



WSCAC Meeting

Location: Held virtually

March 9, 2021 – 10:00 am

Members in Bold in Attendance:

Jerry Eves, WSCAC Chair

Michael Baram

Whitney Beals

William Copithorne, Town of Arlington

Steven Daunais, Tata & Howard

Andrea Donlon, CT River Conservancy

Bill Fadden, OARS

James Guiod

Bill Kiley, BWSC

Paul Lauenstein, NepRWA

Martha Morgan, Nashua River Watershed

Martin Pillsbury, MAPC

Janet Rothrock, League of Women Voters

Bruce Spencer

Kurt Tramosch, Wayland Wells

Non-Members in Attendance

Lexi Dewey, WSCAC staff

Andreae Downs, WAC

Steve Estes-Smargiassi, MWRA

John Gregoire, MWRA

Matt Walsh, MWRA

Erin Graham, DCR

Sara Cohen, DCR

Anne Carroll, DCR

Lou Taverna, MWRA Advisory Board

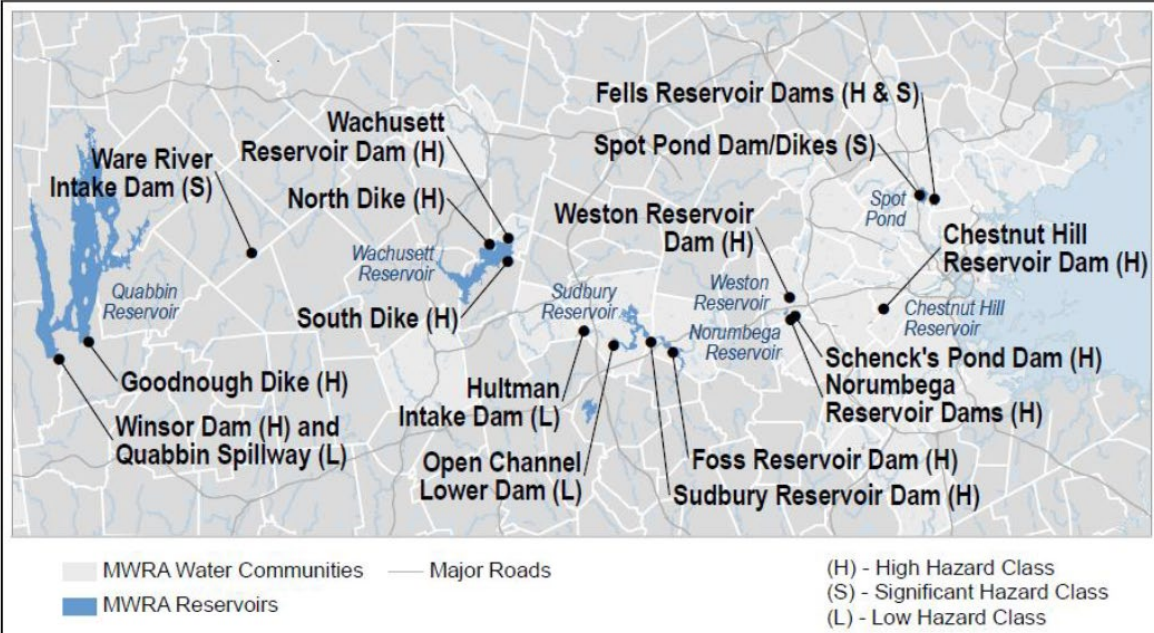
Lexi Dewey opened the meeting and welcomed members and friends to the March virtual WSCAC meeting.

Lexi introduced the first speaker, John Gregoire, MWRA Program Manager for Reservoir Operations. John began his presentation by introducing the following topics:

- Selected water supply dams projects
- Quinepoxet dam removal update
- Rehabilitation of River Rd. in Clinton
- Reservoirs invasives projects update



28 Dams and Dikes across 13 locations

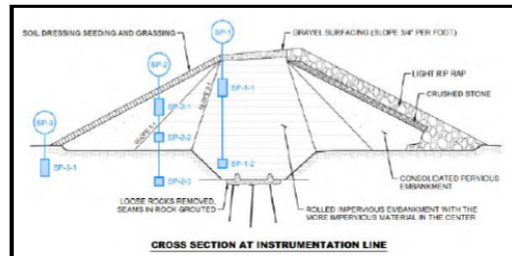


Since taking over responsibility from MDC/DCR in 2004, MWRA has invested over 25 million dollars in small and large dam improvements and repairs. John provided details on the following projects:



