WEST VIRGINIA RURAL WATER ASSOCIATION
Every drop counts.

Mountain State Water Line

A Publication of the West Virginia Rural Water Association

Winter 2024

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- WVRWA Lead and Copper Program
- Power Resilience for WTP and WWTP

West Virginia Rural Water Association

Winter 2024

Hurricane, WV
Photo by: Amanda Cochran

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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.

Online Training Classes

WVRWA has teamed up with SunCoast Learning Systems, Inc. to bring online computer-based water and wastewater training to operators throughout the state. Through WVRWA Online Learning, you now have the freedom to learn from home, the office, or your local library. Training can be accessed directly from your personal computer using your internet connection.

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 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
Surface Water Treatment	10	Water	$180
Basic Environmental Chemistry	10	Water/WW	$180
Small Water Systems I	5	Water	$100
Chlorinator Systems & Chemical Handling	10	Water/WW	$180
Water Transmission and Distribution	10	Water	$180
Practical Personnel Management	7	Water/WW	$125
Water Utility Calculations	10	Water	$180
Pumps & Motor Maintenance	10	Water/WW	$180

West Virginia Rural Water Association

Don't Miss Out on Available Services

Our little to no-cost, two-year, nationally recognized Water/Wastewater Apprenticeship Program matches candidates with employers.

During your apprenticeship, you will earn-while-you -learn with on-the-job training and classroom instruction.

This program starts as a job and emerges as a solid and secure career as either a water operations specialist or wastewater operations specialist.

Our Circuit Riders provide training and technical assistance to operations specialists, water utility managers, and boards. On-site help is available upon request when a system needs it.

- Leak detection and water audits
- Sampling and testing
- System troubleshooting
- CCRs

Our Source Water Protection Specialist provides on-site help for systems to assess, delineate sources of water, and reduce/eliminate the potential of contamination.

- Source water protection plans
- Emergency response plans
- Measure well draw downs
- Perform TV inspection of wells

Training is available to obtain continuing education hours (CEHs) for license renewals.

As part of this training endeavor, training videos have been developed to help bring about compliance with safe drinking water regulations and to enhance system operations.

Videos and study material are available upon request.

Our ARC Specialist provides technical, training, financial, and managerial assistance for water and wastewater systems in economically distressed Appalachian counties.

- Asset management plans
- Rate analysis
- Leak detection
- Preventing inflow & infiltration (I&I)

Our Wastewater Technicians provide assistance to enhance and maintain financial sustainability of wastewater systems through technical support and/ or training.

- Smoke testing and camera inspections
- Nitrogen problems
- Solids handling
- Compliance issues

Our Energy Efficiency Technician provides assistance to rural and small community water and wastewater utility systems to help in becoming more energy efficient.

- Evaluates energy needs, consumption, and costs
- Recommends measures to reduce energy consumption
- Identifies potential funding sources for improvements

Our EPA Water Technical Assistance Specialist provides training and technical assistance to water systems that struggle to achieve compliance with regulations.

A key priority is assisting small systems with their technical, managerial, and financial capacity to achieve long-term sustainability and resiliency.

By Michael Hersman, Water Circuit Rider

Guidelines for Fire Hydrant Location and Maintenance

Fire hydrants are one of those components of a water system visible to the public, so keeping them well maintained can aid a water utility to project a good public image. In smaller systems, hydrants are so seldom used for fighting fires that it may be easy to forget how important it is to keep them well maintained for quick and reliable service when needed. A hydrant that does not operate when needed can result in a loss of life and property. The major purpose of fire hydrants is for public fire protection. The water utility is usually responsible for keeping hydrants in working order, although the fire department assumes this responsibility in some communities. Some water utilities refuse to install fire hydrants throughout their distribution system because they proclaim they are not in the firefighting business.

There are some guidelines that need to be followed to determine where the hydrants should and should not be located. Hydrants should not be located too close to buildings they are intended to protect. Firefighters will not position their trucks where a building could fall on them if the building should collapse during a fire. Hydrants should preferably be located near street intersections. This way, hose can be strung to fight a fire in any of several directions. Hydrants should be placed back far enough from a roadway to minimize the danger of them being struck by vehicles. Hydrants must be located where they are least liable to be covered by plowed snow or struck by snow removal equipment. Hydrants that are very low will be difficult for firefighters to use. Hydrants should generally be high enough that valve caps can be removed with a standard wrench, without the wrench hitting the ground. Sometimes, in rural areas, hydrants aren't always visible due to brush, grass and weeds growing around them. Utilities need to keep them cleared of any debris.

Regularly scheduled maintenance and inspection of hydrants are necessary to ensure satisfactory operation. All hydrants should be inspected at least annually. In freezing climates, each hydrant should be inspected in the autumn to make sure no standing water is in the barrel. Some water systems do this by "stringing" the hydrant - dropping a weighted string down the barrel to see if it comes out wet.

