A regular meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was held on Tuesday, February 28, 2017 at 2:15 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia.

Board Members Present: Mr. Mike Gaffney – Chair, presiding, Ms. Kathy Galvin, Mr. Maurice Jones, Mr. Gary O’Connell, Dr. Liz Palmer and Mr. Doug Walker.

Board Members Absent: None.

Staff Present: Mr. Mark Brownlee, Mr. Tim Castillo, Ms. Victoria Fort, Dr. Richard Gullick, Ms. Teri Kent, Mr. Doug March, Ms. April Marshall, Mr. Bill Mawyer, Mr. Philip McKalips, Mr. Scott Schiller, Ms. Michelle Simpson, Ms. Jennifer Whitaker and Mr. Lonnie Wood.

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

1.0 Call to Order

The regular meeting of the RWSA Board of Directors was called to order by Mr. Gaffney on Tuesday, February 28, 2017 at 2:43 p.m., and he noted that a quorum was present.

2.0 Minutes of Previous Board Meeting

a) Minutes of the Regular Meeting of the Board on January 24, 2017

Mr. Gaffney asked if there were any changes or comments to the minutes. There were none provided.

Mr. O’Connell moved to approve the minutes of December 20, 2016 as presented. Mr. Walker seconded the motion, which passed 6-0.

3.0 Recognition
a) Board Chair Appointment – Mike Gaffney

Mr. Mawyer noted that at the RSWA meeting, Mr. Gaffney had been reappointed to his eighth term as chair of the Rivanna Authorities boards.

b) Resolution of Appreciation for 27 years of service – Judith M. Mueller

Mr. Gaffney read the following resolution into the record:

Resolution of Appreciation for Judith M. Mueller

WHEREAS, Ms. Mueller has served as a member of the Rivanna Water & Sewer Authority Board of Directors since 1985 and Rivanna Solid Waste Authority since 1990; and

WHEREAS, over that same period in excess of 27 years Ms. Mueller has demonstrated leadership in the water and sewer field; the solid waste and recycling field; and has been a valuable resource to the Board of Directors and to the Authorities; and

WHEREAS, Ms. Mueller’s understanding of the water, sewer, and solid waste operations of the City of Charlottesville as well as the Rivanna Water & Sewer Authority and Solid Waste Authority has facilitated a decision-making process that considered not only the benefits to the customers served by the City of Charlottesville but also to the community as a whole; and

WHEREAS, the Rivanna Water & Sewer Authority and Solid Waste Authority Board of Directors are most grateful for the professional and personal contributions Ms. Mueller has provided to both Authorities and to the community; and

WHEREAS, the Rivanna Water & Sewer Authority Board of Directors is additionally grateful for Ms. Mueller’s strong support of the process, alternatives, and execution of the community water supply plan which resulted in a successful community water supply for the next 50 years; and

NOW, THEREFORE, BE IT RESOLVED that the Rivanna Water & Sewer Authority and the Rivanna Solid Waste Authority Board of Directors recognizes, thanks, and commends Ms. Mueller for her distinguished service, efforts, and achievements as a board member of both Authorities, and presents this Resolution as a token of esteem, with their best wishes in her retirement.

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.

MOTION: Ms. Galvin moved to adopt the resolution as read. Mr. O’Connell seconded the motion, which passed 7-0.

c) New Board Members – Doug Walker, Interim County Executive
Mr. Mawyer introduced Mr. Doug Walker, who has served as an Assistant County Executive for several years. He also stated that Lauren Hildebrand was expected to be appointed to the RWSA Board in April as Ms. Mueller’s replacement, but the Rivanna Water & Sewer Authority charter needed to be revised to allow the City’s Director of Public Utilities to be an appointee to the RWSA Board. He noted that the City and County would be taking action on that, which should be finished in April, and he welcomed her to the meeting.

4.0 Election
a) Board Secretary-Treasurer

MOTION: Dr. Palmer moved to nominate Doug Walker as Secretary-Treasurer for the RWSA Board. Mr. Jones seconded the motion, which passed 7-0.

