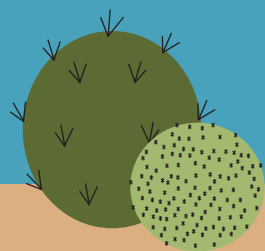


RCAP

RURAL MATTERS

The magazine of the Rural Community Assistance Partnership

the importance of **Drinking Water** *maintenance*



**SYSTEMS OPERATORS CAN GO IT ALONE,
WITH RCAP'S HELP
WHERE ARE THE PIPES?
MAJOR FUNDING FOR THE SMALLEST TOWN
IN MASSACHUSETTS
and MORE**

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ceo letter

An estimated 2 million Americans lack clean, running water in their homes. Rural America faces significant challenges in providing safe, reliable, and affordable drinking water to its residents, primarily stemming from aging and inadequate infrastructure, funding and affordability challenges, new and evolving regulations, and workforce and capacity challenges. Many rural water systems were built decades ago and are now in dire need of repair or replacement. Corroding pipes can introduce lead and other contaminants into the water supply, and outdated treatment facilities struggle to keep up with stricter water quality standards, especially for pollutants like nitrates from agricultural runoff. This exposes rural residents, including sensitive populations like children, to serious health risks.

Maintaining and improving water systems is extremely costly, yet rural communities do not have the population and economies of scale to spread these costs around. Despite recent, historic federal infrastructure funding, the scale of the need surpasses the life of these programs—and small, rural, and Tribal communities also have trouble accessing these dollars.

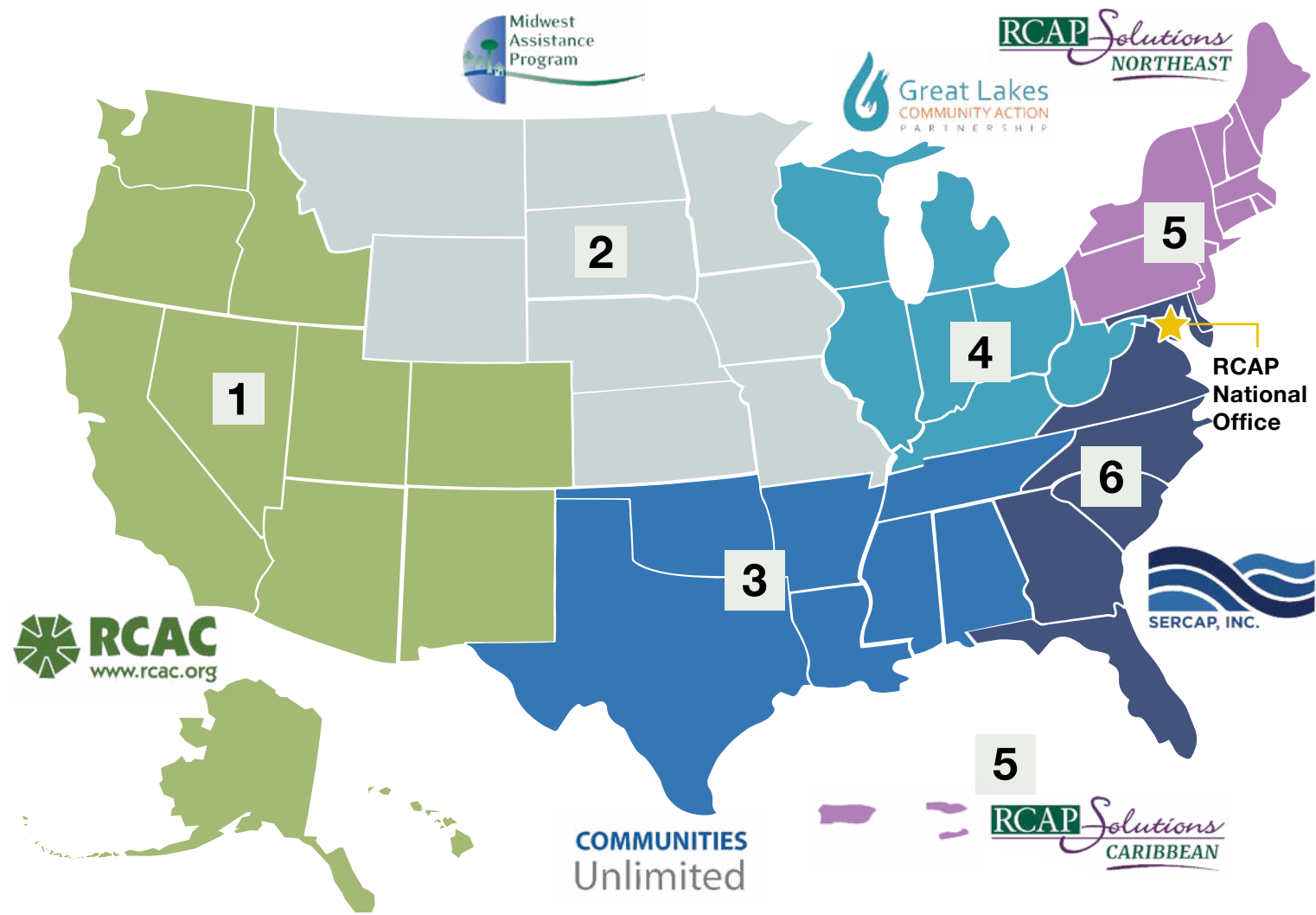
As you will read in this issue, RCAP is actively engaged on all these fronts with communities across the U.S., providing technical assistance and sometimes financial backing to help small systems update arsenic removal systems, set up GIS mapping, and revitalize leadership cultures, ensuring that a system's human infrastructure is also fortified and cared for in order to properly operate, maintain, and sustain its physical infrastructure.

As committed as RCAP is, we know that more resources will be required in addition to innovative solutions tailored to the unique needs of rural and Tribal areas. Our advocacy team has been working with technical assistance providers (TAPs) to lobby Congress to pass the Farm Bill with a robust Rural Development title and the funding required to continue making progress on drinking water and other issues.

Regionalization, which is covered in this issue in a story from Kentucky, is one solution that RCAP has assisted communities in pursuing when going it alone has proven too costly or burdensome. Having personally led dozens of regionalization efforts in the state of New Mexico, where I was a TAP for many years, I have found that it is imperative that leaders have a vision and commitment to the process; include neutral, third-party facilitators; move at the speed of trust; and utilize feasibility studies to help communities consider possible regional models to avoid surprises later.

Despite the challenges that persist, I hope that you come away from this issue inspired by the incredible work our TAPs do day in and day out to bring safe drinking water to more people and by the people and communities behind these stories, who deserve the same access to our most vital resource, water, that the rest of the country often takes for granted.

Olga Morales-Pate
Chief Executive Officer, RCAP



Rural Community Assistance Partnership

The Rural Community Assistance Partnership (RCAP) is a national network of nonprofit partners with over 350 technical assistance providers across the country. RCAP works to improve the quality of life in rural America starting at the tap.

1. Western RCAP

Rural Community Assistance Corporation (RCAC)
916.447.2854
rcac.org

2. Midwestern RCAP

Midwest Assistance Program (MAP)
660.562.2575
map-inc.org

3. Southern RCAP

Communities Unlimited (CU)
479.443.2700
communitiesu.org

4. Great Lakes RCAP

Great Lakes Community Action Partnership (GLCAP)
800.775.9767
glcap.org

5. Northeastern and Caribbean RCAP

RCAP Solutions
800.488.1969
rcapsolutions.org

6. Southeastern RCAP

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866.928.3731
sercap.org

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Major Funding for the Smallest Town in Massachusetts



“Every community deserves access to safe, clean drinking water.”

