Town of Billerica

Department of Public Works

Water Division PWS ID 3031000

Annual Water Quality Report

January 1, 2020–December 31, 2020

L to R: Dave Crusco, Ed McLaughlin, Alan Danehy, Chris Zechner, Mike Haines Jr., Dan Donovan

Perseverance is the hard work you do after you get tired of doing the hard work you already did.

Town of Billerica
Department of Public Works
Water Division

WHO WE ARE AND HOW TO CONTACT US:

John McGovern, *Water Superintendent*
Gerard Garabedian, *Assistant Superintendent*
Water Quality Laboratory
Richard Raworth, *Laboratory Director*
Carolyn Capodilupo, *Laboratory Technician*
Backflow/Cross Connection
Robert Boulé, *BF/CC Surveyor*
Water Distribution
Edward McLaughlin, *Distribution Supervisor*
Chris Zechner, *Distribution Foreman*

270 Treble Cove Rd • West Billerica, MA 01862
Phone: 978-671-0957 • Fax: 978-215-2075

Town of Billerica Web Site: www.town.billerica.ma.us
(Select Your Government > Select Departments > Click on Public Works > Click on Divisions > Click on Water)

ABOUT THE COVER: Our Water Distribution Team is the group of Water Professionals responsible for maintaining our Water Distribution System. Billerica's Distribution System is a complex array of over 235 miles of water mains, gate valves, curb boxes and fire hydrants all of which must be maintained to convey drinking water to our customers. Over the five years between 2016 through 2020 this Team repaired 222 water main breaks many under extreme weather conditions. During this time 193 malfunctioning fire hydrants were replaced by this same Team. When you are notified of a water main break that may affect your water service this is the Team that will be responding to restore your service.

UNDERSTANDING THE LANGUAGE IN THIS REPORT

Throughout this report you will see the word contaminant used frequently. This DOES NOT mean the water is harmful; this term is used to describe the possibility of a contaminant being present in both source water and drinking water. Any substance detected in the drinking water is listed in the analysis table.

Written and compiled by:
Carolyn Capodilupo
Design by: Christina Capobianco

Welcome
to the Annual Water Quality Report from your Award-Winning Water Division!

2020 What Else Can We Say?

2020 was an extremely difficult year for everyone in the world. Covid-19 was one of the biggest threats to sustaining our Drinking Water process. Our top priority was to keep our employees safe and to continue to maintain our ability to provide the best quality drinking water all while news and information about the virus evolved. We faced many challenges in doing this from securing Personal Protective Equipment for our Staff to developing and implementing new Policies and Procedures for operations in our Treatment facility and our Distribution system, to continue operations in the safest most continuous way possible while complying with State COVID mandates.

State and Federal compliance in all areas was required and achieved throughout this crisis through careful planning and the extraordinary Team efforts of everyone at the Billerica Water Division. Throughout this ongoing crisis we continued to maintain operations 24 hours a day every day. Our staff remains vigilant in following all protocols to protect themselves, their co-worker's, their families and those we do business with.

2020 also saw a major construction begin with the Plant Capital Upgrade project. This project involves upgrading the HVAC system, the SCADA system and software reporting program, replacing the failing Ozone system including construction of a building to house this system. It also involved replacing all of the chemical storage tanks and installing scales for each one.

Residential Water System Pressure

The water tanks on Boston Road are called standpipes. These standpipes are used for storage as well as maintaining the water pressure in the distribution system. In some areas of Billerica, this pressure may be as high as 120 pounds per square inch (psi). If this pressure presents a problem in your home, you may hire a plumber at your expense to install a pressure reducing valve after your meter.

System Maintenance, Repairs and Improvements

Our Leak Detection program continued in 2020. In April and May 2020 our water distribution system was surveyed (230 miles), and a total of 39 leaks were detected. These leaks included three water main leaks, six service line leaks and 30 hydrant leaks.

These are all leaks that do not show on the surface such as is the case with most water main breaks.

Our Leak detection Program is ongoing and helps us to find leaks within our system and helps us to identify and repair costly leaks which waste water.

We had 40 water main breaks in 2020 on pipes ranging in installation age from 1913 to 1998. Two of these water mains, one on Ossamequin Rd and another on Boston Rd were replaced due to failing condition. We continue to replace failing water mains as our budget allows.

Boston Road – In July 2020 the old ten inch cast iron pipe installed in 1932 was replaced with 1,468 ft. of twelve inch class 52 ductile iron pipe from the bridge at the Concord River to Floyd Street. The old pipe has failed nine times over the last twenty-two years and was abandoned in place.

