



**WATER SUPPLY CITIZENS
ADVISORY COMMITTEE**
to the Mass. Water Resources Authority

485 Ware Road
Belchertown MA 01007
(413) 213-0454
fax: (413) 213-0537
email: info@wscac.org

WSCAC Virtual Meeting Minutes
Tuesday, February 11th, 2025

WSCAC Members in Attendance in Bold:

- **Christine Bennett**, MWRA
Advisory Board
- **William Copithorne**, Town of
Arlington
- Steven Daunais, Tata & Howard
- Gerald Eves, Trout Unlimited
- **Bill Fadden**, OARS
- Bill Kiley, BWSC
- **Paul Lauenstein**, Neponset (Chair)
- **Paul Rybicki**, Partially Supplied
Community
- **Martin Pillsbury**, MAPC
- **Janet Rothrock**, League of Women
Voters
- **Bill Merriam**, Framingham resident,
Foss reservoir abutter
- **Erin Bonney Casey**, Ipswich River
Watershed Association
- **Ralph Abele**, Charles River
Watershed Association
- Matt Brown, OARS
- **Warren Kimball**, Nashua River
Watershed Association

Non-Members in Attendance:

- **Stephen Estes-Smargiassi**, MWRA
- **Andreae Downs**, WAC
- **Lydia Olson**, Mass Rivers Alliance
- **Moussa Siri**, WSCAC Executive Director

I. Introduction (Moussa Siri, WSCAC)

Moussa thanked the attendees for coming, then introduced the agenda. He indicated that the meeting would be recorded for minutes' purposes. He also indicated that the quorum had been reached but asked Paul to double-check and start the meeting.

Moussa apologized for sending the minutes out late due to health issues and suggested that, in case members were unable to read the minutes, they postpone the vote on the minutes for the next meeting.

Moussa indicated that he would provide a briefing, followed by Andreae Downs from the Wastewater Advisory Committee (WAC), Christine Bennett from the MWRA Advisory Board, and finally Steve Estes-Smargiassi from the MWRA. Moussa added that after the briefings, attendees would be hearing from Steve about the history of MWRA water conservation efforts, and he urged the WSCAC Water Conservation Subcommittee to pay particular attention due to the importance of the topic to that subcommittee.

Moussa then passed it to Paul Lauenstein (WSCAC Chair) to lead the votes on the January 14 meeting minutes.

II. WSCAC Businesses

a. Roll Call and attendance Check (Paul Lauenstein, WSCAC Chair)

Paul Lauenstein took the roll call to check member attendance. While Paul was checking the attendance, Bill Merriam indicated that he couldn't open the meeting minutes. Paul suggested that Moussa save the minutes as a PDF and send them to Bill Merriam.

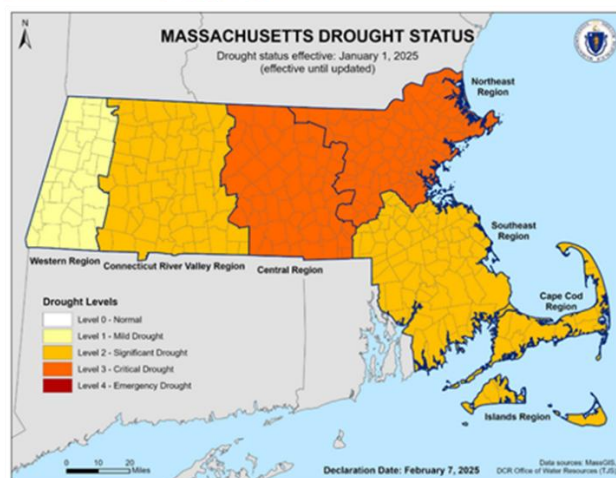
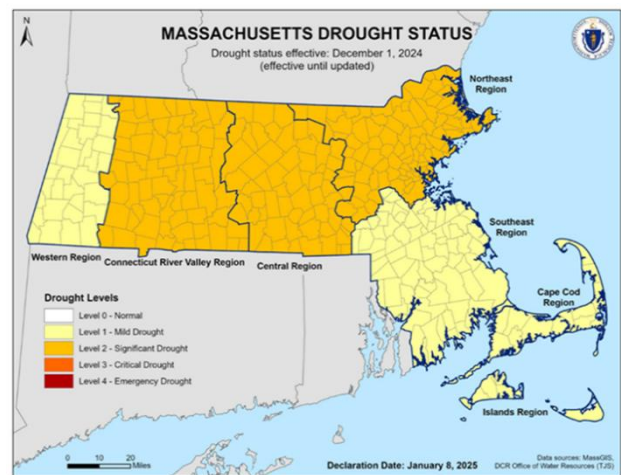
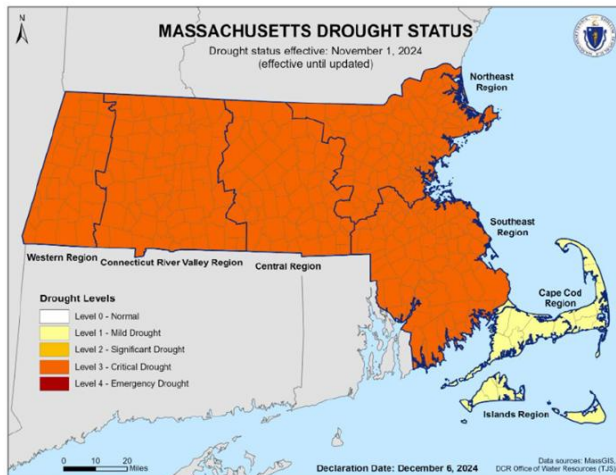
b. Vote to approve January 14th meeting minutes (Paul Lauenstein, WSCAC Chair)

After finishing the roll call, Paul suggested postponing the vote on the minutes for the next meeting, as one member present was unable to access them. Christine Bennett made the motion to postpone the vote on the meeting minutes. When the quorum was verified, Paul asked if they could postpone the vote on the minutes of January 14th, and all were in favor..

III. Briefings

a. WSCAC Briefing (Moussa Siri)

Moussa Siri provided updates on the drought conditions in Massachusetts. She presented three maps, each showing the drought conditions for November, December, and January, respectively (see the maps below).