5.0 Executive Director’s Report
Mr. Mawyer reported that the RWSA had been working hard on the odor reduction program at Moores Creek, and he thanked Dr. Gullick and Tim Castillo for their efforts, noting that they had a temporary chemical system in place, with ferric chloride injected into the wastewater flow on February 6. He stated that preliminary results indicate that the sulfide levels are decreasing in the wastewater, and he hoped that would translate into a much lower odor issue in the nearby community. Mr. Mawyer said they are continuing to adjust the chemical level to try to get the dosage just right. Mr. Mawyer noted that every day, Rivanna transfers biosolids from the centrifuge building and hauls them to the east side where they are stored, then takes a tractor and puts them in a transfer facility that takes them to Waverly. He stated that this process creates odors, so there is more than one issue with odors – and while it could be the wastewater, it may not be. He stated that for the long term, one of the new primary clarifiers now has a partial cover on it, which is part of the long-range odor reduction program. Mr. Mawyer said the new vendor started work on the Crozet system the previous day, and they are using bioxide, which should improve odor issues in that area.

Mr. O’Connell asked how soon that would be in operation.

Mr. Mawyer responded that it was in operation now, but it may take a while before it starts having an effect. They can remotely monitor the sulfide levels and make adjustments.

Mr. Mawyer reported that Rivanna continues to transfer water from Sugar Hollow to Ragged Mountain, and as long as there is some rain, they expect to have the reservoir filled by May – transferring about 4 millions of gallons per day. 1 million gallons per day of that is treated at the Observatory Treatment Plant.

Mr. Mawyer stated that Mr. Castillo and Ms. Kent conducted a tour of the Glenmore Wastewater Treatment Plant for 11th and 12th graders from the Tandem Friends School, as part of Rivanna’s community outreach.

Mr. Mawyer stated that regarding reporting of the annual maximum daily water production, staff has added in the operations report the maximum day for the month of January and was doing some quality assurance on the historical annual data, which they expected to have in March. He noted
that this would apply to any capacity increases considered in some of the projects, such as the CIP. Mr. Mawyer stated that Rivanna staff and Lauren Hildebrand have a meeting with UVA staff on Monday to discuss the lease for the Observatory Treatment Plant.

Mr. Mawyer mentioned that recently there had been a “do not drink, do not use” directive to 83,000 customers in the Chapel Hill, North Carolina area because the locality had put too much fluoride in its system and simultaneously had a water break. He stated that the health department restricted all drinking water use, so that system was shut down for 24 hours. Mr. Mawyer also mentioned issues with the Lake Oroville Dam in California, where water was flowing over the regular dam and ripping up the auxiliary spillway made of concrete, then overflowing the earthen dam and started causing erosion. He noted that they evacuated over 188,000 people to make sure they didn’t have a catastrophe, and stated that Lake Oroville is 1,000 times larger than the Ragged Mountain Reservoir with a dam that is 70 feet tall. Mr. Mawyer stated that these things can happen to any water utility, and Rivanna staff works diligently to make sure they are doing the right things in terms of operations, maintenance, and management.

Mr. Mawyer thanked Mr. Krueger for cleaning up property acquisitions and getting condemnations finalized, some of which have been in the courts for a number of years.

Mr. Gaffney commented that getting news updates from other places and how it translates to this community is very helpful, noting that a lot of RWSA Board members got questions when Flint, Michigan’s situation happened, as to whether it could happen here.

Mr. Gaffney also asked for clarification of the maximum day for the month.

Mr. Mawyer responded that it was 9.6 million gallons on January 20th in the urban area, and he noted those statistics are provided in the staff report. He stated that they were researching the annual maximums and would present a graph of the information in March 2017.

6.0 Items from the Public
Mr. John Martin of Free Union addressed the Board and stated that in the Sunday paper, the County published an open letter to City and County residents regarding the Ragged Mountain Reservoir and the proposal to add bike rails at the reservoir. He stated that he did not understand the purpose of the letter and what the County wants citizens to do or respond to, although he does understand that there is a dispute between the City and the County, which they are working out. Mr. Martin said he wasn’t sure why it was written, but he wanted to set that aside and clarify what would be important to him regarding the reservoir and bike trails there. He stated that it would be important to him and other citizens to get more information about the environmental impact or lack of impact that bike trails would have on the Ragged Mountain Reservoir. Mr. Martin noted that the community has invested an enormous amount in the reservoir, and Rivanna is uniquely qualified to provide some additional information about the impact on the reservoir. He stated that the City has scheduled a tour of the reservoir for the coming week, with a map of the trails and opportunity to see where the trails are proposed, and that may be a good opportunity for Rivanna to be present and gather some more information. Mr. Martin pointed out that there are some tributaries that run into the reservoir, and he questions whether the trails would cross the tributaries – which have fairly low flow, but perhaps not all the time. He said that all the conversation has been based around
the present pool level of the reservoir, but it would go up 12 feet someday and he does not know
if that is an issue. He emphasized that Rivanna has done a wonderful job on the reservoir, and they
have all the skill and capability to go onsite and see if there would be some kind of impact on the
reservoir from these trails. Mr. Martin stated that in terms of the dispute between the City and the
County, it would need to be worked out, but having information about potential impact would help
resolve those issues.

