JULY 2025 | Rathbun Regional Water Association

QUENCH

news by the glassful

CONTENT

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QUENCH Magazine is published 2 times per year by the Iowa Rural Water Association (IRWA). The magazine is distributed by mail to IRWA members' consumers.

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THE 48TH ANNUAL MEMBERSHIP MEETING

The 48th Annual Membership meeting for Rathbun Regional Water Association (RRWA) was held at the RRWA Treatment Plant, 16166 Hwy J29, Centerville, Iowa on February 27, 2025, at 7:00 p.m.

Two directors were re-elected to serve a three-year term on the RRWA Board:

DISTRICT 1
Randy Eddy
Centerville, Iowa

DISTRICT 4
Ken Wuthrich
Bloomfield, Iowa

RRWA would like to thank members of the nominating committee for their willingness to serve. Members of the nominating committee appointed by the Board of Directors were: Dan Furlin, Jr-Numa, Gary Dustin-Albia, Richard Breckenridge-Keosauqua, Leroy Perkins-Corydon, Darrell Krehbiel-Donnellson, Douglas Schock-Bloomfield, and Bill Hillyard-Burlington.

Other items discussed at the meeting were:

- The 2024 Financial Report of RRWA
- Updates on activities and projects during 2024 and for 2025
- Tours of the original and new RRWA Treatment Plants

RRWA BOARD OF DIRECTORS

Randy Eddy, *Chairperson*
Denny Amoss, *Vice Chairperson*
Doug Goben, *Secretary & Treasurer*
Curt Frank
Garry Schiller
Charla Warner
Ken Wuthrich

2024 Financial Summary for RRWA

At the annual membership meeting, RRWA provided a financial summary for the year 2024, highlighting continued growth, responsible financial management, and a strong outlook for the future. A summary of this financial presentation is included below:

Water System Growth and Usage Trends

The number of water meters in service increased by 250 over the year, bringing the total to 21,970 by the end of 2024. Despite this growth, water usage decreased by approximately 125 million gallons — a 3% decline from 2023 — resulting in just under 3.25 billion gallons used during the year. This drop was largely due to above-average rainfall, particularly during the summer, which helped break Iowa's longest consecutive weeks of drought since the 1950s.

Revenue Highlights

Water sales generated $19.9 million in revenue, while wastewater service for 750 customers brought in an additional $253,500. Together, these services accounted for 70% of RRWA's total cash receipts for the year. Other key revenue sources included:

- $1.4 million from construction income and hookup fees charged for new connections to the distribution system
- $435,000 from additional construction services and material sales
- $897,500 in investment income
- Nearly $5 million in federal and state loans and grants to support a smart meter replacement program and expanded water storage rights in Rathbun Lake

Operating Expenses and Investments

Daily operating costs totaled $8.9 million, covering everything from water treatment chemicals to fuel and office supplies. Payroll, benefits, and related taxes added another $6.7 million in expenses. Loan payments totaled $2.3 million and RRWA paid $850,000 in collected excise taxes to the State.

Capital improvements and construction projects required:

- $4 million for new assets, including $1.9 million for additional water supply storage rights
- $2.3 million for new hookups and service expansion into Mercer County, Missouri

Year-End Financial Position

Total cash expenditures for 2024 reached $25.16 million, while total receipts amounted to $28.95 million, resulting in a positive cash flow of $3.79 million. This surplus is being directed into reserve accounts to support future operational and capital needs.

The Association's balance sheet remained strong, and member equity increased by $2.8 million, reflecting continued financial stability and a sustainable foundation for future growth.

RRWA'S DRINKING WATER SUPPLY PARTNERS

Burlington, Fort Madison, Keokuk, and Mount Pleasant

Keokuk uses ultrafiltration membranes to treat water for RRWA.

Fort Madison supplies one million gallons of water daily to RRWA.

RRWA Tower 43 in southern Lee County.

How is it that Rathbun Regional Water Association (RRWA) has water towers in Des Moines, Henry, and Lee Counties? This is one of the more frequently asked questions about RRWA. After all, the Association's water treatment plants are located near Rathbun Lake which is 100 miles away. As one of the largest rural water systems in the country, RRWA's service territory covers more than 5,000 square miles across 22 counties in southern Iowa and northern Missouri reaching all the way to the Mississippi River. Few, if any, of the individuals who came together to organize RRWA in 1968 could have envisioned the extent to which the Association would grow to meet the regional demand for drinking water.

