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4 **RWSA BOARD OF DIRECTORS**
5 **Minutes of Regular Meeting**
6 **May 22, 2018**
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9 A regular meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was held on
10 Tuesday, May 22, 2018 at 2:15 p.m. in the 2nd floor conference room, Administration Building, 695
11 Moores Creek Lane, Charlottesville, Virginia.

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13 **Board Members Present:** Mr. Mike Gaffney, Chair; Ms. Kathy Galvin; Ms. Lauren Hildebrand; Mr.
14 Gary O'Connell; Mr. Maurice Jones; and Mr. Jeff Richardson.

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16 **Board Members Absent:** Dr. Liz Palmer.

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18 **Staff Present:** Mr. Mark Brownlee, Mr. Matt Bussell, Ms. Victoria Fort, Mr. Tom Freeman, Mr. Bill
19 Mawyer, Ms. Katie McIlwee, Mr. Philip McKalips, Ms. Betsy Nemeth, Mr. Scott Schiller, Ms.
20 Michelle Simpson, Ms. Andrea Terry, Mr. David Tungate, Ms. Jennifer Whitaker, Mr. Lonnie Wood,
21 and Ms. Devon Yi (intern).

22
23 **Also Present:** Mr. Kurt Krueger, RWSA counsel, and members of the public.

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25 **1. CALL TO ORDER**

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27 Mr. Gaffney called the regular meeting of the Board of Directors of the Rivanna Water and Sewer
28 Authority at 2:19 p.m.

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

31 *a. Minutes of Regular Board Meeting on April 24, 2018*

32
33 **Mr. O'Connell moved to approve the minutes of April 24, 2018. Ms. Galvin seconded the motion,**
34 **which passed unanimously (5-0-1). Dr. Palmer was absent from the meeting and the vote. Mr.**
35 **Jones abstained, as he was not present at the April 24, 2018 meeting.**

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37 **3. RECOGNITION**

38 There were no recognitions presented.

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

41
42 Mr. Mawyer introduced Devon Yi, a new intern with Rivanna who is working in the IT group.

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He announced that several Rivanna staff members had increased their waterworks operating licenses, meaning they earned a higher class operating license, represented by a decreased number assigned to the class. He stated that in water, Ted Spangler went from a Class III to a Class II, and Chris Wagel went from a Class IV to a Class III; in wastewater, Steve Minnis went from a Class III to a Class II, Duane Houchens went from a trainee to a Class IV, and Matt Bussell became a Class I operator and was promoted by Rivanna to Water Department Manager.

Mr. Mawyer reported that all reservoirs were full as of May 17, although Central Virginia was still in a drought watch – with the only remaining area of concern being groundwater.

Mr. Mawyer reported that the consultant had begun field work earlier in the week on the South Rivanna to Ragged Mountain waterline alignment and would begin going onto properties on May 23, as well as investigating where the pipeline could go. He stated that Rivanna would hold a community meeting on June 19 at 5:30 p.m. at Albemarle High School, inviting all affected residents as well as others who were interested in coming. Mr. Mawyer noted they would have an informational meeting and provide feedback about the project.

Mr. Mawyer stated that they were moving forward with the Crozet drinking water infrastructure project and were scheduled to have a meeting with the Crozet Community Advisory Committee on June 20 at 7 p.m. at the Crozet Library to provide updates on the status of the water treatment plant renovations and pumping station construction. He noted that Rivanna had an interim meeting with the City of Charlottesville and Albemarle County Service Authority on June 4 to discuss the Avon to Pantops waterline, and they had already been doing some modeling to assess where the pipe might go.

Mr. Mawyer reported that Rivanna had held three celebrations of the granular activated carbon (GAC) systems over the last two weeks, and he expressed appreciation for those who had attended. He stated that at South Rivanna, five of the eight vessels were in full service, and the remaining three should come online within the next few weeks. Mr. Mawyer noted that both vessels in Crozet were 100% in operation, both of the two vessels at Scottsville were 100% in operation; and at North Rivanna, one vessel was in operation and they were processing about 85% of the water with GAC – but they were working to improve the rate to 100%.

