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RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
June 27, 2023

A regular meeting of the Rivanna Water and Sewer Authority (RWSA) Board of Directors was held on Tuesday, June 27, 2023 at 2:15 p.m. in the 2nd floor conference room, Moores Creek Administration Building, 695 Moores Creek Lane, Charlottesville, VA.

Board Members Present: Mike Gaffney, Jeff Richardson, Michael Rogers, Brian Pinkston arrived at 2:22 p.m., Ann Mallek, and Quin Lunsford attending as an alternate for Gary O'Connell.

Board Members Absent: Lauren Hildebrand and Gary O'Connell.

Rivanna Staff Present: Bill Mawyer, Lonnie Wood, David Tungate, Deborah Anama, Jacob Woodson, Daniel Campbell, Andrea Bowles, student interns Owen White, Logan Holsapple, Hannah Kaczorowski, Kathryn Shelton, and Caleb Bearly.

Attorney(s) Present: Valerie Long.

1. *CALL TO ORDER*
Mr. Gaffney convened the June 27, 2023 regular meeting of the Board of Directors of the Rivanna Water and Sewer Authority at 2:15 p.m.

2. *AGENDA APPROVAL*
There were no comments on or questions for the agenda.

Ms. Mallek moved to approve the agenda. Mr. Rogers seconded the motion, which carried unanimously (4-0).

3. *MINUTES OF PREVIOUS BOARD MEETING*
a. Minutes of Regular Board Meeting on May 23, 2023

There were no comments on or questions regarding the minutes for the meeting held on May 23, 2023.

Ms. Mallek moved the Board to approve the minutes from the meeting held on May 23, 2023. Mr. Richardson seconded the motion, which passed unanimously (4-0).

4. *RECOGNITIONS*
Drinking Water and Wastewater Professionals Day

Mr. Gaffney read the recognition from the Governor's Office recognizing the Drinking Water and Wastewater Professionals Day.

Certificate of Recognition

By virtue of the authority vested by the Constitution in the Governor of the Commonwealth of Virginia, there is hereby officially recognized:

Drinking Water and Wastewater Professionals Day

WHEREAS, the health, safety, and well-being of all Virginians is of utmost importance to the prosperity and livelihood of our Commonwealth's families and communities; and

WHEREAS, without reliable drinking water and wastewater treatment, the United States would suffer thousands of deaths each year due to waterborne diseases; and

WHEREAS, conscientious regulation and operation of both public and private drinking water treatment plants and distribution systems helps prevent contamination and other avoidable incidents that threaten the health and well-being of Virginia's more than 8.6 million residents; and

WHEREAS, the Commonwealth produces an average of more than 817 million gallons of wastewater each day, the proper treatment of which protects the ecological health of Virginia's surface waters, such as the James and Potomac Rivers, and the Chesapeake Bay; and

WHEREAS, thousands of water and wastewater industry professionals in the Commonwealth's public and private sectors dedicate their careers to keeping drinking water and treated wastewater clean and free of substances harmful to both humans and the environment; and

WHEREAS, the Virginia General Assembly passed House Joint Resolution 88 in 2016 designating June 30 as Drinking Water and Wastewater Professionals Day in Virginia;

NOW, THEREFORE, I, Glenn Youngkin, do hereby recognize June 30, 2023, as **DRINKING WATER AND WASTEWATER PROFESSIONALS DAY** in our COMMONWEALTH OF VIRGINIA, and I call this observance to the attention of all our citizens.

Mr. Rogers moved the Board to approve the Recognition for Drinking Water and Wastewater Professionals Day. Ms. Mallek seconded the motion, which passed unanimously (5-0).

5. *EXECUTIVE DIRECTOR'S REPORT*

Mr. Mawyer noted that they almost did not hold the meeting at Moores Creek because the power was out at the building on the prior day. He stated that they had a circuit breaker which tripped three times in the last five days. He stated staff found a refurbished replacement breaker in North Carolina for $20K. He stated that the supplier was able to deliver the circuit breaker at 2 a.m. that morning, and staff, along with Pyramid Construction, installed the breaker. He stated that shortly after 7 a.m., the power was restored.

Mr. Mawyer stated that there was a CIP project to replace the breaker, but the product was on order. He stated that once they received the breaker from the CIP project, it would serve as the primary breaker with the breaker purchased in North Carolina as a backup.