RRWA serves drinking water to approximately 100,000 people each day. Most of this water, more than eight million gallons daily, is produced by the Association's water treatment plants. RRWA has developed strong partnerships with the city water works and water departments in Burlington, Fort Madison, Keokuk, and Mount Pleasant to obtain drinking water for customers in Des Moines, Henry, and Lee Counties. RRWA is supplied about two million gallons daily from the drinking water treatment plants in these cities. RRWA owns and operates the distribution system towers, pump stations, and pipelines that deliver this drinking water to customers. RRWA's team of dedicated employees in Salem, Iowa operate and maintain the distribution system in the eastern portion of the Association's service territory.

Interestingly, RRWA's partner water works and water departments obtain raw water from several sources and use a variety of treatment technologies. Despite these differences, each is a reliable supplier of quality drinking water for Association customers. Following are a few facts about RRWA's drinking water suppliers:

Burlington Municipal Waterworks (BMWW)

RRWA purchases an average of 750,000 gallons per day from BMWW. The raw water sources for BMWW are the Mississippi River and alluvial wells on the river. BMWW uses conventional drinking water treatment (coagulation, flocculation, sedimentation, and filtration), lime softening, and chloramine disinfection. RRWA started purchasing water from BMWW in 1992.

Fort Madison Water Department (FMWD)

RRWA purchases an average of one million gallons per day from FMWD. The raw water sources for FMWD are alluvial wells on the Mississippi River. FMWD's drinking water treatment consists of oxidation and pressure filtration for iron and manganese removal and reverse osmosis with chlorine disinfection. RRWA first purchased water from FMWD in 1989.

Keokuk Municipal Waterworks (KMWW)

RRWA purchases an average of 175,000 gallons per day from KMWW. The raw water source for KMWW is the Mississippi River. KMWW uses conventional drinking water treatment (coagulation, flocculation, sedimentation, and filtration), lime softening, and ultrafiltration with chloramine disinfection. RRWA started purchasing water from KMWW in 2006.

Mount Pleasant Municipal Utilities (MPMU)

RRWA purchases an average of 260,000 gallons per day from MPMU. The raw water sources for MPMU are deep wells in the Jordan Aquifer. MPMU's uses electrodialysis reversal membrane filtration with chlorine disinfection for drinking water treatment. RRWA first purchased water from MPMU in 1997.

RRWA is committed to ensuring all customers across the Association's service territory are provided quality, reliable, and affordable drinking water. This commitment relies on RRWA's partnership with Burlington, Fort Madison, Keokuk, and Mount Pleasant. RRWA's east distribution system superintendent, Jim Nusbaum, points out the importance of these relationships, "RRWA's ability to serve our customers in this area depends entirely on the water supplied by these communities." RRWA values this essential role played by the Association's water supply partners and looks forward to continuing to work closely with them to meet the drinking water needs in the rural areas and small communities in Des Moines, Henry, and Lee Counties.

RRWA's 2024 *CONSUMER CONFIDENCE REPORTS*

Water quality lab in RRWA's east treatment plant.

The Rathbun Regional Water Association (RRWA), Inc. 2024 Water Quality Reports (also known as Consumer Confidence Reports or CCRs) are coming soon! Starting July 1st, 2025, you will be able to view your RRWA System 2024 Water Quality Report online at RRWA's website **https://www.rrwa.net/water-quality-report.aspx** or by clicking the links below:

If your account number begins with 01 – 30 log on to:
https://www.rrwa.net/CMDocs/RRWA/WaterQuality/Rathbun.pdf

If your account number begins with 33 – 34, 42, 70 – 72 log on to:
https://www.rrwa.net/CMDocs/RRWA/WaterQuality/Ft-Madison.pdf

If your account number begins with 35 – 38, 40 – 41, 74 log on to:
https://www.rrwa.net/CMDocs/RRWA/WaterQuality/Burlington.pdf

If your account number begins with 39 log on to:
https://www.rrwa.net/CMDocs/RRWA/WaterQuality/Mt-Pleasant.pdf

Your 2024 Water Quality Report contains important information about the source and quality of your drinking water. If you would like a paper copy of the CCR mailed to your home or sent as an attachment to an email, please call Jeremy Buckingham, RRWA's Water Treatment Plant Superintendent, at 800-233-8849 or send an email to Jeremy at jbuckingham@rrwa.net.

