2021 Annual Drinking Water Quality Report Andover, MA

Massachusetts Department of Environmental Protection
Public Water Supply ID No. 3009000

Dear Water Customer,

This water quality report provides information on the Town of Andover water source and treated water quality for the 2021 calendar year. This publication is mandated by the Consumer-Right-to-Know provisions in the Safe Drinking Water Act, and requires community water suppliers to provide specific information regarding the quality of water provided to consumers. This document outlines the sources of your drinking water, what substances it contains, and the treatment process your water goes through to ensure that the purest drinking water is delivered to your tap every day. Our hardworking water treatment, distribution and certified water quality laboratory staff are committed to providing high quality drinking water that meets all federal and state drinking water regulations. Our compliance and water testing protocols are routinely monitored by state and federal regulators to certify that safe drinking water is delivered to all residents. It is with great pleasure that I report to you that we received a 2021 Public Water System Award from MassDEP, and are in good standing with all administrative authorities concerning our drinking water. We continue to update our water distribution system that will improve the infrastructure of water delivery to your tap. This report also contains tips on water conservation, as well as contact information.

Sincerely,

Christopher M. Cronin

Director of Public Works

About This Report

This consumer confidence report (CCR) is the twenty-fourth publication to be issued under the Environmental Protection Agency (EPA) regulations requiring annual notification to all consumers about local drinking water sources and water quality information. It is available to all consumers and delivered to the Andover Board of Health, the Massachusetts Department of Public Health (DPH), and the Massachusetts Department of Environmental Protection (DEP). Hard copies are available at the Memorial Library, Town Hall, and the Municipal Services Facility. You may also obtain an electronic copy on the town's website at https://andoverma.gov/waterquality. If you have any questions or comments about this report, you may contact the Water Treatment Plant at 978-623-8870, or by email at dpw-treatment@andoverma.gov. We encourage public participation on issues concerning the town's drinking water. Meeting information for the Select Board, Planning Department and Board of Health can be found on the town's website at https://andoverma.gov. We welcome your interest in the Andover water system.

Department of Public Works
Water & Sewer Division
(978) 623-8700

Town of Andover
Water Treatment Plant
397 Lowell Street
Andover, MA 01810

Phone: (978) 623-8870
Fax: (978) 623-8799
dpw-treatment@andoverma.gov

Inside this issue

Special points of interest

- In 2021, Andover's Water Division treated and delivered over 2.7 billion gallons of water to the Towns of Andover and neighboring North Reading.

Can you guess the date when the Town saw the highest water consumption? What about the lowest? Turn to page 15 for the results.

Sustainable Water Management Initiative

Every twenty (20) years, MassDEP issues new Water Withdrawal Permits to Public Water Supplies that limit the amount of water that can be withdrawn from vital resource ground and surface waters. The current permit term for Andover is ending and our community's projected water needs and water usage will be reviewed in detail and the Sustainable Water Management Initiative (SWMI) will be incorporated into the renewed permit. The anticipated permit will include best management practices for water conservation measures such as limits for non-essential outdoor water use, and unaccounted-for-water metrics.

Did you know….

- ◊ Each year Andover withdraws over 2.7 billion gallons of water from Haggetts Pond and the surrounding watershed which includes Fish Brook and the Merrimack River to produce high quality drinking water?
- ◊ Andover Water Department provides drinking water to a neighbor community? North Reading purchases an average of 1.54 million gallons per day.

Sources of Andover's Drinking Water

Andover's Drinking Water comes from Haggetts Pond (PWS3009000-01S) and the surrounding 1,422 acres of watershed area. The pond is also supplemented with additional waters from Fish Brook (PWS3009000-02S) and the Merrimack River (PWS3009000-03S). The Merrimack River is the fourth largest watershed in New England, encompassing over 5,000 square miles, and 3,200,000 acres. A combination of the three surface water sources is used to produce up to 18 million gallons of drinking water per day and over 2.7 billion gallons of drinking water per year. Andover retains 14 million gallons of water storage in the distribution system. This storage helps maintain consistent water pressure throughout the 257 miles of underground pipes that deliver drinking water to homes and businesses.

Haggetts Pond—Your Drinking Water

How Are These Sources Protected?

MassDEP prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving Andover's water system. The purpose of the assessment was to determine the susceptibility of drinking water sources to potential contaminant sources (PCS) so that we can focus protection efforts. The results of the assessment are available in the SWAP report which is available online at https://www.mass.gov/doc/northeast-region-source-water-assessment-protection-swap-program-reports/download. Andover was assigned a high susceptibility ranking based on the presence of at least one high threat land use within the water supply protection areas. The high threat activities listed by DEP are those that typically use, produce, or store contaminants of concern, which if managed improperly, are potential sources of contamination. It is important to understand that a release may never occur from the potential source, and the actual risk may be lower than the relative threat ranking assigned to it. Additionally, all drinking water sources are protected under the National Pollutant Discharge Elimination System (NPDES) permit program enforced by the state and federal government. To learn more, visit: https://www.epa.gov/npdes.

