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Volume XVIII — Fall 2021



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MISSION STATEMENT

"Protecting and preserving the water and wastewater resources of Rural Illinois through education, representation and on-site technical assistance".

On the Cover:

**This water tower photo was taken by Jeff McCready,
IRWA Wastewater Technician, in
South Wilmington, Illinois.**

Water Ways is the official publication of the Illinois Rural Water Association, P.O. Box 49, Taylorville, Illinois 62568, and is published quarterly for distribution to members as well as other industry associations and friends. Our website is www.ilrwa.org. Articles and photographs are encouraged. Advertising and submissions should be mailed to the above address or e-mail us at ilrwadb@ilrwa.org.



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Stress Upon Stress

*by Don Craig,
IRWA Deputy Executive Director*

Many of you, may or may not have heard about the tremendous amount of rain and ensuing flooding that occurred in one of our long standing member systems on Thursday, August 12th. That community is Gibson City, located in Ford County at the east-central part of the state. The municipality is also my home town.

Fortunately, or maybe unfortunately, I was home that morning when Mother Nature unleashed an unbelievable amount of rain and wind upon us. It was like nothing I have ever seen in my sixty-six years of life, there or anywhere.

As I watched the storm from the windows from my home, and looking at the radar on my phone...it was like the continuous regeneration of 'red' just in our area...and not moving at all.

This bombardment went on about four hours, and unloaded an approximate 11.5 inches of rain during that time. Our community was inundated to say the least.

Once the area creeks and drainage ditches overflowed,

there was nowhere for the water to go, and so it simply backed up everywhere...

to the point of very significant flooding in most areas of town.

One of those areas included the location where Gibson City's

water treatment plant is located. Unfortunately, in that same area, many government housing structures that surround the facility, were flooded with 4 to five feet of water...simply and literally 'pouring' right into their living space, and ultimately forcing those people to be assisted, and or rescued, from their homes.... many by small boats that emergency services were manning. It was a terrible, terrible situation for those people and many, many

more in several other areas around town.

As far as the water treatment plant, fortunately it had been designed and constructed (many years ago), with the possible aspect of something like this happening.



**GIBSON CITY, ILLINOIS
FLASH FLOODING**

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The main part of the plant, its controls, aerator, and gravity filters were all on the second level of the building, as essentially the large concrete structure protected and surrounded the clear well on the ground level, and overall gave shelter to the facility's operational system by its upper location within the plant. There were a couple chemical feed areas, on the ground level, that were affected, but the city crew's did a great job in getting those back on line, after the waters started to recede. The treatment plant actually had to be shut down for several hours after the storm, due to the need from the power company having to stop electricity to all that area because of the tremendous flooding going on. Unfortunately, the large generator at the water treatment plant was located on ground level, so it was unusable as well for the facility. The city put out notice that the plant was 'down' and also a precautionary boil order, as customers were advised to restrict water usage to save as much pressure on the system with the existing storage.

When the power was restored, late that night, the community's water pressure had fortunately stayed up appreciably, and the system was not


'lost'. Again, kudos to all of Gibson City's utility personnel for doing a very admirable job, through a crazy and stressful period.

The damage and emotional stress that all of the residents there incurred, will undoubtedly continue to go on for a long time. Personally, I have continued to notice the ever recurring change in our weather, with storms like this dumping huge amounts of rain in locations... everywhere. It used to be, when there was a rain event occurring, that was more severe than normal, the amounts were like 4 to 6 inches...and that was a lot, indeed. But now, large scale rain storms are more and more, unloading total amounts way in excess of those levels. And, this is happening at places all over the world. For example, Waverly, Tennessee, close to where my daughter lives, went through an even worse rain storm event, just a few weeks after the one in my home town.

No politics involved, and no matter the cause....climate change to me, is real and definitely happening. I worry for all of us, and especially my family, how we are to deal with it in the near future, and for the years to come, and long after I am gone.

What happened in Gibson City was tragic, to say the least, as it has been to other communities in Illinois with similar events. At the time, during the onslaught of rain and wind, I kind of jokingly thought to myself, "is this the end of the world, or are we in hell". It seemed that way at the time. It was not funny though, for any of us....

Oh, and if Mother Nature didn't let us know that day, who is the real boss here on earth...about three weeks later, the same area, the same town...my hometown... was given another reminder as a terrifying straight line wind and rain storm plowed through, with an estimated 70 to 85 mile an hour winds. Many structures and trees were hit very hard by the incident.

That's what you call, stress upon stress... 