There being no further speakers, the Chair closed the items from the public.

7.0   Responses to Public Comments – No Responses This Month

Dr. Palmer stated that she would like for Mr. Martin to come to a Board of Supervisors meeting
and ask that question, but the letter was intended for information so the public understood what
the County was doing and why. She again encouraged Mr. Martin to come to their March 1 meeting
and ask that question.

Ms. Galvin mentioned that during Mr. Frederick’s tenure, Rivanna stated that there would be no
impact to the reservoir by having bicycles – and at that time, dogs – on the trails. Ms. Galvin stated
that he and Rivanna staff indicated that there would be no consequences to water quality, and she
did not know what additional work needed to be done to confirm that. She added that it would be
helpful to know what needed to be done, in terms of a certified letter or verification, but it has been
iterated several times and was read into the Minutes. Ms. Galvin noted that there have also been
questions asked of Mr. Mawyer about this, and he has said there was no impact on the water quality
itself by having those types of uses.

Mr. Mawyer responded that Rivanna feels the recreation is not a concern for water quality, but has
never gathered any scientific data or objective data to reflect that – it has been more of a subjective
consideration. He said there are 1.5 billion gallons of water in the reservoir, and dogs and bike
traffic exist around all of the community’s reservoirs, and treatment plants remove any pollutants
– and Rivanna is comfortable with that. Mr. Mawyer stated that staff could talk with Mr. Martin
regarding his ideas and see if there are additional measures to be taken.

Ms. Galvin commented that specificity would be helpful, but she is not sure what level of analysis
would need to be done.

Dr. Palmer stated that the Board of Supervisors is interested in the legal question, in terms of who
has jurisdiction.

Ms. Galvin said that helps a lot, because it is not a matter of analysis that would be taking staff
time at the RWSA – and they need to be clear about what the issue is.

Mr. O’Connell asked if the County Board of Supervisors was taking this up at its March 1 meeting.

Dr. Palmer responded that the Board is not taking it up at that meeting, but they have asked very
clearly for a facilitated discussion with the City to deal with the legal issues, then would go from
there.
Mr. Krueger emphasized that for the public’s purpose, the legal issue is between the City and the County because it is City-owned property in the County, subject to the County’s zoning regulations. He stated that from the Rivanna Water and Sewer Authority’s perspective, it is only a matter of what their rights and obligations are as the RWSA, under the lease to manage the facilities – which is basically under the Four-Party Agreement. Mr. Krueger added that Rivanna does not control recreation at the reservoir or make recreational decisions, so the legal issue is not within the Authority; it is between the City and the County.

Mr. O’Connell stated that the fishing and boating that goes on does not seem to be an issue.

Mr. Walker clarified that in the County’s zoning ordinance, there are activities that are permitted and activities that are not permitted because they are by exclusion – and activities allowed by permit from Rivanna.*

Dr. Palmer said that the County would work on that clarification.

8.0 Consent Agenda

a) Staff Report on Finance

b) Staff Report on Operations

c) Staff Report on Ongoing Projects

d) Contract Award – Real Estate Acquisition Services

e) Contract Award – Sanitary Sewer Evaluation Engineering Services

f) Work Authorization for Additional Construction Management Services – Route 29 Watermain Betterment

g) Work Authorization for Additional Construction Management Services - Wholesale Metering Project

h) Purchase Order Award – SRWTP Filter Press Rehabilitation

Dr. Palmer moved to approve the Consent Agenda as presented. Mr. Jones seconded the motion, which passed by a 6-0 vote.

Mr. O’Connell commented that he liked the new format of the Consent Agenda, and noted the “time to fill the reservoir” information.

*Note: Signs posted at the reservoirs and the Rivanna.org website state that RWSA allows non-gas powered boats on South Fork Rivanna, Ragged Mountain, Beaver Creek, and Totier Creek without a special permit.

