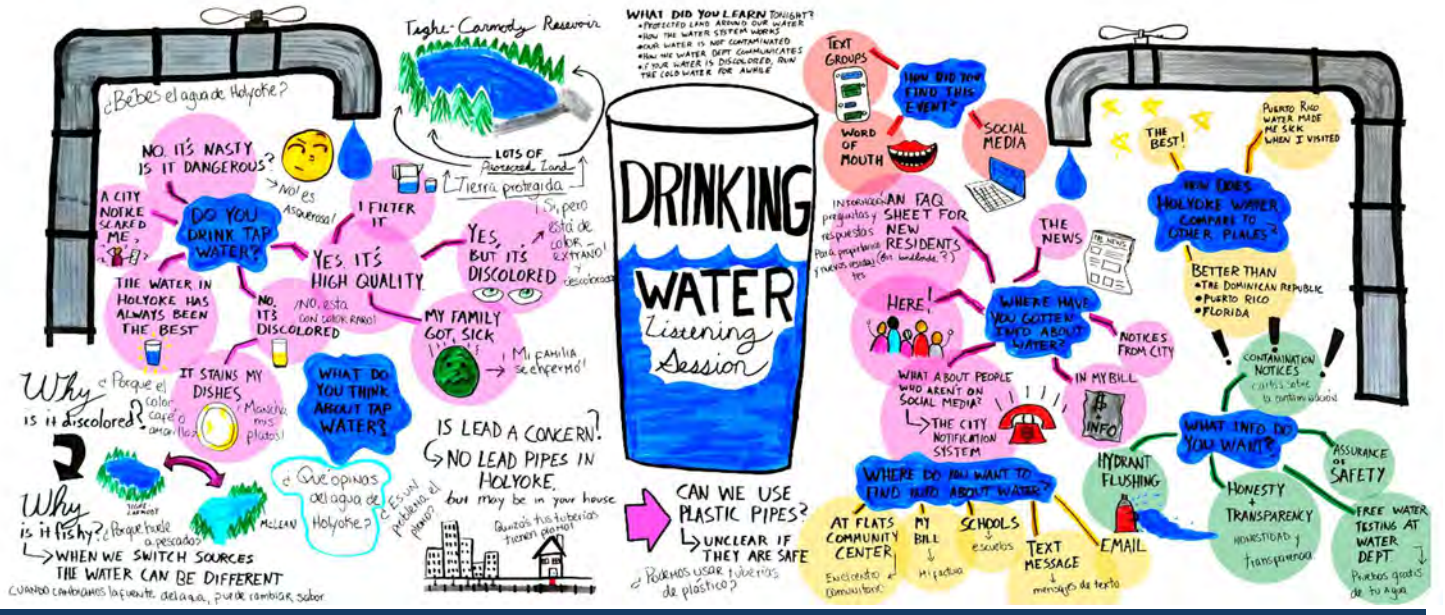


Community Engagement

Overview & findings

Overview

The importance of understanding

Understanding where drinking water comes from — whether a nearby reservoir or an underground aquifer — helps people appreciate why protecting that source matters. At the same time, insights around drinking water operations and systems can elicit more active support for the work of bringing clean water to the tap and ensuring human health and well-being. This is true across the spectrum, from local decision makers who allocate budgets and set policy, to businesses reliant on water for their products, to a family who turns to the tap for drinking, cooking, and washing.

In the Pioneer Valley, work to date indicates that there is a large gap in drinking water literacy. Not only do people typically not understand the source of supply, but they have little awareness of the tremendous work it takes municipal water departments to protect sources and maintain treatment and distribution systems and associated infrastructure. As a result, drinking water operators often struggle under serious financial constraints, which limit capacities in staffing and proper asset management. When it comes to private well-owners, there seems to be a wider range of understanding. Some well owners report regularly testing their water while others do not and are unaware that they are responsible for ensuring the quality of their supply.

Existing communications between municipal drinking water operators and customers is mostly limited to required messaging from EPA - MassDEP – the annual consumer confidence reports and public

notifications when there are water quality issues. Drinking water operators are focused on the technical work of delivering clean water to the tap and typically have little capacity to pursue greater engagement with their communities. Boards of health and health agents are also greatly constrained in engaging with private well owners given the wide range of duties they must perform.

When drinking water does come to the public eye, it is usually based on system failures with main breaks or contamination events. These events can be alarming, and the complexities involved in responding can lead to mistrust for water supply. Several people in the region have mentioned that the difficulty of such events gets compounded by rumor and negative social media chatter.

Drinking water is a shared resource and it requires the care and support of the entire community. There is much needed dialogue and relationship building between public water suppliers (who doggedly work each day with the pressures of shrinking resources to bring clean water to local taps) and communities (where there is very limited understanding about this heroic struggle).

Greater understanding on both sides is essential. This includes relating the epic story of water: Where does our water come from, what is the process for bringing clean water to our tap, and what are the challenges? At the same time, this includes hearing what the issues are for local residents and businesses. Why is there mistrust about drinking water, what might be helpful in moving toward greater confidence?

This chapter seeks to lay a pathway to advancing learning and understanding about drinking water, building trust, reaching all audiences, and increasing capacities for municipal operators and boards of health. It draws from 6 community learning and listening sessions (Belchertown, Chester, Chicopee, Holyoke, Ware, and West Springfield), 8 community of practice roundtables with drinking water operators, a boards of health survey, one-on-one interviews with 26 municipal water suppliers, interviews with several businesses, and more than a decade of PVPC work on drinking water issues in the region, from facilitating the Barnes Aquifer Protection Advisory Committee to assisting with Water Management Act permitting.

