RWSA BOARD OF DIRECTORS
Minutes of Regular Meeting
October 23, 2018

A regular meeting of the Rivanna Water & Sewer Authority (RWSA) Board of Directors was held on Tuesday, October 23, 2018 at 2:15 p.m. in the 2nd floor conference room, Administration Building, 695 Moores Creek Lane, Charlottesville, Virginia.

Board Members Present: Mike Gaffney, Lauren Hildebrand, Jeff Richardson, Liz Palmer, Gary O’Connell, Mike Murphy, and Kathy Galvin.

Board Members Absent: None.

Staff Present: Bill Mawyer, Katie McIlwee, Lonnie Wood, Jennifer Whitaker, Tom Freeman, Andrea Terry, Liz Coleman, Dave Tungate, Victoria Fort, Scott Schiller, Michelle Simpson, and Tim Castillo.

Also Present: 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 2:55 p.m.

2. MINUTES OF PREVIOUS BOARD MEETINGS
a. Minutes of Regular Board Meeting on September 25, 2018

There were no changes to the minutes presented.

Dr. Palmer moved to approve the RWSA Board meeting minutes of September 25, 2018. Ms. Galvin seconded the motion, which passed 7-0.

3. RECOGNITION

There were no recognitions presented.

4. EXECUTIVE DIRECTOR’S REPORT
Mr. Mawyer stated that he had noted for the Board how well staff had performed during Hurricane Michael, which brought more than three inches of rain to Scottsville -- but there were no sewer overflows or water treatment disruptions. He stated that David Tungate and Tim Castillo would provide a presentation in November on how massive quantities of water were moved through a plant without overflow, noting that this storm brought more than 55 MGD in instantaneous flow coming into the plant. Mr. Mawyer explained that they basically bypass normal operating procedures and store it in the ponds, then bring it back and treat it after the flows subside.

Mr. Mawyer reported that this was National Lead Poisoning Prevention Week, and people can be exposed to lead through the water they drink -- with this community having excellent drinking water, falling far below the action level for lead. He stated that RWSC was in the process of completing a corrosion inhibitor study, with corrosion chemicals preventing lead from leaching into the water, and he noted that Rivanna staff would be discussing more with the Board about the lead prevention program in the coming months.

Mr. Mawyer stated that they continue to celebrate their granular activated carbon system and how well it produced quality water for the whole community, with continued good results. He stated they had a “taste and odor panel” comprised of City, ACSA, and Rivanna staff members who came over and drank the treated water to detect any issues. He stated that the panel had commented on the good quality of the water and the consistency over the past several months. Mr. Mawyer noted that GAC was a resource that would reach the end of its useful life, and Rivanna’s consultant had studied it and determined that the GAC material at South Rivanna and Crozet was closing in on the end of its service life. He stated that this meant that they would replace the GAC at both facilities by the end of calendar year 2018, at a cost of approximately $500K.

Ms. Galvin asked if it was somewhat related to the turbidity of the water.

Mr. Mawyer confirmed that it was, stating that the sediment levels in the water determined how much organic material was absorbed by the carbon. He commented that this was not unexpected, and estimates when he arrived two years ago were about $1 million per year to replace the GAC material. He added that there were also theories that you could never replace the GAC material by letting bugs grow in to treat the organic material, but this was not an appealing solution, as is done with wastewater.

Dr. Palmer asked if, when the new sediment removal system was installed at South Fork to transfer the water from South Fork to Ragged Mountain, they would run the water normally treated directly at South Fork through that sediment removal system -- as it would reduce the amount of carbon needed.

Mr. Mawyer responded that it would go back into a natural reservoir.

Ms. Whitaker explained that it would be part of the final design considerations and there would be several options. She stated that one was to pretreat everything and use it as part of the treatment train at South Fork, sending the settled water to Ragged Mountain. She stated that
another alternative was to build a smaller footprint facility and allow South Fork to continue to
treat what it has, then split at the raw water intake -- going in two directions that allow the
smaller facility to pretreat Ragged Mountain. She stated that they budgeted to handle the more
expensive of those options, but as they get into design, the goal will be to design for the
optimum.