Protecting Our Water Resources

Andover Water Division's Surface Water Protection Plan

Andover has been an industry leader making continual improvements to its water system. The Water Treatment Plant continues to maintain a comprehensive Surface Water Supply Protection Plan, which was reviewed and approved by MassDEP, and includes recommendations for watershed monitoring, treatment plant operations, local road salting practices, emergency response planning and preparedness, educational programs and inter-community cooperation on water supply issues. We strive to implement proactive measures to ensure that drinking water delivered to our customers meets all federal and state drinking standards. This plan is reviewed every five years.

Contaminants That May Be Present in Drinking Water

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 human activity. Contaminants that may be present in source water include:

Microbial contaminants such as viruses and bacteria, 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, and 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.

Other Important Health Information

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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

What US EPA Says About Contaminants and Health Risks

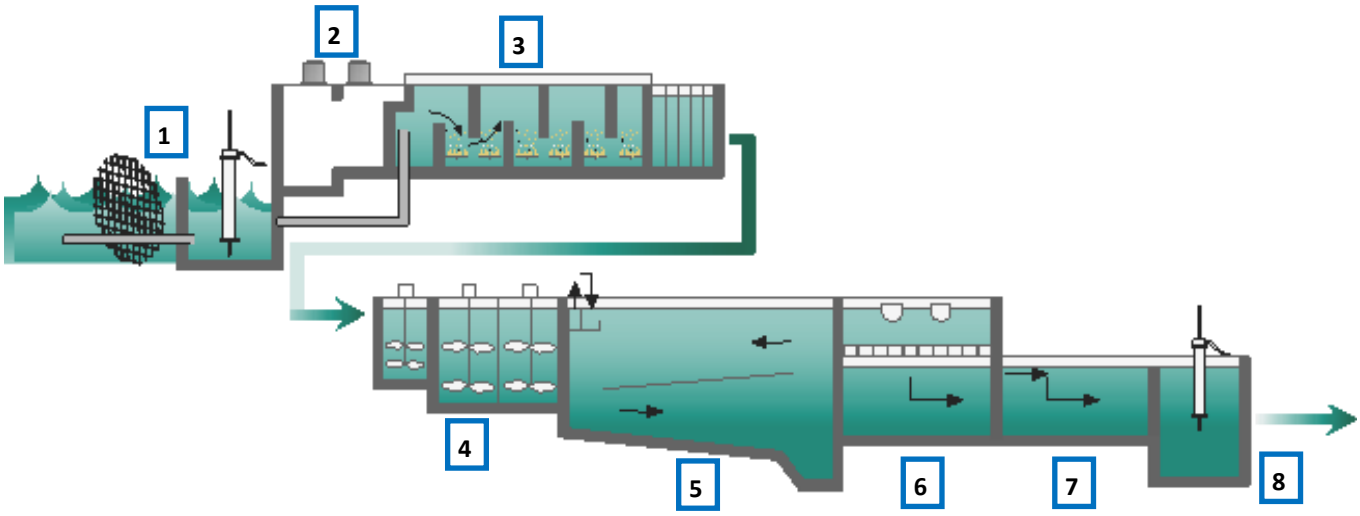
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling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

In order to ensure that tap water is safe to drink, MassDEP and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and DPH regulations establish limits for contaminants in bottled water that must provide the same protection for public health. In order for the water plant to service residents, it must follow these limits that are constantly monitored by DEP.

Water Treatment Process

We are proud of the exceptional quality of water that flows to your household or business daily. We treat it very carefully at our water treatment plant to enhance its quality. Source water transferred from Fish Brook and the Merrimack River into Haggetts Pond is drawn into the water treatment plant, which purifies millions of gallons of raw water daily. The water treatment plant process consists of a series of physical and chemical steps designed to produce a safe and consistent quality product. Fluoride is added to the finished water to about 0.7 ppm to prevent tooth decay and cavities. At this level it is safe, odorless, colorless and tasteless. Visit https://andoverma.gov/water-sewer to view a virtual tour of the water treatment plant.

To ensure that we provide the highest quality of water available, your water system is operated by Massachusetts certified operators who oversee the routine operations of our system. The water quality of our system is constantly monitored by Water Division staff in our on-site laboratory, and by MassDEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required.



Water from Haggetts Pond travels through screens (1) and is then pumped to the ozone facility (2) where it is ozonated. This process removes tastes and odors, reduces organics and aids in disinfection (3). The water then flows to the rapid mix and flocculation basins (4) to mix with chemicals at different rates of speed. The chemicals attach to contaminants in the water, and the mixing causes the particles to cluster. The clustered particles settle in the slow-moving water in the sedimentation basins (5). The water is then filtered through granulated activated carbon to further remove tastes, odors, and fine particles (6). The filtered water is stored in a clearwell (7) at the plant is further disinfected with chlorine. At the final stage, filtered water is pumped to the distribution system (8) where storage tanks provide water to meet the demands of the customers.

Source Water

Filtration

Storage

Water Quality Test Results for 2021

During the year, we have taken hundreds of water samples to determine the presence of any biological, inorganic, volatile organic or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The values reported in the tables are the highest level of each detected contaminant as well as the range of levels detected for each contaminant. While Andover maintains a certified water quality laboratory at the treatment plant, some of the analysis are performed by outside laboratories.

The water quality information presented in the tables is from the most recent round of testing done in accordance with the regulations. All data shown was collected during calendar year 2021 unless otherwise noted in the following tables.