Region	Drought Level Declaration	Previous Month
Western	Level 1 – Mild Drought	Level 1 – Mild Drought
Connecticut River Valley	Level 2 – Significant Drought	Level 2 – Significant Drought
Central	Level 3 – Critical Drought	Level 2 – Significant Drought
Northeast	Level 3 – Critical Drought	Level 2 – Significant Drought
Southeast	Level 2 – Significant Drought	Level 1 – Mild Drought
Cape Cod	Level 2 – Significant Drought	Level 1 – Mild Drought
Islands	Level 2 – Significant Drought	Level 1 – Mild Drought

After sharing the drought conditions in Massachusetts, Moussa added that:

- At this point, there is no Statewide regulation
- Some towns have tough water conservation regulations during drought, while some towns have no regulations at all
- An email from Mass Rivers Alliance indicated that a Senator is calling for a statewide drought regulation.
- MWRA has its drought management, and indicated that, based on Steve Estes-Smargiassi's previous briefing, the Quabbin was at 85.4% and Wachusett at 85.7% full.

Moussa also briefly explained that subcommittees are meeting and invited anyone interested to join. He added the presentation from Steve Estes-Smargiassi. Moussa indicated that forestry and water are interconnected. Forests help improve climate conditions and also conserve water. Water infiltration is higher when there is a good vegetal cover, and he indicated that water conservation and forestry are all important.

Moussa concluded with a reminder about the next subcommittee meeting's agenda, the WSCAC and WAC joint meeting scheduled for March 20, and the visit to the Quinapoxet Dam Removal Project on April 8th.

b. WAC Briefing (Andreae Downs, WAC)

- Andreae Downs thanked Moussa and indicated that WAC had its meeting on Friday, and she was still processing all the information from Matthew Dam and Becky Weidman about the testing that MWRA is doing on effluent and solid residuals for PFAS.
- Andreae added that the testing is mandated or requested by the state, and there are two possible streams, one industry and commercial, and one residential. Toxics Reduction and Control (TRAC) does not control residential properties, and that's what Matthew Dam is responsible for.
- Andreae indicated that WAC will be commenting on the EPA's risk assessment for two legacy PFAS, which are no longer in production, but are the two oldest ones in biosolids and sludges, particularly those that are land-applied
- Unable to do an assessment of incineration due to gaps in the data, no look at what the levels of this two legacy PFAS are, and for instance, animal manures or synthetic fertilizers, which is, they think, probably has a big gap in the data and has the possibility of raising alarms about sludge, which is already not a charismatic substance in the public's mind when we don't have data on other things that people are putting on the land in order to increase its fertility.
- WAC will be making comments on that, and the comments are due March 17. She added that if people want to comment as well, she can provide them with the link for that information.
- Andreae concluded with the upcoming joint meeting in March, which will consist of a budget discussion with the Advisory Board and WSCAC.

c. Advisory Board Briefing (Christine Bennett, Advisory Board)

- After thanking the host, Christine indicated that they have completed their 2024 water and sewer rate survey, and the survey has been distributed and published. They, also had an operation committee meeting late last month where they met with a variety of MWRA staff to talk about how the Advisory Board and MWRA could work together in reaching out to communities and community leaders, most specifically around the ADM per permitting process for obtaining an infrastructure any work around MWRA infrastructure, water or sewer, in light of the Dorchester Water Tunnel incident (fruitful meeting with great presentation by Becky Weidman about the ADM process).
- Christine indicated that they have had some follow-up meetings to talk about looking at different lists and working more closely on getting the word out about two communities.
 - One of the things in that follow-up meeting with Matthew Dam, which was illuminating, that we hadn't thought about, was that there's a lot of infrastructure out by the Quabbin. There are easements around aqueducts and and and really and that's a lot of land and land owners to really think about, making aware of the fact that there is a significant, vital infrastructure, out, either adjacent to or underneath their property (really important piece of our discussion and reason of an operations committee in January).
 - The other portion involved system expansion, and this was a presentation by Colleen Rizzi, which addressed the fact that there has been an uptick in requests for sewer expansion. Often, water expansion leads to requests for sewer expansion. Also, to

remind people of the profound limits of capacity when it comes to wastewater expansion.

- Get the word out into to community leaders or people within municipal government that, they should, when developments or or conversations like these come up, they need to reach out to the MWRA early on the process so projects don't get a long way through the scoping or even permitting phase without addressing that issue or having that conversation about capacity.
- Christine concluded the Advisory Board briefing with a great update they received about wastewater metering, which was fascinating, as it involved the technology that has been updated and is being deployed, and learning about the differences between wastewater metering and water metering.
- **Bill Capithorne:** Following up on the ADM permit, were there any immediate thoughts presented on how to improve visibility? This is something we struggle with all the time on our permanent side, where contractors, even though they know better, often fail to call the towns for their water and sewer markouts, let alone contact the MWRA for a markout. There is water and sewer service on every single one of our streets. On our side, we are aware of the locations of the MWRA lines. We have a layer in our internal permit system, so we can at least include a note on our permit instructing you to call for an ADM.
- **Christine Bennett:** I think that we'll be having this conversation for a while to figure out how to raise awareness. And as we're learning, every municipality is different in terms of who is actually responsible at city hall for safe geothermal drilling. Is that someone from the Department of Health? Does it have to do with public works? We attempt to identify the key individuals who need to be aware of ADM. Etc. But you raise a really good point about general awareness. I think there's the Dig Safe Program, but it's expanding beyond that. And then, the moral hazard of people who will refuse to comply or take out the permit.
- **Bill Capithorne:** Yeah, some pretty reputable contractors are, when you mention MWRA, just blown away. However, raising the geothermal issue is noteworthy because that question has come up a few times this year, and it is not really within my purview. It is not really covered under the building department's purview either. Whenever you dig, you're supposed to call DigSafe, in theory, or anytime you put a shovel in the ground. However, I know of no one in Arlington who is responsible for conducting geothermal work.
- **Steve Estes-Smargiassi:** We are, that you know, the geothermal thing caused us to take a step back and think a bit more about outreach.
 - We also provide up-to-date maps to every community that has any infrastructure, near-surface assets, or tunnels. We are conducting similar outreach to other permitting agencies within communities, the health department, and building departments.
 - Additionally, we are reaching out to the proponent side and engaging with the clean energy counter or center (whichever it is called), the CEC, which generates significant publicity around green energy initiatives. We're reaching out to drilling companies and alternative energy consulting firms, aiming to raise awareness that people need to take a deep breath, look closely, and ask more questions before they start drilling holes that are several hundred feet deep.

