



# MOUNTAIN STATE WATER LINE

*A Publication of the West Virginia Rural Water Association*

## Spring 2021

### **In This Issue**

- ◆ **How Green Can My Plant Be**
- ◆ **Source Water Protection Plan Requirement Update**
- ◆ **What Does the Circuit Rider Program Do**

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FORGET!!!**



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August 14-18, 2021**

**To attend the WVRWA 35th Annual  
Technical Conference**

**To be held at  
Snowshoe Mountain Resort**

**Watch for information and forms to be  
mailed out in spring 2021**



# WEST VIRGINIA RURAL WATER ASSOCIATION



## Spring 2021

## Articles and Features



Scott Depot, WV  
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West Virginia Rural Water Association, WVRWA, is a non-profit organization of rural and small publicly owned water and wastewater systems. The vision of the WVRWA is to be the recognized leader and respected voice for water and wastewater systems. The mission or purpose of WVRWA is to provide and promote the highest level of utility service, technical assistance, training, and advocacy for all West Virginia water and wastewater systems.

WVRWA is affiliated with the National Rural Water Association.



## President's Message

Spring has sprung here in our great state. With nature coming to life, birds returning, and the weather getting warmer. Life as we know it is starting to open up and allow us, as a society, to try our best to conduct business and everyday life. With the COVID-19 virus still ever present, numbers are declining. With a large number of vaccinations being administered and people complying with social distancing and indoor mask mandates, Governor Justus has relaxed some restrictions on social gatherings.

Having said that, the WVRWA

Board met in late March and has made the decision to move forward with the Annual Technical Conference at Snowshoe Mountain Resort.

This year, we will be celebrating our 35th Annual Technical Conference. What a milestone for our Association's members. This year's conference will have an abundance of training sessions for operators to obtain their required continuing education hours (CEHs), sessions for office staff, managers, and board members, along with award presentations, banquet, picnic, networking, golfing, and some amazing enter-

tainment.

Rest assured that all necessary precautions will be observed to help ensure personal safety and a healthy environment for your attendance.

Conference registration packets will be mailed out between the middle of May and early June. Once the information becomes available, you will find the conference schedule and registration forms on our website at [wvrwa.org](http://wvrwa.org).

I wish everyone a happy and safe year!

Sincerely,

Jason Myers, BA, CFM ■

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Water and wastewater operators registering for e-Learning courses will have a menu of courses from which to choose. We are constantly adding and updating courseware to reflect changing industry needs and regulations. For more information, you can visit [www.wvrwa.org](http://www.wvrwa.org) or contact the office at 800-339-4513. Some of the available courses are shown below.

Course	CEH Hours	Approved for	Price
Drinking Water Mathematics	10	Water/WW	\$180
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By Todd Grinstead, Executive Director

# From Your Executive Director

## What does the Circuit Rider Program Do?

The WVRWA Circuit Rider Program, funded by the United States Department of Agriculture-Rural Development (USDA-RD), through the National Rural Water Assoc., provides hands-on technical assistance to water systems by request at no charge to the system. Personal and professional technical assistance is at the heart of the Circuit Rider Program. WVRWA provides a statewide experienced team of drinking water and wastewater professionals to offer hands-on training and technical assistance to water utility managers, boards, and Operations Specialists. The assistance is designed as on-site, hands-on, activity-based training where participants take ownership in learning and are empowered to resolve their current and future problems. The Circuit

Rider Program is designed to protect USDA-RD's utility infrastructure investments and help plan for a more sustainable future. Some of the assistance and services provided by Circuit Riders include:

- Identify and evaluate affordable solutions to drinking water and wastewater problems
- Assist systems to rapidly respond and recover after natural and man-made emergencies such as hurricanes, earthquakes, tornadoes, floods, wildfires, ice storms and a health pandemic, including COVID-19
- Protect the environment and public health by improving treatment processes
- Improve financial sustainability through better management

practices, more efficient operations, and assistance with financial loan/grant application

- Enhance compliance with drinking water and wastewater regulations
- Aid with all aspects of water utility management, finance, operation and maintenance, regulatory compliance, energy efficiency and loan/grant applications

Your WVRWA Circuit Rider team:

- Michael Hersman, water Circuit Rider
- Bertis McCarty, water Circuit Rider
- Heather Somers, water Circuit Rider
- Jim Johnson, wastewater Circuit Rider ■

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# PFAS: What, When, and How

The surfactant C-8 or PFOS was introduced to West Virginia in the 1950s through the production of Teflon at Dupont Washington Works just south of Parkersburg, WV. It has caused quite a stir with lawsuits, health studies, and was even documented in film. It was first created by 3M company and has since been used in a variety of products.

The use of per- and polyfluoroalkyl substances (PFAS) in a wide range of industrial applications and consumer products has resulted in widespread global contamination. These two PFAS groups are known as persistent organic pollutants (POPs) namely perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) and related compounds.

The compounds listed as PFAS are an issue of concern. Recently, companies that use these have developed strategies that include phasing out the use of PFAS. PFOS and PFOA and some other PFASs accumulate in biota and humans and resulted in ubiquitous contamination of human blood, hu-

man milk, and protein rich organs. PFOS is normally the most prevalent PFAS in humans followed by PFOA. According to the current state of knowledge, several PFAS substances are classified as carcinogenic, developmentally toxic, endocrine, immunotoxic, and genotoxic as well as having an influence on the metabolism. Therefore, the current exposure of humans to PFASs need to be reduced and further releases minimized and avoided.

Meanwhile, several hundred million people globally are exposed to PFOS, PFOA, and other PFASs from drinking water pollution due to contamination of ground and surface water as well as contamination of soils and related contamination of plants/vegetables and livestock. A recent study in the US estimates that 200 million Americans could have PFASs in their drinking water at a concentration of 1 ng/L and, therefore, above levels considered safe.

West Virginia has started to test for PFAS in our water sources. Once the testing phase is complete, the EPA will set an MCL. When

the MCL has been set, then it will be up to our systems to comply. How is this going to be accomplished? Unfortunately, I can't answer that question. The places in the State that are treating for PFOS now are doing it with a good pretreatment program and using GAC (granular activated carbon) filters at the end of treatment. This seems to be working very well, but does have some cons. First, GAC is very expensive, plus the cost of adding a filter. Second, once the GAC is spent, it has to be replaced and disposed of at a special facility. Currently, there is no facility in West Virginia.

While the task ahead can seem daunting, our operators will be up to the challenge. I truly believe that our state has some of the best operators in this country. They will continue learn about PFAS and be able to treat this contaminate. Contaminates will continue to come and the operator will continue his or her education to be able to provide safe potable water. Keep up the good work and I'll see you in class. ■



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# Batteries, Part 1

**D**efinitions for all: gotta love the dictionary!

1. **Primary Cell:** A primary cell battery is one designed to be used once and discarded. They cannot be recharged because the electrochemical reaction occurring in the cell is not reversible.
2. **Secondary Cell:** A secondary cell battery is designed to be recharged with electricity and used multiple times.
3. **Alkali:** In chemistry, an alkali is a basic, ionic salt of an alkali metal or alkaline earth metal chemical element. An alkali can also be defined as a base that dissolves in water. A solution of a soluble base has a pH greater than 7.0.
4. **Mercury:** A chemical element with the symbol Hg and atomic number 80. It's commonly known as quicksilver and was formerly named hydrargyrum.

## ***Types and Usage***

### **SILVER-OXIDE:**

A silver-oxide battery is a primary cell with a very high energy-to-weight ratio. They maintain a nearly constant nominal voltage during discharge until fully depleted. They are available in small sizes as button cells, where the amount of silver used is minimal and not a significant contributor to the product cost.

Usage: These batteries are used as a power source for applications such as quartz watches, hearing aids, medical devices, and Bluetooth Low Energy (BLE) devices.

### **ALKALINE:**

An alkaline battery is a type of primary battery

which derives its energy from the reaction between zinc metal and manganese dioxide. Compared with zinc-carbon or zinc chloride types, alkaline batteries have a higher energy density and longer shelf life, yet provide the same voltage. They are disposable, making them a primary cell. These batteries come in various sizes ranging from AAA to AA, C, D, 9V and others.

Usage: AAA and AA are suited for low-drain applications, whereas C, D and 9V are suited for high-drain applications, which have a steady demand.

### **MERCURY:**

A mercury battery, also called a mercuric oxide battery or a mercury cell, is a non-rechargeable electrochemical battery, making it a primary cell. Several batteries have a small amount of mercury in them and fall into this category, such as zinc air, alkaline, and silver oxide. These batteries don't pose a health risk when in use since the chances of the mercury leaking out are small; however, if they're not recycled, almost all of this mercury in them can end up in waste that gets incinerated or landfilled.

Usage: These batteries are used in the shape of button cells for watches, hearing aids, and calculators. They are and also used in larger forms for other devices, including walkie-talkies and phones.