He stated that Observatory Water Treatment Plant was the only challenge, explaining that the GAC material was delivered in a large tractor-trailer and the drivers have indicated that they have trouble negotiating the roads on Observatory Mountain to access the site. Mr. Mawyer noted that Mr. Tungate would be meeting with them on May 23 to address the issue and determine how the GAC can be delivered so the vessels can be filled.

Ms. Galvin noted that at the GAC celebration in Crozet, they had talked about the idea of filming Observatory before any changes were made so they could establish an historic reference.

Mr. Mawyer confirmed that they intended to do this and were working on it.

He reported that Rivanna would hold the odor control celebration on May 23 at Riverview Park to celebrate completion of the odor control project, and that would include a cookout and picnic at noon.

90 **5. ITEMS FROM THE PUBLIC**

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92 Mr. Gaffney opened the floor to items from the public.

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94 There were none offered, and he closed this portion of the agenda.

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96 **6. RESPONSES TO PUBLIC COMMENTS**

97
98 Mr. Mawyer stated that he had a response to public comments from April and noted that a member of
99 the public had suggested that Rivanna remove the South Rivanna Dam and resume river flow. He
100 explained that while Rivanna had not studied that in depth, they felt there would be value in reducing
101 algae by moving from a reservoir to a river, but the loss of capacity that would result from removing
102 the dam would be significant, and on the heels of raising the dam at Ragged Mountain Reservoir – it
103 would not seem logical to eliminate the dam at Rivanna. He added that dam removal would be a
104 significant expense, as would the environmental mitigation of the silt behind the dam, and it was
105 unclear what environmental and regulatory requirements would emerge. Mr. Mawyer noted that staff
106 discussed this as a cursory review and determined that the larger cost and loss of capacity involved
107 with removal seemed to far outweigh any environmental benefits.

108
109 Mr. Gaffney commented that an incredible amount of wetlands had been created at the reservoir, and
110 draining that would kill those wetlands.

111
112 Mr. Mawyer noted that another point made at a previous meeting was a possible conflict of interest
113 with board members regarding owning property around the Rivanna Reservoir, but as far as the
114 Authority knows, no board member owns property there – although Mr. Gaffney had previously owned
115 property, but sold it in 2012. He stated that Rivanna was not aware of any conflict of interest with
116 board members regarding policy around the reservoir.

117
118 Mr. Gaffney stated that he had just built a new home, and in their neighborhood there was a
119 community lot that was located on the reservoir.

120
121 Mr. Krueger commented that this was sufficient disclosure under the conflict of interest act, and it
122 would be noted in the record.

123
124
125 **7. CONSENT AGENDA**

126
127 *a. Staff Report on Finance*

128 *1. Presentation of Wastewater Budget: Lonnie Wood, Director of Finance and Administration*

129 Mr. Mawyer stated that there had been a question in April regarding the wastewater budget meeting
130 the deficit, and Mr. Wood would give a short presentation on that topic.

131
132 Mr. Wood reported that the wastewater versus actual budget shows that urban wastewater currently
133 had a \$920K deficit, and he referenced to page 3 of a document provided that listed the primary causes
134 of the deficit – with one being revenue-related and one being expense-related. He stated that 70% of
135 the deficit was related to either a shortfall in flow of 9% below budget estimates, which was causing

136 approximately \$500K of the deficit. He noted that the other cause was a metering error at the
137 beginning of the year, and the odor control project had needed completion of some work done on the
138 meters coming into the pump stations. Mr. Wood explained that one meter was a recycle meter
139 whereby water coming back into the pump station needed to be backed out of the estimate because it
140 was not true inflow. He stated that this meant that there was overreporting, which meant the billed
141 amount was underreported, representing about \$100K of revenue that equated to a shortfall.