The most important reason for maintaining hydrants is safety. Why perform preventive maintenance on hydrants? There are several reasons: System requirements including hydraulic efficiency, aids in improving operational functionality and meeting regulatory requirements. Public perception, hydrants can be a valuable public relations tool for a water system. Freshly painted, well-maintained hydrants show customers that the water system cares about serving them. The public sees hydrants as an early detection device during emergencies and it promotes safety. Water quality is another reason for maintaining hydrants. Hydrants purge stagnant water from dead-end mains and aid in maintaining water quality to resolve customer complaints. Economics is a very important reason for maintaining hydrants. It helps create an efficient and productive system and incorporates best management practices.

There are several advantages for maintaining fire hydrants. They affect the rate of insurance premiums for your customers, they convey more stagnant water than blow-offs, and they provide an enhanced ability to check shutouts on mains, provide assistance in locating leaks within the system, helps in determining the location of bad valves, and enhances the ability to monitor the system. This program should set attainable goals to try to perform routine maintenance on each hydrant. There are many elements that are critical and necessary to have an efficient and effective distribution system. Maintaining this critical asset is of the upmost importance. If you have a fire hydrant, you have a liability. Make certain they are operational. ■

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By Shane Altizer, Water Circuit Rider

Water Meter Testing

• Testing requirements

On October 24, 2003 the Public Service Commission passed a law requiring systems to test their water meters. Meters shall be periodically tested as follows:

3/4" or less in size at least once every 10 years.

1" in size at least once every 7 years.

1-1/4", 1-1/2", 2" in size at least once every 5 years.

3" in size at least once every 3 years.

4" and larger in size at least once each year.

An issue I've seen with a lot of systems is that they don't test their residential meters. It can be challenging to test the meters for multiple reasons, but most operation specialists aren't the type of people to back down from a challenge. If you need meters tested 2" and larger, call your area circuit rider and we can help.

• Why Test

Aside from it being a requirement, there are a few good reasons that you should test your meters.

The biggest reason is that your system could be losing revenue because the meters are running slowly.

According to the EPA, a person in America uses an average of 82 gallons of water per day in their house. For a family of 3, that is 7,380 gallons per month. Add to that the usage from businesses such as schools, nursing homes, and car washes, you can see how much revenue you could be losing due to slow meters.

• The numbers

Let's assume a system has 1000 residential meters that have been in the ground 20 years or more and have never been tested. Using the EPA average for household usage, that is 7,380,000 gallons of water. The legal limit for meters to be off is 2% and if your meters are only 2% slow, you are losing 147,600 gallons of water revenue a month.

• Conclusion

If you want to improve your revenue and decrease your water loss, testing meters is a simple way to do both. Though it might not be a huge improvement, it is a step in the right direction. ■

By Jim Johnson, Wastewater Technician

Clean Water Act Compliance Monitoring

Since the early 1970s, wastewater plants have been governed by the Clean Water Act. The US EPA works with tribal, state and federal partners to guarantee compliance with the Clean Water Act. The Laws and Regulations set forth in the Clean Water Act are set up to protect human health and the environment. The Clean Water Act is the main federal law covering water pollution. The Clean Water Acts NPDES program regulates point sources, which include wastewater systems, which discharge anything into waters of the United States. Compliance monitoring under the NPDES program includes Discharge Monitoring Report reviews, on site checks, and assistance in compliance with NPDES Permits. If you operate a wastewater treatment facility, know what your NPDES permit says. If there are parts of the NPDES permit you do not understand, investigate and ask questions until you have an understanding of what it means. The EPA's goal with the program is to address the major problems that a permit holder has and to promote compliance.

Most Compliance Monitoring under the NPDES program is completed at the state level. West Virginia implements its own NPDES program to control water pollution; however, EPA oversees the program. NPDES Permits are issued to any facility that has a direct discharge into waters of the United States. EPA performs inspections on systems, such as treatment plants, combined sewer overflows as well as industrial facilities. What might you expect from an inspection of a combined sewer overflow?

1. Orders to eliminate overflows in sensitive areas
2. A review of the NPDES permit
3. Order to minimize industrial discharges during overflow events
4. Making sure the permittee is complying with the NPDES Permit
5. Starting or updating a monitoring program
6. Ensuring there are no dry weather overflows
7. Having compliance on the nine minimum controls
8. Being on schedule with your long-term control plan

The EPA inspections on the sanitary sewer or treatment plant would involve reviewing the NPDES permit and any orders the system may have. They would make sure the system is in compliance with the NPDES permit and that the system is implementing proper maintenance. They would determine if there are any unpermitted discharges. If a system has a known unpermitted or accidental discharge, you are required to report the discharge to the WVDEP spill line (1-800-642-3074). EPA also has plans in place to ensure that industrial facilities do not discharge pollutants to the treatment plant that pass through or interfere with the treatment process. Pretreatment inspections involve reviewing the pre-treatment program, checking annual reports, making sure the pre-treatment program is NPDES compliant, checking pre-treatment files, inspection reports and complaints. The inspection should also include interviewing someone knowledgeable with the program and inspecting industrial users' operations.

