

## Waconia’s drinking water complies with all health, safety regulations

Last year, as in the past, Waconia’s drinking water and the supply system that produces it were in full compliance with all applicable county, state, and federal regulations regarding drinking-water quality, monitoring, operations, and reporting.

### What you need to know

#### What is the Consumer Confidence Report?

The Consumer Confidence Report (CCR) is an annual report required by the US Environmental Protection Agency (EPA) on the water quality of a particular water system such as Waconia. The report details and outlines contaminants and their levels in drinking water.

#### For whom is this report produced?

The CCR is produced for customers and wholesalers of Waconia and ensures that everyone is provided safe drinking water.

#### How much does it cost to receive this report?

This report is free of charge to all customers

#### Why am I getting this report?

Waconia is federally mandated by the EPA to provide this information to you. The Minnesota Department of Health enforces these rules for the EPA. Regulated drinking water substances that were detected during the 2019 calendar year are provided in the chart.

#### What authorities regulate contaminant levels?

To ensure that tap water is safe to drink, the EPA has prescribed regulations that limit the amounts of certain contaminants in water provided by public water systems such as Waconia’s. Each drinking-water contaminant has an allowable MCL. Water for drinking that exceeds MCLs for one or more compounds is in violation of the law.

## Reducing ‘Rusty’ Water Around the City

### 2020 Water-Main Flush Program

**Starting March 23<sup>rd</sup>**, water utilities staff worked their way around the City to flush Waconia’s water mains. By systematically opening and closing fire hydrants, they began the City’s 2020 water-main flushing program.

According to the American Water Works Association, unidirectional flushing of water mains using fire hydrants within a water-distribution system is the most effective and economical way to cleanse a water-distribution system and, improve water quality.

Performed one to two times a year, water main flushing typically takes place in the Spring and Fall. As a result of the flushing procedure, residents in the immediate vicinity of the work may experience temporary discoloration of their water. This discoloration consists primarily of harmless silt and precipitates and does not affect the safety of the water.

#### What should I do if my water is discolored?

If this discoloration occurs, simply run your cold water faucets for about 5 minutes to make sure the water is clear. If it doesn't clear up after a few minutes, wait for an extended period of time (up to 2 hours) and try running the cold faucets again. If the water does not clear up within two hours, please notify the City of Waconia Utilities Department. It is recommended that you do not do laundry during flushing periods to avoid stained clothing.

#### Why do we flush hydrants?

Water moves slowly through the underground water distribution system. This slow movement causes sediment like rust and minerals to build up over time and accumulate along the inside of the water pipes. Brown water is typically iron and manganese that is showing up in the system. Flushing of the fire hydrants increases the movement or velocity of the water through the water mains, thus helps to remove any sediment from the water mains and assures consistent water quality. Additionally, as part of the flushing process every fire hydrant in the water system is operated to ensure that it will operate properly in the event of a fire.

#### Isn’t flushing a waste of water?

Residents who notice Waconia’s utilities crew working at fire hydrants and see water running into the street may think that the City is ignoring its own philosophy on conserving water. The process of periodically flushing fire hydrants, however, is an important preventive maintenance activity. Although it may appear to waste water, this process is part of a routine maintenance program necessary to maintain the integrity of the water system and to continue to deliver the highest quality water possible to our customers.

## 2019 Waconia Water Quality Consumer Confidence Report

This report is published yearly for the Waconia drinking water consumer, to present an overview of water quality during January 1 to December 31, 2019. Because the city of Waconia a drinking water supplier, the City is required by the federal Safe Drinking Water Act (SDWA) of 1976, as amended in 1996, to produce an annual report on the quality of its drinking water.

Your drinking water comes from a groundwater source: four wells ranging from 345 to 735 feet deep, that draw water from the Mt. Simon and Quaternary Buried Artesian aquifers.

Waconia works hard to provide you with safe and reliable drinking water that meets federal and state water quality requirements. The purpose of this report is to provide you with information on your drinking water and how to protect our precious water resources.

The U.S. Environmental Protection Agency sets safe drinking water standards. These standards limit the amounts of specific contaminants allowed in drinking water. This ensures that tap water is safe to drink for most people. The U.S. Food and Drug Administration regulates the amount of certain contaminants in bottled water. Bottled water must provide the same public health protection as public tap water.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency’s Safe Drinking Water Hotline at 1-800-426-4791.

To ensure that testing results comply with all applicable regulatory standards, analytical data are reviewed by the City’s Utilities staff. For more information and/or copies of the complete analyses of Waconia’s 2019 drinking-water samples discussed in this report, go to [www.waconia.org](http://www.waconia.org) or contact:

Doug Bode, Utilities Supervisor, Public Services, City of Waconia, 952-442-2615 Ext. 1102, or [publicservices@waconia.org](mailto:publicservices@waconia.org).



*How are water meters read?  
The city reads water meters monthly through a fixed network reading system.*

# Waconia Monitoring Results

We work with the Minnesota Department of Health to test drinking water for more than 100 contaminants. It is not unusual to detect contaminants in small amounts. No water supply is ever completely free of contaminants. Drinking water standards protect Minnesotans from substances that may be harmful to their health. Learn more by visiting the Minnesota Department of Health’s webpage [Basics of Monitoring and Testing of Drinking Water in Minnesota \(http://www.health.state.mn.us/divs/eh/water/factsheet/com/sampling.html\)](http://www.health.state.mn.us/divs/eh/water/factsheet/com/sampling.html).

## How to Read the Water Quality Data Tables

The tables below show the contaminants we found last year or the most recent time we sampled for that contaminant. They also show the levels of those contaminants and the Environmental Protection Agency’s limits. Substances that we tested for but did not find are not included in the tables.

We sample for some contaminants less than once a year because their levels in water are not expected to change from year to year. If we found any of these contaminants the last time we sampled for them, we included them in the tables below with the detection date.

We may have done additional monitoring for contaminants that are not included in the Safe Drinking Water Act. To request a copy of these results, call the Minnesota Department of Health at 651-201-4700 or 1-800-818-9318 between 8:00 a.m. and 4:30 p.m., Monday through Friday.



Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. The developing fetus and therefore pregnant women may also be more vulnerable to contaminants in drinking water. These people and their caregivers should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

## Water Quality Data Tables

LEAD AND COPPER– Tested at customers taps.						
Contaminant	EPA’s Action Level	EPA’s Ideal Goal (MCLG)	90% of results were less than	# of homes with high levels	Violation	Typical Sources
Copper (08/14/2017)	90% of homes less than 1.3 ppm	0 ppm	.94 ppm	0 out of 30	NO	Corrosion of household plumbing systems
Lead (08/14/2017)	90% of homes less than 15 ppb	0 ppb	6.3 ppb	2 out of 30	NO	Corrosion of household plumbing systems

### Lead and Copper:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Waconia is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>

### Fluoride:

Fluoride is nature's cavity fighter, with small amounts present naturally in many drinking water sources. There is an overwhelming weight of credible, peer-reviewed, scientific evidence that fluoridation reduces tooth decay and cavities in children and adults, even when there is availability of fluoride from other sources, such as fluoride toothpaste and mouth rinses. Since studies show that optimal fluoride levels in drinking water benefit public health, municipal community water systems adjust the level of fluoride in the water to a concentration between 0.5 to 1.5 parts per million (ppm), with an optimal fluoridation goal between 0.7 and 0.9 ppm to protect your teeth. Fluoride levels below 2.0 ppm are not expected to increase the risk of a cosmetic condition known as enamel fluorosis.