Mr. Mawyer recognized Drew Prothero, who passed his state licensing to attain a Wastewater

Operator Class III level. He stated Mr. Prothero had worked for the Authority for about one year, and he was a James Madison University graduate. He stated that June was National Safety Month. He stated that each week of the month, there was a theme related to safety. He stated that as part of the leadership training, Mr. Tungate attended the Local Government Advisory Council tabletop exercise on PFAs. He stated that Ms. Whitaker would participate in the Charlottesville Chamber of Commerce leadership lab program, which would start in September and last for nine months.

Mr. Mawyer stated that there was a team building event for staff held in the parking lot in May. He introduced the five interns who were working at the Authority for the summer.

Owen White stated he was the chemist intern. He stated he attended the University of Mary Washington.

Kathryn Shelton stated she attended the University of Virginia to study environmental science. She stated she was the water resources intern.

Hannah Kaczorowski stated she attended the University of Virginia, and she was the sustainability intern.

Caleb Bearly stated he attended Minnesota North College, and he was the wastewater operations intern.

Logan Holsapple stated he attended the University of Virginia, and he was the engineering intern.

Mr. Mawyer stated that in terms of drought concerns, they were 14 inches low over the last 29 months, about 14% below normal. He explained that last year, local streams were flowing at close to normal levels. He stated that from June 10 through June 16, 2023, the flow was about 80% below normal, and they were getting concerned about the conditions. He stated that in June 2022, the flow in the South Rivanna River was 162mgd, and in June 2023, it was 27mgd.

Mr. Mawyer stated that they had received rain, and from June 20 through June 26, 2023, the flow had increased significantly and gone above the average. He noted that the drought concerns had not passed, but they had been mitigated. He stated that the Rivanna to Ragged Mountain pipeline would help capture and convey water from the Rivanna to Ragged Mountain reservoir during times of high stream flow after significant precipitation.

Ms. Mallek stated that they were not out of the woods by any means. She stated that they should not feel complacent about the concerns. She stated that the rainfall had been spotty.

Mr. Gaffney asked whether there was information about the water table.

Ms. Bowles stated that the State drought monitoring report was still on a "watch" level for groundwater, and they would complete readings again on Thursday.

Ms. Mallek asked how granular the reading was, because people in the northern part of the County were frustrated with the watch levels not fully reflecting conditions.

Ms. Bowles stated that there was a drought monitoring taskforce report, and the last time they met was June 15, but the summary had not yet been posted. She stated that the taskforce was meeting on Thursday, and they met about every two weeks. She stated that she was regularly in touch to provide feedback.

Ms. Mallek asked whether rainfall was being measured in multiple places.

Ms. Bowles responded that for the region, the State brought together multiple professionals to discuss precipitation, geology, groundwater, and other topics. She stated that there were four different factors that were evaluated—groundwater, precipitation, stream flow, and reservoir levels. She stated that for our Middle James region, reservoir data from our local reservoirs and from Lake Moomaw is used.

Mr. Mawyer stated they had come to an agreement with the University Foundation regarding the location and cost of easements and property purchases on the Westover and Fox Haven properties. He stated that they expected to have the signed documents soon. He stated that they were purchasing 1.1 acres near Reservoir Road to build the pump station.

Mr. Mawyer stated that they would continue to work with the University on the Fontaine area. He stated that the University had located a cemetery that conflicted with the development plans and waterline location. He stated that the central waterline project was expected to have 60% design plans by the end of the month, and they would coordinate with the City and ACSA to review the plans. He stated they expect construction to start next June.

Mr. Mawyer stated that the Allen Farm bridge repairs at Buck Mountain began yesterday. He stated that weather permitting, the repairs to the concrete pillars would be completed next week. He stated they participated last week in an EPA drinking water contamination drill with the ACSA and City utility staff. He explained that the scenario included a chemical tanker that was leaking into the Rivanna reservoir, infiltrating the Rivanna WTP and distribution system. He stated that in the drill scenario, the problem became apparent when people started showing up at the hospital, sick.

Mr. Mawyer stated that they invited specialists from the FBI to review the cybersecurity system and familiarize them with our facilities. He stated that a local agent who lived in Crozet attended along with a critical infrastructure expert. He stated that he spoke to the Land Use and Environmental Planning Committee about the community water supply plan and the South Rivanna River crossing project. He stated that he attended the Hydraulic Area CAC meeting and discussed the community water supply plan.