When sewage from the wastewater treatment plant is properly processed and treated, it is called biosolids. The biosolids are usually applied to land as a fertilizer or recycled. Other times, biosolids are placed in a landfill for proper disposal. When you apply for your NPDES permit, you will request how you want to dispose of your biosolids and, when you meet the proper conditions, you can dispose of them in that way. Most biosolids are disposed of in a landfill in West Virginia. Some are still land applied. I have found that land application sites are becoming harder and harder to find. EPA conducts inspections on all facilities that produce, store, or transport biosolids. They also conduct inspections

on any land the biosolids are applied to. These inspections involve:

1. Reviewing sludge monitoring records
2. Reviewing sludge sampling
3. Reviewing the NPDES Permit
4. Reviewing how samples are collected
5. Inspecting sludge treatment units
6. Inspecting sludge storage units
7. Interviewing knowledgeable staff

Basically, if you are the Chief Operator at a wastewater facility, the owner is paying you to be responsible for the NPDES monitoring and compliance. It is up to you to know what the NPDES says and to try to achieve compliance. It is up to you to know when the permit needs renewed and to either renew the permit or make arrangement to hire someone to renew the permit. It is up to the owner to allow the operator to do what needs to happen to keep in compliance with the permit. Whether that is completely a timely task, hiring additional staff, or providing funding. Whatever it takes, do try to achieve compliance with the NPDES Permit. ■

Drinking Water Treatment Revolving Fund Program Has Been Transferred to the DEP

The West Virginia Legislature, at the 2023 Regular Session, passed House Bill 561, which transferred administration of the DWTRF from BPH to the DEP effective July 1, 2023. The DEP will be working in collaboration with the Office of Environmental and Health Services (OEHS) to provide funding to necessary projects and to provide financial support to the OEHS to carry out set-aside activities funded under Sections 1452 (g)(2)(A), (B), (C), and (D) and Sections 1452 (k)(1)(B), (C), (D) of the Federal Safe Drinking Water Act. As a result, the DEP will be responsible for managing the DWTRF and Capacity Development Programs and providing the necessary funding from the set-asides to fund all eligible expenditures in support of the OEHS Environmental Engineering Division.

The Drinking Water Treatment Revolving (DWTRF) Program is beginning preparation of the FY2025 Priority List. If you wish to be listed on the FY2025 DWSRF priority list, you must submit an application, which must be completed and returned no later than March 2, 2024, if a DWTRF loan closing is anticipated for the project during state fiscal year 2025 (July 1, 2024—June 30, 2025). This application can be found on the www.dep.wv.gov website under Water and Waste, Drinking Water Treatment Revolving Fund (DWTRF) Program documents and publications or directly at www.dep.wv.gov/WWE/programs/SRF.

The FY2025 Priority List will contain applicants eligible to be considered for a loan agreement between July 1, 2024 and June 30, 2025. All information requested on the application must be provided. Please note that the last pages of the priority list application need to be completed **only** if you have a project that you feel meets the requirements to be qualified as an emerging contaminants (EC) and/or Lead Service Lines Replacement (LSL) project. If you wish to be considered as an emerging contaminants and/or Lead Service Lines replacement project, then you must complete this portion of the application.

For any questions, please contact John Giroir at (304) 926-0499 ext. 43836 or by email at john.giroir@wv.gov.
Submit Priority List Applications to: depsrfppl@wv.gov.

The FY2025 Clean Water State Revolving Fund (CWSRF) Program priority list application had to be completed and returned no later than January 31, 2024 if a CWSRF loan closing is anticipated for the project during state fiscal year 2025.

By Shannon Cochran, Lead and Copper Program Technician

WVRWA Lead and Copper Program

As the newest staff member of WVRWA, I want to use my first article as an introduction. Just like a lot of you, I never set out in a career in water and wastewater. I was a rock driller, blaster and coal miner for 17 years. When one of the last mines in my area closed, I was blessed to find my local PSD was needing an operator, never knowing I would love it. I quickly became a Class II WW Operator and the Chief Operator and General Manager for Webster Springs PSD for almost 7 years. Then this career, once again, changed my life.

Yes, I am the guy that went to WVRWA's conference and fell in love. I met your Membership Coordinator, Amanda McGinnis, in 2016 and, in April of last year, I made her my wife. I left my small little town and moved to Hurricane to be with her once I had secured a position as Director of Dunbar Sanitary Board and became a Class III WW Operator. Now, I am one of the Lead and Copper Technicians here at WVRWA.