9.0 Other Business
a) Presentation by Rivanna Conservation Alliance

Ms. Robbie Savage addressed the Board and stated that she is the Executive Director of the Rivanna Conservation Alliance. She explained that the Rivanna Conservation Society was created in 1990, and Stream Watch was created in 2002 – and those entities merged on January 1, 2016. Ms. Savage said that they just finished their first year and she would report on their progress. She introduced Ms. Susan Kessel, who was most recently with the Southwest Florida Water Management District.

Ms. Savage presented the “Rivanna River Stewards’ Report,” comprised by the two stewards who paddle the Rivanna, and she noted the boundaries of the Rivanna watershed and how it fits into the larger Chesapeake Bay watershed. She mentioned that the watershed goes all the way to New York and includes Pennsylvania, Delaware, West Virginia, and Virginia – so it’s a big drainage area that goes into the bay, including Albemarle County, Charlottesville, Greene County and Fluvanna County. Ms. Savage noted the location of sub-watersheds and stated that the RCA monitors them through the Stream Watch program. She referenced a graphic illustrating the types of uses that take place in the watershed. Ms. Savage stated that the RCA spends a lot of time monitoring for benthic water quality, with 50 sites throughout the watershed and about 120 monitors certified at Level 3 – which is the highest level of monitoring obtained from DEQ. She said that they are at Level 2 with bacteria, and most of those 15 sites in the urban ring, so there is data available for the community as to whether water is safe to swim in. Ms. Savage also referenced water quality data for Moores Creek.

Ms. Savage reported that human activities within the Rivanna watershed are increasing, placing pressure on the environment, the natural habitat, water quality and water quantity. She noted that all of the communities in the watershed are growing, and the RCA’s vision is a healthy, thriving community that values its rivers and streams – a message that is heard regularly from the League of Women Voters and other groups throughout the community. Ms. Savage stated that in addition to their board of directors, the RCA has a science advisory committee to assist with monitoring and ensure that data is accurate, with most members coming from the University of Virginia. She presented a list of the RCA’s staff members, noting that she is the only full-time paid staff member, with the remainder being part-time employees – but most of them have been with her for the last seven or eight years. Ms. Savage stated that the organization performs advocacy and education, with kiosks up and down the river, and new panels being installed that contain the history of each location that describe where people are in the watershed. She mentioned that they also have a new GIS program that enables them to do a lot more mapping and monitoring for bacteria and benthic levels, and also have river guardians who are volunteers that walk the rivers and the watersheds picking up trash, and caring for the place they live.

Ms. Savage reported that the RCA has a river access project, a collaborative effort with the City and the County to upgrade the put-ins and pull-outs, with some of them being very dangerous for people, and one would be done at Free Bridge at a site where people were falling in, as well as one at Milton/Shadwell to improve that river access. She stated that the RCA has 100 acres in Fluvanna with three miles of trails, and they are building an education center, which has been in the works since she joined the organization. Ms. Savage reiterated that there are 50 benthic sites and 15 bacterial sites. She stated that Level 2 as indicated is for advisory purposes, and with benthic data,
RCA simply notifies the RWSA because it is at a level that equates government officials’ reporting
of data. Ms. Savage stated that the RCA wants to elevate its Level 2 bacteria monitoring, and if
that happens, the organization will be the only nonprofit in the country having Level 3 for both
bacteria and benthic. She added that this seems like a great opportunity for the community, and
they will not have to send people to follow up and it will not be advisory – as the data can be used
for both benthic and bacteria. Ms. Savage stated that this process is not cheap, but waters can be
delisted and put on the 303D list, as well as taken off. She said that it is used by the feds for the
EPA’s 305B reports – and if current trends continue, they will probably have less monitors and
will be depending a lot more on communities to do a lot of the work previously being done by
organizations like the USGS. Ms. Savage noted that they will have to get a qualified plan and
standards of operation, which would not be easy but would be very important.

Ms. Savage presented a map showing the benthic sites, which is a pretty good range of the sites
throughout, and some of these are not easy for monitors to get to – but they do it. She said that in
the 40+ years she has been doing this work, all monitoring is needed – benthic, chemical, and
biological – to get a sense of what is going on in the watershed. Ms. Savage reported that trained
volunteers go out and collect the data and go through a very rigorous process to be certified, with
an introductory session to be held the following week for new benthic monitors. She pointed out
that most of the activity and issues for bacteria are in the urban ring, although there are some sites
in Fluvanna: a beach at Pleasant Grove where monitoring is done, and a project at Cunningham
Creek where they did physical, chemical and biological monitoring for a TMDL. She stated that
they had 10-12 year old data, so before they launched into a full TMDL, they wanted up to date
data – so RCA monitors went out and did the work pro-bono, which concluded that a full TMDL
is probably not needed.