EPA Administrator
Michael S. Regan

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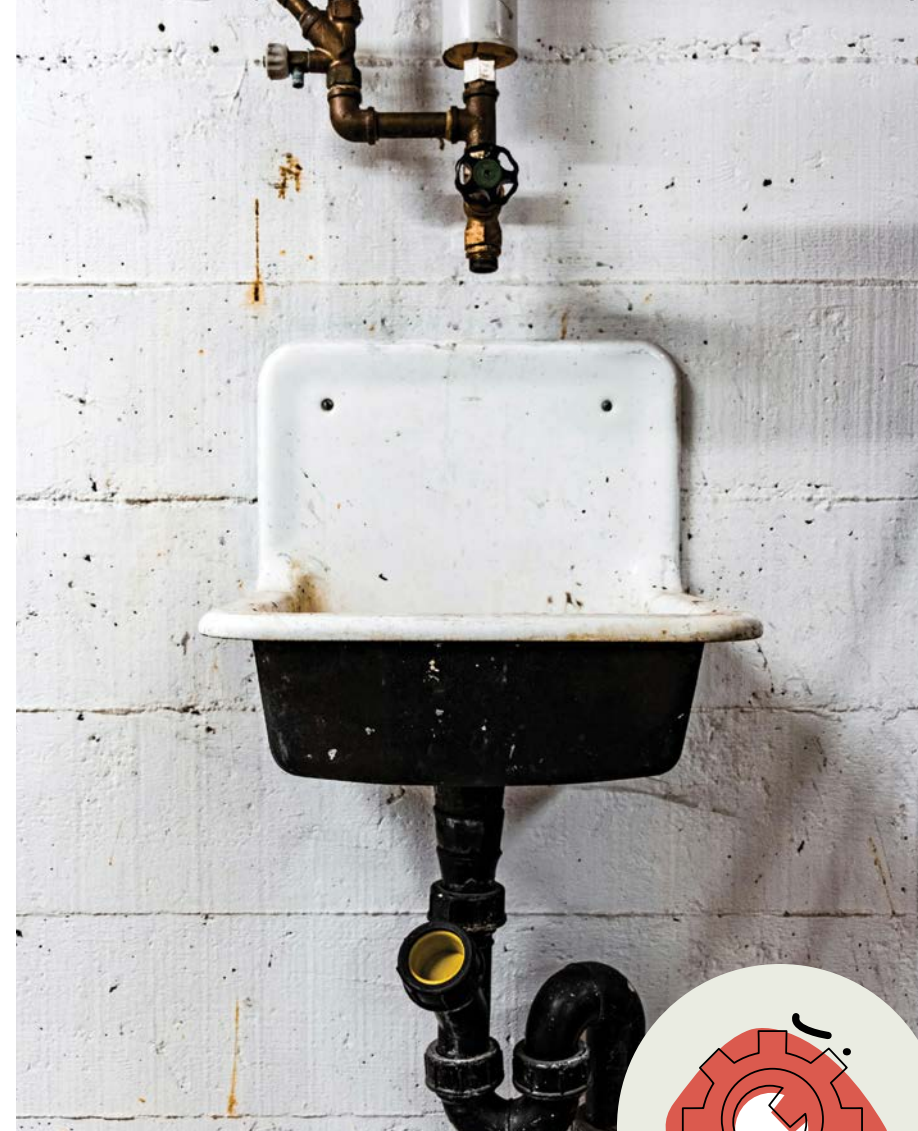
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RURAL ROUND-UP

Recent wins and happenings



Navigating the 2024 Farm Bill Process The recent momentum surrounding the 2024 farm bill, demonstrated by draft outlines from Senate and House Agriculture Committee leadership, Chairwoman Debbie Stabenow and Chairman Glenn “GT” Thompson, sheds light on the intricate legislative journey ahead. With the farm bill reauthorized every five years, it stands as a cornerstone for shaping policies that uplift rural communities nationwide. The proposals underscore the collaborative effort to incorporate diverse stakeholder perspectives, essential for addressing the multifaceted challenges faced by rural regions. As stakeholders eagerly anticipate the full bill text and markups, a commitment to transparency and engagement remains paramount throughout this legislative journey.

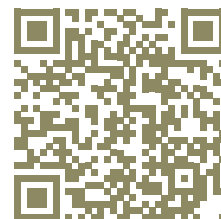


TIPS from a TAP (Technical Assistance Provider)

Brian Scadova-Vose, Community Specialist, RCAP Solutions

Lead is now widely known to be a toxic substance, commonly found in older plumbing materials—pipes, joints, and solder—and paint. Exposure to lead in drinking water or airborne particulates is of particular concern with regard to children, whose developing bodies absorb more lead than adults. Lead exposure can significantly inhibit children’s learning development, emotional regulation, and motor skills. Regrettably, lead was widely used as a water distribution material in the early 1900s and was not banned by the EPA until 1986. The lingering presence of lead in drinking water infrastructure continues to pose health risks to consumers. This is perhaps best illustrated by the Flint Water Crisis, where a change in water source caused lead corrosion in water distribution piping and impacted the health of more than 99,000 people. The Flint Water Crisis, among other incidents, has played a large role in increased public scrutiny of drinking water.

Public confidence in drinking water is critical to the survival of a water utility. Trust between consumer and provider can be achieved through proactive, transparent communication efforts on the part of the utility. So, let’s look at how we can talk about lead in drinking water more effectively, and at places to promote the quality of a water system’s product: rcap.org/communicating-about-lead-in-drinking-water.



DANIEL FAZIO ON UNISPLASH



RECENT WINS and Happenings

In April, RCAP found out it is being awarded \$4.25 million by the U.S. Department of Transportation (DOT) to provide project-level technical assistance, planning, and capacity building support to 16 rural and Tribal communities **as part of** the FY 2023 Thriving Communities Program (TCP). As one of three National TCP Capacity Builder teams, RCAP will manage the Main Streets Community of Practice, serving as a navigator to connect communities with other resources, and working with communities to transition them toward long-term sustainability. **You can read more about the program here.**

Additionally, RCAP has been awarded a \$1.085 million grant from the **U.S. Environmental Protection Agency (EPA)** to plan, prepare, and provide technical support for four annual,

three-day National SRF Infrastructure Financing and Training Workshops across the nation. These dynamic workshops will bring together hundreds of state SRF program officials, financial experts, technical assistance providers, and EPA representatives from across the country to dive deep into the latest developments in the Clean Water and Drinking Water State Revolving Fund (SRF) programs.

Lastly, RCAP and its national network of six regional partners honored U.S. Representative Mike Simpson (R-ID-2) with the 2024 Congressional Champion Award for his outstanding service, dedication, and tireless advocacy on behalf of rural communities and small towns across the nation.

Training Calendar



RCAP hosts free webinars on topics ranging from capacity building to wastewater treatment. **Sign up for an upcoming webinar here!**



SAMUEL SINIPAR ON UNISPLASH

We have an e-Learning platform that is self-paced and covers topics such as rates, board responsibilities and regionalization in a time of crisis.





Playing the Long Game

Tackling the twists and turns of rural water system regionalization in Harlan County, Kentucky.

Luke Newey, GIS Technical Assistance Provider, Great Lakes Community Action Partnership (GLCAP)

This article is funded by RCAP's USDA Technitrain 22 – 23 grant

There are myriad difficulties in the management of any water system. Many rural water systems that receive assistance from RCAP present unique problems that can only be handled by experienced workers. Managing a single

water system can be daunting, but managing the needs of multiple separate water systems magnifies the complexities exponentially. Black Mountain Utility District (BMUD) is a classic example.

BMUD was established in 1986 to serve a small community near Black Mountain in Harlan, Kentucky. Over the years, BMUD has started managing the water systems of neighboring communities, expanding its reach to now serve more than 3,500 customers across eight distinct water systems.