Findings

Trusting water supply

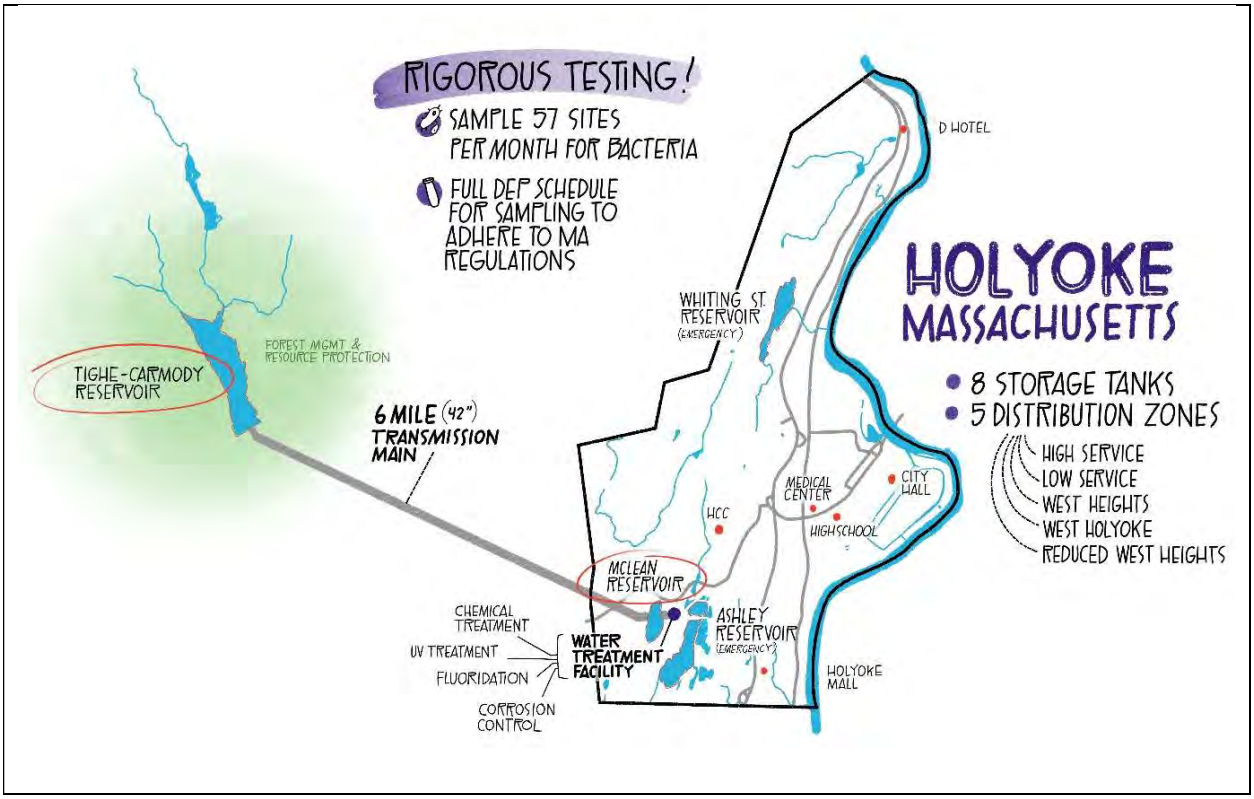
- Across all learning and listening sessions, residents expressed a shared desire for officials to share "the truth" without using overly technical jargon. Residents want to understand exactly what is being tested, why their water might look or taste a certain way, and what is being done to fix it. (*Action 1*)
- Drinking water operators note that the drinking water notifications they must issue are loaded with technical and frightening language that can also be confusing. Some operators sought to adjust language to provide better local context for the notifications but have been told to remove such wording by regulators. As a result, such notifications typically prompt a flood of calls from anxious customers and require time and energy from water suppliers to respond appropriately. Public anxiety around recent notifications (primarily lead and PFAS) was a constant across listening sessions in the region though some suppliers certified lines as lead-free or samples showing no or only trace PFAS levels. (*Action 1*)
- Discoloration of water, smell, and taste highly impact sense of water quality no matter that water may meet all legal safety standards. In two of the community learning and listening sessions, people talked about water staining dishes and laundry, and in every session, participants discussed how issues like chlorine taste, mineral odors, or brown discoloration (often from iron or manganese) drive them to buy bottled water even though tap water might be technically safe. (*"Other considerations" - Action 1*)
- Drinking water operators in at least two communities noted that in the aftermath of serious contamination events, recovery of trust takes a long time. Speaking to this, one operator commented, "When things go bad, it is hard to come back from that." Even after investments have been made to address a problem, lack of trust among water customers persists. In part, this may be due to defensive positions taken by municipal officials in response to the intense upset among residents. It is not clear whether municipalities feared for legal exposure in these cases, but examining the value of such defensive responses and finding approaches that avoid ruptures in trust may be worthwhile. (*"Other considerations" - Action 1*)
- The current approach to messaging on water use restriction due to drought is confusing and creates a significant cognitive disconnect for both water suppliers (when triggers for such messaging, like flow levels in a river are dislocated from wells in another sub-watershed) and for the public (when it is either raining or nearby neighbors have no restrictions whatsoever).
  (*Action 2*)

Reaching all people

- Messaging is not giving people what they need. Many do not know where their water comes from, who is responsible for clean water, and the extent of regulation around tap water. Asked about the value of existing messaging about the drinking water system and water quality, learning and listening session participants agreed that the annual Consumer Confidence Reports are too complicated to understand. Several participants recommended ways of making it easier to comprehend the water quality reporting in particular with one suggestion being an A to F grading system. (*Action 3*)
- Learning and listening sessions conducted for this project demonstrated the tremendous value of direct communication about water supply with customers and private well owners. Many attendees expressed gratitude for being able to learn about their drinking water and the associated challenges

and they engaged actively to share perceptions and needs. Several sessions ended with attendees applauding. (*Action 4*)

- At the Holyoke learning and listening session, it became clear that there are important cultural perspectives related to water that should be accounted for in communications and engagement. Those of Puerto Rican and Dominican heritage, for example, talked about their experiences with drinking water and the ongoing distrust they hold. At the beginning of the Holyoke learning and listening session, for example, many participants described long-standing habits of avoiding tap water. After hearing a presentation from the City's water superintendent about the municipal drinking water system, some expressed surprise that the water was sourced from a highly protected reservoir in Southampton. They had believed that drinking water came from the City's canals. (*Action 4*)
- Residents in all communities noted that current communication methods often fail to reach everyone. This is tied to both social equity gaps (where communications are not reaching non-English speakers and renters), and the digital divide (where some residents, particularly seniors, may not use or do not have internet and social media access). (*Action 5*)



Illustrations at the community learning and listening sessions, like the one above for Holyoke's municipal supply, promote understanding about drinking water sources, treatment, and distribution.

Capacity

- While water suppliers have incredible stories, many are not necessarily skilled in communications and outreach and could benefit from coaching in adding power to the story of bringing clean water to the tap. In the learning and listening sessions, the material for these stories and the draw for residents was evident. (*Action 6*)
- Several drinking water suppliers report that there is limited understanding among decision makers of what it takes to run a drinking water operation. The work tends to happen in unseen ways so elicits little political support for raising rates and securing adequate funding for drinking water. The resulting deferred maintenance leaves suppliers in a reactive state, responding to urgencies rather than being able to invest time in asset management and capital improvement plan implementation. (*Action 6*)
- Smaller drinking water operators are greatly overburdened in all parts of their work so much so that finding time for customized communications with meaningful information for customers is very difficult. This is due in part to a major crisis of aging operators and young people not coming into the profession. (*Action 7*)
- Boards of health are seriously constrained in their ability to provide oversight on permitting and record keeping on private wells, as well as getting information out to private well owners on best practices. For the Belchertown learning and listening session, Director of Public Health for the Quabbin Health District Andrea Crete said she has worked with many well owners who have never tested their water. Private well owners need to better understand their personal responsibility in keeping their water safe and the need to regularly test for certain parameters, depending on where they live, she noted. (*Action 8*)
- Surface water supplies/reservoirs are highly protected from land uses with large tracts of conserved surrounding forest lands. In contrast, primary recharge areas for groundwater wells are typically developed with residential and commercial uses. Because these "underground reservoirs" are invisible, few living and working in these areas understand just how vulnerable these sources can be. (*Action 9*)

Workforce Development

Nearly every municipal water operator spoke to issues of workforce during one-on-one conversations, and at the community of practice roundtables. Issues stem from:

- lack of understanding about the need for competitive wages to attract and retain qualified personnel, and
- many current professionals nearing retirement and few young people knowing about the opportunities within the drinking water profession.

As a stop gap measure, several career drinking operators have been pulled out of retirement in their 70s and 80s to help keep systems running. This is especially true with the smaller operations in rural communities.

On the need for competitive wages, most operators report that ongoing conversations within their jurisdictions are producing mixed results. One operator talked about the oppositional response he regularly gets from decision makers. Another operator who was facing his retirement with no ability to attract successors to manage the system, reports that it took serious conversations about going with a private water company to finally rally decision makers. They moved to prioritize competitive salaries and then successfully attracted new qualified municipal water staff.