EMPLOYEE SPOTLIGHT

ROD WITT

Senior Support Services Specialist

Rod joined Rathbun Regional Water Association (RRWA) in 1987, just two days after graduating from Northeast Missouri State (now Truman State University) with a Bachelor of Science degree in Industrial Technology. Over the past 38 years, Rod has had the opportunity to play several roles in the company. Rod began his career as an inspector during the Van Buren County expansion, overseeing the installation of new water mains. He later transitioned to a plant operator where he earned grade 4 certifications in both water treatment and water distribution (the highest certifications issued by Iowa regulators).

In Rod's current role as Senior Support Services Specialist, he leads a team that is responsible for all aspects of preventative maintenance and repair of company water treatment and distribution facilities and equipment. Rod is the "go-to" source of expertise and assistance to help colleagues resolve operational challenges any time day or night. Throughout his career at RRWA, Rod has valued the opportunity to work with great people and has enjoyed the variety of meaningful projects he has had the opportunity to be a part of.

Outside of work, Rod enjoys family time with his wife, Shari, daughter, Bailey, and granddaughters, Toryn and Tayte. Rod also enjoys golfing, traveling, and going on road trips in the convertible with Shari.

A fun fact about Rod - before embarking on his career at RRWA, he traveled with a country/rock band during high school and through college. After retiring from the band, he can occasionally be spotted picking up his guitar in his "shop" while listening to classic rock and country music.

KELLY CAREL

Distribution Superintendent

Kelly Carel, and his better half, Paula, live in Plano, Iowa. They have five children, Thatcher, Amber, Teigen, Brady, and Blake, as well as five grandchildren.

Kelly started working for Rathbun Regional Water Association (RRWA) in June of 1992 as a laborer on the construction crew. Kelly then worked as a service area representative in Monroe County for approximately 20 years. Since 2017, Kelly has been RRWA's Distribution Superintendent. In his current role at RRWA, Kelly plans, schedules, assigns, supervises, as well as participates in the work of staff responsible for the installation, maintenance, and repair of the water distribution system. Kelly also receives and responds to customers' questions and concerns and investigates water quality issues.

As Kelly reflected on the last 33 years with RRWA, one of the things that shocked him was how fast the years have gone by. He enjoys working with the public and meeting new people. Kelly stated, "I've been blessed to have worked with so many talented men and women at RRWA. The work environment at RRWA is a family-oriented atmosphere. It makes it easy to get up in the morning and go to work."

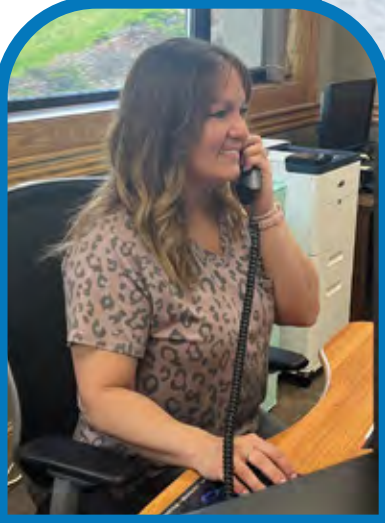
When Kelly isn't working, he enjoys hunting, fishing, gardening, and spending time with family and friends. Anything that gets Kelly out of the house is a win in his book. Kelly is also a Cleveland Browns and Chicago Cubs fan. He knows others may not agree with his pick of teams, but adds jokingly, "I don't care, this is my spotlight article".

Something most may not know about Kelly is his life is an open book and will tell others what he thinks. He believes in treating people the way he would want to be treated and if he has a nickel, you will have 2 ½ cents.

Thank you to both Rod and Kelly for the remarkable combined 71 years of continued hard work, dedication, and commitment to RRWA.

RRWA CUSTOMER REMINDERS

- **Report a verifiable leak or an exposed pipe** in a ditch or stream on a RRWA waterline and receive a $25 leak report reward.
- **Help keep the meter pit area clean and free of debris** so RRWA can perform routine maintenance checks.
- For traditional self-read meters, please **read the meter in the pit periodically and compare it to the remote reading**. Insects or environmental conditions can affect the accuracy of the remote.
- Customers must have their own water main shut-off valve, as the meter on/off valve is intended for RRWA/ **emergency use only.**
- **Always report to RRWA** anytime you believe the meter or remote are not working correctly.
- **A $250 tampering fee plus material and labor** can be assessed for any fraudulent tampering or recurring preventable damages to RRWA equipment.