### **LEAD ACID:**

The lead-acid battery was invented in 1859 by French physicist Gaston Planté and is the earliest type of rechargeable or secondary battery. Despite having a very low energy-to-weight ratio and a low energy-to-volume ratio, its ability to supply high surge currents means that the cells have a relatively

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large power-to-weight ratio. There are two main types of lead acid batteries - Vented Lead Acid (VLA) and Valve Regulated Lead Acid (VRLA). VRLA batteries are sealed and the electrolyte is bound in a glass mat around each plate. This allows the batteries to be arranged in either vertical or horizontal position without risking a spill. When the electrolyte is converted into hydrogen and oxygen gas during overcharging, the VRLA battery has pressure relief valves to prevent the batteries from exploding. VLA batteries freely vent this gas to the surrounding area during overcharging and must be arranged in vertical configuration only because there's no glass mat to keep the electrolyte from spilling. You can also add back lost water to a VLA battery, but you can't do the same with a VRLA battery. A third type of lead-acid battery is the traction or Electric Vehicle Battery (EVB). This design has a high capacity to weight and volume ratio. They are usually deep cycled and require a fast-charging rate.

Usage: These batteries are used in power wheelchairs, Uninterruptible Power Supplies (UPS), telemetry in the water and wastewater field, automotive, forklifts, and golf carts. They're even used in submarines.

### **LITHIUM ION:**

A Lithium-ion battery or Li-ion battery is a secondary cell type of battery because it's rechargeable. There are some general advantages of using a Li-ion battery over other traditional batteries. One of the biggest advantages of a lithium-ion battery is its high energy density. In other words, they can last way longer between charges all the while maintaining a high current output. That makes it the perfect battery for most modern needs.

Usage: Lithium-ion batteries are commonly used for portable electronics, electric vehicles, and military and aerospace applications. They are also used

for powering many different items from small earbuds and earphones to mobile phones, tablets, laptops, Uninterruptible Power Supplies (UPS), golf carts, and energy storage systems.

### **ULTRABATTERY:**

One of the newest battery technologies on the market. UltraBattery is a hybrid energy storage device invented by Australia's Commonwealth Scientific and Industrial Research Organization. It combines ultracapacitor technology with lead-acid battery technology in a single cell with a common electrolyte. This battery provides more energy and costs less over its lifetime when used in variable power applications.

Usage: These batteries can be used for a range of energy storage applications, such as: in electric vehicle (EVs) batteries, to store renewable energy and smooth electricity supply from intermittent energy sources, and as part of efficient hybrid power systems with fossil-fuel electric generators.

### **NICKLE-CADNIUM:**

The nickel-cadmium battery is a type of rechargeable or secondary battery using nickel oxide hydroxide and metallic cadmium as electrodes. It's one of the most impressive, yet still practical, battery chemistry in history. They've been replaced over time for two reasons. Newer technology and environmental concerns. Nickel is a common metal found in abundance in the Earth's crust. Cadmium, a less abundant metal, is particularly toxic to organic life and so any battery containing it has to be sufficiently sealed so as not to expose the cadmium inside. When these batteries are trashed at the end of their useful life, they often end up in landfills, instead of being recycled, as they should be. I guess we could say the same thing about every battery still made.

Part 2 in the next magazine, I'll be discussing Battery Safety. ■



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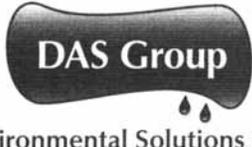
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# Asset Management Re-Cap

Sound and operational civil infrastructure is the basis of a healthy society and a vibrant economy. Water, sewer, and other pipeline infrastructure is the foundation of a community's revitalization and high quality of life. Most of the U.S. water and wastewater infrastructure was installed during the first half of the 20th century and is coming to an end of its useful life. "Out of sight, out of mind" has been the view of our society toward our water and wastewater infrastructure, which we only pay attention to when they reach crisis levels, such as a water line or sewer line repair that takes several hours or several days. The deterioration of our underground infrastructure and treatment facilities has prompted our public officials, politicians, and engineers to look at this issue more seriously. Just kidding, politicians don't look at anything unless it will put more money in their pockets. The Environmental Protection Agency and our Loan and Grant Agencies are requiring cities, municipalities, communities, and PSDs to develop inventories of their underground and treatment facilities' infrastructure to assess their condition and develop a stable planning program. Most systems are behind in developing a consistent program for inventory, condition assessment, renewal/replacement, and special uses of our underground and treatment assets.

Asset Management is a way of thinking that capital, operations, maintenance, repair, renewal, and replacement are all investment decisions. Asset Management encompasses the work of the utility. If you replace an asset too early, you may be wasting money and if you replace an asset too late, you

are wasting money. The goal is to have the ability to analyze the full range of maintenance, repair, renewal, and replacement options in the same category and compare available strategies against the alternatives. The key steps in this process include asset identification, asset registry, condition and critical assessment definition of targeted service levels, and prioritized decision making.

Your customers need to understand what a water utility does and have enough information to know that the service and environmental investments have value equal to the costs. With this information, they are more likely to accept any disruptions in service or rates and can conclude that the work being done is competent, if not exceptional. Asset Management provides the pathways to acquiring the resources necessary to establishing confidence that these water & wastewater infrastructure investments are a good value for the community.

There are **SEVEN** common questions you need to ask yourself when you start your Asset Management plan.

1. **WHAT do we have?** Data Collection, GIS, Field Verification
2. **WHAT is it worth?** Asset Valuations, Depreciation
3. **WHAT is its condition?** CCTV, SSES, I&I, Hydraulic Modeling
4. **WHAT do we need to do with it?** Rehab, Replace, CIP, Benchmarking
5. **WHEN do we need to do it?** Prioritization, CIP, Master Plans
6. **HOW much will it cost?** Construction Cost

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Estimates, O&M Studies

## 7. **HOW will we finance it?** Rate Studies, Bond Issues, Grants & Loans

So, the final line of the definition of Asset Management is the application of good business practices that enable the utility to consistently provide a desired level of service for the **minimum long-term cost**. Better management of your system's assets will eventually lead to lower capital and operating costs, thus, better service and lower costs to your customers.

You will not get there very quickly, but, over an extended amount of time, you will see your system start to improve. Once implemented, the savings to your system will not only be in a dollars sense, but will also improve materials ordering, preventative maintenance, work scheduling, customer satisfaction, etc. The benefits get passed right on down the line.

The benefits of a well-organized Asset Management Plan should obtain the following results:

- Asset life will be increased, and average unit cost of maintenance and operations will be decreased. By tracking infrastructure performance information, asset life would be extended through directed maintenance and replacement. Sharing information with other municipalities will produce a collection of the best methods and materials.
- Records may justify a more costly original investment in the infrastructure while leading to reduced long term maintenance costs.
- Taxpayers and elected officials will gain an understanding of what is being provided for their tax dollars. The administration can be confident that they are providing the right services.
- As municipalities reorganize, infrastructure performance information, such as cost per unit, will be left intact. Infrastructure performance measures are left independent of the municipality's organizational structure.

- As administration and elected officials change, the infrastructure repository (a collection of valuable information) will remain intact for the next generation.
- Infrastructure assets and information can be shared easily across departments and municipalities.

Just as a good preventative maintenance plan extends the life of your equipment, an opportunity exists to improve infrastructure life cycle management within and across the water and wastewater industry. Ultimately, the goal is for systems to enter into a **continuous improvement cycle**. Once in this cycle, systems can decrease the overall life cycle cost of their investment in infrastructure and treatment processes.

A fundamental building block for entering into a continuous improvement cycle is to have a common tracking and reporting framework, which should answer the following questions.

1. How long should infrastructure assets last?
2. What are the levels of routine service?
3. How often should maintenance and operation activities be performed to optimize infrastructure life?
4. What is the justification for major capital repairs?
5. Where can costs be eliminated while limiting the effect on service delivery?
6. Of the many brands and types of parts and materials used by the system, which ones perform the best?
7. What is the system's basis for rationalizing the move to a user-pay model for service?

**IMPLEMENTATION** – Local governments and companies have been using maintenance management systems for many years. Many of these systems, however, only deal with the maintenance and operations side of infrastructure. Attempting to get into the continuous improvement cycle takes time and commitment from all levels inside the organization.

---

It requires commitment from staff, management, officials, etc. The following plan highlights some of the key action items:

**Immediate Action Items (Year 0 – Year 2)**

1. Initiate organizational change initiatives geared toward fostering a continuous improvement culture for management and staff. This should incorporate performance management, business planning, and team training.
2. Introduce business process redesign or similar approaches prior to or in conjunction with new business application implementations.
3. Identify and confirm all infrastructure services provided by the system.
4. Acquire, build, or convert to an enabling technology infrastructure.
5. Implement a standard system cost model.
6. Implement the infrastructure service delivery model.
7. Implement an automated work management system built around the management model.

**Long-Term Action Items (Year 2 +)**

1. Foster continuous improvement in the organization.
2. Identify baseline service levels and improvement targets.
3. Initiate inter-municipal and industry infrastructure benchmarking.
4. Experiment with new methods of service delivery.
5. Foster the standardization of Municipal Metrics.

Regulatory agencies and the pressures they apply have had a role in the development of the infrastructure crisis. Since the early years of the “environmental era” and particularly since the passage of key legislation such as the Clean Water Act and the Safe Drinking Water Act, regulatory authorities have tended to focus on the construction of new and expanded treatment facilities. Maintenance

issues have tended to receive less attention and the maintenance of distribution and collection networks received the least of all, in terms of both attention and funding.