Contract #7614 – Dams Design and ESDC Contract

- Update
 - Sudbury Spillway Masonry and vent pipe design: Inspection and design report submitted and returned. Design underway. Design for spillway masonry repairs underway.
 - North/South Dikes Piezometers:
 - Award contract W327 to NH Boring, Inc. NTP
 - meeting recently held. Preconstruction meeting scheduled.



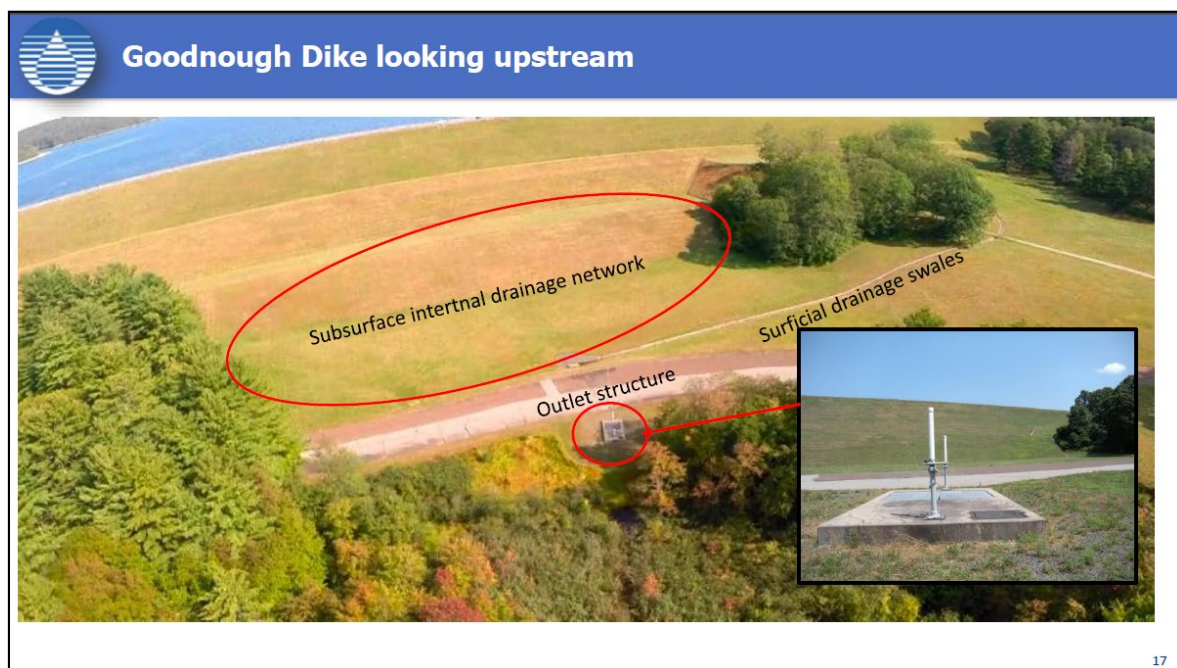
- Foss Dam Overtopping Protection:
 - Design Report pending.
- North Dike Reconnection at LPS:
 - Design Report Finalized. Design underway.

John explained the use of piezometers which are required in high hazard dams because they can assess pressure and can serve as an early warning system. NH Boring Company will do the boring work at North/South Dike. A lot of geotechnical data is generated by these borings which is required in all high hazard dams.

Some of the dams MWRA is responsible for are 80-150 years old, and data wasn't collected when these dams were constructed. Reservoir modeling is now required.

A Hydraulics & Hydrologics analysis report is being done at North Dike to show what a maximum flood would be and how to build for those conditions.

John described the FY22 project at Goodnough Dike at the Quabbin Reservoir which requires internal drainage maintenance. Underneath the red circle is a network of drains which collect water and move it away from the dam to protect the earthen embankment. These drains need to be cleaned and sediment removed from the outlet.



