

Lowell Regional Water Utility

2022 - Annual Water Quality Report

The twenty fifth “Annual Water Quality Report” has been completed by the LRWU Staff. The Safe Drinking Water Act was amended in 1996 and requires that all water suppliers make drinking water quality information available to all their consumers each and every year. This report contains information about the Water Utility, and summarizes all the laboratory data collected during 2022. It includes language about possible health concerns, and a translation advisory for those who cannot speak English. Copies are available at the utility. If you would like more information you can call (978) 674-1677 or visit the Water Utility at 815 Pawtucket Blvd., Monday thru Friday, between the hours of 8:00am and 3:00pm. The complete report is on the City of Lowell’s Web page at:

<https://www.lowellma.gov/DocumentCenter/>

[View/22397](https://www.lowellma.gov/DocumentCenter/View/22397)

ALL distribution (posting, land mail, or e-delivery, publication, and good faith efforts) must be completed on or before July 1st.

Instructions for customers to request a hard copy must also be included in e-delivery.

When a URL is used it must be a direct link to the document; no other clicks allowed.

E. Consumer Delivery Methods – Based on Population Served

For systems serving fewer than 500 persons:
(Choose #1 or #2)

Date of delivery/publication:

1. My system used one or more of the following methods to notify customers that their CCR would not be mailed directly to them but is available to them upon request. (the notice is attached)

- Land-mail Door-to-door Newspaper eMail Posted notices

Locations of posted notices

2. My system provided a CCR to each customer by the following method(s):

- Published the full CCR in a local newspaper (the published report from newspaper is attached).
- Land-mailed or hand-delivered the CCR to consumers.
- e-Mailed with the CCR either embedded in the email or attached as a PDF. (e-mail is attached)
- Posted the CCR on the web and sent the direct URL to customers by way of land-mail or email (notice/postcard is attached).

List URL

For systems serving 500 to 9,999 persons:
(Choose either #1 or #2)

Date of delivery/publication:

1. My system provided a copy of the CCR to each customer by:

- Land-mail e-Mail with PDF of CCR e-Mail with embedded CCR
- Sent a notice (by land or e-mail) containing a direct URL to customers (copy is attached)

List the URL if used.

2. My system provided the CCR to each customer by publishing the full report in a newspaper (a copy of the published CCR is attached) and provided notice to consumers of this action by either:

- Published a notice of this in a local newspaper
- Land mailed a notice of this to consumers.
- e-Mailed a notice of this to consumers.

For systems serving 10,000 or more persons:

Date of delivery/publication:

My system provided a copy of the CCR to each customer by:

- Land mail e-Mail with PDF e-Mail with embedded CCR
- Sent a notice (by land or e-mail) containing a direct URL to customers

April, May, June 2023

April 23, 2023

April 25, 2023

www.LowellMa.Gov/DocumentCenter/View/22397

List the URL if used.

For systems serving greater than 100,000 population: In addition to one of the delivery methods checked above, we have posted the CCR on a publicly accessible Internet site as required.

www.LowellMa.Gov/DocumentCenter/View/2297

List the URL used

F. Good Faith Delivery Methods (minimum of 3 is required for any sized systems)

Good Faith efforts are *in addition* to your primary method of delivery.

To reach people who drink our water but are not billed customers the following were conducted in addition to the required delivery:

- Posted the CCR on a publicly accessible Internet site at the following address. (Only for systems under 100,000 population who did not use this method as their primary method)

www. _____

List the URL used.

- Mailed the CCR to all postal patrons within the service area (list of zip codes used is attached).

- Mailed a postcard listing the URL where the CCR can be found, to all postal patrons within the service area (list of zip codes used is attached).

www. _____

List the URL used.

- Advertised availability of the CCR in the following news media (the announcement is attach):

Radio Newspaper Television / cable Social media Digital signboard

- Published the CCR in local newspaper (attach the published CCR).

- Posted the CCR in public places i.e., post office, town hall, library (list of locations is attached).

- Delivered multiple CCR copies to single-bill addresses serving several persons i.e., apartments, businesses, large private employers (list of locations is attached).

