount of rain from year to year, on average, but that it would be more
978 intermittent, heavier rains and longer droughts. She recalled Mr. Mawyer's mention of how
979 muddy the South Fork Rivanna gets with heavy rains and how that will decrease the operational
980 costs if they do not have to use that.

981
982 Dr. Palmer stated that the pump storage situation, with one large reservoir with little drainage
983 area, would protect it from these very heavy rains and protect them with the pump storage ability
984 during long periods of drought. She asked if Mr. Mawyer is going to meetings and keeping track
985 of the modeling as it goes forward for this area for climate change, if this was still the thought
986 with the models, that they will continue to have a similar amount of rain year to year on average,
987 but that it will be expected to be more intermittent rather than as it had been in the past.

988
989 Mr. Mawyer replied that the consultant looked back 100 years at the weather patterns. He stated
990 that they do look forward to a certain degree, along with the climate issues that are prevalent
991 now. He stated that he could not articulate exactly how much they contributed in the data
992 analysis with that issue, but he believed that they did consider the climate issue in the report. He
993 stated that they will have to ask the consultant more specifically about how they integrated that
994 thinking into the data.

995
996 Dr. Palmer stated that she certainly very much appreciates the ACSA Board and staff being on
997 the more aggressive side with Schedule B, and she hoped they could stick to that as much as
998 possible, going forward. She stated that she thinks this is the most prudent and reasonable thing
999 to do.

1000
1001 Dr. Palmer stated that in the materials, it says RWSA expects it would take about 8 years to put
1002 in the pipe. She asked if this was from start of design to finish.

1003
1004 Mr. Mawyer replied yes. He stated that they would say 6-8 years, but that this is from start of
1005 design to finish construction. He stated that they are doing preliminary design now, acquiring
1006 easements, and have built the Birdwood section. He stated that they are leaning more towards the
1007 6 years than 8 years, but that 8 years was the timeline they started with.

1008
1009 Mr. O'Connell asked if the report talks about how all this fits in with the permit process. He
1010 stated that his understanding is that they are starting the renewal for the permit. He asked if this
1011 is a 15-year permit that takes them to 2038, it would mean that the timing to stay within that
1012 permit would be critical as well.

1013

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

1019

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

1025

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

1027

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

1032

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

1035

1036 Mr. Mawyer replied this was right.

1037

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

1041

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

1044

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

1053

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

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

1060

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

1064

1065 Mr. Mawyer replied no.

1066

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

1070

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

1074

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

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

1077

1078 ***11. CLOSED MEETING***

1079 There was no closed meeting.

1080

1081 ***12. ADJOURNMENT***

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

1085

1086 Respectfully submitted,

1087


1088

1089

1090

1091

1092



Jeff Richardson
Secretary - Treasurer