The River Road rehabilitation project is located in Clinton. It leads to the lower gate house below the Wachusett Dam. The road has had numerous instability problems since 2008 and several smaller repairs were made. However, more work is required to ensure stability into the future. There is a failing stormwater drainage system that needs to be redone and 20 tons of contaminated soils under the road (Lancaster mill coal waste) will need to be excavated and removed from the site. The Town of Clinton considers River Road a private road despite DCR public access. Therefore it must meet MA 100 year storm requirements as well as performance standards. This has increased the complexity of the design and the repairs needed. The grade of the slope will be reduced and armored, and the road narrowed, becoming one way. New guardrails will be installed. A contractor has been chosen and work will begin in April. It is hoped that the project will be substantially complete in September.



Repair zone in landslide-prone area

Repair Zone ~ 900 LF



2008



2019
Existing condition

22

The Quinepoxet Dam removal project is a partnership with MWRA, DCR, Mass Wildlife, the Division of Ecological Restoration and the US Fish & Wildlife Service. The dam is no longer necessary and will restore fish passage within the Quinepoxet River. The consultant, Milone & MacBroom, now SLR, has a



Goals of the project

Restoring natural fish passage, wildlife connectivity and recreational opportunities while protecting water quality within the Quinepoxet River has been a goal for MWRA, its partners and local organizations and stakeholders. MWRA has retained Milone & MacBroom, Inc. (MMI)/SLR, a leader in river restoration, to prepare design plans and prepare regulatory permits for the removal of the Quinepoxet Dam.

Quinepoxet Dam Removal Ecological Restoration Project West Boylston, Massachusetts

The Massachusetts Water Resources Authority (MWRA), in coordination with the Department of Conservation and Recreation (DCR), the Division of Ecological Restoration and the Division of Fisheries and Wildlife, is excited to announce a new ecological restoration project located along the regional important Quinepoxet River in West Boylston, Massachusetts. Restoring nature fish passage, wildlife connectivity and recreational opportunities while protecting water quality within the Quinepoxet River has been a goal for MWRA, its partners and local organizations and stakeholders. MWRA has retained Milone & MacBroom, Inc. (MMI)/SLR, a leader in river restoration, to prepare design plans and prepare regulatory permits for the removal of the Quinepoxet Dam.



Quinepoxet Dam

This dam was constructed in 1905 to support the Quinepoxet Reservoir construction project and has become obsolete with the various upgrades MWRA has made to its water transfer systems. It is a 250-foot-long and 18-foot-high earthen embankment and stone masonry structure. Centrally located on the structure is a 125-foot-long and 9-foot-high stone masonry and concrete arch spillway. Removal of this dam is expected to have minor short-term impacts to the surrounding area but significant long-term ecological benefits. The dam inhibits native species of fish from escaping runs of their natural habitat. The removal of the dam will restore passage to important fishery species such as the landlocked Atlantic salmon and native brook trout. In addition to the removal of the dam, several stands of sediment downstream of the dam will be relocated to create a new vegetated embankment that will help separate the natural river channel from the Quinepoxet Reservoir's power station release.

The project will require regulatory permitting through federal, state, and local regulatory agencies. The project team will be developing permit applications and supporting documents soon. The team looks forward to generating this ecological restoration project to the community and receiving input during the permitting process. For more information regarding this project, please visit MWRA's website or email John Gregoire from MWRA at John.Gregoire@mwra.com or Kathryn Parent from DCR at kparent@dmwr.state.ma.us.