### Learn more:

Visit [Lead in Drinking Water \(http://www.health.state.mn.us/divs/eh/water/contaminants/lead.html#Protect\)](http://www.health.state.mn.us/divs/eh/water/contaminants/lead.html#Protect)

Visit [Basic Information about Lead in Drinking Water \(http://www.epa.gov/safewater/lead\)](http://www.epa.gov/safewater/lead)

Call the EPA Safe Drinking Water Hotline at 1-800-426-4791.To learn about how to reduce your contact with lead from sources other than your drinking water, visit [Lead Poisoning Prevention: Common Sources \(http://www.health.state.mn.us/divs/eh/lead/sources.html\)](http://www.health.state.mn.us/divs/eh/lead/sources.html).

### Key to abbreviations:

- AL:** Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow.
- EPA:** Environmental Protection Agency
- MCL:** Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- MCLG:** Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- MRDL:** Maximum Residual Disinfectant Level: The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- MRDLG:** Maximum Residual Disinfectant Level Goal: The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- N/A:** Not Applicable (does not apply).
- pCi/l:** PicoCuries per liter (a measure of radioactivity).
- ppb:** Parts per billion: One part per billion in water is like one drop in one billion drops of water, or about one cup in a swimming pool. ppb is the same as micrograms per liter (µg/l).
- ppm:** Parts per million, One part per million in water is like one drop in one million drops of water, or about one cup in a swimming pool. ppb is the same as micrograms per liter (mg/l).
- PWSID:** Public water system identification

CONTAMINANTS RELATED TO DISINFECTION– Tested in drinking water						
Substance	EPA’s Limit (MCL or MRDL)	EPA’s Ideal Goal (MCLG or MRDLG)	Highest Average or Highest Single Test Result	Range Detected Test Results	Violation	Typical Sources
Total Trihalomethanes (TTHMs)	80 ppb	N/A	29.8 ppb	21.2-29.80 ppb	NO	By-product of drinking water disinfection.
Total Haloacetic Acids (HAA)	60 ppb	N/A	15.4 ppb	10.70-15.40 ppb	NO	By-product of drinking water disinfection.
Total Chlorine	4.0 ppm	4.0 ppm	.65 ppm	0.23-1.01 ppm	NO	Water additive used to control microbes.

Total HAA refers to HAA5

OTHER SUBSTANCES– Tested in drinking water.						
Substance	EPA’s Limit (MCL)	EPA’s Ideal Goal (MCLG)	Highest Average or Highest Single Test Result	Range Detected Test Results	Violation	Typical Sources
Fluoride	4.0 ppm	4.0 ppm	.83 ppm	.74-.086 ppm	NO	Erosion of natural deposits; water additive to promote strong teeth.

INORGANIC & ORGANIC CONTAMINANTS– Tested in drinking water						
Contaminant	EPA’s Limit (MCL)	EPA’s Ideal Goal (MCLG)	Highest Average or Highest Single Test Result	Range of Detected Test Results	Violation	Typical Sources
Xylenes	10 ppm	10 ppm	0 ppm	0.00-0.00 ppm	NO	Discharge from petroleum factories; Discharge from chemical factories.
Barium	2 ppm	2 ppm	.1 ppm	N/A	NO	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Gross Alpha (2018)	15.4 pCi/l	0 pCi/l	4.9 pCi/l	N/A	NO	Erosion of natural deposits.
Nitrate	10.4 ppm	10 ppm	.93 ppm	.47-.93 ppm	NO	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Monitoring Results – Unregulated Substances

In addition to testing drinking water for contaminants regulated under the Safe Drinking Water Act, we sometimes also monitor for contaminants that are not regulated. Unregulated contaminants do not have legal limits for drinking water.

Detection alone of a regulated or unregulated contaminant should not cause concern. The meaning of a detection should be determined considering current health effects information. We are often still learning about the health effects, so this information can change over time.

The following table shows the unregulated contaminants we detected last year, as well as human-health based guidance values for comparison, where available. The comparison values are based only on potential health impacts and do not consider our ability to measure contaminants at very low concentrations or the cost and technology of prevention and/or treatment. They may be set at levels that are costly, challenging, or impossible for water systems to meet (for example, large-scale treatment technology may not exist for a given contaminant).

A person drinking water with a contaminant at or below the comparison value would be at little or no risk for harmful health effects. If the level of a contaminant is above the comparison value, people of a certain age or with special health conditions - like a fetus, infants, children, elderly, and people with impaired immunity – may need to take extra precautions. Because these contaminants are unregulated, EPA and MDH require no particular action based on detection of an unregulated contaminant. We are notifying you of the unregulated contaminants we have detected as a public education opportunity.

More information is available on MDH’s [A-Z List of Contaminants in Water \(https://www.health.state.mn.us/communities/environment/water/contaminants/index.html\)](https://www.health.state.mn.us/communities/environment/water/contaminants/index.html) and Fourth [Unregulated Contaminant Monitoring Rule \(UCMR 4\) \(https://www.health.state.mn.us/communities/environment/water/com/ucmr4.html\)](https://www.health.state.mn.us/communities/environment/water/com/ucmr4.html).

UNREGULATED CONTAMINANTS– Tested in drinking water.			
Contaminant	Comparison Value	Highest Average Result or Highest Single Test Result	Range of Detected Test Results
Sodium*	20 ppm	44.7 ppm	N/A
Sulfate	500 ppm	69.4 ppm	N/A

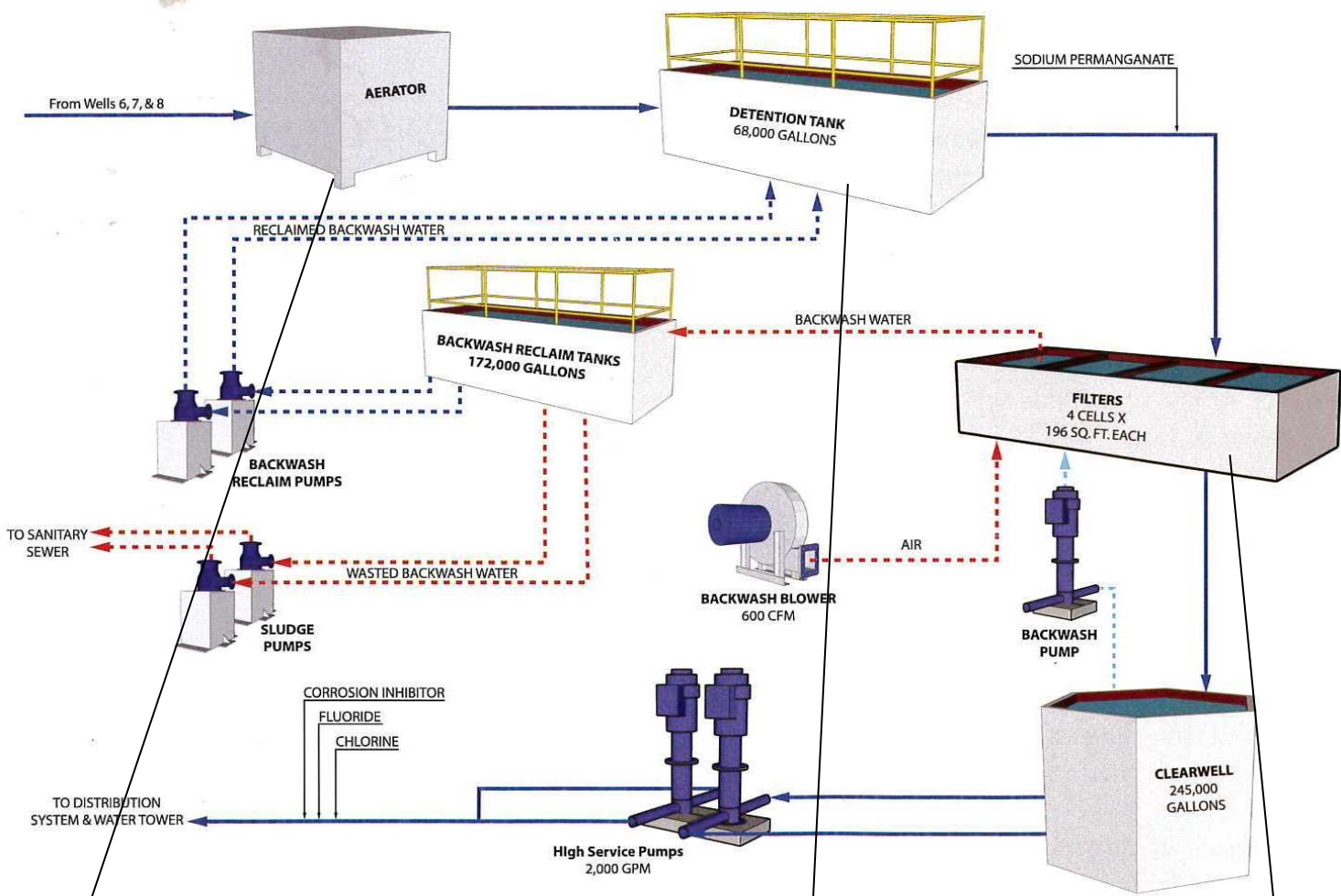
\*Note that home water softening can increase the level of sodium in your water.