RCAP has been assisting BMUD intermittently for over 10 years with everything from vulnerability assessments and emergency response plans to operations and maintenance plans. In 2012, RCAP conducted a large-scale Water Loss Management program to help one of the water systems assess and control its water loss levels. Despite the ongoing assistance provided by RCAP and the many years of work by BMUD staff, the utility has faced a challenging and arduous journey towards improvement.

BMUD Today

Grant Cooper, who has been managing these systems for 2.5 years, has been diligently working to inform the public and the water boards about the daily challenges that BMUD faces. “You just can’t conceptualize it. People say, ‘Oh, it’s just eight numbers to keep track of,’” says Grant, referring to the Public Waster System Identification (PWSID) numbers that Kentucky uses to identify each water system. “But when you cover as many systems as we do, things just aren’t that easy.”

When Grant joined BMUD, he found the utility deeply mired in debt and experiencing water loss levels he describes as “astronomical.” At one point, the system was buying 3.5 million gallons per month for a tank that served an area where consumption was estimated to be around 700,000 to 800,000 gallons. Through the concerted efforts of Grant and his team, BMUD is now current on its debts and has drastically reduced its water loss.

These successes, however, have not made operating eight systems any easier. BMUD workers are required to understand how to respond to any issue throughout their approximately 550 miles of line, including breaks and sometimes unidentifiable leaks. Grant recounts a particular incident when a severe leak caused such substantial water loss that they couldn’t keep water in the tank, leaving the customers entirely without water. Three days of relentless searching proved fruitless, until Grant had a revelation: they were in the Sukey Ridge area. This particular region’s bedrock consists almost exclusively of slate, allowing the water to flow right through its many fissures and cracks, typical of this rock formation. Grant started walking the line until he detected a slight rumble under his foot. Placing his ear to the ground, he confirmed the presence of water rushing beneath. Unearthing the spot revealed a substantial crack in the pipe through which the water had been escaping into the rock.

While an occurrence like this is relatively common in rural water systems, the real difficulty lies in the ever-changing topography between the eight locations. Sukey Ridge is surrounded by slate rock, Louellen sits atop sandy soil, and Holmes Mill begins with sand but transitions to pure rock halfway through the system. Each of these intricate details must not only be understood by Grant’s team members, but also consistently kept in mind while they work in challenging conditions, often late at night. As Grant puts it, “to figure things out, sometimes you gotta sacrifice.” Such sacrifices demand a readiness to respond to diverse problems and think on your feet, whether it’s 3:00 a.m. on Christmas Eve or any other time when issues arise. “In situations like that, you’ve got to be able to count on your guys,” says Grant.

Hiring and Training

The team at BMUD is experienced and dedicated but severely understaffed. The combination of the steep learning curve required of rural water system operators and the constraints of low wages dissuade many from applying or ultimately lead to high turnover rates once employees are hired. Over the past year and a half, the system has hired five employees, but only two have remained for longer than six months, with one of them already seeking alternative job opportunities. Recently, Grant hired a new employee and trained him for two months, and then that employee found a job at Walmart making a significantly higher wage than BMUD could offer. “If you are forced to keep wages so low that you are losing your employees to Walmart, something needs to change,” Grant said.

Grant’s comments touch on one of the most difficult aspects of their operations: hiring new people, training, and then retaining them. Training and low wages make attaining new workers challenging, as most water systems require at least three months of experience before trusting employees to work independently. A system with so many unique variables in its operations cannot run efficiently without asset management. The more experienced workers know the system inside and out and, if they are not able to communicate that to a new worker, their knowledge will not assist the team. RCAP has

been working with BMUD for several years to try to combat this problem.

Asset Management

Central to BMUD’s asset management plan is the use of GIS maps. The significance of a digital database for the system’s operation cannot be overstated—it is a crucial component that enables BMUD to effectively train new personnel. For years, RCAP has collaborated with BMUD staff, meticulously walking every inch of its systems one at a time and mapping the necessary utility components. This concerted effort aims to bridge the knowledge gap between experienced and newly hired staff.

Keeping track of eight separate communities and their water utilities has been a huge undertaking for the team at BMUD. According to Grant, the high attention to detail required to successfully manage these water systems is one of the factors pushing new employees away. “That is why I spend all the time that I can afford updating the GIS database.” To BMUD, the GIS database is the key to effectively training and retaining their employees. “You’ve got to know your system, and you’ve got to be able to think on the fly.” This is where GIS mapping and RCAP step in, assisting BMUD in building a comprehensive knowledge base of their system that serves as a digital library, encapsulating the years of experience and hard work that have shaped BMUD into what it is today.

The Long Game

The work of rural community development centers around “the long game,” requiring years to decades of involvement to witness progress. In the case of BMUD, it took over 10 years of RCAP involvement, numerous technical assistance projects, hundreds of hours of GIS fieldwork, and a dedicated manager like Grant to put all the pieces together and achieve enduring progress.

BMUD’s progress exemplifies the impact of unwavering commitment and collaborative efforts. RCAP will continue to provide assistance, ensuring that water systems like BMUD can thrive and serve their communities sustainably. By embracing “the long game,” BMUD and other rural water utilities can feel hopeful about the efforts they have made and look forward towards a future where their communities can build resilience and prosperity.



Where are the Pipes?

Drinking water infrastructure GIS mapping in Plankinton, South Dakota.

Hope Block, Technical Assistance Provider, South Dakota, Midwest Assistance Program (MAP)

This article is funded by RCAP's EPA NPA 1 22 – 24 grant

It's hard to maintain what you can't find, as water system operators across the nation have discovered. In our modern age, Geographic Information Systems are coming to the rescue.

A Geographic Information System (GIS) is a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface. GIS can show many kinds of data on one map, such as streets, buildings, and utility infrastructure. This enables people to more easily see what their community is comprised of.

Small communities and Tribes have begun to utilize GIS mapping for their drinking water systems. GIS mapping

MAP

allows for accurate mapping of their infrastructure and provides the foundation for asset inventory and management programs, operations and maintenance management, and much more.

Geographic Information Systems and Water Infrastructure

Most of the infrastructure in the country was installed many decades ago, and new installations have decreased steadily ever since. This means the largest part of our country's drinking water inventory is more than 50 years old, and many communities are running their drinking water systems with infrastructure that is far beyond its useful life. Because of this, many water utilities have already begun to heavily invest in infrastructure expansion and replacement.

Most communities have been supplying water to their customers at the cheapest possible rate. They are typically only charging their customers a little more than what it costs to produce the water. While this is wonderful for the residents, there are some obvious problems with this rate system. If rates have not allowed for a reserve for future infrastructure improvements, those necessary improvements have tended to be pushed off, since the funding is simply not available. Now, many water utilities are being forced to take out large loans to replace water infrastructure because their current infrastructure is nearing its breaking point. Updates to water infrastructure are necessary in order to continue to provide safe drinking water to residents.

Communities that have their utility infrastructure mapped out into a GIS program will be equipped with the capabilities to begin planning utility infrastructure replacement or expansion projects. This will provide for easy analysis of the current water infrastructure to determine priorities. GIS mapping of the water systems also allows these systems to operate and maintain their infrastructure more appropriately through routine maintenance instead of having to replace a large portion all at once.

Water Infrastructure in Plankinton, South Dakota

Plankinton is a small community of 781 people in the southeast portion of the state.

MAP



Plankinton owns and operates its own water system and has been working on updating the water infrastructure slowly over the past 30 years to keep up with the community's demand. The town's water tower was replaced 10 years ago, and new PVC pipe has been installed in phases.