142
143 Mr. Wood noted that the other three items were expense-related items, with utility bills being higher
144 that previous years – although the budget had been underbudgeted compared to three-year trends. He
145 cited upgrades in the ENR System, the new pump station, and the new odor control process as
146 requiring more energy and raising energy costs, which were about \$45K above budget estimates. Mr.
147 Wood also noted that the new pump station may have put on the wrong electrical rate schedule with
148 Dominion Power when it came online, and Rivanna was checking into that to ensure it was placed on
149 the correct rate schedule, which was estimated to save approximately \$20K-\$30K annually if they
150 could work with Dominion to get it on the right schedule.

151
152 Mr. Wood reported that regarding odor control on the Crozet interceptor, they had re-competed the
153 contract the previous year and the new vendor provided a bioxide product to eliminate odors.

154
155 Mr. O'Connell remarked that it seemed to be working, although it was expensive.

156
157 Mr. Wood agreed, stating they were all working to maximize the effect but minimize the cost. He
158 stated that they had also done several streambank restorations, with one behind Dunlora and another at
159 5th Street Extended where they were trying to protect a sewer interceptor being threatened by erosion
160 from the adjacent streams.

161
162 Mr. Wood noted that he also included in the board packets a memo done in September or October
163 2017 showing the disposition of the year-end results, which were divided among the six rate centers
164 when the budget was done to keep that separated properly. He stated that the first few years, there were
165 surpluses, and those went into a reserve account in anticipation of a deficit year, due primarily to low
166 flow. Mr. Wood noted that having a surplus on hand meant they would not need to increase rates to
167 make up for the revenue loss.

168
169 Mr. Gaffney asked if they could make up the flow from the previous week's rainfall.

170
171 Mr. Wood responded that they would make up some of it but not a lot, noting that the previous
172 weekend there had been about 50 million gallons on one day, with 9 MGD being the normal average,
173 although it was now subsiding.

174
175 *b. Staff Report on Ongoing Projects*

176
177 *c. Staff Report on Operations*

178
179 *d. Recommendation for Approval of Engineering Services for Crozet Flow Equalization Tank and*
180 *Pumping Station Upgrade, Schnabel Engineering*

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182 *e. Recommendation for Approval of Engineering Services for Asset Management Plan, GHD, Inc.*

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f. Recommendation for Approval of Construction Contract Modification for MCAWRRF Digester #2 and #3 Coatings, Lytle Utilities, Inc.

g. Recommendation for Approval of Work Authorization for Water Treatment Plant Engineering Services, Cornwell Engineering Group

Mr. Jones moved to approve the Consent Agenda as presented. Mr. O’Connell seconded the motion, which passed unanimously (6-0). Dr. Palmer was absent from the meeting and the vote.

8. OTHER BUSINESS

a. Proposed Fiscal Year 2018-2019 Budget Review, Public Hearing and Rate Resolution Adoption: Bill Mawyer, Executive Director

Mr. Mawyer reported that this was reviewed in more detail in March but he wanted to provide a review of the RWSA budget for the coming year. He stated that the total budget was \$33.277 million, with the largest component being debt service at \$15.7 million, or 47%, which paid for capital projects. Mr. Mawyer noted that personnel costs were the second highest category at 25%, followed by the operations and maintenance budget at 16%, including chemicals and items of that nature. He noted that the general services category helped to pay for utilities, insurance, permits, and professional services and represented 12% of the budget. Mr. Mawyer stated that the budget represented a 7.3% increase from the previous year, or \$2.3 million, of which \$1 million was designated for operating expenses and \$1.3 million was for debt service expenses. He noted that total charges to the City of Charlottesville would be an estimated \$14.3 million, an increase of \$680K or 5% from the current year’s budget; Albemarle County Service Authority charges were about \$16.9 million, an increase of \$1.6 million or 10%.

Mr. Mawyer stated that on the operating side, there was a 1% overall budget increase, with a 3% merit pool and three new positions – a water operator, instrumentation specialist, and software analyst. Mr. Mawyer stated that they project a health insurance increase of approximately 10%, which is \$97K, and there are two bathymetric studies planned to measure the volume at the Ragged Mountain and South Rivanna reservoirs over the next year, at a cost of \$175K. He noted they would match this with a safe demand study and would be looking at a new curve of where demand crossed safe yield. Mr. Mawyer stated that there was also a new Rivanna sewer pump station that required utilities and maintenance funding, and they would continue the chemical additions on the Crozet interceptor line at the current level for the next year. He noted that there was also funding requested for a technology master plan, working within their asset management program, as well as funding for implementation of the strategic plan.

