

RCAP

RURAL MATTERS

The magazine of the Rural Community Assistance Partnership

the importance of **Wastewater** *maintenance*

A GOOD
WASTEWATER
OPERATOR IS
HARD TO FIND,
RCAP MAKES
A CRITICAL
DIFFERENCE ON
HAWAII'S BIG
ISLAND,
and MORE

BECAUSE OF WATER



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Rural Community Assistance Partnership

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ceo letter

The year is off to a quick start as RCAP prepares for upcoming events and starts work on several programs. Our Agua4All program, in partnership with the Chris Long Foundation and Liquid I.V., has already had two events in Texas and Michigan, bringing clean drinking water to students in schools. We are excited to see the program expand even further during the rest of the year.

I recently joined national staff, program managers, and officials from United States Department of Agriculture (USDA) in Florida to visit Southeast Rural Community Assistance Project (SERCAP) projects centered on solid waste and community facilities. It was truly impressive to see what the RCAP network's collaboration with USDA and state partners has made possible: a wastewater facility that was improved and brought back into compliance to serve a growing community, a thriving rural hospital that is locally run and serves as a critical health driver for the community, and a community that upgraded its police, its public works department, and its pumping station. It was a great reminder of RCAP's deep connection to rural places and tangible evidence of the impact our work has on the quality of life in these areas.

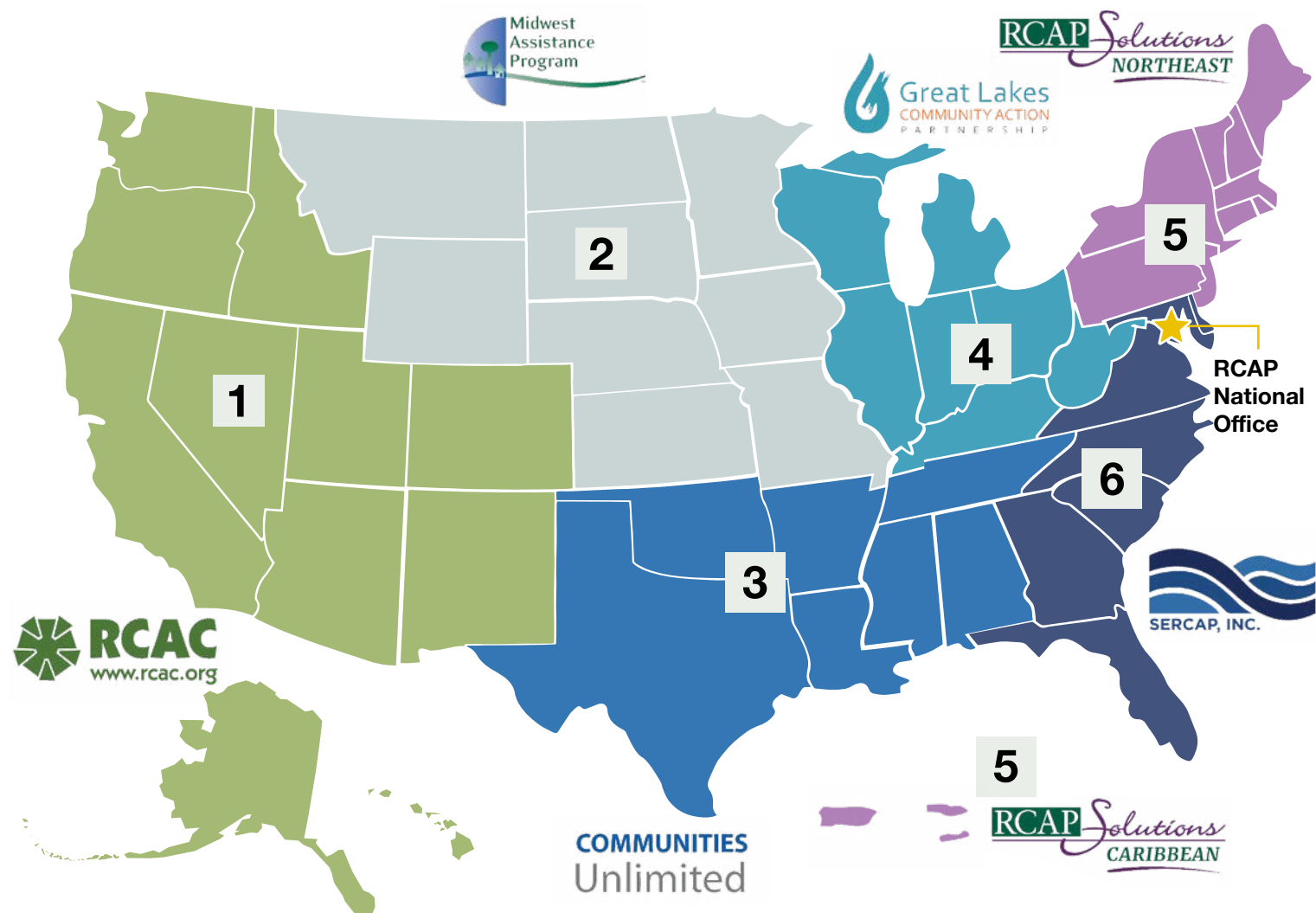
RCAP is preparing to start work as part of Environmental Protection Agency's (EPA) Water Infrastructure Improvements for the Nation (WIIN) program, which designated RCAP as an Environmental Finance Center (EFC). While we await word on our final funding award, we are actively preparing to staff up as we get ready for tracking and managing program deliverables for the National Office and RCAP's regional and external partners, reporting and liaising with RCAP funders, and coordinating and collaborating with the 28 other regional and national EFCs.

The annual RCAP Fly-In, which is critical to our advocacy efforts, took place in Washington D.C., from February 27–March 2, 2023. I always look forward to seeing many of you there as we unite to advocate for rural and Indigenous communities and their water, economic development, and infrastructure needs. Despite President Biden not being available to attend, we had Mitch Landrieu, White House Infrastructure Adviser; Radhika Fox, Assistant Director, EPA Office of Water; and Sen. John Boozman (R-Ark.) join us.

RCAP will also celebrate its 50th birthday this year, which we will commemorate over the next 12 months, and we will encourage our regional partners to do so as well. Stay tuned for more information and how you can get involved.

Thank you for being part of making RCAP's work possible. I am excited to see what we will accomplish this year.

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

Southeast Rural Community Assistance Project (SERCAP)
866.928.3731
sercap.org

WHAT Matters

The majority of public wastewater treatment facilities in the United States are small, serve fewer than 10,000 people, and can treat up to 1 million gallons per day. Many of these systems grapple with low technical, managerial, and financial capacity. This can often lead to compliance issues with the Clean Water Act and can negatively impact public and environmental health. In addition, more than 1 in 5 U.S. households use individual on-site or septic systems to treat their wastewater. When these systems are poorly designed, installed, operated, or maintained, water contamination can occur.

Over the next 18 months, RCAP plans to complete various technical assistance (TA) projects throughout the U.S. and its territories that focus on small publicly-owned wastewater systems and onsite/decentralized wastewater systems to help improve water quality. Additionally, RCAP will conduct virtual and in-person trainings to homeowners, realtors, community leaders/elected officials, planners and environmental health professionals on issues related to onsite/decentralized wastewater system types, cost, operations, and proper management. With the combination of TA and trainings, RCAP hopes to see more communities working their way to well-managed utilities and better access to cleaner water.

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"There is no such thing as a single-issue struggle because we do not live single-issue lives."

Audre Lorde

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RECENT WINS and Happenings

Earlier this year, RCAP was selected to lead an initiative to engage emerging leaders in the water industry at both the staff and governing board/council levels to ensure that the sustainability of rural water and wastewater systems is maintained in the coming decades and that the next generation's leaders across rural America have the skills necessary to be successful. Although rural leaders of all walks of life are welcome, RCAP will work to recruit and empower leaders who are often under-represented in the rural water sector, including women and BIPOC leaders. You can read the full press release by scanning the QR code below.



Advocacy News

RCAP has released its legislative priorities for the 2023 Farm Bill which Congress is working on this year. We ask for Congress and the Biden Administration to prioritize rural development programs and strategies that will increase opportunity for all rural Americans, including those living in underserved areas. You can view our priorities by scanning the QR code below.