Ms. Savage stated that RCA starts monitoring within the next week and will do monthly
monitoring until the summer season starts, which means they will have to back it up – and then
weekly at urban sites such as Riverview Park, Darden Towe, etc. She said that RCA currently
operates a laboratory across from Ace’s Barbecue, with equipment to be installed at a $10,000
cost. Ms. Savage explained that their Level 2 monitoring system is fairly basic, with a sample
taken and reagents added, then placement in an incubator – counting of particles after 24 hours.
She stated that counts can sometimes be off, and their new CUL Alert system takes away a lot of
that guesswork. Ms. Savage said that she is very enthusiastic about the two river stewards, who
provide a lot of information about what is going on with the river, similar to the River Keepers
program, which this area is not quite big enough to be a part of.

Ms. Savage referenced a copy of the RCA’s report, noting that it provides all the data needed to
make a good assessment of water quality. She said there are also volunteer river guardians, who
last year took about 300 tires out of the river between Darden Towe and Fluvanna, with a particular
location near an auto shop. She noted that care must be taken not to create more turbidity when
they are removed, but it was an important effort. Ms. Savage commented that all the RCA’s
volunteers work really hard, with most being in the City and County but some being in Fluvanna
and a few in Greene. She mentioned the new steps at Riverview Park, where there is a sign in both
English and Spanish giving a number to call if there is a problem. Ms. Savage said that a child
drowned at Darden Towe Park two years ago, with part of the issue being that the family did not
speak English – and there was no information about who to call and what to say. She explained
that RCA worked with CARS and the Lake Monticello Water Rescue, who suggested including 911 and the number for water rescue.

Ms. Savage stated that the RCA is requesting an increase in funding from the RWSA from $10,000 to $15,000, which they consider to be a one-time increase for equipment.

Dr. Palmer commented that they all appreciate how professional the RCA is and what an incredible job they do for the community, and she hoped the RWSA Board would discuss it as part of its budget consideration.

Mr. Mawyer said that would take place in March.

Ms. Hildebrand asked if the RCA is also considering just monthly sampling of bacteria when going to Level 3 monitoring.

Ms. Savage responded that they would be doing it monthly and during the spring and summer season when people are out swimming – with up to five selected sites at swimming holes. She said that DEQ has indicated that as soon as there is money to buy equipment, they will be out and will train monitors and get them certified, likely within 30 days. Ms. Savage stated that there are a number of scientists on RCA’s staff, and DEQ thinks they can get them trained by the time people are swimming at Riverview, Darden Towe, and other locations.

Dr. Palmer commented that this is another example of how many well-educated people there are in the community who offer their services as volunteers.

b) Introduction of Proposed FY 2017-2021 Capital Improvement Program (CIP)

Mr. Mawyer reported that the CIP totals $135.9 million, a 1.9% increase from last year’s five-year CIP, and Rivanna continues to try to be strategic in the way it develops projects, focusing on three key programs: state and federal regulations, renewal of facilities, and increasing capacity of facilities.

Ms. Whitaker reported that she would fill them in on last year’s work with the CIP, adding that most Board members have seen the format previously, but there are a few new members. She stated that she would review the proposed CIP budget, the new projects proposed within the budget, some previously approved projects and a few that are currently underway. Ms. Whitaker reported that the proposed CIP budget is a $2.6 million or 1.9% increase over last year’s CIP, with six new projects – one of which is relatively small – so she would focus on the five larger projects. She stated that the first was the South Fork Water Treatment Plant, which Mr. Mawyer had been updating to the Board, along with the Observatory Treatment Plant – and both have limiting conditions in the facilities. Ms. Whitaker stated that in South Fork, the current alum storage facility has three tanks storing about 9,000 gallons, which can last only three to five days during a storm event. She said that the issue is that every week, they are juggling how to keep enough chemical on hand to meet the next storm event, and the idea is to expand to about 20 days of capacity storage – an increase of about 250%. Ms. Whitaker said they would also do some structural improvements in this building to handle the additional chemical storage capacity. She stated that the RWSA is also proposing an increase in filter capacity at South Fork, referencing a photo showing the current
four filters, with a current plant capacity of 12 MGD; two additional filters would take the filtering
capacity to 18 MGD, which would allow them to have filters come on and off line during peak
demand period. Ms. Whitaker said that this offers them additional capacity within this one part of
the process at the plan, but also offers redundancy during peak demands.