Call your RRWA Customer Service Representative today!

Sign Up for RRWA's AutoPay with a *SMART METER!*

Are you tired of reading your water meter remote, writing a check, and mailing your payment every month? If yes, join the thousands of RRWA customers who have already signed up for autopay and enjoy the benefits of automatically paying their water bill online. Signing up for autopay can save you time and money. Here's what you need to know.

What is AutoPay? RRWA's autopay is a secure and convenient way to pay your monthly water bill online. With autopay, the amount of your monthly water bill is automatically deducted from your bank account and credited to your RRWA account. There is no set-up fee. RRWA uses Braintree, a division of PayPal, Inc., to securely store account information and process autopay bill payments.

How does AutoPay work? RRWA will obtain the meter reading from your smart meter on the first of each month. Also, on the first of each month you will receive an email from RRWA with the meter reading, gallons used, and payment amount due. The amount due will be deducted from your account five to seven days later. You will receive an email confirmation once your payment has been processed.

How do I sign up for AutoPay? First, you will need RRWA to install a smart meter at your property to sign up for autopay. Call RRWA at 800-233-8849 to request a free smart meter. After you have your smart meter installed or if you already have a smart meter, setting up autopay is easy. Simply inform your customer service representative of your preferred payment method or download and fill out the autopay form on RRWA's website https://www.rrwa.net/bill-payment.aspx . You can return the completed form by email to rrwainc@rrwa.net , mail it to RRWA, or drop it by our office at 16166 Hwy J29, Centerville, Iowa 52544. You will then receive an email with temporary login credentials and further instructions.

Do you still have questions? Call RRWA at 800-233-8849. Your customer service representative will be glad to provide you with more information about the benefits of autopay and smart meters.

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TO "LIKE" AND "FOLLOW" OUR PAGE SEARCH :

"Rathbun Regional Water Association – RRWA"

Pasture planting is an eligible RCPP practice.

Learn about the PROTECT RATHBUN LAKE RCPP PROJECT

Landowners in the Rathbun Lake watershed can now apply for assistance to install conservation practices on their land from the Protect Rathbun Lake Regional Conservation Partnership Program (RCPP) Project. The RCPP is a program of the USDA Natural Resources Conservation Service. Here are some of the most frequently asked questions about the Protect Rathbun Lake RCPP Project:

What is the Protect Rathbun Lake RCPP Project?

The Protect Rathbun Lake RCPP Project combines local, state, and federal funds to help landowners install conservation practices on land in the Rathbun Lake watershed. Landowners who install practices will help prevent soil erosion on their land and protect water quality in Rathbun Lake. The project started in 2024 and will continue for five years through 2029. Nearly 50 landowners applied for assistance to install conservation practices in 2024, the first year of the project.

What conservation practices can be installed in the Protect Rathbun Lake RCPP Project?

Landowners in the Rathbun Lake watershed can apply for assistance to install the following conservation practices on their land through the Protect Rathbun Lake RCPP Project:

- Terraces
- Grade Stabilization Structures (Ponds)
- Water and Sediment Control Basins
- Cover Crops
- Grassed Waterways
- Pasture and Hay Planting

These conservation practices are very effective at preventing soil erosion and reducing the amounts of sediment and phosphorus carried in runoff to Rathbun Lake from land in the lake's watershed.

What assistance is available from the Protect Rathbun Lake RCPP Project?

Landowners in the Rathbun Lake watershed can receive technical and financial assistance through the Protect Rathbun Lake RCPP Project. Professional staff will assist landowners to plan, design, and install the conservation practices that are best suited to their land and farming operations. Landowners can also receive financial assistance to help with the cost of installing conservation practices. For most practices, this financial assistance will cover 75% of the installation cost. Landowners who convert cropland to pasture and hay may also receive an incentive payment of $425 per acre.

How do I apply for the Protect Rathbun Lake RCPP Project?

Landowners in the Rathbun Lake watershed area of Appanoose, Clarke, Decatur, Lucas, Monroe, and Wayne Counties can apply for assistance through the Protect Rathbun Lake RCPP Project. Interested landowners should visit their local Soil and Water Conservation District (SWCD) office. The addresses and phone numbers for SWCD offices in watershed counties can be found on the Iowa Department of Agriculture and Land Stewardship website https://costshare.iowaagriculture.gov/districts .