RURAL ROUND-UP

Recent wins and happenings



Decentralized Pilots Regional TAPs have been supporting the launch of the Closing the Wastewater Gap Pilot Projects. This is a joint initiative through EPA and USDA that focuses resources on underserved communities with decentralized systems. RCAP and regional partners attended EPA and USDA pilot kickoff meetings in six pilot locations including McDowell County, West Virginia, Lowndes County, Alabama, Halifax County, North Carolina, Harlan County, Kentucky, Bolivar County, Mississippi, and Doña Ana County, New Mexico. TAPs have been working in each pilot community to coordinate with local leaders, regional partners including the National Rural Water Association, and the Environmental Finance Centers. Now that the initial kickoff meetings for each pilot project have been completed, RCAP staff will be engaging communities' stakeholders for additional input, working with local leaders to identify the scopes of the problems and ideas for solutions. TAPs will also engage existing utility leaders to review public health issues and review current assets. Together with their contractor partners, they will generate a project assessment report. Community needs will be detailed through reporting on the data collected, site reviews, TAP findings, and conclusions. Finally, after the needs assessment has been reviewed, a funding solutions plan will be reviewed and then submitted to the EPA.



WEF Train the Trainer RCAP and WEF facilitated a two-day Train the Trainer professional development event for TAPs at The Water Tower in Buford, Georgia. The Water Tower is a new WEF partner and nonprofit water training center focusing on technology, workforce development, research, and community engagement. More than 30 attendees from each RCAP region met to review the newly created WEF wastewater training curriculum. TAPs were able to provide feedback and add key messages that the RCAP team will incorporate into the new training materials. Attendees shared their wants, needs, and ideas for group engagement and activities to benefit the training events. All attendees will have access to the wastewater treatment fundamentals training curriculum and the wastewater treatment fundamentals trainer facilitation toolkits, which include test questions, math solutions, wastewater examples, handouts, PowerPoint slides, and other wastewater materials that they can take back to their communities to provide wastewater training. At The Water Tower, attendees were able to tour the training facility and see what they are doing to provide water and wastewater solutions to utilities. Attendees were also able to tour a state-of-the-art Water Resource Recovery Facility (WRRF) located adjacent to The Water Tower. The Train the Trainer events are a great opportunity for RCAP staff to interact with TAPs and hear what is important to them and what support they need from RCAP to continue to be successful.



TIPS

from a TAP (Technical Assistance Provider)

Elliot Bochstein and Jason Carman, Rural Community Assistance Corporation (RCAC)

In the world of wastewater collections, there are few things more cringe-inducing than the phrase “flushable wipes.” Marketed as a convenient and efficient solution to sensitive tushes and germ-ridden surfaces alike, these fibrous and hard-wearing nonwoven wipes are the bane of rural and urban wastewater treatment facilities. In the thick of the COVID-19 pandemic, consumers have increasingly relied on these faux-flushables to keep their homes, schools, and workplaces clean. This has added to the headaches of system operators around the globe.

Once customers send these deceptively labeled disposables down the tubes, they cause havoc for public utilities’ vital equipment by enmeshing in plant screens and filters, weaving around impellers, or combining with fat, oil, and grease (F.O.G.) to cause pump station clogs and other potentially catastrophic damage. As a result, budgets and labor hours are squandered, reducing systems’ operational efficiency and overall capacity.

In response, utilities have developed countless amusing and creative public information campaigns encouraging customers to think twice before flushing wipes. However, public media campaigns have their inherent limitations, and operators are ultimately responsible for taking the necessary precautions to prevent small obstructions from becoming crusty quagmires or all-out catastrophic events. Learn more about pump maintenance and why to avoid flushing these “flushable” wipes at rcap.org/flushable-wipes-causing-pump-clogs.



Training Calendar



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



We also have webinars in business and financial planning and much more that are designed to support small business entrepreneurs across the country in our Open For Business Hub, powered by the Wells Fargo Open for Business Fund. **Learn more and sign up for an upcoming webinar!**



A Good Wastewater Operator is Hard to Find

But Summerset, South Dakota, found one.

James Jones, Sr., Training & Technical Services Specialist, Rural Community Assistance Partnership



Superintendent Ambrose displaying the SBR greenhouse and solids load-out area.

At the wastewater treatment plant in Summerset, South Dakota, Jonathan Ambrose's commitment to the wastewater process has made all the difference in delivering steady, predictable performance. Since taking over as plant superintendent in 2014, he and his plant have performed exceptionally.

Ambrose relocated his family to the Black Hills to take the Summerset superintendent position after operating the wastewater system in Jefferson, South Dakota. Before that, he had been a Black Hawk helicopter maintenance technician in the Army. His operations and maintenance background were put to the test immediately when he started in Summerset in 2014, as the wastewater plant had been in effluent limit violations with the South Dakota Department of Agriculture & Natural Resources (SD DANR) for many years before his arrival. But since May 2014, Summerset has not seen any effluent limit violations. How did he do it? "I just keep an eye on the process and do my daily inspections," he says.

Ambrose is being modest, of course. RCAP has worked with him since 2014. He has a preventative maintenance plan that he follows closely. He runs process control labs each week and

completes much of his required laboratory testing in-house. "Process control is part of my daily maintenance," he says. "You have to look at your system all the time so you know what it is supposed to look like when things are going good, so you can recognize when things are not."

For those who may not know, the City of Summerset is in the northern section of the beautiful Black Hills of South Dakota. Almost equal distance between Rapid City and Sturgis, Summerset is on the Interstate 90 corridor in Meade County.

Summerset is one of the newest cities in South Dakota. This small community was recently organized into a local government, incorporating on June 7, 2005. Since incorporating, it has seen tremendous population growth. The 2020 census had 2,972 people calling Summerset home—a 10-year increase of 64%, which led to a strain on wastewater treatment capacity and required Summerset to expand its wastewater treatment plant.

RCAP started working with Summerset because it is a USDA-Rural Development borrower. RCAP helped create an Emergency Response Plan (ERP) and completed a Vulnerability Assessment (VA)—documents required of all USDA borrowers—of the

wastewater system in their initial scope of work. Those documents were tools that Ambrose could use to help prioritize budget items.

The original wastewater treatment plant was constructed in 2002 by a local land developer and was sold to the city in 2008. Initially the treatment system was made up of a lift station, preliminary treatment removing screenings and grit, a flow meter, two Sequential Batch Reactors (SBRs), two aerobic sludge digesters, and Ultraviolet (UV) disinfection. The SBR process relies on activated sludge to treat wastewater. Since the plant discharges to a Black Hills creek, it has had low Biochemical Oxygen Demand (BOD 10 mg/L) and ammonia nitrogen (NH₃ 1.0 mg/L) limits from the start.

The SBRs are a fill and draw activated sludge system. Wastewater influent is added to a single batch reactor, treated, and then discharged. Equalization, aeration, and clarification all happen in the single tank. Summerset can aerate and treat influent in the first tank while the second tank is settling and discharging.

SBRs are best in systems that have low or intermittent flow conditions. Their advantages include a small footprint, operating flexibility, and capital cost savings. The disadvantages include the need for an operator with a higher level of knowledge and maintenance skills. SBRs have the potential to discharge floating solids, can have foam issues, and, when water temperature drops during cold weather, which happens every year in South Dakota, they have difficulty keeping the biological activity level high enough to meet effluent treatment limits. “Air is the key for operating activated sludge,” Ambrose says. He never makes radical changes to the process, he says—only small process control changes, one at a time, so that he can see the results of one change before changing anything else.

Superintendent Ambrose brought the plant back into compliance shortly after taking the lead in its operation and maintenance. That did not mean that the plant didn’t have areas that needed upgrades. Sludge reed beds were constructed in 2013. Sludge from the aerobic digesters is transferred to the reed beds. Supernatant off the sludge reed bed is returned to the headworks as needed. Periodically, the solids in the reed beds are removed and hauled to the landfill. Without the reed beds, liquid sludge would have to be loaded out of the digestors and hauled in tankers to another location for further biosolids treatment or disposal.

With the growth Summerset has experienced, the plant has been near design capacity since Ambrose started. The past difficulties in meeting SD DANR permit limits required Summerset to address the treatment process. Summerset decided to construct an effluent equalization tank, effluent lift station, and effluent filters and enclose the SBR tanks in a greenhouse glass cover. RCAP assisted in reviewing all the proposed equipment. These upgrades have improved plant performance but did not address the system capacity issues.