Regulated Substances

Parameter (units)	Date(s) Collected	Maximum Amount Detected[1]	Range of Detection[2]	MCL	MCLG	Violation	Typical Source
Fluoride (ppm)	daily	0.82	0.36 - 0.82	4	4	No	Water additive which promotes strong teeth.
Fluoride has a secondary contaminant level (SMCL) of 2 ppm to better protect human health.							
Nitrate (ppm)	1/7/2021	<1.0	NA	10	10	No	Run-off from fertilizer use; Leaking septic tanks; Erosion of natural deposits.
Perchlorate (ppb)	7/6/2021	0.05	NA	2	N/A	No	Rocket propellants, fireworks, munitions, flares, blasting agents.
Turbidity[3] (ntu)	daily	0.26	0.02 - 0.26	TT = 1.0 max TT <0.3 (95% of time)	N/A	No	Soil run-off

Bromate

Parameter (units)	Date(s) Collected	Running Annual Average	Range of Detection[2]	MCL	MCLG	Violation	Typical Source
Bromate (ppb)	monthly	1.5	<1.0 - 1.8	10	0	No	By-product of drinking water disinfection.

Bromate is sampled because it is a by-product of ozone used in the treatment process.

Chlorine

Parameter (units)	Date(s) Collected	Maximum Amount Detected[1]	Range of Detection[2]	MRDL	MRDLG	Violation	Typical Source
Chlorine[4] (ppm)	40 times per month	1.14	0.01 - 1.14	4	4	No	Water additive to control microbes.

Chlorine is added to your drinking water for disinfection purposes. Chlorine residual is necessary to maintain disinfection throughout the distribution system. We are required to monitor the concentration of chlorine residuals entering the distribution system. The use of chlorine and other disinfectants such as ozone reduces the risk of waterborne disease; however, they can also create compounds known as disinfection by-products (DBPs). The EPA regulates DBPs because they are a potential health risk. Total trihalomethanes (TTHMs) and Haloacetic acids (HAAs) are DBPs that form when chlorine is added to the water that contains naturally occurring organic matter.

Total Coliform Bacteria and other Indicating Contaminants

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We test for coliform bacteria weekly by collecting samples from ten separate locations within the water distribution system, and report the results to MassDEP. Total Organic Compounds (TOC) samples are collected and analyzed monthly from both the raw water and the treated water (i.e., "finished water") as it enters the distribution system. We report the analytical value for the treated water in the table below. The removal efficiency of organic compounds is calculated to demonstrate the effectiveness of the treatment process.

Parameter (units)	Date(s) Collected	Maximum Amount Detected[1]	Range of Detection[2]	MCL	MCLG	Violation	Typical Source
Total Coliform Bacteria	Weekly	1.0%	0% - 4.3%	<5% of samples positive in one month	0	No	Naturally present in the environment
Heterotrophic Plate Count (cfu/ml)	weekly	216	0 - 216	500	N/A	No	Heterotrophic plate count is an indicator method that measures a range of naturally-occurring bacteria in the environment.
Total Organic Carbon (ppm)	monthly	1.81	0.707 - 1.81	TT = 35 - 45% removal	N/A	No	Naturally present in the environment

The contaminants HAA5 and THMs are by-products of drinking water disinfection. These compounds are monitored by collecting samples each quarter from 4 separate locations within the water distribution system and reported to MassDEP four times per year.

Disinfection By-products

Parameter (units)	Date(s) Collected	Highest Quarterly Running Average[5]	Range of Detection[6]	MCL	MCLG	Violation	Typical Source
Haloacetic Acids (HAA5, ppb)	quarterly	8.9	2.5 -16	60	N/A	No	By-product of drinking water disinfection.
Total Trihalomethanes (THMs, ppb)	quarterly	49	16 - 63	80	N/A	No	By-product of drinking water disinfection.

Unregulated Substances

Parameter (units)	Date(s) Collected	Result or Range Detected[2]	ORSG	Violation	Typical Source
Bromodichloromethane (ppb)	quarterly	0.7 - 6.0	none	No	Trihalomethane; by-product of drinking water chlorination.
Chlorodibromomethane (ppb)	quarterly	0.9 - 3.8	none	No	Trihalomethane; by-product of drinking water chlorination.
Chloroform (ppb)	quarterly	0.45 - 5.2	70	No	Trihalomethane; by-product of drinking water chlorination.