Ossamequin Rd – In August the old six inch cast iron main pipe installed in 1959 was replaced with 590 ft. of eight inch class 52 ductile iron pipe from Morgan Road to Lupine Lane. The old pipe failed ten times over the last twenty-two years.

Millstone Way – In October 280 ft. of eight inch ductile main was installed in Millstone Way by a private contractor for the new subdivision.

Ozone and Plant Upgrades

Work continued on the construction of our new ozone system and plant upgrades. During this project a new building was constructed to house the new ozone system placing it more appropriately alongside our pretreatment building. This eliminates the use of the current piping moving the ozone with carry water to the raw water main.

Work also continued within the Treatment Facility on replacing Chemical storage tanks. Scales which are used to determine the amount of chemical used were also changed out. This project was quite involved as it required the use of temporary "day tanks" to store the chemicals while the old tanks were removed and the new scales and tanks were installed.

Backflow/Cross Connection Program

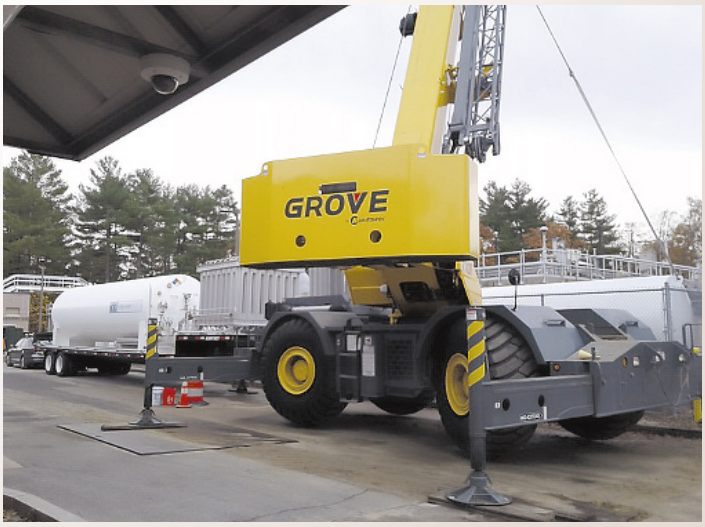
For over 25 years Billerica has been protecting water consumers with its Backflow / Cross Connection Program.

A Cross connection occurs whenever the drinking water supply is or could be in contact with potential sources of pollution or contamination. Cross-connections exist in piping or equipment that allows the drinking water to come in contact with non-potable liquids, solids or gases (hazardous to humans) in the event of a backflow.

A backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by equipment or a system such as a boiler, is higher than the water pressure inside the water distribution line or when the pressure in the water system drops due to routine occurrences such as water main breaks, firefighting, or heavy water demand causing the water to flow backwards.

You can help prevent a cross connection by installing a hose bib vacuum breaker on every threaded water fixture. Buy appliances and equipment with a backflow preventer. Never attach a garden hose to a garden sprayer without the proper backflow preventer.

If you are the owner or manager of a property that is being used as a commercial, industrial or institutional facility you must have your property surveyed for cross connection. For more information or to schedule a cross connection survey please call Robert Boulé at 978-671-0957.



Rehabilitated liquid oxygen tank is installed by crane beside the temporary liquid Oxygen tank which was used during the transition.

Drought 2020

The Drought that we experienced in 2020 proved to be more troublesome than the Drought of 2016. We experienced a sustained decline in water quantity and water quality in our source water, the Concord River. This caused considerable issues in our treatment process requiring critical adjustments and increased scrutiny throughout our process.

Thanks to the hard work and efforts of our drinking water professionals we were able to remain in compliance with all State and Federal regulations.

Outdoor water use restrictions became more stringent as the drought worsened. The need to conserve water for drinking water and fire protection was a priority. While many of our customers complied with these restrictions it was disheartening to see how many residents disregarded the restrictions and continued water use for lawn irrigation. We have now experienced two significant droughts in the last four years. It is evident that we need to be prepared for these situations and take measures to protect our water source and our water supply. Reevaluating how and where we use water is a good place to start. Prioritizing water use by everyone is crucial to preserving this resource.

2020 WATER RESTRICTION AND DROUGHT TIMELINE
(Drought Levels are determined by the MA Drought Task Force)

May 1, 2020 to September 2020 Annual Water Restriction as required by our Water Management Act Permit – No Non Essential Outdoor Water Use between 9 am and 5 pm daily.