Amanda and I bought our home together in March and, in October, added to our family with a rambunctious boxer mix puppy named Ellie. We enjoy taking Ellie to the park and spending time together at home. Amanda takes pictures for the magazine and the NRWA photo contest and I enjoy going with her, trying to capture that perfect shot. We love traveling for work and seeing new states together for the first time. Since joining WVRWA, I have seen more of our great state of WV than I ever imagined. One of the best parts of my job is going out and seeing these great little towns and meeting the hardworking operators that are doing a fantastic job at providing clean drinking water to their customers. It amazes me to see their passion for a, sometimes, thankless job on a shoestring budget.

With the newest Lead and Copper Rule and the inventory coming due in October 2024, I am sure a lot of you operators are feeling overwhelmed, running your plant, managing your workers and now trying to compile your lead and copper inventory. If you are needing assistance with your inventory or have questions about it, feel free to contact me or any other one of our Lead and Copper team. You can email me at shannoncochran@wvrwa.org and/or call or text me at (304) 644-5745. ■

By Charlie Cooper, Emerging Contaminants Technician

Emerging Contaminants in Drinking Water and Wastewater, Effects on Environment and Water Industry

Drinking water and wastewater contamination pose a significant threat to the public health sector. The contaminants affect the society in various ways, including causing diseases, developmental and growth problems. The causes of the problem are identifiable and can be managed by using the most applicable strategies. As such, necessities for the adoption of strategies that will help identify the contributing factors, results and adopt effective strategies that will prevent and reduce waterway pollution. The most effective way to remove PFAS is GAC (Granular Activated Carbon). Another method is Reverse Osmosis (R O). However, this process is very expensive to most rural systems with a smaller customer base. The easiest method is GAC and it is the preferred method of treatment. If you have questions or need assistance, please reach out to WVRWA and myself for help with this issue. ■

RURAL WATER Loan Fund

About The Program

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.

Apply today by contacting your State Rural Water Association or NRWA!

Reasons to Apply

- Reasonable interest rates
- No administrative or processing fees
- Straightforward application process and quick turnaround
- Systems must be public entities serving up to 10,000 persons, or in rural areas with no population limits
- Loan amounts may not exceed $200,000 or 75% of the total project cost, whichever is less
- Emergency loans are 90-day no interest, with immediate turn around on applications

Eligible Projects

- 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

Applications, information and forms can be downloaded from the NRWA website at nrwa.org or by scanning the QR Code above. For help, please call 1.800.332.8715 or email nrwarwlf@nrwa.org.

USDA Rural Development

NRWA

National Rural Water Association is an equal opportunity provider and employer. This material is based upon work supported by the Rural Utilities Service, United States Department of Agriculture.

By Jerry Dotson, Sourcewater Specialist

The Confidential Map Viewer

All water systems that draw their source water from surface sources, and all systems that draw their source water from ground water that is influenced by surface water (whether GWUDI or SWIG) are mandated by the West Virginia Legislature to complete a source water protection plan and to update that plan every three years. To satisfy that mandate, those systems have been given access to the West Virginia Source Water Protection Program Confidential Map Viewer. This viewer allows those systems mandated to complete plans to view the confidential location and information about Above Ground Storage Tanks, Underground Storage Tanks, and Tier II Sites in their source water protection area.

In October of 2023, those systems should have received a letter from the West Virginia Department of Health and Human Resources, Environmental Health Services, Environmental Engineering Division with updated login credentials for the confidential map viewer. As a requirement of the Department of Homeland Security, in order to allow systems access to the confidential information contained in the viewer, the WVDHHR must update the user's login credentials periodically. It is important for systems to have access to the information in the viewer, so it is vital that systems maintain their login credentials and keep them secure to prevent them from falling into the wrong hands.

Systems must have access to this information to have an adequate inventory of potential sources of contamination within the system's protection area. The confidential map view will only allow the user to view the confidential information relating to their system. So, there is no benefit in sharing the login credentials with anyone else. The primary benefits of having this information are that it allows systems to plan readiness procedures in case of a contamination from these sources, and, in the case of a suspected contamination, it provides useful information to help determine what contaminant might be present.

So be sure to keep these credentials in a secure location where they are only accessible to the people who need them, and where they are handy in case of an emergency. And be sure to mark your source water protection plan update deadlines on your calendar and be ready to submit them in a timely manner. If you need help updating your plan or have any questions related to your plan, don't hesitate to contact your WVRWA Source Water Specialist. ■

USDA WATER & WASTE WATER DISPOSAL LOAN AND GRANT PROGRAM

Improve Your Facility

About the Program

This program provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas.

