



MASSACHUSETTS
WATER RESOURCES
AUTHORITY 2021
DRINKING WATER
TEST RESULTS

Always Monitoring Your Water, Reservoir to Residence

This report contains very important information about your drinking water. Please translate it, or speak with someone who understands it.

Si usted desea obtener una copia de este reporte en español, llámenos al teléfono 617-788-1190.

La relazione contiene importanti informazioni sulla qualità dell'acqua della Comunità. Tra-durlò o parlame con un amico che lo comprenda.

O relatório contém informações importantes sobre a qualidade da água da comunidade. Tra-duza-o ou peça a alguém que o ajude a entendê-lo melhor.

Sprawozdanie zawiera ważne informacje na temat jakości wody w Twojej miejscowości. Poproś kogoś o przeliumaczenie go lub porozmawiaj z osobą która je dobrze rozumie.

يحتوي هذا التقرير على معلومات هامة عن نوعية ماء الشرب في منطقتك. يرجى ترجمته أو ابحث التقرير مع صديق لك يفهم هذه المعلومات جيداً

Η κατάσταση αναφορά παραγωγής σπουδαίες πληροφορίες για το ποια νερό σας. Προκαλεί να το μεταφραστεί ή να το εξηγήσετε με κάποιον που το καταλαβαίνει καλύτερα.

Im Bericht steht wichtige Information über die Qualität des Wassers Ihrer Gemeinschaft. Der Bericht soll übersetzt werden, oder sprechen Sie mit einem Freund, der ihn gut versteht.

这份报告中有些重要的信息。讲到关于您所在社区的水的品质。请您找人翻译一下，或者请能看得懂这份报告的朋友给您解释一下。

この資料には、あなたの飲料水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか説明を受けてください。

इस रिपोर्ट में 'पीने के पानी' के विषय पर बहुत जरूरी जानकारी दी गई है। कृपया इसका अनुवाद कीजिये, या किसी जानकार से इस बारे में पूछिये।

របាយការណ៍នេះមានព័ត៌មានសំខាន់ៗអំពីគុណភាពទឹកស្រប។ សូមបញ្ជាក់ឬសួរគ្រូបង្ហាញឱ្យអ្នកដែលអ្នកជឿជាក់ថាពួកគេអាចជួយអ្នកបាន។

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시는 친구와 상의하십시오.

Bản báo cáo có ghi những chi tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông thạo, hoặc hỏi một người bạn biết rõ về vấn đề này.

Ce rapport contient des informations importantes à propos de votre eau potable. Demandez à quelqu'un de traduire ces informations pour vous ou discutez avec une personne qui comprend ces informations.



Massachusetts Water Resources Authority
and the Bedford Department of Public Works

Where To Go For Further Information

Massachusetts Water Resources Authority (MWRA)	www.mwra.com	617-242-5323
Department of Conservation and Recreation (DCR)	www.mass.gov/dcr/watersupply	617-626-1250
Massachusetts Dept. of Public Health (DPH)	www.mass.gov/dph	617-624-6000
Massachusetts Dept. of Environmental Protection	www.mass.gov/dcr/watersupply	617-292-5500
US Centers for Disease Control & Prevention (CDC)	www.cdc.gov	800-232-4636
List of State Certified Water Quality Testing Labs	www.mwra.com/testinglabs.html	617-242-5323
Source Water Assessment and Protection Reports	www.mwra.com/sourcewater.html	617-242-5323
Information on Water Conservation	www.mwra.com/conservation.html	617-242-SAVE

Public Meetings

MWRA Board of Directors	www.mwra.com/boardofdirectors.html	617-788-1117
MWRA Advisory Board	www.mwraadvisoryboard.com	617-788-2050
Water Supply Citizens Advisory Committee	www.mwra.com/wscac.html	413-213-0454

For A Larger Print Version, Call 617-242-5323.

This report is required under the Federal Safe Drinking Water Act. MWRA PWS ID# 6000000





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Dear Customer,

I am happy to provide you with the results of our annual drinking water testing for 2021. Once again, every federal and state standard was met and the quality of your drinking water is excellent.

I also want to assure you that we are constantly checking your water. We have a state-of-the-art monitoring system from the treatment plant to your local pipes, and we take hundreds of thousands of tests each year to ensure that your water is safe. We are also closely watching other important issues that could affect our water, from climate change to cybersecurity. You can be sure that the safety of your drinking water is the top priority for the women and men of the MWRA.