How Long Does It Take a Hacker to Brute Force a Password?

by Kindsley Haynes,
Marketing Director -
IronTech Security

Fort Smith, Ark. – According to leading cybersecurity company, IronTech Security, brute force is one tactic hackers use to access a system. Brute force attacks refer to the many methods of hacking that all involve guessing passwords in order. If a password is only four or five characters (whether they are just numbers or a combination of numbers, letters and symbols), there's a very high chance that it will be hacked instantly. However, if a password is only numbers and up to 18 characters, it could take a hacker up to nine months to crack the code.

Consider that at least 60% of people reuse passwords across multiple sites; an estimated 81% of data breaches are due to poor password hygiene; and although 91% of participants in a recent survey understand the risk of password reuse, 59% admitted doing it anyway. Most people will choose passwords that can be divided into 24 common combinations, and 49% of users will only change one letter or digit in one of their preferred passwords when required to make a new password. Based on an analysis of the data from Dark Web ID, the most categories of information used to generate bad passwords in 2020 were names, sports, food, places, animals, and famous people/characters.

Most brute force attacks employ some sort of automation which allows almost limitless quantities of passwords to be fed into a system. A simple example of a brute force attack is a hacker simply guessing a person's password based on relevant clues. However, most are more sophisticated. Credential recycling, for example, is predicated on the fact that many people reuse passwords, some of which will have been exposed by previous data breaches. Reverse brute force attacks involve

hackers taking some of the most commonly used passwords and attempting to guess associated user names.

The longer, more complex and unique a password is, the less likely it is to fall victim to a password attack. This graphic shows how long it would take a hacker to crack a password.

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In My Travels

*by Jeff McCready,
IRWA Wastewater Technician*

In the last 4 1/2 years working for the Illinois Rural Water Association, I have traveled extensively throughout the northern half of the state, from the western suburbs of Chicago to Galena, Quincy to Danville and up to the Wisconsin border, oh and southern Illinois also. You see lots of small towns, medium size towns and larger cities. (My definition of larger cities is a population of 8,000 to 10,000) As the rest of the IRWA staff can attest, we are able to see all kinds of beautiful scenery, interesting sites, and landmarks in our travels. One type of site that seems to be popular in most towns these days is a Veteran's Memorial.

As a good share of you are aware, I live in the Village of Woodhull, at the junction of I-74 and IL Rt 17. If you head west out of Woodhull on Rt 17 for approximately 40 miles Rt 17 ends in the City of New Boston (41 miles puts you in the Mississippi River), a small town of around 680 people. On May 15th, 2020, I was making some local onsite visits and one of those stops was in the City of New Boston. When I arrived at the maintenance

building, the operator said "follow me to the Veterans Memorial site. They're delivering the monuments today."

When we got there the monument company arrived and started to install the stone monuments in their respective places. A large stone app. 7 feet tall, 6 stones representing the branches of the military – Army, Navy, Coast Guard, Air Force, Marine Corp, and National Guard – and a stone speaking podium with Abe Lincoln inscribed in the front. (Abe Lincoln surveyed the town when it was established in 1834).

So, what makes this one so special that I would write about it. Nothing about the memorial itself, but what I got to see that

continued on page 8



day is something that a lot of us don't get to see. The smiles on the faces of the towns people that were there that day.

The sense of accomplishment, the looks of pride and smiles for the end of what I can only assume was countless hours of volunteer work and fund raising that

typically take place for a memorial in such a small town to get finished. A small town at its best.

In my travel these days, I try at a minimum to a least drive by a Veterans Memorial if there is one in the town I'm working in. I hope

you can take the time in your travels to stop and visit them also and thank a Veteran for their service. Stay safe out there and keep up the good work. 💧



IRWA Support Letters Are Needed

IRWA employees are dedicated in helping the water and wastewater systems throughout the state in making onsite visits and providing technical assistance in helping to ensure your systems have safe and quality water.

Please take a moment to thank any or all of the IRWA employees who have helped your system by writing an appreciation letter on your letterhead and mail to:

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IPWSOA 2021 Operator of the Year

***by Casey Johnson,
IRWA Board Member***

I wanted to take this time to recognize a fellow water operator and friend of mine, Derek Hogue. This September, at the IPWSOA Conference held in Springfield, Illinois, Derek was recognized by his peers as the IPWSOA 2021 Water Operator of the Year.

When I began to reflect on who could receive this award, Derek was the first to cross my mind. Derek is the Responsible Operator in Charge, Superintendent, Billing Clerk, Payroll Clerk, and Chief Financial Officer for Southwater Inc., located in Tamms, Illinois. Southwater is a 2.5 million gallons a day groundwater treatment facility. Southwater's distribution system consists of roughly 450 miles of water mains and residential service lines. The system provides drinking water to approximately 3,500 people. Along with his treatment and distribution system duties, Derek manages four employees, their staffing schedule and remains the 24/7-365 day a year contact person for Southwater.