Funding

Long-term, low-interest loan funding is available. If funds are available, a grant may be combined with a loan if necessary to keep user costs reasonable.

USE YOUR FUNDS TO FINANCE THE ACQUISTION, CONSTRUCTION, OR IMPROVEMENT OF:

01 Drinking water sourcing, treatment, storage, and distribution

02 Sewer collection, transmission, treatment, and disposal

03 Solid waste collection, disposal, and closure

04 Storm water collection, transmission, and disposal

05 Other related activities such as permits and legal fees

NRWA

USDA Rural Development

Scan the QR code to view more information and start your application.

By Adam Conant, Energy Efficiency Technician

Power Resilience for WTP and WWTP

Tired of not being prepared for power outages? Ask yourself do you have a plan for short-term and long-term outages? At some point, every WWTP and WTP systems deal with no power and the headaches that it can bring with it. We know that the electric will, at some point, be down for weather, construction, preventative maintenance, car wrecks, or even theft to name a few. If we don't want to be left in the **dark** then we need a plan to follow. The following article is a brief summary of some ways to be Power Resilient!

First, what we need to look at is what is the definition of being "**Power Resilient.**" According to National Renewable Energy Laboratory, "A resilient power grid withstands, responds to, and recovers rapidly from major power disruptions as its designers, planners, and operators anticipate, prepare for, and adapt to changing grid conditions." The basic meaning is, as operators of WTP and WWTP, we need to be prepared to handle whatever the power grid does and be able to adapt and recover quickly.

These are the **3 points** that every system should consider and focus on as they move towards being power resilient today and in the future.

1. **Written Plan**: Does your system have a written emergency plan? We all know it's not if, but when we lose power. Having an emergency plan is more than just ''**GO GET THE GENERATOR!!**" Here are a few items that should be considered in your emergency plan:
   a. Create a short manual, a playbook so employees can look at and know the basics of what to do during an emergency.
   b. Do we have enough chemical storage?
   c. Have we determined critical areas where we need possible portable or stationary generators?
   d. Plans for short-term and long-term power outages need to be laid out separately.
   e. Do we have enough backup fuel storage for long-term or short-term?
   f. What are the largest energy consumers in our system (pumps, blowers etc.)? Energy Assessments could help to determine those items that consume the most energy.
   g. Backup for telemetry and critical computer files.
2. **Training and Exercising**: Once your system has an organized plan for power resilience, managers and leaders need to start training the entire team of employees on a regular basis so that no one is in the dark when it comes to emergencies.
   a. The team needs to know who the decision makers are and who does what during emergencies.
   b. Everyone needs a copy of the emergency manual.
   c. Short videos concerning critical equipment or "how to" are a great help for training.
   d. Do walk throughs with the team and mock scenarios.
   e. Another option is to send employees to utility companies' training programs for emergency response.
3. **Communication**: The last suggested step in becoming power resilient is to communicate! Your system needs to develop a game plan that will help to communicate to your employees, utility companies and community. The emergency response plan won't do any good unless it can be put into action and be communicated to the right people. The following are a few ways that communication can be done:
   a. Have a communication manager to oversee and make sure communication is accomplished.

b. Make an emergency contact list with information for each name, such as position, company, and contact information. Information should be both a hard copy and digital copy so that all employees have access to with or without power.

c. Speak with utility companies regarding your restoration priority (gas, electric, phone lines, fiber, water, sewer).

d. Possibly, the 911 center may help to communicate if they already have an emergency response center in place.

e. 2-way radios if cell towers are down.

f. Social media post, mass text and email platforms with customer base information.

Each system needs to make sure they have a written plan, are ready to execute, and can communicate to the necessary people. If these items can be executed, then your system can be well on its way to having **Power Resilience** no matter what the future holds!

Site sources: https://www.epa.gov/sites/default/files/2016-03/documents/160212-powerresilience-guide508.pdf ■