Mr. O’Connell asked if they could evaluate the GAC cost and replacement as part of that.

Ms. Whitaker responded that they could, but the primary concern was originally sediment
removal as they went to Ragged Mountain and that now includes phosphorous removal so that
they don’t create algae issues at Ragged Mountain. She stated that she does not have good
information on how that then impacts the GAC treatment, which was not on their radar at the
time and would need to be considered.

Dr. Palmer asked when this was in the CIP.

Ms. Whitaker replied that she did not know.

Mr. Mawyer clarified that from the two options the Board had considered, the earliest start date
would be 2027 and the latest would be 2035.

Mr. O’Connell asked Mr. Mawyer to include something in the November RWSA Board packets
about financial implications of GAC replacement and how that fit into the budget.

Mr. Mawyer responded that they had about $450K in the budget from a prior year and this year
for GAC replacement, so that would cover most of the cost but there may be a smaller amount
needed from savings or reserves. He clarified that there had been $250K budgeted two years ago
and some money in the current year, totaling about $450K, but he would provide actual numbers.

Mr. O’Connell stated that the budget process could push the item up.

Mr. Mawyer stated that now that they had historical information on how GAC would perform,
they would have a budget item for material replacement every year.

Mr. Mawyer stated that staff had told the Board in September that they were in the process of
taking over the Red Hill water system, and he and Mr. O’Connell were meeting later in the day
at Red Hill Elementary to discuss the transfer with customers of that system. He stated that Mr.
Henry had suggested meeting with County staff about using the Rivanna lab for lake water
analysis, and Andrea Terry had been able to work with Mr. Tungate and their lab to provide
nutrient analysis of the water samples -- but could not do algae counts because those were
contracted out.

Mr. Mawyer reported that Ms. Whitaker had been invited to participate in a lake/dam emergency
tabletop exercise, and she would report on that later in the meeting.
He noted that the Board’s next meetings would be November 13 and December 18, which were both earlier in the month to accommodate the holidays.

5. ITEMS FROM THE PUBLIC

There were no items from the public.

6. RESPONSES TO PUBLIC COMMENTS

There were no responses to public comments.

7. CONSENT AGENDA

a. Staff Report on Finance

b. Staff Report on Ongoing Projects

c. Staff Report on Operations

d. Approval of Engineering Services - Beaver Creek Reservoir Dam Improvements – Schnabel Engineering

e. Approval of Engineering Services – Observatory Water Treatment Plant - Expansion And Rehabilitation Project – Short, Elliot, Hendrickson Engineers

f. Approval of Engineering Services – South Rivanna Water Treatment Plant - Expansion And Rehabilitation Project – Short, Elliot, Hendrickson Engineers

g. Approval of Engineering Services – Ragged Mountain Reservoir To Observatory Water Treatment Plant Raw Water Line - Michael Baker International

h. Approval of Term Contract for Environmental Engineering Services - ECS Mid-Atlantic, LLC

Dr. Palmer moved to approve the Consent Agenda as presented. Mr. O’Connell seconded the motion, which passed 7-0.

Mr. O’Connell noted that the RWSA had $75 million in projects they were preparing to design, including a lot of big projects that affected ACSA rates, such as 100% of the Crozet project.

8. OTHER BUSINESS

a. Presentation: Birdwood Raw Water Line Update - Bill Mawyer, Executive Director

   i. Recommendation for Acquisition of Raw Water Line Easements

   ii. Recommendation for Authorization to Award Construction Contract
Mr. Mawyer reported that the RWSA Board had authorized staff in August to move forward with the Birdwood Raw Water Line, and staff including Ms. Whitaker, Ms. Simpson, Mr. Schiller, and Mr. Krueger had been very busy working on easement documents so they had legal right to access the property and have a pipeline, as well as construction documents to procure the work. He stated that the goal was to have this information ready for the Board to approve at this meeting, as UVA had already begun its work and Rivanna needed to keep pace.

