Rivanna Water & Sewer Authority
Rivanna Solid Waste Authority
695 Moores Creek Lane
Charlottesville, Virginia 22902-9016
434.977.2970 • 434.293.8858 Fax
www.rivanna.org

MEMORANDUM

TO: **THE HONORABLE ALBEMARLE COUNTY BOARD OF SUPERVISORS**
THE HONORABLE MAYOR AND CITY COUNCIL

FROM: **LONNIE WOOD, INTERIM EXECUTIVE DIRECTOR**
RIVANNA WATER & SEWER AUTHORITY
RIVANNA SOLID WASTE AUTHORITY

SUBJECT: **QUARTERLY UPDATE**

DATE: **SEPTEMBER 26, 2016**

This is a written quarterly update to be included with your September meeting material and information packets as needed. I would be happy to be in attendance if desired, otherwise, this report will be used at your discretion. Please let your staff know if you have any follow-up questions, and I will be happy to provide additional information:

1. Water Treatment Plant Granular Activated Carbon Filtration Improvements: Construction is well underway to incorporate advanced carbon filtration technology at RWSA's water treatment plants, supporting an interest developed from within the community. In addition to installing the GAC contactor units and other GAC related treatment facilities, this project is also performing various other needed upgrades at several of the water treatment plants. The total project costs are roughly $ 29.7 million. A summary of the upgrades are as follows:

    - South Rivanna WTP: Construction of additional clearwell storage; installation of a chlorine contact tank; replacement of the lime feed system; upgrades to the filter underdrains and backwash system; replacement of the filter media; sound attenuation and ventilation improvements for the high service pump station; installation of a variable frequency drive and soft start motor for pumps at the raw water pump station; installation of new raw water and finished water flow meters, and several improvements to the residuals management facilities.

    - Observatory WTP: Construction of a new chlorine contact tank; upgrades to chemical feed systems; and installation of a finished water flow meter.

    - North Rivanna WTP: Installation of new filter control valves; new pump control valves; new filter sludge removal equipment; new electrical system upgrades throughout the plant; new finished water flow meter; and the installation of a surge relief mechanism.

- Crozet WTP: Upgrade of the chlorine feed system to a modern hypochlorite feed system; install a finished water meter with appurtenances; and replacement of the existing fluoride and corrosion inhibitor chemical feed systems. The new chemical feed systems will be housed in additional rooms in the future GAC contactor building. This new location will allow for shorter chemical feed lines.

This project will advance drinking water quality provided to our citizens by ACSA and the City, which is already high quality, to a superior level. Completion is anticipated in late 2017. To date, all five sites are mobilized with significant ongoing construction.

2. Sugar Hollow Reservoir: The last quarterly update communicated several possible factors affecting the significant drop in the reservoir levels seen in the spring and the actions staff was taking to address this issue. As background, we experienced lower than normal reservoir levels last spring at Sugar Hollow which prompted the Authority to review the permitted release regimen and all the variables involved in determining the permitted minimum flow release from the reservoir. To address this concern, as well as balance the objectives set by the permit, Rivanna reduced the release for several months to temporarily stop the reservoir decline and gave staff time to work on this effort. This temporary reduction in the minimum release was approved by DEQ.

   Rivanna and DEQ worked together to get a better understanding of the various issues at play that caused the reservoir levels to drop so quickly by using temporary stream gages up and down stream of the reservoir. This was done on several occasions. The result was that the initial assessment of the problem, which was the calculation within the permit using the Mechums River gage, was not the issue. The issue was a combination of the calibration/calculation of the meter and the meter location used for the release at dam. The location is difficult to get a good reading on the meter from a hydraulic perspective which causes calibration issues. It was determined that the Authority was releasing more from the reservoir than was actually required in the permitted minimum release. Once this issue was discovered and temporarily corrected, the reservoir levels stopped their previous decline after going back to the permitted release regimen.

   Staff is now working to permanently locate the meter and rework the piping that will be more appropriate to attain an accurate metered flow for the release and a better method for calibration purposes and verification in the future.

3. Reservoir Management Study: Phase 1 of this study is now complete which included the following work by both staff and the consultant:

   - Review and analysis of existing watershed, reservoir inflow, and reservoir data.
   - Identification of the factors and sources that result in existing or potential water quality concerns related to algal growths or that may interfere with the treatment of raw water at the Authority's water treatment plants.
   - Review and suggest modification to current monitoring plan.
   - Identification of key factors or parameters that are regularly or seasonally carried by streams from the watershed to the reservoirs and contribute to water quality problems related to algal blooms.
   - Development of strategies for management of water quality in the Authority's five drinking water reservoirs.