Ms. Whitaker referenced a photo showing the sludge pump station, which is a submarine hatch
type of facility that has a pump station and electrical system down in the “hole.” She said there
have been a few close calls in the past, which turns a small failure into a catastrophic one, which
can flood the facility and threaten the electrical gear – so the plan is to bring the electrical facilities
above grade to prevent future catastrophic failure. Ms. Whitaker referenced a photo of the raw
water pump station, noting that there have been constant speed pumps at the location, with four
pumps at this location – meaning the operators must be very specific about what they turn on and
off in order to match demand. She stated that the additional variable frequency drive would allow
pumps to ramp up and down, and currently only one pump has this drive, so this adds one to
another pump. Ms. Whitaker noted that this provides flexibility and allows for maintenance
because this pump station runs 24/7, 365 days a year. She said that the last improvement at South
Fork is for the office and storage space, as the operators, lab and staff currently all work within a
small area of functional space in the plant, so this would create more use-specific space.

Mr. O’Connell asked if those improvements increased capacity at all.

Ms. Whitaker responded that the capacity increases are related directly to the filters, so those would
have an increased capacity, but overall the plant would remain a 12 MGD plant – but over time as
different parts are modified, there would be increased capacity. She commented that it is an
incremental step, with the filters within the current CIP based on their recent discussions.

Ms. Whitaker stated that the next item is the Sugar Hollow Dam Rubber Crest Gate Replacement
Repair and Intake Tower Repair. She explained that at Sugar Hollow prior to 1998, there were
mechanical gates out on the dam – but the 1995 landslide presented some structural issues to the
dam and gates, as well as some flooding issues. She said that when the dam was upgraded in 1998,
it was replaced with a rubber bladder, which has a service life of about 20 years, so they are
basically in the planning process to replace it – with some concrete repair work to be done while
they are on the site.

Dr. Palmer asked for more information about the concrete repair work.

Ms. Whitaker explained that the concrete work is not structural, and there has been some water
seeping into the tower so they are wanting to make repairs to the intake tower and seal off the
water when needed. She said that this is done with a diver, with some of the work on the inside,
and some of it on the outside. Ms. Whitaker noted that there is an entire industry of divers – many
of whom are retired Navy SEAL divers – who specialize in bridges, dams, etc. and use equipment
underwater.

Dr. Palmer said that years ago, there was supposedly a crack in the dam, but it was of no
consequence that the crack was there.
Ms. Whitaker confirmed that this is a seam in the old concrete form that needs to be repaired so there is no water seeping into the intake towers, and there is no structural concern on the dam at all.

Mr. O’Connell asked if the bladders could get longer life than just 20 years, as that did not seem very long.

Ms. Whitaker responded that you can, but with the rubber material, the service life of the rubber depends on how much exposure it has to UV rays, how dry it is, and how hot the weather is. She stated that Bridgestone is no longer in this business, but recommends that they are replaced every 20 years. She noted that there was a failure of one of these rubber dams in Tempe, Arizona – which never had water running over it as intended, so it sat out in the desert with no cooling mechanism.

Ms. Whitaker stated that there is no concern for the local dam, and manufacturers are all comfortable that their products last for 20 years, but do recommend replacement before issues arise. She confirmed that this is kept inflated all of the time, and said it operates automatically when there is a storm event – so when the water level comes up, it slightly deflates to try to hold the water level steady, and it has only been down about five times in the 13 years she has been here, mostly for maintenance reasons.

Ms. Galvin asked if it rotates so it stays wet on all sides.

Ms. Whitaker explained that it is shaped like a teardrop, so the water goes over it and rolls down to the bottom side, which makes it a self-cooling type mechanism.

Dr. Palmer mentioned that there are months where no water is going over it, at least in the middle.

Ms. Whitaker responded that there are times of the year that is true, but the product is designed to accommodate for that.