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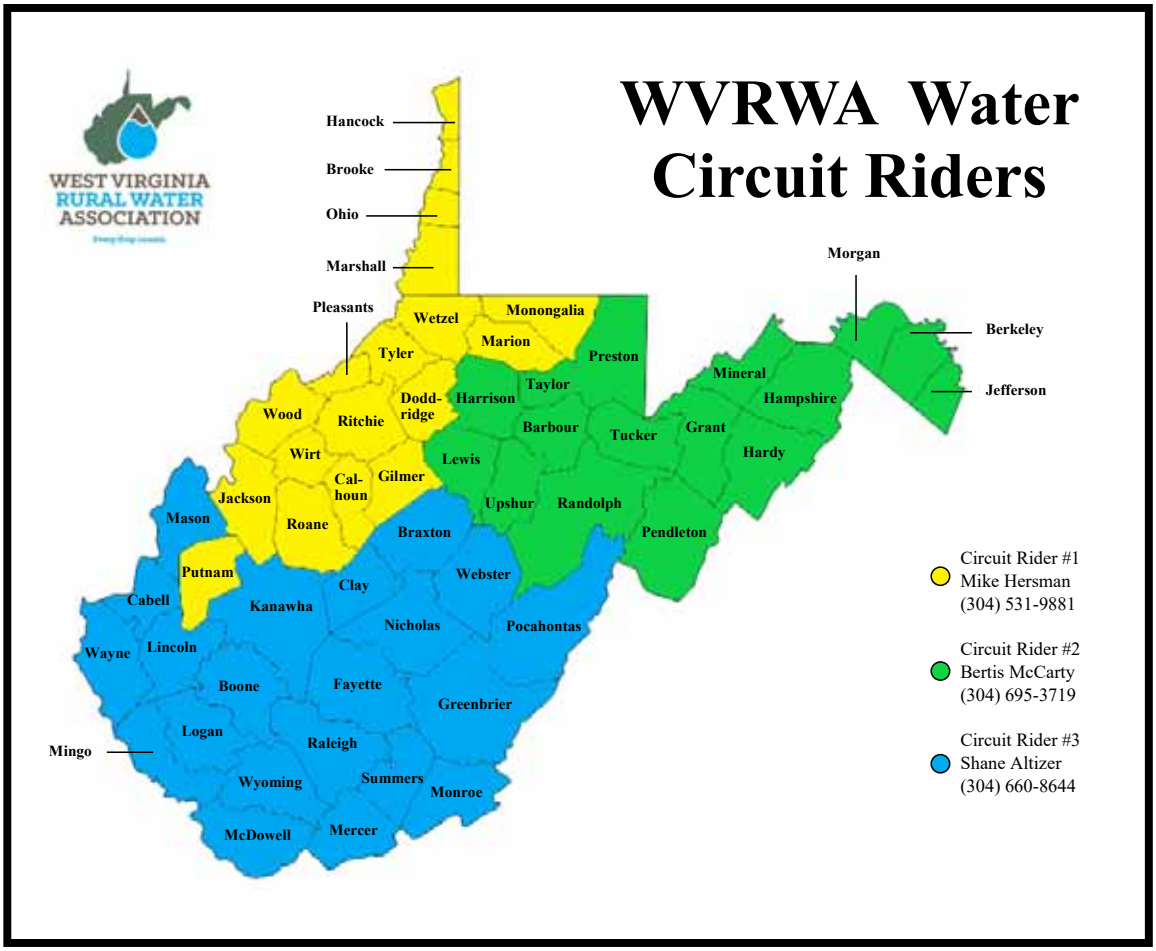
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By Daniel Vestal, ARC Specialist

Update Reminders 3

With this article, I'm going to hit on the highlights of a Vulnerability Assessment. This assessment usually goes right along with an Emergency Response Plan, which the previous article covered. These assessments help water and wastewater systems evaluate susceptibility to potential threats and identify corrective actions that can reduce the risk of serious consequences from violent actions, such as vandalism, insider sabotage, terrorist activities, or anything that will harm the system and the public who uses them. Water systems should consider the vulnerability of your water supply, both ground water and surface water, and how easily someone could taint it with a foreign substance to affect the public. Water and wastewater both should keep in mind how accessible your transmission, treatment, distribution, and collection system areas are. Systems must review their vulnerability assessment periodically to account for changing threats, additions to the system's security, upgrades, modifications of operating procedures, and/or policy changes that may affect the utility's critical assets.

Basic elements of Vulnerability Assessments should include:

1. Characterization of the system, including its mission and objectives
2. Identification and prioritization of adverse consequences to avoid
3. Determination of critical assets that might be subject to malevolent acts that could result in undesired consequences
4. Assessment of the likelihood (qualitative probability) of such malevolent acts from adversaries
5. Evaluation of existing countermeasures
6. Analysis of current risk and development of a prioritized plan for risk reduction

Your assessment process will range in complexity based on the design and operation of the system itself. The nature and extent of the vulnerability assessment will differ among systems based on a number of factors, including system size, potential population affected, source water, treatment complexity, system infrastructure, and other factors. Security and safety evaluations also vary based on knowledge and types of threats, available security technologies, and applicable local, state, and federal regulations.

The highest priority of every system is to safeguard public health and safety, and to reduce the potential for disruption of a reliable service from the utility. Public safety includes the general public, government, military, industrial, critical care, retail, and firefighting. The protection of important facilities, processes, and assets are vital while trying to avoid undesired consequences, which include utility facilities, operating procedures, management practices that are necessary to achieve the mission objectives, how the utility operates, treatment processes, storage methods and capacity, chemical use and storage, distribution, and collection systems.

