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RWSA BOARD OF DIRECTORS Minutes of Regular Meeting April 23, 2019

A regular meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was held on Tuesday, April 23, 2019 at 2:15 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia.

Board Members Present: Lauren Hildebrand, Mike Gaffney, Mike Murphy, Jeff Richardson (left at 3:19 p.m.), Liz Palmer.

Board Members Absent: Kathy Galvin, Gary O'Connell.

Staff Present: Lonnie Wood, Jennifer Whitaker, Phil McKalips, David Rhoades, Steven Miller, Liz Coleman, Scott Schiller, Bill Morris, Victoria Fort, Dyon Vega, Austin Marrs, Andrea Terry, David Tungate, Michelle Simpson, Bill Mawyer, Katie McIlwee.

Also Present: Mr. Kurt Krueger, RWSA counsel, members of the public and media representatives.

1. CALL TO ORDER

Mr. Gaffney called the regular meeting of the Board of Directors of the Rivanna Water and Sewer Authority at 2:59 p.m.

2. MINUTES OF PREVIOUS BOARD MEETINGS

a. Minutes of Regular Board Meeting on March 26, 2019

Dr. Palmer moved that the Board approve the minutes of the meeting of March 26, 2019. The motion was seconded by Mr. Richardson and passed unanimously (5-0). Ms. Galvin and Mr. O'Connell were absent from the meeting and the vote.

3. RECOGNITION

a. Joint Resolution of Appreciation for Mike Murphy

The resolution of appreciation was adopted by the RSWA's action as follows:

WHEREAS, Mr. Murphy has served as a member of the Rivanna Water & Sewer Authority and Solid Waste Authority Boards of Directors since August of 2018; and

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

WHEREAS, Mr. Murphy's understanding of the water, sewer, solid waste and recycling operations of the City of Charlottesville, the Water & Sewer Authority and the Solid Waste Authority has supported a strategic decision-making process that provided benefits to the customers served by the City of Charlottesville as well as the community as a whole.

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

NOW, THEREFORE, BE IT RESOLVED that the Rivanna Water & Sewer Authority and the Rivanna Solid Waste Authority Boards of Directors recognize, thank, and commend Mr. Murphy for his distinguished service, efforts, and achievements as a member of the Rivanna Water & Sewer Authority and the Rivanna Solid Waste Authority, and present this Resolution as a token of esteem, with their best wishes in his future endeavors.

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

4. EXECUTIVE DIRECTOR'S REPORT

 Mr. Mawyer reported that they continued with safety training programs and were pleased that this was part of the strategic plan for workforce development. He stated that Tom Corrice had updated his wastewater license from Class IV to Class III, and they conducted an Earth Day event as part of their environmental stewardship. He stated the State was moving forward with Phase III of the watershed improvement plan to clean up the Chesapeake Bay and was not likely to achieve its goals within the allotted time period, with legislation proposed to reduce the nutrient output from wastewater plants to 4 mg for nitrogen and 0.3 mg for phosphorous. He stated the RWSA had been doing a good job in reducing nitrogen and believed that, with additional treatment, it can meet the goals.

Mr. Mawyer mentioned that they had discussed the new FOIA laws and requirements at the last VAWWA meeting, and they learned there could be penalties for individuals for not following FOIA rules, and for a board if it did not follow closed session requirements.

Mr. Murphy noted that City Attorney John Blair and Meghan Ryan of the Virginia Coalition on Open Government had recently conducted a FOIA training that was open to the public. He asked if there were Board members who didn't feel they knew enough about the FOIA obligation, the City could likely provide it to them.

Mr. Krueger responded that for the last 20 years, the City representatives on the Board have been given FOIA training by the City Attorney, and the County representatives on the Board by the County Attorney. He stated he worked with Mr. Mawyer, Mr. Wood, and Mike Gaffney, and he had not conducted repetitive training for the Board as everyone else already had the training.