Landowners in the Rathbun Lake watershed should take advantage of this new opportunity to improve their land and protect water quality in the lake. Contact the SWCD office in your county to learn more and to apply for assistance through the Protect Rathbun Lake RCPP Project.

Terrace construction is an eligible RCPP practice.

Pond construction is an eligible RCPP practice.

Planting cover crops is an eligible RCPP practice.

IRWA HALF A CENTURY of Support for Rural Water

By Rod Glosser; *Rathbun Regional Water Chief Executive Officer and IRWA Board President*

▲ ***A training room at IRWA's Annual Conference. The IRWA Conference is the largest water and wastewater event in the state of Iowa.***

As early as the 1940s through the 1960s, there were concerns in many rural areas of Iowa about the quality and quantity of water available. In some areas ponds were built to address this situation, however, by the late 1960s, it was realized that a better solution was to establish water systems that would provide water throughout regional areas where these issues were prevalent. Farmers and officials from County Extension offices, the Soil Conservation Service, Agriculture Stabilization office, as well as Farmers Home Administration began holding meetings to find a solution. Local steering committees were established, and studies and surveys were conducted to determine if there was sufficient interest in creating rural water systems to meet the water needs in areas with inadequate water supplies. Often, an interest fee was collected along with the surveys, typically around $25, to help cover the initial expenses of these efforts.

The results of many of the surveys indicated the demand and need for safe, plentiful water were present. The next step was to find the resources to build these systems. Many of the areas seeking potable water were economically challenged and in some cases were in the poorest areas of the state. Fortunately, funding was available through the Economic Development Administration of the U.S. Department of Commerce and the Farmers Home Administration (now known as USDA-Rural Development). However, in order to qualify for funding, an area had to achieve a minimum of 80 percent commitment from residents in the planned service areas. These agencies provided the initial funding to either develop water sources and build water treatment plants or to purchase capacity in existing treatment systems, and construct water storage tanks and distribution mains. The grants and low-interest loans provided by these agencies allowed the systems to provide potable water at reasonable rates and improve the quality of life in many areas of rural Iowa.

By the early 1970s, several systems were beginning to be designed by engineering firms or were already in construction. Rural Water System #1 headquartered in Hospers, Iowa has the distinction of being the first such system to begin operations in Iowa. In the years to follow, approximately two dozen rural water systems were established in the state. Due to mergers, there are currently 19 rural water systems in existence in Iowa today.

◀ ***Congresswoman Ashley Hinson attends a water treatment plant tour at Poweshiek Water Association as part of an initiative to communicate with legislators on the importance of continual upgrades and improvements to Iowa's water and wastewater infrastructure.***

As these systems were established and began to grow, they have played an integral role in serving small communities, farms and agricultural facilities, rural commercial and industrial businesses. Rural water systems in Iowa serve rural areas in all or parts of 72 counties and provide water services to over 300 small communities in the state. Rural water systems are active participants in many economic development initiatives. These days, rural water systems continue to expand and improve their services, including many that provide wastewater services for small, rural communities. Current funding sources of rural water systems primarily are USDA-Rural Development, State Revolving Loan funding, CDBG grants and Co-Bank. Rural water systems have proven themselves to be reliant—dependably serving their customers through the 1980s Farm Crisis, ice storms, droughts, flooding, tornados and most recent, several derechos.

As rural water systems were starting to organize, incorporate, and build the infrastructure necessary to serve rural residential customers and communities, this significant period also marked the passage of the Safe Drinking Water Act in 1974. This landmark legislation set regulatory standards to ensure the public is provided with safe drinking water and tasked the EPA with oversight over water suppliers and operators. Both events laid the foundation for the necessity and creation of the Iowa Rural Water Association (IRWA).

Since its inception in December of 1975, IRWA's mission has remained steadfast and unwavering: "Serving Iowa's public water and wastewater systems by providing technical assistance, education, leadership in legal and legislative affairs, financial and economic growth, and excellence in the industry." IRWA's commitment to this mission is exemplified through the various services offered, including professional training for operators, managers, and boards, on-site technical assistance, an equipment loan program, local legislative and regulatory representation, and many other water and wastewater-specific supports.