To elevate interest in the drinking water profession, there are a several programs currently:

- Springfield Water and Sewer Commission runs the "Pipeline Program," a work-based learning summer internship program for high school students in Springfield. Launched in 2023 in partnership with Springfield Public Schools, Veolia, and Massachusetts Water Works Association, the program provides a paid opportunity for area youth to gain job skills while serving their local community.
- MassDEP in collaboration with U-Mass Amherst runs the Water Professional Partnership Internship Program, which provides flexible internships at water utilities across Massachusetts, offering hands-on experience to students, recent graduates, and career changers.
- Springfield Technical Community College provides online certificate training courses to prepare students for careers in the drinking water industry. The course and books are free for any student enrolled at a community college in MA. STCC's Workforce Development Center has partnered with the Massachusetts Water Works Association and the Springfield Water and Sewer Commission since 2019 to offer the training.
- New England Water Environment Association (NEWEA) and New England Water Works Association (NEWWA) created the New England Work for Water Collaborative in January 2022 to address water workforce challenges. The collaborative is developing a strategic plan and roadmap to support and scale workforce recruitment efforts across the region, with committees being formed and funding already being solicited.
  (*Action 10*)

Actions

In the following pages are 10 actions that are responsive to the issues surfaced in the findings described above. Actions are organized under the following headings: trusting water supply, reaching all people, capacity, and work force. The intent here is to provide a solid starting point for building greater awareness, appreciation, and support for this most vital of resources across the region.

For all actions described within these pages, planning and implementation partners include local officials, regional planning agency staff, state agencies, particularly DEP and DCR, local land trusts, and watershed organizations. The mix of recommended partners – regional, local, state – is denoted with icons at the top of each action.

EPA and MassDEP - Respective Roles

While EPA sets the baseline national drinking water standards and rules under the Safe Drinking Water Act, MassDEP has "primacy" in Massachusetts and adapts EPA rules into state laws and enforces them directly.

So for several actions recommended below, it is important to understand where the limits of EPA requirements begin and end. Making changes to such requirements would be a difficult task. The actions recommended below are aimed more at refining or adjusting guidelines and approaches to meeting those requirements as a key way to enhance understanding about drinking water.



Drinking water suppliers from across the region joined in a series of eight community of practice roundtable meetings to discuss key issues and share insights and approaches to practice.

Trusting water supply

Action 1. Determine whether and how required public notifications can be supportive of ongoing trust building



Existing conditions

Public notification requirements ensure that drinking water consumers will know if there is a problem with their drinking water. Public drinking water operators are required to notify the people who drink their water if any of the following occur:

- the level of contaminant in the water exceeds standards
- there is a waterborne disease outbreak, or any other situation that may pose a risk to public health
- the water system fails to test its water as required, or
- if the system has a variance or exemption from the regulations

MassDEP's Drinking Water Regulations, 310 CMR 22.16, contains the requirements and MassDEP has notification templates to be used depending on the violation.[1] Public water systems serving a large proportion of non-English speaking consumers are also required to include information in the notice in languages other than English.

Acknowledging the critical importance of notifications, municipal drinking water operators in the region say that the required template language can be difficult for most people to understand and scary given the way information is sequenced, causing alarm among the public and contributing to the erosion of trust in public water. Operators point to the lead service line letters that all municipal drinking water operators had to send in 2024 under the Revised Lead and Copper Rule as a key example.[2] The letter has confusing opening lines and information seems out of sequence. The table below compares language from the opening paragraph of a required template letter (on the left) and suggested modification for ease of understanding (on the right).

Required language	What would have been easier to understand
Drinking Water systems are now required to inventory all water service line materials and identify any water service line containing lead or lead materials. Our most recent inventory has determined that a portion of or the entire water pipe (called a service line) that connects your building to the water main is of unknown material classification. Unknown means that the service line could be made of or contain lead.	Drinking Water suppliers are now required by EPA and MassDEP to check water service lines (pipes) and identify whether any of these pipes contain lead or lead materials. When we recently checked the water pipe to your building, we learned that the pipe may be made of or contain lead.

[1] https://www.mass.gov/lists/public-notification-forms-and-templates#tier-1-templates-

[2] The full template letter can be found at: LCRR Consumer Notification Template – Unknown Service Line

> What ought to come next in this letter is instruction on how to get the pipes checked, and what to do in the meantime. Instead, there is a link to an 11-minute video that starts by setting context for the inventory that water systems are required to do. This is followed by a paragraph on the health effects of lead. The information on how to get the pipes checked is 10 paragraphs down in the lower part of the second page.

Drinking water operators report that such letters induce many phone calls with staff having to respond to frightened customers who cannot decipher the notification's confusing language. Several operators have indicated that public relations is one of the greatest challenges of their jobs.

To help overcome the issues with public notifications, operators have suggested a number of approaches that could be helpful:

- Allow municipal drinking water operators to put their own language near the top of notices with required EPA and DEP language coming second. This can make it easier for the public to understand the issue, how to take action, and keep faith that their drinking water operators are working diligently to resolve the problem. Required language would then follow.
- *Follow up* notifications with Facebook posts and municipal "robo" calls to update people on progress toward a solution. This idea is based on a successful experience in West Springfield during a 2024 cross connection event where they used different types of follow-up communication as a way to overcome the initial upset among customers. In these follow-up notices, West Springfield Water included visual aids to help promote understanding. They report that they had a very positive response from the public.
- Inform people about the way they will hear about local drinking water issues and what water departments must go through with DEP and EPA. This proactive approach lays out a process that could help to reassure people that problems get attended to though it may be alarming at first.

It is important to recognize that these approaches may be difficult for smaller, capacity-constrained drinking water operators who can little afford the time to craft customized language and/or post to social media. More discussion and consideration of these limits is essential.

<u>How action will help resolve problems</u>

Taking a more straightforward and clear approach to communicating about drinking water issues will help to build public trust. As noted above, residents participating in the learning and listening sessions expressed a shared desire for officials to share "the truth" without using overly technical jargon. Residents want to understand exactly what is being tested, why their water might look or taste a certain way, and what is being done to fix it.

For drinking water operators, this action could translate to reduced call volumes and staff time spent explaining the confusing information in notifications.

<u>What action entails</u>

Consult with MassDEP to determine what flexibilities there may be in revising notification language (within EPA rules). Ideally notifications could be rewritten by a "plain language" professional to help bridge the gap between technical experts and general audiences. Someone skilled in plain language can

ensure notifications are accessible, transparent, and legally sound.[3] At the same time, explore whether there is a way for drinking operators with less capacity to get assistance, especially following notifications with updates on progress toward a solution.

Other considerations

To build trust even where drinking water meets all standards but may be distasteful for other reasons (brown discoloration, chlorine or mineral odors, etc.), it may make sense to offer a resource for customers to explore strategies. A corollary action here then could be to research whether there is a clearinghouse for testing that evaluates in-home filtration systems. If there is such a resource that gets shared, it is critically important to emphasize maintenance of filtration systems to prevent what could become other public health risks.

Another element worth considering is the nature of response by a drinking water supplier when there are serious violations. It seems that communication with customers through such difficult stretches is critical to long term trust. As noted above, drinking water operators in at least two communities noted that even after investments have been made to address a problem, lack of trust among water customers persists. In both cases it appears that the response to public concern became somewhat adversarial. Given the eventuality of other such future events, it seems worthwhile to conduct a case study or two to ascertain potential alternative response pathways that could have produced better outcomes relative to public trust.

[3] This action is in keeping with Governor Healy's Executive Order No. 615: Promoting Access to Government Services and Information by Identifying and Minimizing Language Access Barriers

Action 2: Investigate approaches to improving drought messaging in the region



Existing conditions

For its monthly meetings, the Massachusetts Drought Management Task Force (DMTF) brings together state, federal, and public health officials to assess dry conditions, coordinate situational awareness, and to advise the state on drought-level declarations and water conservation responses. To make its assessment, the Task Force analyzes six localized drought indices (precipitation, streamflow, groundwater, lakes and impoundments, wildfire danger/soil moisture, and evapotranspiration), shares on-the-ground reports regarding how the dry conditions may be affecting agriculture, local ecosystems, and public water supplies across the state's different regions. If warranted the Task Force recommends specific drought levels by region (Level 1 – Mild Drought; Level 2 – Significant Drought; Level 3 – Critical Drought; and Level 4 – Emergency Drought) to the Secretary of Energy and Environmental Affairs, who then makes the official state declaration.