Water Quality Test Results for 2021, continued

Secondary Substances						
Parameter (units)	**Date(s) Collected**	**Result or Range Detected[2]**	**Average Detected**	**SMCL**	**ORSG or Health Advisory**	**Typical Source**
Alkalinity (mg/L, as CaCO3)	1/7/2021	26.2	-	none		
Aluminum (ppm)	1/7/2021	0.11	-	0.2	N/A	Residue from water treatment process; erosion of natural deposits.
Calcium	1/7/2021	12	-	none		
Chloride (ppm)	1/7/2021	86	-	250	N/A	Runoff and leaching from natural deposits.
Hardness (as CaCO3)	1/7/2021	40	-		N/A	
Magnesium (ppm)	1/7/2021	2.7	-			
Manganese[7] (ppb)	1/7, 2/4, 3/3, 4/7, 7/6, 8/4, 9/2, and 10/5/2021,	3.3 - 40	17	50	300	Natural sources as well as discharges from industrial uses.
Odor (T.O.N.)	1/7/2021	40	-		N/A	
pH	1/7/2021	7.9	-	6.5 - 8.5	N/A	Runoff and leaching from natural deposits; adjustment at water treatment plant for corrosion control.
Potassium (ppm)	1/7/2021	3.2	-		N/A	
Sodium[8] (ppm)	1/7/2021	57	-	20	N/A	Discharge from use and improper storage of sodium containing de-icing compounds or in water softening
Sulfate (ppm)	1/7/2021	25	-	250	N/A	Runoff and leaching from natural deposits; industrial wastes.
Total Dissolved Solids (TDS) (ppm)	1/7/2021	260	-	500	N/A	Runoff and leaching from natural deposits.

Did you know…..

The Town of Andover's drinking water, which has a total hardness of 40 mg/L as CaCO3, is considered "soft water" according to the ranges set by the USEPA. There is no US EPA drinking water standard for hardness, only set ranges to define the degree of hardness. By definition, hardness is the total concentration of calcium and magnesium ions in the water. Hard water is not considered a contaminant, but it does retard the cleaning action of soap and can form a scale on cooking utensils, hot water pipes, and heaters. Soft water may have corrosive tendencies; however, the pH of Andover's drinking water is adjusted before leaving the water treatment plant making it non-corrosive and non-scale forming.

Lead and Copper Test Results and Information

Parameter (units)	90th Percentile	Action Level	MCLG	# Sites Above Action Level	Possible Sources of Contamination
Lead (ppb)	20	15	0	6	Corrosion of household plumbing system; Erosion of natural deposits.
Copper (ppb)	90	1300	1300	0	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.

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. The Andover Water Department 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. The Water Division will notify homeowners when lead service lines are found during water main line work or regular maintenance. Also, periodically unscrew the aerator from kitchen and bathroom faucets and clean the debris that may have settled on the screens. 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 https://epa.gov/safewater/lead.

The Andover Water Division was required to conduct lead and copper testing of the distribution system between June 1 and September 30, 2021. Thirty-one samples were collected from residential home faucets and analyzed for the presence of lead and copper. The values reported in the table above represent the highest concentrations of lead and copper found in 90% of the homes sampled. This means that of the 31 homes sampled, 28 were at or below 20 ppb for lead, and 28 homes were at or below 90 ppb for copper. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Test results showed that of the 31 homes samples, 6 were above the Action Level for lead. As required, Andover Water Department implemented a public education plan, which included notifications in the form of brochures to every home, health facilities, schools and childcare facilities. Information pamphlets are available at Town Offices, Memorial Hall Library and the Robb Senior Center. Additionally, the Water Division website was updated to include information regarding lead in the drinking water, press releases were issued, notices placed on public access television. Adjustments to the treatment process at the water treatment plant were implemented to improve corrosion control measures which limit potential leaching of lead from lead lined water services, and lead solder. The corrosion control measures included increasing monitoring, and reporting the pH of the water within the distribution system. A sampling program that includes collection of water samples at 60 homes was initiated in January 2022, and the sampling program will be completed twice during the calendar year of 2022. Additionally, a Lead Service Line Replacement Plan was developed to remove known lead and/or lead lined water services in town, which has received approval from MassDEP.

Examples of what lead pipes would look like

Lead
A dull, silver-gray color that is easily scratched with a coin. Use a magnet- strong magnets will *not* cling to lead pipes.

Galvanized
A dull, silver-gray color. Use a magnet, strong magnets will typically cling to galvanized pipes.

Copper
The color of a copper penny.

Plastic
Rigid pipe that is joined to water supply piping with a clamp.

Per-and Polyfluoroalkyl Substances (PFAS) Test Results and Information

On October 20, 2020, MassDEP published its PFAS public drinking water standard called a Massachusetts Maximum Contamination Level (MMCL) of 20 nanograms per liter (ng/L, or parts per trillion, ppt) – individually or for the sum of the concentrations of six specific PFAS compounds. These six are: perfluorooctane sulfonic acid (PFOS); perfluorooctanoic acid (PFOA); perfluorohexane sulfonic acid (PFHxS); perfluorononanoic acid (PFNA); perfluoroheptanoic acid (PFHpA); and perfluorodecanoic acid (PFDA). MassDEP abbreviates this set of six as "PFAS6." The drinking water standard is set to be protective against adverse health effects for all people consuming the water.

Andover conducted quarterly sampling for PFAS in January, April, July, and October 2021. The results of the quarterly sampling are summarized in the table below. We are happy to report that concentrations of PFAS6 in your drinking water were non-detect in all four quarters.