Mr. Mawyer reported that the three positions requested include a software analyst to be located within finance and administration, a water operator to be located within operations, and an instrumentation specialist to be located within engineering and maintenance. He stated that the other portion of the \$2.3-million increase in the total budget supported the Rivanna Pump Station, odor control, and other projects moving forward – upgrades to Observatory, Rivanna treatment plants, the Crozet treatment plant, the Avon to Pantops waterline, and the Ragged Mountain to Observatory pipe and pump station replacement project. He added that other projects at Crozet were the water treatment plant upgrade, and

230 the Beaver Creek Dam modifications. Mr. Mawyer stated that the operating expenses represented
231 \$17.5 million, with debt service at \$15.7 million, and about \$16 million was spent on water, in
232 comparison to \$17 million for wastewater.

233

234 Mr. Mawyer reported that the water rate proposed for the urban area would increase 10 cents per 1,000
235 gallons and increased from \$1.96 per thousand to \$2.07 per thousand gallons, or 1 cent per 100 gallons
236 – including reservoir expenses, supply and treatment, and delivery to the City and the ACSA at
237 established connection points. He noted that wastewater rates were proposed at a 19-cent increase,
238 going from \$1.95 to \$2.14 per thousand gallons. Mr. Mawyer explained that debt service charges were
239 allocated separately from the rates as per-month charges for the City and ACSA for both water and
240 wastewater.

241

242 Mr. Mawyer presented the rate resolution as approved by the RWSA Board in March and advertised in
243 newspapers twice, noting that it restated the water rates per 1,000 gallons for the urban area, Crozet
244 and Scottsville; the wastewater rates for the urban area, Glenmore, and Scottsville.

245

246 Mr. Gaffney opened the public hearing for the proposed budget.

247

248 There being no speakers, he closed the public hearing.

249

250 **Mr. O'Connell moved to approve the budget as presented. Ms. Galvin seconded the motion,**
251 **which passed unanimously (6-0). Dr. Palmer was absent from the meeting and the vote.**

252

253 Mr. O'Connell asked Mr. Mawyer to address the debt profile that had been shown in their board
254 packets, as he had been asked about it several times and wanted to be sure he understood it.

255

256 Mr. Mawyer explained that the current debt payments were approximately \$12 million per year, but
257 with adoption of the FY19-23 capital improvements program (CIP), the debt payments in 2019 would
258 increase to approximately \$15.7 million. He stated that each year of the five-year CIP reflected a debt
259 service increase to fund the \$152-million CIP planned for that time period. Mr. Mawyer noted that Mr.
260 Wood was currently planning a new bond issue in the coming year to start borrowing the money to
261 fund these projects included in the CIP, and that peaked in FY23 at the \$19-million level. He noted that
262 they were trying to level the payments at \$15.7 million, and the graph illustrated projection of debt
263 capacity below the \$15.7 million per year around 2031 or 2032, which was how they developed
264 Alternative A (initially alternative b; 2027-2035) for the Rivanna to Ragged Mountain pipeline project.
265 Mr. Mawyer noted that they anticipated having additional debt capacity around that timeframe but
266 would maintain the same annual debt payments.

267

268 Mr. O'Connell asked if this contemplated 10 years' worth of capital projects.

269

270 Mr. Mawyer and Mr. Wood responded that it was five years.

271

272 Mr. O'Connell noted that any projects in the intervening timeframe could push that up.

273

274 Mr. Wood confirmed that they would push it up.

275

276 Mr. Mawyer concurred, noting that they usually borrow money for those projects.

277
278 Mr. O'Connell noted they would still experience a big drop off in future borrowing capacity.

279
280 Mr. Gaffney pointed out that there would be increased revenue every year due to increasing rates.