Many people do not understand what it is like to be a water operator or a water treatment facility manager. Operators wear several hats with limited resources. The sacrifices we all make every day to provide a service is something I learned immediately as I began my professional career in water. Derek was the first local water operator to reach out and offer help any time I needed it. As our two entities have maintained mutual-aid agreements for several years, Derek and I have worked together in emergencies day, night, weekend, or holidays. Derek has always taken my call and been the first one there to help.

Once I had heard the news of Derek winning, I immediately congratulated him, and he simply responded, "You're only as good as the people you surround yourself with. Without my

people, none of this would be possible".

If that is not someone deserving of this award, then I don't know who is.

Congratulations, Derek Hogue! You've more than earned the title Operator of the Year. The daily dedication you provide has set the bar high for every water professional in Illinois moving forward. 💧



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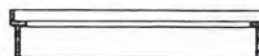
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• Member utilities should contact their State Rural Water Association to access the Rural Water Fleet Program.



FEBRUARY 15-17, 2022

More details and registration information coming in November. We are looking forward to this conference being back on schedule in February at the Keller Convention Center in Effingham!

How Long Does It Take a Hacker to Brute Force a Password?

continued from page 6

Number of Characters	Numbers Only	Lowercase Letters	Upper and Lowercase Letters	Numbers, Upper and Lowercase Letters	Numbers, Upper and Lowercase Letters, Symbols
4	Instantly	Instantly	Instantly	Instantly	Instantly
5	Instantly	Instantly	Instantly	Instantly	Instantly
6	Instantly	Instantly	Instantly	1 sec	5 secs
7	Instantly	Instantly	25 secs	1 min	6 mins
8	Instantly	5 secs	22 mins	1 hour	8 hours
9	Instantly	2 mins	19 hours	3 days	3 weeks
10	Instantly	58 mins	1 month	7 months	5 years
11	2 secs	1 day	5 years	41 years	400 years
12	25 secs	3 weeks	300 years	2k years	34k years
13	4 mins	1 year	16k years	100k years	2m years
14	41 mins	51 years	800k years	9m years	200m years
15	6 hours	1k years	43m years	600m years	15 bn years
16	2 days	34k years	2bn years	37bn years	1tn years
17	4 weeks	800k years	100bn years	2tn years	93tn years
18	9 months	23m years	6tn years	100 tn years	7qd years

Data compiled using HowSecureisMyPassword.net

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"We recommend everyone use a password manager," says IronTech Security CEO Tom Kirkham. "Not only is it easy, it is convenient because it creates and stores passwords for the user. All that user needs to do is remember one master password to gain access to all credentials."

A password manager is essentially an encrypted digital vault that stores secure password login information used to access apps and accounts on a mobile device, websites, and other services. In addition to keeping identity, credentials and sensitive data safe, the best password manager also has a password generator to create strong, unique passwords and ensure the same password is not used in multiple places.

Kirkham says there are many free password managers, but that the paid versions still only cost from about \$30 to \$60 a year.

For more information contact Kindsey Haynes at kindsey.haynes@irontechsecurity.com or visit www.irontechsecurity.com.

###

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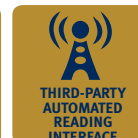
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IRWA Offering Free Energy Assessment

*by Brandon Windell,
IRWA Energy Efficiency Circuit Rider*

Consider...

The high cost of operating utilities has gotten to the point where the utility must look at all options available to save money. Keeping the operational costs to a minimum ensures the lowest possible rates while ensuring safe drinking water & wastewater utilities that return clean water to receiving waters.

What do we assess and What do I need to do?

The Energy Efficiency Technician will assess your electric bills, system assets and operational procedures. They will break it down into a report with options to explore that will lower energy costs and also include a projection of the time to needed for a return on your investment. You will be asked to give us a tour of your system(s), provide 1-2 years of electrical billing, and have a general idea of your equipment run times.

Why is IRWA offering this?

Most operators spend their time on operational issues to ensure that their customers have safe drinking water and/or a clean effluent from their wastewater facility all while maintaining compliance. Operators often do not have time to dedicate to energy savings nor do most possess the expertise in doing assessments. We can take the time and figure it out for you!