Parameter (units)	Date(s) Collected	Maximum Amount Detected[1]	Range of Detection[2]	MMCL (ppt)	Violation	Possible Sources of Contamination
PFAS6 (ppt)	quarterly	ND	N/A	20	No	Discharges and emissions from industrial and manufacturing sources associated with the production or use of these PFAS, including production of moisture and oil resistant coatings on fabrics and other materials. Additional sources include the use and disposal of products containing PFAS, such as fire-fighting foams.
Unregulated PFAS Substances						
Parameter (units)	**Date(s) Collected**	**Maximum Amount Detected[1]**	**Range of Detection[2]**	**ORSG**	**Violation**	**Possible Sources of Contamination**
Perfluorohexaconic acid (PFHxA, ppt)	quarterly	2.2	N/A	20	No	Discharges and emissions from industrial and manufacturing sources associated with the production or use of these PFAS, including production of moisture and oil resistant coatings on fabrics and other materials. Additional sources include the use and disposal of products containing PFAS, such as fire-fighting foams.

Water treatment technologies have been tested and have demonstrated that PFAS can be removed from drinking water. One such technology is the use of activated carbon. As described on page 4 of this document, the final treatment stage at the Andover Water Treatment Plant is filtration through granular activated carbon filter beds.

Consuming water with levels of PFAS6 above the drinking water standard does not mean adverse affects will occur. The degree of risk depends on the level and duration of exposure. The drinking water standard assumes that individuals only drink contaminated water, which overestimates exposure. It also assumes that consumers are exposed to PFAS6 through other exposures as well. PFAS have been used in many consumer products, and most people have had exposure to them through the use of everyday products including: food packaging, non-stick cookware, cosmetics, stain resistant and water resistant coatings used on clothing, carpeting, and furniture.

Water Quality Testing Notes and Definitions

Table Notes:

[1] We are obligated to report the maximum value detected during the analyses of multiple samples of drinking water collected during the calendar year.

[2] The values listed are the overall range of results that were recorded during multiple tests of the drinking water conducted during the calendar year.

[3] Turbidity is a measurement of the cloudiness of the water. It is a good indicator of the effectiveness of the filtration system.

[4] The concentration of chlorine added to the distribution system is continuously monitored. We report weekly measurements for chlorine residual concentrations within the distribution system.

[5] This is the highest average value calculated for all the locations where THMs and HAA5 were sampled during the calendar year.

[6] The values in this range are based on individual numbers rather than averages.

[7] EPA has established a lifetime health advisory (HA) value of 300 ppb for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HA of 1000 ppb for acute exposure.

[8] Sodium is naturally present in the environment and the raw water treated for drinking water is at levels above the MassDEP Guideline of 20 ppm. This value is strictly a guideline and does not imply that a value greater than 200 ppm imposes a risk. The water treatment process does not remove sodium from the water.

Definitions

Maximum Contaminant Level (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG's as feasible using the best available treatment technology. **Maximum Contaminant Level Goal (MCLG)** is 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. **Maximum Residual Disinfectant Level (MRDL)** is the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant (i.e., chlorine, chloramines, chlorine dioxide) is necessary for control of microbial contaminants. **Maximum Residual Disinfectant Level Goal (MRDLG)** is the level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of disinfectants to control microbial contaminants. **Massachusetts Maximum Contaminant Level (MMCL)** is the highest level of contaminant allowed in drinking water by Massachusetts Department of Environmental Protection, individually or for the sum of the concentrations of six specific PFAS compounds. **Treatment Technique (TT)** is the required process intended to reduce the level of a contaminant in drinking water. **PPM** is parts per million, or milligrams per liter (mg/l). **PPB** is parts per billion, or micrograms per liter (ug/l). **PPT** is parts per trillion or nanograms per liter (ng/l). **NTU** is Nephelometric Turbidity Units. **NA** means Not Applicable. **Secondary Maximum Contaminant Level (SMCL)** are standards developed to protect aesthetic qualities of drinking water and are not health based. **Office of Research and Standards Guidelines (ORSG)** are concentrations of a chemical in drinking water at or below which adverse health affects are unlikely to occur after chronic exposure. If exceeded, potential further action may be needed. **Action Level (AL)** is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. **90th Percentile** means that out of 10 homes sampled, 9 were at or below the level. This number is compared to the Action Level to determine lead and copper compliance. **Unregulated Contaminants** are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted. **Running Annual Average (RAA)** is the average of four consecutive quarters of data.

Stormwater Management

Where does stormwater pollution come from? Stormwater can pick up debris, chemicals, dirt and other pollutants and flow untreated directly into a stream, river, wetland or pond used for swimming, fishing, or for drinking water. Polluted stormwater runoff can have many adverse impacts on plants, animals and fish; and also affect your drinking water sources. Visit the Town's website for more information at https://www.andoverma.gov/stormwater/. Issues and concerned can be addressed to the Town Engineering Department at 978-623-8770.

Lawn Care: excess fertilizer and pesticides applied to lawns and gardens wash off and pollute streams. Use pesticides and fertilizers sparingly. Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.

Recycle or dispose properly of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil. Dispose of these products at a household hazardous waste collection event.

Auto Care: Washing your car can send detergents and other contaminants into catch basins that flow directly to water bodies. Use a commercial car wash or wash your car on the lawn so water infiltrates into the ground.

Pet Waste can be a major source of bacteria and excess nutrients in local waters. When walking your pet, remember to pick up the waste and dispose of it properly.

