



GreenvilleWater

**MINUTES OF REGULAR MEETING
COMMISSIONERS OF PUBLIC WORKS
407 West Broad Street
Commission Room, Level Two
Greenville, South Carolina
September 6, 2016
8:15 a.m.**

Commissioners of Public Works in attendance:

Chairman Phillip A. Kilgore, Vice-Chairman James W. Bannister, Debra M. Sofield, and J. David Sudduth. Absent: Mayor Knox H. White. A quorum was present.

Greenville Water Staff in attendance:

Chief Executive Officer David H. Bereskin, Chief Financial Officer Phil Robey, Chief Operations Officer Rebecca West, Director of Engineering Mike Sharpless, Controller Jondia Berry, Director of Information Technology Joe Beineke, Business Analyst Jane Arrington, Facilities Maintenance Manager Allen White, Interim Field Operations Manager Wayne Benson, Watershed Manager Henry Poole, Laboratory Manager Jeff Czarnecki, Water Quality Coordinator Terry Reeves, Design Inspector Paul Hendsbee, CIP Engineer Mark Hattendorf, and Commission Attorney David Ward.

The Regular Meeting of the Commissioners of Public Works was called to order at 8:15 a.m. by Chairman Kilgore.

1. WELCOME

2. PUBLIC COMMENT

No comments were presented at this time.

3. CONSENT AGENDA

Chairman Kilgore listed the items of the Consent Agenda which were the meeting minutes of the Regular Commission Meeting August 2, 2016, the Water Resources Report and the Financial Update Report. There being no questions or comments regarding the consent agenda, the items were deemed approved.

4. WATER RESOURCES QUALITY REPORT

Chairman Kilgore introduced Chief Operations Officer Rebecca West to provide a Water Resources Quality Report. Ms. West reviewed the watershed conditions as of August 31, 2016. Table Rock is 8 feet below full pond and North Saluda is 1.55 feet below full pond. The current drought conditions were abnormally dry. Commissioner Sudduth asked if the low levels at Table Rock has caused staff to change the amount being taken out of Table Rock. Ms. West responded more water is being pulled from the North Saluda watershed as of the month of August. The Operations staff has also been doing a very good job of trying to pick the best time to withdraw water from the watersheds in order to save operational costs.

Chief Executive Officer David Bereskin pointed out of the samples that were collected in the distribution system for August there were zero samples with total coliform/E.coli. Also, there was no cryptosporidium or giardia found at Table Rock, North Saluda or Lake Keowee.

- a. Ms. West introduced Business Analyst Dr. Jane Arrington, who provided a recap of the February 2016 decision by the Commission to postpone an alkalinity adjustment and reassess at a later date, if conditions within the distribution system indicate a more adverse water quality impact upon the infrastructure or Greenville Water customers.

Dr. Arrington reviewed the initial project drivers from the HDR, Inc. study which were operational and cost considerations. Greenville Water's reasons for postponing the alkalinity adjustment were:

- Greenville Water's has a low yet, very stable alkalinity water source.
- Greenville Water has experienced zero operator safety incidences with liquid caustic and bulk bag corrosion inhibitor.
- Caustic prices have lowered since the project inception.
- Corrosion inhibitors have been in use at Greenville Water since the 1970s, and are integral to the Optimum Corrosion Control requirements.
- The current corrosion control program maintains the integrity of the infrastructure, providing a stable passivation layer inside the pipes.
- Greenville Water maintains standards and compliance with the Lead and Copper Rule.
- Customers are satisfied with, and have confidence in, the high quality water delivered to their homes.
- Greenville Water reliably provides water with stable physical and chemical characteristics to industrial and commercial customers, who rely on this stability for the products and services they provide to the community.
- At this time an investment in raising the alkalinity is not fiscally and socially responsible.