Mr. Murphy stated that it continued to evolve and for boards that had a lot of citizens, it was an extremely important part of their orientation to service.

Mr. Krueger commented that it was also very important when they had a Citizens Advisory Council.

- Mr. Mawyer resumed his presentation with photos of the recent Earth Day cleanup event. He
 next reviewed the Birdwood waterline, noting that they have completed about 4,300 feet and
 were two-thirds completed and somewhat ahead of schedule. He stated they were working on
 erosion control issues with the County, UVA Foundation, and residents of the neighborhoods. He
 presented a picture with the route of the new waterline, pointing out the locations that had been
 completed.
- Mr. Mawyer stated they continued to work with the UVA Foundation, other businesses, and residents on the South Rivanna to Ragged Mountain waterline easements. He stated they had a surveyor in the field currently and were conducting appraisals, and they hoped to make offers in late May to private owners at Ingleridge Farm.
- Mr. Mawyer reported they were working with the University on the Observatory Water
 Treatment Plant leases, and had done community outreach in April with UVA, Western
 Albemarle High School, and Hollymead Elementary School. He stated he would make a budget
 presentation to the Albemarle County Service Authority in May and they were on the agenda for
 an upcoming meeting with the Crozet CAC in June. He stated they have issued a press release
 about the granular activated carbon project and would conduct an open house on May 9 at the
 South Rivanna Treatment Plant to demonstrate the system.
- Dr. Palmer noted that the state's draft of Phase III of the Watershed Implementation Plan was already up for public review and comment, and she asked if the legislation was supposed to come through next year and if the legislation had passed.
- Mr. Mawyer clarified that the closing date for comments was June 7 and stated they wanted the legislation as soon as possible to meet 2025 goals, and he did not think the legislation had passed yet. He stated he did not know if Phase III of the Watershed Implementation Plan could be made without the approval of the General Assembly, though he would find out.
- Mr. Krueger interjected that he thought this might be through the adoption of regulations to change the timetable and may not result in an actual bill.
- Mr. Gaffney commented that he had come across a chart of the Chesapeake Bay watershed, graded by locations with a lot of Fs and Ds but the James River watershed had a C+.
- Mr. Mawyer added that he had learned that the James River watershed was the only one to have met its goals thus far. He stated that he had asked why the requirements were changing since the James River watershed was meeting its goals, and he was told that this was because it was a statewide program and they wanted everyone to participate.
- Mr. Mawyer reported on the monthly wastewater allocations for nitrogen and phosphorous.
- Mr. Krueger commented that this was traditionally a battle that the dischargers into the James River had lost.
- Dr. Palmer stated she'd like to see other groups join.

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Mr. Mawyer stated the legislation exempts Lynchburg, Richmond, and Hopewell wastewater plants from the restrictions – so the equity challenge continued.

5. ITEMS FROM THE PUBLIC

Mr. Harry Wellons, owner of Danwell Farm, addressed the Board. He stated the farm was located on Buck Mountain Creek and he has come to address the 82 acres the RWSA took in the 1980s. He stated his understanding was that the RWSA intended to build a reservoir at Buck Mountain Creek, which had not happened as the land had been used to mitigate for expansion of the Ragged Mountain Reservoir, and he requested that he be allowed to reacquire some of this taken land. He distributed copies of an aerial photograph of the property and surrounding land, which he stated was originally 312 acres, with 82 acres taken out of the center. He stated there were also 38 acres of buffer zone that had all been fenced, with cattle having access to waterers in the fields so they did not get into any of the waterways. He pointed out the fence line and areas that have been used for mitigation, including plastic sleeves, the area of the house site, and fields they use for hay.