When a drought is called, drinking water operators have requirements that vary depending on whether they operate their system under a permit or registration.[4] Some operators drawing from large reservoirs while technically not exempt from requirements do not issue mandatory water restrictions to customers. These requirements include restricting non-essential outdoor watering, and providing water conservation tips to the public. Private well owners have no requirements though MassEEA works with boards of health to encourage water conservation.

MassEEA has three videos, and a number of good template documents (for social media) that drinking water operators can customize for local outreach. See: https://www.mass.gov/info-details/water-resources-toolkit-library-of-outreach-materials

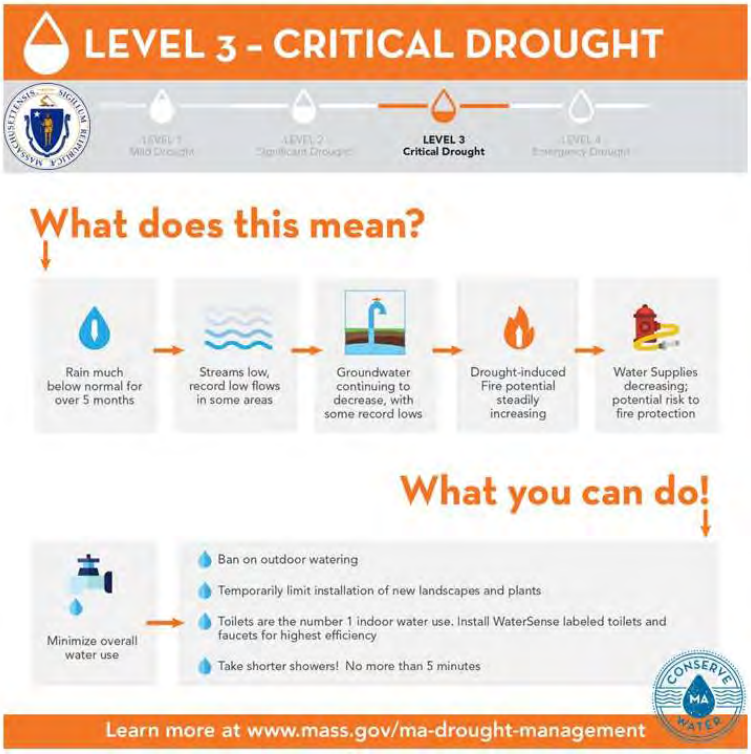
Over the past 5 years (2021–2026), local non-essential outdoor watering restrictions in Western Massachusetts have been required during 3 multi-month drought events: in the summers of 2022, 2024, and currently 2025–2026.

From conversations with water operators and several residents, the issues around drought and messaging are a clear sore point. Both refer to the gap in reasoning between the presented drought and scarcity information and their own lived experience.

- For many water operators drawing from groundwater sources, the trigger for drought and water use restrictions typically comes from a river gauge that is geographically and hydrologically dislocated from their wells. They note that often when a drought is called, their wells show no change in levels and the required messaging on scarcity is out of synch with their reality. At the same time, calling for water use restrictions translates to revenue implications. This puts the operator in the difficult

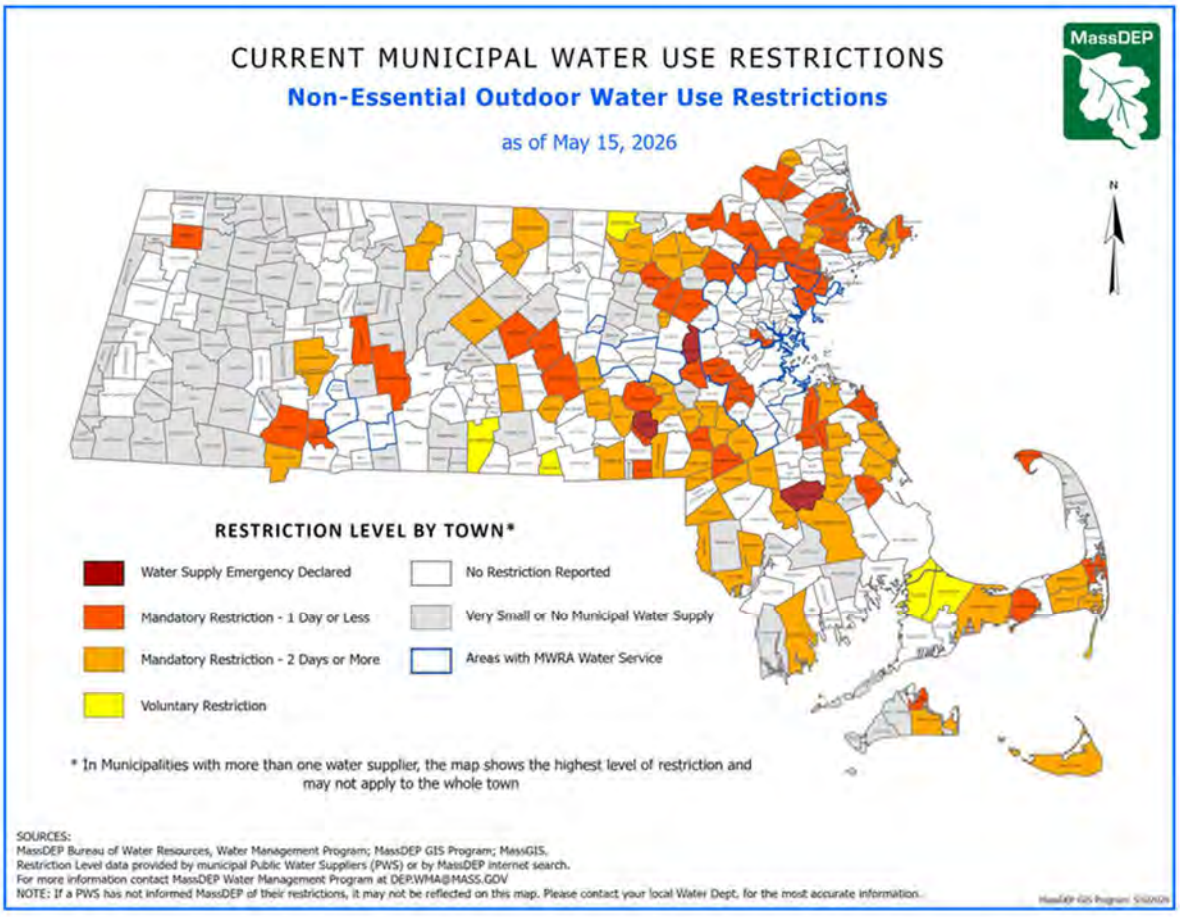
[4] MassDEP is working diligently toward creating better alignment between requirements on restricting non-essential outdoor watering for those suppliers operating drinking water systems under permits and registrations.

position of messaging about scarcity they cannot directly observe in their own system and that also has impact on the funding to operate their system.