Summerset plant capacity was designed for 170,000 gal/day and can support a population of 2,400. In 2020,



SBR tank with center mixer and fine bubble aeration.



Biosolids reed bed.

Summerset had already exceeded its 2028 engineering population estimates and was at plant capacity. Growth in the town would have to be stopped until plant capacity was addressed.

The Summerset wastewater treatment plant placed itself on the South Dakota DANR State Water Plan and shortly after was notified that it had been approved for funding two additional SBR tanks with aerobic digestors. This will increase treatment plant capacity by 50% with the ability to provide treatment for 370,000 gal/day.

RCAP worked with Summerset and a neighboring community to consider wastewater regionalization. A close unsewered community wanted to discuss what regionalizing with Summerset would look like. RCAP worked with both communities to provide details on what this partnership could look like if they worked together. The decision was made by the neighbor that this was not the right time to regionalize but, with an increase in Summerset plant capacity, it may be an option in the future.

Ambrose has been working with HDR Engineering on the design of the plant upgrade. The engineer estimated the project upgrade to cost between \$9.6 million and \$9.9 million—but, as for many projects in these uncertain inflationary times, when project bids were opened, they were surprised to find that bids came in 17% higher than expected. Because the community cannot absorb the 17% increase in expected costs, Ambrose and the engineers must scale back on the project scope. They will no longer include expanding the reed beds and upsizing existing plant aeration blowers, and the new larger backup power generator will no longer be a part of this project upgrade. They recognize removing these items from the current project does not mean the items are not needed; they will just have to be delayed a few years so growth can continue and wastewater revenue can increase so those upgrades can be paid for.

Construction of the plant upgrade will start soon. The city received \$3,596,279 in American Rescue Plan Act (ARPA) grant dollars and will receive the balance of the project cost in low-interest loans from the Clean Water State Revolving Fund. Local developers are eager for the plant capacity to be increased: Summerset expects 1,200 to 3,000 new homes to be built shortly after the wastewater upgrade is completed. This growth will increase the need for Superintendent Ambrose and his ability to ensure that Summerset's wastewater treatment plant will continue to perform exceptionally.

Summerset received a \$5,923,042 Clean Water State Revolving Fund loan and a \$3,596,279 ARPA grant to double capacity of the existing wastewater treatment plant by expanding the capacity of the sequencing batch reactor process, aerobic digesters, blowers, and reed beds. The loan terms are 2.125% interest for 30 years.



Effluent and UV house and EQ tank and effluent filter building.



Effluent disk filter.





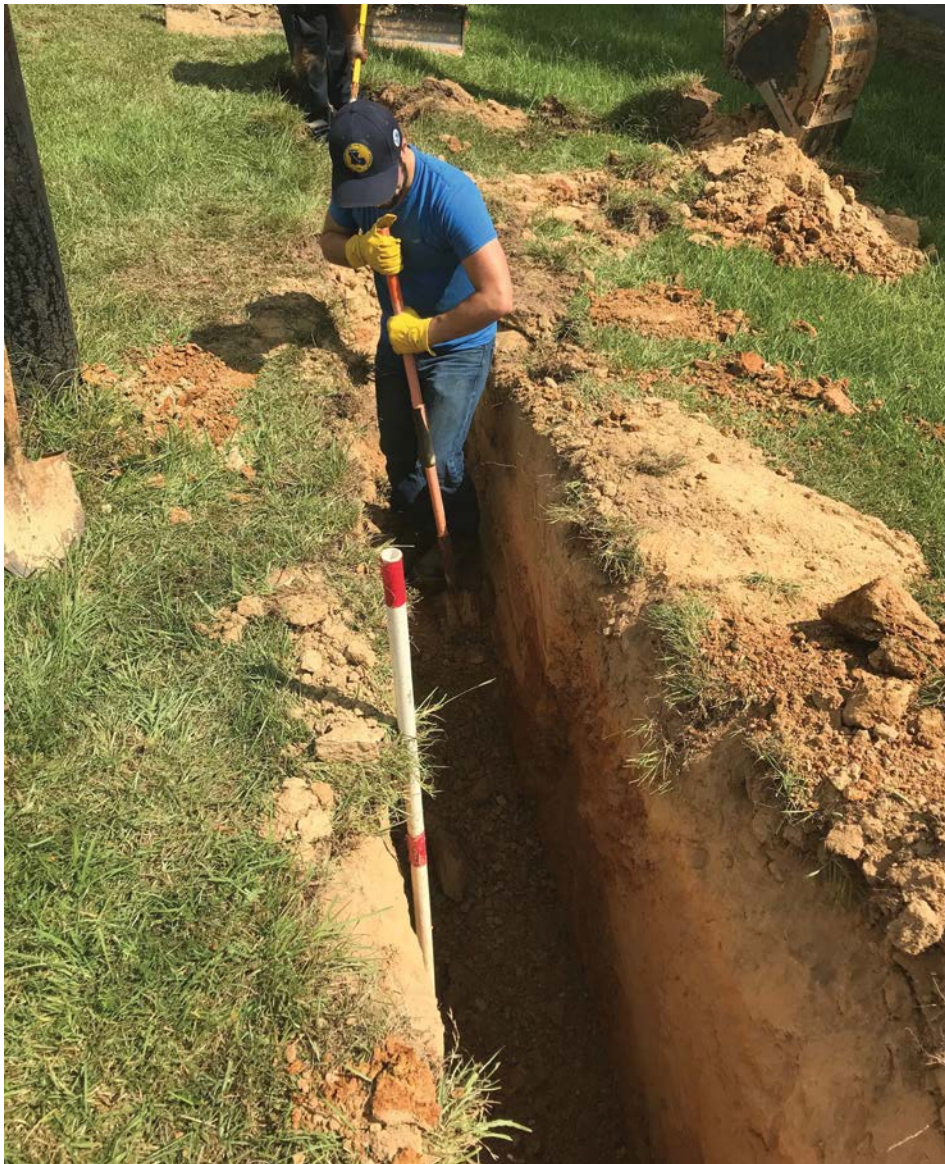
A Customer's Guide to the Wastewater System

A little awareness can help keep the system running smoothly and rate increases reasonable.

Gaylene Riley, Oklahoma State Coordinator, Communities Unlimited, Atoka, Oklahoma

Being a customer of a wastewater system comes with both benefits and responsibilities. Some of the benefits include:

- You do not have to keep a chamber pot under your bed.
- You do not have to use an outhouse.
- You do not have to spend thousands of dollars at one time to install individual wastewater collection and treatment such as a septic or aerobic system.



For those who may question the first two solutions to the wastewater problem, they were once very common means of relieving oneself, and both resulted in contamination of the environment and the spread of disease. Many unserved communities across the U.S. still do not have indoor plumbing, and outhouses can still be found in some rural communities that don't have access to onsite systems. The third solution is still used widely in small communities and rural areas. When properly installed and maintained, these systems provide adequate waste treatment—although many times they are not properly installed or maintained, which leads to public and environmental health concerns.

The responsibilities of belonging to a municipal wastewater collection and treatment system include:

- **Paying your bill on time so that the system can afford to be operated and maintained.**
- **Maintaining your sewer cleanout by keeping the lid on and free of damage and not creating a connection between the sewer cleanout and your guttering downspout.**
- **Only flushing items that can safely be flushed—"flushable" wipes are not in fact flushable.**

While customers may realize the value of the drinking water system that brings much-needed water into their homes, no one wants to think about what goes out and, for that reason, many people are not aware of what is involved in keeping a wastewater system flowing smoothly. A municipal sewer system consists of many miles of wastewater collection line, maintenance holes, lift stations, and a treatment facility. Many customers are unaware of the importance of the wastewater collection system until there is a sanitary sewer overflow, a bypass, or a backup of sewage into their homes. While customers are usually willing to pay their water bills, they're often unaware that it typically includes charges for treating their wastewater. The system relies on the revenues collected from all customers to pay the salaries of the employees who operate the system, purchase supplies, meet any debt repayment requirements, and save toward future replacement costs of lines, pumps, and other equipment.