Dr. Wellons asked that he be permitted to buy back the land should it not be used by RWSA to reunite the property. He stated he was willing to abide by all the restrictions in place to keep cattle from the water and to be a good steward of the land. He noted that when he had the house constructed in 1979, he was not aware of plans to make use of Buck Mountain for a reservoir, and could have used other sites on the property to construct the house if he had known. He expressed concern that the take line ran along the western side of the fence around the yard and may eventually obstruct their view with future growth.

6. RESPONSES TO PUBLIC COMMENTS

 Mr. Gaffney stated that the Board would likely have a response for Dr. Wellons at their May meeting, or possibly at the end of the current meeting.

Mr. Gaffney stated that several times over the last 17-18 years, Rivanna decided to expand Ragged Mountain and had discussions of the property – and it may be good for staff to refresh the Board's memory as there were new members. He stated that it would be helpful to have background and how they got to the current point.

Dr. Palmer noted that they should also discuss whether they were supposed to be replanting the trees on that site.

Mr. Mawyer responded that it was a mitigation site for the Ragged Mountain Dam, and Andrea Terry took care of the Buck Mountain property – but there were some extenuating circumstances with people living in the area, and a pond dam with regulatory requirements. He mentioned that he knew Dr. Wellons was coming to this meeting. Mr. Mawyer stated that there were 1,312 acres and 38 parcels purchased as part of the property, with two parcels condemned, including Dr. Wellons' property. He stated there were about 600 acres in the mitigation area, and staff would bring back a presentation and review all of this for the Board in May.

Mr. Peter Wiley, Dr. Wellons' real estate agent, stated that people in the area – considering the mitigation had taken place and the reservoir would not be constructed – wanted to know what the purpose would be for holding on to the land.

Mr. Mawyer responded that it could become a reservoir in the distant future, and the mitigation site could be relocated with approval from the Department of Environmental Quality. He noted that if there were a reservoir there that would inundate the mitigation, they would have to find a replacement mitigation and rebuild it somewhere else. Mr. Mawyer stated that the mitigation didn't prevent it from becoming a reservoir in the future, but the James River spinymussel was an environmental impediment and no one knew if the current regulations would continue into the future.

7. CONSENT AGENDA

a. Staff Report on Finance

b. Staff Report on Ongoing Projects

c. Staff Report on Operations

d. Proposed Additional Holiday: July 5, 2019

e. Approval of Easement Acquisition Services, SRR to RMR Pipeline; ERM & Associates

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Dr. Palmer moved that the Board approve the Consent Agenda. The motion was seconded by Mr. Richardson and passed unanimously (5-0). Ms. Galvin and Mr. O'Connell were absent from the meeting and the vote.

8. OTHER BUSINESS

a. Presentation: Rivanna Conservation Alliance - Lisa Wittenborn, Program Director and Julia Ela, Operations Director

Rivanna Conservation Alliance

Program Director Lisa Wittenborn and Operations Director Julia Ela of the Rivanna Conservation Alliance presented.

Ms. Wittenborn stated that they have taken over for Robbi Savage and would update the Board on monitoring programs and items they were working on. She stated her organization was formed in 2016 by a merger of Rivanna Conservation Society and Streamwatch. She explained that their vision is to have a healthy and thriving community that valued rivers and streams, and they worked to protect the Rivanna River and its tributaries through a number of programs. She noted that the Rivanna watershed is part of the Chesapeake Bay watershed and presented a map of the river system. She stated they involve schoolchildren in classroom and outdoor educational activities such as stream water quality monitoring, and would take students from Burley Middle School to do a buffer planting along Schenks Branch.

Ms. Wittenborn stated their new Pop-Ups program would include river activity programs at local parks, kiosks at boat landings, the 100-acre Schier Natural Area and Nature Center in Fluvanna County, and they would participate in public events such as the May 11 Riverfest. She explained that the River Steward program has two stewards who look for safety and water quality issues and work with partners like the County to remedy situations. She stated that her organization participates in stream cleanups, paddling experiences for kids, a river race, and conservation projects such as tree plantings, rain gardens, and buffer restoration. She introduced Julia Ela to present on monitoring programs.

