

2020 Consumer Confidence Report Data FREDONIA WATERWORKS, PWS ID: 24601093

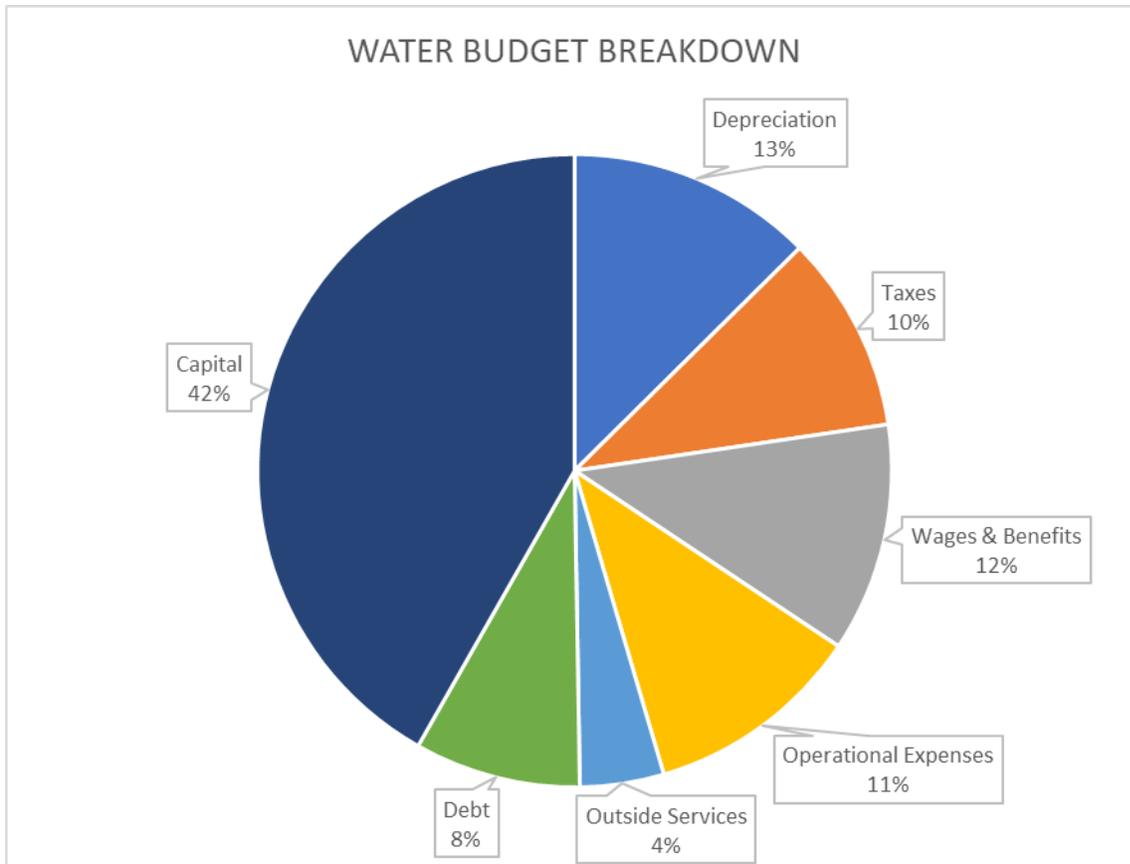
Letter from the Director

Enclosed is our annual update to the residents of Fredonia regarding the safety of our drinking water. I am pleased to report that Fredonia's water has met or surpassed all Federal and State standards for health and safety. Please see the Water Quality Table on page 5 for the details. Last year we pumped 63,426,000 gallons from our wells which is about 5% less than the previous year. This reduction is most likely because of COVID-19 impacts to businesses and the school.

Everyone needs water. With the critical necessity of water for all of us, the Village strives to keep water affordable. However, that requires investments into the water supply system and also the water removal system (sewers) along with water and wastewater treatment. Recent rate increases are largely necessary to make capital improvements at the wastewater treatment plant due to aging equipment and changing regulations and to a lesser extent to replace water mains. The table below shows how our rates compare to other Ozaukee County communities for a typical 12,000 gallon/quarter residential user. With the exception of Belgium, these other communities are much larger which means that they generally have lower rates because of the ability to spread costs over more rate payers. Our rates compare quite well with other Ozaukee County communities; especially, if you factor in population size.