## Water Treatment Process

The water flows into an aerator where gases are removed, iron is oxidized, and oxygen is added. Fluoride is added under State law to prevent tooth decay and chlorine is added to kill any bacteria. It takes less than on drop of chlorine per gallon of water to kill bacteria. Polyphosphate for lead and copper corrosion control is also added. The water then flows through sand filters where the last of the impurities are removed. Once the water has been treated, it is stored in the City’s 900,000 gallon clearwell. From there, water is pumped directly to residents and as much as 2,250,000 gallons can be stored in the City’s two water towers for peak period usage.

## Expansion Process Flow Diagram



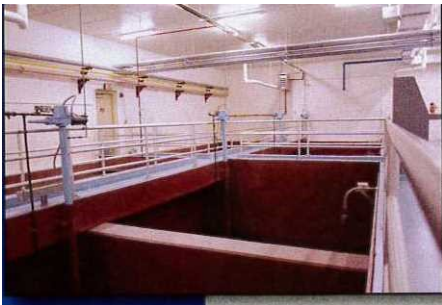
1. The purpose of aeration is to begin the oxidation of iron and manganese to an insoluble form so they can be filtered from the water. The water is pumped from the wells to the top of the aerator. The aerator is comprised of numerous pipes and through which the water flow over. A fan blow air through the aerator to further aid in the oxidation process



2. From the aerator, the water flows by gravity into an 68,000 gallon detention tank, which holds the water for approximately 35 minutes. The detention tank allows for further oxidation of the iron and manganese . The chemical sodium permanganate is added to the detention tank to assist in the oxidation of manganese.



3. After the detention tank, the water flows by gravity into four 14’ x 14’ filter basins. Each filter basin has an underdrain system, reverse graded gravel and filter media. The reverse graded gravel is a series of layers of progressively smaller gravel placed on top of the underdrain blocks designed to retain filter media. The filter media itself is composed of 24” of Filtersil sand. The sand filters out the iron and manganese, which were oxidized to form small rust particles in the previous stages.







4. The material that is trapped by the filter beds is removed from the filters by a process called backwashing. Backwashing is accomplished by means of reversing the flow of water through the filter. The process is further enhanced by blowing compressed air up through the underdrain blocks, causing the media to scour itself. This maximizes the cleaning of the filter bed media prior to returning it to service. The backwash water flows to the reclaim tank. The backwash reclaim tank is located underground, just northeast of the treatment plant, and has a total capacity of 172,000 gallons. The backwash water is returned to the beginning of the process and the settled solids are pumped to the sanitary sewer system for treatment



High Service Pumps

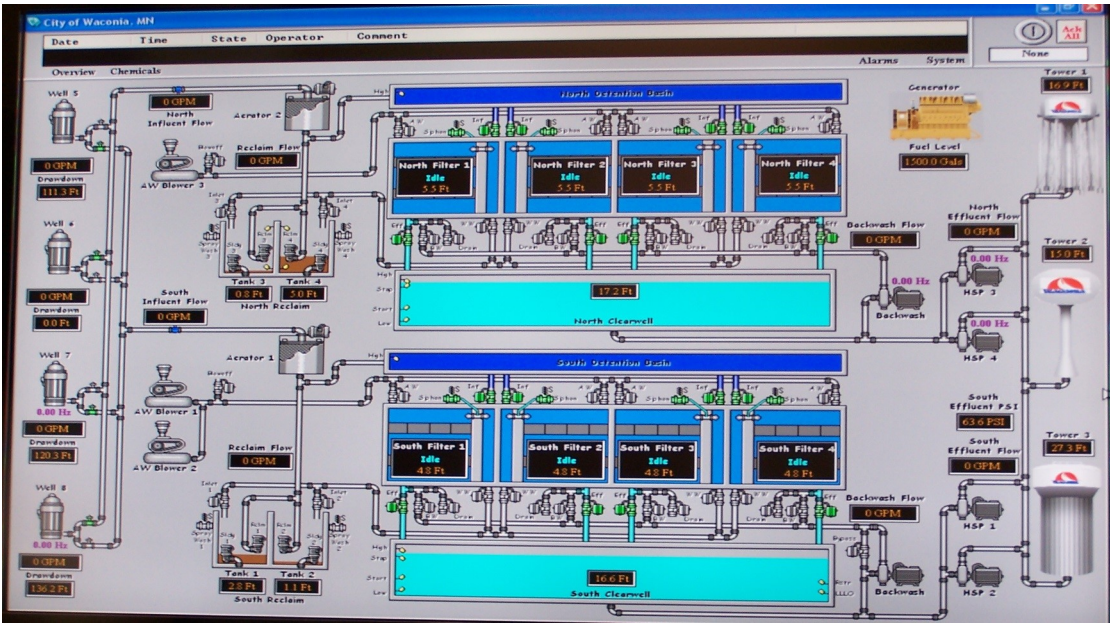
5. The filtered water then flows into a 245,000 gallon clearwell holding tank. Two 125HP high service pumps pump the water out of the clearwell into the distribution system and water tower. After the pumps, the water is enhanced to provide a disinfecting residual (chlorine) and fluoridated for public dental health. Corrosion Inhibitor is also added to decrease the corrosiveness to piping.



Water Tower #2



Utilities crew member Eric Menth checks fluoridation samples



6. The operation of wells, treatment plant and high service pumps are automatically controlled by an Allen Bradley Programmable Logic Controller (PLC) and a Supervisory Control And Data Acquisition (SCADA) computer. The PLC coupled with the SCADA system enables the operators to run the treatment plant directly from the control room.

Meet the Utilities Staff



Doug Bode– Utilities Supervisor



Jeff Hilgers– Utilities Crew Member



Eric Menth- Utilities Crew Member



Jon Wagener- Utilities Crew Member



Todd Karels- Utilities Crew Member



Jake Kemnitz- Utilities Crew Member



# Learn More About Your Drinking Water

## Lead in Drinking Water

You may be in contact with lead through paint, water, dust, soil, food, hobbies, or your job. Coming in contact with lead can cause serious health problems for everyone. There is no safe level of lead. Babies, children under six years, and pregnant women are at the highest risk. Lead is rarely in a drinking water source, but it can get in your drinking water as it passes through lead service lines and your household plumbing system. Waconia provides high quality drinking water, but it cannot control the plumbing materials used in private buildings. Read below to learn how you can protect yourself from lead in drinking water.

