



## PROJECTS IN THE PIPELINE

In 2018, the Authority will begin construction on four major water Capital Improvement Projects in the Marshall and New Baltimore service districts. These projects all exist under Phase I of the FCWSA's Capital Improvement Plan and are the primary focus of the Authority and its Board of Directors. The projects were made possible by securing a low interest 6.8-million-dollar bond that was approved by the Authority Board in May 2017. Since that time, the Authority's staff has been working to design and obtain regulatory approval to begin these projects.

### Marshall Projects

The water supply for Marshall currently consists of four active wells out of seven total wells. The three inactive wells were taken out of service due to contamination and lease expiration. The Authority has made significant progress thus far on overcoming the deficit produced by the lost wells. Over the past year the Authority has:

- Located a **new groundwater well** on Piper Farm, owned by deceased Mr. William M. Backer and his wife of 30 years, Ann Backer. Known as Salem 3, the new well will produce 125 gallons per minute, replacing the three wells that were taken out of the system.
- Invested in the **Rehabilitation** process of an existing well, also located on the Backer property, referred to as Salem 4.
- Secured ownership of land and easements for the property on which the wells sit.
- Completed a Preliminary Engineering Report (PER) in order to secure bond funding.
- Worked with two electric companies (NOVEC and Dominion) to start the design of the three-phase power supply.
- Completed the simultaneous designs of the new well, Salem 3, and the rehabilitation of Salem 4.

The Authority is working to complete the projects in a timely and effective manner. Both well projects are currently one month ahead of schedule, residing in the permitting phase in which the Authority's staff is working to progress as quickly as possible. Anticipating permitting approval, the Authority is expediting the assem-

bly and review of the bid documents. At a total cost of \$3.6 million, both projects are estimated to begin construction towards the summer/fall of 2018 and be completed in 2019.

The Authority continues to work with engineering consulting firms to search for additional groundwater sources to provide the people of Marshall a sustainable and resilient system.



### New Baltimore Projects

Service demand in the New Baltimore area is expected to increase significantly over the next five years. To accommodate this growth, during 2017 the Authority has:

- Located a **new groundwater well** near Kettle Run High School, known as G-4, that will produce 135 gallons per minute and conducted water quality and quantity testing
- Worked with Fauquier County schools to secure the well site and worked with NOVEC regarding the design and construction of site electric.
- Completed a Preliminary Engineering Report (PER) to obtain bond funding
- Design work has been completed for the G-4 Well and it is now in the permitting phase.
- Construction is estimated to begin in the spring of 2018 and be completed by December 2018 at a total cost of \$900,000.
- A **new 760,000 gallon water storage tank** located next to the existing Baldwin Ridge tank. The Authority took a unique approach by obtaining a design-build contract with Caldwell Tanks. Construction is estimated to also begin in the spring of 2018 and be completed by December 2018 at a total cost of \$2.3 million.

Check our website [www.fcwsa.org](http://www.fcwsa.org) for more updates and pictures of our progress as we work to complete these major water projects!

# PROJECTS IN THE PIPELINE

## Major Rehabilitation Projects

### Continue into 2018

Aging water and wastewater infrastructure is an issue that is confronting every utility in the United States. The Authority is taking on this problem and has been actively planning and executing water and wastewater projects in your neighborhoods.

### Sewer Rehabilitation Projects

In 2014, the Authority began a comprehensive study of the inflow and infiltration (I&I) problems in the sewage collection system for the Remington wastewater treatment plant (WWTP). I&I can come from many sources – through defects in the sewers, such as pipe joints, cracks in the pipe, lateral connections, manhole connections, and manhole sections.



Figure 1. Typical Sources of I&I in Sanitary Sewer Systems (image from WEF, 2017)

The Remington WWTP collections consists of a gravity system of approximately 41 miles of 6 to 16 inch lines, over 800 manholes, 8 miles of force main, and 6 pumping stations. Flow meters were installed in lines to obtain flow information which was used to develop systemwide sewer models. Next, Authority crews inserted a small TV camera into the lines to identify cracks in the pipes and leaks in manholes where groundwater could enter into the sewer lines as part of their sanitary sewer system evaluations. Along the way, Authority crews addressed many problems such as a cable that was drilled through the sewer line, and many leaks.



