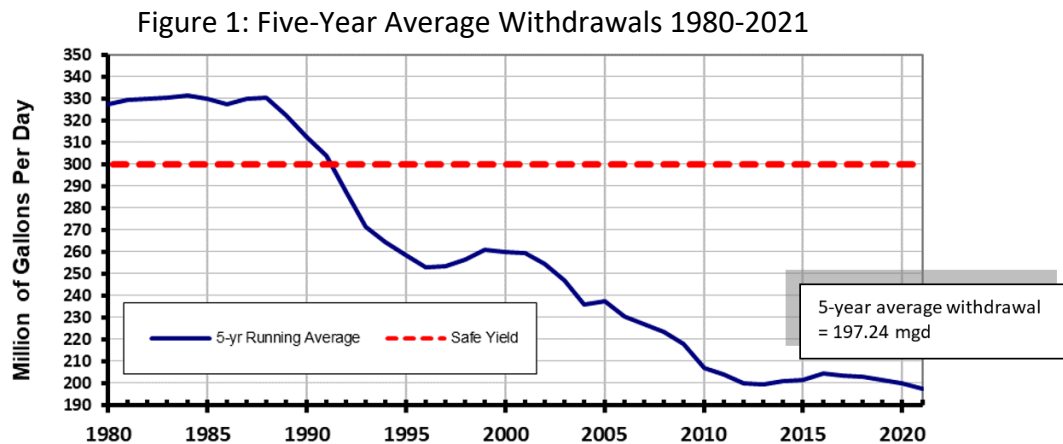


BENEFITS OF JOINING MWRA WATER SYSTEM

Abundant Water Supply

MWRA's source waters are the Quabbin and Wachusett Reservoirs in the Chicopee and Nashua River basins, respectively. To supplement yield, MWRA may also divert waters of the Ware River subject to time of year and flow restrictions. Quabbin Reservoir has a maximum storage capacity of 412 billion gallons, equivalent to about 5-6 years of supply. It is fed by a well-protected 186 square mile watershed. Wachusett Reservoir has a maximum capacity of 65 billion gallons and a 107 square mile watershed. MWRA's Safe Yield, as defined as the ability to supply water on a continuous basis even during periods of extended drought, is about 300 million gallons per day (mgd).

More than twenty years ago, MWRA embarked upon a multi-faceted Long-Range Water Supply Program that incorporated conservation and system management goals into standard operating practices of the MWRA and its communities. As a result, demand on MWRA's water system has decreased substantially. In 2021, MWRA system demand was approximately 194.6 mgd, a decline of approximately 148 mgd from the 1980 peak of 342.8 mgd. As illustrated by Figure 1, the current 5-year average withdrawal (2017-2021) which reduces the effects of year to year variability due to weather and provides a good indication of long term terms, is down to approximately 197.2 mgd. As a result, MWRA has abundant capacity to serve and accommodate growth and economic development in its existing member communities, as well as to expand the service area and provide water to additional communities on the periphery.



In addition to physical capacity, MWRA is registered to withdraw a combined total of 311.9 mgd from the Nashua and Chicopee River Basins (126.12 mgd for the Nashua River Basin and 186.7 mgd for the Chicopee River Basin) under the state Water Management Act.

At current demand, allowing for projected growth in the service area through 2040 and reasonable system expansion, MWRA would not need to impose mandatory water use restrictions, even if a drought as severe as the 1960s occurred. During recent notable dry periods in 2015-2016 and again in 2020, the MWRA water system did not reach drought warning status, according to MWRA's Drought Management Plan.

Excellent Water Quality:

MWRA has reliably excellent water quality due to its well protected watersheds and large reservoirs. Over 85% of the Quabbin and Wachusett watersheds are covered in forests or wetlands, as well as extensive public landholdings. These well protected watersheds act as a natural filter and result in high quality water entering the reservoirs. In addition, multi-year detention time in the enormous reservoirs provide further natural treatment and purification. Water leaving the reservoirs is such high quality that MWRA is one of the few large water systems nationwide which is not required by EPA rules to chemically filter water.