1. **Let the water run** for 30-60 seconds before using it for drinking or cooking if the water has not been turned on in over six hours. If you have a lead service line, you may need to let the water run longer. A service line is the underground pipe that brings water from the main water pipe under the street to your home.
  - You can find out if you have a lead service line by contacting your public water system, or you can check by following the steps at: [Are your pipes made of lead? Here's a quick way to find out](https://www.mprnews.org/story/2016/06/24/npr-find-lead-pipes-in-your-home) (https://www.mprnews.org/story/2016/06/24/npr-find-lead-pipes-in-your-home).
  - The only way to know if lead has been reduced by letting it run is to check with a test. If letting the water run does not reduce lead, consider other options to reduce your exposure.
2. **Use cold water** for drinking, making food, and making baby formula. Hot water releases more lead from pipes than cold water.
3. **Test your water.** In most cases, letting the water run and using cold water for drinking and cooking should keep lead levels low in your drinking water. If you are still concerned about lead, arrange with a laboratory to test your tap water. Testing your water is important if young children or pregnant women drink your tap water. Contact a Minnesota Department of Health accredited laboratory to get a sample container and instructions on how to submit a sample:  
[Environmental Laboratory Accreditation Program](https://eldo.web.health.state.mn.us/public/accreditedlabs/labsearch.seam) (https://eldo.web.health.state.mn.us/public/accreditedlabs/labsearch.seam)  
The Minnesota Department of Health can help you understand your test results.
4. **Treat your water** if a test shows your water has high levels of lead after you let the water run.

### Read about water treatment units:

- [Point-of-Use Water Treatment Units for Lead Reduction](https://www.health.state.mn.us/communities/environment/water/factsheet/poulead.html) (https://www.health.state.mn.us/communities/environment/water/factsheet/poulead.html)
- Learn more:
- Visit [Lead in Drinking Water](https://www.health.state.mn.us/communities/environment/water/contaminants/lead.html) (https://www.health.state.mn.us/communities/environment/water/contaminants/lead.html)
  - Visit [Basic Information about Lead in Drinking Water](http://www.epa.gov/safewater/lead) (http://www.epa.gov/safewater/lead)
  - Call the EPA Safe Drinking Water Hotline at 1-800-426-4791. To learn about how to reduce your contact with lead from sources other than your drinking water, visit [Lead Poisoning Prevention: Common Sources](https://www.health.state.mn.us/communities/environment/lead/sources.html) (https://www.health.state.mn.us/communities/environment/lead/sources.html).

## Drinking Water Sources

Minnesota’s primary drinking water sources are groundwater and surface water. Groundwater is the water found in aquifers beneath the surface of the land. Groundwater supplies 75 percent of Minnesota’s drinking water. Surface water is the water in lakes, rivers, and

streams above the surface of the land. Surface water supplies 25 percent of Minnesota’s drinking water.

Contaminants can get in drinking water sources from the natural environment and from people’s daily activities. There are five main types of contaminants in drinking water sources.

*Microbial contaminants*, such as viruses, bacteria, parasites. Sources may include sewage treatment plants, septic systems, agricultural livestock operations, pets, and wildlife.

*Inorganic contaminants* include salts and metals from natural sources (e.g. rock and soil) oil and gas production, mining and farming operations, urban stormwater runoff, and wastewater discharges.

*Pesticides and herbicides* are chemicals used to reduce or kill unwanted plants and pests. Sources include agriculture, urban stormwater runoff, and commercial and residential properties.

*Organic chemical contaminants* include synthetic and volatile organic chemicals. Sources include by products of industrial processes and petroleum production, gas stations, urban stormwater runoff, and septic systems.

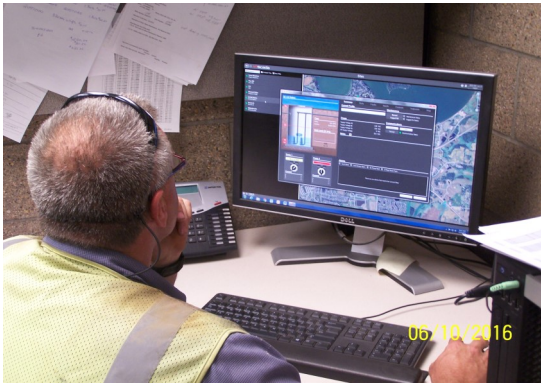
*Radioactive contaminants* such as radium, thorium, and uranium isotopes come from natural sources (e.g. radon gas from soils and rock), mining operations, and oil and gas production.

- The Minnesota Department of Health provides information about your drinking water source(s) in a source water assessment, including:
- How Waconia is protecting your drinking water source(s);
  - Nearby threats to your drinking water sources;
  - How easily water and pollution can move from the surface of the land into drinking water sources, based on natural geology and the way wells are constructed.
- Find your source water assessment at [Source Water Assessments](http://www.health.state.mn.us/communities/environment/water/swp/swa) (www.health.state.mn.us/communities/environment/water/swp/swa) or call 651-201-4700 or 1-800-818-9318 between 8:00 a.m. and 4:30 p.m., Monday through Friday.



Water Softener Settings

- Hardness = 27 grains
- Fluoride = .9 ppm
- Iron = .05-.10 ppm



Utilities crew member Jeff Hilgers monitors sewer lift station levels

# Home Water Treatment

Most Minnesotans, whether they drink from a public water supply or a private well, have drinking water that does not need treatment for health protection. Water treatment units are best for improving the physical qualities of water—the taste, color, or odor.

No single treatment process can remove all substances in water. If you decide to install a home water treatment unit, choose a unit certified and labeled to reduce or remove the substance of concern. If there is more than one substance you want to remove from your water, you may need to combine several treatment processes into one system.

Even well-designed treatments systems can fail. You should continue to test your drinking water after you install a treatment unit. All home water treatment units need regular maintenance to work correctly. Regular maintenance may include changing filters, disinfecting the unit, or cleaning scale buildup. Always install, clean, and maintain a treatment unit according to the manufacturer's recommendations.

Learn more at [Home Water Treatment \(https://www.health.state.mn.us/communities/environment/water/factsheet/hometreatment.html\)](https://www.health.state.mn.us/communities/environment/water/factsheet/hometreatment.html).

# The Pros and Cons of Home Water Softening

Water softeners are a water treatment device. They remove water hardness (dissolved calcium and magnesium). The decision to soften your water is a personal choice that can affect your home and the environment. It is important to understand your home's water quality. This will help you decide if a home water softener is necessary and choose the best treatment device(s). Water softeners must be installed and maintained properly to be safe and effective.

**The advantages of home water softening include:**

- Prevents build-up of minerals (scale) on the inside of pipes, fixtures, and hot water heaters.
- Lengthens the life of some appliances.
- Reduces or prevents mineral spots on glassware.
- Prevents or reduces soap films and detergent curds in sinks, bathtubs, and washing machines.

**The disadvantages of home water softening include:**

- Can corrode your pipes. The corroded metal from the pipes can end up in your water.
- Potential health implications from additional sodium from water softening.
- Regular testing of the water and maintenance of the softener is necessary to make sure the softener is working properly.
- Negative impacts to the environment from salt use.
- Water waste: 5% of the water that goes through a softener is not usable.

# Beware of Water Treatment Scams

False claims, deceptive sales pitches, or scare tactics have been used by some water treatment companies. Every person has a right to decide what is best for themselves and their family, and you may choose to install additional water treatment to further lower the levels of contaminants of emerging concern, chlorine, and other chemicals in your water. However, you should be cautious about purchasing a water treatment system. If you are considering the purchase of a home water treatment system, please read the Minnesota Department of Health's recommendations online at [Warning: Beware of Water Treatment Scams \(https://www.health.state.mn.us/communities/environment/water/factsheet/beware.html\)](https://www.health.state.mn.us/communities/environment/water/factsheet/beware.html).