Just because something can be flushed does not mean it should be. In systems across the country, countless hours are being spent clearing clogs caused by flushable wipes, which equates to millions of dollars in increased operational costs. Disposing of food through the garbage disposal, down the drain, or toilet increases the organic load on the treatment facility, increasing expenses. Pouring fats, oils, and grease (FOG) down the drain also increases the likelihood of clogged lines, causing sewage backups and increasing required operation and maintenance work. Being a good customer includes paying your bill on time, educating yourself about the system that serves you, and remembering the three Ps of flushing: pee, poop, and paper. Do not flush food, scraps, grease, feminine products, or flushable wipes.

The hot water running in the kitchen sink may clear the line from your house of any grease poured down the drain but, eventually, it cools off and leads to the blocking of a line. Fats and grease are hazardous and damaging to sewer collection lines, including those that you have to maintain yourself, such as from the system's mainline to your home. If the clog forms in the line between your home and the wastewater collection system mainline, you will be responsible for the cost to remove the clog—sewer jetting

equipment can be expensive, and the cost of water used to clear the lines also must be considered. A sewer cleanout placed on your service line enables a plumber to clear any clogs between the system's mainline and your house but, while tying your guttering system downspout into the sewer cleanout may alleviate drainage problems in your yard, it may cause the system to have to increase rates for the cost of enlarging the treatment facilities to treat rainwater.

Following these rules does not mean your rates will never increase, but it will keep costs down and help keep those increases reasonable and affordable. If possible, find out who manages and makes decisions about your wastewater system. Attend public meetings, listen to what is being planned, reports on the finances, and where the system stands with the state agency that oversees compliance with water quality standards. If the financial statements show large cash balances in the bank, it does not mean a rate adjustment will not be needed. Ask questions about what is planned for those reserves and why an increase in rates is required.

Consider what is covered by the bill you pay: salaries for operators who keep the system operating properly and in compliance and to office staff who handle the billing and collection of payments; utilities for pumping sewage from lift stations to treatment facilities; insurance coverage; maintenance and repairs; supplies; vehicle expenses; professional fees; and debt repayments. In addition to the costs of operating and maintaining the system and repaying any debt obligations, every system must consider replacing all of the parts that wear out over time. If rates are not reviewed for performance each year, then the amount charged for service may begin to fall short of that need. An annual increase tied to the Consumer Price Index at the very least is needed to ensure that rates keep up with inflation.

An asset management plan and a long-range replacement budget are necessary to plan for the costs of replacing pumps, motors, and other essential components of the system as the life of those assets draws to a close. An increase in salaries and benefits must also be considered to recruit quality employees and retain trained and competent staff. Over time, these salary increases may be less costly to the system than turnover and training costs. Everyone



wants their rate to remain low, and a system should be operated efficiently and with little waste. However, making the budget work without a needed rate increase reduces the cash reserves available to fund emergency repairs or match grant funds for needed projects, and it puts the ability to provide service at risk.

Consider the value of the service that is provided to you. We all want to flush our toilets, feel confident that things will work as they should, and know that our environment is protected from contamination. Improperly treated wastewater can harm the environment and put the health of the public at risk. Many waterborne diseases, such as typhoid and cholera, have been eradicated through the installation of public wastewater treatment facilities. The operators of these systems are public health officials and work diligently to ensure that your health is protected.

Wastewater system customers may be unaware of all that is involved in operating a system properly and continuing to provide affordable service for many years to come. Many small, rural systems across the nation have kept rates artificially low without planning for the future impact on their customers and the system nearing the end of its life span. Municipalities and sewer boards face difficult decisions about rate increases, and those who have been applauded for keeping the rates low in the past may be looked at in a whole new light.



RCAP Makes a Critical Difference on Hawaii's Big Island

A small nearshore community gets help navigating the process to a wastewater solution.

Elliott Bochstein, Staff Writer, Rural Community Assistance Corporation (RCAC)

Kawaihae Village is a small hillside community in Kawaihae, an unincorporated town at the base of Mauna Kea and the Kohala Mountains on the west side of Hawaii's Big Island. The village is a planned unit development (PUD) surrounded by breathtaking ocean views that was originally built in the early 1970s for workers at the nearby Mauna Kea Beach Hotel. A 15-minute drive inland will take you to Waimea, known locally as Kamuela, which offers shopping, dining, and entertainment options.

Kawaihae Village comprises 25 single-family homes, 26 duplexes, and 16 apartments. Residents range from first-generation homeowners, including some still employed in the local hospitality industry, to so-called snowbirds from the mainland who reside in the village part-time. The community and the island itself have seen a rise in vacation homes and a spike in property values. While income levels at Kawaihae Village differ, the median household income (MHI) of \$42,600 remains well below the state and national averages. The development lacks an independent water treatment and distribution system and, instead, resells County of Hawaii drinking water.

The village has two all-volunteer, nonprofit homeowners' associations that have traditionally addressed community concerns in a relatively informal, ad hoc fashion. The Kawaihae Village Association (KVA) is the village's main homeowners' association, and the Kawaihae Village Sewage Treatment Association (KVSTA) manages its wastewater treatment plant. The facility was built in 1972 and contains an underground injection control well and a backup well at a depth of approximately 55 feet.

About 12 years ago, the original wastewater treatment plant failed, and community members replaced it. Whenever the system experienced problems, KVSTA would make the basic repairs to meet Hawaii Department of Health (DOH) requirements. Eventually, however, some critical issues emerged, particularly regarding sludge disposal. The situation reached a breaking point in 2018, when the DOH Wastewater Branch notified the association that an underground injection well was in violation of new federal regulations. The village leadership realized that past quick



fixes would no longer suffice and that the wells had to be decommissioned and replaced at considerable cost.

Leaders explained in a letter to the Rural Community Assistance Partnership (RCAP):

“As water and wastewater systems age out, we are mandated to replace these systems with new, clean technology that will last to serve our grandchildren. Our hearts want to protect the environment, but we lack the dollars to even begin sustainable projects of the highest quality. Logistically, technologically, and financially, we do not even know where to begin.”

— KVSTA'S THEN-PRESIDENT KESAIA HAYWARD

Desperate to find some solution, the community resolved to find an outside funding source. Following a thorough search, KVSTA approached the U.S. Department of Agriculture–Rural Development (USDA–RD) for assistance in revamping its waste infrastructure. It quickly became apparent to KVSTA that receiving aid for the ailing system wasn't as straightforward as submitting a request and receiving it immediately; the all-volunteer board simply lacked the capacity to tackle the first steps. RD recommended that KVSTA reach out to the Rural Community Assistance Corporation (RCAC) for technical assistance.

RCAC contacted the community right away and began what would eventually become a multi-year project involving several TAPs. The RCAP USDA Technical Assistance and Training grant, which is funded by USDA's Rural Utilities Service (RUS), made this work possible.

The very first step was completing a median household income (MHI) survey. In collaboration with the homeowners' associations, RCAC conducted outreach and held public meetings to inform residents about the need for cooperation when TAPs came knocking. The next step was to conduct a Preliminary Engineering Report (PER) and an Environmental Report (ER), two important components required to access USDA funds. To complete these essential pre-development feasibility studies, the cash-strapped community required a Special Evaluation Assistance for Rural Communities and Households (SEARCH) Grant. While these processes were underway, the COVID-19 pandemic emerged and threw a wrench into what was already a complicated project. The community suspended all in-person meetings and shifted to online community meetings. A few of the board members lacked the computer skills and the experience needed to facilitate virtual meetings, and the board president even enlisted her granddaughter to help with basic computer tasks. RCAC stepped in and helped the village adjust to the new normal.

"The pandemic sidetracked things and regulators were still sending letters, so it was a stressful time," says Nicholas Goc, a current KVSTA board member who played an instrumental role in obtaining the USDA funding. "The silver lining was that RCAC set up all our internet meetings and hosted them for us. We didn't have subscriptions to services like Zoom, so it was great for RCAC to share its resources."

After a long waiting period, the community received the \$30,000 planning grant to complete the Preliminary Engineering Report and Environmental Report. The TAPs then began working with the community, particularly with Haywood and Goc, to prepare the Request for Proposals for the PER/ER. Only two local engineering firms ultimately submitted bids. Even after the reports were completed, RCAC had to rewrite most of them in order to meet USDA's stringent



requirements. For this project, Barry Pollock, a veteran engineer and Rural Development Specialist (RDS) at RCAC, worked closely with Goc. "This had become just the mother of all projects," Pollock explained. "The PER/ER should have taken three to six months, but it took almost a year just to get the PER done."