6. *ITEMS FROM THE PUBLIC*

Matters Not Listed for Public Hearing on the Agenda

There were none.

7. *RESPONSES TO PUBLIC COMMENTS*

There were no comments from the public, therefore, there were no responses.

8. *CONSENT AGENDA*

a. *Staff Report on Finance*

b. *Staff Report on Operations*

c. *Staff Report on CIP Projects*

d. *Staff Report on Wholesale Metering*

e. *Staff Report on Drought Monitoring*

f. *Approval of Term Contract for Professional Water Treatment Plant Engineering Services*

g. *Approval of Capital Improvement Plan Budget Amendment – South Fork Rivanna Reservoir to Ragged Mountain Reservoir Water Line Right of Way*

h. *Approval of Engineering Services – Moores Creek Pump Station Slide Gates, Valves, Bypass, and Septage Receiving Upgrades – Design, Bidding and Construction Administration – Hazen and Sawyer*

i. *Adoption of 2023 Thomas Jefferson Planning District Commission Natural Hazard Mitigation Plan*

Ms. Mallek moved to approve the consent agenda. Mr. Rogers seconded the motion, which carried unanimously (5-0).

9. *OTHER BUSINESS*

a. *Presentation: Water Treatment Facilities Overview*
Dave Tungate, Director of Operations

Mr. Tungate introduced Daniel Campbell, manager of the water department. Mr. Tungate stated that currently, there was a pipeline to transfer water from Sugar Hollow to Ragged Mountain, but in the future, as the pipeline from Ragged Mountain to South Fork Rivanna was installed, the Sugar Hollow pipeline would be put out of service. He stated that the Beaver Creek Reservoir fed the Crozet WTP which only supplied the Crozet area.

Mr. Tungate stated that the Red Hill WTP was a small groundwater system that served 9 customers including Red Hill School, and it was the only groundwater system they maintained and operated. He stated that the Observatory, North Rivanna, and South Rivanna WTPs formed the urban water system. He stated that at the southern end of the County, there was the Scottsville WTP which sourced water from Totier Creek and Totier Creek Reservoir.

Mr. Tungate stated that they had a permitted capacity at South Rivanna of 12 MGD, and the

average production in 2022 was about 8 MGD. He stated that the Observatory WTP was permitted for 7.7 MGD, but after the upgrade, it would be able to produce 10 MGD. He stated that the North Rivanna WTP was permitted for 2 MGD, and its average production in 2022 was 0.43 MGD. He stated that the urban total permitted capacity was 21.7 MGD, and the average Urban Water production was 9.32 MGD.

Mr. Tungate stated that the permitted capacity at the Crozet WTP and finished water pump station was 1.6 MGD. He stated that Scottsville was the smallest permitted surface water facility, and it was able to process 0.25 MGD. He noted that the average production was 0.059 MGD.

Ms. Mallek asked whether there was a stream release requirement for the North Fork Rivanna WTP.

Mr. Tungate responded that they did not have a minimum stream flow requirement. He stated that they were monitoring the flow and taking daily pictures. He stated that USGS had a gauging station upstream of the intake, which allows RWSA Water Operations staff to keep a record of the amount of water headed to the North Rivanna WTP intake on the North Fork Rivanna River.

Mr. Tungate explained that there were five steps to a conventional surface water treatment plant. He stated the steps included coagulation, flocculation, sedimentation, filtration, and disinfection. He stated that the source water quality could change, especially from heavy rain or precipitation in the water shed. He stated that South Rivanna WTP had six sedimentation basins, and two new filters had been added to the filtration plant in the most recent water treatment plant upgrades.

Mr. Tungate showed an aerial photo of the South Rivanna WTP and described the water treatment facility shown in the photo. The water administration staff was housed in the administration building at the South Rivanna WTP. There are separate buildings at the South Rivanna WTP for the various water treatment chemicals. In the aluminum sulfate (Alum) and fluoride building, there are 2 separate rooms. One room is for Alum and it can store 24,000 gallons in two 12,000 gallon tanks. The other room is for fluoride and it can store 6,000 gallons. The Sodium Hypochlorite building has two 10,000 gallons tanks. It is used as a disinfectant. Mr. Tungate stated that the Alum and Fluoride building was added during the recent facility upgrade. He identified the filter press building, which is where the residual solids are de-watered from the South Rivanna WTP.