281
282 *b. Presentation of Beaver Creek Dam Modification Alternatives: Jennifer Whitaker, Director of*
283 *Engineering and Maintenance*

284
285 Ms. Whitaker reported that Rivanna had completed most of the work on this project and would be
286 presenting to the Crozet Community Advisory Committee in June. Ms. Whitaker reported that the dam
287 was built in 1963 and was located in Beaver Creek Park. She explained that the dam had been
288 operating completely in compliance with existing dam safety regulations, but in 2008 the state changed
289 those regulations to take Virginia regulations up to a federally recognized standard. Ms. Whitaker
290 commented that this was a good thing from a public safety perspective, but it meant that dams
291 throughout the state had to spend money for upgrading.

292
293 Ms. Whitaker stated that the regulations made some additional changes between 2008 and 2016 due to
294 political pressures, but the Department of Conservation and Recreation issued its final dam regulations
295 in 2016 concerning what dams needed to be upgraded. She noted that DCR had done a study to project
296 maximum theoretical rainfall, and it decreased from almost 36 inches of rain in 24 hours down to 32
297 inches, which was still a lot of rain. Ms. Whitaker noted that this meant that some of the work
298 previously presented to the RWSA Board had to be modified into a slightly smaller project going
299 forward.

300
301 Ms. Whitaker stated that Rivanna had to upgrade the Beaver Creek Dam to go from a 50% probable
302 maximum precipitation (18 inches of rain in 24 hours) to a 100% probable maximum precipitation (32
303 inches of rain in 24 hours), which could be addressed through several alternatives. She presented an
304 overhead photograph of the Beaver Creek reservoir, with the existing intake structure jutting out into
305 the reservoir and a catwalk that served as a popular fishing spot. She noted that the dam itself was
306 visible on either side as you traveled over Brown's Gap Turnpike, and the area was currently grassed
307 with a pump house at the toe of the dam. Ms. Whitaker stated that the part of the dam people typically
308 consider the park is actually the emergency auxiliary spillway. She provided a photograph and
309 referenced the items mentioned, including the catwalk, intake, and emergency spillway. Ms. Whitaker
310 noted that there was a potential for impacts to the park area as they made improvements.

311
312 Mr. O'Connell pointed out that there was no hard surface there.

313
314 Ms. Whitaker confirmed this, stating that it was all earth and you did not want water to go over the
315 earth portion of the dam, but the emergency spillway was cut down with the idea of providing
316 preferential flow path to a tremendous storm event so it bypassed the main dam.

317
318 Ms. Whitaker reported that she would discuss several ways to solve the issue of passing additional
319 water past, around, and over the dam. She stated that one item considered was a labyrinth spillway, and
320 she explained that a longer surface was needed to pass water over the dam. Ms. Whitaker noted that
321 they were constrained in this particular environment because of the topography, but a labyrinth
322 spillway allowed for water movement in a confined space. She stated that a second option was roller-
323 compacted concrete, which would be applied similarly to asphalt. She presented a picture of a dam in

324 North Carolina with a center roller-compacted step spillway, which would have a set of stairs on the
325 backside of the dam. Ms. Whitaker stated that the third option would be a parapet wall, which
326 essentially raised the water level so it didn't overtop the dam, even in the most extreme events. She
327 noted that parapet walls ranged from one to five feet, and prior to the new storm analysis, they were
328 looking at potentially an eight-foot-tall parapet wall. Ms. Whitaker noted that this impacted the
329 visibility and enjoyment of the park environment.

330
331 Ms. Whitaker presented the financial implications of the options, with one alternative having a two-
332 prong approach as a combination of labyrinth spillways in the grass spillway area and some in the dam,
333 with a combination of parapet walls and RCC. She stated that the CIP estimate was based on
334 Alternative 3, which was basically going into the spillway space and putting RCC concrete in the
335 downstream portion. She emphasized that this would have a fairly significant impact on the useable
336 space of the park, and now that the cost impacts were known, they could provide information leading
337 to a decision that best fit community priorities.