Add to that the local concerns about cesspools for wastewater, which can impact nearshore waters and coral reefs, he adds. "It's a very public process where you have to consult all the stakeholders—The Nature Conservancy, Surfriders, Green Peace, local communities, historical preservation and coastal zone management groups, and so on. There was much more scrutiny because Kawaihae Village isn't far from the water."

Although completing and submitting the PER/ER took considerable time, it was essential to estimate the project's cost and explore alternative disposal methods. Meanwhile, RCAC TAP Susan Jamerson gathered financial data from KVSTA's contract bookkeeper and helped negotiate an extension to the contract with its licensed operator. She also was able to help the community set aside some village reserve funds. Despite having to dip into its own reserves to cover up-front expenses, it finally felt like the community was making real progress. "[RCAC was] available to mentor each of us as we worked on this project and grant and watched over us in terms of our vendors and applicants with their superior knowledge and financial motivation," Hayward wrote. After Jamerson guided the community through the application process, it finally submitted the application on March 4, 2022. Within just a few weeks, the community celebrated great news: USDA-RD awarded the village \$818,000 in grant funds, its highest-level grant. A low-interest, 1.25%, 40-year loan of \$241,000 accompanied the grant. RD also credited the village for the \$30,000 SEARCH Grant spent during the pre-planning process.

RCAC continues to work with KVSTA to enhance its managerial and financial capacity so that it can oversee the project until completion. A truly redundant wastewater system and modern leach field will soon be constructed to dispose of sewage sludge in an environmentally safe manner that will serve Kawaihae Village residents for generations to come. "RCAC is not a luxury for communities such as ours—it is vital," wrote Hayward. "It is impossible to thank RCAC enough for their help, or to state how important this organization is."

A Long-term Partnership



Check out our video.

RCAP Solutions has supported wastewater and drinking water efforts in the Broad Top region of Pennsylvania for over 30 years.

Sukhwinder Singh, Pennsylvania State Manager, RCAP Solutions

Broad Top Township is located in rural northern Bedford County, Pennsylvania. Much of the township has a rugged topography, befitting its location in the Appalachian Mountains. According to the 2020 Census, the current population is 1483. For many decades, the area thrived thanks to the coal mining industry—with mining on the “Broad Top”—which still exists in limited form today. The township is now primarily a bedroom community for larger, local municipalities and has a high percentage of retirees. It is also the site of a regional landfill serving multiple counties.

The disposal of wastewater is difficult throughout the mountainous regions of Pennsylvania. Severe slopes and thin soils limit the options for traditional treatment. Prior to current environmental regulations, it was common for wastewater to be discharged directly to local streams, with no management. This was the situation faced by the Broad Top Township supervisors in the 1980s.

Later on, with RCAP Solutions’ technical assistance, the township took a bold and innovative approach to solve its sewage treatment problems by utilizing both centralized and decentralized wastewater treatment approaches. Working in partnership with RCAP Solutions technical assistance providers, the township prepared a Request for Proposals (RFP) for Professional Engineering Services for an Act 537 Sewage Facilities Plan to address sewage planning and wastewater project development on a township-wide basis. The final plan had features that were—and perhaps still are—unique in the Commonwealth of Pennsylvania, even after 30 years. The central theme was that residents who became connected to conventional treatment facilities, along with those who allowed the township to own and operate on-lot systems on private properties, would all be charged an equal monthly “sewage bill.” After receiving significant grant funding at the federal level, the township-wide system began operation in the 1990s. The initial monthly fee of \$10 has slowly increased and is still only \$25/month. There are currently 27 small flow treatment facilities and 50 sand mounds serving 98 residences, along with a larger centralized wastewater facility.

Over the past 35 years, RCAP Solutions technical assistance providers have served the township with compliance based technical assistance. Additionally, they have provided guidance to the Defiance Water Company and the Coaldale Area Water Company which has a customer base in the Broad Top. Some of this technical assistance has involved data collection of the drinking water and wastewater assets in the region to assist with an accurate map. In 2020, the Broad Top Township supervisors approached RCAP Solutions about locating and mapping the wastewater components: manholes, septic systems and the small flow treatment systems for future employees of the system who may not possess the same knowledge as the current staff and leadership within the Township. While much of the field data collection is completed (well over 1,000 data points), RCAP Solutions technical assistance providers are still checking and verifying assets with the Township in order to complete digital and paper maps.

In late summer of 2022, an HHS film crew visited the Broad Top Township in order to tell the story of this remarkable community and its local leaders. When this video is released by HHS, RCAP Solutions will share it with the public and this article will be updated. The impacts of the RCAP technical assistance in Broad Top Township are significant and far-reaching. Most importantly the wastewater facilities are in full compliance with the provisions of the Clean Water Act and the Pennsylvania Clean



Streams Law. Secondly, the update and conversion of the region’s physical maps to digital will mean that future operators and leaders working within the community can update records in real time. This will help improve overall project management and enhance regional solutions within this isolated area. Significant future regional wastewater and drinking water projects are planned for Broad Top Township as are additional acid mine drainage remediation projects. The overall impact is that a region with a long history of coal mining has taken significant steps to clean up the environment, and for this, the Broad Top Township Supervisors and staff should be commended.

“We value the partnership that has been forged between Bedford County and RCAP,” says County Planning Director Donald Schwartz. “The relationship goes back for more than three decades, and RCAP has always been there for us, in numerous municipalities. Our rural townships and boroughs appreciate everything that RCAP has done to keep their drinking water and wastewater systems safe and financially viable. I can’t think of a better investment of federal tax dollars in our county.”

This article is dedicated to the early leaders in Broad Top Township who forged ahead with a bold wastewater plan—Jack Decker, Bernard Hoffnar, Ernest Fuller, Dave Thomas, and Donald Hedge—and all the men and women who have served the Broad Top region. Thank you for your efforts to clean and improve the water and land of Broad Top! To all the current staff of Broad Top Township, thank you for your considerable efforts to introduce senior housing to the area, to solve Abandoned Mine Drainage (AMD) issues, and to extend utility services to neighboring communities.



Wastewater Infrastructure Maintenance

Prolong your system's life and prevent problems before they start with these tips and best practices.

Brett Brehm, Project Manager/Technical Assistance Provider,
Midwest Assistance Program (MAP)

Does your municipality or governing agency proactively clean and televise your wastewater infrastructure? Have you established a service agreement for cleaning and televising to budget for this expense? Was there a wastewater project completed recently that you had televised to ensure proper installation?

There is a famous saying, “Out of sight, out of mind,” and underground infrastructure is often neglected until there is an issue such as a sewer back-up.

I started working for a municipality in 2013 to help with its water and sewer infrastructure. The city supported cleaning and televising its collection system infrastructure, which was completed in 2016. While doing this work, we found three deficiencies where the residential water lines were directionally bored through the sewer main. The city had been unaware of these deficiencies and repaired them immediately. The water lines that had damage from directional boring had been installed way back in 2007—highlighting the importance of regularly televising local infrastructure.

This and other often-neglected best practices outlined below can gain you significant control and peace of mind with regard to the components of your system.