- Delivered multiple CCR copies to community organizations (list of organizations is attached.)

- Posted the CCR or a notice of availability at locations within the apartment/condo complex (list of the locations is attached).

- Deliver CCR to new residents when they move in.

Other

G. Mandatory Agency Delivery Requirements

All systems must submit CCR to these three agencies

1. **Local Board of Health**
Deliver 1 copy of CCR and the Certification Form (Contact your board of health as to whether they would prefer hardcopy or e-delivery of CCR.)

June 29, 2023
Date completed

Agencies and consumers must receive CCR on or before July 1.

2. **MA Dept. of Public Health**
Deliver 1-copy of CCR and the Certification Form
 PDF emailed to: dph.ccr@massmail.state.ma.us
or
 Hardcopy to: 250 Washington St.; Boston, MA 02108

June 29, 2023
Date completed

For e-delivery, scan documents into one PDF file. Make sure Cert Form is first with CCR following it.

3. **MassDEP Boston Office***
Deliver 1 copy of CCR, the Certification Form, and all needed attachments
 PDF emailed to: Program.Director-DWP@Mass.gov.
Label it [PWSID-PWS Name-year-CCR]
Or in case of hardship:
 Hardcopy to: MassDEP-CCR Program, 100 Cambridge St. Ste 900; Boston, MA 02114

June 29, 2023
Date completed

*The preferred delivery method is email.

--Do not send to MassDEP regional offices--
Only Boston is accepting CCRs



Lowell Regional Water Utility

815 Pawtucket Blvd., Lowell, MA 01854

2022 Annual Water Quality Report

Volume 25

PWS ID # MA 3160000

~ OUR PRIDE FLOWS ~

Dear Consumer: The Lowell Regional Water Utility (LRWU) is proud of the fine drinking water it provides to the residents of Lowell and to several of our neighboring communities. We are pleased to present a summary of the quality of the water provided to you during the calendar year 2022. The USEPA 1996 Safe Drinking Water Act (SDWA) requires that all utilities across the country issue an annual "Consumer Confidence Report" to their customers in addition to other notices that may be required by law. This report details where our water comes from, what it contains, and the possible risks to the health of certain segments of the population. Our constant water testing and the continuously updated treatment plant are designed to ensure that we are providing you with the safest and most reliable water supply. We encourage public interest and participation in our community's decisions affecting drinking water. Informed consumers are our best allies in maintaining safe drinking water. All requests for information or any questions regarding this Water Quality Report should be directed to Roger Hebert, Superintendent of Operations, at 978-674-1677, or Fax at 978-970-4235.

From the desk of Roger Hebert, Superintendent of Operations: Over the last two decades, the Lowell Regional Water Utility's (LRWU's) primary focus has been to improve the quality, pressure and reliability of the City's water supply. We have performed numerous upgrades to the treatment plant and distribution system, each of which was required to satisfy regulatory requirements and improve water service to consumers. I am proud to report that the City of Lowell continues to provide residents with the highest water quality at one of the lowest rates in the Commonwealth at \$2.46 per hundred cubic feet(HCF). In fact, despite the significant amount of work performed on our water system in recent years, of over 270 communities and water systems in Massachusetts, our water rates continue to be in the lowest 5% in the state. Today, the LRWU is continuing its focus on improving water service to the consumer population it serves. Recently completed projects and new projects currently underway will further improve the quality, pressure, and reliability of the water we deliver to consumers. We are also continuing to improve the overall efficiency of the water treatment plant and pumping operations. These projects include improvements to the distribution system, pumping stations, metering, and water treatment plant. Each of these projects is critical to the LRWU's ongoing effort to reliably deliver high quality water for many years to come.

Overview:

In 2022, the LRWU purified more than 4 billion gallons (4,043,977,000) of drinking water delivered to approximately 135,000 residents and businesses in the communities of Lowell, Dracut, Tewksbury, Tyngsboro, and Chelmsford. **Lead and Copper:** The annual monitoring rounds of lead and copper "tap sampling" were performed for the years 2000, to present year 2022. In all required compliance testing rounds, the 90th percentile action level for lead (0.015 mg/l) and copper (1.3 mg/l) were not exceeded, and haven't since. The last round of lead and copper sample monitoring was collected during summer 2022.