338
339 Mr. O'Connell asked if the estimated total CIP included other projects like the pump station.

340
341 Ms. Whitaker confirmed that it did, noting that it included the new raw water pump station, the
342 hypolimnetic aeration system, and the dam reconstruction. She stated that in some cases where a
343 labyrinth spillway was included, a bridge was also included – so the shorter the spillway, the shorter
344 the bridge that had to go over it. She noted that she had highlighted on a graphic presented the
345 alternatives through the spillway and the options going through the main body of the dam, leaving the
346 earth spillway as a park recreational space.

347
348 Ms. Whitaker reported that the reservoir was depicted on the bottom of the picture provided, with the
349 dam at the center and downstream at the top of the picture. She stated that there was a labyrinth
350 spillway with concrete at the backside of it, going over the auxiliary spillway, so this took about 75%
351 of the useable park space. She stated that Alternative 1B was basically the same thing but in a narrower
352 footprint and with a much taller parapet wall than the one-foot wall reflected in Alternative 1A. She
353 noted that this option impacted the emergency spillway. Ms. Whitaker explained that Alternative 2 was
354 RCC overtopping, so the picture shown reflected concrete in the center of the dam and steps on the
355 downstream, which preserve the recreational space and the lakeside aesthetics. She noted that there
356 would be a concrete face on the downstream side.

357
358 Ms. Whitaker reported that Alternative 3 put RCC overtopping down into the spillway with a much
359 wider footprint and a five-foot parapet wall, as well as a concrete step spillway – with significant
360 impacts to the park space. She presented Alternative 4, which she noted staff added after deciding that
361 a new raw water pump station would need to be built. Ms. Whitaker stated that originally, the raw
362 water pump station was going to stay put, which prevented them from being able to look at this
363 alternative. She noted that with the more recent information about the raw water pump station, they
364 decided to go back and consider this alternative. She explained that this was a labyrinth spillway going
365 through the center of the dam, allowing a narrower footprint and requiring a bridge to carry Brown's
366 Gap over the spillway and preserving all recreational space. Ms. Whitaker noted that this had a two-
367 foot parapet wall, and Rivanna staff had discussed reducing the height in further design down to a foot
368 or even possibly eliminating it.

369

370 Ms. Whitaker reiterated that there was currently \$14.9 million in the CIP for Beaver Creek Dam
371 alterations, including the dam upgrade itself, the new raw water pump station and intake, and the
372 hypolimnetic aeration system. She noted that based on the most recent cost estimates that came with
373 the alternatives analysis, the total project budget would increase from \$17.2 to \$23.1 million,
374 depending on which alternative was selected. Ms. Whitaker mentioned that engineers were observing a
375 steep increase in dam construction costs – both material and labor costs – and during the economic
376 downturn, some of the competition moved out of the market.

377
378 Ms. Whitaker stated that the schedule was to work through with the RWSA Board and community
379 over the next six months to hone in on which alternative they would like to pursue, spending the next
380 year on final design, then pursuing all permits and easements. She noted they would enter construction
381 in 2021, with completion in 2023. Ms. Whitaker reported that immediate next steps included the
382 CCAC meeting on June 20, at which they would discuss project costs and implications, and would
383 have meetings with the County Parks and Recreation Department to get their input. She noted that the
384 dam was initially funded with a variety of funding mechanisms that included recreation, and the hope
385 was to have a preliminary engineering report to DCR by the end of summer or early fall to start
386 bringing the dam into compliance.

387
388 Mr. O'Connell asked if all the alternatives took the rowing house building into account.

389
390 Ms. Whitaker responded that they did, but there would be some temporary impacts during construction
391 because they would have to reroute traffic, which had several options. She noted the rowing on the
392 reservoir would not be impacted, but getting to the boathouse may have some impacts that needed to
393 be mitigated. Ms. Whitaker emphasized that the boathouse and waterfront use would be preserved.

394
395 Mr. O'Connell asked if this was the presentation to be taken to the community meeting.