Collection system

When looking to hire a company to complete jetting or televising, these points should be considered:

- Size of equipment and location of manhole or cleanouts
- Cleaning Service Agreement to help with budgeting
- Type of televising equipment
- Televising to National Association of Sewer Service Companies (NASSCO) standard
- Additional options like 4K video, laser profiling, elevation documented

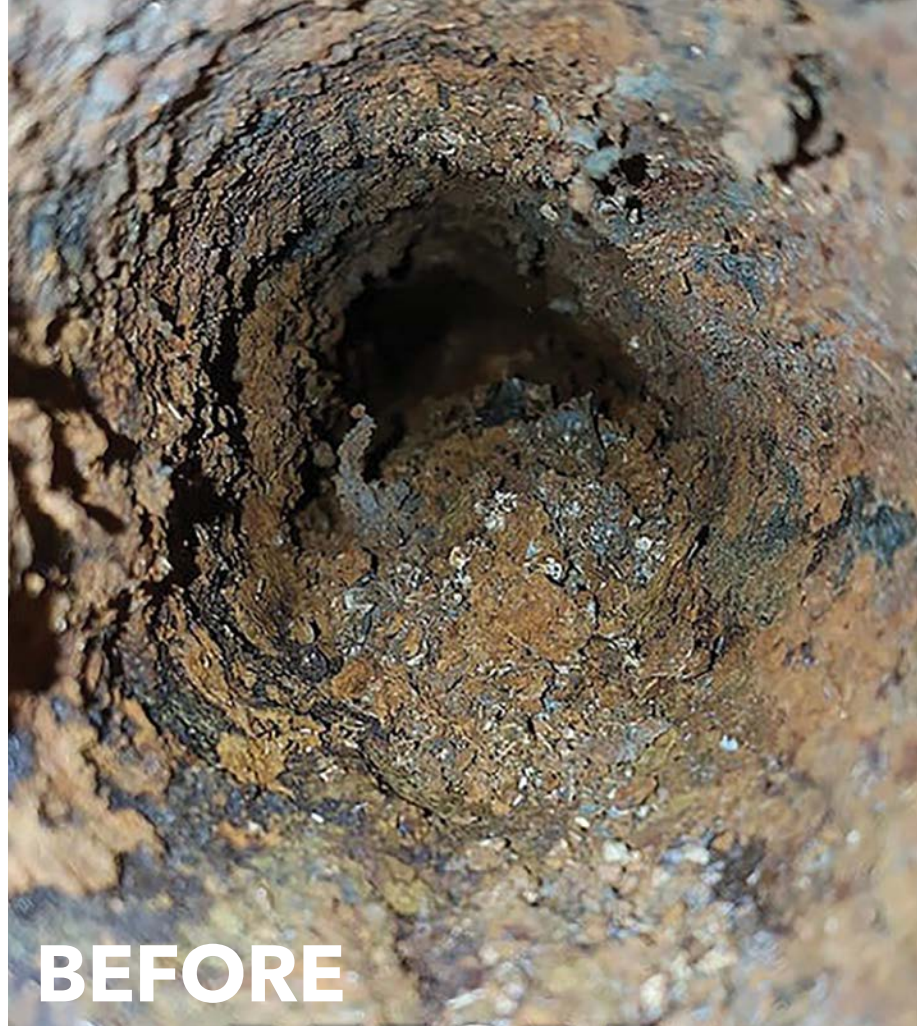
Some companies offer service agreements, which can be helpful for budgeting. It is recommended to check with your utility insurance company, because certain companies give reductions if the scheduled cleaning covers all collection system infrastructure in three to five years.

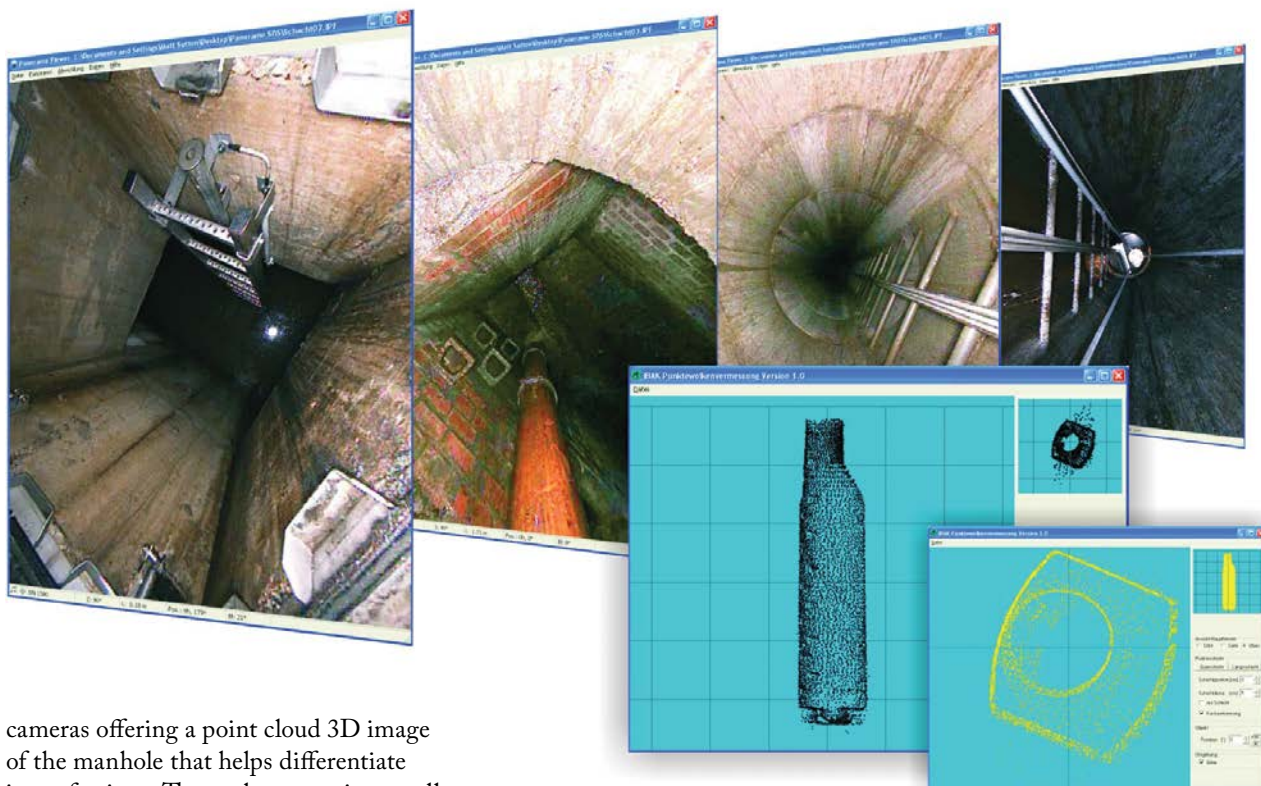
When it comes to coding sewer pipe, you should find a company that is NASSCO certified. This coding of pipe is the national standard, and contractors must get certified to complete it. NASSCO has three licenses: PACP, or Pipeline Assessment Certification Program; LACP, or Lateral Assessment Certification Program; and MACP, or Manhole Assessment Certification Program. These certified contractors will ensure all sags, breaks, defects, joint separation, egg-shaped pipe, service taps, infiltration, and roots are coded to the national standard. Having the collection system piping coded allows the utility to prioritize repairs and replacements. There are companies that offer televising that do not code pipe, so be sure to ask for the contractor's certifications. A DVD or jump drive can also be supplied to clients only wanting to view video of the work.

What about using Geographic Information Systems (GIS) in your collection system? The benefit of having your infrastructure mapped via GIS is being able to attach your cleaning and televising reports along with documenting repairs on each section of pipe or structure. GIS is also a fantastic way to incorporate asset management. Each asset in the collection system is given a unique asset number and GIS data point. The condition of each asset can be documented and tracked over the life cycle of the asset, and that will help with replacement, capital, and budget planning over time.

Consider the locations of your sewer lines and whether a company has equipment small enough to reach these locations. A good jetting company will clean every manhole as it works downstream to ensure the shelf of the manhole structure is cleaned. A good jetting company will also make multiple passes to ensure all debris and material are removed from the sewer line. While the jetting company completes tasks, be sure it does not bypass or shoot through manholes, which does not always clean the shelf of the manhole.

The company that you hire should also have appropriate equipment for televising your infrastructure. There are many types of sewer cameras. The mainline cameras have multiple uses such as storm sewer, drain tile, and sewer pipe. These cameras can come with tracks, numerous size tires, and elevators to center the camera in pipe and complete laser profiling. The lateral camera has two cameras on the front of the tractor with one camera that can be articulated to feed up service laterals from the mainline. The manhole camera comes in several variations from 4K panorama to live feed, with some





cameras offering a point cloud 3D image of the manhole that helps differentiate imperfections. The push camera is a small, compact, stand-alone camera system used to televise service lines from residences or cleanouts. Push cameras are purchased by municipalities frequently due to their lower price point and compact size.