Dr. Arrington asked Water Quality Coordinator, Terry Reeves, to describe the sampling procedures that are followed throughout Greenville Water's distribution system. Mr. Reeves reviewed the procedures and provided maps of Greenville Water's distribution system, referencing the fifty 2015 Department of Health and Environmental Control lead and copper sampling sites sampled every three years, and the 370 Greenville Water distribution and total coliform sites which are sampled twice a year.

Mr. Bereskin concluded that Greenville Water staff is very confident in postponing any alkalinity investments and continuing to diligently monitor the alkalinity.

- b. Ms. West introduced Laboratory Manager Jeff Czarnecki who presented Greenville Water Staff's efforts to better discern different species of algae within our water resources. Mr. Czarnecki reviewed past process for algae analysis, describing it as labor intensive, tedious, time consuming and analyst dependent. In 2016 a draft response plan was developed in the event bad algae were to be found. The following changes have also been made in 2016:
- A Flow Cam purchased
 - Cyanotoxin Testing started
 - MIB & Geosmin Testing started
 - Algae monitoring expanded to include depth sampling and Hester Dendy sampling (per American Water Works Association M57 Manual *Algae: Source to Treatment*)
 - Algae Reporting Form (Watersheds)

Staff has expanded sampling to include depth sampling. Samples are collected at multiple depths using the depth sampler where staff gathers water quality data throughout the water column. The current plan is to:

- Continue sampling for algae and identify the species (currently 37 species)
- Continue depth sampling to develop better understanding of algae composition and water depth at all 3 lakes.
- Continue Hester Dendy sampling to develop better understanding of the role benthic algae play in the lakes (i.e. anabaena on plates but not in the water column).
- Continue MIB & Geosmin sampling throughout 2016 to develop baseline.

Future activities will include:

- Develop sampling program in conjunction with U.S. Geological Survey
- Develop method for Actinomycetes Bacteria – Geosmin producers
- Create Sniff test or water tasting panels
- Potential Carbon Feed Systems at Stovall & Adkins
- Continue to involve U.S. Geological Survey

5. DEPUTY LAW ENFORCEMENT OFFICER OPTIONS

Watershed Manager Henry Poole was welcomed to present Greenville Water staff's recommendation regarding Deputy Law Enforcement Officers (DLEO) as Mr. Bereskin recounted there had been an ongoing discussion regarding the need for DLEOs. The purpose of a DLEO program is to enhance the Department of Natural Resources' (DNR) law enforcement capability through a volunteer force in support of regular DNR LEOs. Mr. Poole explained Greenville Water has had very few instances where additional assistance from South Carolina Department of Natural Resources (SCDNR) was needed. Employees have not had an issue with trespassers or unruly individuals where higher authorities were needed. Currently, Greenville Water has similar enforcement power as a DLEO and has a good relationship with DNR LEOs and neighbors surrounding the watersheds. The staff's recommendation is that a DLEO program is not necessary at this time. Greenville Water will explore additional technology and continue to work with DNR to monitor activities in the watershed. If additional surveillance is needed, contract options will be explored as well as revisiting the DLEO program.

6. WATERSHED MASTER PLAN PHASE II – WATERSHED MONITORING

Chairman Kilgore introduced Ms. West to provide an update on the Watershed Master Plan Phase II. Ms. West reviewed the background of the Water Resources Master Plan (WRMP), as well as current and future WRMP Phase II activities. Currently, Greenville Water is in the process of locating seven rain gauges throughout the watersheds and identifying water flow and water quality monitoring stations to provide data to support the water flow information portion of the Water Resources Management Model. Greenville Water's model takes into account the quantity of water, looks at how the quantity will be altered by climate change as time goes on and adds the component of water quality.

Ms. West pointed out the focus now is to answer the question, how are we going to monitor and know how much water is coming into the reservoirs. United States Geological Survey (USGS) will be partnering with Greenville Water to help answer this question and will help ensure the quality of the data is the best quality to be had.