Through the years, part of the culture of utility oversight by elected officials and boards has been to keep rates down. Every politician has promised “no new taxes” and “no more rate increases” as political fodder during every election campaign. As a result of the political pressure mentioned, water and sewer rates across the U.S. have been kept artificially low for many years. So, now, as our aging infrastructure rates for water and wastewater utilities are at their peak, many systems are failing to produce and treat water due to the lack of funds for upgrades to their systems. Municipalities are having to sell or turn over their systems to privately owned corporations, which, in turn raise their rates anyway.

We have touched on the internal and external factors that typically influence the development of a water or wastewater utility Asset Management Plan. The two most critical influences on the culture of a utility are the short-term perspectives of the elected bodies that govern utilities and the resulting emphasis on keeping rates artificially low, thus starving utilities of needed revenues. Political realities suggest that this influence is not likely to change any time soon, especially on economic issues. However, if utilities are to be successful in improving management of their physical assets for the long term, the economics of utility operations must be addressed and that must mean addressing rate structures that do not provide adequate revenues to sustain proper system management, operation, and maintenance.

Thank you for reading my article and if there is anything you would like to particularly see addressed in our articles, please contact your local circuit rider by email or give a call to our office.

Reference: *Guide to Water & Wastewater Asset Management.* (Benjamin Media. 2008) ■



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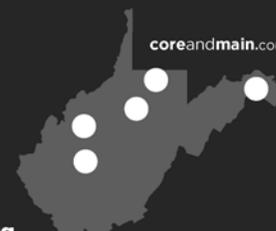
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# Reshaping Your Resume

I have been asked by water utility employees how they should write or revamp their resume. Here are some writing, or reshaping, tips that will clearly show your personal details. The order is as follows: state your full name, phone number, address, and email address. State your educational qualifications. State your actual work experience, which should include extracurricular activities. State your skills intelligently. Do not mention skills that have no bearing on the job for which you are applying and give relevant details for those that do. State any academic and professional recognitions and awards conferred to you.

a one-page resume. Employers need only see a brief description of your background. However, if there is something that you must include, for example, special awards and achievements, you can include these on a second page. Do not, under any circumstances, include personal information such as height, weight, age, and marital status, political, or religious background. It is not legal for an employer to request this information. If a prospective employer requires your salary history, include it as an addendum to your resume. If the employer does not require a salary history on the resume, do not include it. Include references upon request of the employer. Regarding personal references, ask

the person before including them as a reference and let them know that they may be contacted by a prospective employer.

Your resume must not only have all the relevant information, it needs to look attractive. Don't forget to proof read your resume. Have someone else read it, as well. Before you send it out, put it away for a day, take it out again and look it over. You will probably pick-up errors that you missed. Keep your resume up-to-date even if you are currently employed and have no intention of job hunting; add any new skills to your resume. If you have worked on a special project, add that as well. Your resume is your personal marketing piece. It's what gets you in the door. ■

A rule of thumb is to stick to



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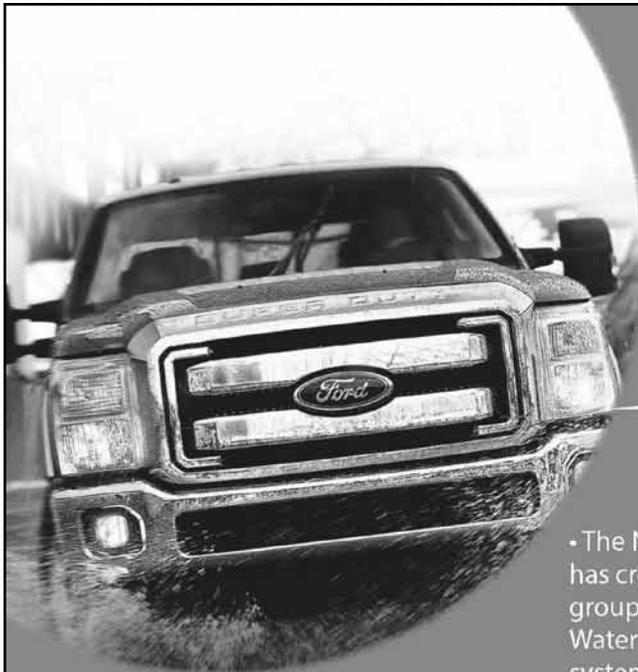
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# FLEET Program

• The National Rural Water Association has created partnerships with motor groups to offer discounts to State Rural Water Associations and their utility system members.

• Member utilities should contact their State Rural Water Association to access the Rural Water Fleet Program.





By Jerry Dotson, Sourcewater Specialist

# Source Water Protection Plan Requirement Update

**A**fter the Freedom Industries chemical spill that contaminated the water supply to the West Virginia American water system in Charleston, the West Virginia legislature created additional rules to aid in the protection of drinking water sources. The results of that and other legislative actions can be found in West Virginia Code 64CSR3 beginning at §64-3-1 where the regulations for Public Water Systems are defined.

For today, the focus will be on the rules for Source Water Protection Plans (SWPP). Every system should have a protection plan for every water source used to provide drinking water. However, the code requires surface water systems and surface water influenced groundwater systems to develop and maintain plans to conform to a particular format, and to update them at scheduled intervals.

The initial rules required all surface water systems to complete and submit a plan by July 2, 2016. The West Virginia Bureau for Public Health, Environmental Engineering Division (WVBPH) provided utilities with contractors to complete those initial plans. The plans are required to be updated every three (3) years, which means all the surface water system plans should have been updated in 2019. Groundwater systems that are influenced by surface water were required to be completed in 2019 and likewise updated every three (3) years. The WVBPH provided contractors for the newly designated SWIG systems.

The West Virginia Legislature has

revisited this issue to make the review process more efficient and manageable. The State is now divided into five (5) regions based on Hydrologic Unit Code 8 (HUC8) Watershed Information. A HUC8 map from the WVDEP website is included at the end of this article. Each Region is assigned a due date. Because of the time it took to finalize the rule changes, the WVBPH determined that some flexibility was needed to allow systems reasonable timeframes to fulfill the source water protection plan requirements. Therefore, some systems will be permitted to forgo submission in 2021/2022 and some will be permitted to fulfill the requirement with the submission of a letter. **The current deadlines for submissions are as follows:**

Region 1 – no letter required, submit full SWPP by 3/1/2023.

Region 2 – no letter required, submit full SWPP by 10/1/2023.

Region 3 – submit a letter with updates by 5/1/2021; submit full SWPP by 5/1/2024.

Region 4 – submit a letter with updates by 12/1/2021; submit full SWPP by 12/1/2024.

Region 5 – submit full SWPP by 7/1/2022.

**Going forward, plans are required to be submitted every 3 years from the dates in this schedule.**

Plans and letters are to be submitted through the on-line SWPP Portal at: <https://apps.wv.gov/OEHS/SourceWater/Login.aspx?ReturnUrl=%2fOEHS%2fSourceWater%2f>. An account should have been set up

when your initial SWPP was submitted.

**The watersheds for each region are listed below with the WVDEP watershed map.**

The utility is required to assemble a Team that will be responsible for developing the plan. The plan should include some general information including water production and unaccounted for water loss. Delineations have already been provided by the West Virginia Bureau for Public Health. An inventory of Potential Source of Significant Contamination (PSSC) within the protection area must be completed. Other sections are a Single Source Feasibility Study if the system has only one water source and a Management Plan for activities to protect the system from PSSCs found in the protection area. There are forms to create a Communications Plan to notify the public in case of contamination. The utility also needs to look at the feasibility of installing early warning equipment to detect contamination. All systems are required to have an Emergency Response Plan (ERP) along with their Source Water Protection Plan.

While developing the source water protection plan, the utility is required to allow opportunities for public input and inquiries. When the source water protection plan is submitted, the utility will be required to provide proof that the public was offered this opportunity. This includes a copy of the notice used to provide this opportunity, a list of attendees, the agenda, and the minutes of the meeting(s).

Don't overlook this step, because the plan will not be accepted as completed without proof that the public was given the chance to provide input.

Since certain parts of the source water protection plan are considered confidential, the utility is also required to have a redacted copy available for the public to review upon request. The West Virginia Bureau for Public Health is sending each system a letter explaining the requirements and pertinent dates for that system, so be sure to watch for your letter.

This is serious. Violations, fines, and even criminal charges can result from ignoring this responsibility. Help is available. Just contact your WVRWA Source-water Specialist at [jerrydotson@wvrwa.org](mailto:jerrydotson@wvrwa.org) for answers or assistance.

Groundwater systems that are not influenced by surface water should also develop plans and keep them up to date. Those systems should use the template provided at [http://www.wvdhhr.org/oehs/eed/swap/Draft\\_Template.asp](http://www.wvdhhr.org/oehs/eed/swap/Draft_Template.asp) for the source water protection plan. Notice that there are six (6) individual sections

with instructions and an Emergency Response Plan.