We continue to take aggressive actions to reduce the risk of lead in drinking water. Since 2016, we have provided \$30 million in zero-interest loans to 13 communities for full lead service line removals. System-wide, we remain below the Lead Action Level. Please read your community's letter on page 7 for more information on your local water system.

PFAS - or 'forever chemicals' - remain a top news story. Since our source water is so well protected, our water easily meets the Massachusetts Department of Environmental Protection's standards.

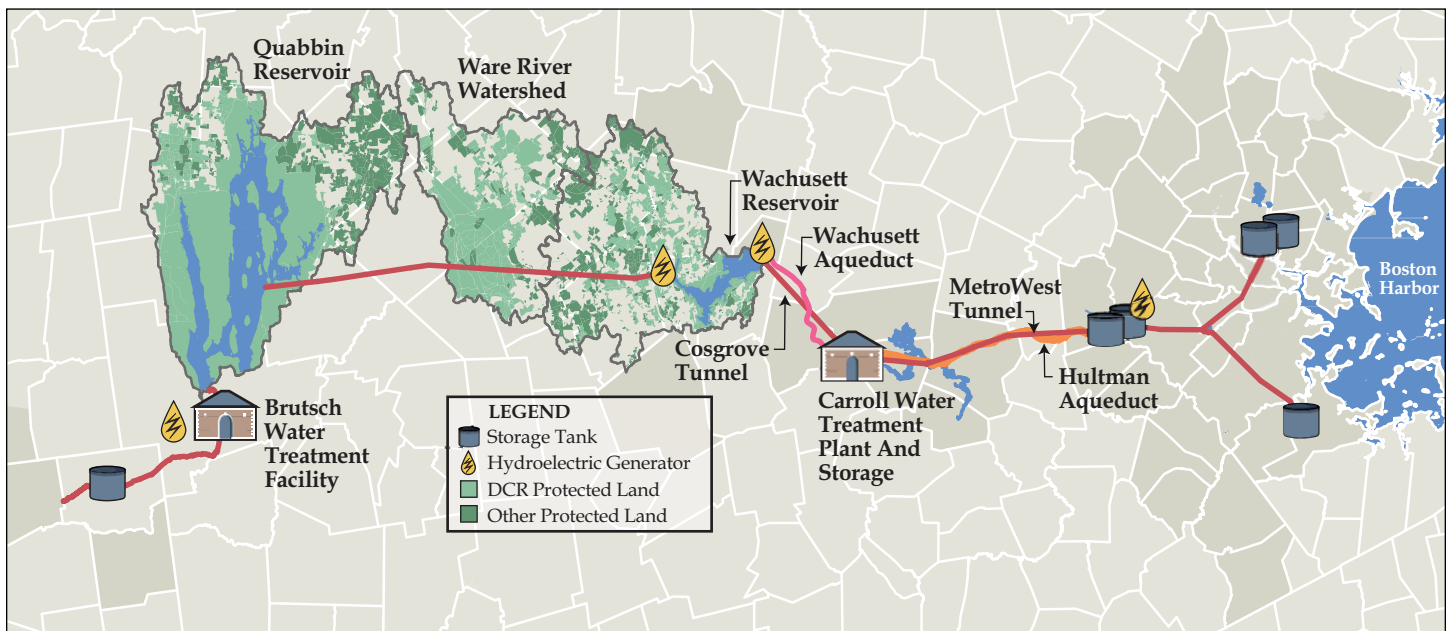
Last year, we welcomed two new communities to our water system: Ashland and Burlington. Our reservoirs have ample supplies to meet the needs of our service area; but, it is important that we all conserve water wherever possible. This is our most precious resource and we cannot afford to waste it.

I hope you will take a moment to read this report. We have great confidence in the water we deliver to your homes and businesses, and we want you to as well. Please contact us if you have any questions or comments about your water quality, or any of MWRA's programs.