Clean Water is Important to All of Us

Did you know……

- ◊ More than 60% of water pollution comes from stormwater run-off which picks up pollutants like leaking oil from cars, fertilizers from yards and gardens, and failing septic tanks?
- ◊ If you use too much fertilizer or at apply it at the wrong time, it can wash off your lawn or garden into storm drains and flow into a nearby storm drain that flows into streams and ponds?
- ◊ Fertilizer in streams and ponds make aquatic plants grow too, but contributes to extra algae which creates water quality problems.
- ◊ The Town of Andover has a Pesticide Use Policy managed by the Board of Health.

Here are additional helpful tips for reducing stormwater pollution:

- ◊ When washing your car or boat, park where the soap will run onto the grass, rather than onto the street and into a storm drain. And use organic or mild soaps and detergents.
- ◊ Never discharge pool or hot tub water directly into a storm drain.
- ◊ Use a neutralizing chemical to dechlorinate pool, hot tub, or spa water when discharging water to the ground. If unable to dechlorinate the water, have it collected by a pool maintenance company.
- ◊ Maintain your septic system—leaking systems release nutrients, bacteria and viruses into stormwater. Inspect your system every 3 years and pump your tank as necessary (every 3-5 years).

Water Conservation

Water resources are vital for the functioning of our homes and our community. Andover residents and businesses use a significant amount of water for lawn irrigation during peak demand months. By consuming less water, you help preserve our resources. More efficient water use begins with individuals. The Water Division continuously monitors the water demand and levels in our storage tanks and reservoirs to ensure we provide high quality water and fire protection.

Make every drop of water count

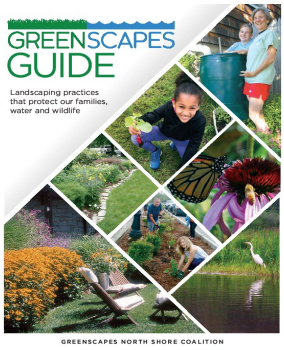
- Soil with compost and mulch included hold water and reduce evaporation
- Use soaker hoses or drip irrigation—they can 50% or more compared with sprinklers
- Use an outdoor water timer (available at garden stores) to water just the right amount, frequency, and time of day
- Water lawns separately from other plantings. Make sure sprinklers aren't watering the pavement!
- When soil is dry or compacted, it won't absorb water quickly. If water puddles, stop watering a while and then restart so the water has time to soak in.

Did you know?

- Gardens and lawns only need 1" water per week.
- Most of the water from irrigation systems ends up evaporating or running off.
- Watering deeply and infrequently is best for plants. They will grow deeper roots and better handle dry conditions.
- Overwatering, such as watering after recent rain, makes plants weaker.

GREENSCAPES

Andover is a sponsor of Greenscapes North Shore. Check out their website at: https://greenscapes.org, where you will find valuable information on landscaping and lawn care practices to help promote water conservation and the protection of our natural resources.

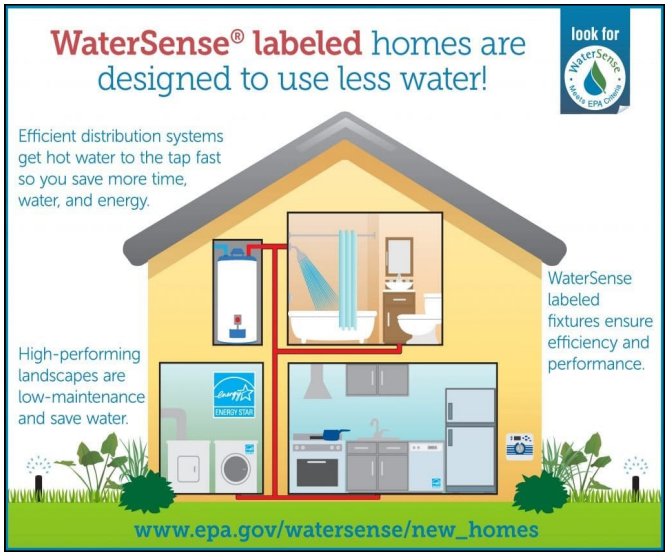


Check out the **Greenscapes Guide** for landscape and garden ideas. The guide has great suggestions for lawn care, composting, native and low-maintenance plantings, rain water harvesting, and rain garden design. The guide also offers suggestions on how to prevent stormwater pollution.

Rain gardens are a simple and cost effective tool to use the rain water that has flowed off of roofs, driveways, parking areas and roads. Water is redirected into creatively designed gardens and can help alleviate flooding while protecting against erosion and pollution. There are many benefits: water conservation, pollinator friendly, no fertilizer, herbicide or pesticide required, and reduces mosquito breeding areas.

Water Conservation Cont.

Andover is a sponsor of US EPA's WaterSense Program. As a partner we are committed to promoting indoor and outdoor water efficiency: from conserving water resources to promoting WaterSense certified products. For more information, visit: https://www.epa.gov/watersense



Look for the WaterSense label to find water-efficient products that meet EPA's criteria for efficiency and performance. The products and services are certified to use at least 20 percent less water, save energy and perform as well or better than regular models.

You can find WaterSense products at your local retailer, including: toilets, showerheads, bathroom faucets, spray sprinkler bodies and irrigation controllers.