6/26/20 – Level 2 Significant Drought is officially declared by Drought Task Force for Western, CT River Valley, Central and Northeast Regions (Billerica is in the Northeast Region). Billerica prepares, prints and mails a postcard on July 8 notifying our customers of this Drought status and restrictions

7/10/20 – Level 2 Significant Drought continues for Western, CT River Valley and Central Regions. A **Level 1 Mild Drought** in Northeast Region a downgrade from Level 2 Drought. A **Level 1 Mild Drought** in Cape Cod up from Level 0, Southeast and Islands Region remain at Level 0 Normal Conditions.

8/13/20 – Level 2 Significant Drought declared in all 7 Regions of the Commonwealth: Western, CT River Valley, Central, Northeast, Southeast, Cape Cod and Islands.

9/9/20 & 9/24/20 – Statewide Level 2 Significant Drought continues

10/9/20 – Level 3 Critical Drought declared for Southeast region, remaining 6 Regions remain at **Level 2 Significant Drought** status. **Level 3 Critical Drought** declared for Charles River and Millers River watersheds.

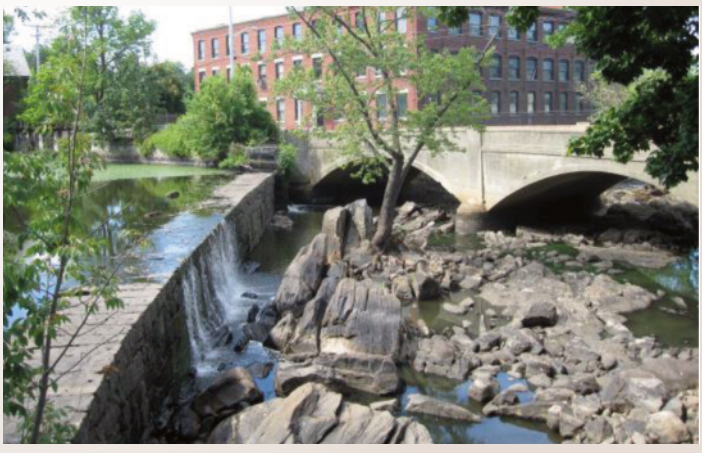
11/9/20 – Level 1 Mild Drought downgraded from **Level 2 Significant Drought** for the Western, CT River Valley, Central, Northeast and Island Regions. In the Southeast Region conditions improved to **Level 2** from **Level 3**. Cape Cod remains at **Level 2**. The Charles River and Millers River basin moved form **Level 3** to **Level 1** and the Nashua River basin declared **Level 2 Significant Drought**.

The Town of Billerica bases its Seasonal Limits on Nonessential Outdoor Water Use on conditions set forth in our Water Management Act Permit #9P-3-14-031.01. These conditions determine what restrictions are required to be implemented. DEP has set performance Standards for residential gallons per capita day (RGPCD) at 65 gallons. This is the amount of water used per person per day. If we have met this performance standard of 65 RGPCD our Restrictions are as follows:

Seasonal Limits on Nonessential Outdoor Water Use from May 1st to September 30th – No Nonessential Outdoor Water Use from 9:00 am through 5:00 pm

a) If we have NOT met the RGCPD Nonessential Outdoor Water Use is allowed TWO DAYS per week before 9 am and after 5pm.

b) Nonessential Outdoor Water Use is allowed ONE DAY per week before 9am and after 5pm whenever a Drought Advisory or higher is declared by the Massachusetts Drought Management Task Force.



Drought at the Falls in 2020.

Drought 2020

The table that follows is a snapshot of the water use for the past 5 years for a low volume pumping month –February and a high volume pumping month-July. The top number is the total volume of water pumped for that month in million gallons per day (MGD). The next row shows the highest pumped volume for a day during that month. The last row is the average temperature for that month and the precipitation total for the year to date (YTD).

High Volume Month	**JUL 2016**	**JUL 2017**	**JUL 2018**	**JUL 2019**	**JUL 2020**
Total pumped	235.321MGD	186.910MGD	228.500MGD	241.975MGD	211.057MGD
High pump day	10.095MGD	7.248MGD	8.569MGD	9.35MGD	8.489MGD
Average Temp	85°F	81°F	87°F	87°F	86°F
Year to date Precipitation	12.28"	23.19"	18.35"	21.03"	13.13"

Low Volume Month	**FEB 2016**	**FEB 2017**	**FEB 2018**	**FEB 2019**	**FEB 2020**
Total pumped	111.346MGD	107.211MGD	108.276MGD	106.330MGD	147.411MGD
High pump day	4.926MGD	4.168MGD	4.389MGD	4.440MGD	5.526MGD
Year to date Precipitation	4.52"	5.73"	5.98"	4.77"	4.45"

The difference in the HIGH AMOUNT OF WATER PUMPED PER DAY in FEBRUARY versus in JULY:

	2016	2017	2018	2019	2020
Million Gallons per day	5.575	3.08	4.18	4.91	2.963

This averages 4.1416 Million Gallons per Day MORE WATER being pumped mainly for outdoor water use during the Summer months. When you factor in how much of that water is wasted by blatantly over – watering lawns, evaporation, poorly placed irrigation watering other surfaces, broken irrigation systems including those not set on correct timers it is staggering. All of this water costs money to treat and deliver to our customers. All of our customers pay for this water via the water rates which are set to cover these costs.