**The Wellhead Protection and Source Water Protection Grant Programs:**

These programs are designed to provide funding for the development and implementation of local wellhead

and source water protection plans. The most recent review provided nineteen grants for projects across the state. Additional information and the program details can be found at [http://www.wvdhhr.org/oehs/eed/swap/wellhead\\_sourcewater\\_grant\\_programs.asp](http://www.wvdhhr.org/oehs/eed/swap/wellhead_sourcewater_grant_programs.asp). ■

HUC8 Watershed map from WVDEP website. Ignore the Watershed Groupings listed on the map. **These are the watershed groups for the Source Water Protection Plans:**

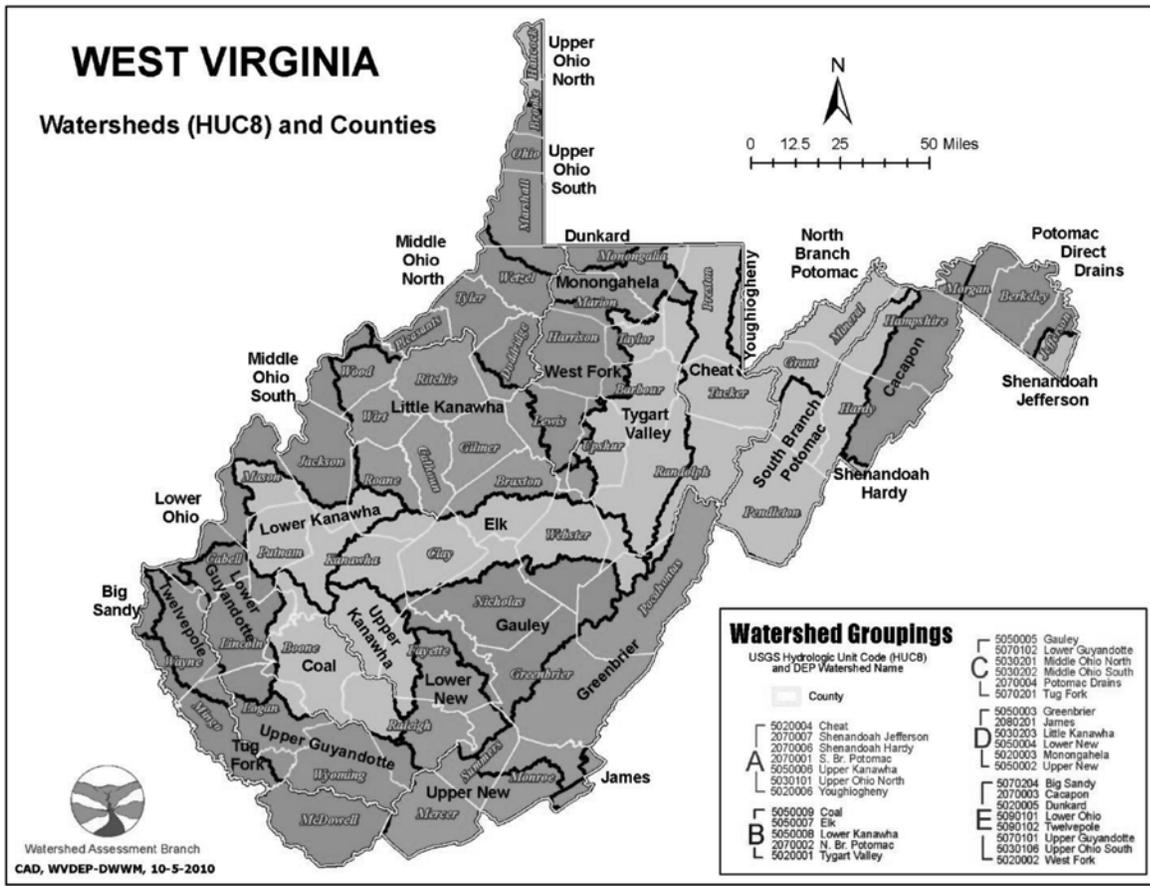
Region 1 - Contains the Upper Ohio North, Upper Ohio South, Middle Ohio North, Middle Ohio South, and Little Kanawha HUC-8 watersheds.

Region 2 – Contains the Dunkard, Monongahela, West Fork, Tygart Valley, Cheat, and Youghiogheny HUC-8 watersheds.

Region 3 – Contains the North Branch Potomac, South Branch Potomac, Cacapon, Shenandoah Hardy, Potomac Direct Drains, and Shenandoah Jefferson HUC-8 watersheds.

Region 4 – Contains the Lower Kanawha, Upper Kanawha, Elk, Gauley, Greenbrier, Coal, Lower New, Upper New, and James HUC-8 watersheds.

Region 5 – Contains the Lower Ohio, Lower Guyandotte, Upper Guyandotte, Big Sandy, Twelvepole, and Tug Fork HUC-8 watersheds.





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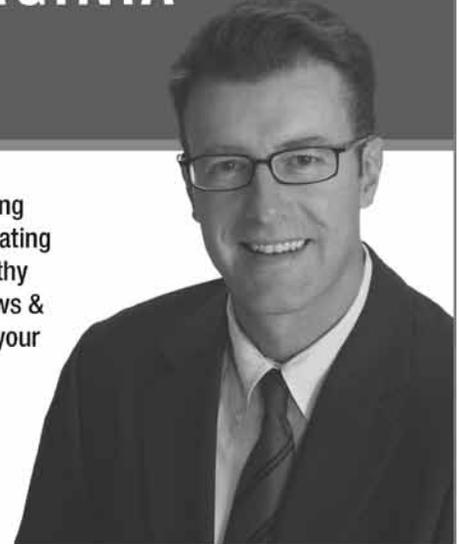
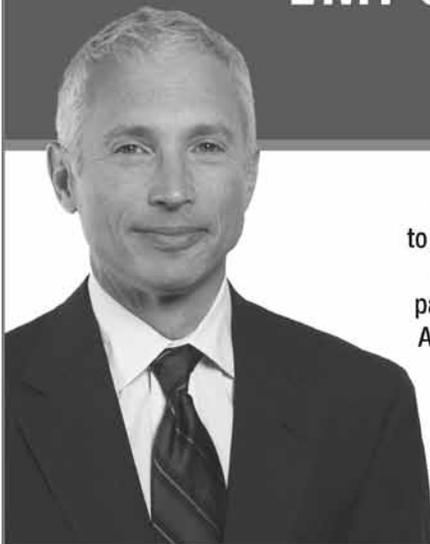
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# Spring into Flood Resilience

## Introduction

The services provided by drinking water and wastewater utilities are vital to the health and resilience of a community. However, extreme spring weather, such as heavy seasonal rainfall that may also be coupled with snowmelt, can trigger flooding that can disrupt drinking water and wastewater services, underscoring the need for long-term resilience solutions in the water sector.

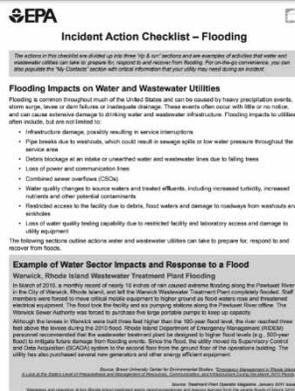
Any drinking water or wastewater utility, large or small, can be at risk of sustaining significant and costly flooding damages. To better prepare for the upcoming spring season, your utility can take steps before, during, and after weather emergencies using the U.S. Environmental Protection Agency's (EPA) suite of easy-to-use tools and resources.

## Identify Response Actions and Critical Customers

Floods are one of the most common and widespread weather-related natural disasters. They can be caused by a variety of weather events, including heavy spring rains that may follow a winter of significant snow and ice accumulation. The EPA has developed the Flooding Incident Action Checklist (IAC)

that lists activities utilities can conduct to prepare for, respond to, and recover from flooding emergencies.

The planning measures outlined in the Flooding IAC encourage utilities and community partners to work together before potential incidents to identify priority water customers, obtain their contact information,



in case of prolonged water service disruptions. Further, confirming with local law enforcement before an incident that your water utility response access credentials are valid can make all the difference when staff are urgently needed to restore flood-ravaged facilities.

## Prepare for Cascading Impacts: Power Outages

The spring season can bring snow melt, heavy seasonal rains, and flash floods. These conditions can overwhelm existing infrastructure and lead to pipe breaks, flooded facilities, and widespread power outages. Power loss can have devastating im-

pacts on drinking water and wastewater utilities and the communities they serve. Inoperable pumps at drinking water utility infrastructures can compromise firefighting operations and cause local health care facilities and restaurants to close. EPA developed the Power Resilience Guide for Water and Wastewater Utilities to provide information and strategies for strengthening relationships with electric providers and increasing water sector resilience to power outages from floods, as well as from other weather emergencies.

The Power Resilience Guide identifies steps your utility can take to establish emergency communication protocols, determine your utility's power prioritization status, and maintain onsite fuel storage, among other recommended actions. The



Guide also highlights case studies from water utilities that have successfully implemented power resilience measures.

