



## Your Unseen Value

By: Don Craig, IRWA Deputy Director

December 2022  
Newsletter

As we go into winter, and just seeing the recent massive snowstorm through lake effect in western New York, it makes me think about bad winters years ago. Specifically in regard to the very cold and harsh ones, when I worked for my hometown community in public works in the middle seventies into the eighties.

Water and wastewater operators and all public works employees are not always 'seen' as emergency responders, but in a clear sense, they... we...are.

In our scenario at that time, and the way it was and still is for them and many rural towns and systems; we were the 'go to' guys for snow removal and water line repairs, no matter how bad the weather, or what time of day. I clearly remember working many long hours through intense snowstorms, plowing snow and keeping the ability of other major emergency responders to be able to get to where they needed to go, without worrying about getting stuck or having other blockages in the roadway. Ultimately, just that job in itself, was a stressful 'mission' to carry out in many aspects. And to make it worse, there were many times while working long hours through the day and night, removing snow off the streets, that I would fortunately... or unfortunately... notice water bubbling up in a ditch or in the street because of a major water main break.

Talk about a gut punch... because I knew that even though our crew had been out long hours to plow snow to make sure the streets were clear and usable, that was not going to be the end of our emergency situation and work to be done. And, it didn't matter how exhausted and tired you were, a newer potential crisis situation had now arose, and it was going to be our responsibility to handle and resolve it as well. At times like that, it always made me think of the old adage, "no rest for the weary".

The sad thing is, besides dealing with such emergencies in such adverse conditions... most people of the community were always warm in their home and sometimes asleep at night; and do not always see the men and women actually out in those situations, let alone appreciate the true and valued importance of the work they are doing.

But, in the end, it's essential for all operators and public works employees to really know and understand in their own mind.... You do make a difference and more importantly, you are an integral asset to that community, even though you don't always get the full support or thanks you so rightfully deserve.

Now, if we could have ALL the local residents, and/or town board, just realize that as well....

### Upcoming IRWA Training Session Schedule January thru March 2023

January 10, 2023	Rochelle	DWT
January 11, 2023	Pontiac	DWT
January 12, 2023	Marion	DWT
January 18, 2023	East Peoria	WWT
February 7, 2023	Danville	DWT
February 15, 2023	Rock Island	WWT
February 21-23, 2023	Effingham	DWT & WWT
March 2, 2023	East Alton	DWT
March 7, 2023	Bourbonnais	DWT
March 15, 2023	Oblong	WWT

### IRWA'S MISSION STATEMENT

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



## Design, Operation and Maintenance Regulations

By: Dave McMillan, IRWA Training Specialist

We are now a few years (July 25, 2019) down the road from the revisions to the Illinois Pollution Control Board's (Board) regulations on the design, operation and maintenance criteria for community public water supplies (TITLE 35, SUBTITLE F, CHAPTER I, PART 604- <https://pcb.illinois.gov/SLR/IPCBandIEPAEnvironmentalRegulationsTitle35>)

So, what can we say so far about implementing these regulations?

I think the answer is, we all need to become better educated about some of what is included/required. From my perspective, as I have worked with water systems in response to their regulatory requirements, I am fairly certain that the "regulated" and the "regulators" have some work to do in understanding the "new" regulations.

To that end, in this article (and likely future articles), I thought that highlighting (in no particular order) some reoccurring themes might be beneficial.

- The regulation includes a "Grandfather" provision. This is important because it allows for the existing designs and operations of our water systems without compromising public health or water system capacity. Specifically, if the following four "tests" can be met, a water system does not have to go back to the drawing board and change their facility or operation until they make upgrades to their treatment and distribution systems.

### 604.145 - Exceptions for Community Water Supplies

a) A community water supply operating before July 26, 2019 is not required to modify or replace components to meet the requirements of this Part if:

- 1) the requirements of 35 Ill. Adm. Code 611 are met (Comment: Meeting the drinking water standards/MCLs)
- 2) the requirements of Sections 604.205, 604.230 and 604.1210 are met (Comment: Adequate source water and pumping capacity is provided);
- 3) water pressure meets the standards of Section 604.1415(a)(1) (Comment: 20 psi in all areas of distribution); and
- 4) the components were permitted or no permits were required at the time of construction.

- The regulation requires all water systems to have two water sources that are capable of meeting demand. This said, again there is a provision for water systems that existed with one well prior to the promulgation of this Board regulation. These water supplies can continue to operate as they have since their inception, until significant renovations to their facilities occurs.

### Section 604.230 Groundwater Quantity

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- c) Single Well Systems: No community water supply, the construction or modification of which commences after July 26, 2019, may rely only on a single well for its water source. A community water supply, the construction of which commenced before and that is not modified after July 26, 2019, may rely on a single well for its water source, but must be placed on the critical review list under 35 Ill. Adm. Code 602.107. For the purposes of this subsection, "modified" means when the fixed capital costs of the new components constructed within a 2-year period exceed 50% of the fixed capital cost of a comparable entirely new facility.

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- A water system must have a nitrification action plan (NAP) if it chooses to use (or must use) chloramines as residual disinfectant. This regulation does not state that a NAP is required if the water system has ammonia present in its source water. However, if you have ammonia in your source water and you do not chloramine, you can expect that the Illinois EPA will ask you to provide documentation that you are reaching breakpoint disinfection (a "free" residual). Additionally, the NAP development and implementation can be unique to every water system and is intended as a process control measure. The recommendations made in the Illinois EPA Sample Collector Handbook and on the IRWA website are just that, recommendations. Finally, the regulation does not ask you to send these plans to Illinois EPA for review and approval. If you are using chloramination, you must be able to produce your plan and show that you have implemented process control monitoring (usually at the time of an inspection).

