



RURAL matters

The magazine of the Rural Community Assistance Partnership

2015
Issue 1

In this issue:

Ohio's approach
to asset
management

40 years of the
SDWA

Solid waste
projects in NC

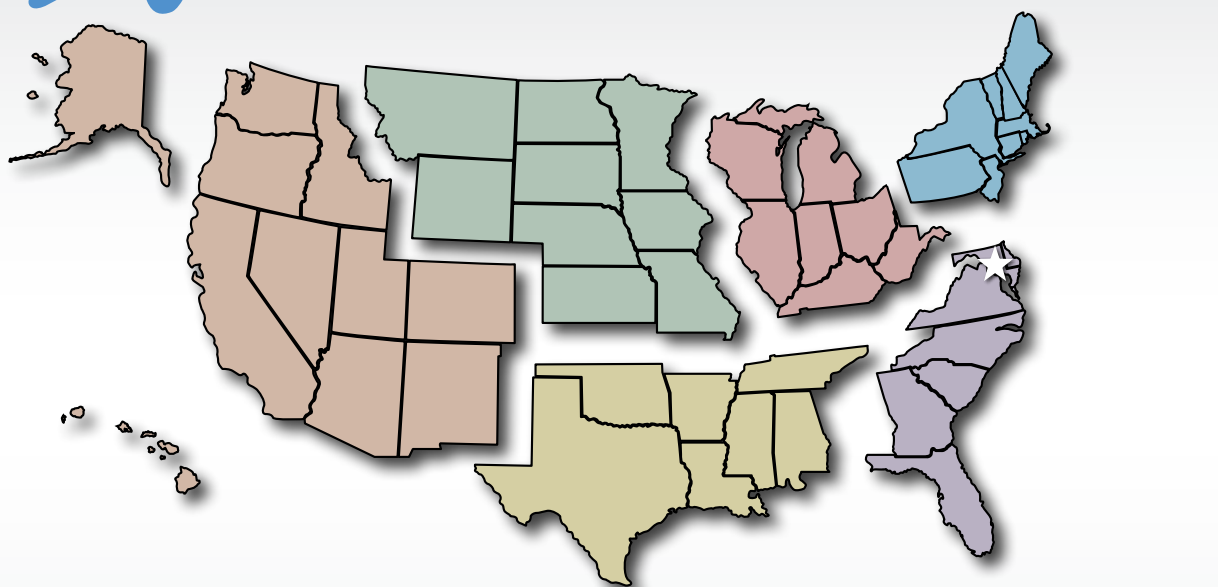
Need help with your community's water or wastewater system?

The Rural Community Assistance Partnership (RCAP) is a national network of nonprofit organizations working to ensure that rural and small communities throughout the United States have access to safe drinking water and sanitary wastewater disposal. The six regional RCAPs provide a variety of programs to accomplish this goal, such as direct training and technical assistance, leveraging millions of dollars to assist communities develop and improve their water and wastewater systems.

If you are seeking assistance in your community, contact the office for the RCAP region that your state is in, according to the map below. Work in individual communities is coordinated by these regional offices.



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Western RCAP

Rural Community Assistance Corporation

3120 Freeboard Drive, Suite 201
West Sacramento, CA 95691
(916) 447-2854
www.rcac.org

Midwest RCAP

Midwest Assistance Program

303 N. Market St., Suite 2
Maryville, MO 64468
(660) 562-2575
www.map-inc.org

Southern RCAP

Communities Unlimited

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Fayetteville, AR 72703
(479) 443-2700
www.communitiesu.org

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RCAP Solutions

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(800) 488-1969
www.rcapsolutions.org



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WSOS Community Action Commission

P.O. Box 590
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Fremont, OH 43420
(800) 775-9767
www.glracap.org

Southeast RCAP

Southeast Rural Community Assistance Project

347 Campbell Ave. SW
Roanoke, VA 24016
(866) 928-3731
www.southeastrcap.org

★ RCAP National Office ★

1701 K Street NW, Suite 700 • Washington, DC 20006
(202) 408-1273 • (800) 321-7227
www.rcap.org

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Photo by Rick Crews

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Practical solutions for improving rural communities

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1701 K Street NW, Suite 700; Washington, DC 20006

Tel: (202) 408-1273 Fax: (202) 408-8165

www.rcap.org

Subscription/editorial/advertising inquiries: ruralmatters@rcap.org

PUBLISHER

Robert Stewart, RCAP Executive Director

MANAGING EDITOR

Breanna Detwiler, Director of Communications

CONTRIBUTING WRITERS

Dave Clark

Ernie Watson

John Crowder

John Rauch

Elizabeth Zach

Bud Mason

Cover photo by Scott Strahley, RCAP Technical Assistance Provider



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Director's Letter



Robert Stewart
RCAP Executive Director

Within this first issue of Rural Matters for 2015 you will find a variety of articles that reflect the ever increasing diversity of RCAP's activities supporting rural communities across America. This ranges from asset management programs, to solid waste and recycling activities, to the installation of water treatment and dispensing units for schools in California, to tips for maintaining water quality within distribution systems and even a snapshot of the daily activities of one of our field staff. Whether we're working on water and wastewater projects, solid waste and recycling programs, affordable housing, or community based economic development initiatives, RCAP's staff is out in rural communities every day to respond to community development needs by providing targeted training and collaborative assistance efforts that are typically not otherwise available.

Just last month I was invited to testify before the House Energy and Commerce Committee concerning "The Needs of Drinking Water Systems in Rural and Smaller Communities." Following several excellent presentations from representatives of the Government Accountability Office and the Rural Water Association, I initiated my testimony by noting that while the needs of small water systems are many and the resources available are limited, the dedication and determination of small communities to provide their customers with the best possible services is strong and unwavering. Almost without exception, rural communities prefer to solve their own problems while acknowledging the need for training, tools and technical assistance, and access to capital. Several members of the committee inquired about the need for additional investments in water infrastructure in rural areas. While all the witnesses were cautious concerning major increases in federal programs, there was a clear indication that current resources dedicated to small water systems were insufficient to meet the public health and development needs of rural America. RCAP's position is that the existing, proven programs operated by EPA (State Revolving Funds) and USDA Rural Development (Water and Environmental Programs) should be strengthened and perhaps better targeted to reach those communities with the greatest need. Rural Development (RD), in particular, has staff in every state that are familiar with and are trusted by rural communities. This allows RD to better serve local water development needs, as long as sufficient resources are available in the form of grants and loans for infrastructure improvements. Along with increased capital investments, rural water systems most need access to technical assistance, training programs (both on-site and online), tools to improve managerial and financial affairs, and assistance with alternative service delivery approaches. One item agreed to by everyone at the hearing was that affordable and sustainable water systems are the foundation to future health and economic growth in rural communities.