Carolyn Capodilupo

The Intake Station, on the Concord River, where we withdraw water for treatment. The normal water height marks can be seen on the base of the building. Green algae coat the surface of the river. Water quality decreases significantly during Drought requiring more treatment and even greater vigilance from our employees.

What's Going on With Drinking Water?

Where Does Our Drinking Water Come From?

The Town of Billerica uses water from the Concord River to provide our drinking water; this is known as surface water. Our source ID # is 10186.

The Watershed above our point of intake is over 400 square miles and lies in all or part of 27 cities and towns. Within that watershed area there are several land use types that have been identified as potential sources of contamination in the source water.

Agricultural Land Uses include: Fertilizer Storage or Use, Landscaping, Nurseries, and Pesticide Storage or Use.
Commercial Land Uses include: Airports, Service Stations, Bus & Truck Terminals, Dry Cleaners, Medical Facilities, Printing Shops, and Research Laboratories.
Industrial Land Uses include: Electronic Manufacturers, Hazardous Materials Storage, and Machine/Metal Working Shops.
Residential Land Uses include: Fuel Storage, Lawn Care/Gardens, and Septic Systems.
Miscellaneous Land Uses include: Above Ground Storage Tanks, Oil or Hazardous Material Sites, Large, Small and Very Small Hazardous Waste Generators, Industrial Wastewater Treatment Facilities and Transportation Corridors.

How Do We Make the River or Source Water Safe to Drink?

Our water system makes every effort to provide you with safe drinking water. To improve the quality of the water delivered to you, we treat it to remove several contaminants.

We add a disinfectant to protect you against microbial contaminants. Billerica uses Chloramines* (a combination of Chlorine and Ammonia) to disinfect the water.

We filter the water to remove small particles and organisms such as sediment, algae and bacteria.

We chemically treat the water to optimize corrosion control which reduces lead and copper concentrations.

We add ozone to the water to oxidize (reduce) the levels of iron and manganese.

We add Fluoride to the water to improve oral health in children.

*For persons who have fish and/or small reptiles whether in a fish bowl or aquarium, Chloramines must be removed from the water to avoid fish kill. Please consult with your pet supplier for instructions on de-chlorinating the water.

How Safe Is My Drinking Water?

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health. All 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 EPA's safe Drinking Water Hotline at 1-800-426-4791.

Source Water Assessment Report (SWAP)

What is SWAP? The Source Water Assessment and Protection Program (SWAP), established under the Federal Safe Drinking Water Act, require every state to:

Inventory land uses within the recharge areas of all public water supply sources; assess the susceptibility of drinking water sources to contamination from these land uses; and publicize the results to provide support for improved protection.

What is My System's Ranking?

A susceptibility ranking of high was assigned to this system using the information collected during the assessment by DEP. Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area. A source's susceptibility to contamination does not imply poor water quality.

The SWAP Report for Billerica is available at https://archives.lib.state.ma.us/handle/2452/674024

Residents can help protect our source water by:
- Practicing good septic system maintenance
- Taking hazardous household chemicals to hazardous materials collection days
- Limiting pesticide and fertilizer use

What's Going on With Drinking Water?

Sources of Drinking Water Contamination

Sources of drinking water (both tap 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, can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, farming and mining.
- Pesticides and Herbicides, which may come from a variety of sources such as agriculture, storm water runoff and residential uses.
- Organic Chemical Contaminants, include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.
- Radioactive Contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

What Problems Can Occur?

Actual events of drinking water contamination are rare, and typically do not occur at levels likely to pose health concerns. However, as development in our modern society increases, there are growing numbers of activities that can contaminate our drinking water. Improperly disposed-of chemicals, animals and human wastes, wastes injected underground. And naturally occurring substances have the potential to contaminate drinking water. Likewise, drinking water that is not properly treated or disinfected, or that travels through an improperly maintained distribution system, may also pose a health risk. Greater vigilance by you, your water supplier, and your government can help prevent such events in your water supply.

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. 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 Safe Drinking Water Hotline (1-800-426-4791).