- One interesting thing is that we don't think we've ever had anybody drill a hole in the Quabbin Tunnel, but someone may have done it, even if it wouldn't geyser the way the Dorchester did. We're now in a scenario where we're putting a little more energy into it. At some point, we may need to reassess all the easements and conduct additional outreach, specifically to property owners, but we haven't done so yet.
- And the one thing that's interesting about that is that as the holes get deeper, just knowing that you're not above a particular deep tunnel doesn't mean that the drill bit isn't going to intersect with that tunnel. So, it's a bit more complicated than just paying attention to your easements. We actually need a bit of a wider concern level because, in the Dorchester Tunnel incident, the drill bit was about 10% off the radial line to the center of the Earth, as the driller didn't care where the bit was. They only care about how deep it is, and therefore, they are not using technology that would ensure a straight radial line to the center of the Earth. They are just drilling down however many feet.
- Bill, if you come up with any good ideas, give us a shout, because I don't think all of our folks doing ADM realized, or those in public health who monitor often, are aware of the drilling.
- **Paul Rybicki:** When the original tunnels were put in from Quabbin to Wachusett coming east, do all of the property above them already have easements today?
- **Steve Estes-Smargiassi:** Yes! It depends on the tunnel, but we always purchased easements of typically 50 feet on either side. There is a deep underground easement for every one of our tunnels, both water and sewer. Theoretically, the property owner is aware of this, but in practice, it is quite different.
- **Paul Rybicki:** Could I ask one follow-up question? Many different types of people drill into the earth, and the geotech drilling for cell towers and other purposes requires the first 20 or 30 feet for their foundation. I would think that there would be a smaller subset of drillers who are drilling multiple hundred feet. Wouldn't they be the perfect target audience?
- **Steve Estes-Smargiassi:** We have already started on that process. Identifying the likely candidates who ought to know their current liability, if they're not reaching, or if they're not doing the appropriate permitting.

d. MWRA Briefing (Steve Estes-Smargiassi, MWRA)

The MWRA updates from Steve Estes-Smargiassi consisted of a few points as follows:

- Steve Estes-Smargiassi indicated that MWRA has hit an interesting milestone on the new metro tunnels, the redundant tunnels to their existing, now sixty- and eighty-year-old tunnels that feed the Boston area. Some MWRA staff, including Steve Estes-Smargiassi, held a large public meeting last week, providing an opportunity for people to hear an update on the progress in all the communities. They are in the final design stage, with construction expected to begin in a few years and be completed by 2038.
- He added that MWRA hit a milestone on the Quinapoxet Dam Project, and the river is now flowing in the channel. Basically, there is now a substantial connection from the reservoir up into the headquarters of the Quinapoxet River. He added that there is more work to be done in the spring, on either side of the channel. MWRA is planning a celebration event for sometime

in the spring, possibly around Earth Day. Although the exact date has not been confirmed, they are looking forward to hosting a party to mark the opening of the river.

- They are also doing a fairly major upgrade to the brains (redo the brains of that control system that started back to the beginning of COVID) of the Carroll treatment plant. This plant is operated by a Supervisory Control and Data Acquisition (SCADA) system, which was designed in the late 1990s and installed in the early 2000s. It has been in operation for twenty years. They are building a parallel system to prevent the plant from being shut down intentionally or accidentally. They are swapping segment by segment from the old system to the new system.
- He added a comment about another MWRA milestone, the Lead and Copper Program.
 - Working on a test rig, known as a pipe rig, with salvaged lead service lines removed from homes where the lead service lines were being replaced, they evaluate potential changes in corrosion control.
 - MWRA is not overly enthusiastic about making changes to corrosion control, such as adding phosphate. But they felt it was prudent and proactive to take the time to get set up to evaluate that.
 - MWRA had an expert panel of national experts and utility experts from around the country review all the data from the test rig, as well as the information they had been gathering on lead service lines and their impact on lead levels in samples.
 - No official conclusions, but Steve's opinion is that:
 - The panel clearly felt that lead service line replacement was a priority and a primary way of reducing the risk.
 - They were a little bit more scattered in terms of exactly how they looked at the corrosion control changes.
 - They believe that the benefit was relatively marginal, and getting the lead service lines out sooner would make a big difference.
 - Currently, looking at that data, they see three to five times lower levels in homes with copper with lead solder than they do in homes with lead service lines.
 - That is a pretty good indication that current corrosion control is adequate there. However, he suggested that they should examine it closely over time and see if it changes.
- The last thing they are working on is the MWRA Annual Water Quality Report, and this year, one of the two themes will be the fact that MWRA is 40 years old (What have they accomplished? Why was MWRA created? What has happened?). The other theme is likely to be a focus on lead service line replacement, given that everybody who has a lead service line or a suspected lead service line on their property has gotten a letter from their local utility.

Paul Lauenstein: Did you say that phosphate is added as a corrosion control?

Steve Estes-Smargiassi: So there are two principal means of corrosion control. One is a pH adjustment, raising the pH to an alkaline range for buffering. So, pH and alkalinity are one strategy. The other strategy involves using a corrosion inhibitor based on an orthophosphate compound. It is

used in many places. It's not that common, and it's not used as much in New England as it is elsewhere in the country. The reasons for MWRA not using it are:

- Adding phosphate to the water means they are adding phosphate to the environment.
- Once you do it, it's hard to back off. At least from a regulatory perspective, once something works, regulators are reluctant to change. And so they could get stuck adding it forever, and whenever they release water into the environment, it will contain phosphate. It may also contribute to the growth of bacteria in the pipelines, biofilms in the pipelines, and, of course, it costs money.
- And so both to construct the new facilities and operate them. For all these reasons, he said they are reluctant to do it unless they think it is necessary. However, he went to the Board and pushed for removing the lead service lines as quickly as possible as the best risk management approach here.
- But if they can't go fast enough, their regulating agencies may tell them that they need to proceed down the path of adding phosphate, and that might make sense from their perspective.
- So their goal in the end is to have as little lead as possible coming out of people's taps, even if they let the water sit stagnant.

Paul Lauenstein: If phosphate does become necessary, would it be possible to do it on a town-by-town basis, or does it have to be system-wide?

Steve Estes-Smargiassi: There is theoretical and practical. Theoretically, yes, you could if you had a single takeoff or a couple of takeoffs, you could add a chemical addition. But, practically, no. All of our meter locations are in urban areas. They are on city streets. Building a treatment plant in the middle of the land we purchased for water supply purposes in Marlborough was a big deal. I don't like the idea of siting a chemical addition facility on a downtown street in Arlington or Malden. It would need to cover at least a large portion of the region, if not the entire region. More than likely, it would be done at the Carroll Treatment Plant.