Sincerely,

Frederick A. Laskey
Executive Director

For more information on MWRA and its Board of Directors, visit www.mwra.com



Continuous Protection of Your Water

While the pandemic continued to impact health and supply lines in 2021, MWRA's drinking water continued to meet all federal and state standards. MWRA staff carried out ongoing, uninterrupted treatment, sampling, testing, planning, and monitoring to ensure the continuous delivery of pure drinking water to all our customers. This annual water quality report illustrates MWRA's ongoing efforts to ensure the provision of your water under all conditions.



The Quabbin and Wachusett watersheds — areas that drain water to the reservoirs — are naturally protected. More than 85% of the watersheds are covered with forests and wetlands, which filter the rain and snow that enters the streams that flow to the reservoirs. This water comes in contact with soil, rock, plants, and other material as it follows its natural path to the reservoirs. This process helps to clean the water, but it also can dissolve and carry very small amounts of material into the reservoir. Minerals and rock do not typically cause problems in the water. Water can also transport contaminants, including bacteria, viruses or other potential pathogens, from human and animal activity, that can cause illness. Testing results show few contaminants are found in the reservoir water. The few that are detected are in very small amounts that are well below EPA's standards.

MWRA and DCR maintain a nationally recognized watershed protection program. The Department of Environmental Protection's (DEP) Source Water Assessment report for the Quabbin and Wachusett Reservoirs commended DCR and MWRA for our source water protection plans. The report states that our **"watershed protection programs are very successful and greatly reduce the actual risk of contamination."** MWRA and DCR follow the report recommendations to maintain the pristine watershed areas. For more information on our source water, go to: www.mwra.com/sourcewater.html. **Your water also comes from local supplies that have a separate report.**

Testing to the Tap

MWRA analyzes, treats and protects the quality of your water from its source to your home or business, starting with the watershed streams, to hundreds of miles of MWRA pipes and thousands of miles of local pipes, all the way to your home. MWRA testing shows that few contaminants are found in the water from our reservoirs. All were well below EPA's standards in 2021.

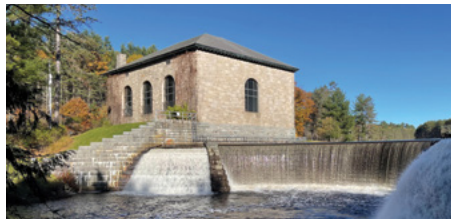
A key, initial test for reservoir water quality is turbidity, or cloudiness. Turbidity refers to the amount of suspended particles in the water and can impair water disinfection. All water must be below 5 NTU (nephelometric turbidity units), and water can only be above 1 NTU if it does not interfere with effective disinfection. In 2021, typical levels in the Wachusett Reservoir were 0.29 NTU, with the highest level of turbidity at 0.61 NTU, well below the standard.

MWRA also tests water for potential disease-causing organisms, including fecal coliform bacteria, and parasites such as *Giardia* and *Cryptosporidium*, that can enter the water from animal or human waste. All test results for the reservoir water were well within state and federal testing and treatment standards.

Learn more about MWRA testing for waterborne contaminants and their potential health impacts on our website at: www.mwra.com.

Your Annual Water Quality Report

This annual water quality report provides consumers of MWRA water with important information on water quality. MWRA also has monthly water quality reports, information on specific potential contaminants, water system updates, and more at www.mwra.com. We welcome your questions at 617-242-5323 or Ask.MWRA@mwra.com.



At the Water Source...

MWRA works with your community, the Department of Conservation and Recreation (DCR), and state and federal regulators to continuously evaluate your drinking water. From the reservoirs surrounded by forests and wetlands, through treatment and miles of pipelines, to your drinking water faucet. MWRA's laboratories conduct hundreds of thousands of tests on the water you receive every year for over 120 potential contaminants.

MWRA's work to protect the drinking water at your home or business starts with our two pristine reservoirs in central Massachusetts — the Quabbin Reservoir, 65 miles from Boston, and the Wachusett Reservoir, 35 miles from Boston. Combined, these two connected reservoirs provide an average of 200 million gallons of pure, highly protected, high quality water each day to 53 communities. The Ware River provides additional water when needed. **Your water also comes from local supplies. See page 7 for more information.**

MWRA Water Test Results 2021

EPA requires that MWRA test for over 120 contaminants that may be in drinking water. MWRA found only those listed here. All of these levels were below EPA's Maximum Contaminant Levels (MCL).

