2023 ISSUE 4

RCAP
RURAL MATTERS
The magazine of the Rural Community Assistance Partnership

let's talk

Solid Waste

systems and disposal

FROM AN ORGANIZED ILLEGAL DUMPING PROBLEM TO A CURBSIDE SOLUTION

MOUNTAIN VIEW'S JOURNEY TO INCREASED RECYCLING

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ceo letter

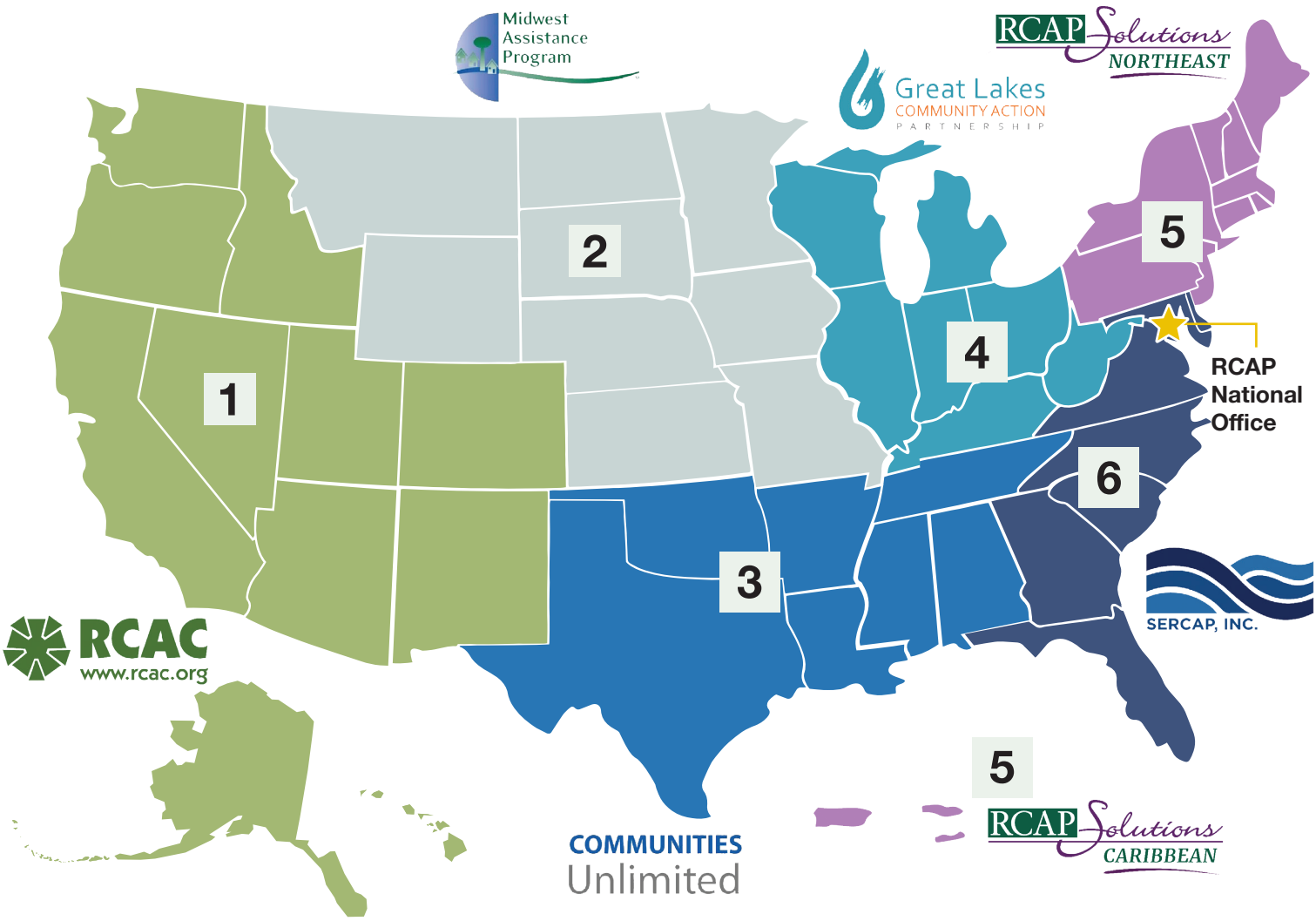
According to the U.S. Environmental Protection Agency, Americans produce 4.9 pounds of trash per person every day, led by paper and paperboard products, food waste, and plastics. How this solid waste is handled—or not—has a direct impact on public health and the livability of our communities. RCAP has been helping rural communities improve their infrastructure and become better places to live for 50 years. A lot of attention has been paid to our work on clean water, but just as important as having drinkable water is ensuring that trash is properly disposed of or recycled.

Through USDA's Solid Waste Management Program, RCAP partners with communities to reduce or eliminate pollution in water resources through training and technical assistance to enhance the planning and management of solid waste, through both community-wide and school programs. As budgets get increasingly tight, better solid waste practices can free up much-needed funds for other purposes, and recycling can also lead to increased revenue for a town, since it costs less and items can be bought for reuse.

This issue covers examples of RCAP's work on solid waste across the U.S. and its Territories, including restoring and repurposing landfills, combating illegal dumping and finding a community waste solution, sustainable recycling, and incorporating indigenous knowledge in solid waste training. I believe you will gain valuable insights from the technical assistance providers (TAPs) who share their on-the-ground experiences in these pages and that you will come away encouraged to take action in your own communities, as we can always do more to ensure greater sustainability and the wise stewardship of limited resources.