Mr. Mawyer stated that there was approximately 1.2 miles of 36-inch waterline to be installed, which was part of the raw waterline from the South Rivanna to Ragged Mountain reservoirs. He stated they had advertised construction bids in September and were hoping to award on October 23, which was not quite possible but they hoped to still begin construction in early December with completion by October of 2019. Mr. Mawyer stated that the budget presented in August was $7 million, but staff believes there is now a better figure.

Mr. Mawyer presented a map showing Route 250 and the line depicting the pipeline location, which would come under Rt. 250 with a 40-foot permanent easement, as well as a 10 feet on each side totaling a 20-foot temporary easement while the project was being constructed. He stated that this was the only permanent access easement to the pipeline, and at the other end of Canterbury Road they would have access by a temporary easement across the UVA Foundation property to provide a second access. He noted the location of storage areas there and near Rt. 250 to be used during construction. Mr. Mawyer stated that they had been negotiating with the Foundation about two permanent easements and a temporary easement, as well as access at Rt. 250 and at Canterbury Road.

Dr. Palmer asked if Rivanna had reached out to the Bellair Homeowners Association, noting that they were a very active group.

Mr. Mawyer responded that they haven’t yet, but as soon as they have a construction contractor and firm plans, RWSA would schedule a meeting.

Dr. Palmer stated that she planned to attend that meeting and asked that staff provide as much advance notice as possible.

Mr. Mawyer presented a sketch showing the pipeline and the permanent and temporary easements, showing that they were purchasing 60 feet of right of way from the Foundation, down the length of the golf course adjacent to Bellair. He stated that in negotiations with the Foundation, they planned to acquire 6.03 acres of permanent easements on two parcels, 2.83 acres of temporary easements, at a cost of $240,200.

Mr. Mawyer reported that the project budget was $7 million, and Rivanna had received bids the previous week ranging from $2.6-$4.1 million, but unfortunately the applicants did not properly complete the bid forms, so all the bids had to be rejected. He stated that they re-advertised for bids and would reopen for bids on October 31, so it was hoped the cost range would remain the same, with a projected cost of $4-4.5 million. He noted that the coordination with UVAF and Virginia Power was also beneficial.
Mr. Mawyer stated that RWSA shared the risk of underground rock with the bidders, who provided a unit price and would be paid for every cubic yard removed, and that was rolled into the total base bid.

He noted that the reason for the bid returns was that as required in the request for bids, mobilization could not exceed more than 3% of the bid, and they had all miscalculated.

Mr. Mawyer stated that the Board was being asked at this time to authorize execution of the easement and compensation agreement totaling $240,200 with UVAF, as well as to authorize Mr. Mawyer to execute minor modifications to this in the event they had to move a few feet in any direction.

Ms. Galvin moved to authorize execution of the easement and compensation agreement totaling $240,200 with UVAF, as well as to authorize Mr. Mawyer to execute minor modifications to them. Mr. O'Connell seconded the motion, which passed 7-0.

Mr. Mawyer reported that the construction contract was a bit unorthodox, but staff was asking the Board to authorize RWSA staff to award the construction contract from bids received the following week, providing they were within the project budget, so they could move forward immediately -- with the typical clause of executing change orders not to exceed 10% of the contract price. He stated that this would help them keep pace with the Foundation and its work, and the award process could be expedited so that things were proceeding before Thanksgiving.

Dr. Palmer moved to authorize RWSA staff to award the construction contract, providing it was within the project budget of $7 million or less, with the typical clause of executing change orders not to exceed 10% of the contract price.

Mr. Murphy commented that the $7 million estimate was derived from information available up to August, but it seemed like there was more information now and he wondered why they couldn't be at $5 million, inclusive of the highest bid estimated plus 10%.

Dr. Palmer responded that they just did not know, because the bids came in and were incorrectly done.

Mr. Mawyer added that they were hopeful they would be in that same range, but before they got those bids they were prepared with a $7 million budget and an engineer’s estimate of $5.3 million. He stated that they could not fully identify why they were lower, but it was hoped they would remain low -- and if the bid had been at $5 million and was correct, it would have remained on budget.

Dr. Palmer stated that if a bid came in at $5.5 million, it would nullify that bid.