Compound	Units	(MCL) Highest Level Allowed	(We Found) Detected Level-Average	Range of Detections	(MCLG) Ideal goal	Violation	How It Gets in the Water
Barium	ppm	2	0.009	0.008 - 0.01	2	No	Common mineral in nature
Monochloramine	ppm	4-MRDL	1.99	0 - 4.0	4-MRDLG	No	Water disinfectant
Fluoride	ppm	4	0.71	0.24 - 0.81	4	No	Additive for dental health
Nitrate [^]	ppm	10	0.83	0.05 - 0.83	10	No	Atmospheric deposition
Total Trihalomethanes	ppb	80	18.6	6 - 34.8	NS	No	Byproduct of water disinfection
Haloacetic Acids - 5	ppb	60	16.8	3.7 - 30.2	NS	No	Byproduct of water disinfection

KEY: MCL = Maximum Contaminant Level. The highest level of a contaminant allowed in water. MCLs are set as close to the MCLGs as feasible using the best available technology. MCLG = Maximum Contaminant Level Goal. The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. MRDL = Maximum Residual Disinfectant Level. The highest level of 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 health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination. ppm = parts per million ppb = parts per billion NS - no standard ND = non-detect [^] = As required by DEP, the maximum result is reported for nitrate.



Conservation, Climate Change, and Your Reservoirs

MWRA works with the communities we serve to promote water conservation. Efficient and wise use of our water keeps it available for the future. We monitor stream flow, reservoir levels and climate forecasts to ensure reliable supply under all conditions, including droughts and major storms. The engineers and planners who designed our supply left us a robust, reliable, system for the future.



Monitoring All Day, Every Day

MWRA's monitoring systems are in operation continuously, 24/7/365. The systems help us evaluate your water before and after treatment. They also help us determine if the water is free of contaminants, and to respond rapidly to changes or issues related to water quality.

Treating Your Water

Downstream of the reservoirs, MWRA's John J. Carroll Water Treatment Plant in Marlborough provides state-of-the-art treatment and monitoring of your water. Our well trained and licensed operators add measured doses of treatment chemicals.

- Ozone, made from pure oxygen, disinfects the water, killing bacteria, viruses and other organisms, and improves water clarity and taste.
- Ultraviolet light (UV), a more powerful form of natural disinfection than sunlight, renders pathogens non-infectious.
- Fluoride protects dental health.
- The water chemistry is adjusted to reduce corrosion of lead from home plumbing.
- Monochloramine (a compound of chlorine and ammonia), provides a mild and long-lasting disinfectant to protect the water as it travels through miles of pipelines to your home.

Water Monitoring After Treatment

EPA and state regulations require regular monitoring of water quality tests to evaluate the water you drink. MWRA conducts hundreds of thousands of tests per year on over 120 contaminants. A complete list is available on

www.mwra.com. The results of MWRA's water quality tests in 2021 are shown in the table on page 2. They confirm the quality and safety of the water your community receives from MWRA. **Local treatment information on page 7.**

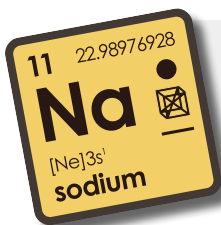
Continuous Service + Redundancy = Reliability

Maintaining system redundancy allows us to continue uninterrupted water delivery to your community, even if sections of our system need inspection, repair or rehabilitation. Planning and environmental review for two new tunnels north and south of Boston to provide reliable service to the entire region is well underway. We also have major projects underway to rehabilitate the Weston Aqueduct Supply Main 3, a 60-inch pipe in Weston, Waltham, Belmont, Arlington and Medford, as well as a 48-inch pipe in Stoneham and Woburn. See www.mwra.com for more info.

MWRA provides zero-interest loans to communities for pipeline rehabilitation and other water quality improvements. During 2021, we loaned \$28 million to 18 communities for pipeline projects and \$11 million to 8 communities for lead service line replacements.

Sodium and Drinking Water

MWRA tests for sodium monthly, and the highest level was 39.3 mg/L (about 10 mg per 8 oz. glass). This level would be considered to be Very Low Sodium by the Food and Drug Administration (FDA). Sodium in drinking water contributes only a small fraction of a person's overall sodium intake (less than 5%).



The Facts on Lead

Lead can be found in your home, including plumbing and your drinking water. Learn about the health impacts of lead, and how to reduce exposure to this toxic metal on the following pages.