However, Plankinton's water infrastructure paper maps were not accurate, and some portions weren't even mapped, which has led to problems locating its utility assets. Locating assets is also hampered by the South Dakota winter, when snow covers the ground for several months of the year. The combination of many inches of snow and rudimentary directions such as "walk five steps north of the apple tree to find the curb stop" can make locating assets nearly impossible. It was not uncommon for Plankinton operators to dig through many feet of snow at several locations before they were able to find what they were looking for.

Plankinton staff requested assistance from the Midwest Assistance Program (MAP) to document their water infrastructure into a GIS environment to alleviate some of their mapping problems and to provide a more promising future for their drinking water system. Plankinton staff were eager to work with MAP to finally have an accurate layout of their utility.



MAP staffers Hope Block and Kevin Coldsmith collected the location data on valves, curb stops, fire hydrants, and other items and entered it into a computer system. Photos of the points were also added, so operators can click on any point and see what the located item looks like. Plankinton's operator, Darin Cranny, who has been with the community for six years, worked with MAP staff to finalize the revisions to the GIS maps. Now Plankinton staff will be able to use the maps to locate their infrastructure and make future plans for their water system.

Plankinton plans to use GIS mapping for all of its utilities to ensure consistency and efficiency for system operators. In April 2022, Plankinton was awarded the following SRF funds: a \$2.5 million Clean Water State Revolving Fund loan and a \$2.7 million American Rescue Plan Act (ARPA) grant to replace or line all deficient sewer lines throughout the community and install a sewage lift station to serve the proposed Briggs Housing Development. In 2023, the town began that multimillion-dollar sewer replacement project, and all the new sewer infrastructure was added to its GIS maps, which Plankinton utility operators are very eager to utilize. MAP staff enjoyed assisting Plankinton in setting up GIS mapping for its drinking water system and look forward to assisting other communities in the same way.

Water Infrastructure GIS Mapping for the Future

Mapping water infrastructure in a GIS environment is beneficial for any water system. Once the data has been collected and the GIS map has been created, there are many ways to utilize that data. Plankinton, for example, can now utilize its new GIS maps to create an asset inventory list, an asset management program, and an operations and maintenance program.

An asset inventory will provide an accurate list of all of the community's water infrastructure. Considering the new Lead and Copper Rule Revisions, it is beneficial for drinking water systems to have an accurate asset inventory list to report lead and copper lines when that deadline arrives in October of 2024. Some funders also require proof of an asset inventory list for loan compliance.

The inventory list will then provide all of the information needed for the asset management program. The assets listed on the inventory can be analyzed to ensure

they are all accounted for, prioritized, maintained, and replaced as needed. A governing board can better gauge where to allocate public funds for asset repair and replacement when the asset management program has been completed.

Maintaining assets and recording operations are key components in managing your system. In the GIS mapping environment, a community can record when its assets have been maintained and ensure they are maintained regularly and appropriately. Lack of maintenance can cause system failures, which can be very costly, and operation and maintenance programs are critical for a well-managed utility, which will benefit from the information collected through GIS.

The opportunities for a drinking water system are endless after the initial asset data has been collected. Small communities are continuing to have success after implementing GIS mapping, and they are better able to provide safe drinking water to their residents at the best possible cost. There is no telling what the future holds for this ever-changing computer software.

MAP



SAVE THE DATE

National Conference

October 22 - 24, 2024

Omaha, Nebraska



Rural
Community
Assistance
Partnership



Partnering for Community Good

The Community Engineering Corps' pro bono professional services for underserved communities complement RCAP services well.

Jean Holloway, Maryland State Lead (retired), Southeast Rural Community Assistance Project (SERCAP)

This article is funded by RCAP's EPA NPA 1 grant

Technical assistance for small community water systems can sometimes benefit from professional help. In these two Southeast Rural Community Assistance Project (SERCAP) projects in Maryland, the participation of the Community Engineering Corps (CEC)—an alliance of engineers that provides engineering services to underserved and disadvantaged communities—improved the outcomes for the communities. The collaboration may serve as a valuable model for future partnerships.

Independence Village HOA

The first was an evaluation of a privately owned water system in Charlotte Hall, in Charles and St. Mary's counties in Maryland, serving about 24 properties and maintained by a Homeowner Association (HOA) known as Independence Village HOA. The system, installed in the 1970s to serve the small subdivision of modest homes, was showing signs of wear, and the HOA board had considered petitioning the county to take it over as a standalone water system. The closest county-owned system was too far away to make interconnection feasible. The county estimated that almost \$2 million would be needed to bring the system up to county standards, and that amount would have to be assessed to each property as a tax lien until the loan was satisfied. This price tag was much too steep to be divided 24 ways, especially since each property's share would be immediately due and payable should any lot be sold or transferred. That dilemma prompted some phone calls that eventually led to a referral to SERCAP.

After meeting with the HOA and taking a tour of the small well house and system equipment, the SERCAP technical assistance provider (TAP) suggested that an independent evaluation of the system and its needs should be performed to determine whether the county's estimate was accurate. The TAP began composing a request for proposal (RFP) for a study of the water system with the intention of applying for a feasibility and planning grant. Before the RFP was completed, the TAP learned about the CEC. The CEC team of volunteers met with the HOA board and outlined the steps they would take to evaluate the system and present viable alternatives, cost estimates, and recommendations for all options they could envision.

Due to the volunteer nature of the team, meetings and site visits were held on Saturdays and during off hours. The final report was submitted to the HOA in 2019 and presented an analysis of five possible alternatives, from upgrading to county standards and turning the system over to installing individual on-site wells and various possibilities in between. The HOA opted for a blend of two alternatives: to maintain ownership of the system and pursue systematic preventive maintenance measures while increasing rates to include some reserves for contingencies and eventual repairs.

Laurel Water Supply Company

SERCAP contacted CEC again to ask for help with Laurel Water Supply, also located in Charles County, Maryland. The very small, private system of 16 homes and about 50 residents was served by a single well, maintained by the HOA, and operated by a contractor. The system had been well-run, both financially and technically, and the HOA had managed to save some money for eventual repairs and emergencies. They were not prepared, however, for the failure and subsequent collapse of their only well in December 2020. The HOA arranged for a tanker service to provide a water source that was treated and distributed through the HOA's system. At a cost of \$800 to \$1,200 per week, the tanker service was quickly depleting the HOA's savings. The U.S. Department of Agriculture (USDA) allowed an expedited version of the Preliminary Engineering Report (PER) to be done in an application for funding to replace the well, but the HOA also wanted an evaluation of the entire 1960s system.

SERCAP contacted AWWA's liaison for the CEC program and, after meeting virtually with the HOA representatives, the CEC agreed to take on the project. An Engineering Services Agreement was signed in June 2021, and the final report was delivered to the HOA board in May 2022. SERCAP assisted by completing the vulnerability assessment (VA) and emergency response plan (ERP)—required components of the USDA funding application—for the Board's approval.