## Transform Preparedness into Mitigation

While preparedness measures can strengthen your utility's resilience to flood-related impacts, putting long-term mitigation planning for flooding incidents into practice is the most effective way to ensure your utility and community can better withstand and recover from disasters. To assist planning for long-term mitigation projects, EPA's Hazard Mitigation Guide for Natural Disasters provides examples of mitigation projects for disaster scenarios that drinking water and wastewater utilities may encounter during a flood, such as purchasing or renting a generator to prepare for power outages and elevating wellheads to mitigate the impacts of flooding from spring rains or water runoff. The Guide encourages drinking water and wastewater utilities to work with their local mitigation planners to execute priority projects that are consistent with the overall community strategy.



The Hazard Mitigation for Natural Disasters Guide also includes information on eligibility for funding, such as federal grants or loans, to support mitigation work. This includes the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP), which can be used by communities to implement hazard mitigation projects following a Presidential Disaster Declaration.

### Identify Federal Funding Opportunities for Mitigation

There are several federal programs, including HMGP to help utilities understand and obtain federal disaster and mitigation funding. EPA developed the Federal Funding for Water and Wastewater Utilities in National Disasters (Fed FUNDS) tool so that utilities can quickly screen funding programs from U.S. Department of Housing and Urban Development, U.S. Department of Agriculture, Small Business Association, FEMA, and EPA to identify those that are applicable to your utility. It also provides examples of successful utility applications and tips for funding.

### Consolidate Information in an Emergency Response Plan

Another key aspect in planning for and responding to flood-related incidents is developing a robust

Emergency Response Plan (ERP). An ERP describes strategies, resources, plans, and procedures to prepare for and respond to an incident, natural or man-made, that threatens life, property, or the environment. Under America's Water Infrastructure of 2018 (AWIA) Section 2013, community water systems serving over 3,300 people are required to develop or update an ERP. The information, plans, and procedures developed when utilizing the Flooding IAC, Power Resilience Guide for Water and Wastewater Utilities, and Hazard Mitigation Guide for Natural Disasters contribute to the foundation of your ERP. Compiling this information provides a clear and concise process for unexpected emergencies and fosters a culture of preparedness at your utility.

### Interested in Learning More?

To learn more, visit [www.epa.gov/waterresilience](http://www.epa.gov/waterresilience) or join the What's Going On newsletter email list by contacting [WSD-outreach@epa.gov](mailto:WSD-outreach@epa.gov). With the help of EPA's free water resilience resources, you can help ensure that your utility continues to provide safe and reliable services to your customers during emergencies.

**Contact information:** Gabrielle Minton, [Minton.Gabrielle@epa.gov](mailto:Minton.Gabrielle@epa.gov) ■

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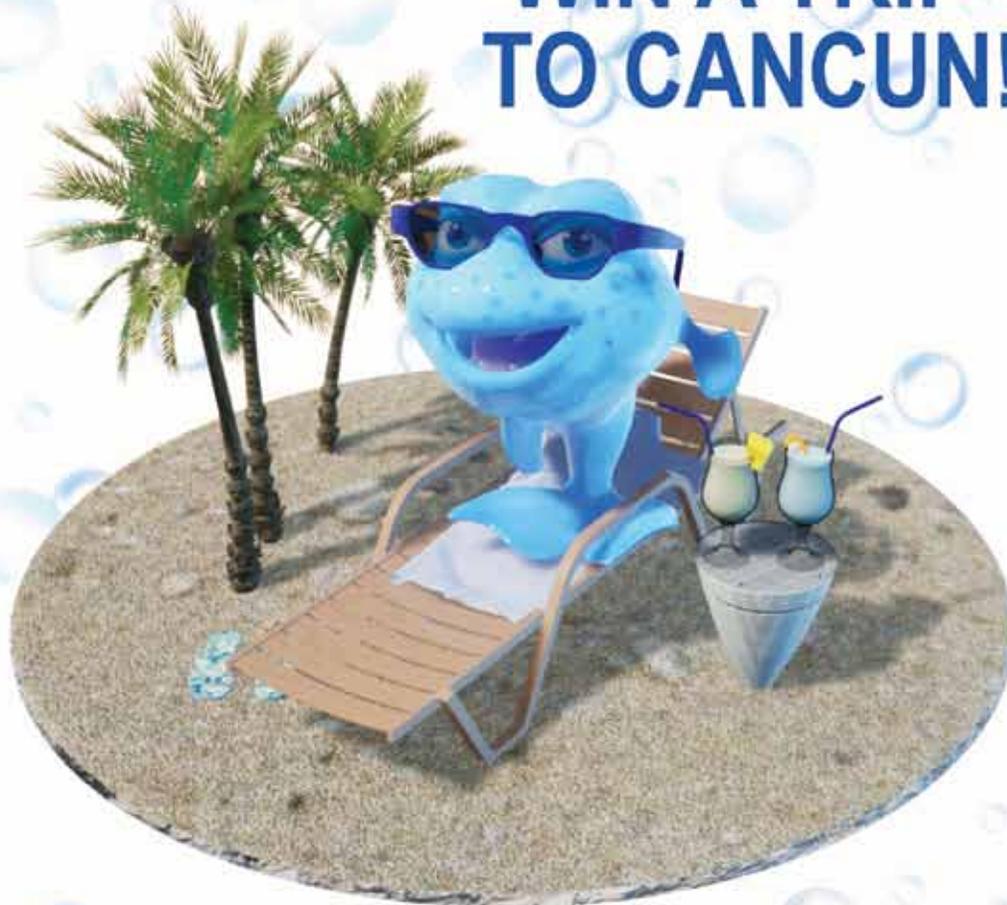


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NRWA has created partnerships with the Ford Motor Company and the Chrysler Group to offer special fleet discounts to State Rural Water Associations and their utility system members. Member utilities should contact their State Rural Water Association to access the Rural Water Fleet Program. Vehicles may be purchased at your local dealer or through the national fleet auto group at [www.nrwafleet.com](http://www.nrwafleet.com).

**Program Details**

- Limited to Water/Wastewater utilities that are current members of a State RWA
- There is no limit to the number of vehicles that can be purchased under the program
- Incentive pricing is deducted off the factory invoice. Fleet vehicles must be in service for a minimum of 12 months or 20,000 miles
- Vehicles must be registered and operated in the 50 United States

Call your State Association today to get your Fleet Identification Number (FIN)



ServLine is a unique insurance program that will cover water lost with no deductible, repair or replace a customer's water and sewer line in a timely fashion. ServLine is a full service program backed by Hanover Insurance Company and is not a warranty program. The difference is warranty programs only provide water line and sewer line repair products and no leak adjustments.



**ServLine:**

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- Protects your utility against financial water loss
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- No direct marketing to utility customers

Contact your State Association to sign up today!



NRWA, in collaboration with Mike Keith Insurance and National Insurance Partners, is pleased to introduce the Lifestyle Health Plans 'Healthy Benefits' program to give NRWA members a comprehensive and affordable health benefits option to meet all of the compliance requirements of ACA.



**What makes Healthy Benefits different?**

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To learn more about lifestyle health plans, visit [healthybenefitsnrwa.com](http://healthybenefitsnrwa.com) or contact Jeanie Cunningham at (800) 530-5229 or via email at [jeanie@mkeithins.com](mailto:jeanie@mkeithins.com)



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To view features and get started securing your system, visit the Products and Services at [www.nrwa.org](http://www.nrwa.org)



Companies want to hire qualified and talented people to help their business succeed. Having an effective background screening program is an essential step in the process. NRWA teamed up with IntelliCorp to provide members with comprehensive background screening products and solutions at cost-effective rates. IntelliCorp provides validated criminal searches, screening packages, personalized support, training and compliance.

Get started today with no set-up fee! [www.nrwa.org/background-checks](http://www.nrwa.org/background-checks)



**The Power of Association**

Only the National Rural Water Association can bring together this unique Products and Services Portfolio. Systems can choose from website design and customer communications, to several insurance packages including health plans, data breach services, line and leak coverage, background screening as well as our Rural Water Loan Fund.

**All Designed to Meet the Needs of Utilities**

This NRWA Products and Services Portfolio Toolbox was designed to assist State Associations and their members with up-to-date information and provide exclusive, beneficial products and services at an affordable cost.

You can find additional information on each product or service on the NRWA website, [www.NRWA.org](http://www.NRWA.org).

For NRWA assistance, please contact:

**Dawn Myers**  
Products & Services Coordinator and Corporate Membership  
2915 South 13th Street  
Duncan, OK 73533  
580.251.9081  
[dawn@nrwa.org](mailto:dawn@nrwa.org)



**Affinity Program**



The Rural Water Loan Fund (RWLF) is a funding program designed to meet the needs of small water and wastewater utilities. The RWLF provides low-cost loans for short-term repair costs, small capital projects, or pre-development costs associated with larger projects.