For more on this hearing, you can access the Committee's site at <http://energycommerce.house.gov/hearing/needs-drinking-water-systems-rural-and-smaller-communities>. ■

rural developments



News and resources from the US Environmental Protection Agency

EPA Incident Action Checklist – Drought

The actions in this checklist are divided into three "rip & run" sections and are examples of activities that water and wastewater utilities can take to prepare for, respond to and recover from drought. For on-the-go convenience, you can also prepare the "My Contacts" section with critical information that your utility may need during an incident.

Drought Impacts on Water and Wastewater Utilities

Drought is a period of abnormally dry and/or unusually hot weather that is sufficiently prolonged to cause a serious hydrologic imbalance. Droughts normally develop and abate with impacts potentially lasting several years afterwards. Areas that have experienced a drought are also at an increased risk of flash flooding because the dry ground cannot effectively absorb rainwater. Droughts in the United States have caused cascading effects in the water sector that may include, but are not limited to:

- Loss of supply (both surface water and groundwater)
- Increased demand from customers (e.g., previously self-supplied communities that cannot meet the demand, agricultural customers requiring more water for irrigation)
- Detention of water quality and difficulties complying with drinking water regulations
- Increases in treatment and pumping-related costs
- Limited options for accessing other local water sources through interconnections due to increased regional demand and water scarcity
- Decreased capacity in alternative and supplementary sources due to high demand for emergency water by other industries and communities in the drought-affected area
- Potential power interruptions due to high energy demand if drought is accompanied with unusually high temperatures
- Loss of fire suppression capabilities
- Possible increased pressures to develop water reuse practices

The following sections outline actions water and wastewater utilities can take to prepare for, respond to and recover from drought. (Because drought and extreme heat events can coincide, please see the Extreme Heat Incident Action Checklist for intense heat-specific activities.)



EPA Incident Action Checklist – Tornado

The actions in this checklist are divided into three "rip & run" sections and are examples of activities that water and wastewater utilities can take to prepare for, respond to and recover from a tornado. For on-the-go convenience, you can also prepare the "My Contacts" section with critical information that your utility may need during an incident.

Tornado Impacts on Water and Wastewater Utilities

Tornadoes can occur in any location with little to no notice. Tornadoes can have wind gusts from 80 to over 200 miles per hour (mph) and are often accompanied by floods, high straight-line winds up to 140 mph, hail and lightning. About 1,200 tornadoes occur in the United States each year, and they can have devastating impacts to water and wastewater utilities. Impacts may include, but are not limited to:

- Damage to infrastructure (e.g., storage tanks, hydrants, residential plumbing fixtures, distribution systems) due to hail, wind, debris and flash flooding, resulting in loss of service and/or reduced pressure throughout the system
- Restricted access to the facility due to debris and damaged roads
- Loss of power and communication lines
- Potential contamination due to chemical leaks from ruptured containers
- Service water and pressure loss due to ruptured service lines in damaged buildings and broken fire hydrants from airborne debris

The following sections outline actions water and wastewater utilities can take to prepare for, respond to and recover from a tornado.

Example of Water Sector Impacts and Response to a Tornado

Smithville, Missouri 2011 Tornado

An EF-0 tornado with estimated winds of 200 mph and a half mile wide track hit Smithville, Missouri in April 2011, destroying 100 homes and several businesses and city facilities, including the water system. The utility's elevated storage tank was damaged and several pipes were cut due to a car striking the structure. The tornado also tore up pipelines and pumping stations from homes and destroyed at least three fire hydrants.

Both the drinking water and wastewater utilities lost power immediately after the tornado hit, and half of the town was without water due to damage to infrastructure and the power outage. Operations were coordinated through the Missouri Rural Water Association to provide temporary power. The drinking water and wastewater utilities conducted damage assessments and response teams were quickly deployed to be sure, turn of meters in destroyed homes and restore service throughout the systems.

Source: EPA's "Statewide Hazards Assessment" (2011)



EPA Incident Action Checklist – Hurricane

The actions in this checklist are divided into three "rip & run" sections and are examples of activities that water and wastewater utilities can take to prepare for, respond to and recover from hurricanes. For on-the-go convenience, you can also prepare the "My Contacts" section with critical information that your utility may need during an incident.

Hurricane Impacts on Water and Wastewater Utilities

A hurricane is a severe tropical cyclone with sustained winds of 74 miles per hour or greater. Hurricanes and tropical storms have the potential to cause a great deal of damage to drinking water and wastewater utilities due to heavy rainfall and inland flooding, coastal storm surge, and high winds. Typical impacts that may lead to service interruptions include, but are not limited to:

- Pipe breaks due to subsidence, uprooted trees, etc. which could result in sewage spills or low water pressure throughout the service area
- Loss of power and communication infrastructure due to high winds
- Combined sewer overflows (CSOs) due to flooding
- Restricted access to facilities and collection and distribution system assets due to debris and flood waters
- Loss of water quality testing capability during the storm due to restricted facility and laboratory access and damage to utility equipment

The following sections outline actions water and wastewater utilities can take to prepare for, respond to and recover from hurricanes.

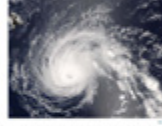
Examples of Hurricane and Water Sector Impacts and Response

Superstorm Sandy Response

Utilities from Florida to Maine were very active in monitoring and preparing for landfall of Superstorm Sandy in October 2012. More than 600 drinking water and wastewater utilities across 11 states and Washington, D.C., experienced impacts from the storm. Water/Wastewater Agency Response Network (WRAN) responses included significant communication with utilities to assess operational conditions and fulfill resource requests, such as the following:

- **MARIANA** - West Baytown Water District provided generator support to Norfolk County Department of Public Works for a sewer pump-out station.
- **MARIANA** - Combined generator support results with West Baytown Office of Emergency Management (EM) and the Emergency Management Assistance Compact (EMAC), and relief of need to transporting WPPNs of uncollected resource requests.
- **NY/PA** - Suffolk Water District provided 1000k Gallons Water Supply with chlorination equipment via contract, as an interim means of delivery was provided. Oneida County Wastewater Agency provided a chairman crew to support New York City Department of Environmental Protection (NYCDEP) facility assets. NY/PA's provided international support to the US Army Corp of Engineers (USACE), Suffolk Area Field Office.
- **PA/VA** - Erie Water Works responded to generator request from Lehigh County Authority within 10 minutes of request and with safe operating mode in less than 24 hours.