Ms. Whitaker stated that the next project for the CIP is the Crozet Water System Master Plan, and explained that there is increased demand – particularly during peak summer days – in that area, with peak days of 80% or more of treatment capacity. She stated that this project focuses on raw water capacity, safe yield in reservoirs, and dam improvements that are required from a regulatory standpoint, with others possible as needed. Ms. Whitaker said they are looking at raw water supply, piping and pumping, treatment plant capacity, finished water storage, and conveyance. She stated that this project looks at DEQ permitting, as well as public engagement and discussion regarding needs and how to accomplish objectives.

Ms. Whitaker said that the Sugar Hollow Control Valve project is relatively small, and currently staff has taken historical measurements and adjusted the valve with approximation of 4 MGD being transferred – and this would allow for installation of an automated valve as well as a flow meter in this location so they would know what volume of water was being transferred at all times, and also be able to control it remotely. She stated that because the pipeline is so long and is aging, there is a very specific process done to protect the infrastructure, and it takes hours to open the valve. She said that this improvement would allow them to automate the process so that staff was not required to do it manually.
Dr. Palmer commented that the pipeline was now about 90 years old.

Ms. Whitaker said that part of it was 97 years old, built in 1920, and some of it was actually 109 years old, and the CIP includes a description of which pipes are which ages.

Ms. Whitaker reported that the last CIP project is a raw water line interconnect, and just downstream from the Ragged Mountain Dam coming into town, there are two parallel 18-inch mains that are currently not interconnected except at the dam and at the water treatment plant. She stated that because they occasionally have line breaks on the pipes, they would like the opportunity at the midpoint to redirect water from one pipe to the other and one pump station to another, which provides interoperability and reliability of raw water pump stations. Ms. Whitaker noted that this is in the area of Fontaine Research Park.

Mr. O’Connell asked if they served any day-to-day purpose.

Ms. Whitaker responded that there are two raw water pump stations, including the Royal Pump Station – which does not have a backup generator and is a fixed-speed pump, and Stadium Road – which is a much more modern pump with a backup. She said that this improvement would allow Rivanna to take water from either side of the system and run it through the more advantageous pump station under most conditions, so it provides better flexibility regardless of variables in each pipeline. She stated that typically pipelines fail in streams, so they have to go through the Army Corps permitting process to rebuild and repair them in those areas – so there is some time involved in ensuring that compliance.

Ms. Whitaker reported that a few projects have changed, including the Observatory Treatment Plant, which Mr. Mawyer has discussed previously. She said that the plant was built in the 1950s and much of the infrastructure is original, including the sand and filters. Ms. Whitaker stated that they would be taking a somewhat antiquated facility with very high quality water coming into it and bringing it up to modern standards. She referenced a graphic prepared by Dr. Gullick that illustrates the issue the plant has, explaining that the South Fork plant provides water into the heart of downtown, east to Pantops; the Observatory Plant provides water over the southern corridor. She stated that hydraulically, Pantops and Avon are not well interconnected, so the system struggles to get water from one side of the system to the other, as it basically “screams” through the City pipes. Ms. Whitaker said that in the late 1980s, a connector pipe was established to connect Pantops and Avon in the urban area, and the pipeline is about 24 inches in diameter and 15,000 linear feet. She stated that they have put the beginnings of the funding in the CIP, but it will take longer than the five-year CIP timeframe, and the cost estimate is $13 million – but it does complete the system hydraulically and allows the system to serve the entire community from either water treatment plant under all circumstances.

Dr. Palmer asked what she meant by “screams” through the City system.

Ms. Whitaker explained that if there is a higher demand in Avon, for example, and they want to push water from South Fork to Avon, they basically fill Pantops’ tank until it “locks out,” and that increases the pressure in that portion of the system and pushes the water through the pipe at higher
pressure. She said the inverse was also true, and if they need to produce more water at Observatory, they bring the pressures up high, which forces a pressure gradient through the system. Ms. Whitaker stated that the piping in the southeast quadrant of the City sees higher pressures and velocities, and although the City has replaced the piping over the years, the increased pressure has resulted in some line breaks — particularly at Free Bridge. She said that this project would allow the system to maintain lower operational pressures and much more easily serve the system from both water treatment plants. Ms. Whitaker said that the first phase would be a routing study and easement acquisition, and about a third of the alignment is on the wastewater plant, going along the highway.