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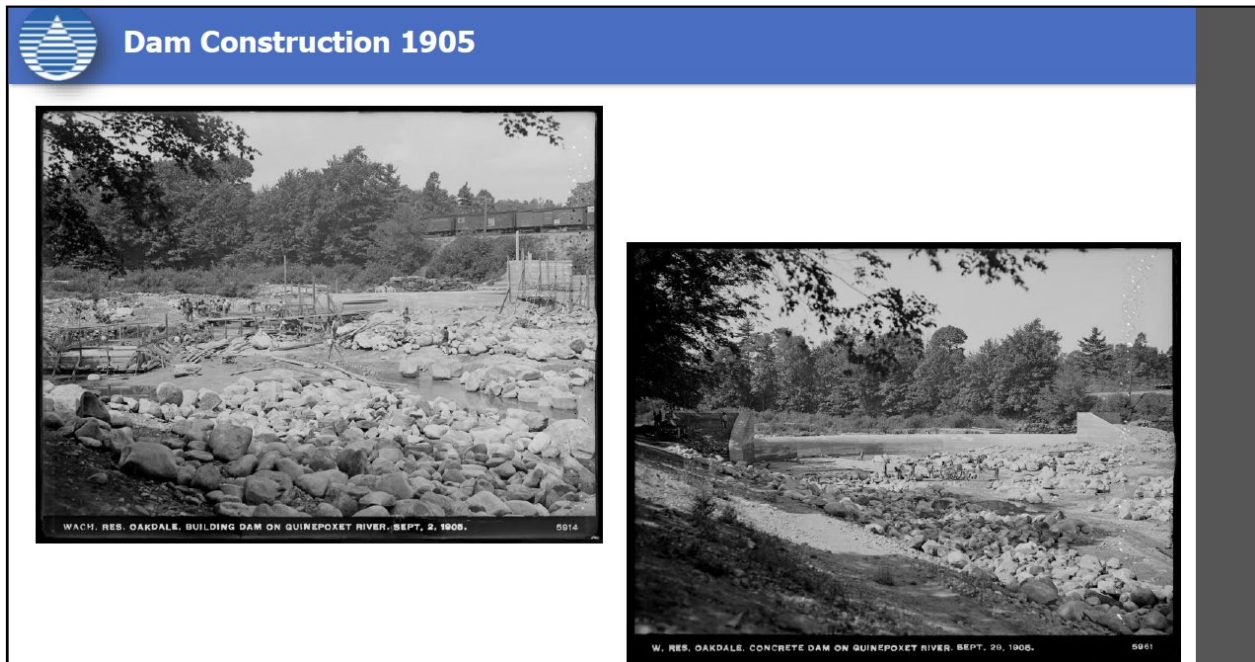
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great deal of experience in dam removal.

The historic pictures below show dam construction and the old rail line that is now a rail trail. The dam is concrete and faced with granite. What makes this dam unique is that it doesn't have an impoundment on the upstream side. Most other dams do and that causes an accumulation of sediment. Instead, the sediment load is distributed downstream in the overwidened channel. The sides are armored.

The project is at 60% of design currently and subject to refinement. The plan is to remove the dam and construct a rifle pool system which will create a place for the fish to swim up the rifle and then rest in the pool. Construction of an elongated chase will move the fish away from the attraction flow at the Quabbin transfer infrastructure which can move 300mgd a day in the summer. Hydro transmission also occurs during Quabbin transfers at Shaft I and the Oakdale powerstation. Sedimentation control during and after the project will be monitored as well as performance standards to make sure water quality is protected.

Michael Baram asked who is paying for these improvements. John said MWRA is paying for the design with a contribution for the Division of Ecological Restoration. Once the project is shovel-ready, MWRA will begin looking for grants which should be available for an environmentally beneficial project like this one. Michael also asked if the dam was used for flood control and John said no. Since it is still considered a regulated dam by the MA Office of Dam Safety, additional studies, inspections and maintenance are required which would cost several hundred thousand dollars. MWRA feels this is not a good use of funds given that the dam doesn't provide a necessary service.





Re-engineered downstream channel 1905 and today



W. REE. OAKDALE, NEW QUINEPOXET CHANNEL. NOV. 29, '04. 5767




John changed subjects to discuss the 9 annual contracts for invasives control projects at Wachusett Stillwater, Oakdale and Thomas Basin. Since 2013, a lot of progress has been made on reducing aquatic invasives and now native species are returning in many of the areas that were inundated with Eurasian Milfoil, Water Chestnut and Fanwort. The scope of work is now being dialed back due to the work completed by the Diver Assisted Suction Harvester (DASH) projects.

Work is now focused on the Variable Milfoil at Quinepoxet Basin which has been present since the 1970s. Work is being done six months a year to eradicate the large amounts of this plant. Fanwort has been discovered in the Sudbury Reservoir as well as Water Chestnut. DASH work is now being done there to hopefully eliminate both plants. A QAC diver inspects all the work done by the DASH contractor.