A Valuable Model

These stories are examples of the invaluable no-cost services for the small community

Engineers Helping Underserved Communities

The Community Engineering Corps (CEC) is a domestic alliance of Engineers Without Borders (EWB), the American Society of Civil Engineers (ASCE), and the American Water Works Association (AWWA) that provides engineering services to underserved and disadvantaged communities while providing valuable experience to engineering students under a professional engineer's guidance. More than 200,000 professionals and professionals-in-training participate on a volunteer basis to provide engineering solutions on the local level in the U.S. The CEC "facilitates critical infrastructure projects for communities in need through bringing the technical and engineering resources together to address their infrastructure challenges." Examples of services include analysis and assessment of infrastructure systems necessary to apply for funding programs, both private and public. CEC projects are "front end" type projects for engineering, evaluation, and design, not for construction itself. Below is a list of the types of projects CEC can assist with:

- Agriculture (e.g. community gardens, irrigation, stormwater management)
- Civil Works (e.g. roads, trails, erosion control)
- Energy (e.g. solar power, alternative energy sources, energy audits)
- Structures (e.g. structural assessments, roofing)
- Water & Sanitation (e.g. water supply projects, water quality)

Learn more about the Community Engineering Corps here.



clientele that SERCAP serves. Two very small water systems, barely big enough to even be designated Community Water Systems, were the recipients of professional engineering evaluations and recommendations at absolutely no cost to the residents and ratepayers. Without the CEC and its capabilities, these small systems may have eventually gotten the same analysis and reports, but only after considerable costs were incurred. The CEC estimates that the hours spent on these two projects would have resulted in at least \$100,000 in professional engineering services. Even if a grant could have been obtained to pay for the same evaluation and engineering services, the cost of the resulting study report would have been considerable, especially when actual costs and in-kind services from SERCAP were added.

CEC's commitment that no community should be left behind means that communities can receive services they may not otherwise be able to procure, much less afford. The CEC program fulfills a vital role in serving disadvantaged and under served communities that might otherwise go without, draining their capacities and their bank accounts. In these two examples, the CEC team provided a value add to SERCAP's technical assistance that might otherwise have been unreachable for these communities.

The CEC team from Northern Virginia and SERCAP were asked to make a presentation at the virtual conference of Engineers Without Borders in October 2021, showcasing the two Maryland projects and the first one completed by the team in Cedar

Gulch, South Dakota. The theme of the conference was "Pathways to Resilience—No Communities Left Behind." That theme certainly applies to the CEC program just as much in the U.S. as it does overseas.

In March 2023, SERCAP and the CEC team participated in a panel presentation for the National Environmental Justice Conference held in Washington, D.C. The presentation highlighted details of these two SERCAP projects and one that planned a community garden for a team of nonprofits in D.C. The panel discussion and questions focused on community engagement, how to produce a successful project, and tips for communities facing the same dilemmas. The audience was most attentive, and several approached the panelists after the session ended.

SERCAP



SYUHEI INOUE ON UNSPLASH

Communication, Flexibility, and Respect

RCAC TAPs into Guam's water leadership potential.

Elliott Bochstein, Rural Community Assistance Corporation staff writer

This article is funded by RCAP's EPA NPA 1 22 – 24 grant

Imagine turning on your faucet to be met with salty, unpalatable liquid—an unsettling reality far too familiar for Guam residents. Despite its postcard-perfect beauty, locals must contend with a vulnerable water system's health risk concerns, outdated infrastructure, and the looming threat of scarcity. The Rural Community Assistance Corporation's (RCAC) team worked with Guam's Waterworks Authority (GWA) to revitalize its leadership culture.

Guam, the ancestral home of the Chamoru people, shimmers with white sand beaches and lush rainforests. The island and its waters should be a source of sustenance and life for residents. However, the small U.S. territory's long history of external control and vulnerability to natural disasters has made water security an ongoing concern in this western Pacific paradise.

Guam's water infrastructure faces challenges common to many islands—a limited freshwater supply, saltwater intrusion, and aging pipelines—making it difficult to balance the water needs of residents, tourists, and strategic U.S. military bases. Ongoing water quality concerns and a changing climate require collaborative partnerships to guarantee the equitable distribution of clean, safe water resources. Recognizing this, federal agencies like the U.S. Environmental Protection Agency (EPA) are spearheading efforts to revitalize the island's water systems and ensure benefits for all residents.

However, Guam's distance from the mainland creates logistical challenges that impact the cost and availability of materials for infrastructure revitalization projects. Furthermore, the island's highly competitive job market means that the Guam Waterworks Authority (GWA)

must implement innovative strategies to recruit and retain a skilled workforce.

“GWA has a shortage of operators and qualified staff; people retire and there’s often no way to replace them,” explains Susan Jamerson, an RCAC technical assistance provider.

GWA collaborates with federal partners and nonprofits to enhance its capacity for sustainable water management. Recognizing the importance of developing strong leadership skills at the utility, RCAC dispatched Jamerson to Guam. She and RCAC Training Strategist Jason Carman created tools to help GWA develop its leadership capabilities and, in the long run, retain staff.

Developing GWA’s Potential

As a seasoned rural development specialist with a track record of working with water systems across the Pacific, Jamerson aimed her strategy squarely at building the skills of GWA’s existing personnel to address the island’s unique challenges.

Over the course of a week, Jamerson taught more than 200 GWA staff members leadership and customer service skills, emphasizing leadership capabilities, efficiency, and team dynamics. This training cultivates a problem-solving, adaptable culture, which empowers GWA’s team to overcome challenges.

The Power of Active Listening

Effective communication is the cornerstone of strong management. In general, managers who are used to issuing orders frequently assume that their instructions are clearly understood, a misstep that can result in miscommunication, inefficiency, and widespread frustration. During the workshops, participants practiced active listening in role-playing exercises and learned that repeating instructions, asking clarifying questions, and taking detailed notes are essential.

“Maintain eye contact, avoid distractions like your phone, and observe nonverbal cues,” Jamerson stresses, emphasizing the challenges of mastering these increasingly rare skills. Active listening goes beyond task delegation; in a utility setting, open communication channels can prevent safety hazards. When managers value listening, they build teams that think critically, anticipate problems, and make informed decisions.

The SMART Goals Approach

Guam’s water managers learned to transform vague directives like “clean the pump house!” into SMART goals—Specific, Measurable, Attainable, Realistic, and Time-bound. Instead of leaving workers guessing at the desired outcome, this approach ensures everyone is on the same page from the start.

A SMART framework provides a detailed roadmap, boosts productivity, and gives workers ownership over results. Instead of “inspect the filtration system,” a SMART goal might be “inspect filter #3 by close of business Friday, noting leaks, blockages, and pressure loss.” This specificity sets the worker up for success and gives management clear criteria to evaluate results and transform workflow in a lasting way.

Building Morale Through Flexibility

The training underscored the value of reasonable flexibility. For instance, adjusting work schedules for employees facing childcare challenges accommodates their needs and enhances productivity and engagement. “This flexibility is key to building a trustful and empathetic workplace environment, benefiting the entire organization,” Jamerson explains. The training encouraged managers to view workers as individuals with real-life demands, finding a balance that works for all sides.

The “Feedback Sandwich”

A lot of folks might dismiss the “feedback sandwich” as dated and soft, but sometimes classics can still stick the landing. This technique emphasizes starting with a solid base of positive observations, layering in some constructive criticism, and then topping it all off with more encouragement. Participants’ initial attempts felt a bit clumsy—praise is a rare ingredient in some managers’ kitchens. The lesson learned: People are more receptive to feedback, even the difficult kind, when they know they’re valued and their strengths are appreciated.

Jamerson offers an example: “Start positive: ‘Mike, you’re a great team player and always on time. Your work is accurate, but sometimes deadlines get tight. Can we streamline your process a bit and ensure tasks are completed on time? Overall, we love having you on our team.’” This respectful approach increases the likelihood of positive behavioral change. “If you come at your workers with harsh criticisms, they may just shut down,” she said.

Core Values and Motivation

A powerful but often overlooked insight also was addressed: understanding employee values. Discussions revealed honesty, hard work, family, and community as core motivators, contrasting with the status- or wealth-driven environments often seen elsewhere. Aligning tasks with these values boosts morale. A community-oriented worker given a task with clear service benefits will be more engaged.