Over the past five decades, IRWA has not only grown in size but also in its ability to impact the water and wastewater industry positively. The dedication of our Circuit Rider staff, who provide on-site technical assistance, training, and emergency response, is crucial to our mission. They are the backbone of our operation, ensuring that our members have the support they need to maintain and improve their systems.

Over the years, circuit riders have adapted to meet the evolving needs of rural communities, incorporating new technologies to enhance their support for the industry. The concept of circuit riders originated with clergy in early American history, traveling to remote areas to deliver sermons and organize congregations. This model was later adapted for the water industry through the National Rural Water Association and the passage of the Rural Development Policy Act of 1980. Since then, the program has expanded to offer a wide range of services, including improving water quality, ensuring regulatory compliance, providing emergency response assistance, promoting financial sustainability, and delivering specialized training. These circuit rider positions have played a crucial role in helping small water systems comply with the Safe Drinking Water Act and other regulations, thereby enhancing the health and safety of rural communities across Iowa.

IRWA's source water specialist also plays a critical role in the ongoing efforts to protect Iowa's water resources. The source water specialist focus is on the design and implementation of Wellhead and Source Water protection plans. Public health remains the top priority for the industry, and significant progress is being made across the state in identifying, controlling, and eliminating point source pollution from industrial, agricultural, municipal, and household sources.

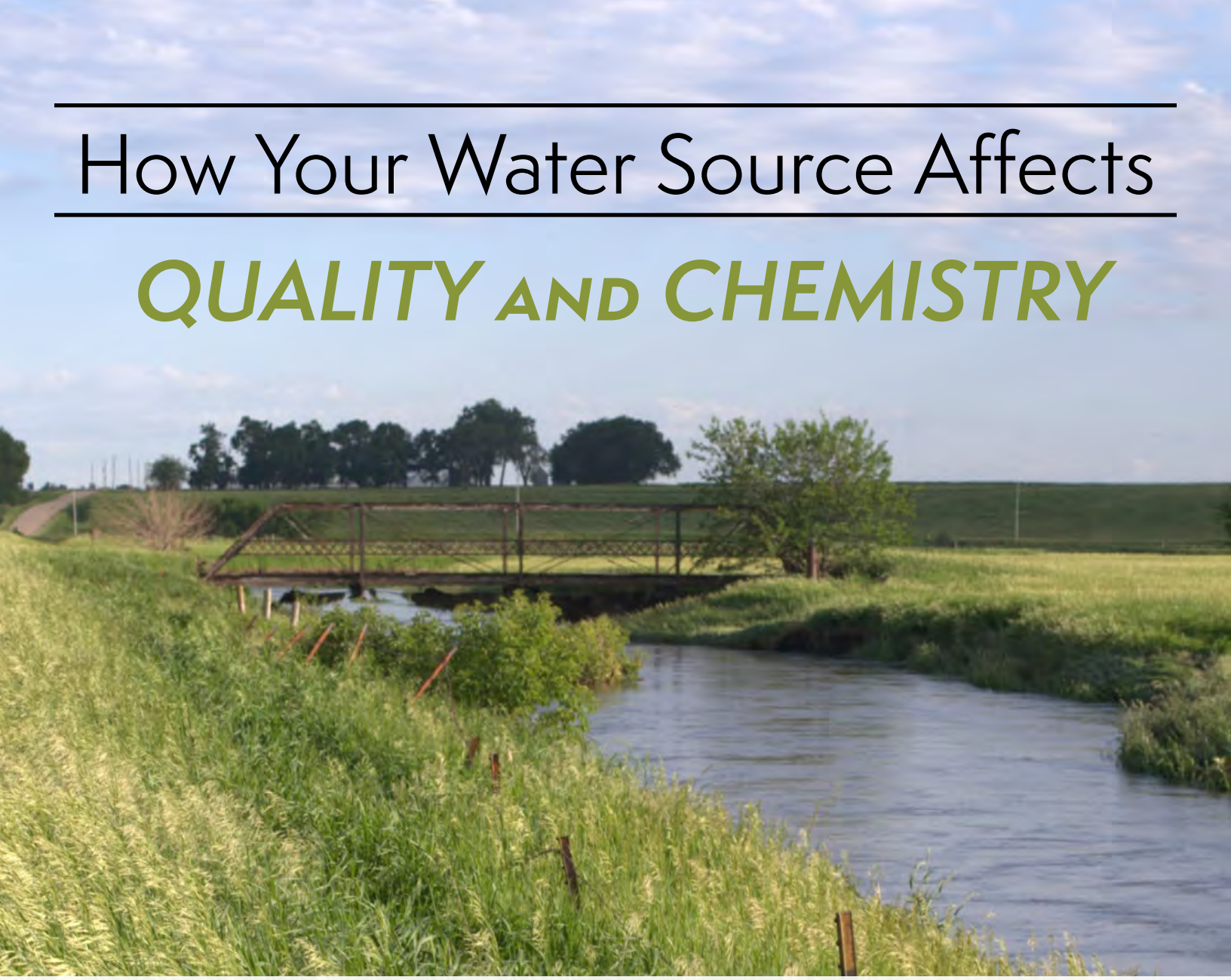
As we roll through the early part of 2025, we pause to celebrate half a century of rural water service in Iowa and the existence of the Iowa Rural Water Association. This article is intended to honor all of those who paved the way for water service that is so easily taken for granted. It is due to their efforts, sacrifices and selflessness that has made a plentiful, safe, reliable water service available where it wasn't before. Join me in congratulating the Iowa Rural Water Association for a Half Century of greatness in Iowa's water industry.