MWRA's modern water treatment plant uses Ozone, created from pure oxygen, as a primary method of disinfection. This treatment inactivates parasites like *Giardia*, improves the clarity of the water, and yields a clear clean taste. Ultraviolet Light is then used as a second method of primary disinfection, which further improves water quality by inactivating chemically resistant parasites such as *Cryptosporidium*. Because MWRA uses chloramine for residual disinfection, water does not have objectionable chlorine tastes or odors. In 2011, 2013 and 2019, MWRA was named "New England's Best" in a blind taste test at the New England Water Works Association's Annual Conference. In 2014, Boston and MWRA won first and second place at the American Water Works Association annual conference blind taste test and in 2021 MWRA won first place, earning the title "Best of the Best". Very low levels of dissolved minerals make MWRA water soft, meaning that very little detergent or shampoo is required to clean clothes or wash hair.

MWRA's water continuously and easily meets all EPA and DEP drinking water maximum contaminant levels (MCLs). Even with the most sophisticated laboratory tests, very few contaminants are detected and consumers can confidently drink MWRA water. Many emerging containment threats including pharmaceuticals are not detected in MWRA water. Per- and polyfluoroalkyl substances (together PFAS) have been detected in levels too low to quantify and well below both federal or state existing and expected guidelines and standards. MWRA is extremely confident in water quality test results. Monthly and annual water quality reports are provided to local elected, health, and water officials as well as posted publicly on MWRA's website (see links below). MWRA staff assist in the development of each community annual Consumer Confidence Report

Water Quality Sampling:

MWRA uses sophisticated real-time continuous monitoring to manage and safe guard water quality. Operations control centers, staffed 24/7, manage all aspects of the system, and provide access to MWRA staff in any emergency day or night. MWRA operates several state of the art DEP-certified drinking water laboratories to provide analyses for operations and regulatory compliance.

For the Total Coliform Rule (TCR), communities collect and MWRA analyses and reports on all samples, both routine and repeat samples, for all communities both fully and partially supplied at no cost. MWRA laboratory staff submit coliform testing data to DEP via the eDEP portal and copies are provided to each Public Water System. Additionally, MWRA's experienced sampling staff provide routine training for new community samplers to ensure proper technique for

coliform sampling, sampling tap assessments, and testing of chlorine residual measurements. In the event a community is required by DEP to do an assessment under the TCR, MWRA can also assist with community reports or discussions with DEP.

MWRA laboratories provide free water quality lab services (available also on weekends and holidays) to fully supplied communities for all other rules as described below:

- For the Lead and Copper Rule, fully supplied communities collect and MWRA analyses and reports on all samples, as part of MWRA's regional sampling pool.
- For all other Safe Drinking Water Act rules, fully supplied communities are covered under MWRA's compliance and sampling plans – MWRA collects, analyzes and reports on any samples required for these rules thereby, relieving the community of sampling and testing costs. This includes source water samples, all process control samples within the water treatment plant, and all finished water samples, as required by the LT2ESWTR, the Stage 2 DBP Rule, the Inorganics (IOC) Rule, the VOC and Synthetic Organic Compounds Rules, the Radionuclide rule, and EPA's Unregulated Contaminant Monitoring Rule. MWRA also samples its entry point for Perfluorocarbons (PFAS), Perchlorate and Secondary contaminants. No community action is required.
- MWRA provides assistance and coordination in response to consumer water quality complaints. Once a complaint is vetted through community water department staff, MWRA can advise on next steps including complaint surveys, field and laboratory testing, and reporting of data to the consumer in layman's terms.

MWRA can arrange for laboratory services (at cost) and regulatory guidance for any partially supplied community for the rules mentioned above.

Water Quality Reporting:

MWRA provides routine compliance reporting to DEP on behalf of each community for all rules.

MWRA provides a monthly water quality report, printed and on-line for local officials and interested public. See <http://www.mwra.com/watertesting/watertests.htm>

MWRA develops, prints and mails the annual "Consumer Confidence Report" on behalf of each community. See <http://www.mwra.com/water/html/awqr.htm>

MWRA produces a very detailed weekly internal water quality report which is available to any community water department upon request.

MWRA has an extensive website containing a wealth of helpful consumer information on water quality, conservation, and other topics of interest. MWRA works hard to identify current issues which may interest customers and proactively response to potential questions or concerns on the website.

MWRA maintains a water quality hotline for consumer questions – 617-242-5323.