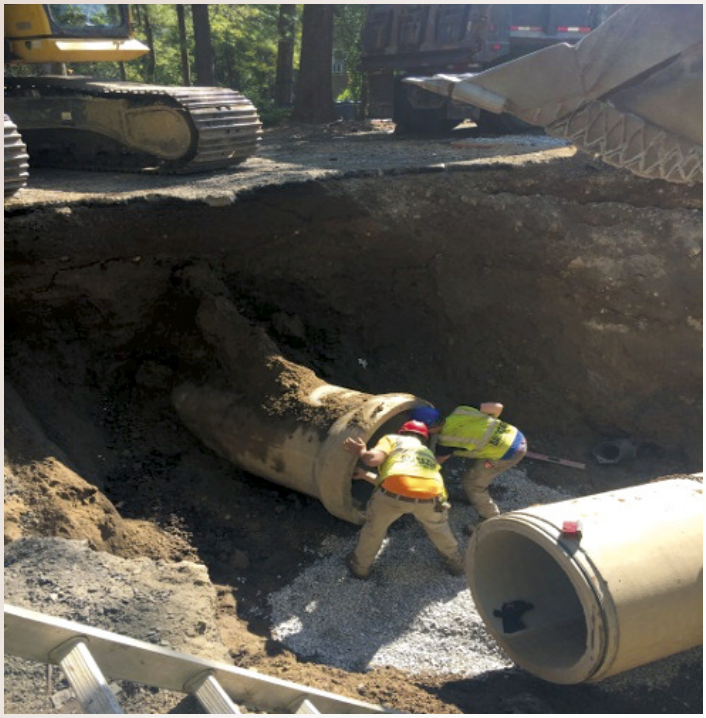
In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

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 EPA's Safe drinking Water Hotline at (1-800-426-4791).

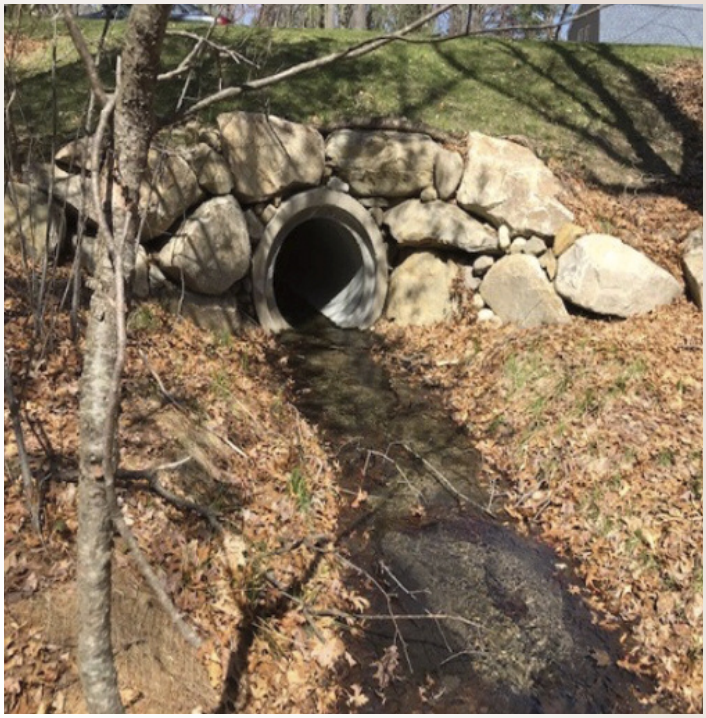
Lead and Copper

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. Billerica Water Division is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. (Billerica does NOT have any lead service lines or water mains, however, in older neighborhoods homes which have iron service lines may have lead goosenecks connecting the service line to the water main). 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 two minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water you may wish to have your water tested. Information on lead in drinking water is available from the Safe Drinking water Hotline or at http://www.epa.gov/safewater/lead.

What's Going on With Drinking Water?



Sumac Street culvert installation.



Sumac Street culvert completed.

What is Stormwater?

Stormwater is the runoff water from rain and snowmelt. It has been identified by the United States Environmental Protection Agency (EPA) as the number one contributor of pollution to our streams, ponds, wetlands, lakes, rivers, and oceans. Stormwater pollutants include trash and litter, sand, bacteria, chemicals (including fertilizer and herbicides from lawns), and oil and gas from cars. Runoff from paved areas or other impervious surfaces such as rooftops and walkways can create large amounts of polluted stormwater.

To prevent flooding, parking lots and streets often have storm drains to quickly move stormwater off the pavement. Since storm drains convey the stormwater directly to a nearby water body WITHOUT treatment, whatever flows down a storm drain comes out in the closest wetland, stream, or pond.