As 2024 unfolds, I encourage you to take stock of how much and what kind of waste you are producing and to consider how you could take it upon yourself to reduce, reuse, and recycle every day. If you need assistance with solid waste issues, please reach out to RCAP, as we would be happy to help you and your community navigate any conflicts or compliance issues you may have.

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.

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WHAT Matters

CONTENTS

STAY IN THE LOOP

by joining our digital newsletter.

Rural Matters will discontinue as its physical form after the next issue.

"There is no such thing as 'away.' When we throw anything away it must go somewhere."

Annie Leonard

JAS MIN ON UNSPLASH

Talk to Us!

Visit us on the web and tell us what's on your mind.

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Advocacy News

On Thursday, November 16, 2023, President Biden signed the House's continuing resolution after it passed the Senate to avert a government shutdown and extend the 2018 Farm Bill through September 30, 2024. The stopgap funding bill created a two-tiered deadline for appropriations bills. In agencies relevant to RCAP, USDA and DOT funding now expires on January 19, 2024, and EPA and HHS funding lapses on February 2, 2024.

In November, the RCAP Advocacy team was busy writing! Everything from letters to hearing testimony has been submitted to Congress. RCAP submitted a letter of support and appreciation for the Rural Partnership and Prosperity Act of 2023 (RPP) to Senators Casey and Fisher for championing the legislation. RCAP individually and as a steering committee member of the Rural Network submitted letters of support for USDA Undersecretary Nominee Dr. Basil Gooden. Finally, we submitted Olga's written testimony for the Environment & Public Works (EPW) Hearing on Accessing Clean Water Infrastructure Assistance: Small, Rural, Disadvantaged, and Underserved Communities on November 8. Below is a photo from Olga's meeting with the Senate Environment and Public Works Committee, where she discussed clean water funding for underserved communities.

TIPS from a TAP (Technical Assistance Provider)

Lorraine Magee, Communities Unlimited

Is your water or wastewater system prepared for winter storms, freezing temperatures, heavy snowfall, and the dangerous ice they can bring? According to the Environmental Protection Agency's (EPA's) 2015 "Incident Action Checklist—Extreme Cold and Winter Storms," cold weather can impact operations and cause problems. The effects of the cold weather may have costly and lasting impacts on utilities that may include, but are not limited to:

- Broken pipes throughout the distribution system
- Loss of power and communication lines
- Limited access to facilities due to icy roads or debris
- Reduced workforce due to unsafe travel conditions
- Source water quality impacts due to an increased amount of road salt in stormwater runoff
- Potential flooding risk due to snowpack melt and ice jams
- Potential surface water supply challenges as ice and frozen slush can block valves and restrict intakes

Now is the time that utilities should think about the resilience of their systems. EPA's "Incident Action Checklist—Extreme Cold and Winter Storms" lists ways utilities can prepare for, respond to and recover from the cold and winter storms. Planning for extreme weather can be as easy as monitoring for inclement weather. Being prepared for inclement weather can give utilities the time to gather extra equipment and supplies such as motors, chemicals, batteries, generators, and fuel. Do not wait until an emergency happens and there are not enough funds to take care of the issue.

Find more information on preparing your utility for winter at *rcap.org/are-your-utilities-prepared-for-the-upcoming-winter*!

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RECENT WINS
and Happenings

RCAP had its National Conference in Boston, Massachusetts, in October of this year. We had a record-setting crowd of more than 300 people, including speakers and panels covering philanthropy and advocacy at the national and local levels. Check out some of the photos from the conference!

Additionally, we unveiled videos produced for RCAP's 50th anniversary, so be sure to check them out. Each one tells a powerful story of the impact RCAP has had on rural communities and the people who live there.

RURAL ROUND-UP
Recent wins and happenings

In September, RCAP had the opportunity to attend WASTECON in Boston, Massachusetts. This three-day annual conference is the Solid Waste Association of North America's (SWANA's) executive leadership summit and one of the nation's leading convenings among the solid waste industry. WASTECON not only offered a great opportunity to build skills and expertise among RCAP staff, but also provided a forum for sharing the impact and availability of the network's solid waste programs – over the past decade RCAP has worked with hundreds of rural and Tribal communities to address solid waste needs, with projects focused on recycling education, vermicomposting, and in-depth technical assistance to help systems improve their operations, fund infrastructure upgrades, and increase sustainability.

On the final day of the conference, RCAP Chief Programs Officer Sarah Buck, Solid Waste Specialist Debbie Hackman, and local partner Daniel Masten from Pulaski County, KY presented a special session, Unlocking Sustainable Waste Solutions: Regional Collaboration for Resilient Communities. Under this, they shared the results and methods implemented under several recent projects, including how technical assistance providers were able to help a community build back a valuable regional transfer station in Puerto Rico after damages sustained by Hurricane Maria through establishment of a local nonprofit entity, the success of a small town in Indiana sharing its municipal trucks and workforce to meet the solid waste needs of nearby rural neighbors, and the impact of a cross-county hub and spoke recycling system developed in rural Kentucky.

A special thank you to SWANA, for its partnership and collaboration, and to the U.S. Department of Agriculture, for funding valuable solid waste programs across the RCAP network.

Training Calendar

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

We have an e-Learning platform that is self-paced and covers topics such as understanding income statements, developing entrepreneurial capacity, and marketing effectively as well as archived webinars in English and Spanish on a plethora of relevant small business topics.

SAMUEL SJANIPAR ON UNSPLASH

From Grassroots to Growth

Technical assistance helps build sustainable recycling in rural Indiana.