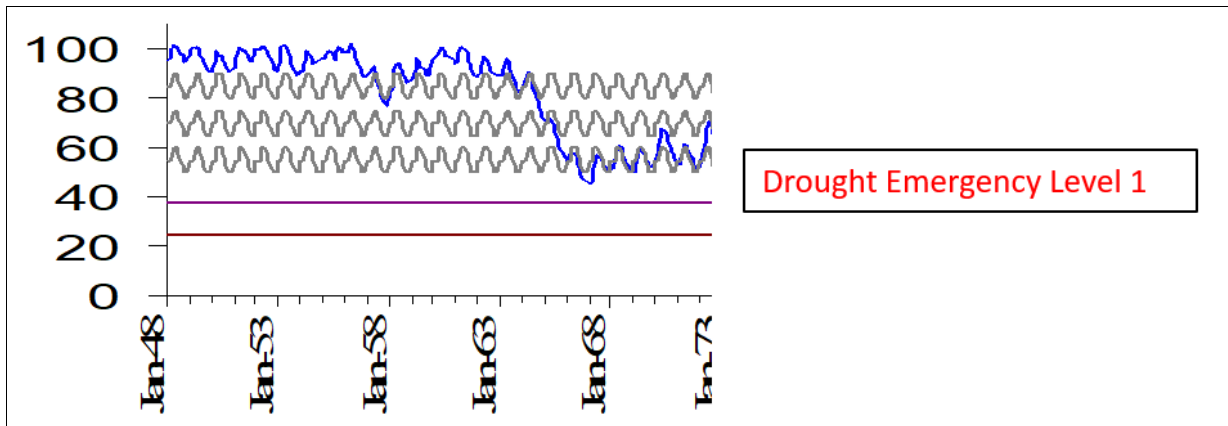
IV. Presentation: The Long View On MWRA Water Conservation Program

Moussa introduced Stephen Estes-Smargiassi, the Director of Planning and Sustainability at the MWRA, then passed the floor to him for the presentation.

Steve Estes-Smargiassi noted that when discussing water conservation, people often do not realize that things were different at the creation of the MWRA. He indicated that the MWRA has been in operation for forty years. While he thinks of these programs as being fresh, many of them were started thirty-five to thirty-seven years ago, and not everybody knows it. He indicated that when a reporter calls them to ask questions about the wastewater system, they realize that most of them weren't born when Boston Harbor was the dirtiest harbor in the nation. Mike Dukakis did not get elected president, in part because George Bush was able to highlight his poor environmental record in Boston Harbor. Therefore, the people I frequently deal with often don't realize that things were different when the MWRA was created or before the MWA was established in terms of water supply. Steve pointed out key points of the historical MWRA water demand management as follows:

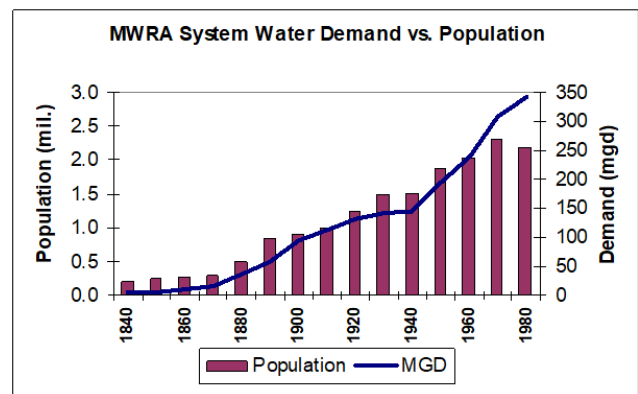
- **Northeast Drought of 1960s Showed Vulnerability**

- The drought of the nineteen sixties (1960s), which was a multi-year drought all up and down the East Coast, really did point out to the folks in the Boston area that Quabbin might not be the long-term solution (vulnerability of Quabbin).
- The reservoir dropped to a historic low of 44% full in May of 1967. There were sandbars, and it was a big deal. I'm showing here that elevation on our current drought plan triggers, but it dropped down, not as bad as it could be, but pretty low (see graph below)



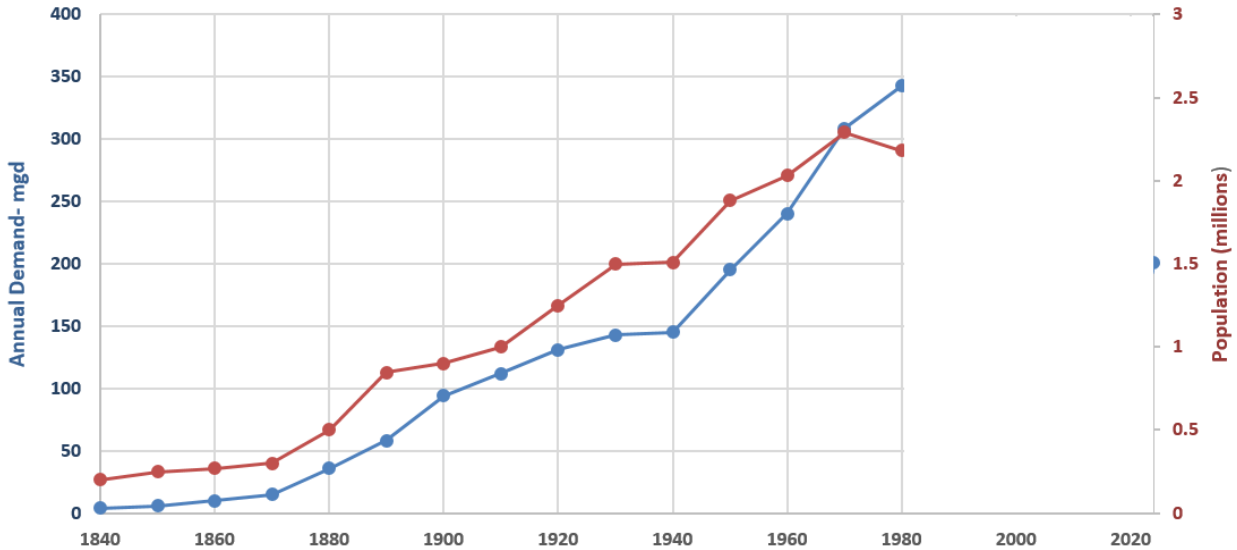
- **Demand Had Exceeded Safe Yield by the Early 1970s**

- By the 1970s, water demand had exceeded the safe yield of the system.
- The drop in safe yield from approximately 330 or 320 to 300 was when they realized that the Sudbury Reservoir was not providing water of suitable quality for human consumption without further treatment, so they had to take that source offline.
- But even with the Sudbury online, they were using more water than they could safely withdraw from the system (see left graph below).
- Demand was rising faster than population, and both were alarming characteristics (see graph on the right).