What you can do to help this Summer

Grass clippings and yard waste can clog storm drains and cause flooding in streets. They can also leach nutrients into local water bodies and harm water quality and aquatic life. Nutrients like nitrogen and phosphorus are also in fertilizer, which can cause algae to grow in lakes and ponds. These algal blooms use up oxygen that fish need to survive and can even harm drinking water quality. When completing yard work this Summer, do the right thing and keep leaves and yard waste off of paved surfaces and out of the storm drains. Consider mulching or composting grass clippings and leaves – they can be used as free fertilizer for your lawn! Always apply lawn chemicals sparingly and never before a rainstorm. Consider switching to slow-release and phosphorus-free fertilizers to help improve Billerica's waters. For more information about Billerica's leaf litter and yard waste collection program, visit the DPW website.

Stormwater Management in Billerica

The EPA nationally regulates the discharge of stormwater runoff that is transported through municipal drainage systems into local water bodies through the National Pollutant Discharge Elimination System (NPDES) stormwater program. Billerica must implement a local Stormwater Management Program to comply with the NPDES stormwater program and to help reduce pollution in local water bodies. With your help and support, we can make the difference in keeping stormwater and local water bodies clean. For more information about Billerica's Stormwater Management Program, a summary of what has been completed over the past year, and tips for keeping our waters clean, please visit the Stormwater Management website.

What's Going on With Drinking Water?

In The Spotlight, PFAS the "Forever Chemical"

We are closely monitoring a family of chemicals called per- and polyfluoroalkyl substances (PFAS) that have been detected in some public water supplies in Massachusetts and across the nation. Recently, the Massachusetts Department of Environmental Protection (MassDEP) issued a new drinking water standard for the sum of six PFAS compounds (PFAS6). This new standard requires all Massachusetts public water suppliers to test for PFAS. The sum of PFAS6 may not exceed 20 nanograms per liter (ng/L), also equal to 20 parts per trillion (ppt). EPA standards are set at 70 ppt.

The Billerica Water Division has a mission to deliver clean and reliable water, and we are always concerned about threats to our water supply. We already test extensively for regulated and non-regulated contaminants, and if above the standards, take necessary measures to treat the water.

The Billerica Water Division will be testing for the presence of PFAS6 and will make those results available to the public after they are received by us and confirmed with follow up testing.

With relatively recent advances in laboratory testing, the presence of the PFAS6 can be found in parts per trillion where in the past it would be undetected in parts per million or billion. Consider one part per trillion to one drop of water in an Olympic sized swimming pool. If testing shows PFAS6 levels exceed state standards, please be assured that we will take immediate action to work towards compliance with the regulations and communicate those plans with the public.

PFAS are a family of chemicals used for nonstick, stain resistant and water proof coatings, and in numerous consumer products, industrial uses, and firefighting foams. Manufacturing of certain PFAS was discontinued in the U.S. decades ago, but they may still be used in imported products. PFAS are resilient and do not degrade easily. As a result, they are widely found in the environment as products are disposed of and PFAS leaches into the soil and water, finding its way to food and drinking water sources. PFAS is ubiquitous, and in the United States and other industrialized countries, most people have concentrations of these compounds in their blood. The good news is the levels have been dropping as the use of certain PFAS has been discontinued. A 2015 – 2016 Federal study found an 82% drop in PFOS and 70% drop in PFOA in the general population, according to the U.S. Center for Disease Control and Prevention.

MassDEP recommends that consumers in a sensitive subgroup (pregnant or nursing women, infants, and people diagnosed by their health care provider to have a compromised immune system) are advised not to consume, drink, or cook with water when the level of PFAS6 is above 20 ppt. These individuals are advised to use alternate sources of water such as bottled water tested for PFAS6 or in home filtration systems certified to remove PFAS6 by independent testing groups.

The drought tolerant garden at the Water Treatment Facility. This garden was built to replace turf areas with plants that require no watering. The plants selected will bloom and reseed each year resulting in a water free beautiful garden. Another advantage is that many of the plants also attract and sustain many species of birds, bees and butterflies. This photo shows the first year the garden was planted. Swing by and check the garden out to see the many beautiful plants and how your yard can look beautiful without watering.