Key Offerings:

Find where your system can save money on energy. Not only can your system be more efficient, but we can also outline which changes/upgrades can generate repayment the quickest. An

easy-to-read energy

report will be generated

from the information

collected during the

visit. The report will

show you how much

energy can be saved

with each item assessed

and include rebates/

incentives, if offered, by

your electric supplier. There is no obligation to upgrade anything

listed in the report. This is a free service offered by IRWA to

small systems to highlight where you can potentially save money.

IRWA has been contracted to perform 30 energy assessments per year, so please do not hesitate to call IRWA's Energy Efficiency Technician, Brandon Windell at (217) 820-1560 and schedule yours today - before it's too late!! 💧





What are you looking for?

The ABC's of ilrwa.org

- **Advertising in Water Ways information** (Ad agreement and links) - Publications > Advertising Information
- **Becoming a Certified Water or Wastewater Operator**—Training > Water > under table
- **Boil Order Notice**—Resources > Downloads
- **Certification Overview from IRWA**—Training > Certification
- **Certified Water Operator Contract**—Resources > Downloads
- **CEU Forms from past conferences**—Training > Conferences
- **CEU's from CD training**—Training > CD's
- **Cross Connection** (manual, survey & ordinance) - Resources > Cross Connection
- **Current hot topics and upcoming events** - Home
- **E-CCR**—Services > e-CCR Hosting
- **Energy Efficiency Assessment**—Services > Energy Efficiency
- **For Sale/Wanted**—Services > For Sale
- **Forming a new water district**—Resources > Downloads
- **GPS/GIS**—Services > GPS/GIS Mapping
- **Industry Organizations**—Resources > Links
- **Lead Testing**—Resources > Lead Information
- **Leak checklist and how much am I losing flyers**—Resources > Downloads
- **Legislative Information** – (Who is my rep?, Bills that IRWA is following)—Resources > Legislative
- **Mutual Aid**—Resources > Downloads
- **NFP Tax Forms** — Resources > Downloads
- **NRWA Fleet** - Membership > Benefits—click on the NRWA logo
- **Operator Groups**—Resources > Links
- **PFAS**—Home
- **Rate Study**— Services > Rate Study
- **Red Flag Act**—Resources > Downloads
- **Speaker Request Form for Conference** —Training > Conferences
- **Tracer Wire Specs**—Resources > Downloads
- **VA/ERP/Contingency Plans**—Resources > VA/ERP
- **Video Inspection Services**—Services > Video Inspection
- **Wastewater CEU information**—Training > Wastewater > under table
- **Water Loss Handouts**—Resources > Downloads
- **Water University**—Training > Water U

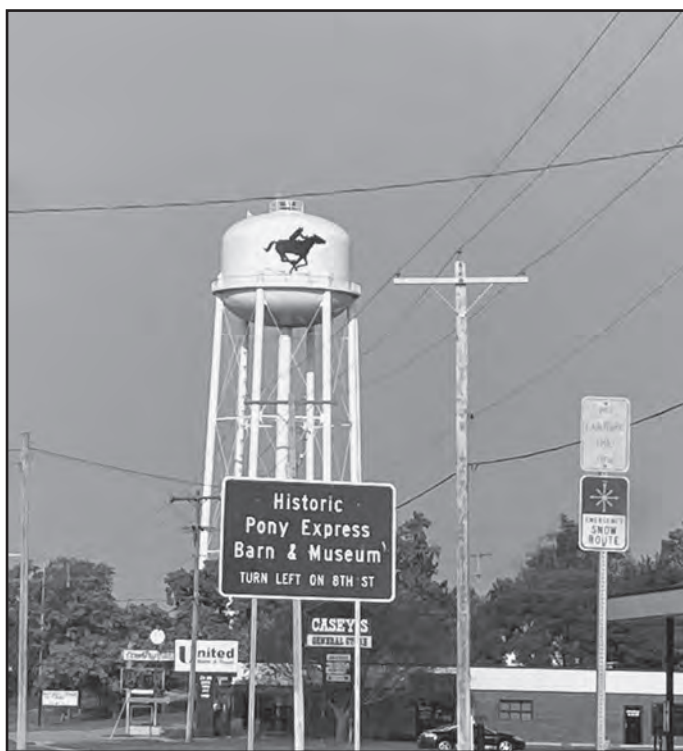


Water Towers - A Large Part of a Small Town's Identity

by Clark Cameron,
IRWA State Circuit Rider

While taking a leisurely Sunday afternoon drive through a number of small towns in both Illinois and Missouri, I was fascinated by the variety of assorted designs and artworks on the water towers in each town. In my job as a state circuit rider, I do quite a lot of traveling on the backroads from town to town and often times the first sight I see when nearing a small, rural town is the water tower. A water tower can often times give a quick snapshot of a town's finances too. If the tower is old, rusty and in disrepair it immediately gives the impression that the town may not be very well off financially. A new shiny, well painted tower gives the impression that the town is doing it's best to stay ahead of Father Time and project a positive image for all to see. As you can see from the photo below just a simple, well-maintained tower can project a positive image to anyone lucky enough to pass by your town.