- Make sure that, as a political entity and as a practical engineers, you're not constraining the regional economy

- Another version of MWRA Long Term Demand versus Population Growth from 1840 to 1980 (see graph)
 - For most of the time from the 1840s through the 1970s, population and water use were kind of paralleled
 - In the 1960s or possibly in the 1950s, the rise of suburban areas, lawn watering, and, to some extent, the degradation of some of those systems, which were sixty to eighty years old at the time, led to water use increasing faster than population growth. Studies began to look for new water sources



- **Studies Were Underway for a New Source**
 - The Northfield Project was a proposal for skimming Connecticut River spring flood flows and diverting them into the Quabbin Reservoir, using a pumped-storage facility
 - The measure was approved and funded by the legislature in both 1967 and 1970
 - The extra storage was built into the Northfield Mountain power reservoir
- **Beginning of the Modern Environmental Era**
 - In the late 1970s came Earth Day and the rise of the environmental movement
 - Citizen awareness and participation increased
 - Founded as the Northfield Citizens Advisory Committee in 1977, which became the Water Supply Citizens Advisory Committee (WSCAC)
 - MEPA was established to open up the Decision-Making Force Agency (MDC) to look closely at how they were making decisions
 - Coalition forms against Connecticut River diversion and exploits Western Massachusetts' resentment toward Boston
 - The State of Connecticut fights back and threatens a lawsuit
- **MWRA's Response in Three Key Points**

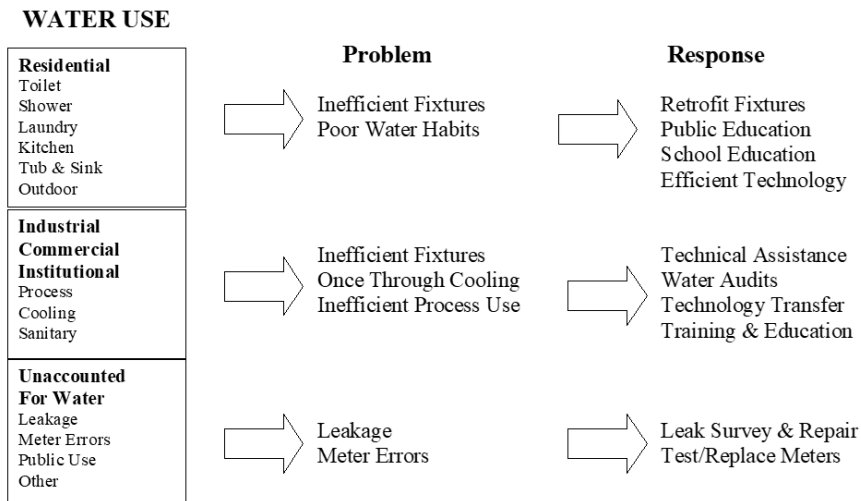
- When MWRA began operations in 1985, its first step was to review the Long Range Water Supply Study begun by MDC that included diversion options of the Connecticut, Merrimack, and Sudbury Rivers
- In November 1986, the Board of Directors voted to try water conservation for a 3-year period to curb demand (Steve Estes-Smargiassi's involvement started here when hired to supervise this program and report to the Board)
- A number of initiatives were implemented

- **MWRA was Created:**

- It inherited a lot of leaky old pipes
- There were a lot of old and leaky MWRA and community pipes



- **There were some Obstacles to Water Conservation (see slides for details)**
 - Initial Skepticism About the Possibility of Long-Term Success
 - Needed to Cross Institutional Boundaries – Watershed to Tap
 - Resource Allocation
- **Start With a Plan**
 - Make all of their consumers aware of the reasons to change
 - Explain various techniques to reduce water use
 - Promptly respond to questions
 - Facilitate the decision to change
- **Demand Management Strategy – Reservoir to Tap (see chart)**



- **Specific Demand Management Programs Used to Conserve Water**

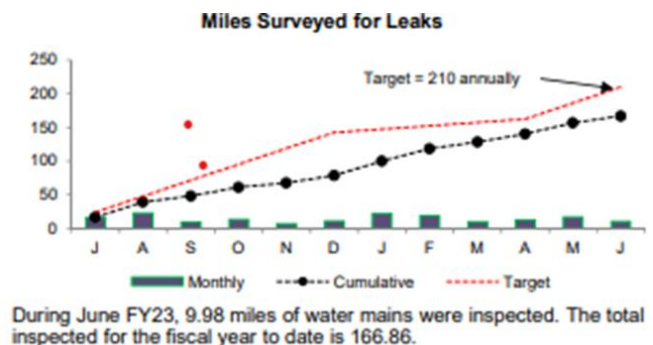
- MWRA's Operation WaterSense in the 1990s installed 1.3 million water-saving fixtures in approximately 350,000 households. 59% penetration
- Public Education Outreach - water conservation materials distributed at no cost
- A free one-time leak detection survey (1988-1990) of 6,085 miles of community pipes detected 30 MGD of water loss.
- In 1991, the MWRA's leak detection regulations were implemented, requiring communities to conduct leak detection surveys every two years. Communities may use MWRA's contractor
- Rehabilitation of MWRA and community distribution pipelines for water quality has the added benefit of reducing pipeline leakage
- Audits, pilots, and facilitated outreach to institutional, commercial, and industrial users

Please check the slides if interested in learning about the next five (05)bullet points

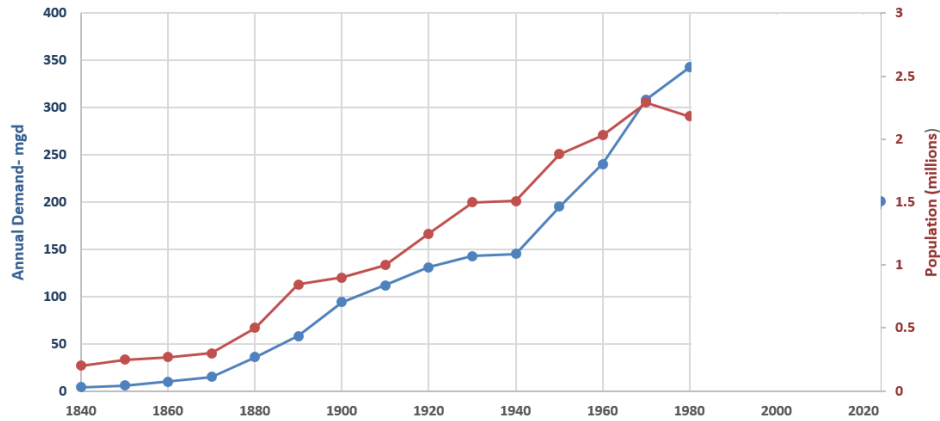
- **Program Approaches -- Look at Performance**
- **Participation -- Be realistic (see slides)**
- **The Message -- Keep it clear, simple, and positive**
- **Develop Good Working Relationships: Make Everyone a Partner in Success**
- **Multimedia Approach**
- **Use Pilot Programs to Test and Build Support**
 - Domestic Device Retrofit Pilot
 - Tried multiple distribution models

