



**GIS and White Squirrels**  
**By: Don Craig, Deputy Director**

**December 2018  
 Newsletter**

Water  
 Quality  
 Protection  
 Through  
 Education  
 and  
 Technical  
 Assistance

This past month of November, IRWA began the first of three very large GPS/GIS mapping projects in one of our bigger voting member systems...the City of Olney, in Richland County in the southeastern part of the state. Olney's population is just under 10,000 people, and is the well-known home of white squirrels.

Our first of three projects has started with the utility's storm sewer system. And, in fact, as of the beginning of December, as weather has permitted, over 900 features (inlets, manholes, catch basins, etc.) have had GPS shots taken, and already processed into digitally created maps through ArcGIS...and uploaded into Diamond Maps for mobile and computer access; and the capacity for editing by the Olney facility personnel. It is a map in progress, which is regularly updated, and managed. And, upon completion of that aspect of the GIS mapping, Olney will have ability to view good, updated, and accurate storm sewer maps through digital and/or hard copy access. Presently, the city does not have quality maps of that system. So, they are eager to gain that capability.

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Once that initial project is finalized, the mapping process will move into GPS field work, covering the facility's wastewater collection system feature locations. This too, will be a large undertaking and process...due to the size of the community and the sanitary system. Yet again, when completed, it will be a huge benefit for that department to have access to quality maps for reference, for years to come.

As that second venture of Olney's GIS mapping endeavor finalizes, IRWA will then begin the largest of the three overall projects...that of the water distribution system. In fact, it is so large, that between IRWA's conservative ability to take on such a huge demanding process, and the City's wanting to stretch out its overall

cost...we have developed a 3 phase process (over three years) to the final project's completion. The water system map, in its entirety, will include the main distribution system (gate valves, hydrants, hydrant valves, tanks, plant, lines, etc.), and also, the very large total combination of curb boxes and meter pits throughout the town. Without a doubt, mapping the water system will be a huge undertaking for IRWA, but we are committed to reach its finality with quality digital and hard-copy maps to be accessed and utilized by the utility.

In the end, the GIS mapping of all three systems...will add to the City's overall good asset administration, and continued sustainability for years to come. These factors are needed for maintenance and future changes and/or upgrades to each system; and such proactive system(s) management is looked upon highly when looking to possibly acquire government funding for utility improvements.

So, as you can tell, this entire mapping process will continue to go on for a lengthy period in Olney. I'm getting to know the layout of the town, like the back of my hand! But, I have yet to see one of those elusive white squirrels...

**Happy  
 Holidays!**

**IRWA'S MISSION STATEMENT**

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



# Winterizing Your Water Utilities

By: Roger Noe, IRWA Circuit Rider

It is that time of the year to prepare for the cold months and protect your utilities from the freezing temperatures. As I am sitting here writing this article it is November 15 and I am watching the snow fall. Our school officially had their first snow day; it doesn't take much for Southern Illinois schools to close when it snows. Here are a few tips that could help during the cold and dreary months. Be sure that employees have the proper gear for the winter months. Check and make sure the fire hydrants do drain properly. If you have identified some that don't drain properly you need to identify the issue and fix to prevent any other issues. If there are any areas that use heat tape make sure it is working correctly. If the heat tape is more than 3-4 years old, you may want to replace the tape. If your community has park restrooms or fountains, they need to be drained or winterized. If you have any machinery that stays out in the cold or unheated garage, be sure to check the antifreeze strength. It should be at least -25 F. Check your insulation and weather stripping on all facilities to reduce heating cost for those spaces. You might check for any small openings that could allow mice to enter the structure in which they could cause damage with wiring.

### Wells and Pumping Equipment

Check your pump houses to make sure there is a functioning heater with a thermostat to maintain enough heat to prevent any discharge lines or sensing lines to freeze. If you have a vertical turbine pump in the pump house, there will be a small amount of water trickling out of the stuffing box, which is normal. You will want to assure proper draining away from the pump house. On a submersible pump you need to maintain proper heat so when the pump is off it will not freeze. Well and pumps with pitless adapters, you must ensure that the well is covered properly and protected from snow or ice getting in them but allowing them to be vented to the atmosphere. Make sure your back up generators are serviced and ready to go if there is a power outage.

### Storage Tanks

A water tower is one of the biggest assets for the community water system and should be a concern in the winter months. If your tank has issues with overflowing at times you need to have it corrected to prevent any excess ice buildups on the exterior of the tank. The lack of circulation in the tank could cause freeze ups. A small tank is more susceptible to freezing than a large tank. Example: a 100,000-gal elevated tank has approximately 30 gal-

lons of stored water for every square foot of surface area, while a 1,000,000-gallon elevated tank has approximately 68 gal per square foot. The more steel surface there is per gallon, the faster the heat will transfer. The sensing lines need to be suitably insulated or heat taped to prevent false readings. Several years ago, the water system I was running had an issue on a cold December night. I received a call from the SCADA saying low tank level. I checked, and the tower was dropping at a rapid rate. I got to the plant started pumping water and contacted my coworkers to help find the leak. After a few hours of searching for a leak nothing was located, so we all met at the tank and realized the sensing line was froze and was giving us an inaccurate reading. That is a lesson learned on a cold, snowy, and icy night.