Source: EPA's "Statewide Hazards Assessment" (2012)



EPA Releases Incident Action Checklists for Utilities

EPA has developed a series of Incident Action Checklists that outline critical measures that drinking water and wastewater utility personnel can take immediately before, during, and after an emergency to protect their systems. Ten incident types are highlighted, including drought, earthquake, extreme cold & winter storms, extreme heat, flooding, hurricane, tornado, tsunami, volcanic activity, and wildfire. The "rip & run" style checklists were developed collaboratively with water utility managers and state

agency/water association representatives as an on-the-go reference.

The Incident Action Checklists complement two other EPA efforts that support response during actual emergencies. The first effort provides up-to-date response partner contact information by state and region. The second effort provides access to a number of useful weather forecasting tools through the PDF document Weather & Hydrologic Forecasting for Water Utility Incident Preparedness and Response. All three of these resources can be accessed at EPA's Emergency/Incident Information page at <http://water.epa.gov/>

[infrastructure/watersecurity/emmerplan/index.cfm#pp29](http://water.epa.gov/infrastructure/watersecurity/emmerplan/index.cfm#pp29).

EPA Launches Finance Center to Improve Community Water Infrastructure and Resiliency

WASHINGTON - The U.S. Environmental Protection Agency launched the Water Infrastructure and Resiliency Finance Center to help communities across the country improve their wastewater, drinking water, and stormwater systems, particularly through innovative financing and

by building resilience to climate change. The center was announced as Vice President Biden and EPA Administrator Gina McCarthy toured the construction site for a tunnel to reduce sewer overflows into the Anacostia River in Washington, D.C. by 98 percent. The center is part of the White House Build America Investment Initiative – a government-wide effort to increase infrastructure investment and promote economic growth by creating opportunities for state and local governments and the private sector to collaborate, expand public-private partnerships, and increase the use of federal credit programs.

“Infrastructure is central to the President’s plan to build on the progress the U.S. economy is making by creating jobs and expanding opportunity for all Americans,” said EPA Administrator Gina McCarthy. “By modernizing the nation’s infrastructure we can protect our drinking water sources and enhance resilience to the impacts of climate change by avoiding financial and water supply losses from leaking pipes and reducing pollution from sewer overflows and wastewater discharges.”

Key Points

- EPA’s center will serve as a resource for communities, municipal utilities, and private entities as they seek to address water infrastructure needs with limited budgets.
- EPA will help explore public-private partnerships and innovative financing solutions.
- Aging and inadequate water infrastructure hinders the ability of communities to provide clean drinking water, manage wastewater, reduce flooding, and provide recreational waters that are safe to swim and fish in.
- Impacts of climate change — including intense and frequent storms, drought, floods, sea-level rise and water quality

changes — create challenges for communities as they prepare water infrastructure that can withstand these impacts.

By the Numbers

- More than \$600 billion is needed over the next 20 years to maintain and improve the nation’s water infrastructure.
- State-by-state breakdown of funding needs: <http://water.epa.gov/infrastructure/upload/clean-water-and-drinking-water-infrastructure-needs-by-state.pdf>

Details

The Water Infrastructure and Resiliency Finance Center will:

- Explore innovative financial tools, public-private partnerships, and non-traditional finance concepts to better leverage federal funding programs. The Center will build on the highly successful State Revolving Fund and other programs of EPA and its federal partners.
- Explore ways to increase financing of climate-resilient water infrastructure projects that integrate water efficiency, energy efficiency, water reuse and green infrastructure.
- Support communities to develop sustainable sources of funding, particularly for stormwater activities.
- Build upon existing work to support small community water systems to build technical, managerial, and financial capacities through collaboration with the U.S. Department of Agriculture.
- Closely coordinate with the EPA-supported Environmental Finance Centers and consult with the Agency’s Environmental Finance Advisory Board.

Water infrastructure includes the pipes, drains, and concrete that carry drinking water, wastewater, and stormwater. It includes industrial wastewater pretreatment facilities; wastewater treatment

plants; municipal separate storm sewer systems; decentralized, onsite, and septic systems; public drinking water systems; and private wells. It also includes green infrastructure, such as using natural land cover to capture rain where it falls, allowing it to filter through the ground instead of being immediately directed into storm sewers.

More Information

EPA’s Water Infrastructure and Resiliency Finance Center: <http://owpubauthor.epa.gov/infrastructure/waterfinancecenter.cfm>

Build America Investment Initiative: <http://www.whitehouse.gov/the-press-office/2014/07/17/fact-sheet-building-21st-century-infrastructure-increasing-public-and-pr>

Other news and resources



RCAP National Training Conference to Take Place in Memphis

We are very excited to announce that our next National Training Conference will take place at the Peabody Hotel in Memphis, Tennessee from November 16-19, 2015. RCAP staff from across the country will gather for four days of training and presentations aimed at improving RCAP’s effectiveness in the field. For more information as the conference nears, visit <http://rcap.org/2015NationalConference>. ■

New EPA Agreement Redefines How Community Needs are Addressed

by Dave Clark

The Rural Community Assistance Partnership (RCAP) was awarded \$4.5 million in May 2014 for compliance-based, capacity-building technical assistance and training from the National EPA for National Priority Area (NPA) 1: Training and Technical Assistance for Small Public Water Systems to Achieve and Maintain Compliance with the Safe Drinking Water Act (SDWA). This training and assistance targets operators, board members, and managers of tribal and non-tribal small community water systems, non-transient non-community water systems, and transient non-community water systems with the objective of protecting human health by reducing exposure to contaminants in drinking water in small, rural communities in the US and US territories. The project time period is from May 1, 2014 – October 31, 2015.

Under our new EPA NPA 1 agreement, we have begun using violations data from the EPA Safe Drinking Water Information System (SDWIS) database and state sanitary survey data to determine the numbers and types of violations in each state. We have analyzed data in order to more efficiently prescribe effective solutions targeted directly at the problems existing in

the field. Reports for each state, which included suggestions as to the communities most in need of RCAP technical assistance and training, were shared with state primacy agencies across the country. With state primacy agencies, partner organizations, and RCAP Technical Assistance Providers (TAPs) working together, a list of possible priority communities in each state was developed. RCAP then contacted the communities and began working with them to develop a prescriptive service plan targeted at their specific compliance violation or related issue. Through this directed approach we hope to better educate the people that operate the water system and return the system to compliance, thereby increasing community health through better quality water.