The State has some useful information when droughts are called. For more resources, see: https://www.mass.gov/info-details/drought-status

- With residential water users, the cognitive disconnect can be even more visceral. Drinking water operators report difficulty in attaining compliance with non-essential outdoor watering restrictions in some neighborhoods. Messaging about drought when there has been a period of rain pits an abstract, invisible reality against people's direct sensory experience. Compounding this issue is that restrictions are implemented in a patchwork across a geography, whereby one town may have restrictions and another may not. This can even occur within a municipality where residents are served by two different suppliers. In South Hadley, for example, part of the community is served by District 1, which receives supply from the MWRA-Quabbin Reservoir and rarely issues non-essential outdoor watering restrictions, while others are served by District 2, which draws from a local well and has had to issue multiple such restrictions in the past 5 years. Reportedly, the confusion is most apparent where the boundaries of these two service areas meet and neighbors on one side of the street must comply with restrictions while neighbors on the other side of the street have no restrictions.



Restrictions vary depending on level of drought in a given region, but also whether a supplier operates under a permit or registration. This presents a somewhat patchwork approach to drought messaging. When the Connecticut River Region is in Level 3 Critical Drought, only parts of the population receive messages. Image source: https://www.mass.gov/info-details/outdoor-water-use-restrictions- for-cities-towns-and-golf-courses#current-city-and-town-water-restrictions

How action will help resolve problems

Drought is a serious issue and an event that will likely occur with greater frequency given the growing extremes with climate change. The current regulatory levers to require messaging of water suppliers are limited, producing a patchwork of restrictions across a geography.

This action involves exploring how drought messaging might evolve so that news of drought can be taken more seriously. The aim is to facilitate communication *across a geography* (in this case the Connecticut River Region) that includes drinking water suppliers, boards of health, public water customers, and private well users with the objectives of fostering understanding, water conservation, and trust.

What action entails

Explore the potential for improved drought messaging in the region through consultation with drinking water suppliers, boards of health, MA EEA, and MassDEP. An early element of this work ought to include focus groups that engage a range of water users who draw from both public and private sources.

Focus group sessions could test a variety of messaging approaches to discern which are most effective. Overcoming cognitive disconnects and identifying what will produce more durable commitments from water users are key. One idea here is to more actively show where data collection occurs and how these are all brought together in decision making around drought for the Connecticut River Region. There is important methodology and data from the Drought Management Task Force, the local regional elements of which ought to be highlighted, perhaps through an interactive graphic on-line application.

One approach that could be explored is regional messaging though this may not be a suitable for all drinking water operators. In exploring this idea, PVPC's messaging on stormwater for MS4 permitted communities in the region may provide a useful framework.[5] This work has been supported through a memorandum of agreement (MOA) and modest annual dues from participants.

For this work to improve drought messaging in the region, the Massachusetts Drought Resiliency and Water Efficiency Grant Program could potentially support initial steps to developing messaging and piloting programs to demonstrate worth.

[5] Since 2008, PVPC has coordinated a regional approach to messaging on stormwater for MS4 permitted communities. PVPC assists with public outreach to the MS4 permit required audiences (residential, commercial/business/institutional, developers (construction), and industrial) on the required topics each year and then submits an annual report to MassDEP and EPA on behalf of participating municipalities. Messaging has involved such means as flyers, brochures, door hangers, pledges, videos, zip-code targeted social media, and radio interviews and ad spots. The central "hub," where people are directed for more information is the Think Blue Connecticut River website: https://thinkblueconnecticutriver.org/

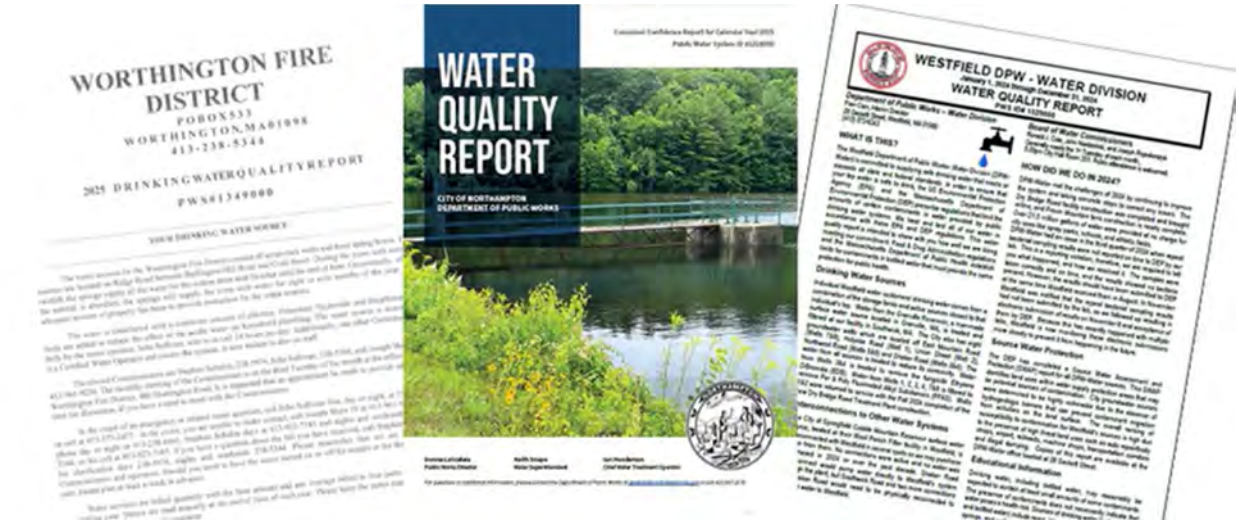
Reaching all people

Action 3: Explore how much consumer confidence reports can be simplified or supplemented for ease of comprehension



Existing conditions

Consumer confidence reports are the primary means for drinking water suppliers to inform their communities about the sources and quality of drinking water supply. The report is issued once each year through mail or direct delivery to each water customer, and drinking water operators must make a good faith effort to reach consumers, such as renters, who do not receive water bills. While MassDEP offers a report template for use by operators, the readability of reports can still vary greatly by community, often depending on the capacities of the drinking water operation. Some water suppliers outsource report production with firms that take the local water quality data and generate a report customized for that operation.



The look and readability of reports can vary greatly from one community to the next.

At the community learning and listening sessions, some expressed appreciation for these reports (and seemed to have an ability to interpret information), but many participants said these reports are dense and difficult to understand. One participant suggested simplifying the reports based on an A to F grading system in order to help make it easier to understand water quality data.

Drinking water operators are now preparing to comply with new Consumer Confidence Report Rule Revisions issued by EPA, which must be implemented with reports issued July 1, 2027. Changes include a requirement to issue the report twice each year if an operator is serving 10,000 or more people, the inclusion of a summary at the top of the report, and greater access for translation. While there is some nod to the need to use "plain language," this takes experts who have such skills in revising technical language for non-technical readers.

How action will help resolve problems

Given the complexity of technical information inherent to these reports, this action will explore how content can be made more understandable. Use of diagrams to explain the system and "plain language" will be key to this objective. Such elements could then be pulled for use in water bills and other messaging to create more "bite-size" ways to present important information.

What action entails

Begin by examining the existing MassDEP CCR template and perhaps a recent CCR report in the region and make recommendations on simplifying and making information more accessible. In this process, it is important to understand EPA requirements. Then work with MassDEP staff to determine what recommendations are possible given required reporting constraints. This work ought to engage with a plain language expert, an advisory group of drinking water customers, and graphic artist to ensure this important drinking water communication is understandable to all.

Action 4: Conduct additional listening sessions with community-based organizations



Existing conditions

Drinking water is one of the most vital aspects to life and critical to the well-being of our local economies yet there are few people in the region – outside drinking water operators – who really understand sources of supply and what it takes to maintain a treatment and distribution system in good working order. The ongoing conversations around high costs, constrained budgets, and challenges related to drinking water rarely rise to the surface for the public. At the same time, existing required communications (as noted above) seem to do little to enhance public understanding. So it is that the work of drinking water goes largely unseen and thus out of mind. It is typically only when things go bad, that drinking water comes into focus, and these are typically the most difficult times for drinking water operators to communicate with their customers.