You can adjust pump cycles, filling times, and tank volume to help with circulation of the tank. The fill pipe needs to be insulated to prevent any freezing potential.

### Customer Meters and Services Lines

Make sure the lid is secured and not damaged to prevent any excess cold air to get to the water meter. If the meter is in an extremely cold area you can insulate the meter with a foam ring or bale of straw over the lid. Talk to your customers about making sure they have disconnected any garden hoses from the house to prevent freeze ups. If the temperature is extremely cold, a good suggestion is to have the customer let the water drip in the structure, especially mobile homes. As an operator, help educate your customer to prevent cold weather issues with their plumbing.

### Emergency Stock Items

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|------------------------|----------------------|
| Repair Clamps          | Compression Fittings |
| Pipe                   | Lids and Rings       |
| Saddles                | Valve Box and Rings  |
| Pipe thawing equipment | Extra meters         |

Take out your emergency plan and review it. If it needs to be updated this is your time to get it up to date. I have given a few ideas and suggestions. I am sure you as an operator may have your plan for your water system. Have a safe winter! As we all know the weather in Illinois will change from day to day.

## GPS/GIS MAPPING SERVICES

Through the implementation of GPS & GIS technology, IRWA can effectively produce hard copy and digital maps. With this service available from IRWA, utilities can attain new and accurate maps to better manage their water, wastewater, and storm sewer assets.

The printed maps can be large-scale wall maps up to 36"x48" showing utility features with the desired layers (aerial photos, streets, topography, etc.).

The digital map files on a CD, can be viewed and printed with free software that IRWA will provide and install on a utility computer. The software allows you to view and click on a system feature (such as a valve, hydrant, meter pit, curb stop, manhole, lift station, treatment facility, etc.), and pull up attribute data about each...as well as several other capabilities such as printing, zooming, etc.

Also, IRWA has a working relationship, with DiamondMaps.com, to put your IRWA project maps, on their server, for mobile viewing with a smartphone or cellular capable tablet....including editing capability. This is at no extra charge to the system for the first year's subscription. Continuance of the Diamond Maps service after the first year, is at the utility's discretion.

Payment for GIS services, is a set charge per feature, with IRWA members receiving an automatic 30% discount, and even more of a reduction with bigger projects. More information is also posted on our website at: [www.ilrwa.org](http://www.ilrwa.org), or you may call our office at 217-287-2115.



## CONFERENCE RE-CAPS

By: Heather McLeod – Membership Services Assistant

In October, we welcomed 80 attendees and 40 exhibitors to Giovanni's Restaurant and Convention Center once again for our 14<sup>th</sup> Annual Northern Conference. We offered 10.75 credit hours throughout the two days of the conference. Thank you to all of our exhibitors, speakers, attendees and our sponsors Cahoy Group, PDC Labs, Municipal Well & Pump, and People's Bank & Trust.

Congratulations to the winners of the cash prizes (totaling \$625) donated by our exhibitors and to Gary Schoenfeld for winning the Amazon Fire Tablet.

This year, we added an app for our conference in addition to the paper agenda to follow along with. The app included not only the times and names of the sessions going on, but also the speakers and exhibitors contact information. Since this was a trial run, we opted not to pay for publishing an app in the app store. This app was web based and available via link on our mobile website. Even though from reports on the feedback cards no one actually used it, I am going to make it available again for the Effingham conference. If it is well received, I will continue to do an app for future conferences. If not, well, we can say we tried! We have scheduled next year's Northern Conference for October 22 & 23, 2019 at Giovanni's.

No, that isn't an error in the title, I did say re-caps! Since the departure of Phil Donelson in July, I have also taken the Administrative Conferences under my wing. Our latest one was held November 15 & 16 at the Par-a-Dice Hotel Casino. There were 20 administrative professionals in attendance who braved the snowy roads traveling to East Peoria on Thursday. Over the day and a half conference, we learned about Municipal Websites, Grants, Identity Theft, FOIA & OMA, Utility Software & Solutions, Ameren Efficiency Incentives, and Options to Accept Credit and Debit Cards.

As you may know by now, we usually have one in Southern Illinois in the Spring, and a Northern one in the Fall. We would love to have more administrative staff join us at these conferences. If you haven't attended one and would like to but think that there would be a better time or location for them, please let me know. Also, if there is a topic you would like to hear about, I would be glad to know that too!

I can be reached by e-mail at [ilrwahm@ilrwa.org](mailto:ilrwahm@ilrwa.org) or 217-287-2115.



**HAPPY HOLIDAYS FROM THE IRWA BOARD & STAFF!**

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*Save the date! Information coming soon!*



**37th Annual Technical Conference**  
**February 19-21, 2019**

***Thelma Keller Convention Center/Holiday Inn - Effingham, IL***