How Lead Affects Health and Development

Lead affects young children, and may cause damage to the brain, slow growth and development, and learning and behavior problems. Preventing lead exposure is particularly important if a pregnant woman or a child lives in your home or apartment. Lead can also impact the health of your entire family. While lead poisoning frequently comes from exposure to lead paint dust or chips, lead in drinking water can also contribute to chronic, total lead exposure.

Important Lead Information From EPA

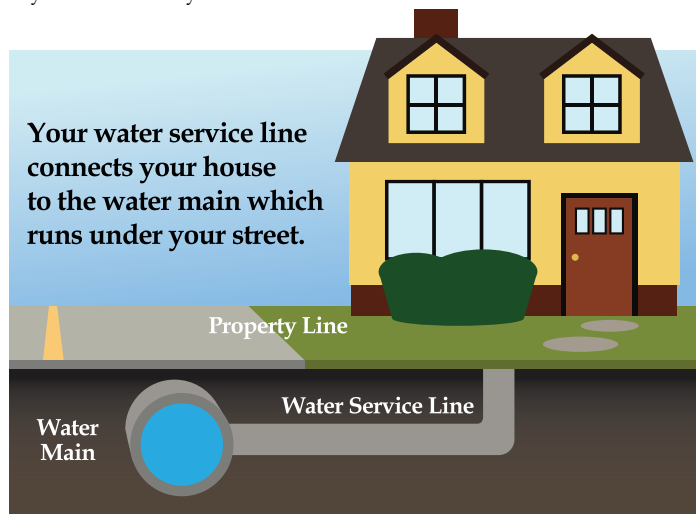
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components

associated with service lines and home plumbing. MWRA is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. If 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 at 1-800-426-4791 or www.epa.gov/safewater/lead.

How Lead Can Enter Your Water

Lead in your home plumbing or a lead service line can contribute to elevated lead levels in the water you drink. MWRA's water is lead-free when it leaves our reservoirs. Distribution pipes that carry the water to your community are made mostly of iron and steel, and do not add lead to the water. Lead can enter your tap water from your service line (the line that connects your home to the water main) if it is made of lead, lead solder used in plumbing, or from some older faucets.

Corrosion, or wearing away of lead-based materials can add lead to tap water, especially if water sits for a long time in the pipes before it is used. MWRA's corrosion control program helps limit the amount of lead in your water. In 1996, MWRA began adding sodium carbonate and carbon dioxide to adjust the water's pH and buffering capacity. This treatment makes the water less corrosive and reduces leaching of lead into drinking water. Lead levels found in sample tests of tap water have dropped by nearly 90% since this treatment change. Learn more about lead in drinking water at www.mwra.com.



MWRA Meets Lead Standard in 2021

Under EPA/DEP rules, MWRA and your local water department are required to test tap water each year. We collect samples from homes with lead service lines or lead solder. The EPA rule requires that 9 out of 10 homes tested must have lead levels below the Action Level of 15 parts per billion (ppb).

This testing process can provide information on whether lead is corroding and mixing with the drinking water. It also provides communities and homeowners with information on how to reduce lead in their drinking water. The results do not reflect lead levels in all homes.

All sampling rounds over the past 18 years have been below the EPA Action Level. Nine out of ten homes were below 8.56 ppb—well below the Action Level.

Your community letter on page 7 will provide you with local results and more information.

What is An Action Level?

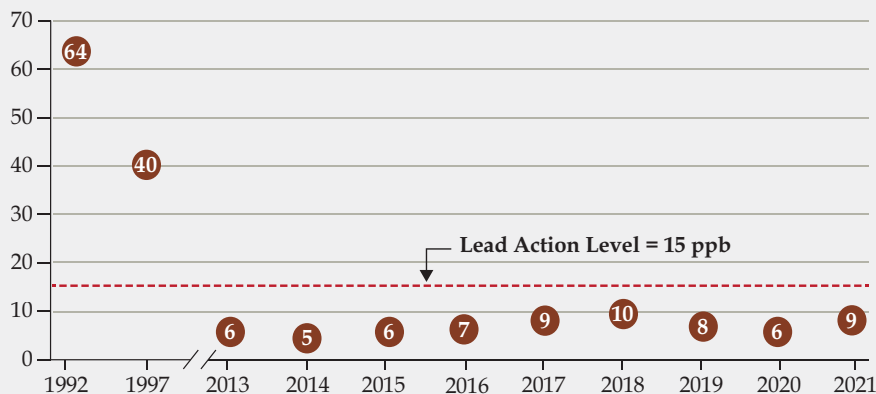
An Action Level is the amount of lead that requires action to reduce exposure. If your home or school's drinking water is above the lead Action Level, additional steps to reduce lead may be required. If more than 10% of your community's samples were over the lead Action Level, your local water department is taking action to address the problem. See page 7.