USGS proposed purchasing, installing and operating real-time continuous discharge, stage and precipitation stations, along with a measurement only station at the watersheds. All gauging stations will be installed and operational by January 1, 2017. Data from the gauging stations will be available for Greenville Water to review approximately six weeks prior to the data being released to the USGS website at the onset of the project. All data from the gauging stations will be stored and managed on the USGS website and Greenville Water will have full access to the data. Ms. West provided an example of the gauging stations and the stream gauge website. Work will begin in October 2016 to install the continuous monitoring flow stations throughout both watersheds. Greenville Water will complete the installation of the rain gauges throughout the watershed by the end of September 2016. The data-sondes that measure water quality will be co-located with the flow monitoring stations and will continue to be managed by Greenville Water staff.

7. UPDATE ON ENGINEERING PROJECTS

Mr. Bereskin introduced Design Inspector Paul Hendsbee to provide an update on the Woodvale Area project. Mr. Hendsbee reviewed the description of the project and advised the status is 74% complete, with approximately 3300 feet of pipe left to install. The project consists of renewing customers' inlet service connection from existing pipe to new 6 inch ductile iron pipe, installing new meter setters, and re-connecting the outlet service. The remaining work includes installation of 3300 feet of 6 inch ductile iron pipe on Woodvale and Mount Vista Avenue; pressure testing and sampling of the new line on Penn Street, Mount Vista Avenue and Woodvale Avenue; three tie-ins, tap-overs, asphalt and patching the water line trench. Challenges experienced on this project were 430 cubic yards of rock with an estimated additional 151 cubic yards of rock to complete the project, limited space for traffic and storing materials. The completion date is projected to be October 30, 2016. To date the project is on schedule.

Chairman Kilgore welcomed Capital Improvement Project Engineer Mark Hattendorf to provide an update on improvements to the dams at Table Rock and North Saluda watersheds. Mr. Hattendorf referred to an inspection report on the dams delivered to the Commission in May 2016 by Bunnell-Lammons Engineering, Inc. (BLE) where corrective actions were recommended for the North Saluda watershed. A contract has been issued for a repair to an existing French drain that is partially clogged at North Saluda, to include installation of 400 LF of 4 inch drain piping. The formal report from BLE on Table Rock is expected by the end of September. The report will contain subsurface profiles to illustrate conditions of groundwater level, penetration resistance, and earthquake liquefaction potential. The existing French drain analysis from test pits will be used to size new drains. Action items expected are work on French drains and surface erosion treatment.

8. CHIEF EXECUTIVE REPORT

Mr. Bereskin announced Chief Financial Officer Phil Robey will be presenting a Financial Update as well as 2017 Budget presentation in October.

Bad Creek Hydro 25th Anniversary celebration will be Thursday, September 8, 2016. Duke Energy is doing a tremendous upgrade to the hydro capacity at Bad Creek. Chairman Kilgore asked Commissioners that were interested in attending the celebration to get in touch with Mr. Bereskin.

The Nature Conservancy will be meeting with Mr. Bereskin, Ms. West and Communications Manager Olivia Vassey to share their interest in partnering with Greenville Water on Lake Keowee to formulate a watershed management program.

Greenville Water will be a sponsor for Euphoria 2016. As part of the sponsorship, the Lunchtime Pile Up food trucks will be at the West Broad Street location on September 14, 2016. The front entrance will be closed and customers will use the Hyde Street entrance. Meals will be available for purchase for \$10 and under from 11:00 am to 2:00 pm.

Mr. Bereskin announced Wayne Benson as Interim Manager of Field Operations for a 12-month period, until he receives his Associates Degree. At that time, he will be placed in the permanent position. Mr. Benson has been with Greenville Water for 19 years. The Commission congratulated Mr. Benson.

Mr. Bereskin recognized the City of Greenville Public Works Department crews that have been working on sidewalks around the Greenville Water Campus project, stating the crews have done a wonderful job.

9. COMMISSION COMMENTS

No comments were presented.

10. ADJOURNMENT

There being no further business, the meeting was adjourned at 10:00 a.m.



Phillip A. Kilgore, Chairman

Kimberly J. Haulter, Executive Assistant