Mr. Murphy asked if there was a material change in the bids as a result of what the contractors missed.
Mr. Mawyer responded that they did not know and had heard there was pipe put on reserve and
may not be maintained at the bid price -- and in the past, prices had risen when they were rebid.

Ms. Hildebrand asked if there was a risk of pushing the bids up if they approved something close
to budget.

Mr. Mawyer responded that the budget was known in the first round of bidding.

Mr. O'Connell suggested that they authorize $5 million -- and if it came in higher, they had a
meeting on November 13 and could discuss it then, which would avoid the possibility of pushing
the bids up.

Mr. Gaffney added that they could always hold a special meeting.

Ms. Galvin commented that she understood this logic.

Mr. Krueger pointed out that the bidders had the $7 million in the first round of bidding, and that
was not being changed, so in some sense the engineer's estimate was $7 million -- and the only
reason Mr. Mawyer mentioned a smaller project is because they received the bids. He
emphasized that there was nothing in the engineer's estimate to say it was wrong, and from a
competitive standpoint, there will still be competition among bidders.

Ms. Galvin noted that the budget was approved by both, and she was hearing from Mr. Mawyer
and Mr. Krueger that it would be easier to proceed as proposed.

Mr. Krueger mentioned that Mr. Mawyer could always come back to the Board if he so chose,
and he was not being required to sign if it was less than $7 million -- he was only being
authorized to do so.

Mr. O'Connell stated that in terms of a schedule, bids would be opened on October 31, then
reviewed and a low bidder determined to get to the point of signing -- which did not offer much
time before the next Board meeting.

Mr. Mawyer responded that they typically used a 10-day waiting period, and if this Board
awarded it on November 13, they would wait 10 days before issuing the award letter. He stated
that while it was only two or three weeks, it would avoid the holiday period.

Dr. Palmer stated she did not see a reason to change this, as it was in the CIP and had been
publicized at $7 million.

Ms. Galvin noted that they were basing the lower budget on bids that were provided in error,
which caused concerns for her.

Mr. O'Connell clarified that the contractors had just filled the bid form out incorrectly.
Mr. Gaffney stated that hopefully they would be bidding close enough to what they had done before, if they wanted the job.

Mr. O'Connell stated that they did not know what the contractors would do behind the scenes, and it would be challenging to get going by November 13.

Dr. Palmer stated it was the 10-day waiting period and Thanksgiving that were at issue, and she would rather get it going -- especially in light of complaints from Bellair constituents. She added that she was getting a constant flow of complaints about Birdwood construction, and it looked like a moonscape with all the clearing, so she would prefer that they get going.

Mr. Krueger noted that the compensation agreement approved also had milestones for completion of two phases of the project that directly affected Birdwood’s fairways and greens, and there was a good amount of time to meet those benchmarks of a date certain in 2019. He stated that in the event they did not meet them, they had to shut down and start over later on, which Birdwood wanted so they could get their grass seed planted and reopen in the spring.

Ms. Galvin called for the question.

Mr. Murphy offered a friendly amendment that the Executive Director be required to notify the Board of any executed contract exceeding $4 million in construction costs.

Mr. Mawyer stated that would be fine with him.

Dr. Palmer accepted the amendment to the motion. Ms. Galvin seconded the motion. The motion as amended was approved by a 7-0 vote.

b. Presentation: Rivanna’s Dam Safety Program - Jennifer Whitaker, Director of Engineering and Maintenance and Victoria Fort, Senior Civil Engineer

Ms. Whitaker stated that Ms. Fort would be co-presenting on the dam safety overview, which had been a program with Rivanna for some time and was a pivotal piece of what RWSCA did as an organization. She stated that Rivanna had grown into a regional resource for other dam owners, and she had recently learned there were only about 300 regulated dam structures in Albemarle County.

Ms. Fort reported that dam safety was important in avoiding catastrophic failure of dams, which had resulted in loss of life over the years, as well as massive damage to properties. She stated that they could also learn a lot from non-failure dam emergencies, and she would highlight several of those.