Lead & Copper Results, September 2021

	Range	90% Value	AL	Ideal Goal (MCLG)	#Homes Above AL/ #Homes Tested
Lead (ppb)	<0.075-120	8.56	15	0	22/448
Copper (ppb)	<3-222	132	1300	1300	0/448

Key: AL=Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

90% Lead Levels in MWRA System of Fully Served Communities (ppb)



Keep Lead Out of Your Drinking Water



Lead Service Lines

A service line connects your home or building to the water main in the street. If yours is made of lead, it can be the main source of lead in your tap water. Older pipes that combined galvanized iron and lead connectors (“goosenecks”) can also release lead. Lead service lines should be removed entirely to prevent lead in your drinking water.

Replacing Lead Service Lines

Your local water department can help find out if you have a lead service line, and provide help in replacing it. In some cases, an onsite check is necessary to determine the specific piping to your building.

You can also see if your service line is made of lead by scratching the pipe near your water meter with a key or other metal object. Lead pipes will show a dull grey color, while copper pipes will not. For an online how to guide, go to www.epa.gov/pyt.

MWRA Funding to Replace Lead Service Lines

MWRA and its Advisory Board offer zero-interest loans to customer communities for full lead service line replacement projects. Each MWRA community can develop its own local plan, and many communities have already taken steps to remove lead service lines. To find out more, contact your local water department.

Reduce Your Exposure to Lead

Remove Lead Piping

- Find out if you have a lead service line or lead components in your plumbing. Learn about options for removal of this piping from your local water department.

Other Measures for Lead Reduction

- Any time water has not been used for more than 6 hours, run the faucet used for drinking water or cooking until after the water becomes cold.
- Let water run before using it—fresh water is better than stale. To save water, fill a pitcher with fresh water and place it in the refrigerator for future use.
- Never use hot water from the faucet for drinking or cooking, especially when making baby formula or other food for infants or young children.
- Remove loose lead solder and debris. Every few months, remove the aerator from each faucet and flush the pipes for 3 to 5 minutes.
- Be careful of places where you may find lead in or near your home. Paint, soil, dust and pottery may contain lead. Call the Massachusetts Department of Public Health at 1-800-532-9571 or 1-800-424-LEAD for information on lead and health impacts.

How to Test Your Drinking Water

If you are concerned about lead piping in your home, contact your local water department about testing for lead in your drinking water. MWRA also maintains a list of certified laboratories and sampling instructions on our website at www.mwra.com. You may also call MWRA at 617-242-5323.

Lead Testing in Schools

Children can consume most of their drinking water at school or daycare. The plumbing inside some schools and childcare facilities can contain lead and contribute to lead exposure. MWRA, in coordination with DEP, provides no-cost lab analysis and technical assistance for schools and day care centers in MWRA communities. This service has been offered since 2016, and nearly all MWRA communities have participated. To date, more than 39,000 tests have been completed in more than 530 schools. Results are available on the MassDEP website at: www.mass.gov/dep (search for “lead in schools”). You may also contact your local school or water department for results.



Water Service Lines – Lead and Copper



You can identify lead service line by carefully scratching with a key.