Every Drop Counts…

* **Bathrooms account for more than 50% of your indoor water use**
* **Heating water is the second largest use of energy in a home.**
* **Residential outdoor water use accounts for 8 billions gallons of water use each day, mainly for landscape irrigation.**

Did you know…

◊ **Replacing showerheads with a WaterSense labeled model can save 4 gallons of water per shower?**

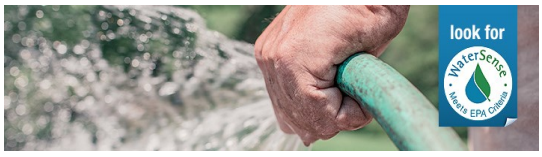
◊ **Replacing old, inefficient faucets or aerators with a WaterSense labeled model can save 700 gallons of water per year?**

◊ **Replacing a clock based controller with a WaterSense labeled irrigation controller can save a home up to 15,000 gallons of water annually?**

One home can waste an average of 11,00 gallons of water or more due to running toilets, dripping faucets, and other household leaks. Nationwide, more than 1 trillion gallons of water leak from U.S. homes each year. Each year in March, WaterSense runs a Fix a Leak Week campaign. You can check it out on the WaterSense website, or by following along on the Town of Andover's social media sites.

WaterSense also hosts annual campaigns which include:

- **Shower Better**
- **Sprinkler Spruce Up**
- **When it's Hot**



Cross Connections

Andover Water Division makes every effort to ensure that the water delivered to your home and business is clean, safe and free of contamination. Our staff works hard to protect the quality of the water delivered to our customers from the withdrawal point from Haggetts Pond throughout the entire treatment and distribution system. But what happens when the water reaches your home or business? Is there still a need to protect the water quality from contamination caused by a cross connection?

A cross connection occurs whenever there is a potential or actual connection between the public water supply and a source of contamination or pollution.

Backflow is the flow of water or other liquids, mixtures, or substances into the water distribution piping from any source. This can occur when there is **backpressure**— the reversal of normal flow due to an increase in the downstream pressure above that of the supply line; or when there is **backsiphonage**— the reversal of normal flow in the water piping caused by a negative pressure in the supply line.

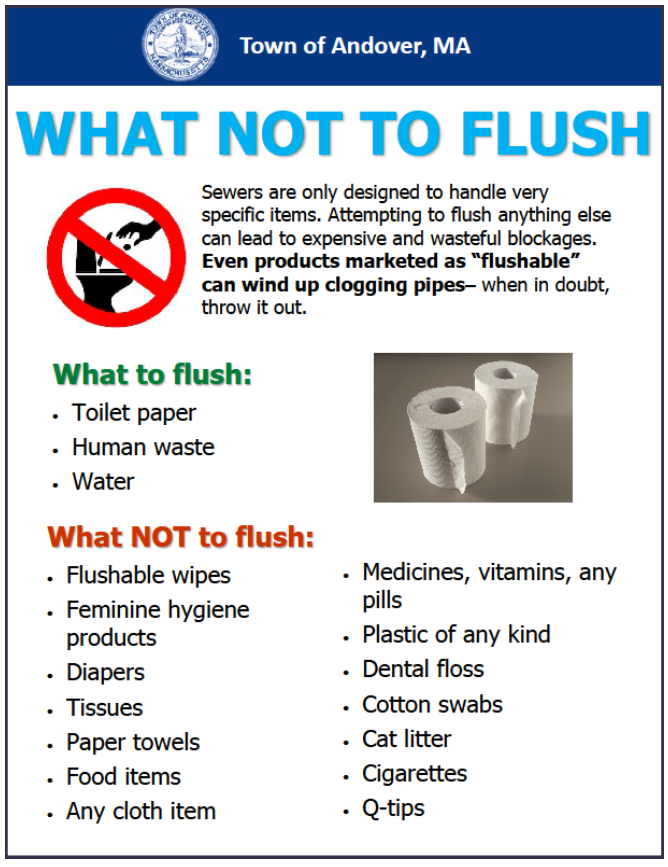
Examples of backflow conditions include: a sudden decrease in the water supply line pressure due to a water main break or nearby firefighting use of hydrant. **The most common form of a cross connection is the use of a garden hose** as it can be easily connected to the potable water supply and used for a variety of dangerous applications. For example, garden hoses are often left submerged in swimming pools, attached to chemical sprayers for fertilizer or herbicides, or left laying on the ground which can be contaminated with garden chemicals.

Here are a few recommendations to protect the potable water supply.

◊ Use a Hose Bibb Vacuum Breaker—install one on every sill cock at your home.

◊ When filling your pool, place the hose outlet at least 2 inches above the water surface to create an air gap.

Protecting Your Sewer System



The Town of Andover sewer system is comprised of a sewer collection piping system which is directed to Greater Lawrence Sanitary District. In some areas of town not serviced by the municipal sewer system, homes have a private septic system. The "What Not to Flush" Advisory applies to all homes, whether they are served by the municipal or private sewer systems.