If you are having problems with your lawn, don't keep adding chemicals. Test your soil to see if the underlying problem can be diagnosed. Soil can be tested through UMASS extension: https://ag.umass.edu/services/soil-plant-nutrient-testing-laboratory

Water Quality Summary | Jan 1, 2020 – Dec 31, 2020 | Public Water Supplier ID #3031000

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Regulated Contaminants

SUBSTANCE	MCL	HIGHEST RESULT DETECTED	RANGE DETECTED LOW—HIGH	TYPICAL SOURCE
Fluoride (ppm)	4*	0.9	0.6–0.9	Erosion of natural deposits
Nitrate (ppm)	10	0.255	0.153–0.255	Runoff from fertilizer use; leaching from septic tanks, sewage, natural deposits
Nitrite (ppm)	1	0.107	0.010–0.107	Runoff from fertilizer use; leaching from septic tanks, sewage, natural deposits
Barium (ppm)	2	0.022	NA	Discharge from drilling wastes; discharge from metal refineries; erosion of natural deposits
Perchlorate (ppb)	2	0.220	0.220	Rocket propellants, fireworks, munitions, flares, blasting agents.

TURBIDITY DAILY COMPLIANCE (NTU)	TT	LOWEST % OF SAMPLES	HIGHEST DETECTED DAILY VALUE	MONTHLY COMPLIANCE	TYPICAL SOURCE
1.0	1.0	100%	0.25	At least 95%	Soil Runoff

Lead and Copper

SUBSTANCE	DATE COLLECTED	90TH PERCENTILE	ACTION LEVEL	MCLG ppb	NUMBER OF SITES SAMPLED	NUMBER OF SITES ABOVE ACTION LEVEL	TYPICAL SOURCE
Lead (ppb)	June 2019	2	15	0	30	0	Corrosion of household plumbing
Copper (ppb)	June 2019	25	1300	1300	30	0	Corrosion of household plumbing

90th Percentile: Out of every 10 homes, 9 were at or below this level. This number is compared to the Action Level to determine lead and copper compliance.

Disinfectants and Disinfection By-Products

SUBSTANCE	MCL	HIGHEST ANNUAL RUNNING AVERAGE	RANGE DETECTED LOW—HIGH	TYPICAL SOURCE
Chlorine (ppm)	4	1.7	0.27–2.62	Water additive to control microbes
Bromate (ppb)	10	5.1	0.9–16*	By-product of drinking water chlorination
Total Organic Carbon	TT Annual Average % Removed = 71%			Naturally present in the environment

Disinfection Byproducts. Disinfection of drinking water is one of the major public health advances of the 20th century. However, sometimes the disinfectants can react with naturally occurring materials in the water to form unintended byproducts, which may pose health risks. EPA recognizes the importance of removing microbial contaminants while simultaneously protecting the public from disinfection byproducts, and has developed regulations to limit the presence of these byproducts. For more information, see http://www.epa.gov/safewater/mdbp.html

**Compliance for some contaminants is based on a Running Annual Average or a Running Quarterly Average. Some detects may show above the MCL but when averaged meet compliance.*

DISINFECTION CONTAMINANTS	DATES COLLECTED	HIGHEST RESULT OR AVERAGE	RANGE DETECTED	MCL	TYPICAL SOURCE
Total Trihalomethanes TTHMs ppb	Quarterly	59	13–59	80	By-product of drinking water disinfection
Haloacetic Acids HAA5s ppb	Quarterly	20	4.5–20	60	By-product of drinking water disinfection

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***Unregulated Contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether further regulation is warranted.**

Unregulated and Secondary Contaminants

SUBSTANCE	SMCL	ORSG	LOWEST DETECTED	HIGHEST DETECTED	TYPICAL SOURCE
Sulfate (ppm)	250	NA	33	44	Runoff and leaching from natural deposits; industrial wastes
Manganese* (ppb)	50	300*	13	30	Erosion of natural deposits
Aluminum (ppm)	NA	200	ND	0.027	Residue from water treatment process; erosion of natural deposits
Chloride (ppm)	NA	250	110	185	Runoff from road de-icing; leaching from natural deposits
Sodium** (ppm)	NA	20	79	112	Discharge from the use and improper storage of sodium containing de-icing compounds or in water softening agents
Total Dissolved Solids (TDS) (ppm)	500	–	304	608	–

**EPA has established a lifetime health advisory (HA) value of 300ppb for manganese to protect against concerns of potential neurological effects, and a one-day and ten-day HA of 1000ppb for acute exposure.*

***Sodium-sensitive individuals such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.*

Unregulated Volatile Organics*

SUBSTANCE	ORSG	LOWEST DETECTED	HIGHEST DETECTED	TYPICAL SOURCE
Chloroform (ppb)	70	1.5	13.9	By-product of drinking water chlorination
Bromodichloromethane (ppb)	none	3.2	14.8	By-product of drinking water chlorination
Bromoform (ppb)	none	ND	11.2	By-product of drinking water chlorination
Dibromochloromethane (ppb)	none	3.0	19.9	By-product of drinking water chlorination
Chloromethane (ppb)	2.69 to 269	ND	2.9	Discharge from industrial uses
Acetone (ppb)	6.3	–	6.8	Discharge from industrial production and use, in automobile exhaust, from landfills and natural sources
Methyl Ethyl Ketone (ppb)	4.0	–	16.5	Discharge from use as a production solvent and degreaser
Tetrahydrofuran (ppb)	600	–	37.1	Discharge from use as an adhesive for joining pipes in water treatment systems and as a production solvent

DEFINITIONS AND NOTES:

AL – Action Level The concentration of a contaminant which if exceeded triggers treatment or other requirements that a water system must follow.