Ms. Fort reported that the first of those was in February 2017 with the Oreville Dam incident in Northern California. She explained that the dam was constructed in 1968 and was a 770-foot embankment dam -- 10 times the height of the Sugar Hollow Dam -- and was an embankment dam with a concrete main spillway and an earthen emergency spillway. Ms. Fort stated that there had been heavy rains in the winter of early 2017, which caused the lake level to rise quickly, so
they opened the gates to the main spillway to allow some of the water to release from the lake. She stated they found fairly quickly that a large crater had formed in the spillway, so they shut off flow to assess the damage but had to continue to release water from the lake to prevent the earthen spillway from activating.

Ms. Fort stated that ultimately they were not able to release enough water, the earthen spillway over-topped and started undercutting quickly, and there was concern that the entire spillway would fail and release a massive floodway into the river basin. She stated that local officials decided to evacuate the Feather River Basin, with 188,000 residents evacuated -- many of whom ended up stuck on the bridge over the Feather River downstream because evacuation routes routed over the river. She noted that the waters eventually receded and the spillway did not fail, but they were currently undergoing repairs at a cost of over $1 billion.

Ms. Fort stated that what went well was that everyone recognized the failure early, took steps to try to mitigate, the dam ultimately did not fail, and local officials responded quickly to evacuate the area. She stated that what did not go well was the evacuation route, as they ended up with vehicles stuck over the Feather River on a bridge. She stated there were also some structural issues with the spillway itself that led to the crater and the subsequent damage, which may have been able to be recognized in regular inspections.

Ms. Fort reported that there was also an incident with the College Lake Dam in Lynchburg, Virginia, which had been overtopped by heavy rains in August 2018 from the upstream basin. She stated that the dam was built in 1934 by VDOT and was 35 feet high, closer in scale to the Totier and Licking Hole Creek dams. She stated that the dam had overtopped and the water caused damage to the road and the dam itself -- with concerns that the dam would fail as the waters continued. She noted that they eventually opened a gate in the dam to release water and drain the lake, but in the meantime evacuated 124 homes downstream. Ms. Fort stated that they would likely abandon the dam built for flood storage and sediment control because the cost of repairs would be too high for the owners to bear.

Ms. Fort stated that positive aspects were that they made the decision to evacuate in a very timely manner, and protected the downstream university and residents. She stated that the negative aspects were that the dam was undersized for these types of flood events and was in need of an upgrade that was not being pursued as quickly as needed.

Dr. Palmer asked what they would do to serve the purpose if they were not replacing or repairing the dam.

Ms. Fort responded that her understanding was that it would be converted to wetlands.

Ms. Whitaker reported that per the state of Virginia, a regulated dam must be greater than 6 feet tall or greater than 25 feet tall and impounding more than 50 acre feet, or over 15 acre feet for a shorter dam. She stated there were agricultural small dam exceptions, so taking the 300 regulated structures in Albemarle County and doubling or tripling those for ag-exempted dams would mean upwards of several hundred additional dams that fell within that exemption. She added that the South Fork Rivanna Dam was an energy-related dam and thus was a federal dam.
Ms. Whitaker stated that dams were designed with a high level of conservatism, but current meteorological data may show that is not high enough. She stated that dam safety events were low-probability events but had a potential for high impact. She stated that in Charlottesville, there was the South Fork Rivanna Dam, Sugar Hollow, and Ragged Mountain dams -- and Ragged Mountain and South Fork both had high urban populations downstream, meaning a high impact to homes, transportation, and community functionality. She added that the dam safety program and upkeep on high-hazard dams was important given the close proximity of the community.

Ms. Whitaker reported that things that could cause dam emergencies included a rainfall event, which had been the case in 2018; material failure such as in the Oreville example; vandalism or terrorism; and accidents and public safety issues. She mentioned that there were a few low-head dams in Albemarle County, which brought safety concerns related to the structures and the hydraulics adjacent to them.

Ms. Whitaker reported that there were three hazard classifications, including high-hazard dam, which was related to what was downstream and was not related to deficiencies or vulnerability. She stated that high-hazard dams had the potential for loss of life or high economic impact. She stated that significant hazard dams had a possible loss of life and probable destruction of property; low-hazard dams had no loss of life and minimal economic or environmental loss, such as Totier Creek because there are no structures downstream and only three properties between it and the James River, as well as no potential economic functional loss.