Additionally, fats, oils and grease (FOG) which come from common food and cooking waste from garbage disposals should not be disposed of via your household drains. Over time, grease cools and hardens in the sewer disposal lines and cause a build-up, and eventually block the piping leading to raw sewerage overflow. Examples of FOG:

◊ Butter, Shortening, Lard, Cooking Oils
◊ Food Scraps
◊ Sauces, Salad Dressings
◊ Dairy Products
◊ Coffee Grinds
◊ Meat
◊ Baking Goods

Improvements to the Water System

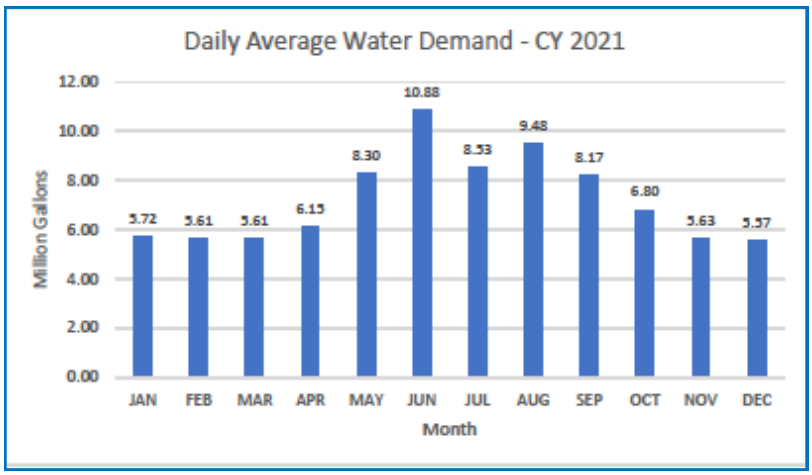
- During 2021, in collaboration with the Engineering Division, the Water & Sewer Division continued the multi-year water main replacement program primarily targeting unlined and problem mains in the Gas Affected Area.
- Approximately 19,500 feet of new water main was installed, and many parallel water mains were abandoned.
- Water Main replacement work includes the installation of new pipes, new hydrants, new service connections to homes and businesses.

- Water Main Flushing continued in 2021. The Central and East areas of town were completed in the spring and fall, respectively. Since 2014, unidirectional flushing (UDF) has been the technique adopted by the Town. UDF is designed to bring water through the distribution system in a controlled fashion at velocities sufficient to provide a scouring action within the piping.

Did you know…

- Andover Water Division has 10,000 service connections.
- There are 3 separate pressure zones within the distribution system.
- There are 257 miles of water mains throughout town.
- There are 2,400 hydrants.
- The oldest water main was installed in 1886. It will soon be replaced.

During the summer months, water demand almost doubles; as a result of irrigation. In January 2021 the average daily demand for water was 5.77 million gallons per day. In June 2021 the demand jumped to 10.97 million gallons per day. The figure below illustrates the water demand for each month of 2021.



Days with Highest and Lowest Water Consumption in 2021

June 2021

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29 Highest Water Use Day 13.876 MG	30			

Highest
Tuesday, June 29th
13.876 MG
Weather:
Humid, 98 degrees

November 2021

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13 Lowest Water Use Day 4.287 MG
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Lowest
Saturday, Nov. 13th
4.287 MG
Weather:
Rainy, 48 degrees

Haggetts Pond
Your Drinking Water Reservoir

Haggetts Pond is one of Andover's most iconic natural features; with its beautiful shorelines, calm waters, and surrounding forest, the pond attracts hundreds of Andover residents each year in search of walking trails, or a quiet spot for bird-watching. Please be reminded that Haggetts Pond also serves as the Town's primary drinking water reservoir; the entirety of the Town's drinking water passes through the pond, and there is no backup source available. As such, it is imperative that we all do our part in ensuring that Haggetts Pond remains clean and free of contamination. With that in mind, a number of restrictions are currently in place to ensure the pond remains available for shared use, without negatively impacting water quality.

Permissible Activities

Passive Recreation: Walking, Hiking, Jogging and Biking on established trails

Fishing: from Shoreline or Rowboat **only** *(Must have valid state license)*

Boating: Rowboats **only**. Absolutely No motors of any kind. No electric or gas-powered motors.

Boats must be registered. Registrations are available at the Town of Andover's Municipal Services Facility located at 5 Campanelli Drive, during normal business hours, and only after obtaining a Mass. State Fishing License.

Restricted Activities

No Swimming, Bathing, or Wading

No dogs or other animals may enter the water

No Hip-waders shall be worn—Fish from the shoreline or a rowboat

No Ice Fishing
No Ice Skating
No Canoes
No Kayaks
No Windsurfers
No Paddleboards
No Sailboats
No Kitesurfing/kiteboarding

Storage of Boats

Storage of boats on water supply property is prohibited. All boat owners must carry their boats in and out each time they use their boat on the pond. Any boats left behind shall be considered abandoned and disposed of accordingly.

Town of Andover
Department of Public Works
Christopher M. Cronin
Director

Water & Sewer Division
(978) 623-8700

Water Treatment Plant
397 Lowell Street
Andover, MA 01810
(978) 623-8870
dpw-treatment@andoverma.gov

Brian Peña
Superintendent

Karen Martin
Laboratory Director/
Environmental Coordinator

Water Distribution and Sewer Collection
Municipal Services Facility
5 Campanelli Drive
(978) 623-8860
dpw-watersewer@andoverma.gov

Jeffrey Crane
Superintendent

Water Billing Question?
Call (978) 623-8906

Need an Irrigation Meter?
Call (978) 623-8700
Monday-Friday
8:00—3:30 pm