At the May 2016 meeting a summary of the Phase 1 work was presented to the Board. The Board also requested that a less formal, summary report to be prepared for the public for distribution as needed. We are pleased to provide you with the summary public document ***Reservoir Water Quality and Management Study: A First Look.*** Both the detailed report and this condensed summary are also available on our website at www.rivanna.org/reservoir-study.

From the consultant's presentation at the May Board meeting, an additional year of study is needed to formulate recommendations going forward to improve the raw water quality in our water supplies. Phase 2 of the study is now underway which will allow staff and the consultant to analyze additional data, conduct additional sampling and flow studies to further understand the processes occurring within our reservoirs, identify the sources of nutrient loadings (internal vs. external), and allow for refinement of the proposal for reservoir management methods which may help to minimize the use of algaecides for the control of algae. A final report will be presented to the Board, along with recommendations in 2017.

RWSA currently employs a comprehensive monitoring program to sample, identify and count algal populations in the reservoirs, which was incorporated in the overall effort on this study. By conducting this sampling program with existing staff, we have saved roughly $180,000 on sampling and lab analysis that would have otherwise been performed by consultants in the first phase alone. We have observed and treated algal blooms in our reservoirs when necessary over the last two plus years. One purpose of this water quality management study is to identify other strategies and methodologies for reducing the occurrence of algal blooms and their impacts to our reservoirs.

4. Schenks Branch Interceptor Replacement: The City's Schenks Greenway public park is presently closed for RWSA to construct a new 30-inch interceptor between Harris Street and the entrance to the McIntire Recycling Center. A fence has been installed to shield the construction zone from surrounding development, and construction is being limited to business hours. The contractor's revised schedule lists a fall to mid-December completion but is being revised.

   The presence of unsuitable material at the Rt. 250 Interchange connection point, rock within the excavation, adverse weather conditions over the winter months, and general difficulties with deep sewer installation has slowed progress. This project has run into several unanticipated conditions with the amount and density of the rock conditions in the pipeline/easement corridor. There has also recently been discovered what is believed to be petroleum-based contaminated soil condition discovered in the pipeline trench that has caused this portion of the project to be delayed to properly mitigate the issues. Staff and the contractor are working with the City (who is the property owner) and the DEQ to resolve this unforeseen issue. Roughly the final 300 linear feet of the nearly 800 is what is left, and all of that portion of the pipeline trench is in the rock conditions previously mentioned.

   Nearly half of the Greenway has been reconstructed, unfenced and the path has been paved to allow public access once the City determines when to officially open that section.

5. New Rivanna Pump Station: Installation and backfill grouting of the new 60-inch interceptor pipe inside the tunnel is complete. Reinforcing steel, conduit installation, and concrete pours for the walls of the new pump station are complete. The ground floor slab shoring over the west pump room has been installed and the concrete floor pour is completed along with a staircase of 96 concrete steps. The contractor has assembled most of the large diameter piping inside the pump

station and installed the pumps, bridge cranes, and roof beams. The roof and brick siding will be installed this fall along with installation of electrical controls for the motors, pumps, and emergency generator.

6. Wastewater Plant Odor Control: The bid was awarded to MEB General Contractors for $9.3 million at the April 26, 2016 Board meeting. A "notice to proceed" was issued on June 27th. Construction has begun at the Moores Creek Plant. A successful neighborhood kick-off meeting was held at Riverview Park on July 15. Staff keeps in close communication with the local neighborhood by sending odor control updates to interested parties. All information about this project, including an aerial map which highlights the eight major components of the project, is available for viewing at http://www.rivanna.org/community-projects/odor-control-project/.

7. Ivy Material Utilization Center Transfer Station: After our productive kick-off meeting with County, Authority and Engineering staff held on June 15, RSWA staff held an informational meeting for the members of the Solid Waste Alternatives Advisory Committee (SWAAC) on August 11 at Ivy. The RSWA board gave approval for the Authority to negotiate Work Authorization #2 costs for the final design stage of the project in the August board meeting. The new transfer station is an 11,800 square feet facility. The Authority is still on schedule to comply with the DEQ milestone schedule and currently plans to submit that site plan application to the County in October. A community meeting is scheduled to be held on Thursday, September 29th at Murray Elementary School from 6-8pm.

8. Executive Director Search: The Search for the next Executive Director is entering the final stages with several candidate interviews conducted on September 22. The board is nearing a decision and we should be able to announce a new Executive Director has been hired in the next few weeks.

cc: RWSA Board of Directors
RSWA Board of Directors