How action will help resolve problems

Ongoing relationship building is essential. It can evolve a more informed community that becomes aware, enables appreciation, and even possibly move people to action in providing support for their drinking water supplies. Relationship building can also help to overcome issues of trust during difficult times.

The direct communication through the six community learning and listening sessions held in this initial planning phase seem to have been an invaluable move in the right direction. Hosted by trusted community-based organizations, these events connected people with the human beings who are hard at work to safeguard water supply. This direct communication approach enabled people to understand through accessible programming, both key information about the source of supply and associated challenges. It also provided an opportunity for people to express concerns and get questions answered. In these meetings water superintendents emphasized their availability at any time to respond to concerns, reassuring participants their deep care for what they do.

What action entails

Given the success of the listening sessions in such communities as West Springfield, Holyoke, Belchertown, Ware, and others, this action recommends additional listening sessions in these and other communities. Though there was reluctance to go forward in at least two of the communities where listening sessions were held, concerns were overcome in the end by a great team effort and productive and positive outcomes for both of these sessions.

This action draws on the good models established for drinking water learning and listening sessions in this first phase of planning. These include: partnering with community-based organizations (with contracts that include good budgets and scopes of work); thorough team pre planning to develop annotated agendas, presentations (templates available along with water system diagrams), and strategies to address specific issues that could arise (list of ground rules for everyone); that leads to accessible programming for learning and listening.

Integral to this action is exploring the cultural perceptions of water in sessions where there is a diversity of participants. That understanding can then translate to how these cultural perceptions can be more effectively addressed in ongoing community engagement. Warm up questions for participants that help to shine a light on these perceptions early on in the learning and listening session could be especially helpful in ensuring the conversation can fully explore these points of view.



Hosted by One Holyoke, the Holyoke listening session drew 36 people and involved a presentation by Drinking Water Superintendent Matt Smith, working group exercises to reflect on experiences, and large group discussion. The session has proved invaluable to the community with One Holyoke Director Nayroby Rosa saying people are asking for more similar sessions, and Smith inspired to take measures to engage more actively with his drinking water customers.

Action 5: Use a wider variety of media to get messages out to people about drinking water



Existing conditions

Residents in all listening and learning session communities noted that current communication methods often fail to reach everyone. At the same time, drinking water suppliers face a persistent challenge in ensuring that critical information reaches every resident, regardless of language, housing status, or technological access.

- Non-English speakers are challenged when materials are not produced in their language, leaving them at a loss for understanding important drinking water information.
- Renters often do not receive communications as drinking water operations sometimes have available only water billing mailing addresses in targeting outreach.
- The digital divide adds to these social equity challenges for residents who lack reliable internet access or the digital literacy to navigate online platforms. Seniors are disproportionately affected, as some did not grow up with technology and may find digital tools unfamiliar, inaccessible, or financially out of reach.

How action will help resolve problems

This action will help to bridge communications gaps through a thoughtful process that identifies a more effective multi-channel approach that pairs digital outreach with traditional methods — such as printed flyers, phone trees, community liaisons, and partnerships with trusted local community based organizations.

What action entails

Develop and implement a multi-channel communications plan that integrates both digital and traditional outreach strategies to reach all residents equitably. Steps to developing this plan ought to include:

- An inventory of existing communication channels and key communities to engage in communications (including non-English speakers, renters, seniors, and low-income households)
- A gap analysis that examines reach of these channels and who they are / are not reaching
- A refined communications checklist that fills identified gaps for when communications are issued. This could include developing a diverse toolkit of appropriate methods — such as multilingual printed materials, and partnerships with trusted community-based organizations like senior centers, libraries, faith communities, and social service agencies.

The idea is to ensure that critical information is consistently disseminated across all segments of the community. Where there is capacity, the plan ought to designate responsible parties, set clear timelines, and include mechanisms for ongoing evaluation to measure whether communications are successfully reaching across the community.

Capacity

Action 6: Enable municipal drinking water operators in more effective communications with their communities and decision makers



Existing conditions

Municipal water suppliers in the region face significant institutional constraints that limit their ability to communicate beyond what MassDEP requires. Most operate with lean staffing that is focused largely on treatment, distribution, and compliance, leaving little capacity for proactive outreach or sustained engagement with their communities, including municipal officials who influence budgeting and capital planning.

This communications gap has consequences. With elected officials and the public lacking a clear understanding of water system needs — including aging infrastructure, source water vulnerabilities, and long-term capital requirements — drinking water tends to be treated as a background utility rather than a strategic community asset. Funding decisions get made without full context, investments get deferred, and the ability to address the backlog becomes more difficult because the groundwork of public understanding remains weak.

At the same time, it is critical to recognize that given the work they do, municipal drinking water operators have exceptionally engaging stories to tell. There is the fundamental challenge of both managing and protecting a drinking water source and then ensuring the reliable delivery of clean water to the tap. There is the quiet crisis facing most water systems today: outdated infrastructure, climate change impacts, and strained resources long taken for granted. And there is the deep commitment and pride that operators have for their systems — most spending their careers maintaining something the public never sees or thanks them for. (One water supplier in the region even has generational ties to the supply he oversees, his great grandfather having constructed an early reservoir in his system.)

How action will help resolve problems

Through the initial phase of work, it is evident that support for drinking water operators on engagement can help reduce this communications gap. Learning and listening sessions demonstrated that when operators present drinking water information directly to residents, the response is strong — people are genuinely interested and eager to understand their water supply. At the same time, one-on-one interviews with operators revealed the depth of institutional constraints they face and reinforced how drinking water needs to be elevated as a strategic community asset rather than a taken-for-granted utility.

Building on those findings, this effort takes a three-pronged approach to improving communication between water suppliers, their communities, and decision makers.

What action entails

Part A - involves providing storytelling coaching to drinking water operators, followed by videotaping and in-person events designed to share their stories across a variety of communication channels — from community meetings and local media to municipal websites and social platforms. This support will equip operators with the confidence and skills to pull back the curtain on their remarkable and largely hidden world, translating the realities of water supply into narratives that are accessible, compelling, and personal. Such stories will deepen public understanding of where water comes from, and what it takes to keep it clean and reliable.

Part B - involves providing support for drinking water operators in organizing and conducting municipal roundtable events so that all boards and officials in a community understand the value of drinking water resources and the greatest challenges facing their system. Meetings might be held as a two-part series, beginning with a learning and listening session to gauge where the greatest gaps in understanding exist and what concerns are most pressing among local decision makers. The second session could then directly address those gaps, presenting targeted information and making the case for specific local drinking water investments and priorities. Ongoing meetings, perhaps held annually, could provide updates on system conditions, capital needs, and progress toward goals — keeping drinking water visible on the municipal agenda and sustaining informed leadership toward meaningful and long-term investment.

Part C – involves collaborating with New England Water Works Association and Massachusetts Rural Water Association to understand what may be available to train those serving on local drinking water boards.[6] What does it take to be an informed and effective water commissioner or board member when it comes to drinking water? The Massachusetts Association of Conservation Commissions and the Citizens Planner Training Collaborative offer trainings for members serving on other local boards that are good models from which to draw for those working on drinking water. MACC even has a fundamentals certificate training. See: https://www.maccweb.org/page/Fundamentals_Certificate_Program

Part D - involves preparing a summary report on the local drinking water system (including challenges and strategies for overcoming) that is integrated into all local planning documents (hazard mitigation, comprehensive plans, and open space plans). Such plans shape land use, capital spending, and community priorities and aligning drinking water with broader community goals is essential. Water supply is deeply connected to growth and development, open space protection, climate resilience, and emergency preparedness and integrating water into local planning documents makes those connections explicit and actionable. At the same time, it can help to elevate drinking water to a policy priority. When water supply challenges appear alongside other recognized community priorities in official planning documents, it can be used to signal decision makers — and state and federal funders — that the community takes those challenges seriously.

