

# Drought Q&A for Community Public Water Systems

From Carmelita Nelson, MN DNR Water Conservation Consultant

## Drought Conditions - What should water supplies be doing?

**What is a Restrictive Phase?** With 42% of Minnesota now experiencing Extreme Drought, the DNR has determined that three major watersheds are in the Restrictive Phase: Mississippi Headwaters, Red River, and Rainy River watersheds. This is the fourth of five drought phases/triggers. Since we have not had a drought recently, you may want to familiarize yourself with the [State Drought Plan](#) (4-page document). With the Restrictive Phase designation, the Minnesota Department of Natural Resources (DNR) is taking additional steps as required by the State Drought Plan. If needed, the Governor's critical water deficiency declaration, would occur at phase five, the emergency phase, and we are not there yet.

**What watersheds are impacted?** On August 17, nearly 300 water suppliers received notices that they are in a watershed with Extreme Drought conditions. These include three of the 12 major watersheds: the Red River, Mississippi Headwaters, and the Rainy River watersheds.

**What is Required vs. Recommended?** Public water supply permit holders serving over 1,000 people, must have a drinking water supply plan that includes conservation measures and demand reduction efforts that must be implemented during times of drought. Communities that received the DNR notice to begin implementing these measures are required to implement some measures. The specific measures to be implemented are up to the community. Cities are not required to meet the 25% above January water use, but that is the goal they need to strive for.

**What if we have deep wells?** The notices went to surface and groundwater systems. Even if your community itself is not in extreme drought or your deep well water levels have not dropped, if your watershed is in extreme drought, then you received a notice to begin implementing additional water conservation measures.

**When do we need to take action?** Extra water conservation measures should begin as soon as possible and focus on reducing outdoor water use. During extreme drought/Restrictive Phase, you may consider completely banning or shutting down some non-essential water uses. Examples may include banning all lawn irrigation but still allowing hand watering of trees, vegetable and flower gardens. At a minimum, reduce the number of days that lawn irrigation is allowed down to one day per week. If there are splash pads, consider reducing the hours of operation or water pressure. Encourage residents to delay non-essential water use such as car washing and pressure washing homes until the fall or next spring. Inspect and fix leaks in the water supply system, hydrants, city pools, and fountains. Contact your ten largest water users to encourage them to save water.

**Where can I get more information about the drought situation?** The DNR encourages all public water suppliers to [sign up](#) to receive the weekly drought update, released each Monday, that

includes information about current drought status, fire danger and state burning restrictions, and sample stream flows and lake levels.

Subscribers also will receive State Drought Task Force meeting summaries and agendas. The DNR convened the task force in July, when Minnesota entered the Drought Warning Phase. The State Drought Task Force comprises 21 state, federal, tribal, regional and local agencies and organizations with water-related responsibilities.

DNR's [web resources](#) about drought include current information on water conservation efforts, lake level and river flow data, drought and streamflow maps, and a new table providing information about temporary water appropriation suspensions by watershed.

For community-specific questions or water supply concerns, contact your area hydrologist or Carmelita Nelson at 651-259-5034 or [Carmelita.nelson@state.mn.us](mailto:Carmelita.nelson@state.mn.us)

**How will the drought impact our staff?** Drought response activities may take priority over other routine tasks and maintenance, and can increase staff workloads. Overtime expenses may increase, which can impact the overall budget. During a drought, utility staff may need to:

- Respond to increased customer calls.
- Enforce water restrictions and respond to variance requests.
- Communicate regularly with local media and the public.

Consider hiring temporary staff or contractors, reassigning staff or requesting resources from your Water/Wastewater Agency Response Network (WARN).

**What about Hydrant flushing During a Drought?** - At a minimum, wait until mid-September or even October to do the hydrant flushing. Or, if you are not getting customer complaints, maybe wait until spring. Some cities in Minnesota are moving to only one flush/year rather than twice/year. Continue to check that the hydrants are not leaking and they are in good condition for firefighting. During the droughts in California, water utilities changed the way they did routine flushing. Here is an interesting article <https://calwaterassn.com/how-the-drought-affects-routine-water-main-flushing-to-maintain-water-quality/>

**Are there best practices for irrigating athletic fields?** To have a safe sports field that prevents injuries to athletes, it is important to maintain turfgrass health and density. Healthy turfgrass depends using the right grass species, mowing correctly, fertilizing properly, watering enough, etc. At this point in Minnesota, irrigation is needed to provide the water needs of turfgrass, especially on an athletic field that receives wear and compaction stress, in contrast to a home lawn or ornamental turf area that isn't being intensely used. The University of Minnesota Turfgrass extension irrigator recommends the [sports field best management practices developed from Cornell](#). They have most of their information on a website, here's the page on [watering sports fields](#), and a page for [administrators describing field safety metrics and how they relate to management](#).

**Should Cities Allow Developers to Install New Sod during restrictions?** - Perhaps you could reach a compromise with the developers. Some suggestions:

- It would be best to delay sod installation until the fall when the temperatures are not so hot and there would be better chance of successful root growth.
- If sod is installed with irrigation systems, then they should be required to install Smart Irrigation Controllers certified by the EPA WaterSense program (retail cost approximately \$230). Studies conducted by the University of Minnesota have shown these controllers save an average of 49% of outdoor water use for homes.
- Require that irrigation systems be set to only operate early in the morning or later in the evening when temperatures are cooler.
- Require that irrigation systems be adjusted so sprinklers only water the lawn and not the house, sidewalk, or street.
- Have the systems set to water in several short sessions rather than one long one, in order for the lawn to better absorb moisture and avoid runoff. Grass only needs 1" per week – although new sod may need more (I'm not an expert on new sod).
- You may want to have a hefty fine for the above requirements.