▲ *Zeb McFarland, Circuit Rider for the Iowa Rural Water Association, on the phone organizing help for Minden after devastating tornado.*

▲ *IRWA Circuit Rider Casey Sebastian offers hands-on Water Operator Basics training for beginning operators. This provides an opportunity for continuing education credit towards licensing but also builds a network of new operators that can offer support to each other*

▲ *Aaron Schroeder gives visual guidance to 5th grade students on the water table and the process of our water cycle.*

How Your Water Source Affects QUALITY AND CHEMISTRY



Water is essential to life, but did you know that its source plays a crucial role in determining its quality, taste, and safety? Whether your water comes from a river, lake, or underground aquifer, the differences in origin impact everything from mineral content to the presence of contaminants. Understanding these distinctions can help consumers make informed choices about their water consumption and treatment needs.

Surface Water vs. Groundwater: What's the Difference?

Water supplies generally fall into two categories: **surface water** and **groundwater**. Surface water is sourced from lakes, rivers, and reservoirs, while groundwater comes from underground aquifers accessed through wells. Because surface water is exposed to environmental factors, it tends to have more organic contaminants and microbial activity. In contrast, groundwater is filtered naturally through layers of rock and soil, giving it a different chemical composition.

What's in Your Water? A Look at Contaminants and Chemistry

SURFACE WATER CHARACTERISTICS

1. **Higher Microbial Activity** – Rivers and lakes are open to environmental exposure, making them more susceptible to bacteria, viruses, and parasites from runoff and wastewater discharge. This is why surface water typically requires extensive filtration and disinfection.

2. **Organic and Chemical Contaminants** – Pesticides, herbicides, and industrial pollutants can wash into surface water sources, increasing the need for advanced treatment methods.

3. **Nutrient Pollution** – Fertilizers used in agriculture can contribute to high nitrogen and phosphorus levels, leading to algal blooms and taste or odor issues.

4. **Turbidity (Cloudiness)** – Surface water often contains suspended particles from soil erosion, making it appear murky and requiring additional treatment to remove sediments.

GROUNDWATER CHARACTERISTICS

1. **Higher Mineral Content** – As groundwater moves through rock layers, it absorbs minerals like calcium, magnesium, and iron, which can contribute to water hardness and scaling in pipes and appliances.

2. **Natural Contaminants** – Elements like arsenic, fluoride, and radon can be found in certain groundwater sources, sometimes requiring specialized treatment.

3. **Lower Microbial Risk** – Because groundwater is naturally filtered through soil and rock, it generally contains fewer bacteria and viruses, though shallow wells can still be vulnerable to contamination.

4. **Stable Chemistry** – Groundwater usually has a more consistent pH and alkalinity compared to surface water, which can fluctuate due to acid rain, industrial runoff, and seasonal changes.