MCL – Maximum Contaminant Level The highest level of a contaminant that is allowed in drinking water.

SMCL – Secondary Maximum Contaminant Level These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

NA Not Applicable / **ND** Not Detected

ORSG Massachusetts Office of Research and Standards Guidelines This is the concentration of a chemical in drinking water, at or below which adverse health effects are unlikely to occur after *chronic (lifetime) exposure*. If exceeded, it serves as an indicator of the potential need for further action.

TT Treatment Technique – A required process intended to reduce the level of a contaminant in drinking water.

NTU Nephelometric Turbidity Units

ppb parts per billion / **ppm** parts per million

TOWN OF BILLERICA
DEPARTMENT OF PUBLIC WORKS
WATER DIVISION
270 TREBLE COVE ROAD
BILLERICA, MA 01862

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More Information

Resources and Information on Public Notifications

The Town utilizes both the CodeRED and Nextdoor notification systems.

The Water Division only conducts these notifications during normal business hours and the Water Division does not have a 24/7 presence on social media. To register and/or sign up go to:

To join Nextdoor go to www.nextdoor.com to register. For CodeRED notifications go to www.town.billerica.ma.us. Select Your Government, Select Fire Department, Select CodeRED tab in the dialog box on the right side of the screen. Click on "Register Here" and follow the prompts.

Why do I have no water or low water pressure?

The most common reason for this is due to a water main break or fire activity. Both of these events may also cause discolored water which will clear up with normal use.

What is the Hardness of our drinking water?

Our hardness averages about 61.4 milligrams per liter as Calcium carbonate. USGS guidelines classify this as moderate on a scale of soft to very hard

How do I report a leaking hydrant or a possible water main break?

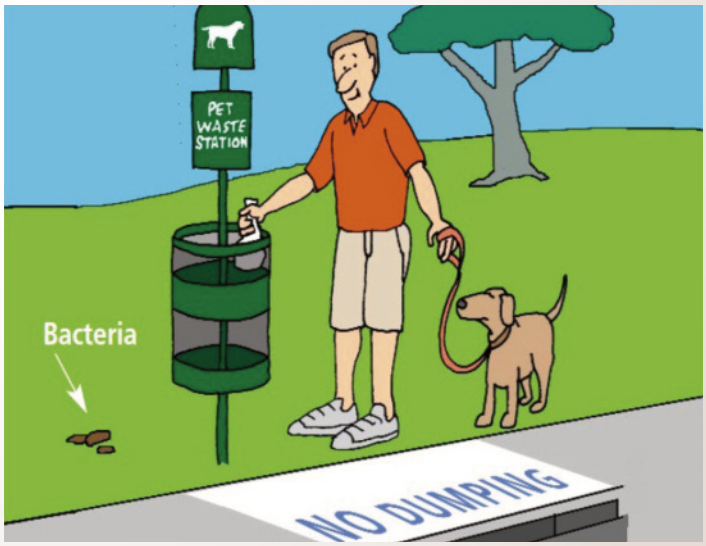
Please call 978-671-0957 our Treatment Facility is staffed 24 hours a day 7 days a week.

What to do if you see suspicious activity involving a fire hydrant or any of the Water Treatment properties.

Please call the Water Division if you see anyone other than the Water Division personnel hooking up to a hydrant, if you see suspicious activity at any of the standpipes (water towers), or if you witness dumping into the Concord River.

Pick up after your pet!
What's the Problem with Dog Waste?

Besides being a neighborhood nuisance, dog waste can make people sick, especially children who are more likely to come into contact with it while playing. It's full of harmful bacteria and excess nutrients which can cause significant health issues including Giardiasis, Salmonellosis, Campylobacteriosis, and Toxocariasis. Dog waste left in our yards, forest areas, and parks can have many adverse effects on the environment. During a rainstorm, these pollutants can be washed into local rivers and ponds.



Montgomery County, Maryland

Help protect our local waters: SCOOP IT, BAG IT, TRASH IT! Every pet owner plays a part in preventing water pollution in our rivers and streams. Responsible pet owners pick up after their pets, both at home and on public land.