**Should residents be allowed to drill a new Private Well in City Limits?** Drilling private wells in areas with city water is up to individual city ordinances. Most cities prohibit the drilling of wells where city water is available, or in wellhead protection areas. Existing wells are allowed to be used by most cities, but some cities require them to be sealed.

Drilling private wells in a city may not be a good idea for several reasons:

1. It may conflict with your MDH Wellhead Protection Plan and increase the possibility of aquifer contamination over time.
2. Private well use in proximity to the city wells may cause an increased drawdown of the city well water levels. This in turn may increase pumping costs to the city or even endanger the city water supply.
3. If people use private well to irrigate their lawns this inevitably brings up a fairness issue. If it is allowed, the city council should adopt an ordinance that says private wells must comply with city watering restrictions.

**Should residents be allowed to pump water from lakes to irrigate lawns?** Many communities have communicated to their residents and businesses about reducing water use, conserving water, and using water as efficiently as possible. This may include lawn watering restrictions within a particular community. However, pumping directly from a lake for watering a lawn typically isn't regulated by a local community where the lake is located. Rather, pumping water from a lake would only require a permit from the DNR if the homeowner or business is using in excess of 10,000 gallons per day or 1 million gallons per year. Most people watering their lawns with lake water do not require a DNR permit because the appropriation of water is below the permit thresholds.

Permitted water users are told to suspend their appropriation of water if specific low flow or low water level thresholds are met. In many northern and central Minnesota watersheds these

low flow thresholds have occurred and so the DNR has notified permitted water users to suspend their water use from a surface water (lakes, rivers, streams, and wetlands). Residents and businesses can continue to pump water from a stream, river or lake if they are using less than 10,000 gallons per day (permit-required threshold). This is considered their riparian right as long as the water user owns land abutting the surface water.

The DNR encourages residents, businesses and public water suppliers to conserve and use water efficiently. Local governments like cities, counties, watershed districts and soil and water conservation districts are best-positioned to share educational resources to encourage them to use water efficiently.

**What does our DNR Water Appropriations Permit say about water conservation?** Language varies slightly, but typical permits state: **WATER CONSERVATION:** All practical and feasible water conservation methods and practices must be employed to promote sound water management and use the least amount of water necessary, such as reuse and recycling water, water-saving devices, and water storage.

**Cities over 1,000 have additional requirements:**

**WATER SUPPLY PLANS:** Public water suppliers serving more than 1,000 people must have a water supply plan approved by the Department. Plans must address water supply and demand reduction measures, allocation priorities, and identify alternative sources of water for use in an emergency. Plans must be updated once every ten years.

**WATER SUPPLY PLAN COMPLIANCE:** The permittee shall comply with all agreements relating to monitoring, conservation, well location, education, and other agreements, as agreed to during water supply plan review. These agreements will be described in the permittee's Water Supply Plan approval letter. Failure to carry out the measures described in the approval may be cause for termination of this permit.

**DEMAND REDUCTION:** Public water suppliers serving more than 1,000 people must employ water use demand reduction measures before requesting approval from the Minnesota Department of Health to construct a new public water supply well, or requesting an increase in the authorized appropriation volume from the Department of Natural Resources. Demand reduction measures must include evaluation of conservation rate structures and a public education program that may include a toilet and shower head retrofit program.

### **Outdoor Water Conservation Tips During a Drought**

#### **CAR WASHING**

- Use a commercial car wash that recycles water.
- If you wash your own car, use a shut-off nozzle that can be adjusted down to a fine spray on your hose.

#### **LAWN CARE**

- Avoid over watering your lawn and water only when needed.
- A heavy rain eliminates the need for watering for up to two weeks. Most of the year, lawns only need one inch of water per week.

- Check the soil moisture levels with a soil probe, spade or large screwdriver. You don't need to water if the soil is still moist. If your grass springs back when you step on it, it doesn't need water yet.
- If your lawn does require watering, do so early in the morning or later in the evening, when temperatures are cooler.
- Check your sprinkler system frequently and adjust sprinklers so only your lawn is watered and not the house, sidewalk, or street.
- Water in several short sessions rather than one long one, in order for your lawn to better absorb moisture and avoid runoff.
- Use a broom or blower instead of a hose to clean leaves and other debris from your driveway or sidewalk.
- Avoid leaving sprinklers or hoses unattended. A garden hose can pour out 600 gallons or more in only a few hours.
- In extreme drought, allow lawns to die in favor of preserving trees and large shrubs.

### **Indoor Water Conservation Tips During a Drought**

#### **BATHROOM**

- Avoid flushing the toilet unnecessarily. Dispose of tissues, insects and other similar waste in the trash rather than the toilet.
- Take short showers instead of baths. Turn on the water only to get wet and lather and then again to rinse off.
- Avoid letting the water run while brushing your teeth, washing your face or shaving.
- Place a bucket in the shower to catch excess water for watering plants.

#### **KITCHEN**

- Operate automatic dishwashers only when they are fully loaded. Use the "light wash" feature to use less water.
- Hand wash dishes by filling two containers—one with soapy water and the other with rinse water containing a small amount of chlorine bleach.
- Clean vegetables in a pan filled with water rather than running water from the tap.
- Store drinking water in the refrigerator. Do not let the tap run while you are waiting for water to cool.
- Avoid wasting water waiting for it to get hot. Capture it for other uses such as plant watering or heat it on the stove or in a microwave.
- Don't rinse dishes before placing them in the dishwasher, just remove large particles of food.
- Avoid using running water to thaw meat or other frozen foods. Defrost food overnight in the refrigerator or use the defrost setting on your microwave.

#### **LAUNDRY**

- Operate clothes washers only when they are fully loaded or set the water level for the size of your load.