- Selected direct install
 - Significantly greater savings, for a modest increase in cost
 - Hotels, Colleges, Industrial Facilities
 - Pilot, Then Publicize
 - Low-flow toilets
 - Public building retrofit
 - State, then national code change
 - Reading, MA - Washer Study:
 - 68-unit condominium complex
 - Replaced all washers and dryers
 - Monitored water and energy use
 - Saved: 44% water, 50% energy, 24% detergent
- **Initial System–Wide Leak Detection – a Pilot of Sorts**
 - MWRA funded and contracted for leak detection of every community's pipes
 - Aggressive effort to ensure the leak repairs
 - Approximately 30 mgd of leaks identified and repaired.
 - Long-term requirement of detection every two years:
 - MWRA provided training on leak detection techniques
 - Developed on-call program with MWRA procured contractors
 - Communities can use their contractor or staff
 - Some are now doing annual inspections
- **Leak Detection Works – Much tighter MWRA system (see graphs below)**

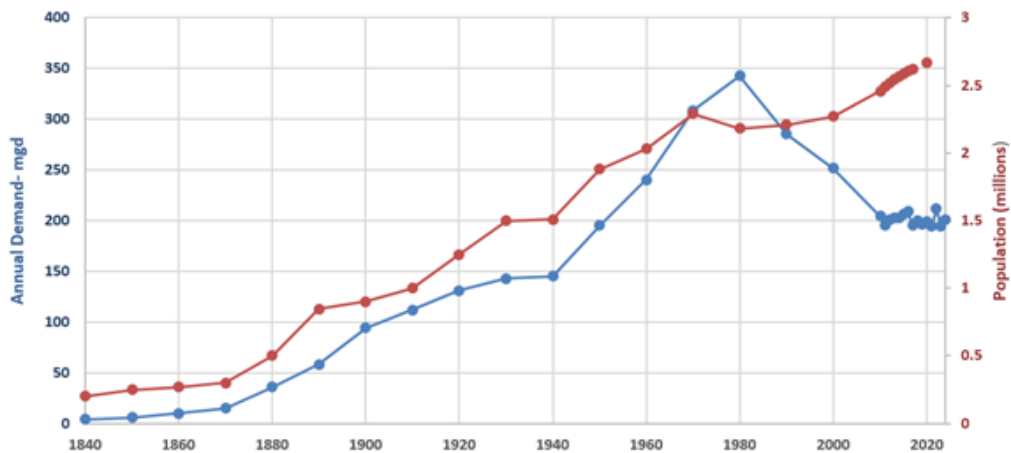
MWRA Unaccounted For Use Declines Substantially



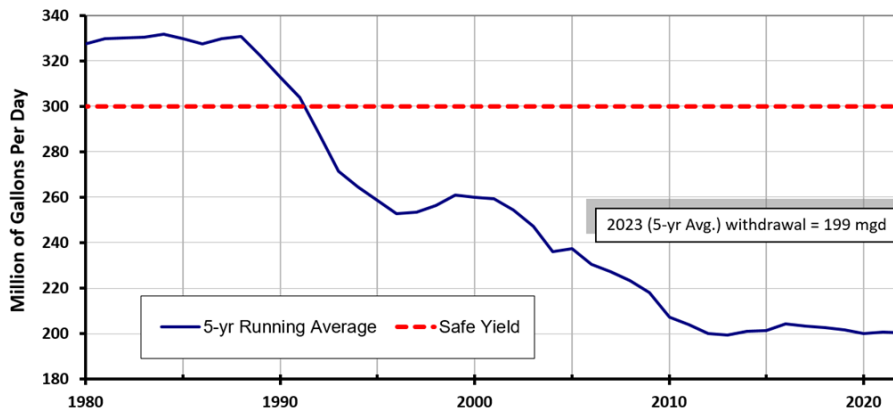
- **Water Conservation Worked (see graphs below)**
 - MWRA Long Term Demand and Population 1840 to 1980



- MWRA Long Term Demand and Population 1840 to 2024



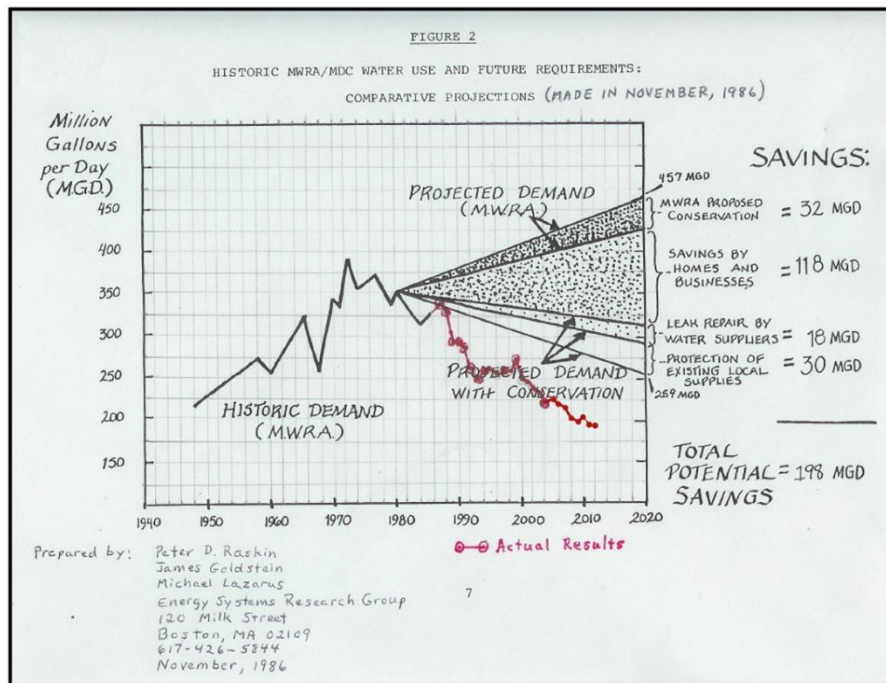
- Reservoir Withdrawals Lowest Since 1950s



- Boston Usage is at a 120-year low, as seen in the graphs below.