	Quarterly Water Bill	Quarterly Sewer Bill	Total	Population
Fredonia	56.09	166.66	222.75	2,207
Cedarburg	51.31	135.60	186.91	11,527
Saukville	65.64	128.06	193.70	4,442
Grafton	53.02	161.04	214.06	11,646
Port Washington	80.32	150.43	230.75	11,761
Mequon	93.35	154.12	247.47	24,144
Belgium	79.77	206.01	285.78	2,322

The largest portion of our water utility budget goes for capital equipment and facilities such as meters, water mains, water tower, pumps, etc. The breakdown of the budget is shown below.



Repairing a Water Main leak

Water main's generally break because of two primary reasons: a pressure spike caused by the abrupt starting and stopping of a pump or quick closure of a valve or shifting soil generally caused by frost. Once a break occurs, we are typically notified of the break by a passing resident or police officer. Other times based on pump run times, water tower level, or high flow at the wastewater treatment plant, we will be alerted to possible breaks and we will search for them in locations where the water main may be routed outside the road or by looking for high flows in manholes. Once we identify the location of the break, we will turn down the valves surrounding the break to reduce the amount of water lost through the break. We call the break into diggers hotline because we will have to excavate to repair the break, notify affected residents of anticipated repair date and times frame for water to be shut off and notify the fire department so that they are aware of low flows and pressure in that neighborhood. Typically, we plan to repair the break the same day or the following day that we find the break. Occasionally, we will wait to repair the break because of a pending snow storm, the leak isn't showing itself above the ground to give us an idea where to dig, or because of an upcoming weekend. We will wait for Monday because of a known shortage of manpower and to avoid overtime pay. We also factor in the capacity of the pumps to keep the water tower full and the anticipated cost of the water.

Now it's finally time to make the repair. We try to identify the exact location of the break by examining the height of the water bubbling out of the road, pavement cracks, etc. Frequently the frost will cause the water to surface in a different location from the break. There are times when we call in a professional leak detection service. We will locate water services and sewer laterals

to homes and businesses, we check the depth of nearby sanitary mains and storm sewers to determine if they may be impacted by the excavation and we saw cut the pavement above the expected location of the leak. About half the time the Village will excavate and repair the break on our own. The other half we contract someone to excavate and haul the material for us. We contract if we expect difficulty digging because of frost, other utilities, or man power shortage. Because of the size a Contractor's dump truck and our plow trucks are usually full of salt, a contractor can spend more time digging and less time hauling than the Village can. When the excavated soil is being hauled, there is little that can be done until the truck gets back. So haul time greatly affects the length of the repair time and water off time. During the excavation, we run pumps to keep the hole dry, we direct traffic, we monitor the trench for safety, and set up the tools necessary for the repair. Frequently the nearest valves don't hold, and we have to shut off more valves. If this happens, we try to notify as many affected residents as we can but the notice is very short and often incomplete. When we are near the pipe, we start probing the floor of the excavation to determine the exact depth so that we don't damage it further by hitting it with the excavator. Once the pipe is exposed, we hand shovel around the break. When the pipe is cleared sufficiently to put the repair sleeve on it, we scrape corrosion deposits off of the outside of the pipe to make it smooth, wipe the dirt off, and place a compression sleeve over the crack or hole. At this time, we turn water back on to determine if our repair holds and we also open a hydrant to flush the main because it will often turn rusty while empty. We also flush the main to make sure that there is a good chlorine residual back in that water main. Now we open the remainder of the valves, backfill our hole, and clean up the site. We now have to wait for hot asphalt to be available to permanently patch the road.

This year, we replaced a few valves and replaced the chemical pumps at the well houses, cathodic protection was added to the water tower and a connection for emergency power was installed at Well 2. About 1/3 of the valves were exercised and all of the hydrants were flushed and inspected. During 2021, we will replace the water main on N. Wilson street and replace about 40 meters in homes and businesses.

If you would like to know more about the information contained in this report, please contact Roger Strohm at (262) 692-9125.

Opportunity for input on decisions affecting your water quality

First and Third Thursday of every month at 7:00 PM at the Fredonia Government Center located at 242 Fredonia Avenue, Fredonia, WI.

Health Information

The Village's water supply naturally contains Fluoride at about 0.5 mg/L. We do not add Fluoride to the drinking water. The U.S. Public Health Service recommends 0.7 mg/L of Fluoride in the community drinking water supply. You should discuss with your dentist and health care provider if you feel that you need additional fluoride.