Groundwater Leaking into Sewer

In 2018, Authority crews will be working in the Town of Remington and along Remington Road to repair and replace pipes and manholes, and begin the designed Capital Improvement Program.

The Authority has also completed flow metering and sanitary sewer evaluations in Marshall and is currently in the design phase of a Capital Improvement Program. The highest priorities in Marshall are the Plains and South of Town. Watch out for our crews in Marshall and The Plains as they continue to do sanitary sewer evaluations, and help to keep these wastewater lines in tip top shape.

## Water Line Replacement

In 2017, the Authority did an emergency line replacement in the Rock Springs area of New Baltimore. The Authority crews used an innovative technique in which water was rerouted into a temporary line so that customers could remain in service while Authority crews replaced the line with trenchless technology called pipe bursting. The Authority first used this technique in the Schoolhouse Road project in Bealeton, and saved \$25,000 of capital resources in product and labor, and were able to complete the project in a much more effective and timely manner.



Trenchless Replacement of Line

In 2018, the Authority will be working on completing the replacement of the remaining lines in the Rock Springs area. Customers will experience a very brief interruption in service as they are connected to the temporary line and will be notified prior to the work being performed by the Authority.

## DID YOU KNOW?

Virginia 811 is the "one call" Virginia communications center for excavators, contractors, property owners, and those planning any kind of excavations (digging) or demolition. They notify utilities such as gas, power, sewer, water, and communications of the upcoming excavation work so they can locate and mark their underground facilities in advance to prevent possible damage to underground utility lines, injury, property damage and service outages.

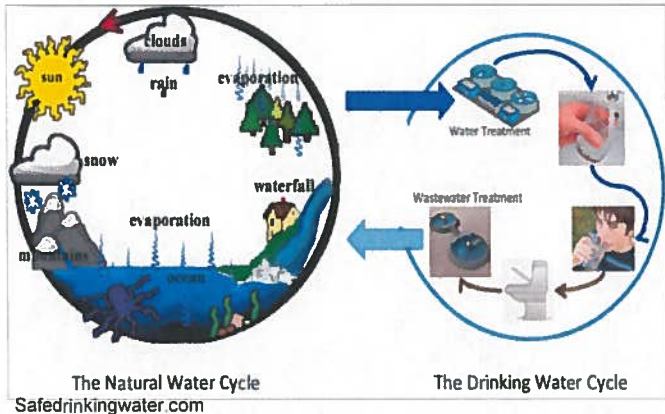
If you are planning any type of digging project, you should call just to be on the safe side. While it might not be life threatening, you'd hate to miss the big game because you were planting begonias. There is no cost for this service, so you really have no downside. More importantly, calling 811 before you dig is the **LAW**.





# Students Learn Their Role in the Water Cycle:

Last Autumn, Patriot High School's 9th grade Earth Science students visited the Fauquier County Water and Sanitation Authority to learn all about their water system. As part of their curriculum, the students are taught about the natural water cycle, and during this visit they were also able to explore the drinking water cycle.



The students' exploration began with a presentation on where Fauquier County's drinking water comes from. They learned about the journey the water makes from the ground to your faucet and then back into the environment. Throughout the field trip, the students also learned water conservation tips offered by EPA Water-Sense, the importance of watershed management, and the Protect Your Pipes campaign that explains what not to dump down your drains.

The highlight of the students' trip was a visit to the Vint Hill wastewater treatment plant to get a first-hand look at what it takes to clean up the water before it goes back into the environment. During the tour, STEM (Science, Technology, Engineering and Mathematics) careers in the water industry was a hot teacher/student

topic, with many students engaging with the Authority's Senior Operator at the Vint Hill plant, Griffin Golesorkhi. Students showed major interest in the drinking water cycle process that affects them and their community.



VHWWTP Senior Operator Griffin Golesorkhi

The Fauquier County Water and Sanitation Authority is proud of its many dedicated professionals: operators, mechanics, engineers,

accountants, customer service, and construction employees that work 24/7 to provide safe drinking water to you, and treat the wastewater to ensure the protection of our environment! Many thanks to the teachers and students whose thirst for knowledge about water made our day and allowed us to showcase the wonderful Authority employees and infrastructure that serve you!