We will continue to develop and work on this priority area over the next few months and years, as we have received funding through 2016. Please stay tuned for more information. ■

Clark is the Director of Environmental Programs in the RCAP National Office in Washington, DC.



Photo by Scott Strahley

SDWA Celebrates 40 Years

This past December marked the 40th anniversary of the Safe Drinking Water Act (SDWA). For over 4 decades, the SDWA has been successful in identifying and regulating water contaminants that jeopardize human health and in establishing rules for specific needs and treatment processes such as the Surface Water Treatment Rule, the Disinfection Byproducts rule, the Total Coliform Rule, and the Groundwater Rule. Thanks to the SDWA, in the United States you can drink tap water from virtually anywhere and it will be safe.

However, this safe, clean drinking water doesn't come without effort and expense. The burden for compliance under these rules often falls hardest on the smallest systems that typically have the least managerial, technical, and financial capacity to understand these requirements, to develop plans to meet treatment requirements, to obtain financing for improvements, and to operate water systems with trained, qualified, and certified operators. At RCAP, we recognize the need for training and capacity building assistance in tens of thousands of small community and non-community water systems in order to comply with current and projected regulatory requirements. We will continue to offer trainings, technical assistance, and other programs across the country to help small systems meet drinking water standards.

RCAP Executive Director, Robert Stewart, speaking before a forum of experts convened by the Association of State Drinking Water Administrators (ASDWA) to celebrate the anniversary of the SDWA, recognized the hundreds of thousands of operators, managers, researchers, regulators, advocates, assistance providers, and countless others who ensure millions of American households have access to clean water.

"One cause for celebration and recognition in the wake of this 40th anniversary should be directed at the countless federal and state researchers, regulators, and outreach and assistance staff at EPA and the state and territorial primacy agencies that are charged with the implementation of the provisions of the SDWA. These staff perform a difficult job with little recognition of the part they play in ensuring safe drinking water in this country. In addition, the tens of thousands or really hundreds of thousands of local utility operators and managers who work

every day to bring safe drinking water into over 100 million household should be the real headliners for today's event. These dedicated professionals work every day, many times under the worst conditions imaginable at relatively low pay to ensure the public health of all Americans. At RCAP we usually work with over 2,000 small communities each year and having spent nearly



twenty years in the field over a thirty year career I can assure you that water utilities in small communities have some of the most dedicated, resourceful and hardest-working people you could ever know. They don't want you to come in and fix their problems, they want training, tools, targeted assistance, and access to financing so that they can manage their problems on their own while fully complying with the SDWA. And I would be remiss if I did not mention the many hundreds of trainers and technical assistance providers that work for RCAP, the National Rural Water Association, AWWA, and countless other water based associations and research universities to provide vital technical and capacity building assistance to small communities. The SDWA is not just a law, it represents the collective work and accomplishments of thousands of people involved in every aspect of the water utility industry including community organizers and activists that shed light on drinking water issues. Much has been accomplished, yet much remains to be done, and it will be up to these dedicated women and men to continue to work for another 40 years and longer to full realize the goals of the SDWA."

For more on 40 years of the Safe Drinking Water Act, visit <http://www2.epa.gov/safedrinkingwater40>. ■



In Communities: Small Town Operators

by Ernie Watson

Jesse Gomez of Bluewater, New Mexico is seldom seen these days without a dapper looking fedora. I strongly suspect he is the sharpest dresser in the entire Bluewater area. The truth is, Jesse Gomez has been wearing many hats throughout his life.

He's run an auto repair shop, worked for the State of New Mexico, and worked in the treacherous uranium industry -- but those were just day jobs. While he worked, Jesse moonlighted as a volunteer on the board of the Northwest New Mexico Action Program, overseeing Head Start and other vital assistance programs for citizens in a five county area. Today, Jesse is technically "retired" from the working world, but not really. His volunteer work keeps him very busy.

Jesse Gomez currently serves as President of the Bluewater Mutual Domestic Water Users Association. If you live in rural New Mexico the odds are good you get your drinking water from one of more than 700 community water systems around the state, often known as "Mutual Domestic Water Users Associations." These organizations might be small 15-user systems in a place like Quail Hollow, New Mexico or larger, like the 1,700 residential water consumers in Rio Communities, New Mexico. They operate like any big-city water system -- they bill their customers and they make certain water is there when people turn on the faucet. The difference is they are not run by government employees. They are run for the most part by local volunteers.

Included in that bunch is Jesse Gomez, our super-volunteer in Bluewater, New Mexico. The community of Bluewater (population 628) is located about 20 miles south of I-40, just west of

Grants, New Mexico next to Bluewater Lake State Park. It's a lovely spot, nestled between mesas and the Zuni Mountains. The water in Bluewater Lake is definitely blue, and it is rumored to be one of the state's better fishing spots.

For years, the Bluewater water system consisted of a set of small-diameter pipes (what you might use on your lawn's sprinkler system) that originated from an old tank and well sending water to 170 homes. Bluewater sits in a hilly area, and those little pipes weren't equipped to force water uphill or at a distance with enough water pressure for showers and faucets.

Mr. Gomez sought out hundreds of thousands in funding for a new tank and new lines to successfully modernize the local water system. As he tells it, he "brought the water association from a pair of rusty vice-grips and a screwdriver to a business that is worth in excess of \$900,000."

This is not an unusual story in New Mexico. Many New Mexico water systems were thrown together with what was available at the hardware store or what could be provided from a local contractor. I'll never forget seeing what masqueraded as a water system in the community of Low Mesa south of Alamogordo -- a water well connected to an old oil drum with PVC pipe bought from Home Depot (50 homes were on that system).

Water systems require constant upkeep and small communities like Bluewater are in a never-ending battle to scratch and claw for any grant and loan funding they can find from the State and Federal government. New Mexico's immediate water infrastructure needs are estimated to be well above \$100 million. Water board volunteers, like Jesse, not only have to navigate the challenging world of billing your neighbors and providing them dependable water, but also have to figure out complex financing arrangements and government paperwork.