An Explanation of the Water-Quality Data Table: Unless otherwise noted, this report is based upon tests conducted in the year 2022 by the Lowell Regional Water Utility's certified Laboratory Director, Treatment Plant Operators, and by certified water-testing laboratories. Terms used in the Water-Quality Table and in other parts of this report are defined here.

Maximum Contaminant Level - (MCL): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

Maximum Contaminant Level Goal - (MCLG): The level of a contaminant in drinking water below, which there is no known or expected risk to health. MCLG's allow for a margin of safety.

Maximum Residual Disinfectant Level - (MRDL): The highest level of a disinfectant (chlorine) allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal - (MRDLG): The level of a drinking water disinfectant (chlorine) below, which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Action Level - (AL): The concentration of a contaminant that, if exceeded, triggers a treatment or other requirement, which a water system must follow.

Treatment Technique - (TT): A required process intended to reduce the level of a contaminant in drinking water.

Key to Table:

ppm = parts per million, or milligrams per liter (mg/l)
ppb = parts per billion, or micrograms per liter (µg/l)
ppt = parts per trillion
pCi/l = picocuries per liter (a measure of radioactivity)
TT = Treatment Technique
AL = Action Level
N/A = Not Applicable
MDL = Method Detection Limit
ORSG = Office of Research and Standards Guideline

MRDL = Maximum Residual Disinfectant Level
MRDLG = Maximum Residual Disinfectant Level Goal
< > = less than or greater than
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
NTU = Nephelometric Turbidity Units
N/D = Non-Detectable
90th % = Out of 10 homes, 9 were at or below this level
(NON) = Notice of Non-Compliance

2022 Water Quality Data Table

Contaminant Detected	Unit	MCL	MCLG	Level Detected	Range of Detection	Major Sources	Violation
Regulated Contaminants							
Nitrate	ppm	10	10	0.247	0.03	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion from natural deposits.	NO
Fluoride * (see below)				0.76	0.62 to 0.76	Water additive which promotes strong teeth.	NO
* State (MCL)	ppm	2	none				
* EPA (MCL)	ppm	4	none				
Sodium	ppm	none	none	41.0	41.0	Erosion of natural deposits; road salt and water treatment chemicals.	NO
Chlorite	ppm	1.0	0.8	0.59	0.07 to 0.59	By-product of drinking water disinfection.	NO
Turbidity (see note)	NTU	1.0	TT= 100 %	0.174	0.024 to 0.174	Soil runoff.	NO
<p>TT = lowest percentage of monthly samples < 0.3 NTU</p> <p>Note: <u>Turbidity</u> is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.</p>							
Disinfectant residual	ppm	(MRDL) 4	(MRDLG) 4	1.13	0.4 to 1.13	By-product of drinking water disinfection.	NO
Perchlorate	ppb	2.0	none	ND	0.53ug	Rocket propellants, fireworks, munitions, flares, blasting agents. Aged water treatment disinfection chemicals.	NO
PFAS6	ppt	20	none	3.20	ND to 3.20	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 these PFAS, such as fire-fighting foams.	NO
<p>Health effects: Some people who drink water containing these PFAS in excess of the MCL may experience certain adverse effects. These could include effects on the liver, blood, immune system, thyroid, and fetal development. These PFAS may also elevate the risk of certain cancers</p>							
Volatile Organic Contaminants							
(TTHM)	ppb	80	0	(51)	22 to 51	By-product of drinking water chlorination.	NO
[Total Trihalomethanes] (Highest Running Annual Average)							
Disinfection By-Product Contaminants							
(HAA)	ppb	60	0	(17)	3.4 to 31	By-product of drinking water chlorination.	NO
[Halo-acetic Acids] (Highest Running Annual Average)							
Unregulated Contaminants							
MTBE	ppb	none	none	N/D	N/D < 0.5	Gasoline Additive.	NO
Chloroform	ppb	noneno		26.1	7.6 to 53.9	By-product of drinking water chlorination.	NO
Bromodichloromethane	ppb	none	none	1.8	1.8 to 4.8	By-product of drinking water chlorination.	NO
Sulfate	ppm	none	none	4.0	2.0 to 8.0	Mineral and nutrient	NO
<p>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 future regulation is warranted.</p>							