Ms. Julia Ela stated that in addition to visual monitoring performed by the river stewards, they have two scientifically rigorous watershed water quality monitoring programs for which they have been certified as level three monitors by Virginia Department of Environmental Quality, which is equivalent to those collected by the state agency itself, and can be used to list and delist impaired water and in TMDL processes, the MS4 stormwater permitting programs, and help to inform and guide water quality improvement decisions. She explained that state certification adds a lot of value and creates more investment by volunteers.

Ms. Ela reported that the first monitoring program is the Benthic Macroinvertebrate Streams Monitoring Program, for which they have a full-time staff member and volunteers dedicated to sampling the organisms that live in stream bottoms and whose presence or absence can indicate long-term stream health. She stated there are 50 sites throughout the watershed that they sample each spring and fall. She stated their other level three program is the Bacteria Monitoring Program, in which volunteers test for E-Coli bacteria, with some sites sampled monthly and others weekly, with information posted on their website. She presented a map of the sampling locations and indicated that pink dots represent benthic monitoring sites, yellow dots represent 16 established bacteria sites, and they plan to add four additional sites. She noted that the benthic sites present a long-term picture while bacteria monitoring presents a snapshot in time, with the two programs together providing a good indication of stream health. She stated they are looking into the addition of a chemical monitoring program to measure Ph and conductivity.

Mr. Murphy asked what the orange squares on the map represented.

Ms. Ela responded that these represented educational kiosk locations.

Dr. Palmer asked Ms. Ela what the land use categories were that the 50 benthic sampling sites represented.

Ms. Ela explained that four locations are reference sites located near the headwaters and within or adjacent to Shenandoah National Park. She stated the other sites represent agricultural, urban, and forested land uses.

Dr. Palmer asked if any sites are near traditional illegal dumping areas.

Ms. Wittenborn explained that the sites were selected almost 15 years ago by Streamwatch and she is not sure of the rationale for why they were chosen. She stated they have been talking about

updating the internal land use study to consider whether they need to adjust the site locations or to add sites, though they don't want to eliminate existing ones because they have a long legacy of data available.

Dr. Palmer suggested they consider adding some traditional dump sites if they decide to increase the number of sampling locations and she offered to provide a list.

Ms. Ela remarked that they are looking to work with partners that are doing significant restoration activities to conduct before and after monitoring at additional sites.

Ms. Ela stated she would review monitoring highlights from last year. She stated 2018 was the first year they used the Level 3 monitoring program throughout the sampling season. She stated their bacteria monitors detected some sewer line leaks, which led to very quick repairs and which may have gone unnoticed for a long time. She stated they moved to a new location on River Road so that all staff and volunteers are now located in one space, which has created more cohesion. She noted that they won the USDA NRCS Virginia and Southeast Region awards for outstanding volunteer group.

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Ms. Ela explained that their 2019 monitoring goals are determined by staff, as recommended from their scientific advisory committee, and work with community partners to make sure the goals align. She stated they would add habitat assessments at the benthic locations to obtain a more complete picture of what is going on in the surrounding area to inform them of what is occurring with the benthic community in the stream. She stated they hope to conduct a trend analysis utilizing 15 years of data to determine if there have been land use changes or anything else that may have contributed to changes, they are looking to establish a new Level 3 program for PH dissolved oxygen and conductivity, and would take data from a 2007 study of fish in conjunction with the Woolen Mills Dam removal and hope to replicate it in conjunction with Department of Game and Inland Fisheries. She stated they publish an annual Watershed Stream Health Report and would update date this at the end of the summer.

Mr. Gaffney asked what conductivity was in this context.

Ms. Wittenborn replied that they would look at salinity conductivity with an interest in the use of road salt and have been able to make linkages to conductivity and the health of the benthic community.

Ms. Ela interjected that it is a measure of ion concentration in the water to see how strongly the conductivity correlates to road salts vs. other things.