The issue of water availability in New Mexico is not just about where the water is going to come from, but who is going to get it out to people and how. No two ways about it, our water board volunteers are getting older, and, in the next decade, we stand to lose much of their vast experience and knowledge if younger folks don't step up and take their place. The future of water availability in rural areas depends on those volunteers

Whether it's volunteer firemen, school volunteers, church volunteers, or volunteer water board members, those individuals keep needed services in place in rural communities. Jesse Gomez has been successful in keeping the water flowing in Bluewater, but it takes a lot of hard work and ingenuity. No doubt those years of experience he gained from wearing many hats helped a bunch. ■

Watson is a Public Affairs Specialist with the U.S. Department of Agriculture, Rural Development.

RCRA Means Jobs for a Growing Solid Waste Industry

But Training for Rural County Recycling Workers Lacking

by John Crowder

Solid waste management has become a big business, and the growth of commercial recycling in North Carolina is thriving. However, some of the more rural, poverty stressed communities in the state have been left without the necessary resources to conduct needed training of their recycling center personnel.

In North Carolina, the Southeast Rural Community Assistance Project (SERCAP) expanded its solid waste management educational and community development programming to implement the Southeast RCAP SMART Solid Waste Program through the SMART solid waste grant provided by the United States Department of Agriculture, Rural Utilities Service, (USDA-RUS) Technical Assistance Grant Program. SMART Solid Waste stands for Skills, Maintenance, and Assistance to Reduce Threats to water resources. In North Carolina, the grant was used primarily to provide technical assistance and operations training programs for solid waste facility operators, staff, and stakeholders. Recycling site operators were primarily targeted for this training.

Background

Modern solid waste management in the United States started with the passage of the Resource Conservation and Recovery Act (RCRA). RCRA is our nation's primary law governing the disposal of solid and hazardous waste. Congress passed RCRA, which amended the Solid Waste Disposal Act of 1965, on October 21, 1976 to address the increasing problems the nation faced from our growing volume of municipal and industrial waste. RCRA set national goals for:

- Protecting human health and the environment from the potential hazards of waste disposal.
- Conserving energy and natural resources.
- Reducing the amount of waste generated.
- Ensuring that wastes are managed in an environmentally-sound manner.

To achieve these goals, the solid waste program, under RCRA Subtitle D, encourages states to develop comprehensive plans to manage nonhazardous, industrial solid waste and municipal solid waste. It also sets criteria for municipal solid waste landfills and other solid waste disposal facilities and prohibits the open dumping of solid waste.

With the onset of RCRA, North Carolina began an extensive program of waste management based on recommendations from the US EPA. In addition, unlined municipal landfills, commonly referred to as sanitary landfills in the 70s and 80s, were ordered closed by the late 1990s to early 2000s. Under Subtitle D, high-tech lined landfills, were then opened by both private companies and by some local county governments.

Disposal costs for our solid waste increased 10-fold over a very short period, and reduction and reuse was emphasized. With the soaring costs of transportation, building and operating/maintaining a lined landfill, and disposing of garbage, many local governments were forced to contract their solid waste



Photo courtesy of John Crowder

continued on next page



Photo courtesy of John Crowder

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management to private companies. Those that chose to maintain their collections and recycling programs often struggled to offer low cost collection and recycling to their citizens. Most rural counties cannot afford to provide door-to-door curbside collection so they setup drop-off, or convenient recycling centers for general public to use.

In the beginning, unstaffed recycling sites were provided by towns or counties, but there were major problems. Every kind

Hiring personnel to operate and maintain each site is a major cost factor, and these sites are often operated with limited hours and days of the week due to cost constraints.

of waste was being dumped at these sites, even industrial and hazardous waste. There was virtually no collection of recyclables or collection of landfill banned solid waste with the use of these green box sites.

Most counties and communities that had green box sites in North Carolina have transitioned to staffed collection sites. With the need to recycle/reuse/reduce our waste (i.e. metals, used oil, paper, plastic, cardboard) and in accordance with the state's goal of 40% solid waste reduction, many county or town recycling programs have evolved into viable, zero-cost, enterprise funded programs. In some instances, county or local government programs could pay for recycling centers as long markets remained viable and transportation costs constant. However, the recyclable market has not remained stable and the cost of these programs is constantly changing.

Transitioning to staffed recycling sites meant communities and counties purchasing land, erecting fencing, site improvement/stabilization cost, and buying equipment including compactors, roll-off containers, and trucks. Hiring personnel to operate and maintain each site is a major cost factor, and these sites are often operated with limited hours and days of the week due to cost constraints. Numerous rural recycling sites are being run by semi-retired or retired county employees. The majority are run part-time to reduce labor cost. There has been an attempt by some counties in North Carolina to provide training (i.e. recycling, water quality, safety, communication skills) for these employees, but the more rural counties cannot afford to send their employees to organized training programs. In an effort to fill the training gap, SERCAP in South Carolina and North Carolina provided training opportunities.

In South Carolina

In the 2013-14 SMART solid waste grant, a pilot program was started in South Carolina with one-on-one and small group training in several counties performed by a South Carolina Technical Assistance Provider (TAP). Like in North Carolina, rural counties in South Carolina could not provide formal training to their operators. The program appeared to have a great impact on their recycling program and also gave the participants a great sense of pride and accomplishment.

In North Carolina

In fiscal year 2013-14, recycling operator training programs were completed in three rural counties in North Carolina (Ashe, Duplin and Robeson Counties). In Ashe County, there were six recycling convenience centers and 22 employees who received training. In Duplin County, there were 14 sites with 19 employees receiving training. In Robeson County, there are 22 recycling centers with a total of 70-72 employees that received the training. In Duplin and Ashe Counties, SERCAP provided one-on-one site training. Topics presented included the importance of recycling, water quality issues, communication skills, and safety. The training program was geared around the improvement of water quality.

Outcomes

These county employees, even working part-time, are key to promoting environmental issues to the general public so it is critical that employees promote recycling as an alternative to waste disposal. SERCAP in North Carolina was able to train approximately 120 employees who otherwise would not have received any formal recycling, water quality, or safety training.

The long term effects will be measured by the increased knowledge and information that the general public has received from these trained attendants and the overall improvement of long term water quality issues.

In addition, SERCAP state managers were able to evaluate a lined landfill and some of the recycling convenience sites and make specific operational recommendations as they pertained to water quality.

SERCAP in North Carolina was able to train approximately 120 employees who otherwise would not have received any formal recycling, water quality, or safety training.