Ms. Whitaker stated that they have discussed probable maximum precipitation, which is the theoretical greatest amount of precipitation for a given area and given period of time, based on fairly complex computer models -- including one completed in 2015-16 for Virginia -- preceded by models that used hydrologic data from the 1980s. She stated that given precipitation patterns, there would likely be more frequent updates in the future.

Ms. Whitaker presented probable maximum precipitation (PMP) data from the Beaver Creek watershed evaluation, with that being a relatively small watershed. She stated that the South Fork Rivanna River watershed had 259 square miles, so those numbers would drop because you could not have a very intense storm over an area that large. She stated that a 2-year storm had just under four inches of rain; a 100-year storm had 9 inches of rain; and a PMP event was 34 inches of rain in a 24-hour period. Ms. Whitaker noted that the May 30-31, 2018 storm event had 9 inches of rain in a very short timeframe. She stated that while PMP was a maximum, there were several events in Virginia that have approached that level -- Hurricane Camille and the 1995 Madison County rain event, both of which were at 80% of PMP. Ms. Whitaker mentioned that those two events were among the largest rain events in the entire country.

Dr. Palmer asked what percentage the 1995 event was for Sugar Hollow, as it was impacted the same as Madison County.

Ms. Whitaker responded that it was 86%, and it was one of the storms that governed the Virginia study for the region.
Ms. Whitaker noted that there were high-hazard facilities that included South Fork, Sugar Hollow, Beaver Creek, Ragged Mountain; low-hazard was Totier Creek and Lickinghole; and there were other facilities such as North Fork, Mechums River, a small dam at the Ivy MUC, and a small dam at Buck Mountain Creek that were monitored. She stated there was also Lake Albemarle, state-regulated dams, private dams, County-run dams, Dominion Power dams, etc. that needed to be monitored -- and this was a big issue in the County, given its topography.

Ms. Whitaker stated that South Fork was federally regulated with FERC, but Rivanna hoped it would revert back to state regulation in the near future; Ragged Mountain was earthen and state-regulated; Sugar Hollow was concrete with a rubber bladder, which would be replaced along with the bladder air system in the next CIP. She stated that Beaver Creek Dam was fairly significant and would need upgrades, and given the road on the crest of the dam, it fell into high-hazard. She stated that Totier Creek and Lickinghole were relatively small, low-hazard dams and were just over 30 feet tall.

Mr. O'Connell asked how Rivanna was responsible for Lickinghole.

Ms. Whitaker responded that she researched it and found that it came out of the anti-eutrophication watershed ordinance work in the 1980s, at which time there was interest in trying to do sediment forebays on the South Fork Rivanna River to prevent nutrients moving downstream. She stated that Rivanna was a dam-owning agency and a regional cooperation agency in the water supply with jurisdiction in the river, and the project was handed over for operation. Ms. Whitaker noted that it served as a sediment basin for the Crozet service area and prevented sediment from coming into South Fork.

Dr. Palmer recalled that it went along with putting the Crozet Interceptor in to save the South Fork from eutrophication, as there was a lot of algae growth in the South Fork in the 1970s.

Ms. Whitaker added that there were nutrients coming from the interceptor to the wastewater plant in Crozet that was discharging, as well as sediment that carried phosphorous typically, so the idea was to address it in several different ways and try to improve the health of the South Fork.

Ms. Fort stated that there was a number of elements that went into emergency response planning (EAP) for dams, and they have created the Owners Dam Safety Plan, which included internal dam safety policies, internal procedures and training, safe dam design and quality construction, dam maintenance and monitoring -- including inspection and instrumentation, emergency action plans for high-hazard dams as a federal and state requirement, and annual review of and training on emergency action plans, including functional exercises. She stated there was also public notification protocol regarding present hazards, including signs and buoys of "dam ahead," with a goal of increasing that signage and possible alarm systems to alert for rising floodwaters.

Ms. Fort stated that EAPs included several sections, including a notification chart for each type of emergency for each dam, which went through a call-down list and actions to take; emergency detection evaluation and classification; responsibilities both internally and externally within.
Rivanna in the event of an emergency; preparedness steps to be ready for an emergency; and
inundation maps.