# Drinking Water and Covid-19

Visit [Drinking Water and COVID-19](#) for more information and general updates about COVID-19 related to drinking water. Public water systems can visit [Public Water Systems and COVID-19](#) for information and updates about COVID-19 related to drinking water utilities.

Together in partnership with public water systems, the Drinking Water Protection Section at MDH will continue working to ensure the delivery of safe and sufficient drinking water to all Minnesotans throughout the COVID-19 response.

# Help Protect Our Most Precious Resource – Water

## The Value of Water

Drinking water is a precious resource, yet we often take it for granted.

Throughout history, civilizations have risen and fallen based on access to a plentiful, safe water supply. That’s still the case today. Water is key to healthy people and healthy communities.

Water is also vital to our economy. We need water for manufacturing, agriculture, energy production, and more. One-fifth of the U.S. economy would come to a stop without a reliable and clean source of water.

Systems are in place to provide you with safe drinking water. The state of Minnesota and local water systems work to protect drinking water sources. For example, we might work to seal an unused well to prevent contamination of the groundwater. We treat water to remove harmful contaminants. And we do extensive testing to ensure the safety of drinking water.

If we detect a problem, we take corrective action and notify the public. Water from a public water system like yours is tested more thoroughly and regulated more closely than water from any other source, including bottled water.



# Protecting Groundwater is Everyone’s Business

The residents of Waconia and surrounding area rely on groundwater for their drinking water supply. There are several public and private drinking water wells located within the area. These wells draw water from groundwater aquifers located from 50 feet to several hundred feet underground. Groundwater aquifers are vulnerable to contamination from land use activities on the surface. The City of Waconia is working to protect their drinking water supplies by implementing a **WELLHEAD PROTECTION PLAN**. Wellhead Protection (WHP) is a way to prevent drinking water from becoming polluted by managing possible sources of contamination in the area that supplies water to the public. Protecting drinking water is an ongoing need for the community and everyone has an important role to play in this process. For more information on the City’s WHP efforts, please contact Public Services

## Wellhead Protection Goals

To determine how to best protect the drinking water supply, an in-depth evaluation was completed by the MN Department of Health identifying potential sources of contamination. A number of potential threats were cited including private wells, individual septic systems, leaking underground storage tanks, and stormwater runoff. In total, the City is trying to manage 15 contaminate sources. To assist with their ongoing efforts, the City of Waconia received a grant from the MN Department of Health to identify the number of unused wells within their groundwater recharge area. Once the City is aware of the number of unused wells, they can **present financial options to have the wells sealed**.

## What Is An Unused Well—And Why Is It A Problem?

A well that is not in use—sometimes referred to as an “abandoned” well—can be a potential threat to health, safety, and the environment. Unused wells that have not been properly sealed can be a source of groundwater contamination, potentially affecting nearby drinking water wells. They may threaten the quality of water in the City’s wells, your neighbor’s well, or even your own well.

## How Do Unused Wells Threaten Groundwater?

Groundwater is found in underground geologic formations called *aquifers*. The layers of rock and soil that lie between an aquifer and the surface, typically act as a natural barriers against the spread of contamination. However, an unused, unsealed well can provide an open channel between the surface and an aquifer, acting as a drain—allowing surface water runoff, contaminated water, or improperly disposed waste to reach an uncontaminated aquifer.

## What Does the Law Require?

By law, a well must be in use, be under a *maintenance permit*, or be sealed by a licensed well contractor. A well must be sealed if: 1) the well is not in use, 2) the well is contaminated, 3) the well has been improperly sealed in the past, 4) the well threatens the quality of the groundwater, or 5) the well otherwise poses a threat to health or safety.

If you have an unused well—and wish to keep the well for future use—you must apply for a special *maintenance permit* from the MN Department of Health, which requires an annual fee.





## Water Conservation is Everyone’s Responsibility...

### Typical Water Use Habits in the Bathroom:

- Teeth Brushing      2 gallons (tap running)
- Hand Washing      2 gallons (tap running)
- Shaving              3-5 gallons (tap running)
- Tub Bathing        36 gallons (full)
- Showering        20-40 gallons (5 gallons per minute)
- Toilet Flushing    5-7 gallons

Water running unused is like connecting the drain to your tap, and those few gallons a minute can add up to a lot of wasted water.

### Laundry:

Twenty-five percent of the daily household water use occurs in the kitchen and laundry, with much of the water being wasted.

A clothes washer can use 36-60 gallons per load.  
20 loads=720-1200 gallons

- If your washer has a variable load control, always adjust water levels to fit the size of the load. This saves both water and the energy needed to heat the extra water.
- Remember that clothes get cleaner in soft water and require less detergent and less rinse water.
- When buying a new washing machine, look for models with water or energy saving controls.

*Forget watering streets, walks and driveways... they don’t grow a thing!*

- **Morning is the best time to water most lawns. Before 9:00 am is the best of all because rising heat later on tends to steal a lot of water by evaporation.**
- **A lush green lawn requires 1 to 1-1/2 inches of water a week.**
- **Avoid watering when it is windy.**
- **Lawns that are frequently aerated absorb water better.**
- **Mulch around shrubs and other plantings so the soil holds moisture longer.**
- **Drive your car onto the lawn before washing it so rinse water can help water the grass.**

## LEAKS!... A WASTE OF WATER... AND COSTLY TO YOU!



The best method for determining whether a leak exists is to take actual water meter readings. This method checks the entire internal plumbing system for water leaks. Take a water meter reading just before going to bed or when no one will use any water for several hours. Take another meter reading in the morning before any water is used or after a few hours of non-use. In theory, the two readings should be the same. If they are not and you cannot account for the use by a humidifier, ice cube maker toilet flush, or water softener, you have a leak, and further investigation is recommended.

From our experience, 90 percent of the leaks in residential plumbing systems are found at the toilet tank. Malfunctioning water softeners and humidifiers run a distant second and third. We encourage you to check for a leak. Toilets leak at the bottom of the tank around the flapper plug or at the top of the tank at the overflow tube. To test the flapper plug, carefully remove the lid from the toilet tank and mark the water level in each toilet tank with a pencil. Shut off the water supply to the toilet. If the water remains on the mark you made for 10 minutes, the flapper plug is not leaking. If the water level drops below the mark you made, the flapper plug is leaking and should be repaired or replaced. The water level in the toilet tank should be at least 1 in. below the top of the overflow tube. If the water level in the toilet tank is at the top of the overflow tube, that is where a leak may be occurring, and the float that controls the water level in the tank should be adjusted so that the water level in the tank is at least 1 in. below the top of the tube. Toilet tank leaks typically result from worn parts or misalignment of some part of the flushing mechanism. Most repairs can be done by an experienced "do-it-yourselfer." If you are not sure you can handle the job, call a plumber. It is important to stop the leak.

Water leaks are costly. A typical toilet leak at today's rates can add \$5,400 to a single water bill. Our information is provided as a courtesy, with hopes of action on your part that may minimize an unnecessary waste of water and expense to you.

-Taken from April 1998 AWWA “Opflow “Magazine

**Fact or Fiction?**  
A typical shower with a non-low flow showerhead uses more water than a bath. (FICTION: A typical shower uses less water than a bath.)