Continuation and projected programs

In the current fiscal year both Duplin and Robeson Counties will be included in this project. Projects will include helping Robeson County receive permitting assistance in constructing a waste water treatment plant in which the leachate from their lined landfill will be able to be treated on-site instead of transporting their wastewater to an off-site sewage treatment plant.

In addition, SERCAP will assist Robeson's newly hired recycling coordinator to develop recycling programs in their elementary schools.

In Duplin and Robeson Counties, through a partnership with local medical facilities and health departments, a program will be developed to educate the general public in the proper handling and disposal of their diabetic needles, or sharps. There is no established county wide training program currently in place. As type-one diabetes is ever increasing, the use of insulin needles has made this program necessary for the general public, for their safety and for the safety of the solid waste workers.■

Crowder is the North Carolina State Manager for Southeast RCAP.

Special thanks to: Ashe, Duplin, and Robeson Counties for their part in this project; Patrick Walker, SC SERCAP State Manager; USEPA; NCDENR Division of Waste Management; Recycling Business Assistance Center Division of Environmental Assistance and Customer Service; North Carolina Department of Environment and Natural Resources; Chatham County Solid Waste Operational and Safety Training; Pasquotank County Solid Waste Services; Ashe County Environmental Services; Duplin County Solid Waste Department; and Robeson Solid Waste Department.

Photo courtesy of John Crowder



Ohio's Approach to Asset Management

by John Rauch



Photo by Scott Strahley

Four water systems and four wastewater systems have partnered with Ohio RCAP to develop asset management plans. This planning process involves 12 months of intensive technical assistance and training, followed by six months of assistance with implementation. By the end of the 18 month process, each community should have an asset management plan, which, for most communities, will include GIS mapping, condition assessment training, a computerized maintenance management system to improve preventative and predictive maintenance, a capital improvement plan to mitigate deferred maintenance, and sustainable rate recommendations.

The innovative part to this approach is that all eight communities have committed at least 50% of the costs for these services. On a limited time basis, the Ohio Environmental Protection Agency and the Ohio Water Development Authority are covering the cost of the other half of the service. As the first eight

communities are nearing completion, Ohio RCAP is currently working with additional communities that want to begin the process.

Ohio RCAP has developed a 12 step, 3 phase program to organize and streamline data collection and report generation. Phase I involves a desk audit, which includes an administrative review, GPS mapping, program area identification, and an operational review. In this stage, we try to learn as much as possible about the utility from existing data. Phase II involves field investigation to better identify the source of documented problems and appropriate best practices. To save costs, most of the field work is done by utility department staff with training from Ohio RCAP. During this phase we act as a team leader and coach, helping the community to organize and manage asset attribute data they collect. Phase III involves capital improvement planning, sustainable rate analysis, final report writing, and results in a presentation to the decision making body.

The twelve step program enables the owner and Ohio RCAP to critically look at the entire utility. We normally find many things working very well. However, we also find areas of operations and management that need to be optimized to get the greatest value from the utility. Then the question of risk comes into play. What happens when a component of the utility fails? Is the utility shut down, or can it take parts off the shelf and continue to operate? What are the risks of failure? In some cases, it makes sense to run a component to failure then replace it. In other cases, failure of a pump, tank, or chemical feeder may be catastrophic.

Implementation begins once the plan is adopted by the governing board. Ohio RCAP continues to assist and train the local staff using the Check Up Program for Small Systems (CUPSS) program from USEPA to manage assets, track maintenance, and manage replacement and rehabilitation. The goal at the end of the period is for utility management to get into the habit of using GIS mapping and computerized maintenance management software, such as CUPSS, to manage their assets. We would be remiss if we did not mention this process improves the community's institutional memory. All too often, small systems suffer when a key person is no longer taking care of the utility and everyone must learn what was in that person's head when they left.

Participating communities expect real savings from their investment of time and capital. They expect to see longer life from assets because preventative and predictive maintenance mea-

3 Phase 12 Step Asset Management Program

Phase 1- Desk Audit

1. Administrative review of utility management
2. Develop an asset inventory (GPS data collection)
3. Construction and maintenance history (identify program areas)
4. Operational review (historical vs. best practices and energy audit)

Phase 2- Field Investigations/Identification of Appropriate Best Management Practices

5. Initial condition assessment (reporting & monitoring standards)
6. GIS mapping with important attributes (permanent electronic record)
7. Identify best management practices (performance benchmarks)
8. Set-up CMMS software with preventative maintenance, predictive monitoring and rehabilitation/replacement escrow

Phase 3- Report Preparation

9. Capital improvement plan to address deferred maintenance
10. Asset management plan (long-term capital budgeting)
11. Rate analysis (affordable and sustainable rate)
12. Public meeting to discuss asset management plan results

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asures are being completed. They also expect more cost effective capital replacement as part of the plan. Informational systems within their utility can be expected to improve because of the planning. Digital mapping in and of itself improves locating underground components of the utility. They hope to reduce emergency repairs by being proactive and fixing assets before they fail. Reductions in unplanned overtime may even cover the initial investment in the planning process.

Although Ohio RCAP's accomplishments to date are small in the number of systems that could benefit from asset management planning, the success is huge in comparison to where Ohio RCAP was prior to partnering with funding agencies to make asset management planning a reality. Currently, in the second year of the partnering approach, we have experienced more demand for this service than we have resources to provide. That tells us we are doing good work for small systems. Another factor in our success is being able to bundle sustainability services including GIS, rate studies, capital improvement plans, energy audits, digital maintenance plans, and long term management plans into one package, which makes it more attractive to small systems. Finally, our approach is finding success as it only costs the utility about half of what these services would be if they had to cover the entire cost.

To learn more about asset management services available in your region, contact your regional RCAP office for more information at www.rcap.org/regions. ■

Rauch is the State RCAP Director for Ohio, part of Great Lakes RCAP.

Photo by Scott Strahley



Agua4All – Providing Access to Safe Drinking Water

Photo by Sarah Buck

by Elizabeth Zach

Most people in the U.S. today pay little attention to drinking fountains. They're as ubiquitous as political advertising during election season.

But across rural California, particularly where immigrant farm laborers live and work, a drinking fountain – plainly put, access to free, safe drinking water – is a luxury, despite the fact that such access is a basic human right.