How Water Treatment Adapts to Different Sources

Since surface water and groundwater have distinct characteristics, their treatment methods also differ:

- **Surface water treatment** focuses on removing pathogens, sediments, and pollutants. This often includes filtration, coagulation, sedimentation, and disinfection processes like chlorination or ultraviolet (UV) treatment.
- **Groundwater treatment** typically addresses mineral content, heavy metals, and natural contaminants. Techniques like water softening, reverse osmosis, and aeration help remove excess minerals and unwanted elements.

The Role of Climate and Geography in Water Quality

Climate and geographic factors significantly impact water quality and availability. Regions with heavy rainfall and dense vegetation often have more abundant surface water sources, while arid areas rely heavily on groundwater. Seasonal changes can affect water levels, temperature, and contamination risks. For instance:

- **Drought-prone regions** may experience lower groundwater recharge, leading to higher mineral concentrations and water scarcity.
- **Coastal areas** may face saltwater intrusion in freshwater supplies, requiring desalination efforts.
- **Industrial and agricultural zones** are more likely to experience contamination from chemicals, fertilizers, and heavy metals seeping into both surface and groundwater.

Water Quality Testing and Consumer Awareness

Regular water testing is crucial for both municipal and private water sources. Public water systems are required to comply with Environmental Protection Agency (EPA) regulations, ensuring safe drinking water through rigorous monitoring. However, private well owners must take responsibility for testing their water for contaminants like bacteria, nitrates, and heavy metals.

What This Means for You

If your water comes from a municipal supply, rest assured that it undergoes rigorous testing and treatment to meet safety standards. However, if you rely on a private well, regular testing is essential to ensure safe drinking water, as groundwater quality can vary based on location and environmental factors.

Understanding how water quality is shaped by nature and human activity can help you appreciate the journey your water takes before it reaches your tap. Whether you prefer the crisp taste of surface water or the mineral-rich quality of groundwater, being informed empowers you to make the best choices for your household's water needs.

Future Trends in Water Treatment and Sustainability

As technology advances, new water treatment methods are emerging to improve efficiency and sustainability. Some key trends include:

- **Advanced Filtration Techniques** – Innovations like nanofiltration and membrane bioreactors provide more effective purification while using less energy.
- **Smart Water Monitoring** – IoT-based sensors allow real-time tracking of water quality and usage, helping communities detect contamination faster.
- **Water Reuse and Recycling** – Treated wastewater is increasingly being repurposed for irrigation, industrial use, and even potable water supplies.
- **Desalination Breakthroughs** – Improved desalination technology is making it more cost-effective to convert seawater into drinking water, benefiting coastal and drought-affected regions.

By staying informed about these developments, consumers can make more sustainable water choices and contribute to a future where clean water remains accessible for all.

Rathbun Regional Water Association, Inc.
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www.rrwa.net

WATER MATTERS

Cybersecurity for Rural Water Systems Act

Congressman Don Davis (NC-01), along with Congressman Zachary Nunn (IA-03), members of the U.S. House Committee on Agriculture, introduced H.R. 2109, the Cybersecurity for Rural Water Systems Act.

"The reality is that Iowa's water supply is vulnerable. A single cyber-attack would have a devastating impact across our rural communities, making it a priority to safeguard our water systems and deliver security for Iowans," said Congressman Nunn. "This bipartisan bill would provide critical resources to prevent cyber-attacks and bolster cyber defenses so that all Iowans can rest easy at night knowing our water supply is safe."

Control room in Rathbun Regional Water Association west treatment plant.

"With cybersecurity being a significant challenge for many small and rural water systems, enhancing the ability to proactively protect these vulnerable utilities is needed," said National Rural Water Association (NRWA) Chief Executive Officer Matt Holmes. "This legislation will provide ongoing education, training, and technical assistance needed for utilities to prevent, prepare for, and respond to cyberattacks. The Cybersecurity for Rural Water Systems Act of 2025 will create 'Circuit Rider' cybersecurity specialists who will deliver onsite training and technical assistance to rural utilities across our nation that lack the technical, financial, and managerial resources and in-house expertise to defend themselves from cyber threats. On behalf of our 31,000 utility members, NRWA is grateful for Representative Donald Davis's leadership and efforts on this important legislation."

The bill would expand the successful rural water circuit rider program to include cybersecurity technical assistance and authorize funding to hire a cybersecurity circuit rider for all 50 states. These experts will provide critical services to ensure rural water systems are secure from cyber threats, assist small water utilities in building action plans to protect and prevent cyber-attacks and develop and report on cybersecurity for rural water systems across the U.S.