- The hand-drawn diagram below indicates that the water demand was projected to reach 457 MGD by 2020. Some of the WSCAC members thought that there were a lot of things or activities going on, and the demand could be brought down to 259 MGD, but MWRA did even better by bringing it to about 200 MGD, beyond the optimistic reality
- MWRA also funded watershed or source water protection for every single partial MWRA user, identified potential risks, made recommendations, etc.



- MWRA also spends a lot of effort with its communities to improve water quality by replacing, cleaning, and lining old mains.

Steve Estes-Smargiassi, following the historical water conservation effort by the MWRA, provided additional comments before elaborating on current events. Steve indicated that when he started at the MWRA, he came with two goals that he articulated to WSCAC and also to the Advisory Board at his

first participation in these committees' meetings in September 1987. There are two paths. The first path was that the newly formed MWRA would be the pioneering path forward, and demand management would result in sufficiently substantial and reliable savings that they did not need to build the Connecticut River diversion. The second path was that if MWRA tried hard enough and did everything in its power, everything that was possible, and failed, then MWRA could convince people that they had done everything possible and that it was not possible to save enough water to avoid a new augmentation.

Ralph Abele: Great Presentation! I was working on some of these issues before you started. However, one of the successes in this regard is that you mentioned the proposed reactivation of the Sudbury Reservoir. And I was working for the Fish and Wildlife Service at the time, and they own the Great Meadows Refuge. At the time, the MDC stated that they could divert the river down to five CFS, which wouldn't leave much of a floodplain. Without getting into the legal aspects of whether they could have done so or not, the fact that they never ended up doing so has kept that refuge the way it is. And so, not only did the Connecticut River not get diverted, but the Sudbury didn't either.

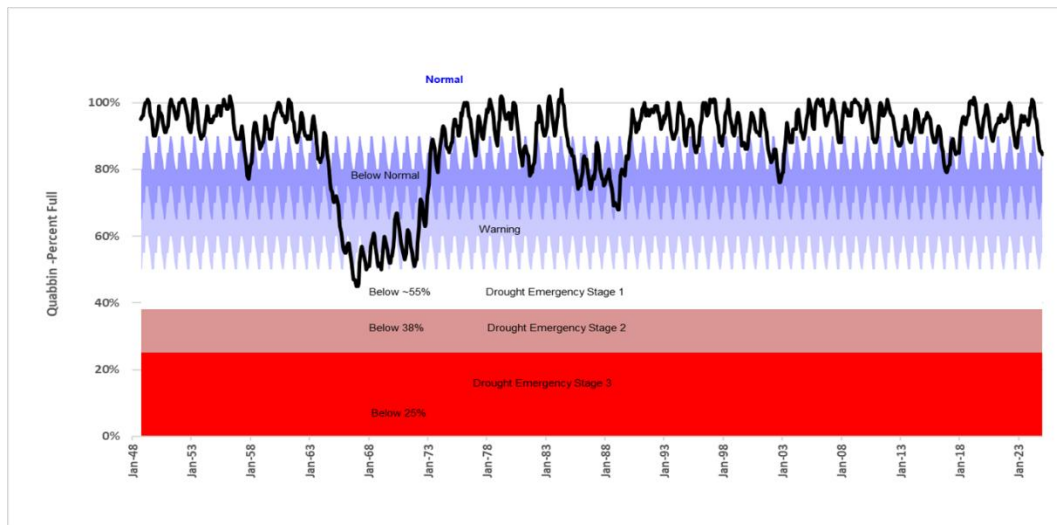
Steve Estes-Smargiassi: Well, thank you for mentioning that because actually that is a point of pride for a few of us, including Jonathan Yeo, a former staff member, now the chief operating officer for Newton. Jonathan actually sat on the Wild and Scenic River study group, and the MWRA published a definitive report and statement stating that the MWRA did not plan to reuse or reactivate the Sudbury Reservoir. And that is, essentially, a policy statement of our board that we don't intend to use that. Now it is available in an emergency, as it was back in 2010, but not as a long-term source. The MWRA is happy to help the downstream communities both in wet times and dry times. The MWRA provides a steady flow out of the reservoir, which helps somewhat during dry periods, and holds back water during wet periods to prevent some flooding.

Bill Merriam: This is a maybe a large question not suitable for answering in limited time, but in reviewing the 02/2005, WISCAC view on water conservation, they refer to earlier failures for the commonwealth to implement demand control, and it also says that, quote, "urge communities to consider the limits of their natural resources before approving new growth". It seems that today, priorities are reversed, and the state is encouraging the development of more housing at the expense of resources, including water. So I don't need an answer for that in today's meeting. I was just wondering how that impacts today's thinking.

Steve Estes-Smargiassi: I would say that for folks like the MWRA, we are using way less water than we were back in the 1980s, and way below our safe field. I think there is some room, and I'll discuss that in a minute, for the use of that supply to meet societal needs. Clearly, housing demand is one of those needs. However, I hope and expect that the new development will be substantially more efficient than our existing one.

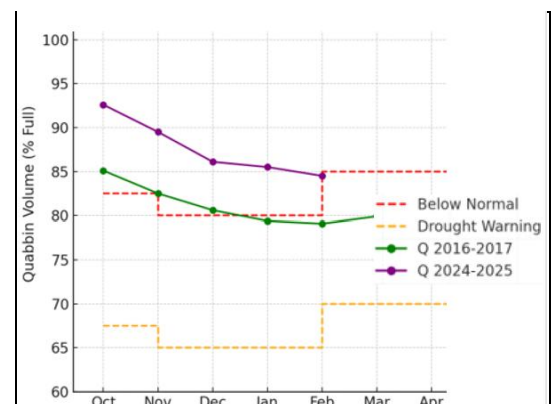
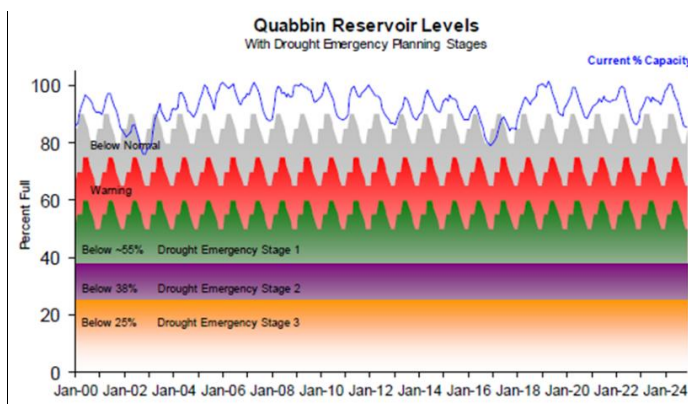
Commenting about the drought indicated by Moussa in his briefing, Steve explained the long-term track of actual water use and actual Quabbin levels over time. He indicated that we can see this in the 1960s drought that he discussed earlier, but we can also see it in the late 1980s drought, just as demand was starting to decline. He indicated that as time passes, partly because demand is lower, droughts appear to have a lesser impact.