Approximately 25 percent of California's 9,846 schools do not meet the state and federal mandate to provide free, fresh drinking water to school children at mealtimes; by some estimates, 500 California schools do not provide safe drinking water at all to their students because of recurring safe drinking water compliance violations. And even for those that do, many drink-

remaining squarely on during the festivities, kindly accepted reusable bottles for themselves and requested additional ones for their señoras at home.

"We came because this is so important," said Thermal resident Hilda Castro.

A day later, when a ceremony inaugurated a fountain at Lamont Park in Kern County, local politicians and nearby residents also celebrated.

"When I was in high school, we used to actually test the water in chemistry class," joked Arvin City Council member Jose Gorrula, Jr. "We need long-term solutions, but we also need interim solutions, and this is why we're here today."

Both ceremonies were largely symbolic, highlighting a far-reaching plan to bring more of these "taps" to small, rural communities across the state.

It works like this: the Rural Community Assistance Corporation (RCAC) is partnering with The California Endowment, Community Water Center (CWC) and Pueblo Unido Community Development Corporation (PUCDC) in an innovative pilot program called Agua4All. This program aims to increase access to and consumption of safe drinking water in California, starting with South Kern County and the Eastern Coachella Valley.

Through the pilot program, RCAC is installing more than 120 water dispensers in schools and other public places throughout these two areas. Where necessary, water treatment will also be installed to filter out arsenic or other contaminants so that residents finally have public access to potable water. Reusable bottles will also be made available where possible to optimize filling station use. CWC and PUCDC are providing on-the-ground support for the year and a half long pilot.

The program also addresses public health crises – obesity and Type II diabetes. When safe water is unavailable the nearest and most affordable option is a sugar sweetened beverage.

"How are we to teach children that drinking water is a healthy option if we can't provide safe drinking water in their schools and/or their homes?" said Stanley Keasling, CEO, RCAC.



Photo by Elizabeth Zach

ing fountains are aging, poorly maintained, and often extremely uninviting.

Therefore, when the San Jose Community Center in Thermal, California had a ribbon-cutting ceremony in late January for a new filling station for water bottles – dozens of residents turned out, young and old. Maria Castro, her lined and wizened face framed by a braided bun, her daughter Gabriela Rodriguez, and her grand-daughter, Alanne Rodriguez were there. Farmers Samuel David Castro and Jose Cervera, their cowboy hats

In California, 41 percent of children, 62 percent of adolescents and 24 percent of adults drink at least one soda or other sugar-sweetened beverage every day. By comparison, in a recent California Health Interview survey, 73 percent of South Kern and 58 percent of Eastern Coachella Valley children drank sugar-sweetened beverages the day before the survey was administered, as compared to just 40 percent of children surveyed statewide.

Permanent solutions, which include upgrading local community water systems and treating for harmful contaminants so that the water is safe, are very costly to implement and maintain. Acquiring funding for these types of projects is also a very long process, and for many California water systems it often takes more than three years to apply for funding, receive the award and complete an infrastructure project. Agua4All is an interim solution for safe water and also a long-term infrastructure upgrade to increase consumption and sustain high consumption rates over time. This project has the potential as it grows all across rural California to impact millions of Californians' health. Currently, more than a million Californians lack access to safe drinking water in their schools and homes. In low-income rural communities, unsafe water, which can be a result of naturally occurring or human-caused contaminants, can cause many health problems, including an increased risk for cancer.

Costs covered through the project include the tap units themselves, which range in price from just under \$1,000 – \$3,000; water treatment, which for point of use media adsorption arsenic filtration is at least \$1,500 per tap; reusable water bottles, installation, operations, and maintenance costs; program coordination and administration; and program communications and outreach in an effort to change the negative perception of California's tap water.

This campaign is so vital, in fact, that during a press conference at the California State Capitol on January 7, renowned chef Jamie Oliver announced his support for RCAC's Agua4All pilot project.

"Clean, safe water is essential for a healthy life, and it's a human right. Agua4All is for everyone," Oliver said. ■

Zach is Staff Writer for RCAC, Western RCAP.

More ways you can help

- Like Agua4All on Facebook and follow us #agua4all on Twitter.
- Tell your friends and neighbors about the problem and why it matters for California's future.
- Urge your state legislator in Sacramento to demand clean water for all and work toward water solutions that increase access to safe drinking water while improving drought response.
- Help crowd fund a water tap in your community (if available).

Help fund Agua4All – Contact:

Julia Helmreich, RCAC CDE Director
(916) 447-9832 ext. 1008 | jhelmreich@rcac.org

Sarah Buck, RCAC Rural Development Specialist
(916) 447-9832 ext. 1041 | sbuck@rcac.org

Help identify a location for a safe water tap – Contact:

Sarah Buck, RCAC Rural Development Specialist
(916) 447-9832 ext. 1041 | sbuck@rcac.org

Susana de Anda, Community Water Center, Co-Executive Director (South Kern)
(559) 733-0219 | susana.deanda@communitywatercenter.org

Sergio Carranza, Pueblo Unido CDC Executive Director (Eastern Coachella)
(760) 777-7550 | scarranza@pucdc.org





Letter from the Field

by Bud Mason

Modest in cost, modest in design. Those were the very first lessons I learned as an RCAP Technical Assistance Provider about project development. After five years of working with developing projects, those words still ring true.

One day I received a call from a regional planning commission looking for assistance. They had a community that had a wastewater problem, but were not exactly sure what the problem was and thought that RCAP could help. Upon further questioning, I discovered that the amount the community was paying a neighboring community for its wastewater treatment had doubled and they were looking into building their own wastewater treatment facility. I agreed to assist and requested to meet with the community.

I met with a representative of the planning commission, the mayor, and their operator, Tom. After formalities we got down to the brass tacks. It took a little bit of coercing to get Tom talking but once the pump was primed, I couldn't shut it off. My role at this point was to interpret what Tom was saying as he was speaking "operatoreeze", a language that most mayors and planning commissioners do not readily speak. At the end of the meeting, it was agreed that I would work with Tom to diagnose why their sewer bill was so high before we began planning a new treatment facility.

Tom and I reviewed meter readings for the gallons going into their water system and the gallons entering the wastewater treatment facility. We looked at when leaks had been repaired and even gathered weather data to know when and how much it had rained. Nothing was adding up. We then ran a pump test on their main lift station to determine the gallons pumped per minute so that the daily hour usage could be converted to gallons and then compared to the meter at the wastewater plant. Finally, we picked up the scent on something and followed the trail to see where

it would lead. The next step was to determine if there was infiltration / inflow between the lift station and the meter or if it was a metering problem.