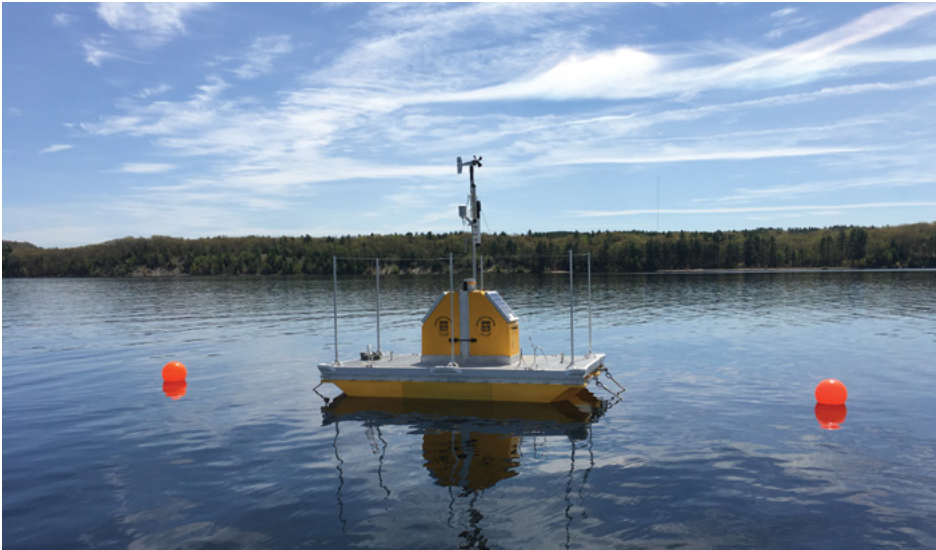


New copper service line.

3 Ways to reduce lead in your water

- Remove your lead service line
- Run your water before using
- Use a filter certified to remove lead

Continuous Testing of Your Water



MWRA works with local water departments to sample and test 300-500 water samples each week for total coliform bacteria. Total coliform bacteria can come from the intestines of warm blooded animals, or can be found in soil, plants, or other places. Most of the time, they are not harmful. However, their presence could signal that harmful bacteria from fecal waste may be there as well. If total coliform is detected in more than 5% of samples in a month, the water system is required to investigate the possible source and fix any identified problems. If a water sample does test positive, we run a more specific test for *E. coli*, which is a bacteria found in human and animal fecal waste and may cause illness. **If your community was required to do an investigation, or found *E. coli*, it will be in the letter from your community on page 7.**



Complaints Are Important!

You can help provide information about local water quality. Every call is investigated. Most complaints are related to discolored water (usually related to local construction or hydrant use), or conditions in a building's plumbing. Contact your local water department, or call MWRA at (617) 242-5323.

Important Research for New Regulations

MWRA works with EPA and health research organizations to help define new national drinking water standards by collecting data on water contaminants that are not yet regulated. Very few of these potential contaminants are found in MWRA water due to our source water protection efforts. Information on this testing, as well as data on PFAS, disinfection by-products, *Giardia* and *Cryptosporidium*, and other contaminants can be found at www.mwra.com

MWRA Monitoring for PFAS

PFAS compounds, used since the 1950s for many purposes from stain and water proofing to firefighting, continue to be a concern. In 2020, MassDEP published a drinking water standard for PFAS. MWRA water is now tested for 6 different PFAS compounds or "PFAS6." Tests of MWRA water show only trace amounts of these compounds, well below the state standard of 20 parts per trillion. See www.mwra.com.

Important Health Information: Drinking Water and People with Weakened Immune Systems

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

Cross-Connection Information

A cross-connection is any temporary or permanent connection between a potable (drinking) water source and a non-potable source. Non-potable water or other sources can contaminate your drinking water if backflow occurs.

Sources could include:

- Garden hoses
- Boilers
- Swimming pools
- Irrigation systems or wells
- Residential fire protection systems

Massachusetts DEP recommends the installation of backflow prevention devices for inside and outside hose connections to help protect the water in your home as well as the drinking water system in your town. For more information on cross-connections, please call 617-242-5323 or visit www.mwra.com.

EPA Information on Bottled Water and Tap Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791) or MWRA. In order to ensure that tap water is safe to drink, the Massachusetts DEP and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (MDPH) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.



Continue to Conserve

MWRA water use has dropped by over a third since the 1980s. It's up to all of us to continue to use water wisely. Every drop is valuable. Our website has many tips on how to save water indoors and outside.