Dr. Palmer asked how many paid employees they have.

Ms. Wittenborn replied that there is one full-time employee plus two three quarters time employees and two part-time river stewards, one of whom also serves as the education manager.

Ms. Ela added that they are about three FTEs spread over five people.

Dr. Palmer remarked that they do amazing work with a small number of employees. She asked if they have attended Board of Supervisors or City Council meetings.

Ms. Wittenborn stated they have not.

Dr. Palmer invited her to attend a Board of Supervisors meeting.

Mr. Mawyer added that they would continue to support the RCA in the 2020 budget.

b. Presentation: Annual Reservoir Report - Andrea Terry, Water Resources Manager

Ms. Andrea Terry, Water Resources Manager, presented. She stated she would talk about water quality, monitoring, quantity, and the results of the bathymetric surveys completed this year.

She reminded the Board that South Fork Rivanna, Sugar Hollow, and Ragged Mountain make up the urban area reservoirs, Totier Creek serves Scottsville, and Beaver Creek serves Crozet. She stated they began a reservoir water quality and management assessment in 2015 with DiNatale Water Consultants, which looked at data from various studies and created a long-term monitoring plan for each reservoir in order to develop a robust database and understand what is happening. She stated they learned that the reservoirs differ from one another and looked at potential water quality management strategies.

Ms. Terry stated Phase 2 focused mainly on Beaver Creek and South Fork Rivanna Reservoirs, since they have had issues with algae blooms, and involved sampling and flow studies including identifying the source of nutrients, with refined reservoir management methods recommended. She stated the primary method recommended is the hypolimnetic oxygenation system for Beaver Creek. She stated that, though the consultant's work is done, they continue to collect data biweekly from April – November from three reservoirs and have learned a lot from the samples. She stated the monitoring data from the past year indicates they are trending similar to what they had been.

Ms. Terry stated that stratification occurs early in May at Beaver Creek and lasts through November, with the surface water becoming warmer and setting up temperature gradients that lead to algae blooms as a result of nutrients at the bottom, including an algae bloom at Beaver Creek last December. She explained that Beaver Creek has a ten square mile watershed and they want to know how long the water remains in the reservoir, which is known as residence time, which they estimate ranges from 39–135 days, with shorter times during periods of high flows. She stated they are investigating the possibility of installing a water quality sonde in Beaver Creek to continuously monitor the water.

Ms. Terry characterized South Fork Rivanna as a run-of-the-river reservoir, as it operates like a river, with residence times of less than one day during a storm, which does not provide a lot of time for nutrients to accumulate. She noted that 2018 was a very wet year, the reservoir never fell below the crest, and they did not experience any algae blooms above the triggers. She stated they have not seen any blue-green algae blooms at Ragged Mountain since it was filled, though they have seen green algae and Totier Creek and Sugar Hollow have not had any algae blooms

that required treatment. She presented a slide with information on algae treatments at the

reservoirs and noted that they treated Beaver Creek with algaecide last week and are monitoring

the reservoirs and will continue to collaborate with the County, Rivanna Soil and Water

Conservation District, RCA and other organizations.

Ms. Terry addressed an earlier question about mitigation at Buck Mountain, explaining they are working with a consultant who is doing studies of mitigation sites and providing data on what is and what is not living.

and what is not living.
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378 Ms. Terry presented slides with data on useable storage volumes for the reservoirs before the

bathometric study was established in 2018, followed by slides with current data. She stated that South Fork changed from 883M gallons to 885M, and Ragged Mountain from 1.5B to 1.4B

381 gallons.

Ms. Palmer emphasized that there may be questions about accuracy as there were several years in between and different people were conducting the study.

Ms. Terry pointed out that there has been a net decrease of 70M gallons in total useable storage in the urban water system. She stated the last time they had a study from which they could make a stage storage curve was the 2016 as-built for the Ragged Mountain dam, based on the as-built drawings of the dam itself.