Mr. Tungate explained that they used aluminum sulfate as a coagulant. He stated they used liquid lime to adjust the pH. He stated they used sodium hypochlorite to disinfect the water, orthophosphate to control pipe corrosion, and hydrofluorosilicic acid (fluoride) for dental health. He stated that after water was pumped from the reservoir to the water treatment plant, alum and lime are added to help flocculate the dirt particles. The sedimentation basins were designed so the water with the flocculated particles flows through them with low velocity to allow the flocculated particles to settle to the bottom. These solids are removed twice a day by a mechanical device to limit the amount of solids in the sedimentation basins.

Mr. Tungate explained that frequently, the chemical doses could be tricky to determine, such as

after a rain or temperature change. He stated that water department staff can run water treatment jar tests at the water plant to help determine the best chemical doses. He stated that after the sedimentation basins, the next step was filtration in the gravity filters. He stated that there were six gravity filters at South Rivanna. A slide was shown with Giardia and Cryptosporidium on it. He stated that giardia was removed from the water via chemical oxidation , and cryptosporidium was removed through filtering. He stated that filter turbidimeters were used to determine the effectiveness of the filters. He stated that the turbidimeters took continuous samples. He stated that every 12-hour shift, water operations staff calibrated and confirmed readings from the online instruments, including turbidimeters and free chlorine analyzers.

Mr. Tungate stated that finished water pumps were used once the water was treated to deliver the water to the distribution systems. He stated that two kinds of activated carbon are used at the water treatment plants. Powder activated carbon and granular activated carbon. Powder activated carbon (PAC) had a one-time use and is settled in the solids found in the sedimentation basins. He stated that granulated activated carbon (GAC) was used in large vessels called contactors. He stated that PAC was fed into the mixing basins. He stated that water samples were taken from the GAC contactor vessels to determine how much GAC is left that can be used. Each GAC vessel or contactor holds 40,000 lbs. of GAC at the three Urban Water Plants (South Rivanna, Observatory, and North Rivanna).

Mr. Tungate stated that GAC contactors were installed at all of the surface WTPs. He stated that South Rivanna had eight contactors (320,000 pounds of GAC) with an 8 MGD treatment capacity. He stated that at Observatory, there were six contactors (240,000 pounds of GAC) or 6 MGD of treatment capacity. He stated there was a project to add a third contactor to the Crozet facility and a contactor to Red Hill. He stated that the Crozet contactors could hold 20k lbs of GAC. He stated that at Scottsville WTP, there were two 6k lb. contactors or 0.25 MGD treatment capacity.

Mr. Pinkston asked whether the GAC contactors were needed for well water.

Mr. Tungate stated that it depended on what was detected and if there was contamination present in the water. The GAC contactors at the surface water treatment plants were installed for disinfection by-product precursor removal and these constituents are not usually present in groundwater.

Ms. Mallek asked if there was ongoing testing of the plume from the old gas station at Red Hill.

Mr. Tungate stated he did not know. He stated they discussed the matter with DEQ, and at times they had sampled monitoring wells and residences that were not hooked into the Red Hill water system. He stated that there were stop boxes and service lines in the right-of-way if residences had detected contamination in their private wells.

Mr. Tungate stated that they renovated the filters at Observatory WTP, and they had five new filters. He stated that the original Observatory WTP had four sedimentation basins with a capacity of 7.7 MGD, and after the project is complete there will be two sedimentation basins with a capacity of 20 MGD.

Mr. Pinkston clarified that the UVA water storage tanks on Observatory Hill acted as a buffer for the UVA system.

Mr. Tungate responded that at the Alderman pump station, half of the pumps were operated by Rivanna and the other half by UVA. He stated that on the UVA side of the station, their pumps put water into the water system and water that was not consumed was stored in the UVA water storage tanks.

Mr. Tungate stated that the water department had to submit monthly reports of operations by the 10th of every month to the Virginia Dept. of Health. He stated that information in the reports included the volume of water pumped, chemical dosages, filter turbidity, chlorine residuals, total coliform sampling, and any data related to the Safe Drinking Water Act.