At this point, I became a wing man on this project. As in most of my communities, the answers usually lie within. Tom had the ability to figure it out; he just needed someone to reassure him that he was on the right track. He was not bashful about asking questions and demanding answers, and if the answer did not suit him he would ask another question or ask someone else. When all the questions were answered and the last vendor made their last site visit, for the first time, Tom had a meter at the wastewater treatment facility that was accurately reading the influent.

"Sometimes all our communities need are support and empowerment-"

Was the solution modest in cost and design? Absolutely! It was a whole lot cheaper than building a new treatment system as all it really took was some elbow grease and holding the people that had already designed the meters feet to the fire to get it to work properly. Sometimes all our communities need are support and empowerment from one who cares.■

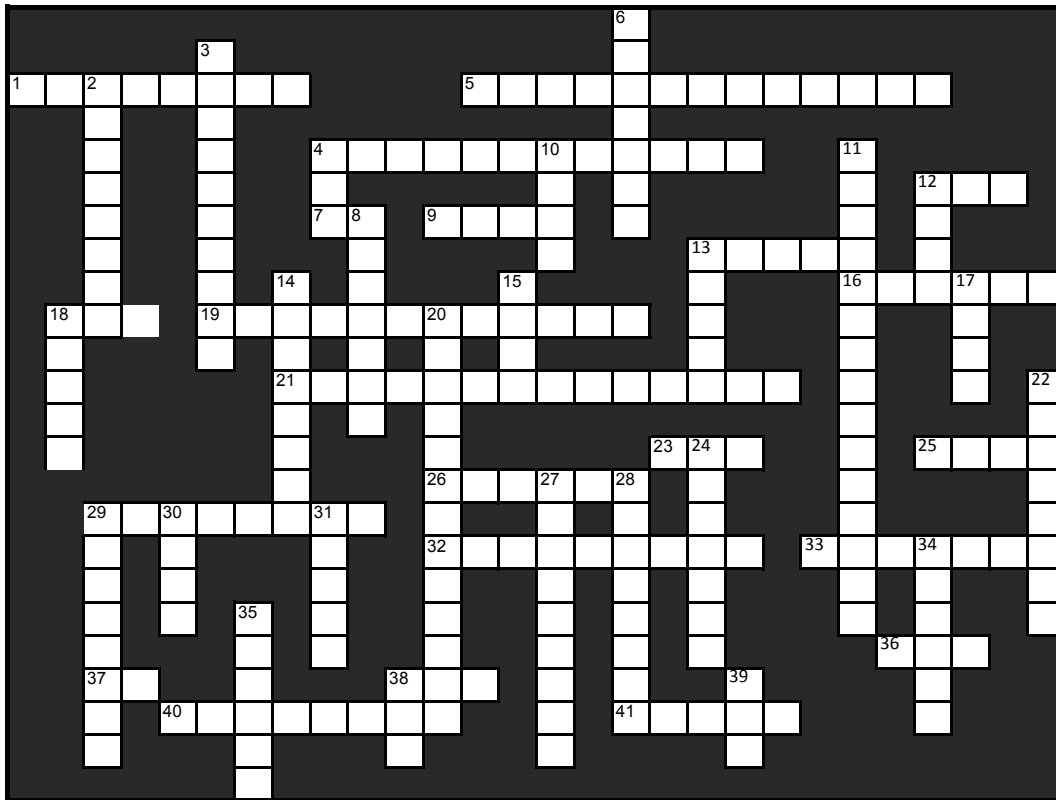
Mason is a Technical Assistance Provider with Great Lakes RCAP.



Photo courtesy of Bud Mason

Distribution System Crossword

Test your distribution system knowledge! Need help? Check out our March *Drop of Knowledge* newsletter on Distribution Systems at www.rcap.org/dropofknowledge, or visit our glossary at www.rcap.org/glossary. Answers at www.rcap.org/crosswordanswers.



ACROSS

1. Indicator of microbial contamination
4. Killing or inactivation of microorganisms, some of which may be disease-causing
5. Disinfection byproduct precursors from natural sources (2 words)
7. Measurement of H⁺ concentration
9. Metal that can leach into drinking water
12. Where water flows from in homes
13. Type of disease-causing organism, you need 4-log of removal
16. Collect to test for water quality
18. Residence time of water in distribution before reaching customers
19. Application of chlorine to

disinfect

21. Defect that provides a pathway of entry for microbial contamination (2 words)
23. Federal regulation for lead & copper (acronym)
25. Water main breaks are a common reason for pressure _____
26. Media used to remove particulate matter
29. Microorganism that can cause disease
32. Reaction of metals and water that can lead to failure of water mains
33. Term for microorganisms which grow on surfaces in the distribution system
36. Max. permissible level of a contaminant in water delivered to public (acronym)
37. Type of light used in a disinfection process to kill or

deactivate potential microbial pathogens, for short

38. Treatment system at the tap (acronym)
40. Adding air to water
41. Connecting pipes to make the distribution system more robust

DOWN

2. Dissolution, e.g., of lead and copper from pipes
3. Meeting rules or standards
4. Leftovers of disinfection process (acronym)
6. Check water quality or for process control
8. Water outlet during flushing
10. Where samples are taken prior to entering the distribution for short
11. Connection between drinking (potable) water system & unapproved supply

12. EPA has published the Stage 1 Disinfectants/Disinfection Byproducts Rule to regulate these, for short
13. Controls the passage of water through a pipe
14. Preventive maintenance strategy that removes sediment and loose deposits
15. Newest EPA Rule requiring public water systems to meet a legal limit for *E. Coli*, for short
17. Raises and circulates water
18. Effects of these events are immediate i.e. *E.Coli*
20. Biochemical oxidation of ammonia to nitrate
22. Residential water user to the utility
24. The effects of these events are long-term, i.e. lead
27. Measurement of water quality by passing light through suspended materials
28. Chlorine _____ cannot be undetectable in more than 5% of samples within the distribution system
29. Force acting on a surface, e.g., lbs/sq in
30. Place where water can be stored
31. Bacterium that is commonly found in the lower intestine of mammals that indicates fecal waste
34. Place where you take a lead and copper sample
35. Term for where water comes from, either surface or ground
38. Treatment system for a building at the point where the water line enters (acronym)
39. Federal agency responsible for researching and setting national standards for drinking water



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