Lift stations and pumps

Lift station cleaning is important to remove all sediment and debris from the bottom of the structure, which can include sand, rocks, grease, toys, and flushable wipes. It is important to ask the jetting company how they clean lift stations. Some will only scrape the grease off the walls. Others will pressure wash the complete structure, while others still will only vacuum the bottom of the container. Lift stations that have grease issues should have grease removed during the lift station cleaning, which will improve the life expectancy of pumps. During my long public works career, I have collaborated with multiple communities that have proactively cleaned their lift stations and maintained their pumps yearly. This is akin to cheap insurance, considering the fact that, if a lift station fails and a sewer backup occurs, it would cost significantly more. I would recommend getting a service agreement to have your



lift station pumps pulled yearly and inspected to ensure that they operate properly and that tolerances are met, to prolong your pumps' life expectancy. Items a pump company should inspect are proper operation of float switches, amp draw, ohm draw, voltage check, impeller check, wear plate, meg motor windings, proper sealing with no water in housing, oil-coolant level, power cord, guide rails, base elbow, proper seating of pump, and that ID card information is documented.

You should check your lift stations daily for proper operation. When checking your lift station, make sure that no warning lights are lit and that warning lights work properly, along with documenting the run times of your pumps. Listen to your pumps operate—they should run smoothly and not sound like rocks are passing through them, which could be a sign of pump cavitation. Knowing what your typical pump run times are will forewarn you of issues such as bad floats, severe inflow and infiltration from a rain event, or a pump issue. If you rely on a single light bulb to warn you about issues, what happens if the bulb is broken and you only check your lift station once per week? Having a dialer or alternative alarm such as a siren to notify the public will help decrease the chance of a sewer backup.

Reading your wastewater permit can tell you how often to complete a pump draw down test. The advantage of doing two pump calibrations per year is that you know how efficient the pumps are. This provides an accurate reporting on Discharge Monitoring Reports (DMR). Some agencies require pump draw down tests once a year, while others require them several times a year. The life expectancy of most lift station pumps is 12 to 15 years and, if your pumps are at the end-of-life stage, you should ensure that there is budget to replace them. It is not recommended to buy a pump and let it sit, since the seals will dry up and cause pump failure. Verify with your pump supplier prior to making a purchase if you plan to put a back-up pump in storage.

Generator and pressure testing

Do you have a generator for power outages—and when was the last time you used your generator? Did you put a load-draw on it to ensure proper operation? A generator is frequently forgotten until the power goes out. It is a good practice to run your generator monthly to ensure proper operation. It is also recommended to check that your generator is full of fuel or that the propane tank is full if you have a stationary generator. Having a stationary generator is a great asset for power outages, but make sure that, when you do lift station checks, you also verify the generator has been operating when scheduled and that there are no issues.

If your community recently completed a large wastewater infrastructure project, is it required to have your system pressure tested? Pressure testing is an effective way to ensure that there are no leaks with your new system.



I would recommend getting a service agreement to have your lift station pumps pulled yearly and inspected to ensure that they operate properly and that tolerances are met, to prolong your pumps' life expectancy.

Sewer pipe needs to have proper grade for flow characteristics, and having your sewer pipe televised will verify there are no sags, improper connections, or joint separation as well as proper service line orientation and manhole installation. Spending money to have your infrastructure televised after completion is cheap insurance, for this infrastructure will have to provide service for potentially the next 40 to 50 years or more. Televising infrastructure immediately upon completion of the project will ensure all material has been installed properly.

Having a plan to clean a certain percentage of your collection system infrastructure each year will enable you to budget yearly. Sewer infrastructure has a life expectancy; it would be wise to complete an asset management plan if you do not currently have one. This plan will help you with budgeting and creating a timeline to prepare for future expenses.



Country Glen Development and the Nonprofit Solution

The beginnings of a way through legacy septic system problems in Delaware.

Jean Holloway, Western Maryland State Manager, Southeast Rural Community Assistance Project (SERCAP)

In 2015, a group of interested parties from a wide range of disciplines and businesses met periodically for more than a year to discuss an ongoing problem in the State of Delaware. This study group, formed at the behest of the United States Department of Agriculture (USDA) director for Maryland and Delaware, tried to identify options for small, decentralized wastewater systems that were owned by private homeowners' and property owners' associations (HOA's and POA's).

The HOAs and POAs had been left with the responsibility for what were, in essence, giant septic systems by the developers of their neighborhoods. Instead of centralized treatment systems fed by collection systems, the homes had either individual septic tanks or a tank for every two homes that were then piped to a central drainfield for disposal of the effluent. In this way, a developer could get more saleable lots from a piece of property, because each lot needn't have the space required for an individual drainfield or mound system. This was a fairly common practice 20 or more years ago, but is no longer allowed under state regulations.

The problems arose when the systems began to age and the HOAs' revenues were lagging behind the cost of upgrades and replacement. Coupled with the HOAs'

lack of knowledge or expertise in operating, maintaining, and managing a wastewater utility, the systems began to fail.

At least one such system was in danger of condemnation by the state for being out of compliance and severely in arrears on its State Revolving Fund (SRF) loan repayments. Condemnation would have meant relocation for its residents, most of whom were retired or otherwise of low to moderate income, significantly less than the state Median Household Income (MHI). As a private system, it was not eligible for most grants to upgrade, and borrowing more was not feasible if it couldn't pay back what was already outstanding. A takeover by a for-profit company was equally infeasible, because reinvestment in the system would make user rates unaffordable.

This untenable situation brought the study group together.

Clean Water Solutions

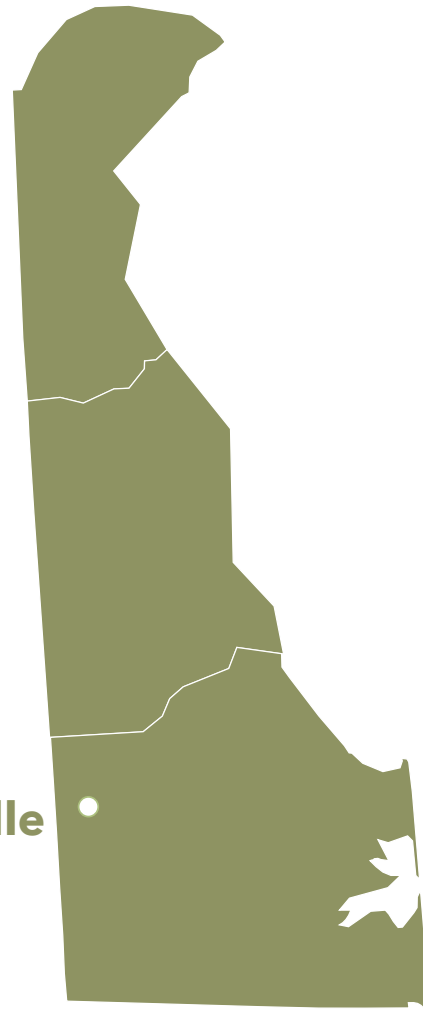
The work group decided that the problem could be solved by a nonprofit owner that would be eligible for grants. Through USDA, the group issued a Request for Interest (RFI) to a number of nonprofits, and three responded, including SERCAP. Once the responses were evaluated, the work group decided that no single nonprofit had the means to do all that they envisioned, so they asked the three to work together—thereby creating Clean Water Solutions (CWS).

CWS was comprised of EDEN Delmarva, a small nonprofit environmental group, as the fundraiser and financial manager; Diamond State Sustainability Corporation (DSSC) as the utility operations arm and eventual owner of the systems; and SERCAP's Delaware office as the community liaison and technical assistance provider.

The three collaborators began working together in the summer of 2016 and filed the first application with the Public Service Commission (PSC) to take over a small, 37-home wastewater system in June 2017.

Funding for CWS was initially provided by Discover Bank as the principal funder of EDEN Delmarva. Of the initial eight utilities targeted for takeover, CWS identified four for an initial pilot project. Private funding in addition to Discover Bank came from the Delaware Community Foundation, a Business Development Grant, and a SEARCH Grant for preliminary engineering evaluations that came from USDA.

Bridgeville



The plan was to set up a Citizens Advisory Group made up of representatives from each system and to provide financial “literacy” training to understand the new utility and its billing. An application was sent to PNC Bank to fund a series of workshops to help customers know what to expect. A number of Letters of Inquiry were submitted to a wide range of private foundations to help with the start-up costs for the utilities, each of which could have cost up to \$30,000 in legal, engineering, and PSC filings.