## SCHOOL TALKS

Can't make it to the Fauquier WSA facilities for a tour? It's okay—we can come to you! FCWSA staff is available to speak to your class/group on many topics regarding water and wastewater management. To schedule please email [camant@fcwsa.org](mailto:camant@fcwsa.org)

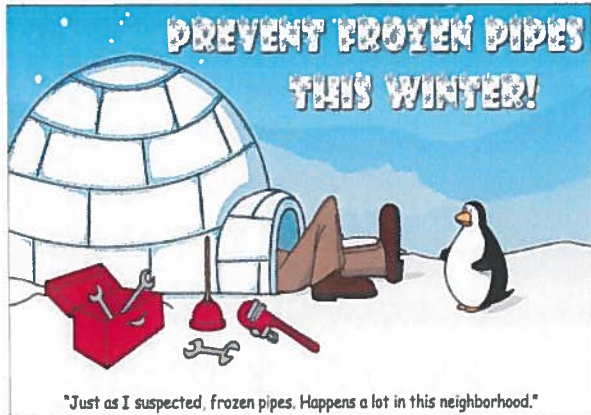
## MEET OUR STAFF: RICK LANDIS

Mr. Rick Landis has been an employee of the Authority for nearly 30 years and has been the Director of Maintenance and Construction since 2008. Mr. Landis began his time with the Authority as a maintenance mechanic. He laughed as he recalled the beginning of his time with the Authority before cell phones, when two way radios were used and a pocket full of quarters for pay phones was necessary. Mr. Landis quickly rose through the ranks becoming Maintenance Supervisor, and later began overseeing the Construction Department as well. He never tired of his work in maintenance, stating that he has "been in maintenance [his] entire career [with the Authority] and never wanted to switch or do anything else." Mr. Landis explained the he has "good people that work under [him]" and attributes that to much of his success as an exemplary employee of the Authority. Thank you for your service, Rick!



## Protect Your Pipes!

As the temperature decreases, it's important to prepare your home's water pipes. Frozen water can expand pipes, leading to cracks and breaks that are expensive to repair. The Authority is responsible for water mains and lines that connect to your meter, but not the pipes located on your property—so here are a few tips from us to you:



- During extended absences from home in the winter, set the thermostat to at least 55° F or simply shut off the main water valve to protect pipes.
- Drain in-ground lawn irrigation systems.
- Insulate pipes in unheated areas
- In severe cold weather, let cold water drip from faucets served by exposed pipes.

### If your household pipes burst...

- Shut off your main water valve.
- Call a licensed plumber immediately.

<http://aoe.city.org/wp-content/uploads/2016/01/Frozen-Pipes.jpg>

Protectyourpipes.org

## Hydrate Your Mind



### Puzzles in the Pipeline

W O K P Z W A T E R V R I D C  
 V T H H U D L S G R O R N O F  
 D V N S E W E R R W O N F K I  
 C O N S E R V A T I O N I W G  
 K J W R L R M G R U L D L A R  
 Y V G U W D I I M N K S T S O  
 U O A J E Q U N K Z E K R T U  
 C S L P L D O Z F P E R A E N  
 M I L N L M E U I L E X T W D  
 K A O O S M D P J E O S I A W  
 Y L N Q U U P W N C V W O T A  
 S E S H F Q N F R O Z E N E T  
 Q Z T S O F T T N T X W W R E  
 R U W Y U L N O K A P U D K R  
 F M O M Y S E Z D H H V J F F

WATER	WASTEWATER	GROUNDWATER
GALLONS	WELLS	CONSERVATION
MANHOLE	PIPES	SEWER
INFLOW	INFILTRATION	FROZEN

## INTERN WANTED

The Fauquier County Water and Sanitation Authority is looking for communication and engineering interns.

If interested, please email Nikki Martin at [nmartin@fcwsa.org](mailto:nmartin@fcwsa.org)

## DID YOU KNOW?

The average family can waste 180 gallons of water per week, or 9,400 gallons annually, from household leaks. That's equivalent to the amount of water needed to wash more than 300 loads of laundry.

WaterSense [www.epa.gov](http://www.epa.gov)



### CONTACT US:

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