**Eligible Projects**

- Planning costs for infrastructure projects
- Replacement equipment, system upgrades, maintenance and small capital projects
- Energy efficiency projects to lower costs and improve system sustainability
- Disaster recovery or other emergency loans are available

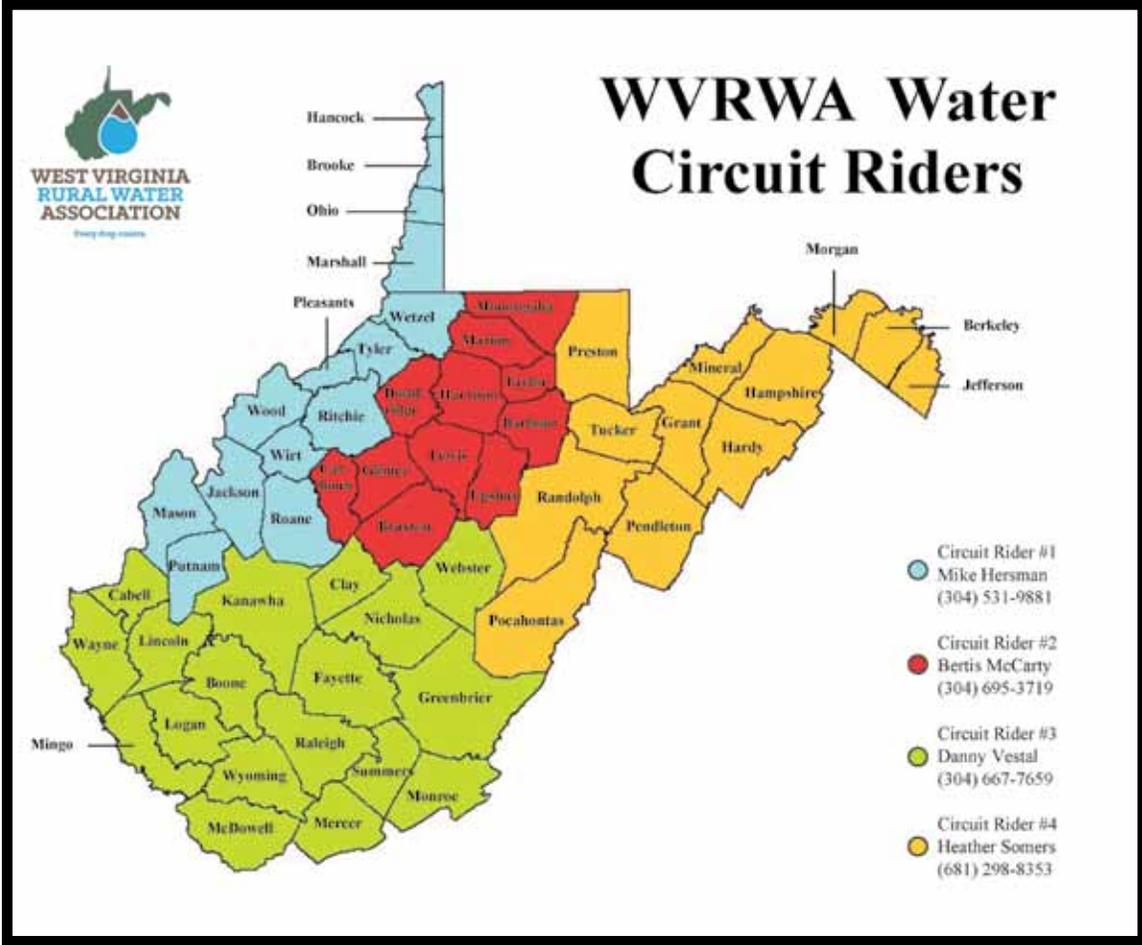
Visit [www.nrwa.org](http://www.nrwa.org), to find out how you can apply for a loan with reasonable interest rates and no processing fees.



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# RURAL WATER Loan FUND



The **NRWA Rural Water Loan Fund (RWLF)** is a funding program specifically designed to meet the unique needs of small water and wastewater utilities. The RWLF provides low-cost loans for short-term repair costs, small capital projects, or pre-development costs associated with larger projects. The RWLF was established through a grant from the USDA/RUS, and repaid funds used to replenish the fund and make new loans.

## Reasons to apply

- Reasonable interest rates
- NRWA does not charge administrative or processing fees
- Straightforward application process
- Quick turnaround

## Eligible Projects Include

- Pre-development (planning) costs for infrastructure projects
- Replacement equipment, system upgrades, maintenance and small capital projects
- Energy efficiency projects to lower costs and improve sustainability
- Disaster recovery or other emergency loans available

**Contact your State Rural Water Association or National Rural Water Association for help with the application process.**

## For More Information:

Applications, information and forms can be downloaded from the NRWA website, [www.NRWA.org/loans](http://www.NRWA.org/loans).

Email applications to:  
[nrwarwf@nrwa.org](mailto:nrwarwf@nrwa.org)

Or mail to:  
Rural Water Loan Funds  
2915 South 13th  
Duncan, OK 73533

For help, please call 1.800.332.8715 or email [nrwarwf@nrwa.org](mailto:nrwarwf@nrwa.org).



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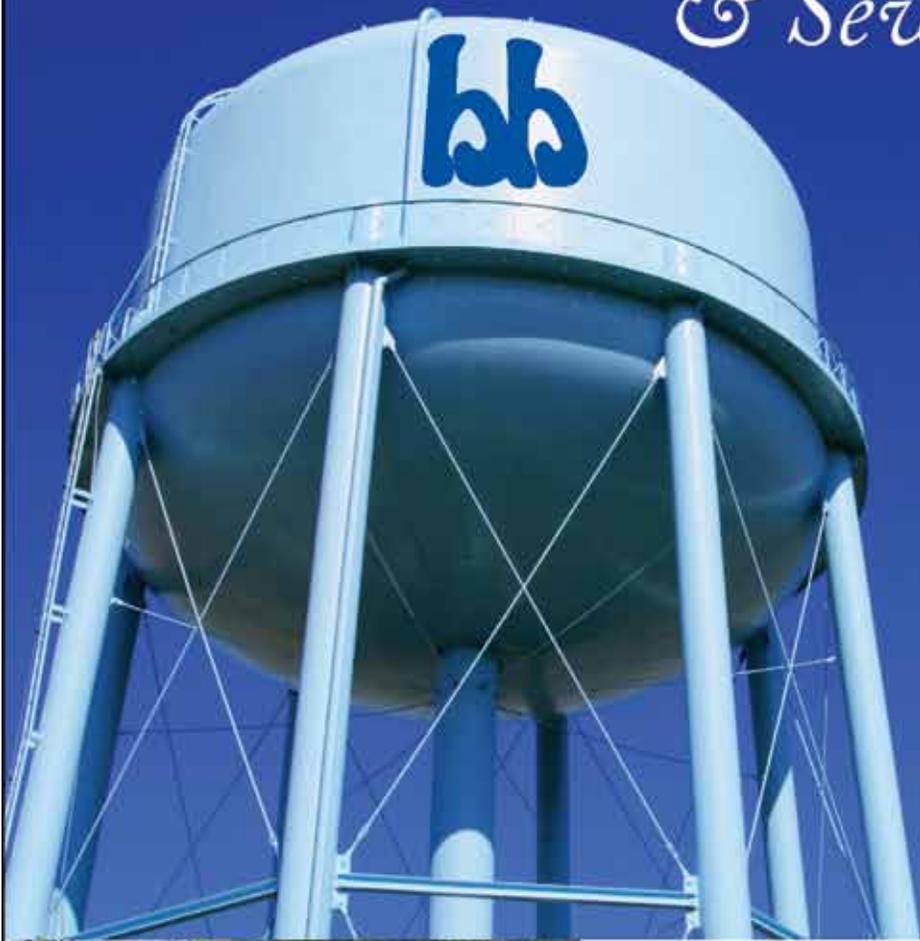
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Recently, WVRWA published its new e-Newsletter, *News Droplets*. *News Droplets* provides information on new programs and benefits, training classes, conference, legislative news, and much more. If you are currently not receiving *News Droplets*, but would like to, please send your name and email address to [connect@wvrwa.org](mailto:connect@wvrwa.org) to be added to the mailing list.

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# How Green Can My Plant Be

According to the U.S. Bureau of Labor Statistics, prices for electricity were 11.14% higher in 2020 versus 2010. Green energy and energy efficiency are all over the news these days, not only due to cost, but also the possible environmental impact. It is possible for your plant to be more efficient and not bust your already tight annual operation budget. Below are ways to do just that.

Clean Water State Revolving Fund (CWSRF) has a Green Projects Reserve to fund energy saving projects. Proposed green projects in Energy Efficiency, Water Efficiency, Storm Water, and Green Infrastructure may be eligible to receive additional loan subsidization, in the form of principal forgiveness, to the lesser of 50% of the total eligible green CWSRF costs or \$500,000.

Environmentally Innovative projects may be eligible to receive loan subsidization, in the form of principal forgiveness, of 100% of the total eligible green CWSRF costs. Allowable green projects to be funded in this category are:

Decentralized sewer systems

- 1.) Publicly Owned Systems
- 2.) Privately Owned Onsite Systems

This category is used for constructing, upgrading, or repairing onsite/septic systems to existing eligible structures to protect water quality. The project must be sponsored by a local entity eligible to receive SRF funding. This is all contingent on available funds.

Rely on your professionals to guide and assist you through this process.