## Minnesota State Requirements for Backflow Prevention

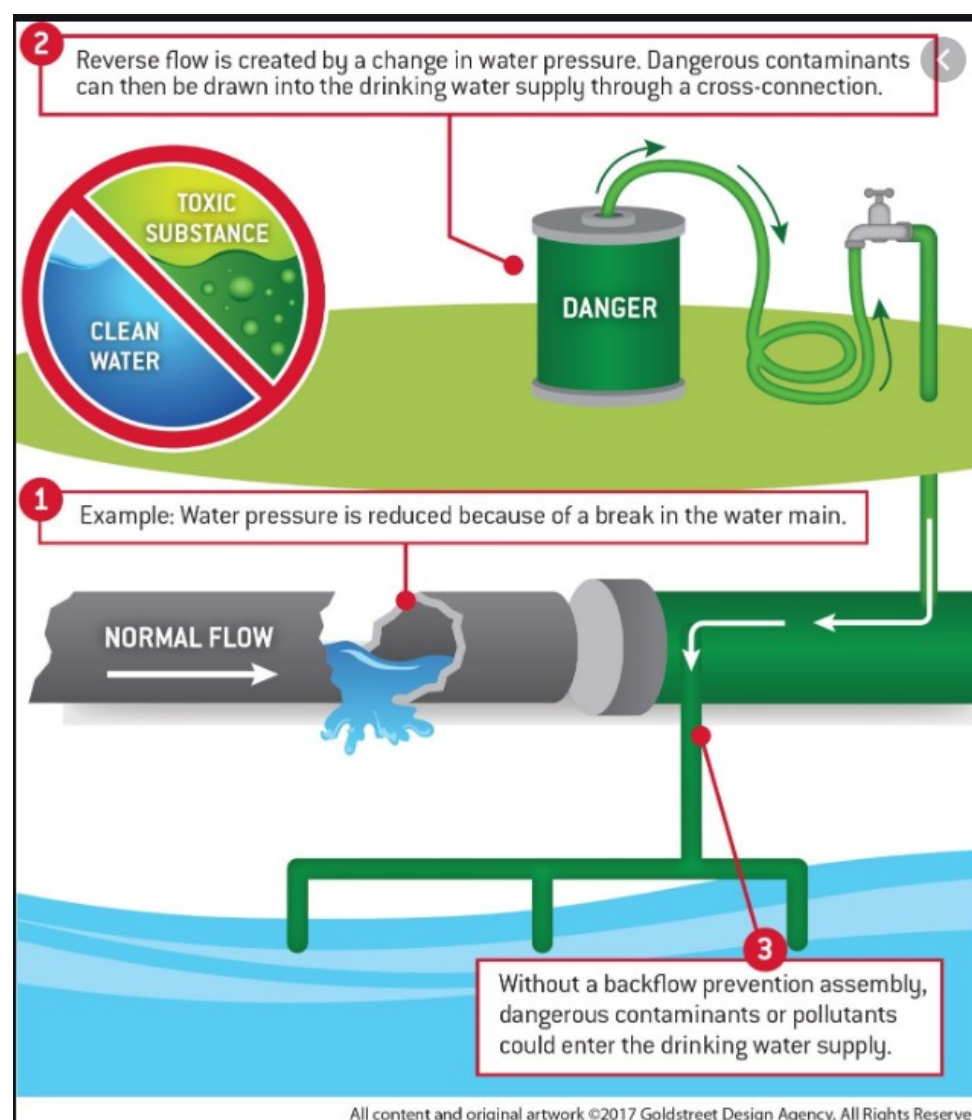
Effective January 23<sup>rd</sup>, 2016 the State of Minnesota approved a National Plumbing Code, the 2012 Uniform Plumbing Code with Minnesota amendments. The requirement is designed to assist in protecting the residents of Minnesota from potential Back Flow Contaminations.

As part of the update, the code requires that all testable backflow devices be tested upon installation and at least annually thereafter by a certified backflow assembly tester.

Such Devices:

- **Reduced Pressure Backflow Assemblies**
- **Reduced Pressure Detector Fire Protection Prevention Assemblies**
- **Double Check Backflow Prevention Assemblies**
- **Pressure Vacuum Breaker Backflow Prevention Assemblies**
- **Double Check Detector Fire Protection Backflow Assemblies**
- **Spill Resistant Pressure Vacuum Breaker**

## Back Flow Image Example



## Cross Connection Control

Do your part to help prevent the problems caused by backflow and cross connections.

Backflow, or back siphonage, occurs when the pressure of a polluted source exceeds that of the drinking water supply, which can pull contaminants back into the drinking water supply. It can result in contaminants, including hazardous chemicals and bacteria, mixing with drinking water. Cross connections—an actual or potential connection between a drinking water and non-drinking water supply—are sources of backflow problems.

Residential and commercial property owners should be concerned and diligent about backflow and cross connections. A garden hose can often be a cross connection. Someone spraying an herbicide with a cross connection could have some of the herbicide pulled back into the home plumbing, especially if there is a drop in the water pressure while the garden hose with the herbicide is attached.

The Minnesota Department of Health and American Water Works Association recommend the following precautions:

- Do not submerge hoses in buckets, pools, tubs, or sinks.
- Keep the end of the hose clear of possible contaminants.
- Do not use spray attachments without a backflow prevention device, and attach these devices to threaded faucets. Such devices are inexpensive and available at hardware stores.
- If a plumber is used to install backflow prevention devices, make sure the plumber is licensed to ensure that local codes and manufacturer's recommendations are met.
- Commercial property owners should develop a cross connection plan to minimize the risk of drawing contaminants into uncontaminated areas.

Maintain air gaps (vertical separations between an outlet and the flood-level rim of a vessel of at least twice the diameter of the water supply outlet, and at least one inch) between hose outlets and any liquids.

Thanks for doing your part!



## How Does This Impact the City and Homeowners with the Devices Listed?

Each City or Municipality is responsible for notification to its Homeowners and Businesses the need for tracking of inspection, testing and repair of the previously mentioned devices. As a Homeowner, you may have an irrigation system with a Pressure Vacuum Breaker Backflow Prevention Assembly. Most Commercial or Industrial buildings are required to have a Fire Suppression System. These systems require a Pressure or Double Check Fire Protection Backflow Assembly.

As stated earlier, each device must be tested annually, or each year to maintain compliance with Minnesota Plumbing Code.

### What is the City of Waconia Planning to Do About Meeting the Minnesota Plumbing Code?



Over the next few Months City Staff will be working on updates to our Municipal Ordinances reflective of the new Plumbing Codes. City Staff have discussed with the City Council a desire to meet the requirements through utilization of an outside source for Management and Tracking purposes. The initiative will assist the City in meeting the new Plumbing Code, keep operational and tracking cost down to meet the new unfunded requirement.

City Staff have made a recommendation to the City Council that we work with the **Safe Water Commission of St. Paul, Minnesota**. The Safe Water Commission maintains a pre-qualified list of Plumbing Inspectors/Testers and Repair Practitioners. We will be working diligently with the Safe Water Commission on an agreement to manage the requirements and approaches to initiate the large volume of inspection needs for these devices.

It is also City Staff's recommendation that all devices within the City be tested with the end-goal of protecting the Waconia community from potential back flow contamination.

### What to Expect at This Time, and What Should I Do as a Homeowner?

As a Homeowner you may monitor the progress of the Ordinance improvements through the City Council Meeting processes. As stated earlier, this process will take several months, and you as a Homeowner will have the right to provide comments through a Public Notification process. City Staff will keep the public informed of the steps taken to implement and meet the new requirements.

Please monitor the City Website [www.waconia.org](http://www.waconia.org) and Waconia Patriot for further details.

You may also contact Public Services at 952-442-2615 or [Publicservices@waconia.org](mailto:Publicservices@waconia.org) with questions on the progress and implementation plan.

## Water...

.....An Essential Part of Our Lives and Our Future!

### *Water Conservation Measures & Enforcement:*

The City of Waconia has adopted enforcement measures related to its Water Conservation Ordinance. Outdoor irrigation is not permitted between the hours of 9 a.m. and 7 p.m. on any day, all year round. In addition, odd/even watering restrictions are also in effect. For instance, if your address is an odd number, you may water (during appropriate hours) on odd numbered calendar days; whereas, if you have an even numbered address, you may water on even numbered calendar days.