Mr. Tungate stated that the water department operating budget was $25M. He explained that $13M was for debt service, and there was $3M budgeted for central support (Human Resources, Information Technology, Finance). He stated that $2.5M went toward employee salaries, $2M was for water treatment chemicals, and $900K of that allocation was for GAC. He stated $1M was budgeted for operations and maintenance, and $700K was budgeted for utility costs.

Mr. Tungate stated they produced 3.8 billion gallons of drinking water at a cost of $0.01 per 1.5 gallons. He stated that there were 27 staff positions in the water department. He stated there were 22 water operators, including three relief operators, a water quality specialist, and four management staff.

Ms. Mallek asked if the disinfection tests were related to the GAC removing the disinfection byproducts.

Mr. Tungate responded that the more disinfectant byproduct they removed, the less they would have in the system.

Mr. Mawyer responded that they performed disinfection testing in the distribution system.

b. Presentation: Long Range Utility Concepts
Bill Mawyer, Executive Director

Mr. Mawyer explained that only 3% of the water on Earth was freshwater, and of that freshwater, 70% was contained in ice caps and glaciers, 29% was contained in groundwater, and 1% was easily accessible in lakes and rivers—1% of 3%. He stated that the US had 4.3% of the world population but 7% of the global, renewable freshwater resources. He stated that the US had the largest freshwater lake system in the world, the Great Lakes, which held 6 quadrillion gallons of water.

Mr. Mawyer stated Colorado State University found that by 2071, half of the freshwater basins in the US would be unable to meet monthly water demands. He stated that the UN found 5 billion people, or two-thirds of the global population, would experience water shortages by 2050 due to climate change impacts.

Mr. Mawyer stated that emerging contaminants included PFAS, dioxane, perchlorate, microplastics, endocrine interrupters, and cyanotoxins. He stated that PFAS was a forever-chemical used as a water repellant, stain resister, grease-proofer, and friction reducer. He stated that microplastics were likely to be regulated in the future. He stated that cyanotoxins were blue-green algae that created odor and taste problems.

Mr. Mawyer stated that technology would continue to change and influence the drinking water and wastewater industry. He stated that capacity was an issue everywhere, and our area would continue to see a growing population due to climate change. He stated that by 2025, they estimated the City would have 50k water customers, and the ACSA would have about 72k customers in the urban area. He stated that by 2070, the population was expected to increase by 40% in the urban area. He noted that the projection was updated every 10 years.

Mr. Mawyer stated that they considered sustainability measures, such as solar facilities, carbon emissions reduction, and water reuse. He stated that in the future, they may require more reservoirs, and they may consider unified local systems. He stated that in the future, there could be an opportunity to eliminate the Glenmore and Stone Robinson WWTPs by extending a pipe to the Moores Creek facility. He noted that there were odor, noise, and light issues at Glenmore associated with the wastewater treatment plant.

Mr. Mawyer stated that they could consider ways to unify local water treatment and distribution systems, as well as regional customers, to improve affordability. He stated that new regulations would likely increase the cost of water and wastewater treatment. He stated that beyond 2070, the Board had discussed retaining the Buck Mountain property because of the potential for coastal population migration and the need to build another reservoir.

Mr. Mawyer stated that the Observatory WTP lease would expire in 2069, but it had a 50-year renewal option. He stated that expansion of South Rivanna and Observatory WTPs would be considered in the next 50 years. He stated that the Beaver Creek Reservoir appeared to have adequate water supply for the next 50 years, but there would need to be a plan to serve growth in Crozet past 2070.

Mr. Mawyer stated that additional reservoirs would be the likely solution to achieve a greater supply of drinking water. He stated that regulations would continue to emerge to address known and unknown contaminants. He stated that unification of local and regional systems would help manage affordability. He stated that our long-term strategic plan provided an enormous benefit to the Authorities, and the planning should be continued.

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

Ms. Mallek stated that the original environmental impact statement for the Western Bypass planned for when a tanker would overturn, not if. She stated that the tabletop tests were incredibly important.

11. *CLOSED MEETING*

There was no reason for a closed meeting.

12. *ADJOURNMENT*

At 3:18 p.m., Ms. Mallek moved to adjourn the meeting of the Rivanna Water and Sewer Authority. Mr. Rogers seconded the motion, which passed unanimously (5-0).

Respectfully submitted,

Mr. Jeff Richardson
Secretary - Treasurer