Debbie Hackman, Solid Waste Specialist, Great Lakes Community Action Partnership (GLCAP-Indiana)

Recycling may be a staple in many communities, but Orange County in South Central Indiana is not one of them. The county's total population is less than 20,000, it has no zoning ordinances, and 20% of the residents do not have internet access. Residents also lack curbside recycling or drop bins dedicated solely to recyclable products. To accommodate the solid waste needs of the residents of this rural community, random trash bins are placed throughout the county, which residents can use with no limits or fees.

Armed with this information and motivated by the desire to preserve the county's natural resources as well as provide recycling as an option for solid waste management, a group of residents formed the Orange County Recycling Co-op (OCRC). Donations from members helped with start-up costs, and the group got started by collecting aluminum and fiber as easy-to-collect and easy-to-market products. They used the proceeds to fund their small collection facility and purchase a small box truck to collect cardboard in the communities of Paoli and French Lick. Eventually, plastic collection was added to the program, and a newly hired program manager was paid through proceeds from the sales of the recycled products.

OCRC opened a Resale Store that accepts donations for resell to bring in additional revenue and to reinforce the need to reuse and recycle products. Revenue generated from the store now helps to fund the recycling collection program.

The recycling program grew as other community groups got involved, and OCRC was awarded a grant from a community foundation to collect electronic devices that are prohibited in Indiana landfills.

The Sheriff's Department also got involved by collecting and disposing of pharmaceuticals and keeping them out of the waste stream. The Orange County Solid Waste Management District granted OCRC a yearly stipend to supplement the income from recyclable aluminum, paper, cardboard, and plastic.

With a drive-through operation and a single vertical-stroke baler, OCRC offered adequate, yet primitive, service to the residents. While participation was steady, OCRC soon faced the need to pay for equipment maintenance and upgrades.

With the help of an RCAP solid waste technical advisor, OCRC applied for and received a grant from the Indiana Recycle Market Development program. The grant was over $50,000, and was used to upgrade the slow, manual-load baler to an automated horizontal baler. To maximize the use of the baler, grant funds were used to install a new conveyor and to purchase a skid loader and self-dumping hoppers.

The Co-op also purchased a glass crusher. Previously, the volume of glass was low and never recovered for recycling, but OCRC members saw an opportunity to collect glass bottles as the number of wineries and breweries grew around French Lick Resort in the western part of the county. Glass was collected and separated by color before crushing it and then was given back to local artists to use in their projects.

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Incorporating Traditional Ecological Knowledge into Integrated Solid Waste Management Training

Traditional Ecological Knowledge methods engage Tribes more fully in sharing and learning at waste management workshops.

Jacqueline Shirley, Rural Development Specialist II, Rural Community Assistance Corporation (RCAC) and Yupik Tribal Member, Native Village of Hooper Bay, Alaska

What is Traditional Ecological Knowledge (TEK)?

In the search for pathways to sustainability and resiliency of humans and nature, Western science can come together with Traditional Ecological Knowledge (TEK) in a respectful and synergistic way. TEK—also known as Indigenous Local Knowledge (ILK) and Indigenous Traditional Knowledge (ITK)—is defined as knowledge and practices passed from generation to generation informed by cultural memories, sensitivity to change, and values that include reciprocity. TEK observations are qualitative and long-term, often made by persons who hunt, fish, and gather for subsistence. Most importantly, TEK is inseparable from a culture's spiritual and social fabric, offering irreplaceable ecocultural knowledge that can be thousands of years old and incorporating values such as kinship with nature that can help restore ecosystems.

Background

Rural Community Assistance Corporation (RCAC) staff, with funding from the U.S. Department of Agriculture, Rural Development Solid Waste Management (USDA RD SWM) grant, worked with three Tribes: Native Village of Chefornak, Alaska; San Carlos Apache Tribe, Arizona; and Pueblo de San Ildefonso, New Mexico. Recognizing the need for improved solid waste management practices, these Tribes reached out to RCAC for technical assistance (TA)

JACQUELINE SHIRLEY

and training. The objectives of this TA and training encompassed pollution reduction, increased recycling, initiating composting projects, minimizing food waste, adapting to climate change challenges, enhancing community outreach and education, and ensuring health and safety training for personnel at transfer stations and landfills. RCAC developed a comprehensive work plan to achieve these goals as an integral component of the USDA RD SWM grant.

TEK is progressively cementing its role in local, state, and federal policy decisions, particularly in natural resource management, climate change adaptation strategies, and other environmental conservation initiatives. The inclusion of TEK as a planning and educational tool for solid waste management in Tribal communities should be considered.

Approach

At each of RCAC's workshops in the three Tribal locations, we introduced a three-pronged approach to blending TEK with conventional solid waste management training.

First, the TEK session began with Tribal sharing. I presented TEK from my Tribe in Arctic Alaska and then guided workshop attendees through sharing stories from their own Tribes.

- Chefornak Tribe shared the importance of protecting their surrounding tundra, river, and Bering Sea waters from both authorized and illegal landfill burning, emphasizing the need to protect the animals and plants they rely on from harmful waste practices. They discussed how best to educate youth and actively involve Elders in improving household waste handling and disposal methods. One workshop participant commented, "Sometimes old ways are no good for this new trash coming into our village, but we're still Yupik."
- San Carlos Apache Tribe delved into the significance of the local plants and fibers essential to crafting their world-renowned baskets. Additionally, they touched upon various edible desert flora that require protection from solid and hazardous waste stream mismanagement. A part of this discussion included a site visit to a local organic food farm that grows the traditional "three sisters," which are squash, corn, and beans.
- San Ildefonso Pueblo highlighted the significance of dance, song, and Tribal societal norms. They understand the importance of reinforcing and continuing these traditions to unite the community and actively engage them in Tribal environmental education, outreach initiatives, and policies.