[6] New England Water Works Association does offer a Basic Training for Drinking Water Board Members/Commissioners (see: https://www.newwa.org/training-certifications/free-online-learning-courses/), and Massachusetts Rural Water Association is in process of developing a training series.

Other considerations

Engaging with the region's state legislative delegation on drinking water is critically important, since many of the challenges require investments that far exceed what most municipalities can raise through rates and local bonding alone. State funding — through programs like the Clean Water Trust State Revolving Funds, earmarks, and targeted appropriations — is essential to bridging that gap. Yet state representatives and senators have so many issues competing for their attention that drinking water tends to compete poorly against more visible priorities. Through direct engagement on drinking water, legislators can become powerful advocates for state-level funding, policy changes, and regulatory support that can make a decisive difference.

Engaging on a regional basis can amplify that impact considerably. When multiple communities and suppliers speak with a coordinated message to their shared legislative delegation –- as PVPC has with communities working to abate combined sewer flows –- it signals a systemic problem rather than an isolated one — making it more likely to drive meaningful action. Timing also matters: state budgets, bond bills, and legislative priorities shift regularly, and communities that have built strong relationships with their delegation on key issues are far better positioned to take advantage of funding opportunities when they arise.

Action 7: Pilot a youth based drinking water ambassadors' program to share in the local story of water at community-based events



Existing conditions

There are parts of the developing world where access to water is not guaranteed, where droughts can deplete sources or family members must carry heavy containers home from communal village wells or springs. Few in the Pioneer Valley region, however, understand and appreciate the sources and systems that deliver clean water to our taps. Turning the tap is relatively effortless and many use it without a second thought, from showers to brushing teeth, from watering lawns to washing cars.

Drinking water operators are stretched thin across all aspects of their work, making it difficult to prioritize the community engagement activities that build public understanding and support. This kind of outreach also tends to fall outside their core professional expertise.

How action will help resolve problems

Since drinking water is fundamentally a community resource, drawing other community members into the effort of fostering understanding and appreciation can exponentially increase reach. And there are few more powerful messengers than young people who can give voice to their care about issues within their own families and across their communities.

A program focused on youth will help toward resolution of the problems in two ways. First, it will create a corps of ambassadors for drinking water operators who can inform conversations at the dinner table, across other social circles, and at community events. And at the same time, it equips youth with knowledge about and appreciation for drinking water, providing agency in first steps toward meaningful action, something that youth can grow if their care around drinking water deepens or even possibly transpose to other issues that engage their interests.

What action entails

This action involves working in 2 municipalities to pilot a youth-based drinking water ambassadors program. Recommended partners include drinking water operators, schools, and community-based organizations to be supported programmatically by key regional actors. Through a four-part series, students receive training and in return agree to table at 2 to 3 annual street/festival events within their communities to share in the local story of water. To ensure follow-through from training to tabling, it may be useful to identify and work with interested high school students who also have community service requirements through such programs as Scouting or National Honors Society.

Four training sessions will enable students to learn about municipal drinking water supply and in turn share their new-found knowledge and appreciation with their community:

- Explore cultural perspectives on water in the community, working with local community-based organizations who bring in people to tell these stories at the trainings. This could include stories from other parts of the world, but also local indigenous ways of knowing about water.

- Field trips to tour public drinking water treatment operations and drinking water source areas (reservoirs or well fields)
- Water tasting to build appreciation for the taste of water where students will explore… What are the tastes of water? Should good water taste like anything? What is the taste of good water? This will also include some inquiry into the differences between municipal tap water and plastic bottled water and quality considerations.
- Ways to take what they've learned to others (how to be an ambassador) and coordinating who will cover which events.

For the 2 to 3 street/festival events, project partners will need to provide students with a good set up. Holyoke is currently developing a mobile water trailer to use at events. Useful materials for a set up could include the following:

- Maps and illustrations (source to tap diagram) to help students in talking about municipal supply
- Instructions on how to run your own water tasting
- Visual aid comparing cost and quality of tap water versus plastic bottled water
- Swag (perhaps quality water bottles inscribed with "love your water" or "without clean water we are nothing" or "water is everything")
- 2 printed roller banners and a tent (color of which matches banners)

Other considerations

There are a variety of ways to connect youth to learning about drinking water. While this action focuses on opportunities related to annual street fairs and events, EPA has resources for teachers at: https://www.epa.gov/ground-water-and-drinking-water/drinking-water-activities-students-and-teachers. Healing Hands International (a Christian based organization) also promotes an annual Walk for Water event that highlights the world-wide average 4-mile walk for water and raises funds for the global water crisis. See: https://www.hhi.org/walk4water/ .

Action 8: Enable boards of health to get meaningful information out to private well owners



Existing conditions

In Massachusetts, local Boards of Health (BOH) have primary jurisdiction over private wells.[7] The local BOH is empowered to adopt and enforce local well regulations, pursuant to its authority under Massachusetts General Laws, Chapter 111, section 31, issue permits for well construction and closure, mandate water quality testing by certified labs, and ensure wells maintain safe distances from contamination sources like septic systems.

Through surveys and interviews, board of health members and agents indicate they are already constrained in their ability to provide oversight on permitting and record keeping on private wells. As a result, there is a large gap on getting information out to private well owners about their personal responsibility in keeping their water source safe. While some private well owners do understand how best to ensure their water remains safe, Director of Public Health for the Quabbin Health District Andrea Crete said she has worked with many well owners who have never tested their water.

How action will help resolve problems

Given that private well owners are responsible for the safety of their own drinking water, it is essential for them to understand that a neglected well can become contaminated with bacteria, other harmful substances, or even naturally occurring elements such as arsenic and radium. This can put their entire household's health at risk, particularly children, pregnant women, and immunocompromised individuals.

Best practices around protecting and maintaining well heads and water sources, and what to test for and how to read results are fundamental to private well ownership. By helping advance understanding among private well owners, this action will help to reduce health risks, prevent costly repairs or remediation down the line, and possibly even avoid cross contamination events with neighboring wells.

What action entails

The Quabbin Health District has graciously offered to collaborate with PVPC in sharing expert public health insights and experience along with:

- Preparing key outreach tools for use by local BOH's in the region with private well owners, and
- Presenting to the Western MA Public Health Association on key issues for private wells.

[7] MGL Ch.111 s.122



There are important best practices for private well owners in keeping drinking water safe. Source: https://www.epa.gov/privatewells/learn-about-private-water-wells

Materials could include a set of fact sheets on private wells that are designed for mailing or posting on public health web sites with discrete elements that could be pulled for use on social media (where BOH have such capacity). Topics to include are:

- Getting information on your well, including identifying what type of well you have
- Testing water quality and understanding what to test for based on where you live
- Interpreting water quality results
- Resources for addressing private well issues that may arise

Other considerations

Bills filed and sent to study in the current legislative session (HB 900 and SB 585) seek to create greater equity for private well owners with state-wide standards and easier access to remediation funds. At the Chester learning and listening sessions, however, private well owners raised four main concerns about the legislation:

- It puts requirements on private wells for testing when owners feel they are caring for their water source well enough.
- What happens if testing shows that private well water is not safe to drink? Does a home then become condemned because it has no viable source of drinking water?
- What happens to home values in an area where water testing is showing problematic results? How would the state ensure enough money to help private well owners manage issues?
- One suggestion was to revise the bills so that it leads with creating a funding source to help private well owners while making testing optional.