A summer drawdown is done at Shaft 8 intake pool in July at Ware River to clean the screens and make sure any plant fragments are removed before Ware River water is transferred to Quabbin. Winter drawdown of 10 feet are done at Chestnut Hill and Foss Reservoir to expose invasive plants to freezing temperatures to kill them. The desiccated plants are then collected and removed before refilling the reservoirs. The past few years, winter drawdowns were not done due to drought conditions. This often enables invasive plants to come back as a bigger population necessitating a DASH project.

This spring, Chestnut Hill Reservoir will receive a high dose Alum treatment to control phosphorus which helps prevent cyanobacteria blooms. The Alum strips the phosphorus out of the water column. However, the sediment now has a high enough level of phosphorus in it that a higher dose than before is needed. The treatment will occur in late April or May and will last ten years. Whit Beals asked the Aquatics Survey includes the Wachusett open channel. John said that no, that MWRA doesn't think the cost benefit is worthwhile. Whit asked if the Fanwort may originate in the open channel? John said he thinks that the Fanwort has been shown to come from a stream coming into Parmenter Cove. Whit mentioned that waterfowl can carry Water Chestnut seed capsules embedded in their chest feathers. Bill Fadden offered condolences for the death of Guy Foss, the Director of Western Operations. John mentioned how much

Guy will be missed and the unfortunate inability to share Guy's extensive knowledge. Bill asked about the Stearns and Brackett reservoirs becoming a state park. John said he hasn't heard any recent information except that DCR has some maintenance to complete at the Brackett dam.



2020 Season Aquatic Plants Survey and Invasive Control Efforts: COMPLETED. New Contracts under procurement for 2021

- Wachusett Stillwater Basin DASH
- Wachusett Lower Basins DASH (including full season phase @ Quinapoxet Basin VLM)
- Sudbury DASH (Fanwort)
- Sudbury/Foss Water Chestnut
- QA/QC Diver surveys of Wachusett and Sudbury DASH projects
- Reservoirs Aquatic Macrophyte Survey
- Ware River/Shaft 8 Intake Pool invasive plants control
- Weston Reservoir – pioneering EWM plants removed
- Chestnut Hill Mechanical Harvest

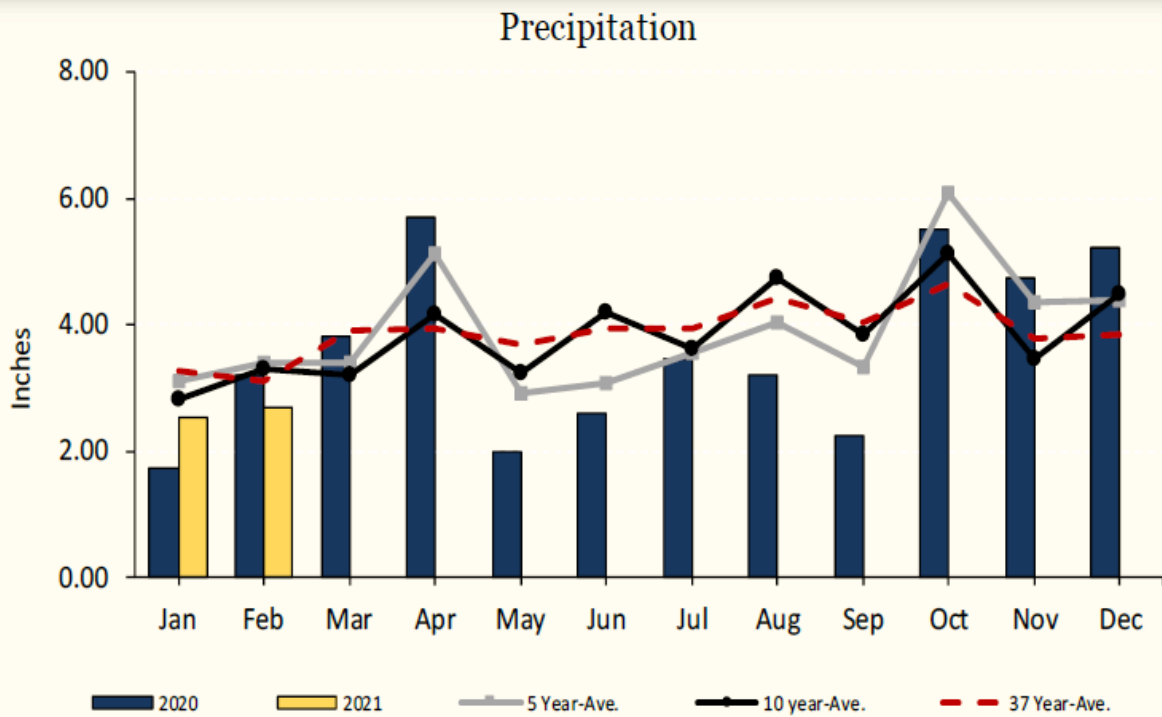
Members thanked John for his presentation. His presentation can be viewed in more detail here: *MWRA Reservoir Operations Update* <https://www.mwra.com/monthly/wscac/presentations.htm>