Next, facilitators introduced a conversational mapping exercise. This technique enables participants to express their ideas about community outreach, traditional knowledge, and recycling through non-verbal means. By jotting down their thoughts, every participant can enjoy an equal platform to "speak," ensuring that even those who typically remain silent in conventional group discussions can express their perspectives.

Finally, each workshop wrapped up with a traditional talking circle. These circles provide participants a safe place to express themselves freely, cultivating individual and collective understanding, recognition, and empathy for matters extending beyond the circle. This practice nurtures a more harmonious community. While discussions within these circles remain in the participants' hearts and minds, they are encouraged to maintain confidentiality—thus, I cannot divulge more detail on those conversations.

Impact

The sharing of history and traditional ecological knowledge profoundly impacted inter-generational Tribal workshop participants. Younger attendees, including college students and interns, voiced their astonishment at not recognizing plants used for basket weaving or never having tasted certain wild fruits. They also admitted their lack of awareness about other edible plants and their medicinal purposes. These admissions alarmed the older participants, who then discussed the Tribes' duty to proactively transmit TEK to younger generations. The discussions also underscored the value of integrating this ancestral wisdom with Western scientific insights for more effective environmental stewardship.

Participants recognized that traditional waste disposal—such as burning, burying, and "giving back to Mother Earth"—is ill-suited for modern hazardous waste. A strong sentiment emerged about the need to educate their community on the urgency of adopting new practices to protect their homelands, hunting and fishing ground, and plant-gathering areas from trash impacts, ensuring their lands remain a vital source of nourishment and support. Conversations also extended to climate change, the necessity of youth engagement, vandalism challenges, and other community stressors. TEK's potential in fostering community healing became a central theme. Tribal members spoke with authority, love, and humor. They felt acknowledged and valued as workshop participants, expressing deep appreciation for RCAC's commitment to integrating TEK into the SWM workshop framework.

A response on the evaluation of one San Carlos Apache workshop participant emphasized the workshop's impact: "The way I will most benefit from this training is: 'being educated on what has to be done to heal my Tribe.'"

"Mainstream" educational and outreach materials—those tailored to urban, industrialized societies—often don't resonate with rural, remote Indigenous communities. For organizations like RCAC and other technical assistance providers aiming to foster a shift in waste management practices and understanding, it's crucial to communicate concepts that are meaningful to Tribal residents. This is particularly relevant for Indigenous populations that still hunt, gather, and fish, often near waste disposal facilities.

VALERIE V ON UNSPLASH

From an "Organized" Illegal Dumping Problem to a Curbside Solution

RCAP technical assistance guides Lajitas, Puerto Rico, in solving a longstanding problem.

Edwin Vazquez Asencio, Sustainable Materials Management Specialist, RCAP Solutions

The Lajitas community of Puerto Rico is well-known to the Rural Community Assistance Partnership Incorporated (RCAP). The network began working with the community in 2016 to clean up Guayabal Lake, which was severely contaminated by debris and waste. Illegal dumping in ravines and the multiple tributaries leading to the lake contributed to the problem, along with littering alongside the roads. As in many rural areas, the roads cross large fields or land covered by woods and heavy vegetation, creating secluded areas that were easy to use for illegal dumping. Unfortunately, this illegal dumping was also occurring in more visible public areas as well.

RCAP SOLUTIONS CARIBBEAN

RCAP created awareness in the community about the problem, and the community's enthusiasm to address the situation gave us the opportunity to organize them to work toward long-term solutions. Community members assisted in reducing litter in areas near the road across the community and have sought guidance and technical assistance from RCAP to address the dilemma, with noticeable results.

In our experience, assistance may initially be focused on a particular problem in a community, but other needs are often identified as well. Many problems are the result of lax attention or the development of small deficiencies that evolve into bigger issues over time. In these cases, the situations may pose risks to public health, making it imperative to act, even when it was not the main task of the project initially. This is especially true if the situation is related to the goals of the funding program—in this case, the proper management of solid waste.

An Informal Dump Site

Like many rural communities, Lajitas is not just an area with houses around a church or a "plaza"—it has multiple sectors with different and particular challenges. Some community members live in the highest point of this region, where the access road is very narrow. Some streets are no more than nine feet wide, and many "informal structures," or houses made by the same residents without formal education in construction design or the required engineering knowledge, sit in small clusters at the edge of the road or side by side on the pavement. Even for small individual vehicles, transit on these roads can be challenging. If another car comes from the opposite direction, the situation may require driving in reverse to a wider area to make room for the other car to pass. For a waste compactor truck, it could be exceedingly difficult to access some of these higher locales, as the average size of a compactor is a little more than eight feet wide (34 to 40 square yards). For more than 40 years, this community was excluded from any collection in these neighborhoods, requiring residents to remove their waste with their own vehicles for decades. These problems led them to improvise, and many years ago they reclaimed a basketball court enclosure at a lower elevation to deposit their garbage. The facility was not

in regular use and did not have a dumpster. Eventually, residents started to dump other materials and debris in the empty enclosure, which went on for several years.

What had been a simple solution in the beginning had turned into a problem as the municipality struggled to keep the area clean and safe. The deficiencies in the process led to the facility being used as a dumping ground for garbage, appliances—also known as "whites"—e-waste, bulky items, and all kinds of refused materials or debris. Because dumpsters, or "bins," do not exist in the area, the municipality wants to provide the proper solid waste service to the community. On top of these challenges, people from outside the community, including commercial users such as bars and small businesses that were looking for a way to reduce the cost of proper disposal, identified the facility as a common place to illegally dump trash.