There is clearly a lot more discussion needed to find the most productive approach to supporting safe drinking water for private well owners without creating undue burden.

Action 9: Identify and then implement effective strategies for homeowners and commercial property owners to comprehend the value of groundwater resources and the risk posed by certain land use activities



Existing conditions

Surface water reservoirs are tangible. People can see them — the large lake behind a dam, the watershed forest buffering its shores. This visibility drives robust policy responses. Municipalities and utilities routinely purchase or conserve thousands of acres of surrounding forestland as buffer zones, and restrict residential development, agriculture, and commercial uses within watershed boundaries. The protection is largely *intuitive* — if you can see the water and see the land draining into it, the connection between land use and water quality is obvious. A logging operation or a subdivision near a reservoir triggers immediate concern.

Groundwater is a fundamentally different kind of resource — and a far less protected one. Drinking water aquifers, recharge zones, and the slow underground movement of water are invisible, and what people cannot see, they rarely think to protect. This invisibility makes it difficult to connect everyday land uses — a new parking lot, a septic system, a fertilized lawn — to the water drawn from 200 feet below ground. And unlike a reservoir, which has a visible shoreline and watershed, a groundwater recharge zone typically encompasses a large and relatively ordinary-looking landscape with no visible indication of its critical relationship to the wells it feeds.

Residential and commercial uses located in groundwater recharge areas are permitted and then operated in ways that belie the significance of the resource that lies just below. Such uses compact soils and increase impervious surfaces, which reduces recharge. These uses also typically involve intensive management of lawns and roads that can introduce contaminants (road salts, petroleum products, pesticides, septic effluent) that percolate slowly downward, often remaining undetected until they reach wells years or even decades later.

How action will help resolve problems

This action sets a path toward ensuring long term protection of the region's groundwater sources. It seeks to shift understanding, but also behavior, one of the most difficult of actions within this plan. One hydrogeologist in the region points to Eastern Massachusetts as a cautionary tale: decades of inadequate stewardship have left groundwater sources contaminated, pushing entire communities into dependence on the Quabbin Reservoir. It is a story of failure to understand the value and need for greater protection of groundwater.

Making breakthroughs in understanding and behavior in communities that rely on groundwater would be of significant benefit for the region, especially now as experience and emerging science is indicating that groundwater may be more resilient to shifts in climate. Buffered by its location deep underground and its storage capacity, groundwater is less vulnerable to such events as short term drought, wildfire, and contamination (brought with downpour events with high velocity runoff or flooding or summer heat changes in water temperature/algae production).

What action entails

This action involves a Community Based Social Marketing (CBSM) approach, a framework developed by environmental psychologist Doug McKenzie-Mohr as a more effective alternative to traditional information-based campaigns.

As such this action has several elements:

- The process begins with identifying the specific behavior you want to change and then researching the barriers and benefits associated with it for a particular community. Surveys, focus groups, and direct observation are used to understand what actually drives and impedes the target behavior in that specific population. This diagnostic step is what separates CBSM from generic public awareness campaigns.
- From that research, practitioners select from a toolkit of behavior change strategies. These include commitment (getting people to make a small public pledge), social norms (showing people what their neighbors are already doing), prompts (visible reminders placed at the point of decision), incentives, removing practical barriers, and vivid communication that makes abstract issues feel personal and immediate. The key is that strategies are chosen based on what the research reveals about that community's specific barriers — not based on what feels intuitive to the program designer.[8]
- Finally, CBSM emphasizes piloting and evaluation. Before scaling a program, it is tested with a small segment of the community to measure whether behavior actually changes. This evidence-based cycle — diagnose, design, pilot, evaluate, scale — makes CBSM considerably more rigorous and effective than traditional awareness campaigns, which often generate knowledge without ever moving the needle on action. For issues like groundwater protection, where the behavior gap between understanding and action is wide, it is a particularly well-suited approach.

Changing behavior requires people to first understand what they're protecting and why it matters. In the CBSM process, it is critically important to use visuals that make the invisible visible (cross-section diagrams, local photography, water testing results) and to use hyper local stories (not abstract national statistics). This can include a clear, place-based story that names the aquifer, shows a map, and shares local data on depth to water table, recharge time, and the percentage of residents who drink from it.

For more information on CBSM, see: https://cbsm.com/

[8] MassDEP, DER, and DCR have explored the use and effectiveness of community based social marking to reduce summer outdoor water use in several communities across the state. Resources and analysis from this work may be helpful to this action recommended here. For more information, see: https://www.mass.gov/news/community-based-social-marketing-to-reduce-outdoor-water-use

Work force

Action 10: Pilot a program in local schools to seed and develop youth interest in water careers



Existing conditions

Work force issues for drinking water supply in the region are pressing. Water system operators consistently identified workforce issues as a top concern, driven by two main factors: uncompetitive wages that hinder recruitment and retention, and a wave of retirements with few younger workers entering the field. In some smaller, rural systems, retired operators in their 70s and 80s have been brought back as a stopgap measure.

To help the region and other communities with similar pressures across the state, there are several drinking water work force development programs in the region and the state focused on:

- providing internships with water utilities (Springfield Water and Sewer Commission, Springfield Public Schools, Veolia, Massachusetts Water Works Association and MassDEP),
- community college-level on-line certificate training programs to prepare for careers (Springfield Technical Community College, Massachusetts Water Works Association and the Springfield Water and Sewer Commission)

There is also attention to the issue of workforce through the newly created New England Work for Water Collaborative in January 2022, which is developing a strategic plan and roadmap to support and scale workforce recruitment efforts across the entire Northeast region.

How action will help resolve problems

This action will seed interest in water careers among youth, a sort of "first exposure," that builds water literacy and generates interest and connection to the possibilities of a profession in water. Programming will provide a bridge for interested youth to the opportunities for internships and certifications, possibly accelerating the success of these efforts in addressing the labor shortage in water operations.

What action entails

The action involves running a two-year pilot with one school system, working with youth at two levels, during 5th grade where required curriculum elements could tie well to introductory material on drinking water and high school where programming would enable youth to understand the possibilities of a water career, from forestry needs for reservoirs to operations within a treatment plant to all the technology applications used in protecting supply (drones, GIS, etc.). At both levels students would engage with content in the classroom and in the field. Learning would connect students with drinking water professionals and facilities in the region. Following initial coursework at the high school level, students showing special interest would

continue with a series of continued content (perhaps each quarter) providing additional engagement with drinking water professionals in the region and exposure to opportunities through MassDEP, Springfield Water and Sewer Commission and Springfield Technical Community College.

At Gateway Regional High School, Superintendent Matarazzo has expressed commitment to such a pilot and has already flagged courses within the high school curriculum that are supportive of a drinking water career that can be used to encourage students who come out of this early program exposure with interest. The overall aim would be for interested students to be supported through their high school experience so that they then have a good "on ramp" to taking the certification course offered by STCC. Toward the end of the two-year pilot period, evaluation of the program is essential and results then ought to be shared with other high schools in the region.

Other considerations

Mass Water Works Association has also noted that assistance to municipal operators in navigating the existing workforce development programs offered by the state would be helpful. They observe that while there is money available to support workforce training and internships, resource-strapped water utilities rarely have the time available to navigate the process.



Resources, such as this booklet, are available to help people learn more about careers in water. Source: www.educationandoutreach.com/product/careers-in-water/