Local Water System Assistance Program:

MWRA's Local Water System Assistance Program (LWSAP) provides a total of \$725 million in 10-year, zero-interest loans to 47 eligible member communities for local water system improvement projects. This program provides financial assistance to member communities in an effort to improve local water systems and maintain high quality water as it passes from MWRA's facilities and transmission lines, through local pipelines, and eventually to customers' taps.

The LWSAP has been implemented in three phases: Phase 1 which was completed in FY13 at \$222 million, Phase 2 is being implemented from FY11 through FY23 at \$210 million, and Phase 3 is being implemented from FY18 through FY30 at \$293 million. Each new community is immediately eligible for the LWSAP and their loan allocation would be prorated based on the number of years remaining in the program when they become MWRA water member communities.

Through December 2021, \$483 million in 10-year interest-free loans have been distributed to member communities to finance 493 projects that will help maintain high water quality in local distribution systems.

Lead Service Line Replacement Loan Program:

MWRA's Lead Service Line Replacement Loan Program (LLP) provides 10-year, zero-interest loans to 47 eligible member communities. In 2017, a pool of \$100 million loan funds was approved to provide to eligible communities for local lead service line identification and removal projects. This program enables communities to create local programs to fully remove lead service lines from the community water main all the way to homes or businesses. Through December 2021, MWRA has distributed a total of \$28.2 million in 10-year interest free loans to thirteen communities to fully replace lead service lines. For additional information on LSWAP and LLP, see the MWRA Community Support Program web page at: www.mwra.com/comsupport/communitysupportmain.html

Training:

MWRA provides several opportunities each year for community staff training at no cost. MWRA arranges for the receipt of Training Contact Hours (TCHs) for participants as required by DEP for all licensed water operators. This includes training on emergency response, water quality, distribution system management, and current regulatory and public interest issues.

Technical and Emergency Assistance:

MWRA provides routine and emergency technical and field assistance to communities as needed. In this past, support has included emergency advice, troubleshooting, emergency and mobile pumping and disinfection equipment and operators, special water quality sampling, modeling assistance, equipment loans and expert advice to several communities with storage tank/water age problems. MWRA has also provided the use of leak detection crews to find elusive or time-sensitive leaks as well as assistance working with DEP during unusual events including drafting public notices.

MWRA technical and laboratory staff are available to help resolve local water quality complaints.

MWRA's expert water quality, regulatory compliance, operations, and others staff are available to member communities to help solve local problems. MWRA can frequently help a community avoid hiring a consultant or to use one more efficiently. MWRA has excellent working relationships with DEP and can often assist in resolving regulatory issues.

Management of Compliance with New DEP and EPA Requirements:

Being part of the regional MWRA system removes the burden of uncertainty from communities that new rules could require capital investments or changes in operations or monitoring. For full service member communities, these changes become the responsibility of MWRA. MWRA is closely involved with national water associations which work with EPA as new rules or guidance documents are developed. This provides an opportunity for local issues to be considered in the formulation of new rules and offers MWRA and our communities advance notice of new regulations as they are being developed.

MWRA Water Conservation/Demand Management Program:

The MWRA's Water Conservation and Demand Management Program targets both the MWRA-owned distribution system, as well as member community-owned distribution systems. In 1985, MWRA inherited a water system that had been exceeding the 300 mgd safe yield for almost twenty years. Since then, MWRA has instituted and continues to maintain an effective water conservation/demand management program. Average annual water demand has been reduced to less than 200 mgd, which is well below safe yield. The program includes MWRA and member community leak detection and system repair, as well as water conservation outreach to local communities, individual residential, commercial, industrial, and institutional water users.

To encourage water conservation, MWRA provides educational materials and low-flow device kits (showerheads, faucet aerators, and toilet dams) to member communities and individual customers at no cost. MWRA's water conservation public education materials include brochures on indoor water use (toilets, shower heads, faucets, washing machines, etc.) and outdoor water use (lawn and garden). These education materials are designed as bill-stuffers to be efficiently distributed by communities to retail customers. MWRA also maintains a dedicated water conservation informational telephone line (617-242-SAVE) to allow community representatives and the public direct access to MWRA staff as a technical resource. Additional information is available at MWRA's website at:
<http://www.mwra.com/comsupport/waterconservationmain.htm>.

MWRA maintains on-going "on-call" contracts with leak detection firms that communities can simply access with repayment at cost during the following fiscal year. This avoids the need for local bidding, procurement and contractual efforts.