A Worsening Problem

The community was empowered to organize themselves and take corrective action to ensure a clean and safe neighborhood for all the residents. RCAP assisted in the development of new community organizations such as the Guayabal and Wepa foundations. The involvement and enthusiasm of new community leaders began to increase. Even so, the community-wide acceptance of the use of the facility as an "organized dumping area" made the situation difficult to address, with some community

members who had become accustomed to dropping everything there not understanding the negative consequences. During the training sessions conducted by RCAP's Technical Assistance Provider (TAP) on the basketball court, the TAP observed the problem themselves and outlined a strategy to correct the situation. Subsequently, neighbors were interviewed about the problem, and outreach activities were performed to educate the locals about public health concerns.

Due to economic constraints, the current trend in municipal administration is to forgo self-management of operations and opt for private contracts for essential services traditionally offered by local government. This was the case with waste management in this municipality. In the last few years, the municipality has used a private company to collect trash and another to operate the landfill. Unfortunately, the collection was deficient, and the precarious situation got worse. The new company was not collecting any open or torn bags, which were common. The situation became a public health concern with the arrival of vectors carrying diseases, as expected with the increase in odors resulting from mixed rubbish. The sporadic collection of debris added another risk element, creating a refuge for pests such as rats.

Looking for ways to improve the operation, the municipality adopted a ticket system for the collection of debris, requiring neighbors to contact the municipality to schedule the pickup of their bulky items or any debris. Having used this communal area for illegal dumping for many years, the residents would not call for pickup, so the uptake of this new ticketing system was low except among those residents who were close to the area and were affected by the odor, flies, and other nuisances.

Many residents expressed their concerns. "I am taking care of my mother, who receives dialysis, and this situation worries me too much. She is bedridden and vulnerable to different diseases," stated a resident who lives less than a hundred yards from the dumping area. "Anything you can do for us will be greatly appreciated. This situation has been there for years."

Even with the worry of some neighbors, at least the ones who live close to the enclosure, it became necessary to present this situation and the implications of the worsening problem to the rest of the community.

Identifying Solutions

The RCAP TAP identified and defined the public health risks and began conducting outreach and door-to-door canvassing to involve the community in the search for alternatives. The TAP evaluated the debris and waste as well as the pests at the dump site and gathered evidence of the harm they might cause. Information about vectors of disease was included in the training, based on the observations of the area and the guidelines of the Puerto Rico Department of Health.

The TAP presented the options to address the problem and a plan to tackle the situation with the collaboration of the municipality and other stakeholders. The TAP prepared a letter with the alternatives and options to address the situation that had been discussed with community members. It included evidence about the deficiencies in the current trash collection and options of services that were offered by the hauler, but not provided to the community. All community members were engaged in the process and signed the claim to the hauler using the municipality as the intermediary. The TAP taught the community leaders the key points to be discussed with the municipality and other possible stakeholders.

In the interim, Hurricane Fiona was about to hit the island, and it was necessary to wait for the perfect time to submit the formal claim. The TAP met with municipal staff to discuss the issue. The debris and discarded items were removed the day before the hurricane, and the TAP documented the collection as part of the site visit to the community and discussed alternatives to address the situation with the Department of Transportation and Public Works (DTOP) director.

This was a great opportunity to measure the problem after the hurricane and to determine the usual amount of debris and waste accumulation in the period after the cleanup. The torn bags and household waste were still in the concrete enclosure because they were not removed by the municipality or the hauler. The garbage was documented as evidence of the service deficiencies, and the community was instructed to take pictures before and after the collection days as part of the evidence to be presented with the claim.

After the recovery from the storm, the community made an appointment with the municipal administrator. Armed with the letter and the knowledge to present the formal claim, they met and began the process to fix the situation. The municipal administrator then visited the affected community sector with his staff and established an action plan to address the situation based on the claims made by the community leaders represented by the Wepa Foundation. The claim was also made to the hauling company. For the first time, an alternative was brought to the table, and a few days later, the municipality made an agreement with the hauler.

A System in Place

The waste hauler agreed to implement curbside collection using a small waste compactor truck. To be able to provide the service, they promised to give each household a 55-gallon drum to be used as a trash can—and, as a sign of good will, they would collect the existing trash accumulated in the illegal dumping site at the basketball court.

A schedule was established, and the municipality assigned a supervisor to ensure that the process was carried out on time. The municipality produced and distributed a letter with the agreement, describing all involved parties and their responsibilities. This included dates and actions to be taken, including the removal of all debris and the demolition of the concrete enclosure that had time and again been filled with illegally dumped waste and debris. The Municipal Police Commissioner supported the transition to this new approach to reduce dumping in the area, and enforced the municipal ordinance "Mi Ciudad Limpia" (My Clean City). This includes fines for dumping in the area and a ticket system for the organized collection of bulk items. This service is free of charge for the permitted materials that should be properly disposed of by the municipal staff.

The DTOP director will coordinate the demolition of the structure and the safe disposal of the resulting debris. All existing debris in the area will be removed, and access to the facilities will be restricted with a chain or a gate to minimize the possibility

CARL CAMPBELL ON UNSPLASH

of dumping during the night.

As part of the communication with the community, a web portal was created and promoted for each resident to request debris collection. The system provides a case number and the ability to track the collection day and notify residents when to take debris out for pickup. General guidelines about the hauling process were given, including where they must place the materials and how to separate vegetative material from other debris.

It was gratifying to hear the enthusiasm from the community leaders, validating the education and knowledge that was imparted by the TAP during the previous training sessions.

Capacity-Building Works

Finally, all steps were followed, and the area was cleaned up. The demolition was completed, and the community received curbside collection for the first time—now a reality for the Paso Hondo sector in Lajitas.