Town of Bedford
DEPARTMENT OF PUBLIC WORKS

Public Water Supply
 # 3023000

314 Great Road - Bedford, MA 01730
 Tel. (781) 275-7605 - Fax (781) 275-9010 - www.bedfordma.gov

BEDFORD'S WATER SYSTEM

In 2021, Bedford supplied 550 million gallons of water to our residential, retail and industrial customers. This usage is the same as in 2020 (550 MG), resulting in an average daily usage of 1.5 million gallons. Our average residential use is 53 gallons per person per day. Bedford's peak day demand was 2.7 million gallons. In 2021, however, Bedford was 100% supplied by MWRA water. In previous years, 90% of our water came from the MWRA through 3-meter vaults at the Lexington town line and 10% from the Shawsheen Treatment Facility. Currently, the three Shawsheen wells that supplied our water are still off-line while we work with MassDEP to determine safe and cost-effective measures related to PFAS. Bedford's Water System includes approximately 80 miles of water mains, 800 fire hydrants, approximately 760 backflow prevention devices, 5,000 service connections and three storage tanks.

WATER DEPARTMENT OPERATIONS

This year the Water Division began work to retrofit the Pine Hill and Crosby Drive water tanks to upgrade treatment methods and techniques. Additionally, our water consultant completed a hydraulic model of the Town's distribution system to assess current water sources and pressures to identify system improvements. We also upgraded security measures to our SCADA system as part of an assessment for risk and resiliency. As part of our regular maintenance, over 200 hydrants were flushed to remove sediments in dead-end water mains, and another 100 hydrants were cleaned, flagged and painted. Older/leaking hydrants are replaced as needed.

WATER QUALITY TESTING

The Water Division regularly tests for various parameters to monitor water quality. MWRA's results for various parameters are listed in the beginning of this report. In addition to the regulated testing noted below, the calcium concentration was 5.2 ppm, and hardness was 17 ppm.

From August through November 2021, total coliform bacteria were detected above the 1 positive/per month limit of samples, which required us to conduct one Level 1, and three Level 2 Assessments. Level 1 and 2 Assessments are studies of the water to identify potential problems, and determine (if possible) why total coliform bacteria were found in our water system on multiple occasions. Coliforms are bacteria that are naturally present in the environment and are used as indicators for other, potentially harmful, waterborne pathogens, which may be present or that a potential pathway exists through which contamination may enter the water distribution system. Based on the results of the Level 2 Assessments we will be upgrading the disinfection system in our storage tanks. We performed additional hydrant flushing to improve water quality.

LEAD & COPPER IN BEDFORD

The Bedford Water Division and the MWRA adjust the pH of your water, making it less corrosive in order to prevent the leaching of lead and copper from household plumbing. In compliance with the MassDEP Lead and Copper Rule, the Town performed lead and copper sampling in 2019. 30 homes, the 4 public schools and 2 daycare facilities were tested, with results below the MassDEP Action Levels (see below). Our next sampling for lead and copper is scheduled for the summer of 2022.

If you would like more information about Bedford's water system or public meetings, please call, or visit our website.

Jason Raposa, Water & Sewer Operations Manager
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Bedford CCR 2021

Compound	MCL	MCLG (Highest Level Allowed)	Detected Level	Range of Detection	Violation	How it gets in the water
Fluoride ¹	4 ppm	4 ppm	0.7 ppm	0.6-0.8 ppm	No	Added to the water to fight tooth decay.
Total Trihalomethanes	80 ppb ²	NS	32 ppb ³	11-32 ppb	No	Byproducts of drinking water disinfection.
Haloacetic Acids - 5	60 ppb ²	NS	15 ppb ³	1.6-16 ppb	No	Byproducts of drinking water disinfection.
Lead	AL=15 ppb ⁴	0 ppb	7 ppb ⁴	<1 - 9.2 ppb 0 over AL	No	Corrosion of household plumbing.
Copper	AL=1300 ppb	1300 ppb ⁴	167 ppb ⁴	37-275 ppb 0 over AL	No	Corrosion of household plumbing.
Chlorine	4 ppm	4 ppm	1.74	0.02 - 2.64 ppm	No	Drinking water disinfection.

ppm = parts per million, ppb = parts per billion, MCLG = maximum contaminant level goal, MCL = maximum contaminant level, ND = Non-Detected, NS = No Standard, AL = Action Level. 1-Fluoride is a measure of the amount of chemical added to the water 2-Highest levels allowed are based on the average of four quarterly samples by location. 3 Highest average of four quarterly samples. 4-Levels are based on the 90th percentile of all 30 required samples.