Again, look over this assessment annually with all employees, especially new hires, and date and change anything added to or removed.

Reference: epa.gov ■

SUDOKU PUZZLE

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

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.

We're on the Web!

For the latest information on what WVRWA is up to, follow us on Twitter, Facebook, & Lindedin

- Twitter: WV Rural Water
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Answers to Soduko Puzzle

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

By Bertis M. McCarty, Water Circuit Rider

AC Pipe

Asbestos-Cement (AC) pipe, AKA, Transite pipe, was used extensively in the mid-1900s in potable water distribution systems, particularly in the Western United States. The Chrisotile Institute estimates AC pipe lifespan at 70 years, but actual service life depends largely on pipe condition and working environment. I have seen, in central West Virginia, 4" AC pipe installed near a railroad track deteriorate after 35 years. I feel sure the soil condition had something to do with it. In a study performed in the UK in the late 1980s, it was stated that, "In areas of aggressive conveyed and ground waters corrosion related failures have been reported from pipes less than 20 years old." The same article explained aggressive water to be that which has low PH and Alkalinity. Because thousands of miles of AC pipe installed in distribution systems in the U.S. is nearing the end of its useful life, AC pipe condition assessment and strategic replacement planning will need to be done in the coming decade.

Over time, AC pipe undergoes gradual degradation in the form of corrosion (i.e., internal calcium leaching due to conveyed water and/or external leaching due to groundwater). Such leaching leads to reduction in effective cross-section, which results in pipe softening and loss of mechanical strength. Accordingly, as the water distribution system ages, the number of AC pipe failures increases with time. In light of these risks, an AC pipe condition assessment is essential to determine the remaining useful service life and develop a suitable, proactive replacement plan for the distribution system. Engineers can assist water agencies in development of strategic and cost-effective AC pipe replacement plans, customized to the individual challenges of the distribution system.

The condition assessment and proactive replacement planning process might consist of some of the following steps:

Identification of prevalent AC pipe failures, such as beam splits, bursting under pressure, cracked joints or collars breaking

Analysis of historical AC pipe leak records with respect to geographic location in the distribution system, incorporating geographic information system (GIS)

Identification of factors affecting AC pipe failure propensity, which may include:

- Pipe age
- Pipe diameter and pipe manufacturer
- Internal/external water chemistry
- Internal water pressure
- Soil physical and chemical properties
- Groundwater table elevation
- Overburden
- Climate

All of the above refers to a good "ASSET MANAGEMENT" program.

Asset Management isn't just one of those steps or formalities that must be done when your project is started!

Some facts about Asbestos:

- Only harmful if it is inhaled – NOT a danger when it is not airborne
- Asbestos fibers are 0.01 microns thick, 18,000 times smaller than human hair
- **You cannot see, feel, smell, or taste Asbestos fibers**
- Asbestos is a generic term for a group of naturally occurring silicate minerals, which are separable into usable fibers
- OSHA regulations require a "Trained Abatement Team" to handle Asbestos

With your new knowledge of the facts above, it would be my recommendation to be very careful when working with AC pipe.