AEP and First Energy Corp (Mon Power) have offered incentives to utilities, business, and homeowners that enter into energy saving projects at times in the past. To search for rebates through AEP, go to <http://takechargewv.com/business>. Mon Power doesn't have any energy efficiency programs available at this time, but they are offering a Business Energy Analyzer. Go to [https://www.firstenergycorp.com/save\\_energy/save\\_energy\\_west\\_virginia.html](https://www.firstenergycorp.com/save_energy/save_energy_west_virginia.html). Projects can be as simple as occupancy sensors to turn off lighting, conversion from florescent or incandescent lighting to more efficient LED, to replacing pumps and controls to VFD controls. Even without the power companies participation, projects of this kind have a payoff in reduced power bills.

A simple energy saving project that costs little above the cost to replace in-kind would be to, as florescent lights or their ballasts fail, replace the tube with LEDs. There are two types of LED tubes; one requires removing the ballast, which I believe, is the best option for cost savings, although this methods requires a little wiring knowhow and the other utilizes the ballast. The replacement that removes the ballast is simple and youtube.com has many videos that explain the task with the only items needed being a pair of wire cutters, wire strippers, a few small wire nuts, and electrical tape. If you choose the simpler route of keeping the ballast, all that is required is to replace one florescent tube for one LED tube; however, if the ballast fails in the future, it must be replaced for the tubes to continue to function. ■

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## SUDOKU PUZZLE

	6	4		7	9			2
		1			6			9
						6		
8								
	7	2			3	4	5	
			6		2	7		
	2			3	7			1
	3		4		8		9	
				1		3	7	

The aim of the canonical puzzle is to enter a numerical digit from 1 through 9 in each cell starting with various digits given in some cells (the "givens"). Each row, column, and region must contain only one instance of each numerical. Completing the puzzle requires patience and logical ability.

Answers can be found on page 38.



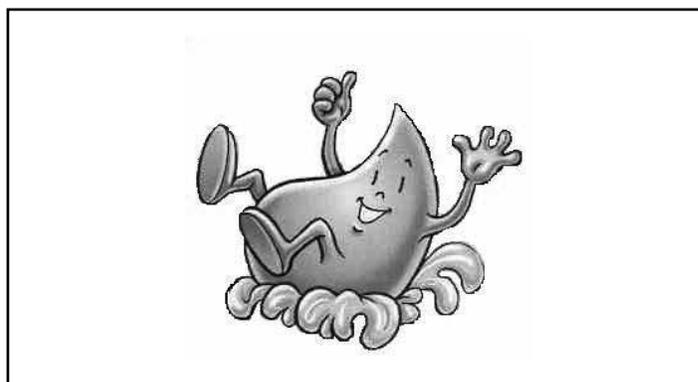
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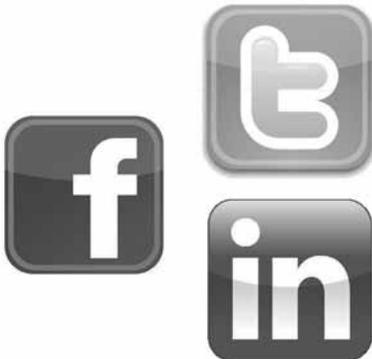
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7	8	1	3	2	6	5	4	9
2	5	9	8	4	1	6	3	7
8	1	6	7	5	4	9	2	3
9	7	2	1	8	3	4	5	6
5	4	3	6	9	2	7	1	8
4	2	5	9	3	7	8	6	1
1	3	7	4	6	8	2	9	5
6	9	8	2	1	5	3	7	4

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By Jim Johnson, Wastewater Technician

# Tips on the Oil and Grease Problem Faced by Wastewater Systems

**A**s most Wastewater Operators know, fats, oils and grease have the potential to cause many problems in your wastewater system. These FOGs, as they are generally referred to, can cause problems such as plugging lines and damaging equipment. The problems they can cause are numerous and very costly. Food establishments generate tons of food waste, including oil and grease each year. If this waste is not properly managed, your wastewater system can have major problems to deal with. These oil and grease compounds often enter the system as a liquid. They then cool and take on the properties of a solid. They also can separate from the water and float. The grease will then begin to cling to the sewer pipe. This, in turn, will create a condition in which the pipe will clog, or the capacity will be reduced. Either way, sewage will be challenged to make its way through the pipe. Blockage repair is expensive, difficult, and timely. Sewage backups in homes and businesses carry bacteria, viruses, and pathogens, which create a public health hazard. Nationwide, one of the major causes of dry weather overflows is FOGs.

Grease is quite a problem in a sewer system. Problems range from blockages and health hazards, as was mentioned earlier, to odor problems and pump station failures. They also cause the sewer lines to have to be cleaned more often.

Wastewater systems should develop a FOG or grease control pro-

gram for users of their wastewater system. The system should develop a program that calls for grease removal equipment in all food service facilities. The regulations should include cleaning intervals for this equipment, as well as record keeping for when cleaning and maintenance was performed. Also, wastewater system staff need to be able to inspect the equipment and have the records sent to them. Every food service establishment should have someone in charge of overseeing their FOG program. This person should have a contact at the wastewater system to report problems and to get assistance in the way of advice if a problem occurs. Your wastewater system should have someone who works with the FOG program and understands the regulations and knows some ways for the food establishments to stay in compliance.

Some of the equipment that can be installed to help remove grease from a sewer system are grease traps. A grease trap is usually installed inside a building or under a sink. They hold the grease in the trap while allowing the water to escape into the sewer system. They have a removable lid to allow for inspection and cleaning. A grease interceptor is installed outside the building. It retains grease, but allows the water to be discharged to the sewer system.

Some best management practices that may be included in a FOG plan to further help keep grease out of your system may include the fol-

lowing:

1. Any outdoor grease storage containers should be covered so as not to collect rainwater or produce an odor.
2. Grease storage containers should be located away from storm drains, basins, or anything that could get to the sewer or a body of water.
3. Make sure any spills are cleaned up around the storage containers.
4. Do not clean with water in an area where water can flow to a gutter, street, or storm drain.

The food service establishment should keep a maintenance and cleaning log of all the activity on the grease removal equipment. This will ensure that cleaning and maintenance are performed as directed. Keeping them maintained and cleaned on the proper schedule is the key to their proper operation. Grease usually must be hauled away by a waste hauler or a recycler. Usually, in West Virginia, a report must be filed with the January DMR that the grease facilities were inspected during the previous year.

If the wastewater system can implement a FOG program and keep their inspections up-to-date, you can reduce the grease in your system. This should prevent a few problems in the wastewater system. It does take quite a bit of work, depending on the number of food service establishments that are on your system. The program has a lot of benefits. ■

# Special Interest

**N**imrod Lee Riley, 61, of Arthurdale entered eternal rest from his home on Wednesday, December 16, 2020. He was born in Morgantown on July 1, 1959 to Dorothy (Bishop) Riley and the late Alston Riley.

Nimrod was a lifetime member of the Reedsville Volunteer Fire Department. He was currently serving as president, but had served as Chief and had held all offices and positions. He was the former director of the Office of Emergency Management of Preston County and he helped establish the local 911 system. He was a Val-

ley EMS. Nimrod was elected as a county commissioner for 8 years and



Water Company under Claude Bonnette and he operated the water company ever since. He loved the outdoors, but, most of all, he loved his girls. He was the owner and opera-

tor of NL Riley Construction for many years. His knowledge of Arthurdale housing and his ability to do quality repairs was well known. He is survived by his mother Dorothy; two daughters: Anna Edmunds and Justin; and Aubree Riley and Dylan Bowers; one brother: Michael Riley; four sisters: Marilyn Newcome, Irene Durr, Donna Guire, and Mary Jane Zeigler; two grandchildren: Isabella and Derek; and numerous nieces and nephews.

tor of NL Riley Construction for many years. His knowledge of Arthurdale housing and his ability to do quality repairs was well known.

He is survived by his mother Dorothy; two daughters: Anna Edmunds and Justin; and Aubree Riley and Dylan Bowers; one brother: Michael Riley; four sisters: Marilyn Newcome, Irene Durr, Donna Guire, and Mary Jane Zeigler; two grandchildren: Isabella and Derek; and numerous nieces and nephews.

He was preceded in death by his father and brothers: Brian and Lonnie.

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**Where is this located in West Virginia?**

**Last issue's answer:**

**Fidler's Mill  
in Rock Cave, WV**

## *Recipes to Tempt Your Taste Buds*

## **Cheesecake-Stuffed Pound Cake**

### Ingredients:

- 1 (8-oz.) block cream cheese, softened
- 2 tbsp. sour cream
- 1/2 c. powdered sugar, sifted
- 1 tsp. lemon zest
- 1/2 tsp. vanilla extract

- Pinch of kosher salt
- 3/4 c. whipped topping
- 1 1/4 c. raspberries
- 1 pound cake, store-bought or homemade

### Directions:

In a large bowl using a hand mixer, beat cream cheese and sour cream together until smooth. Add powdered sugar, lemon zest, vanilla, and salt and beat until combined. Fold in whipped topping, then gently fold in raspberries.

Leaving a 1" border, hollow out the middle of the pound cake, being careful not to cut through the bottom. Reserve removed pound cake for topping.