Upon discovery of a violation, the violator shall be issued a warning letter that sets forth the violation and shall describe the remedy and fines for future violations. Upon a second violation at the same location, the violator shall be issued a citation with a fine of \$75.00. A third, and subsequent violations at the same location, will result in a \$250.00 fine for each occurrence. Fines will be added to the violator's monthly water utility bill.

These water conservation measures are necessary to protect our natural resources and remain within the City's water usage allocation set by the DNR. Failure to conserve water will result in higher costs for all our residents, so please water responsibly. Questions regarding water conservation measures may be directed to Public Utilities at 442-2615.

Residents with new sod or seed are reminded that they can call or stop down at the Public Services office to obtain a permit that will allow them to water every day for 14 days, but they are still prohibited from watering between the hours of 9:00am and 7:00pm. Water toys or sprinklers that are used for children who are present and actively playing and hoses that are hand held by a person are exceptions to the ordinance.



Watering is **NOT** permitted between the hours of 9am to 7pm— all year, no exceptions!

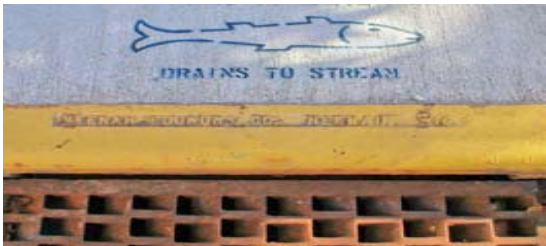
# How You Can Help Keep Water Clean

## Reduce Pollution to Lakes and Rivers

Storm water runoff is rainwater that does not infiltrate into the ground, but instead runs off impervious areas (streets, sidewalks, parking lots) and into lakes, rivers and wetlands. It is the leading causes of water pollution in the United States, carrying grease, oil, bacteria, nutrients, sediment and other contaminants straight into our waters. Below are ways you can reduce storm water, and/or the pollutants it might come in contact with. Visit [www.cleanwatermn.org](http://www.cleanwatermn.org) for even more ideas!!

- 1. Mulch or Compost Leaves and Grass Clippings!**  
Grass clipping and leaves located on impervious surfaces such as streets, driveways, and sidewalks, wash away with storm water runoff into nearby lakes, rivers and wetlands via storm drains. They add excess nutrients to the water which results in algae blooms! Help clean streets of grass clippings and leaves and reduce nutrients in lakes. Compost grass clippings and leaves, thus keeping nutrients out of waters AND reduce the need for lawn fertilizers
- 2. Keep Storm Drains Clean!**  
Storm drains drain to waters without treatment! In addition to keeping them free of leaves and grass clippings, we must also prevent debris, trash and hazardous chemicals (paint, herbicides) from getting into them and washing into lakes and rivers.
- 3. Use Phosphorus FREE fertilizers**  
If you must use fertilizers on your lawn and garden use phosphorus free. Lawn fertilizers carrying phosphorus have been banned in MN, but garden fertilizers still contain it. Phosphorus washes into streams and lakes with storm water runoff and causes algae blooms. Sweep excess fertilizers away from sidewalks, driveways, streets, and storm drains when finished using and remember the best methods for green lawns are to use mulch and compost and reduce mowing frequency!
- 4. Build a Rain garden**  
Rain gardens reduce storm water runoff and associated pollutants and help prevent flooding. A rain garden is a shallow depression garden designed to catch and infiltrate storm water runoff. The plants absorb and breakdown nutrients and pollutants and attract many types of wildlife (birds and butterflies) to your yard increasing the beauty and aesthetics of your yard. Interested in building a rain garden? Learn more at [www.bluthumb.org](http://www.bluthumb.org)
- 5. Get a Rain barrel**  
Another method for reducing storm water runoff is to get a rain barrels. Rain barrels catch runoff from your roof, which can later be used to water gardens. Using rainwater helps conserve water and is better for your plants as it does not contain chlorides. Interested in getting a rain barrel! The Carver County [Environmental Center](#) sells them every spring at the best price in the metro area!
- 6. Redirect Your Gutter**  
If you don't wish to get a rain barrel, you can still redirect your gutters so the water flows onto grass and gardens instead of hard surfaces that go to storm drains.
- 7. Fix Car Leaks!**  
Those drips from motor oil, break fluid, anti-freeze and other liquids from cars, get washed into our waters so fix them quickly to prevent pollution.
- 8. Improve that Septic Systems**  
While properly managed septic systems recycle water back into the natural environment, failing systems result in sewage back ups, sewage in the house or surfacing in the yard or ditch. These failing systems are public and wildlife health threats. For more information on septic systems and programs offered by Carver County, visit the [Environmental Services Septic Systems](#) page.
- 9. Don't Dump Hazardous Materials**  
As said before, drains lead to water bodies. Although the drain from your sinks and bathrooms go to water treatment facilities before entering lakes and rivers, these treatment facilities do not have a capabilities of removing every contaminant from the water. Thus, *READ LABELS* on your household products to see if they are harmful and how to properly dispose of them. The [Environmental Center](#) in Carver County takes many hazardous household materials. Dumping down the drain or on soil leaks these chemicals to surface and groundwater. Learn more at: [Keep hazardous waste out of the garbage \(http://www.pca.state.mn.us/featured/keep-hazardous-waste-out-garbage\)](http://www.pca.state.mn.us/featured/keep-hazardous-waste-out-garbage).
- 10. Keep or Restore Buffers and Natural Shorelines!**  
If own shoreline property, you can greatly improve the water quality simply by leaving a buffer strip of native vegetation near the water. The vegetation acts as a filter, capturing and containing pollutants that otherwise would have ended up in the water. It also serves as habitat for wildlife such as migrating birds.  
Many people mow these natural shorelines down, but that leads to water pollution and erosion and loss of property.
- 11. Remove Pet Waste**  
Although loveable and fuzzy, pets produce waste that can get washed off our lawns and parks and into our waters, and waste carries bacteria. Picking up pet waste is a huge and simple step towards cleaner and healthier waters. You can even get compostable biobags for picking up pet waste with [Biobags!](#) These bags breakdown and can be buried, compost them in your yard away from potential rain and it can act as a fertilizer for your lawn.
- 12. Winter ice removal:** Chemicals used to break up the ice are called deicers or anti-icers. They can be harmful to the environment, corrosive to driveways and sidewalks and harmful to plants, pets and humans. Always shovel first, and then only apply deicers/anti-icers lightly if needed. Learn more at [10 smart salting tips to protect Minnesota waters \(https://www.pca.state.mn.us/featured/10-smart-salting-tips-protect-minnesota-waters\)](http://www.pca.state.mn.us/featured/10-smart-salting-tips-protect-minnesota-waters).
- 13. Out-of-date medications:** Never flush unwanted or out-of-date medications down the toilet or sink. Always take them to a waste disposal or prescription medication drop-off site. More information is available at [Managing unwanted medications \(www.pca.state.mn.us/living-green/managing-unwanted-medications\)](http://www.pca.state.mn.us/living-green/managing-unwanted-medications)

The depositing of garbage or refuse on a public right-of-way or on adjacent private property (i.e. Blowing grass clippings into the street.) **Is a violation of City ordinance and may result in a fine!**





# Your Lawn and the Environment



**Sweep it up grass clippings**, leaves, or fertilizer left on streets and sidewalks can be a major source of phosphorus pollution in lakes and rivers.