A water tower serves far more important purposes than just looking pretty and displaying your towns name. A water tower is an important part of the water system that helps to maintain the pressure in the system. Most small communities do not operate the water plant 24 hours per day, so the tower is the only thing that keeps the pressure at a safe level. The placement and sizing of a tower is critical to the proper operation of a water system, especially in towns that have hilly terrain. A water tower is also a huge part



The tower pictured above happens to be one of my favorites simply because of the name.

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Water Towers - A Large Part of a Small Town's Identity

continued from page 22

of every town's firefighting capabilities. Having a large reserve amount of water in the tower can sometimes be the difference between a disaster or not. And most importantly, should some type of problems arise at the water plant that forces it offline for a brief period, the town will still have water and a boil order has been avoided.

Here is a picture of the new tower that was recently erected in Sorento, right beside the old tower just before it was taken down. The new tower is 128 ft. tall and was completed in April 2021 at a cost of \$617,000. The Village was awarded a grant that covered roughly half of the total cost and the Village was

responsible for the rest. There are numerous grants and loan sources available right now to assist with the cost of major projects, but towns need to plan ahead and make sure they have sufficient rates to produce the revenue necessary to pay their share. Illinois Rural Water Association helped the Village of Sorento prepare their finances by performing a rate study that helped the Village know exactly where they needed to set water rates to pay for the improvements. And, as always, Illinois Rural Water Association is ready and willing to help your town or village get a better understanding of your financial future and prepare for whatever comes along. We are just a phone call away!





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Acorns	Apple Pie	Apples	Autumn	Autumnal Equinox
Back To School	Blackberries	Black Cats	Bounty	Chestnuts
Chrysanthemum	Colorful Leaves	Cool Weather	Corn	Corn Fields
Cornucopia	Cranberries	Cranberry Sauce	Crows	Fall
Falling Leaves	Fog	Halloween	Harvest	Harvest Moon
Haystacks	Indian Summer	Jack o Lantern	Kite Flying	Kites
Leaf Piles	Moon	November	Nuts	October
Pecan Pie	Pine Cone	Pumpkin Patch	Pumpkin Pie	Pumpkins
Raking Leaves	Rain	Raincoat	Scarecrows	Season
September	Spooky	Squash	Thanksgiving	Trick or Treat
Turkey	Walnuts	Winds	Yams	



FREE RATE STUDY

Why Have a Rate Study Conducted?

With the amount of grant dollars available for water and wastewater projects continuing to dwindle, coupled with the aging water and/or wastewater infrastructure, it is increasingly more important that decision makers for systems throughout the state become more educated about system finances. This **FREE** rate study takes an in-depth look into the expenses and revenue that a system has. Once all of the data has been gathered and entered into a spreadsheet a detailed report is generated to explain the findings and recommendations. This easy to read report and any rate changes recommended will assist Boards and Councils in mapping out the financial future of their respective systems.

If your system is interested in having a rate study conducted, please contact Clark Cameron at (217) 287-2115(Office) or (217) 820-3814 (Cell).

What Information Will the Rate Study Provide?

- ⇒ Breakdown of expenses
- ⇒ The cost to produce the water (if applicable)
- ⇒ Amount of nonrevenue water
- ⇒ Amount of lost revenue from water loss
- ⇒ Annual gain or shortfall in revenue
- ⇒ Different rate scenarios



What Information Will I Need to Supply For a Rate Study?

- ⇒ Financial statements for the most current fiscal year (audit report preferred)
- ⇒ Amount of water produced and/or purchased during the most current fiscal year
- ⇒ Amount of water sold during the most current fiscal year
- ⇒ Current rate structure
- ⇒ Number of customers in each rate class
- ⇒ Amount of debt (if any)



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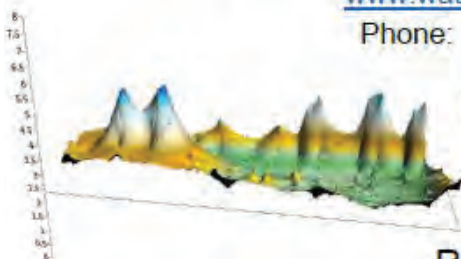


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