A plan of action

It has been estimated that there are as many as 80 decentralized systems in Delaware alone. So far, 29 have been identified as potentially “troubled” in either compliance or financial terms. The plan was to take over the first four systems by early 2018, then select four more once those were operating sustainably. All of this was done in about 18 months and with each collaborating organization contributing its staff and travel time without reimbursement. Eventually staff would have to be hired, but for 2017 and into 2018, the three organizations provided services on an in-kind basis in an effort to keep the eventual user rates as low as possible.

A certificate of public convenience and necessity (CPCN) was approved for Country Glen, just outside Bridgeville, Delaware, in 2018, making it Delaware's first nonprofit private wastewater utility. In June 2019, the HOA land and system was officially transferred to Diamond State Sustainability Corporation (DSSC), the operational nonprofit.

Two other systems, Sandy Ridge and Grants Way, followed soon after. Country Glen, however, was somewhat unique.

First up: Country Glen

Country Glen had been developed in two phases by the original developer, who by now had gone out of business and essentially disappeared. The first phase, called “the front half”

by residents, contained lots with individual on-site septic systems. The “back half” of about 37 lots had on-site septic tanks that discharged to a central drain field of what had been three platted lots. The front half residents paid \$200 each year in HOA dues. The back half residents paid an additional \$400 to fund operations of the central drain field. The problem was that only about half of the 37 “back half” lot owners paid their annual dues, leaving the HOA Board concerned about eventually running out of money. As a result of the lower cash flow, roads were deteriorating and residents began complaining about potholes and drainage—all tied indirectly to the septic system and the need to funnel precious funds into its operation.

Despite these concerns, the Country Glen system was well-maintained, due to the diligence of the volunteers, and was financially sound, even though not sustainably so. The CWS partners decided it was the ideal candidate for the first acquisition, since it had the fewest operational problems and could be run immediately without the need for a host of capital improvements. At the opposite end of the spectrum was the fourth pilot community, Morningside Village, where the system had serious operational deficiencies and was facing potential condemnation. Because it was critical to show that the CWS effort could be successful, it was decided to start with the system that had the fewest problems.

In June 2019, the HOA signed the necessary deed and system transfer papers with much relief. The volunteer board, most of whom worked full-time, knew that the transfer not only lifted a burden from them but alleviated a drain on their time. The signing was accompanied by corks popping on champagne, with ginger ale for the teetotalers. DSSC began operating all three assumed systems and billing directly to the owners or residents, using a contract operator and third-party billing business. The only staff hired was a part-time customer service representative who fields calls and dispatches either the contract operator or the third-party biller.

Whoops—no by-laws

With Country Glen completed, SERCAP closed out the project in early 2020. Then in the fall of 2021, the board contacted SERCAP again for assistance—this time with writing new by-laws. The HOA



discovered that by-laws had never been recorded for their HOA, since they had been founded before recordation was a requirement of Delaware law. Moreover, they could not find a copy of the official by-laws anywhere, and the attorney who had incorporated them did not have any record of by-laws being written. They could find everything but the by-laws themselves, despite the mention of by-laws in numerous other documents, including a much-outdated Handbook for Residents that a former member had put together.

SERCAP went to work researching the requirements for by-laws, including a search of Sussex County records to make sure none were in existence. The technical assistance provider (TAP) consulted the ombudsman for Common Interest Communities in the Delaware Attorney General’s office, who forwarded examples of by-laws from other communities and advised on the process for adopting and recording them. The order of application in the event of a document conflict is that deed covenants prevail, then articles of incorporation, then by-laws, so care had to be taken to make sure that none of the new by-laws contradicted anything in the other source documents. The ombudsman, actually a deputy attorney general, advised that the draft document should be reviewed by the Country Glen attorney to make sure it complied with all applicable laws.

The TAP sifted through all available Country Glen source documents, extracting the various provisions and clauses already in force and measuring them against the by-law examples provided by the ombudsman. The goal was to see which provisions and topics were common to all the documents and to identify what might be missing. The TAP met with the HOA Board several times to discuss what they wanted to see in the by-laws, then drafted a version that was an amalgam of the existing documents. The HOA Board reviewed the draft and suggested revisions. The final version is pending a meeting of the membership in 2023, where it must be adopted by a majority of voting members present. SERCAP will assist the board with the presentation and with any legwork needed to inform the voting residents prior to the meeting.

The first time is the hardest

From a struggling volunteer HOA charged with operating an on-site wastewater disposal system to Delaware’s first nonprofit private utility, Country Glen has been one of the projects that shows a tangible, measurable result. In addition to being relieved of the septic system, residents are now enjoying newly paved roads made possible by a state program recommended by SERCAP. Previously, the HOA had paved or patched only the worst sections in order to save funds for operating the septic system.

Being the first is sometimes a more arduous journey than expected, as was the time lapse between the official CPCN in 2017 and the assumption of ownership by DSSC in 2019. Nevertheless, Country Glen is now operating on a sustainable basis, and the residents in the “back half” are pleased to have their annual dues reduced to the \$200 level paid by the “front half” as well as to be able to drive without dodging potholes and pavement patches on their way in and out of the development.



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A Solution for Deferred Wastewater Maintenance

Working with the Village of Hopkins Park, Illinois, rural development professionals and volunteer and student engineers formulate a plan.

Bob Rick, James Meece, and Zach Green, Senior Rural Development Specialists, Great Lakes Community Action Partnership (GLCAP)

The Village of Hopkins Park is in northeastern Illinois, in Kankakee County. Hopkins Park has a need to extend the useful life of its wastewater treatment system, which was built in the late 1980s.

Rural Community Assistance Partnership (RCAP) has been working with the village on and off for over a decade. Bob Rick, a licensed water and sewer operator, has worked with the village for the past four years, assisting the community in training staff, answering technical questions, and providing other resources.

Hopkins Park has fewer than 500 residents and a median household income of \$24,000, which is significantly less than the Illinois average and about one-third of the national average. Its wastewater treatment system serves approximately 250 households, and years of deferred maintenance caused issues with its lagoon system and lift stations.

After a conversation between Rick and Hopkins Park Mayor Mark Hodge about the wastewater system, the two began looking for solutions and decided to apply to the Community Engineering Corps (CEC) for assistance. A five-phase approach was recommended in December 2021 by CEC, a not-for-profit group of engineers, volunteers, and engineering students who work with lower-income communities to create engineering plans they typically could not afford on their own.

Over the course of the past two years, students from the University of Illinois School of Engineering who worked with CEC did an assessment of the Hopkins Park

THE VILLAGE OF HOPKINS PARK, ILLINOIS

POPULATION
597

MHI
\$24,000

TAPS
Robert Rick, James Meece,
and Zach Green

REGIONAL PARTNER
Great Lakes Community
Action Partnership

**INFRASTRUCTURE
TYPE**
Wastewater

ISSUE
Need for wastewater plant

SOLUTION
Connect with funders,
engineers

FUNDING PROGRAM
EPA NPA3 20-22

wastewater system, identified the issues that needed to be addressed, completed a cost analysis of each solution, and produced recommendations to resolve the issues. In December 2021, CEC presented this plan to the village.

The first phase entails repairing the lift stations and screenings as well as the valves and piping. The second, third, and fourth phases involve repairing the lagoon system. The final phase of the project is focused on repairing the sand filters and the chlorine contact tank. Now that the plan has been presented to the village, it is seeking funding for their project.

The village and RCAP will continue to work together to secure funding for this project and ensure a safe and working wastewater treatment plant for Hopkins Park residents.

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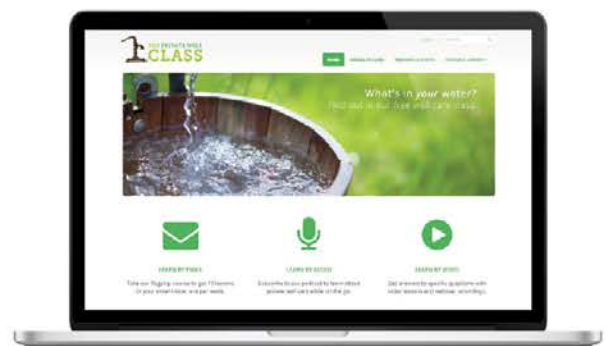
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