2022 Water Quality Data Table cont'd

Contaminant Detected	Unit	MCL	MCLG	Level Detected	Range of Detection	Major Sources	Violation
Radionuclides next round of testing 2023							
Gross Alpha	pCi/l	15	0	0.01 (+-0.6)	N/A	Erosion of natural deposits	NO
Radium 228	pCi/l	5	0	- 0.20 (+-0.6)	N/A	Erosion of natural deposits	NO
Contaminant	Unit	AL	MCLG	90 th % Value	# of Samples Above AL	Major Sources	Violation
Lead	ppb	15	0	.002	1 of 50	Corrosion of household plumbing systems. Erosion of natural deposits;	NO
Copper	ppm	1.3	1.30	.043	0 of 50		Corrosion of household plumbing systems. Erosion of natural deposits; Leaching from wood preservatives
Finished water pH 7.7 to 8.1							

Lead Service Line Inventory and Replacement Program:

The LRWU began designing a Lead Service Line Inventory and Replacement Program in 2022. On March 1, 2023, our staff began conducting on-site inspections to confirm the presence of lead water infrastructure to aid in the development of a complete water service line inventory. These inspections remain ongoing, and the data gathered during this project will be made available on our website under "Lead Service Line Inventory and Replacement Project" once the inventory has been finalized.

Water Source:

The only water supply for Lowell's Water Treatment Plant is the surface water from the Merrimack River, which has its source in the White Mountains of New Hampshire. The Intake Station is situated on the riverbank north of the city and water is pumped one half mile to the treatment plant. The interconnections with the surrounding communities are to supply them with water; they cannot supply water to Lowell. A draft source water assessment (SWAP) was completed by the Massachusetts DEP. The (SWAP) report is available at the water utility for any parties interested.

A susceptibility ranking of High was assigned to this system using the information collected during the assessment by the DEP. As with many water systems, this watershed contains potential sources of contamination. However, source protection measures reduce the risk of actual contamination. The Lowell Regional Water Utility was commended for taking an active role in protecting their drinking water source. Some examples of the staff's good work include the following:

Emergency Planning and Response – The Utility works with upstream communities in Massachusetts and New Hampshire on emergency response planning. The City has an emergency management committee and has coordinated activities with the Massachusetts Emergency Management Agency (MEMA).

Communication with Other Communities – The Utility maintains contact with upstream and downstream communities, including those in New Hampshire, on a variety of source protection issues.

Unregulated Contaminants:

Our utility participated in a major drinking water quality-testing program in 1998 called the **Information Collection Rule (ICR)**. One of the contaminants we tested for is the parasite *Cryptosporidium* which has caused outbreaks of intestinal disease in the U.S. and overseas. *Cryptosporidium* is the only contaminant for which source water monitoring results must be reported. It is common in surface water, very hard to kill, and even a well-run water system will contain some live parasites. The U.S. Environmental Protection Agency (EPA) is working to resolve several scientific issues that will allow it to set *Cryptosporidium* safety standards. Our testing, performed quarterly in 1998 on the river water, revealed the presence of *Cryptosporidium*, but no precaution about our drinking water is currently needed for the general public, since **Cryptosporidium was not found in the finished treated drinking water that goes to your tap!**

Required Educational Information:

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. 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 potential health effects of their drinking water from their health care providers. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in *bottled water* that must provide the same protection for public health. Contact the EPA's Safe Drinking Water Hotline (800-426-4791) for more information about contaminants and potential health effects; and EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants.