"I've been living in this community for more than 45 years, and this is the first time I have seen a garbage truck coming for our waste," stated Winda I. Rodriguez-Rosario, a resident at the end of the road in Paso Hondo. "I used to carry the garbage to the collection area all my life, and the area was full of flies and bad odors. I am really happy that this is happening."

The cleanup project was the result of building capacity in the community—however, the creation of a supportive, community-based organization such as the Wepa Foundation was a key element. Gathering community members and getting them involved is something that requires commitment and the understanding of the day-to-day challenges that the community is facing. The TAP provided the necessary tools, and the community leaders created their own locally run community organizations to address their challenges. The TAP recognized the need for municipal involvement, and the city administrator worked with the hauler to demonstrate the city's commitment to correct the situation. The technical assistance needed to identify the risk and the possible solutions was crucial, and, as always, RCAP TAPs are here to help!

Mountain View's Journey to Increased Recycling

A solid waste system financial analysis helps an Arkansas festival town change its operation.

Michelle Viney, Area Director of Program Operations, and **Ben Smith,** Staff Writer, Communities Unlimited (CU)

The musical town of Mountain View, Arkansas, is nestled in an Ozark valley near the junction of the Springfield plateau and the Boston Mountains. Named for sweeping views of the Blue Mountain Range of the Boston Mountains, the city is often referred to by regional and local enthusiasts as the folk music capital of the world. Mountain View is known for its Arkansas Folk Festival, held each year in April, to honor folk music, customs, food, and traditions. Semi-annual bluegrass festivals, held in mid-March and mid-November, embellish an already popular year-round tradition of evening jam sessions where musicians from the region and around the globe come together on the county courthouse square to play impromptu fusions of country, folk, gospel, and bluegrass music.

While this often-quiet community is home to only 2,800 residents, seasonal

festivals may cause the population to swell to nearly 20 times its normal size. Businesses and the economy are largely geared towards the tourism industry in this community, with city infrastructure and services structured to accommodate the fluctuating population.

At the request of Mountain View's mayor, Roger Gardner, Communities Unlimited (CU), the southern regional partner to the Rural Community Assistance Partnership Incorporated (RCAP), conducted a financial analysis of the city's solid waste operations program. The study was funded through a solid waste management technical assistance and training grant from the United States Department of Agriculture's (USDA) Rural Development (RD) and was based on financial data provided by the city for fiscal years 2020, 2021, and 2022.

The Financial Analysis

During a financial analysis, program income and expenses are analyzed for two to five years before the current date. This analysis can help determine historical trends and identify rate insufficiencies. Projections are made based on historical data to predict how future incomes and expenditures will continue to provide adequate financial security for the program. Using these planning tools, local decision-makers are better prepared to make decisions about changes in rates, programs, and services.

A financial analysis aims to ensure the adequacy of rates to support anticipated expenses for operations, maintenance, debt service, capital improvements, and necessary reserves. Solid waste and recycling programs are expected to maintain adequate customer rates to:

- Provide for efficient operation and maintenance of collection and disposal;
- Provide an adequate equipment replacement fund; and
- Pay debt service—specific requirements of debt service repayment are often included in the program's bond ordinance, funder letters of conditions, and/or loan agreements.

Expenses for a solid waste program change over time. Salaries, utilities, insurance, postage, supplies, repairs, and fuel all represent costs likely to increase on a yearly basis. Revenue from customer rates may

"CU and Michelle led us through everything. They walked us through all the steps and, more importantly, the why. Knowing the why made it easier to let the council know why an increase was necessary to prepare for the future and keep up with rising costs. CU helped greatly—they looked at our spending and showed us what we should charge."

MOUNTAIN VIEW MAYOR ROGER GARDNER

or may not keep up with increases in expenses. When expenses outpace revenues, solid waste program services invariably suffer. Equipment maintenance may be deferred, reserves become depleted, and service quality is ultimately diminished. To ensure that revenues are adequate to meet anticipated needs, it is important that the city periodically review customer rates and make necessary adjustments when needed.

In Mountain View's case, city officials only reviewed rates periodically rather than annually. Not only had rate increases begun to lag behind expense increases, but the city also faced replacing two trash collection vehicles over the same period. Trash trucks are the backbone of rural solid waste programs. Downtime for collection vehicles can mean serious lapses in service to residents. With this consideration, the CU technical assistance provider (TAP) and city decision-makers identified the objectives specific to this study, including both rate sufficiency studies and an asset management plan.

Two measures typically used to determine the rate adequacy of solid waste revenues are the operating ratio and the coverage ratio. The operating ratio is a comparison of system expenses and payments, which is calculated by dividing total revenues by total expenses. The standard operating ratio is between 1.0 and 1.1. An operating ratio of 1.0 demonstrates that the program revenues exactly cover program expenses. An operating ratio of 1.1 demonstrates that the program revenues exceed expenses. Some lenders will require an operating ratio of 1.05 or higher to ensure revenue sufficiency to cover debt service. In Mountain View, solid waste expenses exceeded revenues in 2020, 2021, and 2022.

Projecting Future Finances

Based on the historical data, revenues and expenditures were projected for five years. Capital reserve projections were added, satisfying the equipment reserve needed to replace solid waste collection vehicles at the ends of their useful lives. Operating ratios were calculated to predict whether future incomes and expenditures would provide adequate financial security for the program. Five-year projections demonstrated that operating ratios would remain below 1.0, indicating that revenues would remain insufficient to cover expenses without action. The coverage ratio is an indicator of the ability to repay debt, which is calculated by subtracting non-debt expenses from annual income and dividing revenue available for debt service by the annual debt service expense. Regarding coverage ratios, an adequate ratio typically ranges from 1.15 to 1.25. For this analysis, the coverage ratio was not calculated because the City of Mountain View has no solid waste debt in terms of loans. Funders often require debt service reserve funds to ensure that debt service payments can be made in case of a substantial change in program revenue.