During the training, a tense moment arose when an operations manager objected to the concept of motivation, believing everyone should simply perform out of duty. This ignited a discussion that highlighted a common pitfall: treating workers as if they’re automatons driven solely by paychecks. Overlooking individual values and the importance of empathy corrodes workplace morale and leads to high turnover and dissatisfaction.

“Genuine praise for a worker doing a good job or going above and beyond is essential,” Jamerson explains.

Cultivating Leadership, Enhancing Commitment

RCAC’s workshops gave managers a rare opportunity to reflect on nurturing existing talent and left participants with the tools necessary for making positive change. “People felt like the organization was investing in them, that they were being honored and their role was truly valued,” Jamerson says.

Leadership workshops can’t repair physical assets or address deeper systemic issues, but they are potent tools to help bring about a more effective, proactive, and harmonious team environment. This can save a utility a lot of time and money by minimizing the need to retrain the same positions repeatedly due to high staff turnover. By fostering mutual respect and shared responsibility, technical assistance providers can strengthen communities’ resolve to collectively safeguard their water future.



Systems Operators Can Go It Alone, with RCAP’s Help

Communities Unlimited Assists Green Acres Mobile Home Park with system updates.

Ashley McAfee, Community Environmental Management Technician, Communities Unlimited

This article is funded by RCAP’s EPA NPA 1 22 – 24 grant

Green Acres and Riverview Water Works is a mobile home park/estates utility system providing water to two separate neighborhoods in El Paso, Texas, with a total of 49 water connections. Its unique name comes from the 1965–71 television show Green Acres starring Eddie Albert and Eva Gabor. The show's iconic jingle says “Green Acres is the place to be ...,” with its fresh air and open spaces. Ironically, these neighborhoods are in the westernmost tip of the Texas desert.

The utility is owned and operated by a one-woman team. Her name is Brenda Lopez, and she's a Navy veteran who initially worked as the system's bookkeeper/operator 20 years ago. Unfortunately, when the system's previous owner passed away suddenly, Brenda became the new owner of Green Acres—along with its outdated machinery and equipment. Communities Unlimited (CU) started working with Green Acres in 2017. In 2018, Green Acres was awarded \$216,000 in principal forgiveness through the State Revolving Loan Fund (SRF) with the Texas Water Development Board (TWDB) for a new arsenic water treatment system. As part of CU's services, the utility consolidated previous debts for more economic mobility to revitalize the outdated system.

Green Acres received various types of assistance through CU to address its many needs, including managerial, financial, and technical assistance to comply with the Texas Commission on Environmental Quality's (TCEQ) requirements. After the TWDB funds were awarded for the arsenic removal equipment, Brenda was unexpectedly hospitalized for months, which halted the project's progress and created a tricky predicament for this one-woman operation. CU staff visited Brenda in the hospital to complete and aid in the system's requirements, including a rate adjustment application with the Public Utility Commission. As a result of her health challenges, Brenda has to be on oxygen 24/7. Stress and many environmental factors can affect her ability to breathe. Due to these health issues, having a conversation over the phone with different agencies can be challenging and stressful for Brenda. Despite this, it does not slow her down; this woman can run circles around anyone, and her positive attitude is contagious.



In June 2021, CU provided Brenda with a \$189,888 low-interest loan through its Community Development Financial Institution (CDFI) loan fund to refinance the system's purchase, replace meters, and install valves and hydrants. With this loan, Brenda was able to complete multiple goals.

The system has faced its fair share of challenges, including Brenda's health, the COVID-19 pandemic's overall effect on production, and complications with the engineering company contracted for this project. The initial engineer had a unique approach to his position, with great ideas and solutions but, as preparations were made for the arsenic removal equipment with the engineer and the supplier, AdEdge, the first engineer and their office location closed, giving no notice to Green Acres of their closure. In June of 2022, a new CU staff member, Ashley McAfee, was introduced to the project. “Ashley is wholeheartedly there for the people she assists,” Brenda says. The initial engineer was no longer with the company, and communication took a lot of work. Fortunately, another engineer from the same firm, based out of San Antonio, was familiar with the project and was able to take over. The project had to start from scratch. Communication between the engineering firm and Brenda has been difficult, so having CU as a liaison helped both parties throughout this project.

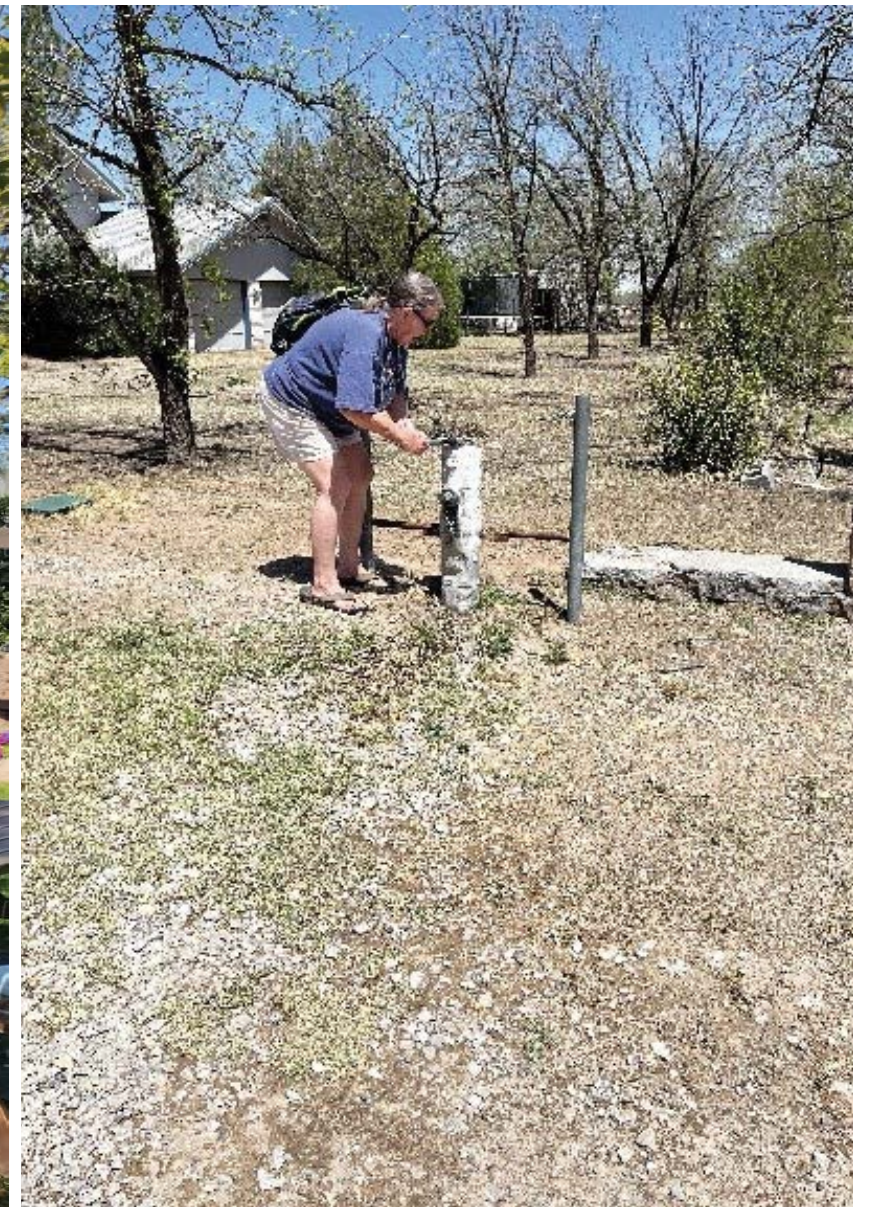
One of the solutions was to have in-person meetings to review the system and Brenda's concerns. Secondly, CU assisted in facilitating all of Brenda's meetings with the state agencies and engineers, reducing stress and confusion. Brenda states that she felt more

comfortable having someone “on her side.” If she is having health difficulties, CU can facilitate and help her to express concerns and have these conversations while she is present.