Perchlorate - Perchlorate interferes with the normal function of the thyroid gland and thus has the potential to affect growth and development, causing brain damage and other adverse effects, particularly in fetuses and infants. Pregnant women, the fetus, infants, children up to the age of 12, and people with a hypothyroid condition are particularly susceptible to perchlorate toxicity.

Fluoride was added to prevent tooth decay/cavities.

Lead - "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 Lowell Regional Water Utility is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline 1.800.426.4791 or at: <http://www.epa.gov/safewater/lead>.

Contaminants that may be present in source water include:

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

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



Lowell Regional Water Utility
815 Pawtucket Blvd.
Lowell, MA 01854

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“There’s a lot to like about Lowell” *(2022 Water Quality Report)*

CROSS-CONNECTION CONTROL AND BACKFLOW PREVENTION

The Lowell Regional Water Utility makes every effort to ensure that the water delivered to your home and business is clean, safe and free of contamination. Our staff works very hard to protect the quality of the water delivered to our customers from the time the water is extracted from the Merrimack River, throughout the entire treatment and distribution system. But what happens when the water reaches your home or business?

What is a cross-connection?

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 arrangements or equipment that allowed the drinking water to come in contact with non-potable liquids, solids or gases (hazardous to humans) in event of a backflow.

What is a backflow?

Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This can occur when the pressure created by an equipment or system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (backpressure), or when the pressure in the distribution line drops due to routine occurrences such as water main breaks or heavy water demand causing the water to flow backward inside the water distribution system (back-siphonage).

What can I do to help prevent a cross-connection?

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains, or chemicals.
- NEVER attached a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bibb vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with a backflow preventer
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.
- 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’s plumbing system surveyed for cross-connection by your water purveyor. If your property has NOT been surveyed for cross-connection, contact your water department to schedule a cross-connection survey. For more information, please contact Aurora Bas at (978) 674-4242

Le rapport contient des informations concernant la qualité de l'eau de votre communauté. Faites-le traduire, ou parlez-en à un ami qui le comprend bien.

El informe contiene información importante sobre la calidad del agua en su comunidad. Tradúzcalo o hable con alguien que lo entienda bien.

O relatório contém informações importantes sobre a qualidade da água da comunidade. Traduza-o ou peça ajuda de uma pessoa amiga para ajudar-lo a entender melhor.

“Το έγγραφο που περιλαμβάνεται σε αυτό το φυλλάδιο περιέχει σημαντικές πληροφορίες σχετικά με την ποιότητα του νερού της περιοχής σας. Εάν έχετε δυσκολία να καταλάβετε το περιεχόμενο της παρακαλείσθε όπως ζητήσετε από γνωστούς ή φίλους σας να σας την μεταφράσουν.”

Η έκδοση αυτή περιέχει σημαντικές πληροφορίες σχετικά με την ποιότητα του νερού της περιοχής σας. Εάν έχετε δυσκολία να καταλάβετε το περιεχόμενο της παρακαλείσθε όπως ζητήσετε από γνωστούς ή φίλους σας να σας την μεταφράσουν.

City of Lowell Regional Water Utility
City of Lowell City Hall Treasurer's Office
City of Lowell City Hall Clerk's Office
City of Lowell Public Library
City of Lowell Dept. of Public Works
City of Lowell Board of Health
Lowell Commuter Train Station
Council on Aging (Elderly Community Center)
U-Mass Lowell, North Campus Administration Building
U-Mass Lowell, South Campus Administration Building
Lowell General Hospital - Main Desk
Lowell General Hospital - Cancer Center
Lowell General - Saints Campus
Cross Point (Multi-Tenant high-rise office building)
Cobham(formerly Ma/Com) office building(Pawtucket Blvd.)
Ma/Com office building (100 Chelmsford St.)
UMass Inn & Conference Center (formerly Double Tree)

CCR Copies to Community Organizations

Back Central Neighborhood Assoc.
Belvidere Neighborhood Assoc.
Coalition for a Better Acre
Centraville Neighborhood Action Group
Highlands Neighborhood Assoc.
Pawtucketville Citizens Council
Riverside Community Council
Lowell Citywide Neighborhood Council