Spoon cream cheese mixture into center of pound cake and smooth into an even layer. Crumble about 1/4 of the reserved pound cake and use the crumbs to cover the cheesecake mixture.

Refrigerate pound cake until cheesecake mixture is firm, about 4 hours. Slice and serve.



## West Virginia Rural Water Association Cybersecurity Update

West Virginia Rural Water Association here with a quick update regarding cybersecurity and tips on identifying genuine WVRWA communication.

As our industry continues to integrate digital services like email into our daily work, it becomes increasingly important to ensure that we are taking efforts to be as secure as possible when online. Here are some tips to help confirm that online communication you may receive with our name on it is truly coming from us:

- When you receive an email claiming to be sent from West Virginia Rural Water Association staff, check the email address of the sender to determine if it is correct. If it isn't an @wvrwa.org email address, it likely isn't from us.
- If you were not expecting any direct communication from us, be especially critical of both the sender's information as well as the content of the email.
  - Be particularly careful about the sender's information if you receive communication directly asking you for private information. Feel free to contact us over the phone or through a new email message if you would like confirmation that we reached out to you.
- Be mindful in general when reading an email claiming to be from WVRWA or WVRWA staff. Some inauthentic emails can be convincing, so it is important to take the time to examine the message closely before you respond.

We encourage you to contact us with any questions or information regarding West Virginia Rural Water Association and proper cybersecurity!

**Need Information or CD's?  
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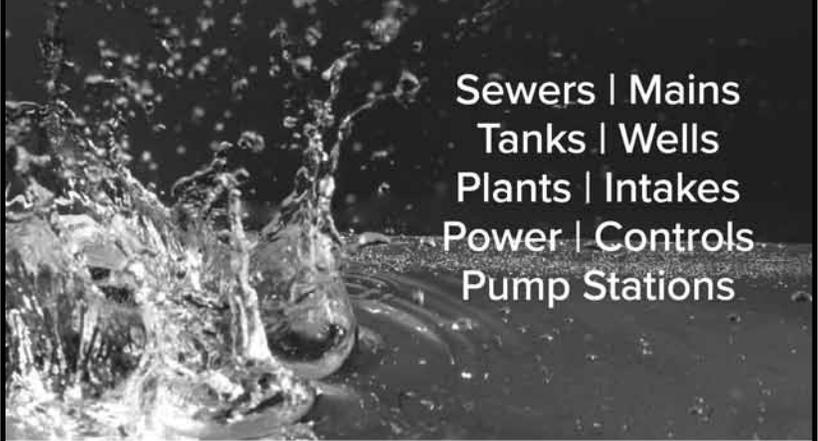
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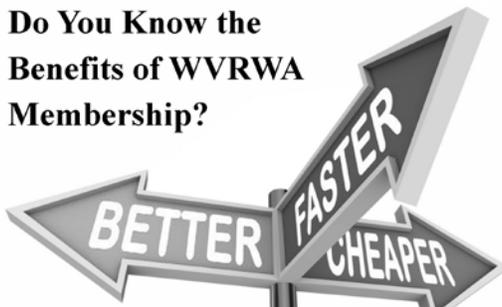
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We would like to give a special thanks to all of our current and former Board Members and Staff who have helped shape WVRWA.

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Big Bend PSD	Flatwoods-Canoe Run PSD	Middlebourne	Salt Rock Sewer PSD
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Branchland-Midkiff PSD	Gauley River PSD	Monumental PSD	Southwestern Water PSD
Bridgeport	Gilbert Water	Moorefield	Spencer
Brooke County PSD	Gilmer County PSD	Moorefield Regional Wastewater	St. Albans MUC
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Cameron	Greater Harrison PSD	Nettie - Leivasy PSD	Tennerton PSD
Canaan Valley PSD	Greater St. Albans PSD	New Creek Water Assoc.	Tri County Water Assoc.
Carpendale	Green Valley-Glenwood PSD	New Cumberland	Triadelphia
Cedar Grove	Greenbrier County PSD #1	New Martinsville	Tunnelton Municipal
Central Barbour PSD	Greenbrier County PSD #2	Newburg	Tyler Co. PSD
Central Boaz	Hammond PSD	Northern Jackson County PSD	Union
Central Hampshire PSD	Hamrick PSD	Northfork	Union PSD
Century Volga PSD	Hancock Co. PSD	Norton-Harding-Jimtown PSD	Union Williams PSD
Chapmanville	Hardy County PSD	Nutter Fort	Valley Falls PSD
Charles Town	Harman	Oak Hill Sanitary Board	Village of Beech Bottom
Chester	Harpers Ferry	Oakvale Road PSD	Village of Bethlehem
Chestnut Ridge PSD	Harrisville	Paden City	Vienna
Clarksburg Water Board	Hartford	Page-Kincaid PSD	Wardensville
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Clay Municipal Water Works	Hinton Sanitary Board	Parsons	Wayne
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Clinton Water Assoc.	Hughes River Water Board	Paw Paw Rt. 19 PSD	Welch
Clover PSD	Hundred-Littleton PSD	Pea Ridge PSD	West Hamlin
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Davis	Lavalette PSD	Preston County PSD #4	Worthington
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325 8th Street

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Phone: (304) 523-2100

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707 Virginia Street, E

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Phone: (304) 345-8900

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P.O. Box 1588

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Phone: (304) 375-4900

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**Agency, Inc.**

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Logan, WV 25601

Phone: (304) 752-6850

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### **\*\*Hayes Insurance Agency**

202 Union Square

Marietta, OH 45750

Phone: (740) 373-2347

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### **\*USI Insurance Services**

1 Hillcrest Drive East, Suite 300

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Phone: (304) 993-3331

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### **\*CME Operations**

975 Georges Station Road

Greensburg, PA 15601

Phone: (724) 672-4800

### **\*\*Crews & Associates, Inc.**

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Morgantown, WV 26501

Phone: (304) 292-6600

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### **\*Dunn Engineers, Inc.**

400 South Ruffner Road

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Phone: (304) 342-3436

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Phone: (814) 943-5214

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### **\*\*\*Hornor Brothers Engineers**

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Phone: (304) 624-6445

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501 Eagle Mountain Road

Charleston, WV 25311

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P.O. Box 286  
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Phone: (800) 624-8285  
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## \*Reliance Laboratories, Inc.

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Phone: (304) 842-5285  
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2257 Clairmont Drive  
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## \*\*Ampstun Corporation

P.O. Box 784  
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Phone: (888) 252-4784  
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44 Amber Way  
Scott Depot, WV 25560  
Phone: (304) 757-1260  
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Phone: (608) 729-6617

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P. O. Box 1018  
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Phone: (304) 881-1735  
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## \*BissNuss, Inc.

7 Court Street, Suite 260  
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Phone: (330) 533-5531  
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Oak Hill, WV 25901  
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## \*\*CITCO Water

4034 Altizer Avenue  
Huntington, WV 25705  
Phone: (800) 999-3484  
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## \*Consolidated Pipe & Supply Co., Inc.

907 Honeybranch Industrial Park  
Debord, KY 41214  
Phone: (606) 298-0333  
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## \*Core & Main

2825 Fairlawn Ave.  
Dunbar, WV 25064  
Phone: (304) 768-0086  
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3251-C Old Frankstown Road  
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712 Tobacco Run Drive  
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## **\*Neptune Technology Group**

2305 W 18th Street  
Wilmington, DE 19806  
Phone: (302) 824-6918

*See Our Ad Page 6*

## **\*Suez Water Advanced Solution**

1230 Peachtree Street, N.E., Suite 1100  
Atlanta, GA 30309  
Phone: (855) 526-4413

*See Our Ad Page 6*

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5900 MacCorkle Avenue  
St. Albans, WV 25177  
Phone: (304) 768-5965

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## **\*Master Leak Technologies, LLC**

100 Home Road  
Hatboro, PA 19040  
Phone: (267) 236-6184

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## **\*Pittsburg Tank & Tower Co.**

P.O. Box 913  
Henderson, KY 42419  
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## **\*Tepco-Trombold Equipment Co., Inc.**

P.O. Box 897  
Mars, PA 16046  
Phone: (724) 625-4260

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## **\*Visu-Sewer East, LLC**

10994 Leadbetter Road  
Ashland, VA 23005  
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101 Regency Parkway  
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90 Clairton Boulevard  
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400 Fifth Avenue  
Coraopolis, PA 15108  
Phone: (412) 269-0999

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1551 Jackson Avenue  
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1551 Robinson Road  
Washington C.H., OH 43160  
Phone: (740) 335-2019

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## **\*ProSource Water Products, Ltd.**

14680 Pleasant Valley Road  
Chillicothe, OH 45601  
Phone: (888) 772-5478

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**Contractors Alliance**  
512 33rd Street  
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Phone: (304) 546-1909

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## **\*Miss Utility of West Virginia**

5608 MacCorkle Avenue, S.W.  
South Charleston, WV 25309  
Phone: (304) 345-3959

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## **\*Quality Water Services, LLC**

160 John Street  
Weston, WV 26452  
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P.O. Box 250, Stadium Drive  
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P.O. Box 2097  
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