396
397 Mr. Mawyer responded that it was. He encouraged board members to provide feedback on the
398 alternatives, stating that staff would come back to them with a report on what the CCAC meeting
399 generated. He stated that there were essentially two choices – to impact the park or not impact the park,
400 putting it in the middle of the dam.

401
402 Mr. O'Connell commented that not impacting the park would cost more money.

403
404 Ms. Whitaker confirmed this.

405
406 Mr. Gaffney asked why that was the case.

407
408 Mr. O'Connell noted that had stemmed from conversations he had been having with the County
409 Executive about projects.

410
411 Ms. Galvin asked if the idea was that it would be used for ballfields.

412
413 Mr. O'Connell responded that it was intended more for a picnic area, frisbee-throwing area, etc. – but
414 it had a slight slope to it. He confirmed that it was not a program space, other than rowing space, but it
415 was a big enough area for something like soccer and was a pretty space.

416

417 Mr. Gaffney noted that for South Fork and rowing, even though ACSA would absorb 100% of the
418 costs there, he wondered if ACSA and the county would work out the difference.

419
420 Mr. O'Connell replied that they had not yet had that discussion.

421
422 Mr. Krueger clarified that from Rivanna's perspective, this looked like a project that was allocated
423 either in part to the city or to the county – all to one or the other – so Rivanna did not have the ability
424 to obtain money directly from the County for it, but ACSA and the County could agree to how that
425 project was funded if there were recreational aspects to it.

426
427 Mr. O'Connell asked if staff's estimates also included road costs.

428
429 Ms. Whitaker responded that it did, stating that when Rivanna had talked to VDOT it was an
430 accommodation of the need versus a road project.

431
432 Mr. Krueger asked if there was a significant difference in the land over which they would need to have
433 easements or make purchases, as it seemed the existing property border was affected with all the
434 alternatives presented.

435
436 Ms. Whitaker confirmed that the property went further down the hill, and the key property issue still to
437 be resolved was the parapet wall, as there were different regulations as to whether flood easements
438 were required all the way to the top of the wall. She stated that they currently did not have flood
439 easements if the dam height were raised by parapet walls, and the state had mixed opinions as to
440 whether the easements were needed. Ms. Whitaker noted the question remained as to whether Rivanna
441 had to get easements from all the waterfront property owners.

442
443 Mr. Gaffney asked if it changed the floodplain.

444
445 Ms. Whitaker responded that it didn't change it on the 100-year floodplain analysis, but the issue was
446 if they had 32 inches of rain, which was well beyond that analysis, and this was merely preserving that
447 space so things didn't get built into it. She clarified that this was a 10,000 to 50,000-year storm event,
448 which was the current standard for dam construction – in part because of the potential significant loss
449 of life downstream. Ms. Whitaker pointed out that Hurricane Camille was a 98% predicted maximum
450 flood (PMF), and the 1995 storm at Sugar Hollow in Madison County was an 85% PMF.

451
452 Mr. Gaffney asked for clarification of dam lifespan.

453
454 Ms. Whitaker responded that the construction ideology was "forever," and they built things in a much
455 more bomb-proof fashion than otherwise, although there was some localized degradation or change in
456 standards such as that at Ragged Mountain. She emphasized that science had progressed, and she
457 would surmise a 75-year lifespan, with the need to make adjustments to certain components of it.

458
459 Mr. Gaffney commented that it was the regulations that became outdated.

460
461 Ms. Whitaker concurred pointed out that this dam had been constructed fully in compliance, but the
462 regulations stipulated that the dam would now need to withstand full storm amounts, not just half as
463 previously required.

464
465 **9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA**

466
467 There were no other items presented.

468
469 **10. CLOSED MEETING**

470
471 There was no closed meeting held.

472
473 **11. ADJOURNMENT**

474
475 **Mr. Jones moved to adjourn the meeting. Mr. Richardson seconded the motion, which passed**
476 **unanimously (6-0). Dr. Palmer was absent from the meeting and the vote.**

477
478 **The RWSA Board adjourned the meeting at 3:07 p.m.**

479
480 Respectfully submitted,

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486



Mr. Jeff Richardson
Secretary-Treasurer