Ms. Fort reported that there were three failure scenarios: a dam has failed or is about to fail; there
is a potential situation developing, such as a new seep getting bigger; and a non-failure
emergency such as a high-rain event that may increase the level of monitoring. She stated that
each scenario had a notification chart for each dam under each EAP, and she presented an
example of each along with a description of each failure scenario it accompanies. Ms. Fort also
presented a call-down list, which included police, fire, RWSA Board members, emergency
management, the National Weather Service, dam safety officials, VDOT, and alternative
contacts.

Dr. Palmer noted that she was not on the list.

Ms. Whitaker responded that they were in the process of updating it and would add her, noting
that it may not include elected officials.

Ms. Fort clarified that it was County and City executives.

Mr. O’Connell asked what officials would be expected to do.

Ms. Fort stated that in terms of responsibilities, Rivanna would verify and assess what the
emergency condition was and how it was progressing; notify emergency management agencies
of the event and how RWSA felt it should be classified; undertake corrective action at the facility
as much as possible, such as putting down stone or rip-rap; issuing condition status reports to
local officials and emergency management personnel; and declare an emergency at the facility.
She stated that Charlottesville, UVA, Albemarle, and other emergency management staff were
responsible for receiving Rivanna’s condition status reports and notifying the public -- and if an
evacuation needed to happen, the localities and UVA would be the ones coordinating it. She
mentioned that Fluvanna was also receiving the reports since they were in the inundation areas,
and were thus responsible for notifying the public in connecting the evacuations.

Mr. Murphy stated that he assumed they would convene the regional Emergency Operations
Center (EOC), and Alison Farole would convene the group and work through that -- but he
wasn’t sure how that would work with Fluvanna.

Ms. Fort confirmed this, adding that in the event of an emergency, Fluvanna would also be
notified.

Ms. Whitaker clarified that Ms. Farole has called Fluvanna’s representatives in the past related to
some of the South Fork Dam emergency items, and they had been asked to attend EOC events.

Mr. O’Connell pointed out that in the event of a major weather event, everyone would be
involved anyway.
Ms. Fort stated that EAPs would likely be activated for multiple facilities, and the longer text in
those plans expounded on the detail as to which staff members were present at the EOC, who
was coordinating with whom, and the protocol for contacting local officials.

Ms. Fort stated that she would also review inundation mapping, as they had a set of maps for
every facility included in the copy of the EAP, and she pointed out various sections of the
Ragged Mountain Dam EAP. She stated that they evaluated various road crossings and the
distance from the dam, the arrival of the flood wave, and a sunny day breach -- which was one
that occurred in the middle of a day, not related to a flood; or a Probably Maximum Flood
(PMF) breach, a flood resulting from PMP. She noted that it also showed where inundated road
beds and structures were, which were also detailed in the EAP for crossings.

Mr. Murphy asked about authority for an evacuation because in terms of local government it was
just a suggestion, as the Governor was the only one authorized to require mandatory evacuation.

Ms. Whitaker explained that from a dam safety perspective, Rivanna had to notify all the local
emergency management agencies -- and it was incumbent on the local EOC and municipalities to
issue evacuation orders.

Mr. Murphy stated that he had only done a preliminary look with the City Attorney, along with
research pertaining to the recent Lynchburg incidents, and he understood that it was not in the
power of a local administrator and must be coordinated with the state.

Ms. Whitaker responded that during Hurricane Isabel, the EOC issued evacuation orders for
Reservoir Road and Sugar Hollow -- but she was not certain if they were enforceable by law. She
stated that emergency management went door to door to encourage evacuation, but she was not
aware of their legal authority.

Mr. O’Connell noted that County Police went door to door with Sugar Hollow in 1995, but he
was not sure if people resisted or refused.

Dr. Palmer stated that the Fire Department had come by and advised her to leave, but it was not
an order -- and she had not left because they were at a higher elevation.