Ms. Whitaker reported that they have talked about the Upper Schenks Branch project, and the CIP includes phase two — which is about 1,200 linear feet and is about 20-25 feet deep. She stated that there are two alignments being reviewed — one on County property, and one on McIntire Road — and somewhere along those alignments would be a connection from the end of Schenks Branch to the City’s 14th/15th Street collector. Ms. Whitaker noted that they are anticipated a significant amount of rock in this alignment, which would need to be broken out.

Dr. Palmer asked if tunneling was being considered, or if it was much more expensive.

Ms. Whitaker responded that typically a tunnel boring machine is not used for anything less than 6-8 feet in diameter, so a 36-inch pipe, there isn’t really equipment made to work at that size. She said there are several different ways to approach it, but the rock undulates between dirt and rock, and open cutting is the most predictable way to access it.

Mr. Mawyer added that they could get to the pipe to repair it if there were a leak or a problem, but that is more challenging if there is a tunnel.

Ms. Whitaker stated that historically where systems fail is when trees come down on an aerial crossing of a pipe, so dropping piping deeper makes the system more resilient.

Mr. Mawyer said that this is a compromise for not having more sewer pump stations, and they wouldn’t have to go as deep with more stations — but that’s an expense in itself.

Ms. Whitaker stated that they are very fortunate in that most of the system is gravity.

Ms. Whitaker reported that the last project in the CIP is the Crozet Wastewater Flow Equalization Tank, which addresses peak shaving and wet weather flows coming from the Crozet area and is a cost avoidance project. She said that at some point they would have to upgrade all four pump stations and the piping coming into Crozet for the wastewater system, but this project allows delay of that for decades and also includes odor control measures. She added that this will allow them to peak shave during wet weather events and also allows them to take the rest of the infrastructure offline for maintenance, which they currently can’t do very well.

Ms. Whitaker noted that four projects underway include the Route 29 pipeline installation, which realizes $2 million in saving by doing it while the road is being build. She said that this is about 10,500 linear feet of pipe, and they are about 80% completed and expect to be done by April. Ms.
Whitaker stated that the Rivanna Pump Station and tunnel are almost complete, with the pump station itself functioning and almost ready to start up, with several months of and testing and an expected summer completion. She noted that the project would take them up to 53 MGD peak capacity on the eastern side of town.

Mr. O’Connell asked what the tunnel looks like now.

Ms. Whitaker explained that it really looks like the inside of a pipe, but it is a 60-inch pipe with supports that it sits on. She said that it was installed so that every so many feet, there is a support that goes 360 around the pipe and braces it against the wall of the tunnel, with the pipe loaded into the tunnel and concrete grout placed around it.

Ms. Whitaker stated that the last project is the Odor Control Project, and explained that over the last few weeks they have been putting covers onto the primary clarifiers – with the interior of those clarifiers prepped. She referenced a photo of the new covered trailers that would have sludge loaded directly in so it would not be hauled around the plant, creating odors. Ms. Whitaker stated that the conveyors needed inside the solids handling building to use the trailers are currently under construction and should be ready to go in the next few months. She noted that this ties into the second centrifuge project and includes all other work at the plant, including the foul air lines and odor scrubbing facility.

Mr. Mawyer mentioned that Rivanna had reviewed the CIP with Mr. O’Connell and Ms. Hildebrand several weeks ago to give them an overview, so they saw it on behalf of the Board. He explained that for March, staff would bring any comments into the plan, but otherwise would request approval of the CIP from the Board, and would begin the operating budget process. Mr. Mawyer stated that in April, they would advertise the rates for the year and would finalize the total operating budget in May.

Ms. Galvin asked for explanation of the increase from the $6.67 million existing to the $9.01 million proposed for the Upper Schenks Branch Interceptor.

Ms. Whitaker responded that the project had been built by three or four VDOT projects, a City road project, a Rivanna project, and the last stretch underway. She said there has been a capital account that has been sitting for some time, so they are completing the lower portions that are actually finished construction ready to be capitalized and keeping money in the upper section. Ms. Whitaker said that adding those two together yields the higher number, and they also added some funding to address the rock found in the last section. She agreed to provide the specifics of this to the Board.

Mr. Mawyer mentioned that there is $4 million in new funding in FY18 and FY19 for that project.

10.0 Other Items from Board/Staff not on Agenda

11.0 Closed Meeting
There was no closed meeting held.

12.0 Adjournment

Mr. Jones moved to adjourn the RWSA Board meeting. Mr. O’Connell seconded the motion, which was approved by a vote of 6-0.

There being no further business, the meeting adjourned at 3:58 p.m.