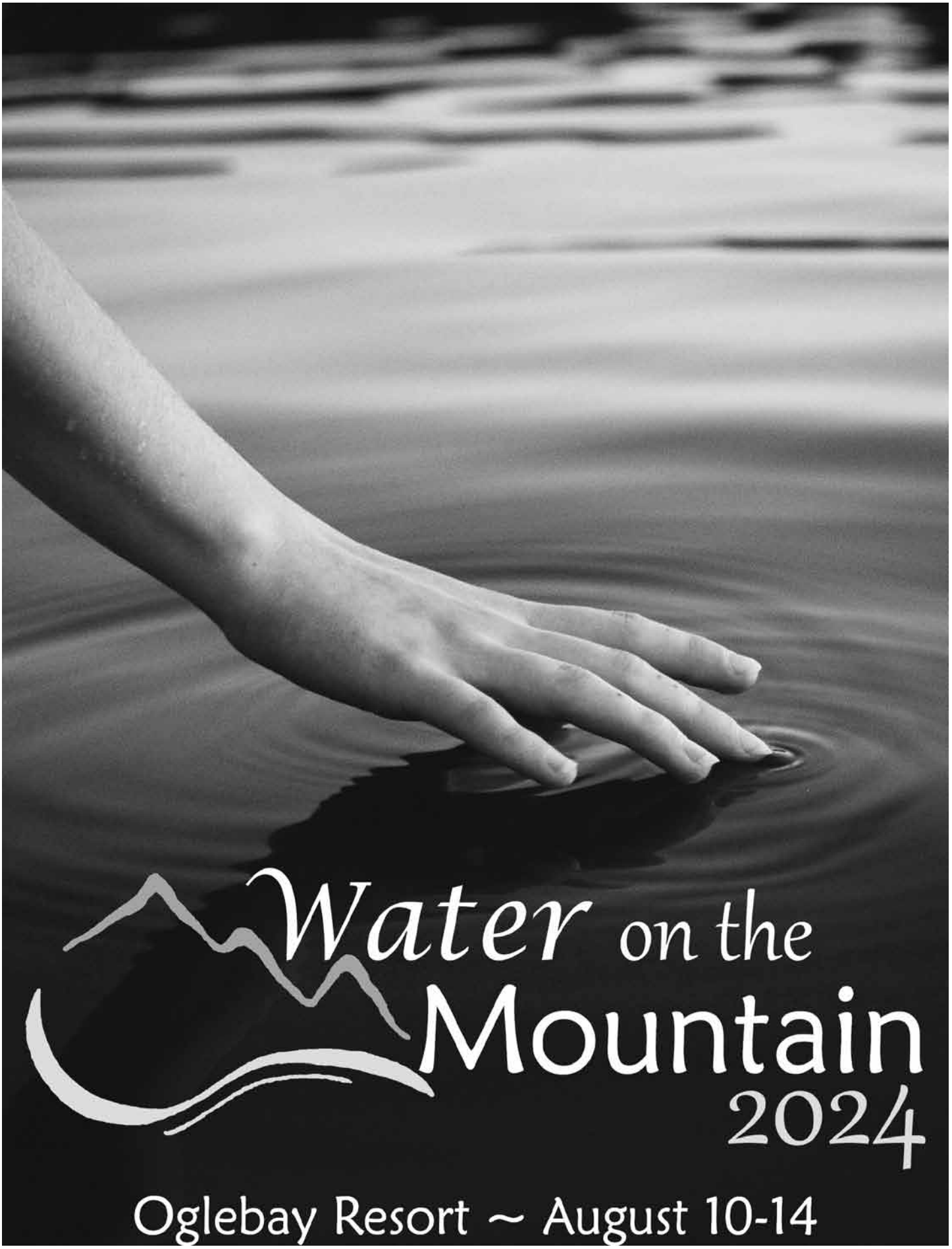
For example:

- Keep it wet when cutting
- Leave all pieces under ground
- Wear the proper safety gear, including disposable coveralls
- For your family's safety, don't wash your clothes at home used during contact with AC pipe

https://www.osha.gov/laws-regs/standardinterpretations/2007-05-29

The link above is a question-and-answer section to OSHA concerning tapping an AC pipe for new service. It's a good and interesting read, especially for those who think they know how to handle asbestos pipe in all cases.

YOU CAN NEVER BE TOO CAREFUL AROUND AC PIPE! ■


Water on the Mountain
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By Heather Somers, 2% HELP Training Specialist

Communication is Key in Developing Your Lead Service Line Inventory

Many water systems across the state are currently working on LSLI, racing to complete this task by October 16, 2024.

When the LSLI team at WVRWA comes to see your system, we focus on many details about compliance and hit on all the tangible assets that can help assist you on your inventory journey. Oftentimes, we are so engrossed on the "what," we don't spend as much time on the "how."

One important intangible asset I'd like to remind you of is communication. You already use this vastly important tool in your day-to-day operations, and probably have used it to ask former or seasoned operators for information about the service lines in your system.

Communication builds trust and that will go a long way in creating "partnerships" with your customers, in turn, getting the information you need about their private side service line. This will happen when you prioritize transparency and have conversations about the "why" surrounding LCLI and the information you need. Many times, folks are hesitant to cooperate when they don't understand or feel like they are being left out of an important process.

One way you can improve relationships with your customers is to introduce the community to your water system and staff by making a social media post or sending out a flier. You can post information about LCRR and why you are going to be asking for information about their service line. Be sure to leave the conversation open, letting them know they can call the system if they have questions or concerns.

Another way to engage customers is to communicate with the office staff, and ask them to have a conversation with the customer when they come in about why you will be needing to verify their service line.

Communication is the backbone of our communities, allowing us to form connections, influence decisions, and motivate change. Going forward with your LSLI, involve your customers, prioritize their importance, and watch your community come together as a team. ■

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 to be added to the mailing list.

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Do you have a Water Utility Construction Project? Now is the time to act! Rates are at an all time low, and with the current pricing being opportunistic and taking action can result in benefits not only for your-self but for the customer as well. Consider the below items that detail positive reasons to act now that you can present to your governing body.

- Interest rates are at an all-time low.
- More project contractors are available, increasing the number of bids, potentially lowering project costs.
- Fuel costs are low, lowering pipe related costs.
- Most material costs for projects are down.
- Shipping costs for many have decreased.
- Road and water projects are easier to schedule due to decreased volume in traffic.
- Low construction costs and available contractors are not guaranteed to last.

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