Ms. Fort reviewed the dam safety program elements, noting that they took care of all the
permitting and regulatory compliance for FERC and DCR for regulatory dams; developed and
annually updated all EAPs; performed annual training internally and regionally, including
exercises annually; addressed vegetation control at all facilities, including grass maintenance;
performed repairs and upgrades needed to instrumentation for the dam and ancillary facilities;
dealt with public safety, signage, access, and recreational components; performed studies and
reports for the facilities for emergency procedures and design purposes; conducted annual and
monthly inspections; and monitored facilities, including use of staff.

Mr. Mawyer commented that it takes a lot of the Rivanna team’s effort to manage the 5+ dams
under its purview.
Mr. Wood reported that the bond issue would price the following week, with November 6 as a target date for execution.

Mr. Wood explained that at the end of each year, after the auditors completed their work, Rivanna went through a process of evaluating operating cash balances and comparing them and reconciling them with year-end results. He stated the authority had six separate rate centers, each with its own budget, rates, and revenue stream. He stated that they would not want to have rate center surplus one year to pay for another’s deficit.

Mr. Wood stated that they had looked at their cash balances and came up with a 60-day cash target for operating, with $4.1 million currently in that account and target cash of $5.4 million, making them short by about $1.29 million -- which was close to what year-end results were, due to a wastewater deficit as discussed in April. He stated that most of this was due to a low-flow year, with a dry year at the end of 2017, and they were hard to predict, that caused about $600K of the deficit itself and revenues lower than anticipated. He stated that they also had some metering issues in July and August that caused about $100K of the deficit, and had some pipeline and streambank restorations that were over budget by $122K. Mr. Wood stated they had some odor control issues with the Crozet interceptor that were fixed with the contractor, and the utility budget was going over because of the new pump station.

Mr. Wood presented a memo that detailed transfers in and out of the operating account to make it whole, and the recommendation was to transfer those funds according to that. He stated the other attachment was provided to give an idea of where reserves were currently, and the year-end results were about $29.9 million -- with $28.6 million remaining after this transfer. He stated that while this seemed like a lot in reserves, however with $160 million in debt, the liquidity position helped balance some of that out. He noted that there was a recent Moody’s review that showed Rivanna having a significant/above-normal amount of debt, but the liquidity position balanced that out and helped maintain the Authority’s AA2 rating.

Mr. Mawyer commented that they had an excess of funds in 2014.

Mr. Gaffney noted that there had been a lot of rain in the current year.

Mr. Wood responded that this would help make up some of that difference.

Mr. Murphy asked what the total number was for wastewater.

Mr. Wood clarified that it was about $15 million, or half of the total, and he mentioned that wastewater could fluctuate 40% from one year to the next based on rain.

Dr. Palmer stated that it was better than it used to be when they had capital debt built into the rates.
Mr. Wood stated it would be double that if flows were still tied to debt service rates.

Mr. Murphy stated that he was trying to establish how closely the $1.3 million tracked the 9.3%.

Mr. O’Connell noted that with a $15-million budget, 10% would be $1.5 million.

Mr. Wood mentioned that it was on the website for the June RWSA financial results, but he could also send it directly.

Mr. Gaffney noted that they were 20% over for this year.

Mr. Wood stated that would get even better if the upcoming spring was wet.

Dr. Palmer moved to approve transfer of funds according to the memo. Ms. Hildebrand seconded the motion, which passed 6-0. Ms. Galvin had left the meeting and was not present for the vote.

9. OTHER ITEMS FROM BOARD/STAFF NOT ON AGENDA

Dr. Palmer stated she had asked in September who attended project coordination meetings, such as those with VDOT and the power companies, and she asked Mr. Mawyer to send the list.

Mr. O’Connell noted that there would be a new meeting set up with VDOT in March to look at County water and sewer projects to coordinate them with paving projects.

10. CLOSED MEETING

There was no closed meeting held.

11. ADJOURNMENT

Dr. Palmer moved to adjourn the meeting. Ms. Hildebrand seconded the motion, which passed 6-0. Ms. Galvin had left the meeting and was not present for the vote.

The RWSA Board adjourned the meeting at 4:10 p.m.

Respectfully submitted,

[Signature]

Mr. Jeff Richardson
Secretary-Treasurer