As of the beginning of 2023, Brenda and Ashley have prepared Emergency Preparedness Plan (EPP) waivers, completed Financial, Managerial, and Technical training with the TCEQ, and begun asset management planning for the utility. They have completed the necessary request for bids to install her arsenic removal technologies, and construction will start soon. The TWDB, engineers, AdEdge, Brenda, and CU have bi-weekly meetings for project updates to ensure completion. The relationship between Brenda and CU is wonderful. More recently, all of the involved parties have started the process of hiring a new engineer to upgrade their existing well or to interconnect with a surrounding community. Communications and work are all still ongoing, as of May 2024.

The water treatment technology provider is requesting additional funds due to project delays and inflation. As this change order is going through the required processes, there have been concerns about this project's financial success and sustainability. Brenda and CU must seek additional funding to subsidize potential fees and aim for cost-saving approaches. It is common for rural communities to be overlooked due to their size, and this is especially true for systems that are privately owned.

Situations and circumstances are thrown at these communities, piling up alongside the ever-changing aspects of our society, all while trying to keep their heads above water. It is a heavy burden, especially for those who do it alone. Jobs like this often remain in the shadows and are taken for granted. Some of us consumers are in a privileged position not to think about



CHRISTINA AL FROM PIVABAY

COMMUNITIES UNLIMITED



Major Funding for the Smallest Town in Massachusetts

RCAP Solutions helps Cuttyhunk Island leverage funds for significant water system improvements.

Laurie A. Stevens, P.E., Regional Director (ME, NH & VT), RCAP Solutions
Funded by our EPA NPA 1 23 – 25 grant and USDA Community Facilities TAT grant

Despite formidable challenges, the small, secluded community of Cuttyhunk Island, Massachusetts, demonstrated admirable resilience in navigating regulatory and administrative hurdles to secure funding for a multimillion-dollar infrastructure project. RCAP Solutions has played a pivotal role in this journey, providing invaluable assistance.

The Town of Gosnold, a small town encompassing the Elizabeth Islands in Dukes County, Massachusetts, faces unique geographic and socioeconomic challenges. The sprawling, multi-island community encompasses a total area of 140 square miles, only 13 of which are land. And although the Town ranks 272nd out of the 351 communities in the Commonwealth in terms of land area, it has the longest distance between points within municipal limits of any town in Massachusetts. Yet, the community has a population of just 75 year-round residents and a median household income of \$49,300. All of this makes the provision of public water extremely expensive—underscoring the community’s need for assistance.

Gosnold consists of several smaller islands, and residents and visitors from the mainland must travel from island to island to reach the destination of Cuttyhunk, the most remote of the chain. Provisions unavailable on the island must be brought from the mainland, traveling by ferry or private charter. The beautiful landscapes, seclusion, and ocean views make Gosnold a well-sought-after destination, and the full-time residents love it. However, this seclusion drives up the cost of most things, including water infrastructure improvements. Materials and equipment must be conveyed from the mainland, and engineers, surveyors, and contractors must charge for the extra time and travel to serve the town. This increases the cost of design, survey, and construction that the population of 75 residents must generate to have clean drinking water, including appropriate quantity and pressure for fire protection.

Many communities in the Commonwealth have Intermunicipal Agreements with surrounding communities for emergency services, fire protection assistance, and emergency interconnections to public water systems,

“Thank you so much for your help today. All your education and ideas are beneficial in more ways than one. I feel lucky to have you working with us and your guidance along the way.”

—SARAH BERRY, CHAIR OF THE GOSNOLD SELECT BOARD

among other services. RCAP Solutions has assisted communities with negotiating and drafting such agreements and memorandums. Gosnold does not benefit from the proximity relations many other municipalities enjoy. Being an island, no neighboring potable water interconnections exist. For emergencies and urgent assistance, spare parts and materials must be put on a ferry from the mainland.

Cuttyhunk’s Water System

Cuttyhunk Island’s water source is groundwater from wells constructed in the 1960s. The system has been maintained over the years but has not had any significant upgrades. This 60-year-old well field, which has a series of small-diameter wells, has an antiquated vacuum prime pumping system that experiences many leaks, and the water distribution lines are in disrepair. Due to these issues associated with the age of the system, the Town needed to embark on a comprehensive replacement project, with replacing the wells a priority. Submersible pumps for the wells were identified as an alternative to the vacuum prime system. The project was designed with two phases: The first would encompass the well field improvements, and the second would address the distribution system improvements.

There were various alternatives available for the community. As usual, the price, constructability, and other factors were considered before the engineer selected the alternatives presented to the client and incorporated them into the grant application.



Some potential options included:

- **No Action**—Under this scenario, the system operates under the existing conditions and encounters the same problems that it does now. The community did not consider this viable due to the existing problems and the lack of intermunicipal resources. The town will only have to pay more if it further postpones the inevitable, so this was not an option.
- **Desalination plant**—Interconnections are not an option for an island. This alternative is extremely expensive and was not considered feasible.
- **Wells and pump system replacement**—This was determined to be the most practicable alternative for this project, and the community’s long-time engineer began the conceptual design and Preliminary Engineering Report (PER).

RCAP Solutions played a crucial role in the project, assisting the community in securing funding for the needed improvements. At the beginning of 2019, RCAP Solutions staff Jim Starbard, regional director, and Laurie Stevens, P.E., regional director, attended the annual New England Water Works Association Conference in Worcester, Massachusetts. They were invited to a meeting by Chuck Adelsberger, P.E., of Environmental Partner Group, Inc., the engineering firm for the Town of Gosnold. Mr. Adelsberger recommended that Sarah Berry, Chair of the Gosnold Select Board, enlist RCAP Solutions’ assistance for the project. The meeting took place at Chairwoman Berry’s Worcester office, and the design of the upgrades was already underway. The challenge was making the multimillion-dollar project financially viable for a community with only 75 residents, a challenge that RCAP Solutions was well-equipped to tackle.

“Thank you so much for your help today,” said Chairwoman Berry. “All your education and ideas are beneficial in more ways than one. I feel lucky to have you working with us and your guidance along the way.”

Overcoming Financing Challenges

RCAP Solutions is familiar with several agencies that fund infrastructure improvement for small and rural communities. Therefore, they began assisting the community by reviewing the project to see if it was a viable candidate under any loan and grant program guidelines. After a review of the PER, it was determined that the best funding option available for the community would be through the United States Department of Agriculture, Rural Development’s (USDA-RD) Water and Waste Loan & Grant Disposal Programs. The application process would be under the guidance and direction of the USDA Wareham office and would be submitted to Rebecca A. Strohman, the Rural Development Community Programs Specialist. RDAppl, USDA’s online application portal, had two major components: the application and the electronic Preliminary Engineering Report submittal, or ePER. Although both require similar information, they are distinctly different processes. Users must be authenticated before starting either step.

RCAP SOLUTIONS

Right from the start, the authorization could not be processed, and the Select Board Chair, after multiple attempts to register, was notified that the process was unsuccessful. The engineer had the same difficulty registering. The process for the engineer ran simultaneously with the application process. The dual programs intend that, once the PER has been uploaded, the information will populate the RDAppl application, in theory. However, the entry procedure for the information from the PER is not as simple as uploading a PDF and requires entering several fields in numerous tabs throughout the program. Only when the data is entered completely and correctly will the information be populated into the RDAppl application.