### Section 604.140 Nitrification Action Plan

Any community water supply distributing water without a free chlorine residual must create a Nitrification Action Plan (NAP). The NAP must:

- a) contain a plan for monitoring total ammonia-N, free ammonia-N, nitrite-N, nitrate-N, monochloramine residual, dichloramine residual, and total chlorine residual;
  - b) contain system specific levels of the chemicals in subsection (a) when action must be taken;
  - c) contain specific corrective actions to be taken if the levels in subsection (b) are exceeded; and
  - d) be maintained on site and made available to the Agency, upon request.
- Source water protection plans are required for all water systems that produce their own water (don't purchase treated water). These plans must be provided to the Illinois EPA for content review and approval by the date specified (based upon population served).

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## Fire Hydrant Maintenance

By: Roger Noe, IRWA Circuit Rider

A fire hydrant in the water distribution system is one of the most important apparatuses in the system. Fire hydrants can assure fast water supply in case of a fire. The hydrant also gives the ability for the water distribution system to properly flush their water mains through the hydrant. There have been cases where I have been doing leak detection and came across hydrants that are either leaking or out of service. Are your hydrants working properly and in good condition? Here are some maintenance tips for the fire hydrants. The hydrant maintenance information comes from American Flow Control.

\*Hydrants should be flushed twice a year, spring, and fall. Hydrants should be checked for drainage after use in the extremely cold weather.

### \*External Inspection:

Check chains, to make sure they allow the nozzle cap to turn freely.

Check all caps, make sure they can be removed.

Check paint, remove all loose paint and repaint if necessary.

### \*Lubricate Hydrant Prior to Operating Hydrant:

Where oil is specified use white mineral oil USP.

Where grease is specified use food machinery grease.

### \*Flushing the Hydrant:

Using a hydrant operating wrench and turn the hydrant in the direction of the arrows on the cast of the hydrant. A pipe wrench should not be used to open the hydrant repeated use will round off the operating nut causing the hydrant wrench to no longer work.

Open the hydrant at a moderate pace, typically one turn per second.

Open hydrant to fully open position, it will come to a stopping point. Internal damage can be done if you try to go past that point. If the hydrant is not fully open water will flow out of the drain or weep hole and cause damage to the drain field.

Flow the hydrant until water becomes clear and no objects are

flowing from the hydrant such as rocks. Control the direction of flow of the hydrant so that damage in the water path. A diffuser would help control the direction of flow.

Close hydrant slowly, so that the hydrant does not create a water hammer that could possibly blow a water main.

When hydrant is closed you should be able to back off the operating nut a quarter turn to half turn. The water pressure should hold hydrant valve shut.

Place hand over nozzle and feel suction.

Leave nozzle cap off or lose to allow for hydrant to drain.

When the hydrant has drained place a small amount of food grade grease on the nozzles and put on nozzle caps.

If the hydrant fails to shut off, do not force the hydrant closed. Open hydrant back up and try to flush the obstruction. It may take more than once flush to flush the obstruction.

If the hydrant fails to drain, put all caps in place and tighten. Then open the hydrant 2 to 3 turns to attempt to flush out the drains of the hydrant. Let sit in this open position for 5 to 10 minutes. Close hydrant and remove one of the caps to check for drainage. If the hydrant still does not drain, it should be pumped out.

If the hydrant is non-working order, it should be flagged, or black bagged, and fire department should be notified about the hydrant being out of service. Hydrant repair can be easier to be performed if you have valve located in front of the hydrant to stop the water flow the hydrant. There are several different checklists on the web to track the maintenance and repair records of the hydrant. If your water system has been mapped with GIS you can add the data from the hydrants into the mapping software. Some other things to consider are to have static pressure, residual pressure, and flow for each hydrant and record the data. The association has diffusers and other flow test equipment for loan if the water system is in need of equipment.



### 41st Annual Technical Conference

February 21-23, 2023

Holiday Inn/Keller Convention Center—Effingham, IL

\*12.75 Credit Hours Available

\* 115 Exhibitors

\* Sportsman's Raffle

\*Water and Wastewater Sessions

\*Cash Prizes

Exhibitor registration is open. Attendee registration will be sent out in the mail and be available on-line soon.

Please visit [www.ilrwa.org](http://www.ilrwa.org) for credit card payments and printable registration forms.

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#### **Section 604.305 Source Water Protection Plan Requirement and Contents**

Each community water supply that treats surface or groundwater as a primary or emergency supply of water must develop a source water protection plan that contains the following minimum elements:

- a) a vision statement as set forth in Section 604.310;
- b) a source water assessment as set forth in Section 604.315;
- c) the objectives set forth in Section 604.320; and
- d) an action plan as set forth in Section 604.325.

#### **Section 604.330 Submission**

- a) A community water supply that first commenced construction after July 26, 2019, must develop and submit a source water protection plan simultaneously with the construction permit application.
- b) A community water supply in existence as of July 26, 2019, must develop and submit to the Agency for approval a source water protection

plan within the following time frame after July 26, 2019:

- 1) within 3 years, for a community water supply serving a population greater than 50,000 persons;
  - 2) within 4 years, for a community water supply serving a population of greater than 3,000 but less than or equal to 49,999 persons; or
  - 3) within 5 years, for a community water supply serving a population of less than or equal to 2,999 persons.
- c) An existing community water supply that anticipates using a new source of water for its supply must develop and submit a revised source water protection plan simultaneously with the construction permit application.

If you have any additional regulatory questions, please contact the Association for assistance.