The City of Mountain View purchased a new 2020 Freightliner collection vehicle and planned to buy another new one in the spring of 2023. The expected useful life of solid waste collection trucks is typically 10 to 15 years in rural settings. The vehicles are currently used both on city-maintained and county-maintained roads. Additionally, the Mountain View vehicles accumulate higher mileage due to multiple weekly trips to the Waste Connections landfill in Ash Flat, Arkansas, which is over 100 miles round-trip per load. It is essential to prioritize careful maintenance of these vehicles and plan long-term for replacement.

Current Programmatic Recommendations

First, it was recommended that the City of Mountain View increase solid waste rates by 51.3% to achieve revenue sufficiency and an operating ratio of 1.05. Increasing solid waste collection rates will raise revenues to meet the program's operational expenses, such as tipping fees, personnel costs, and equipment. Additionally, the increase will provide revenues sufficient to fund important capital reserves for future equipment replacement.

Second, it was recommended that the City of Mountain View review rates annually and determine whether a small, 2% or 3% increase was needed to keep up with rising solid waste program costs. An annual review of income, expenses, and the operating ratio will allow the city to ensure the program's financial stability and keep any subsequent rate increases small and incremental.

Finally, the city should implement an asset replacement plan for solid waste equipment and fund an equipment replacement reserve account. Adding, repairing, and replacing equipment is necessary to continue providing quality services to each customer. Supporting an asset replacement reserve, sometimes known as a depreciation account, will allow the city to have the funds needed to replace equipment and repair as required. The recommended rate increase also provides for a capital reserve fund.

Future Programmatic Recommendations

Diversion of solid waste from area landfills should be a high priority for Arkansas communities. Landfill space is finite and landfill operators spend a great deal of consideration and planning when estimating the remaining useful life of landfills. Diverting solid waste from landfills through community recycling programs will reduce demand for limited space and extend the useful life of the state's landfills.

It is recommended that the City of Mountain View consider opportunities to increase access to recycling services. Mountain View has recently implemented a bag limit for solid waste curbside collection customers. Every household may place up to six large, 55-gallon trash bags per week or 12 smaller, 13-gallon kitchen trash bags per week for disposal curbside. When programmatic changes, such as bag limits, are made, it is important to provide customers with information about their recycling options. Collaboration with the Stone County recycling program to provide Mountain View residents with additional recycling information may minimize the burden on residents during this transition.

Summary and Acknowledgements

On behalf of the CU staff, we acknowledge the commitment and contributions of the City of Mountain View's management, staff, and elected officials. We commend the City of Mountain View for taking action to improve the solid waste service it provides to its customers. We are confident the recommendations in this study will aid in the city's efforts.

ANDREW SHELLEY ON UNSPLASH

The missing "R" in Solid Waste Management

Landfill planning could benefit from considering the post-closure use of a site from the outset.

Monte Kerchal, Technical Assistance Provider, Midwest Assistance Program | Funder: USDA Solid Waste Management

It is widely known through world news sources, social media, environmental publishing, and political ads that globally, humans of the world are producing more and more solid waste—trash—and are starting to stress the limits of our current landfills and recycling efforts. Traditional methods of waste disposal, such as the use of incinerators and burying garbage, can create gas emissions, noxious smells, and unsightly landfills, negatively affecting the environment as well as our health and emotional well-being. For these reasons, it is very important to find more eco-friendly alternatives for managing waste.

The solid waste management industry normally covers the 3Rs: Reduce, Reuse, Recycle:

- **Reduce**—as individuals we should buy only what we require, thereby reducing the household waste we produce.
- **Reuse**—if we need to acquire goods, purchasing used ones or eco-friendly substitutes is encouraged—or we can reuse our old packages in creative ways. This also includes alternatives like reusable water bottles and food storage containers.
- **Recycle**—when discarding waste, we must consider ways of recycling before taking the last option which is to discard or dispose. Depending on where you live, not all items may be recyclable.

But I have realized that a fourth "R" may need to be considered when we talk about

best practices for reducing the waste stream:

- **Restore/Repurpose—**envision a new purpose, both aesthetic and economic, for former landfills.

Former landfills are often repurposed into landfill-gas-to-energy sites. Generating power from captured landfill gas isn't new, and converted electricity is often fed back into the grid to power everything from our homes to our vehicles. Solar panel fields have also been installed on top of old landfills.

Landfill redevelopment projects can be excellent ways to turn solid waste disposal sites into spaces that serve a whole new purpose—the site of a new building or green space, for example. Landfill redevelopment can be a trickier process than it might seem, and many of the challenges inherent in these projects stem from the waste itself. This includes solid waste creating unstable foundations for larger developments and leachate ruining the soil or groundwater around a site if it isn't properly contained.

Still, these are engineering problems, not deal-breakers. More than anything, landfill redevelopers and community stakeholders simply need patience with these projects. According to the Environmental Protection Agency, a brownfield is defined as "a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant." Any community that chooses to redevelop a brownfield would need to anticipate a lengthy timeframe for getting the approvals needed, but the payoff could be a great revenue-producing endeavor for the community. There is also funding available to communities to help with this brownfield clean-up and redevelopment.

There are many examples all around the U.S. of landfills that have been repurposed and given new life.

Solar Parks

What better way to repurpose an old waste site than to turn it into a renewable energy power station by covering it in solar arrays? Several cities in the U.S. are exploring this option right now.