Fertilizers, leaves, grass clippings, animal waste, and eroded soil are all sources of phosphorus. When they are swept or washed into the street or nearest storm drain, they end up in your local lake or river. You can do your part to protect water quality by doing the following:

- Buy phosphorus-free lawn fertilizer.
- Apply fertilizer at the recommended rate. Late summer is the best time. Don’t fertilize before a storm. Never apply to frozen ground.
- Keep soil, leaves, and lawn clippings out of the street.
- Mow higher. Keeping your grass length to 2½ – 3 inches is healthier for your lawn.
- Pick up pet waste promptly. Pet waste can contain harmful bacteria as well as nutrients that cause excess algae and weed growth in lakes and rivers.
- Control soil erosion around your house. When left bare, soil is easily washed away with rain, carrying phosphorus with it. Soil erosion can be prevented by keeping soil covered with vegetation or mulch.



## For more information on lawn care

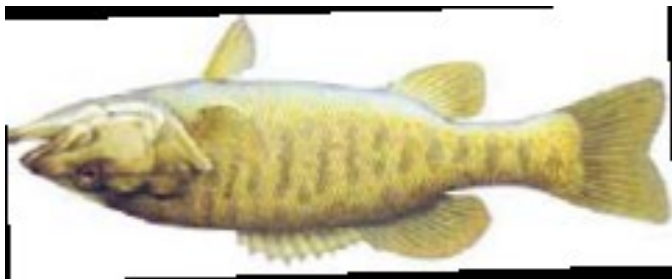
- The **Yard & Garden Line** is the University of Minnesota Extension’s one-stop telephone link to information about plants and insects in the home landscape. Call 952-443-1426 or [www.extension.umn.edu/gardeninfo](http://www.extension.umn.edu/gardeninfo).
- **Sustainable lawn maintenance.** University of Minnesota Extension – *Sustainable Urban Landscape Information Series* (SULIS): [www.sustland.umn.edu](http://www.sustland.umn.edu). From the home page, click on “Maintenance” then on “Sustainable Lawn Maintenance.”
- **Minnesota’s phosphorus law.** Minnesota Department of Agriculture: [www.mda.state.mn.us/phoslaw](http://www.mda.state.mn.us/phoslaw).
- **No-waste lawn.** Minnesota Pollution Control Agency: [www.pca.state.mn.us](http://www.pca.state.mn.us). From the home page, search “lawn and garden”.

## The Problem: Too Much GREEN



**Green and murky** Excess algae and weed growth is a major problem in many Minnesota lakes and waterways. One pound of phosphorus can result in hundreds of pounds of algae.

**More phosphorus, fewer fish** Too much algae lowers oxygen levels and darkens the water. In severe cases, this can have a devastating effect on fish populations.





What is Xeriscaping?

Many assume that Minnesota, "the land of 10,000 lakes," is inundated with bountiful rainfall. Unfortunately, that isn't generally true. Most lawns and gardens need at least an inch of water every week and there are usually periods where we don't receive adequate rainfall to meet their moisture requirements

Xeriscaping is one way to cut down on water usage while still having a beautiful low-maintenance yard and garden. (Xeros is the Greek work for "dry"). You don't have to make your entire area drought-resistant, but if you place all your thirsty plants in one section, you will concentrate your watering needs and save time as well as water.

Check out the website [www.earteasy.com/grow\\_xeriscape.htm](http://www.earteasy.com/grow_xeriscape.htm) for more information on xeriscaping and grasscycling



Liatris is an example of a perennial xeriscape planting

Grasscycling?

The simple practice of leaving clippings on the lawn after mowing is called “grasscycling”. There are a few tips to successful grasscycling, and when done properly, clippings quickly de-compose and return nutrients to the soil naturally.



A Storm water Poo-llution Prevention

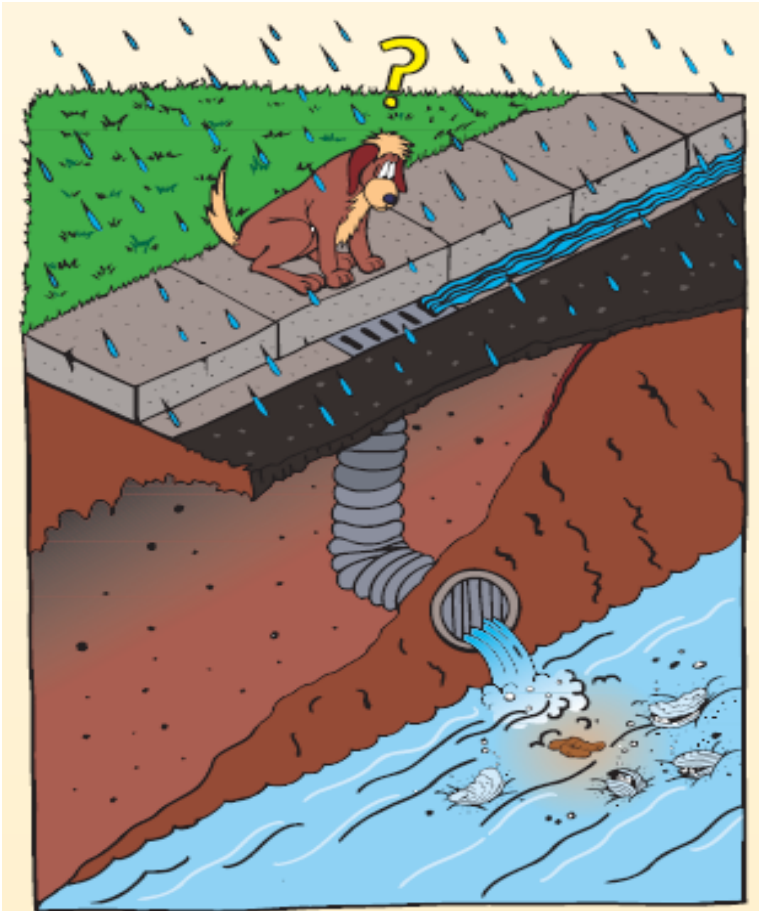


**Fact**, dog waste has been declared a “nonpoint source of pollution” by the Environmental Protection Agency (EPA). Believe it or not, this puts dog waste in the same category as oil and toxic chemicals!



Improperly disposed pet waste negatively impacts water quality in lakes, ponds, creeks and the river. Pet waste that decays in lakes depletes oxygen. The lack of oxygen combined with warm temperatures can result in fish kills. Nutrients in pet waste also encourage weed and algae growth further reducing water quality. Algae blooms are stinky and make the water green and ugly which results in fewer recreational users including swimmers, boaters, wind surfers and anglers.

While pet waste isn’t the biggest pollutant to our water bodies, it is one of many small sources that add up to a bigger problem. And dog owners can help tackle this bigger problem by picking up after their pets.







A Career in the Water Industry  
is waiting for **YOU!**

St. Cloud Technical and Community College’s Water Environment Technologies (WETT) program provides you with the skills you need to land a great job in this rapidly growing industry. There are many benefits to this program:

- ▶ Hands-on learning
- ▶ Metro and St. Cloud locations
- ▶ 12 month program
- ▶ 95% placement rates

Call St. Cloud Technical & Community College at 1-320-308-5952 for more information on this career program or email [gkropp@sctcc.edu](mailto:gkropp@sctcc.edu)  
Instructor: Greg Kropp



The City of Waconia takes pride in providing a high level of water quality and customer service and in having one of the most qualified, experienced and dedicated water plant staffs in Minnesota. Waconia hires only State certified operators and the staff receives extensive training in operations and measurement of water quality.

**Please contact us with any questions, concerns or comments**

**City of Waconia**  
Public Utilities Department  
310 East 10th Street  
Waconia, MN 55387  
**952-442-2615**  
Email:  
[publicservices@waconia.org](mailto:publicservices@waconia.org)  
Website:  
[www.waconia.org](http://www.waconia.org)  
EPA Safe Drinking Water Hotline  
**1-800-426-4791**  
Minnesota Department of Health  
**651-201-4700**