The Village water supply also naturally contains Arsenic. The levels of arsenic in the water supply are about 1/3 of the amount allowed by the EPA. We do not treat for arsenic in the water supply. Removal of arsenic in the home can be accomplished by adding a filter or ion exchange system. If you choose to add one of these systems to your home, **follow the manufacturer's recommendations for replacement of the filter. This applies to any filter that you use in your water system at home including refrigerator filters.** These filters can become home to bacterial growth causing taste and odor problems.

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 (800-426-4791).

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 systems disorders, some elderly, and infants can be particularly at risk from infections. These people 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 Environmental Protection Agency's safe drinking water hotline (800-426-4791). **Our water is supplied from the ground and does not contain many of the contaminants found in surface water sources such as cryptosporidium.**

Source(s) of Water

Source ID	Source	Depth (in feet)	Status
1	Groundwater	457	Active
2	Groundwater	360	Active

Our water is supplied from the ground and does not contain many of the contaminants found in surface water sources. To obtain a summary of the source water assessment please contact, Roger Strohm at (262) 692-9125.

Educational Information

The sources of drinking water, both tap water and bottled water, include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally- occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which shall provide the same protection for public health.

Definitions

Term	Definition
AL	Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine, if possible, why total coliform bacteria have been found in our water system.
Level 2 Assessment	A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine, if possible, why an E. coli MCL violation has occurred or why total coliform bacteria have been found in our water system, or both, on multiple occasions.
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.
MFL	million fibers per liter
MRDL	Maximum residual disinfectant level: The highest level of a 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 a 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.

Term	Definition
mrem/year	millirems per year (a measure of radiation absorbed by the body)
NTU	Nephelometric Turbidity Units
pCi/l	picocuries per liter (a measure of radioactivity)
ppm	parts per million, or milligrams per liter (mg/l)
ppb	parts per billion, or micrograms per liter (ug/l)
ppt	parts per trillion, or nanograms per liter
ppq	parts per quadrillion, or picograms per liter
TCR	Total Coliform Rule
TT	Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

Detected Contaminants

Your water was tested for many contaminants last year. We are allowed to monitor for some contaminants less frequently than once a year. The following tables list only those contaminants which were detected in your water. If a contaminant was detected last year, it will appear in the following tables without a sample date. If the contaminant was not monitored last year, but was detected within the last 5 years, it will appear in the tables below along with the sample date. **Our water exceeds all standards set by the EPA and the DNR at less than 0.5¢ per gallon.**

Disinfection Byproducts

Contaminant (units)	Site	MCL	MCLG	Level Found	Range	Sample Date (if prior to 2020)	Violation	Typical Source of Contaminant
HAA5 (ppb)	S-6	60	60	0	0		No	By-product of drinking water chlorination
TTHM (ppb)	S-6	80	0	0.9	0.9		No	By-product of drinking water chlorination

Inorganic Contaminants

Contaminant (units)	Site	MCL	MCLG	Level Found	Range	Sample Date (if prior to 2020)	Violation	Typical Source of Contaminant
ARSENIC (ppb)		10	n/a	4	3-4		No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
BARIUM (ppm)		2	2	0.095	0.035 - 0.095		No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
FLUORIDE (ppm)		4	4	0.5	0.4 - 0.5		No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
NICKEL (ppb)		100		1.1000	0.5500 - 1.000		No	Nickel occurs naturally in soils, ground water and surface waters and is often used in electroplating, stainless steel and alloy products.
SODIUM (ppm)		n/a	n/a	13.00	13.00		No	n/a

Contaminant (units)	Action Level	MCLG	90th Percentile Level Found	# of Results	Sample Date (if prior to 2020)	Violation	Typical Source of Contaminant
COPPER (ppm)	AL=1.3	1.3	0.1230	0 of 10 results were above the action level.		No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
LEAD (ppb)	AL=15	0	5.00	0 of 10 results were above the action level.		No	Corrosion of household plumbing systems; Erosion of natural deposits

Radioactive Contaminants

Contaminant (units)	Site	MCL	MCLG	Level Found	Range	Sample Date (if prior to 2020)	Violation
GROSS ALPHA, EXCL. R & U (pCi/l)		15	0	1.9	0.0 - 1.9		No
RADIUM, (226 + 228) (pCi/l)		5	0	0.6	0.0 - 0.6		No

Additional Health Information

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. Fredonia Waterworks 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 www.epa.gov/safewater/lead. For those that have read this far, please email stretow@village.fredonia.wi.us with your name and phone number and we will enter you for a chance to win a \$20 gift certificate to a business of your choice within the Village courtesy of the Public Works Director.