Ms. Palmer asked if the decrease was statistically significant.

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Ms. Whitaker responded that it was from the perspective of Ragged Mountain, and she pointed out that this is the first true baseline. She explained that they flew the site in 2009, conducted a survey, excavation, and estimates based on drawings, whereas recently they conducted a detailed analysis above and below the water using LIDAR, and suggested that they use this baseline going forward as it provides greater accuracy with respect to lake volume. She opined that the reservoir shifts and sediment is flushed out in storms.

Ms. Terry noted that the last time they did this at South Fork was 2009, and the 883MG estimates came from that effort—and past estimates suggested they would be reducing storage by 15M gallons a year, but the latest data indicated that has not happened.

Mr. Gaffney commented that the sand bars seemed to be getting bigger.

Ms. Terry emphasized that the sediment shifts around, and the 2018 May storm flushed out a lot of sediment. She noted that the recent information reduces the capcity by 70M gallons, and assuming consumption of 10 MGD, that would be 7 days of usable storage.

Mr. Murphy commented that as the City moved forward with its new comprehensive plan, with conversations about density and consumption, he was curious as to usage today versus in the future when populations in both the City and County increased. He asked how difficult it would be to obtain that number.

Ms. Whitaker and Mr. Mawyer responded that they were working on a study now. 415 416 Mr. Mawyer stated that they would do projections of City and County growth, and from that data 417 they would establish projections - including the maximum safe yield available - as part of the 418 urban water demand study, which would be brought back to the Board in the fall. 419 420 Mr. Gaffney stated they used Weldon Cooper's information, which was based on interviews with 421 the City and developers, etc. 422 423 Ms. Terry pointed out that Rivanna's consultants interviewed City staff and County staff to try to 424 get all the necessary input. 425 426 Mr. Murphy asked if the projections would be available in six months or so. 427 428 Ms. Whitaker replied that it would be by the end of the year. 429 430 Mr. Mawyer noted that the Ragged Mountain agreement stated that every 10 years they must 431 check the community demand versus supply, and 2020 was the next year a check was required. 432 433 Ms. Whitaker stated that since the South Fork Reservoir was built in 1966, Rivanna had mapped 434 this out – and average loss was consistently 15 million gallons a year. She stated that this was a 435 virtual straight line, and staff intentionally waited until after the storm to do this work. She noted 436 that in 2006, one of the big hydrology discussions they had about dredging and reservoir health 437 was what happened when lakes filled up with more sediment, possibly reaching equilibrium. Ms. 438 Whitaker stated that this showed that a big storm could disrupt the equilibrium equation – and 439 one storm could effectively undo a decade of deposits. 440 441 Mr. Gaffney asked if that big storm was a 100-year storm. 442 443 Ms. Whitaker responded that it was a 500-year storm localized, and because it was right over the 444 watershed, it created the scour. 445 446 Ms. Terry emphasized that rivers move, and storms over time would do different things – but 447 staff was confident in the numbers they were using now, with the same one used for stage 448 storage in South Rivanna. 449 450 Mr. Gaffney asked if they were losing 15 MGD before that storm. 451 452 Ms. Whitaker and Ms. Terry responded that they did not know. 453 454 Ms. Whitaker stated if they had been using the 15 MGD a year loss, they would have lost 150 455 million gallons in the reservoir. 456

9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

There were no other items presented.

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62	10. CLOSED MEETING
463	There was no closed meeting held.
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465	11. ADJOURNMENT
466	Dr. Palmer moved to adjourn the meeting. Ms. Hildebrand seconded the motion, which
467	passed unanimously (5-0). Ms. Galvin and Mr. O'Connell were absent from the meeting
468	and the vote.
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471	Respectfully submitted,
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473	bl. KV.
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475	Mr. Jeff Richardson
476	Secretary-Treasurer

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