

THE SPIGOT

from the NORTH DAKOTA RURAL WATER SYSTEMS ASSOCIATION

Ensuring that Water Stays Frost Free for Customers

Just as taking care of the home or business water system is important, so is taking care of the system providing water to the consumer. Extremely cold weather can affect the underground piping and storage tanks that are used to supply water to customers.

Fortunately, this winter has provided enough snow cover in most areas of the state that underground water lines are insulated from cold air temperatures and from frost penetrating to the pipes. However, the above ground tanks in a water system are not able to take advantage of the snow for protection and must be maintained by the water system's staff to prevent freezing and structural damage. Water system staffs take great care in ensuring the supply

of quality water is uninterrupted. Preventative maintenance, completed at routine intervals, ensures that the water tanks and water system components are in the best condition possible.


Because it is not economical to insulate water storage tanks, water operators use other methods of keeping the tanks from freezing solid in the cold weather. To prevent freezing, water operators need to make sure that there is always water moving in the storage tank. The water operator has several means of keeping the water moving, the most common being to change the operating level of the tank on a regular basis. Circulating pumps pump water into the tank continuously at low volumes, which creates a current inside the tank that reduces ice buildup. Another option is an in-tank mixer. The in-tank mixer does not add any water to the tank, but helps to circulate the water already in the tank to prevent icing. Water system employees also routinely monitor the automated control systems that fill the water tanks and create the pressure to move water to the consumer.

Even the best maintenance and observation practices sometimes fail in extreme cold weather. Control systems can fail, usually because of a storm or power outage. When this happens and a tank freezes to the point it is no longer functioning, the water system staff will take immediate action. Most small water systems do not have the staffing or expertise to thaw a frozen water tank. Therefore, it is fortunate that in North Dakota there are several service companies that specialize in water tank maintenance. These service companies have highly trained staff and special equipment to deal with the unique environments of water tanks. Their staffs are trained in confined space entry, high elevation work, and the proper methods of working in a tank without contaminating the water.

There are many measures that are taken by water systems in the state to ensure that above ground tanks stay frost free and that customers have quality drinking water during the cold winter months.



The beautiful but ravaging effects of Mother Nature on our water infrastructure.



This winter has blanketed most of the state in deep snow. As street and road crews have been trying to keep our roadways open, it has been very hard or sometimes impossible for them to keep snow away from fire hydrants. Homeowners, civic groups, youth groups, and entire communities should join in the effort to keep the fire hydrants accessible to their fire departments. The extra time it takes a fireman to shovel out a hydrant could make the difference in saving a home or, more importantly, a life.

How to Help Prevent Frozen Water Pipes and Water Meters

When below freezing temperatures are sustained over multiple days, water pipes and water meters that are close to cold air may freeze. North Dakota Rural Water urges customers to take steps to prevent water pipes and water meters from freezing. Frozen water meters and water pipes can stop water service and may be expensive to repair or replace. A broken pipe can add up to big water losses. For example, a 1/8-inch hole can lose about 3,200 gallons a day or the equivalent of what one person can use in a month of normal use. Below are some steps you can take to prevent this from happening.

- If you suspect the water line is about to freeze, check the temperature of the water. Monitor the temperature from the faucet that is closest to the water line entry into the home. When the water reaches 38 degrees Fahrenheit, you should run the water at a pencil-sized stream, which should prevent freezing.
- Make frequent use of your water supply. When outside temperatures remain well below freezing, it's less expensive to run your faucet regularly than to repair a frozen or burst pipe. Letting your water run, however, can sometimes lead to frozen sewer lines, so be careful.
- Insulate your pipes in areas of your home that are not well heated, such as crawl spaces and attics. You can wrap these areas with pre-molded foam rubber sleeves

or fiberglass insulation. Another option would be to use heat tape. To prevent accidents or fires, make sure to install Underwriters Laboratories (UL) approved heat tape per manufacturer's instructions. The heat tape should be used on both the water pipes and the valves that shut off the water pipes.

- Seal outside openings and cracks. Take measures to prevent the flow of cold air into these areas where pipes are susceptible. Repair broken windows, check doors, and insulate areas that allow cold exterior air to enter. If your water meter is located near the floor or along the block wall of a basement, make sure warm air is allowed to circulate around your meter. If your meter is in a separate room, leave a door open to this room to allow warm air to enter.
- Determine where your shut-off valve is located in your house and learn how to use it. For most homes, the shut-off valve is located near the water meter at the point where the water line comes into the home, which is usually in a basement or crawl space. It is also not a bad idea to exercise the shut-off valve a couple times a year to ensure that it is functioning.
- If you are planning to be gone for an extended period of time, have your rural water system shut off your water while you are away. Remember, an ounce of prevention now can save a lot of heartache later.