Golf Courses

If you think about a golf course, including both traditional ball golf and disc golf, the vast, rolling landscapes of fairways and

JAMES AMBRON ON UNSPLASH

greens are almost a natural vision as one looks upon a reclaimed brownfield. Developers can build on top of old landfill sites, which provide adequate room and a blank canvas for golf courses. The web resource *Golf Vacation Insider* has published an article on various sites that were reclaimed and repurposed as golf courses, including the Park Ridge golf course in Lake Worth, Florida.

"Thinking about the Palm Beach area conjures visions of blue ocean water, palm trees, and amazing wealth," Tim Gavrich wrote. "So, it's strange that one of the area's best public golf courses is a 'brownfields' (former landfill) course."

Conclusion

Beyond solar generation and golf courses, brownfield redevelopment options for former landfill sites include parking lots, green spaces, hiking trails, and more. Whatever a site's ultimate use, it is much easier to plan for the distant future when selecting a new landfill location when there's a roadmap for its next period of providing for the community. If there is a plan at the outset for the site upon its maturity and it can be restored into something aesthetic for everyone, you can have investors ready to assist in the redevelopment upon closure of the brownfield. In addition, the environmental assessment can be much easier to overcome.

CDC ON UNSPLASH

Students Incorporate Vermicomposting Project into Farm to School Curriculum

The outcome: flowers and vegetables, learning and fun.

Patrick T. Walker, Contractor, Southeast Rural Community Assistance Project, Inc. (SERCAP), South Carolina

Vermiculture, or worm farming and composting, is a great learning activity for both elementary school students and teachers. This is especially true when combined with other farm-related activities. Students at Prosperity–Rikard Elementary School located in Prosperity, South Carolina, have been involved in Clemson University's Farm to School program for several years. Through this program, a number of raised garden plots have been constructed to teach students about agriculture, taking care of plants, and harvesting food products. This past year, with assistance from Southeast Rural Community Assistance Project, Inc. (SERCAP), students incorporated two vermiculture towers, or worm bins, for recycling food scraps and producing compost as part of the overall project. This was a follow-up project to vermiculture lessons conducted in several schools in Florida and developed and reported by SERCAP Technical Assistance Provider (TAP) Rachel Silver in the Summer 2021 issue of *Rural Matters*.

After an initial planning meeting with Debra Templin, gifted and talented teacher leader at Prosperity–Rikard, two vermicomposting towers were delivered and set up in 2022. As part of setting up the towers, a class lesson on vermiculture was presented by the SERCAP TAP to a second-grade class. The class then assisted with setting up the worm towers, placing peat moss and other composting materials in the towers and putting 500 red wiggler earthworms in each tower. The classroom observed the worm towers over the following few days and then prepared them to begin receiving organic food scraps from the school cafeteria. Recycled food scraps from the cafeteria included lettuce, shredded carrots and other vegetable peelings, fruit peelings and fresh fruit, grains such as rice, cut-up potatoes, and coffee grounds from the teacher lounge.

Over the following months, lessons were provided to several classes on the details of worm farming, the benefits of composting,

screening the generated compost, and methods for placing the compost in the garden plots. In one second-grade class, the students read books on worms and prepared numerous questions for the SERCAP TAP. Several follow-up visits were made by the TAP to meet with teachers and students and evaluate progress with the towers. Each tower was evaluated for compost development, and worms were separated from the compost through a screen. The compost towers were re-established with a peat moss and compost mixture, and worms were placed back into the bins with fresh organic scrap food. Harvested compost was placed into several raised garden beds by the students and hand-tilled into the soil.

Near the end of the school year in May 2022, the overall project was reviewed by the students and teachers. The vermiculture towers were briefly viewed, and an evaluation was performed via questions from and to the students. The students also viewed the raised bed gardens where vermicompost had been placed and ripe vegetables were gathered. According to Templin, "The students really had so much fun making the connection between the worms and generating compost needed to improve the vegetable and flower gardens."

The assistant principal at Prosperity–Rikard Elementary is going to take responsibility for checking on the vermiculture towers over the summer, providing food scraps for the worms, and keeping the compost moist. The TAP plans to make a visit during the summer break and at the beginning of the next school year to kick off a composting lesson for the new classes and close out the project.

This first year of working with the vermicomposting towers was a learning experience for everyone. After the bins were initially set up with worms, bedding, and food, it was expected they would quickly grow larger and multiply. At some point the students realized that they were not feeding the worms enough food scraps and were not keeping the bins moist enough. By the third month, the worms were very active, growing and producing compost. It also took much longer than expected to produce larger volumes of compost. Sufficient amounts of compost had been produced to fertilize one or two of the raised garden beds, but it was realized that it would take an extended period to provide compost for all 12 of the beds. Wait until next year!

PATRICK T. WALKER

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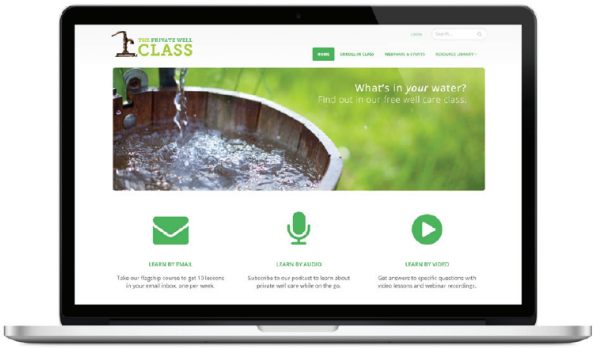

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WaterOperator.org and PrivateWellClass.org are collaborations between the Rural Community Assistance Partnership and the University of Illinois, through the Illinois State Water Survey at the Prairie Research Institute, and funded by the U. S. Environmental Protection Agency.

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