Once an applicant gets an e-authorization identification, they must submit an authorized representative request. The community can have many individuals assigned to a project, although they all need different roles. The roles determine the level of access each individual is allowed. Some roles only allow viewing, some editing, and the highest role allows the actual submittal of documents on behalf of the community. Being the chair of the Select Board for a community and having a full-time career allows little time for overseeing the final stages of the design as well as navigating through the paperwork required for the funding application process. RCAP Solutions was there to offer encouragement and help the community stay the course, because the community had few other options without funding. The training provided by USDA-RD regarding RDAppl helped provide a broad overview of the process, enabling RCAP Solutions to assist communities with their funding applications, including this one.

“I want to be sure that you know how much I appreciate your belief in the value of the Cuttyhunk/Gosnold project and that we could fit the need to the application,” commented Selectwoman Berry. “I have learned so much in this process and now recognize how much all these agencies do and the good people that work for them.”

As August approached, the community faced a funding year deadline. At times, the community considered waiting until the next funding cycle, given all the challenges encountered with the preliminary part of the application. The

RCAP Solutions staff stepped in to assist in the process, and the staffer at the USDA office in Wareham, Rebecca Strohman, was helpful throughout the process. USDA staff encouraged Selectwoman Berry to continue, as the likelihood of receiving funding was promising, although not guaranteed.

As the design progressed, Selectwoman Berry was pleased to see that progress was finally being made on the project. She stated, “Chuck was clever to have you come over to my office at the Water Convention that day in the winter and get us started.”

After reviewing the rate structure and comparing it to other communities in the area, it became clear that the financial burden, without any loans or grants for this project, would drive the water rates to a level that island residents could not afford. Gosnold’s volunteers often felt they were drowning in paperwork. But there was no turning back, as the community would have no way of paying for the \$2.1 million project without assistance from some state or federal agency. The community had concerns about taking on such a big and expensive project. Selectwoman Berry expressed ongoing appreciation for RCAP Solutions’ support through the challenges. The warrant article was drafted at the select board meeting in preparation for the town meeting, and the community later voted to authorize the loan and the grant conditions for this much-needed project.

The community was ecstatic, as evidenced by the positive feedback from Selectwoman Berry: “Our Board of Selectmen got people on board for the financing who had been unsure before, so I think we are on track for a good vote to proceed with the debt and the financing. The RCAP [Solutions] staff are amazing, and I will always be grateful for your patience in getting us to dig into this program.”

In total, approximately \$5.7 million was leveraged for the project. This included \$3 million in USDA grants and low-interest loans, \$1 million from the state Executive Office of Housing and Economic Development’s Massworks program, \$1.5 million from the state Executive Office of Energy and Environmental Affairs’ Municipal Vulnerability Program, and Town matching funds. The Town of Gosnold had to come up with only \$20,000 in applicant contribution funds for this multimillion-dollar project.

The community hosted a groundbreaking event and walking tour to celebrate this milestone as construction began. The successful event was attended by dignitaries and representatives from USDA, construction and engineering partners on the project, members of the Town of Gosnold, and RCAP Solutions staff.

Because of RCAP Solutions’ assistance in helping Cuttyhunk Island navigate the process of identifying and securing funding grants and low-interest loans, the residents will have safe, clean, potable water, the island can continue to be a popular tourism destination, and its residents can go back to business—and life—as usual.

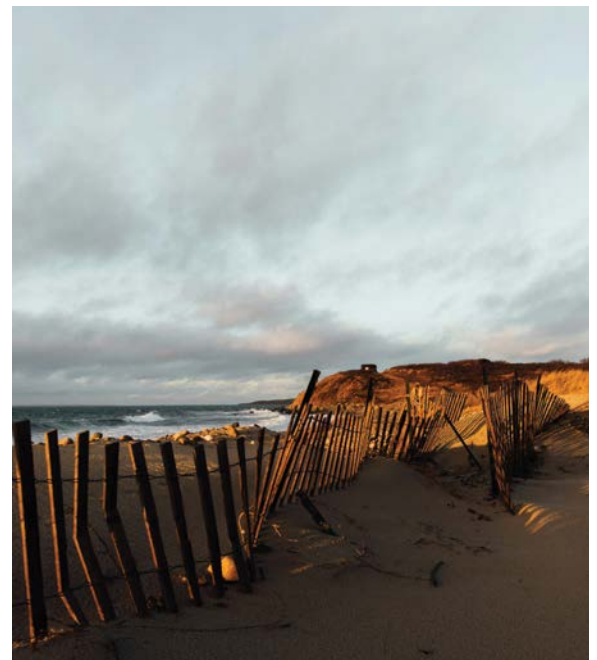
The community is very appreciative of all involved in making this happen. As Selectwoman Berry stated, “I am so impressed and grateful for the guidance and support I received along the way to keep at this project. You gave me the confidence that we could go after this, and your follow-through kept me at it. You were so persistent in pushing us to keep at it, and without the support of RCAP Solutions, this would never have gotten done.”

Meeting Other Needs

In the two years since Gosnold held its groundbreaking ceremony, the community members continue to focus on making significant improvements to their small island town. Most recently, the city identified the need to purchase two new emergency vehicles and is working with RCAP Solutions’ Community Facilities Technical Assistance and Training program to help rural communities access USDA’s Community Facilities Loan and Grant Program, a flexible funding program from USDA’s Office of Rural Development. The program provides grants and low-interest loans to communities with a population of under 20,000 residents to purchase, construct, or improve essential community facilities.

While the town may have a limited number of year-round residents, it is a significant tourist destination and is exceptionally busy during the summer. Older vehicles tend to rust quickly, dealing with the wear and tear caused by the weather and elements of an island town, and the community has seen an increased need for new emergency vehicles.

“This is a bustling place in the summer,” stated Seth Garfield, Town of Gosnold highway supervisor and fire chief. “Because the island is 75% conservation land, we cannot build new homes or expand the tax base, so we must rely heavily on state



and federal funds to help offset the need for new vehicles. We need to have new fire equipment and emergency vehicles.”

Because the Town of Gosnold is a community of several islands, a significant portion of the township’s land is beach sand and, therefore, inaccessible to standard emergency response vehicles such as ambulances and firetrucks. To reach these areas without getting stuck in the sand, the town needs a lightweight four-wheel-drive vehicle. The islands that make up the township are also largely undeveloped, with many areas not accessible via roadways. As a result, emergency response teams need a vehicle that can handle off-road fire suppression and extraction.

The first vehicle is a pickup truck equipped with four-wheel drive capability, which will be used to respond to emergencies on the town’s many beaches. The second vehicle is a Utility Task Vehicle, equipped to accommodate a stretcher and a fire suppression hose, which will be used to respond to health and fire emergencies in locations that cannot be accessed via roadways.

“We’re planning for the next generation of residents on the island and trying to encourage more year-round residents,” commented Garfield. “I don’t expect to be the fire chief forever. We’re trying to train EMTs and a new fire chief. As we pave the way for the next generation, having new equipment is key. These vehicles will help us respond more quickly to an injured person.”



Scan the QR code to see a video RCAP Solutions staff made to promote their work on the project.

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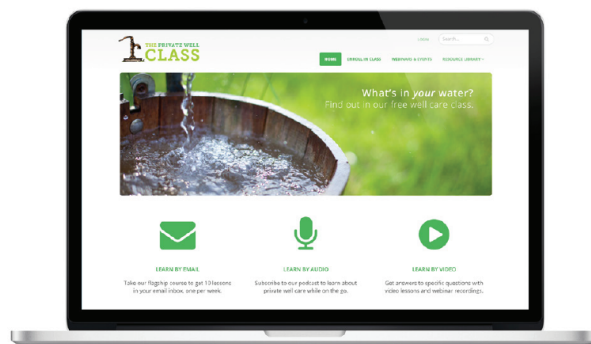
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