- **Quabbin's Levels and Drought Stages (1948 to 2024)**



- **Current Conditions after dry fall and winter**

- Quabbin went down by 3.9 ft. and was at 85.5% capacity at the end of December – normal operating range
- On February 1st, Quabbin levels dropped to below normal, with the target rising to 85%. MWRA is in normal operation if the reservoir of quabbing is at 85.80% full or higher, through November, December, and January. According to the MWRA's current drought plan, the water level needs to be above 85% to be in normal operating range as of February.
- As of the day before the meeting, we were at 84.2% and 88.6% down at Wachusett. Between the two of them, there are 407,000,000,000 gallons of water, indicating that we are in relatively good shape (See MWRA Drought Management Plans in the table below).
- Steve added that we are not yet in a drought warning, and that's because the reservoirs are so large and multi-year reservoirs that we don't want to wait until we are in trouble to start talking about this.



- **MWRA Drought Management Plans Stages**

- The current management plans (last updated in 1989) are shown in the table below
- MWRA Drought Plan under review for spring submission under WMA

Stage	Target Water Use Reduction
Normal Operation Below Normal Drought Warning	0 Previous year's use (Voluntary) 5% (Primarily Voluntary)
Drought Emergency Stage 1 Stage 2 Stage 3	(Mandatory Restrictions) 10% 15% 30%

- **Estes-Smargiassi's Long Look Forward (See slides for details):**

- Steve indicated that MWRA is paying attention to climate change. There will be changes in demand and demand variability, as well as a change in supply.
- A warmer atmosphere would lead to higher precipitation as air would hold more moisture. Large Reservoir to Yield Ratio + More Precipitation = Plenty of High Quality Water
- More High Quality Water Means We Can Help Our Neighbors
- Demand Management works (see slides)
- Steve believes that if we connected up to the Connecticut River, we probably would not have been able to avoid filtration, because we would have had an unprotected source as part of our sources.

Access all presentations here: <https://www.mwra.com/about-mwra/advisory-groups/water-supply-citizens-advisory-committee-wscac/wscac-presentations-0>

V. Some Comments after the Presentation

Paul Lauenstein: I would like to share that I conducted a study on water use in Sharon, and I discovered that if everyone in the town used water as efficiently as the 500 most water-efficient households, the town could reduce its water use by half. There is a tremendous disparity in water use from household to household. Although Sharon has an award-winning water conservation program and the town has reduced its water use by approximately 30% over the last fifteen years, we can still cut it in half.

I also wanna share that on Saturday night, I spent two hours cleaning up an overflow toilet at the Sharon Historical Society. It had an old 3.5-gallon toilet, and it only takes two flushes to overflow, whereas a 1.28-gallon high-efficiency toilet would require only one flush. That's one of the fringe benefits of efficient toilets, as they don't overflow as easily. The cost of heating the water to take a shower is higher than the cost of the water itself—something to think about in the connection between energy and water.

Steve did a great job explaining why water conservation is important. One last thing: I had a printing business in Canton, and I shared the building with my landlord. I clearly remember one day, my landlord came in and said, Oh my God, Paul, MWRA is raising the water rates hugely. Water can no longer be taken for granted. Put a sign on your bathroom saying that if anyone discovers the toilet is running, please notify you, as it will cost a lot of money. And we did, and it just shows how people react to the cost of water, and they try to conserve it when they realize it's actually gonna cost them serious money.

Martin Pullsbury: Thank you. That was a great trip down memory lane for me. I was around for, like, all of this. I actually worked there before I was in MAPC in 1982 and '83 for the consulting firm, which was working with the MDC, the predecessor agency, before MWA was even formed. I was a very upstart in planning, and my job that summer was to conduct a leak survey of residents in homes throughout the region. We statistically selected 100 homes in the Water District, stratified by single-family, two-family, larger apartments, urban, suburban, inner-core towns, and suburban towns. We had a hundred samples. I visited all these homes over the summer, placed the dye tabs in the toilets, examined the meter in the basement, and attempted to determine a quantitative estimate of the amount leaking in each home. So it was even before the MBR Gray was created and made this commitment to water conservation.

Some groundwork had already been done. The reason it was done was that it was part of phase one. The entire proposal for the Northfield Mountain diversion to Quabbin was being studied under the Massachusetts Environmental Policy Act (MEPA). MEPA was a relatively new process at the time, and it required that as many large projects as possible, along with alternatives to the proposed one, also be considered. And so while they thoroughly looked at the Northfield Mountain as the primary sort of alternative that was most, you know, that was struck the desired alternative, they looked at other sources of water seriously, including bringing water from the Millers and the Tully River, down from the Merrimack River, up from the Plymouth Aquifer, reactivating the Sudbury River, which was talked about before.

That was one of the alternative studies. And even reactivating a number of the smaller wells that had been shut down in previous years, throughout the district. I believe there were approximately 25 to 30 different local water sources that could be reactivated. And a few years later, when I was working for MAPC, Steve mentioned that the MWA was in the process of examining all those local sources, as the loss of local sources was one way demand for carbon could increase. And they're already funded a number of those studies.

They actually hired my agency, and I worked on this as one of my first projects, examining the largest single local source in the district, the Cambridge water system, which has a demand of around 16 or 17

million gallons per day (MGD) in that one city. We developed a watershed protection plan that incorporates cooperation with the towns and cities where these reservoirs are located. So, a lot of groundwork has been done behind the scenes, which even those who were fairly close to this process may not be aware of all the details. I'm not familiar with all the details. I learned a few new things today. This is a great presentation, Steve, and I suppose the only thing I'd say is that if there were an Oscar nomination for water supply systems, I'd nominate the MWRA.

We've seen it. Yeah. I guess the only thing I'll say is that if there were such a thing as an Oscar nomination for water supply systems, I would nominate the MW. Thank you. Okay.

After thanking Steve Estes-Smargiassi for this interesting presentation, Moussa Siri expressed his satisfaction with the high attendance of WSCAC members (12 out of 15, with two excused), and passed the lead to Paul Lauenstein for the roll call to adjourn the meeting.

V. Other Businesses

No other businesses!

Paul Lauenstein asked for a motion to adjourn the meeting.

Martin Pillsbury made the motion.

Motion seconded by Christine Bennett.

All in favor, and the meeting adjourned around 11:40 AM.