Lexi introduced Matt Walsh, MWRA Project Engineer, Reservoir Operations. Matt provided an update on the status of reservoir yields, precipitation and releases to the Swift and Nashua rivers. It's been a relatively quiet winter. February was the only month there was snow. In December there was enough rain to finish the year at 43 inches. Currently, the Quabbin is in a good position at 93% though precipitation has been minimal so far.

Members thanked Matt for his presentation. It can be viewed in more detail here: *MWRA Systems Status Update* <https://www.mwra.com/monthly/wscac/presentations.htm>

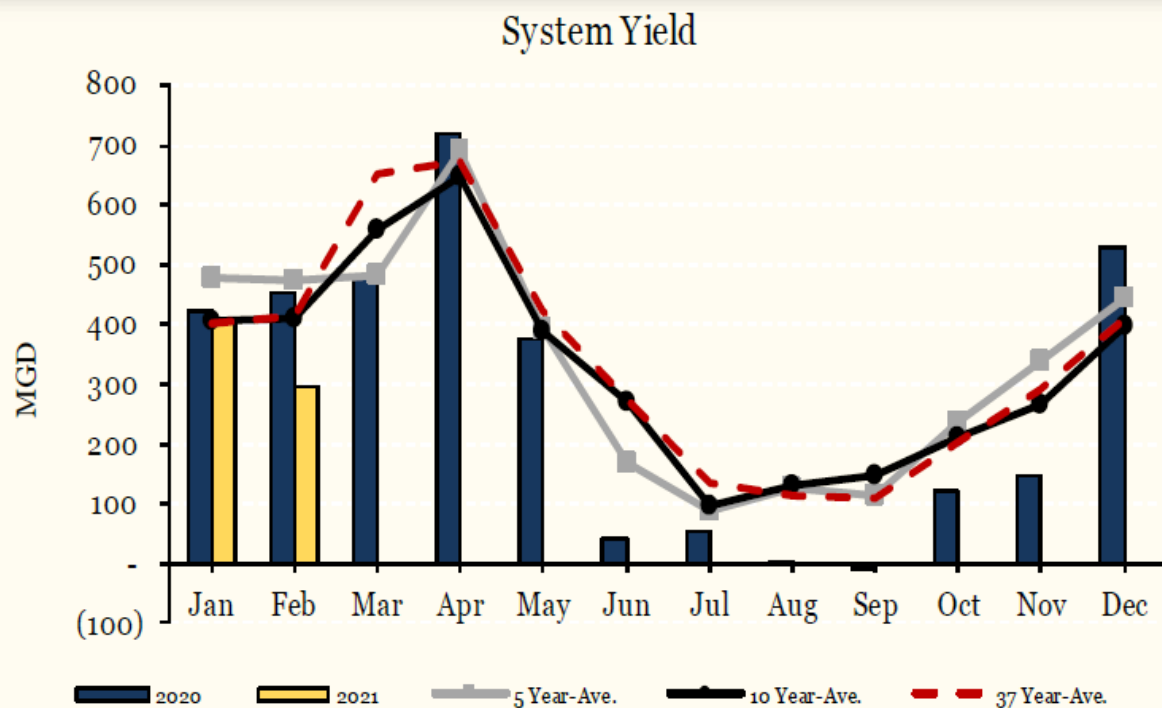


Precipitation

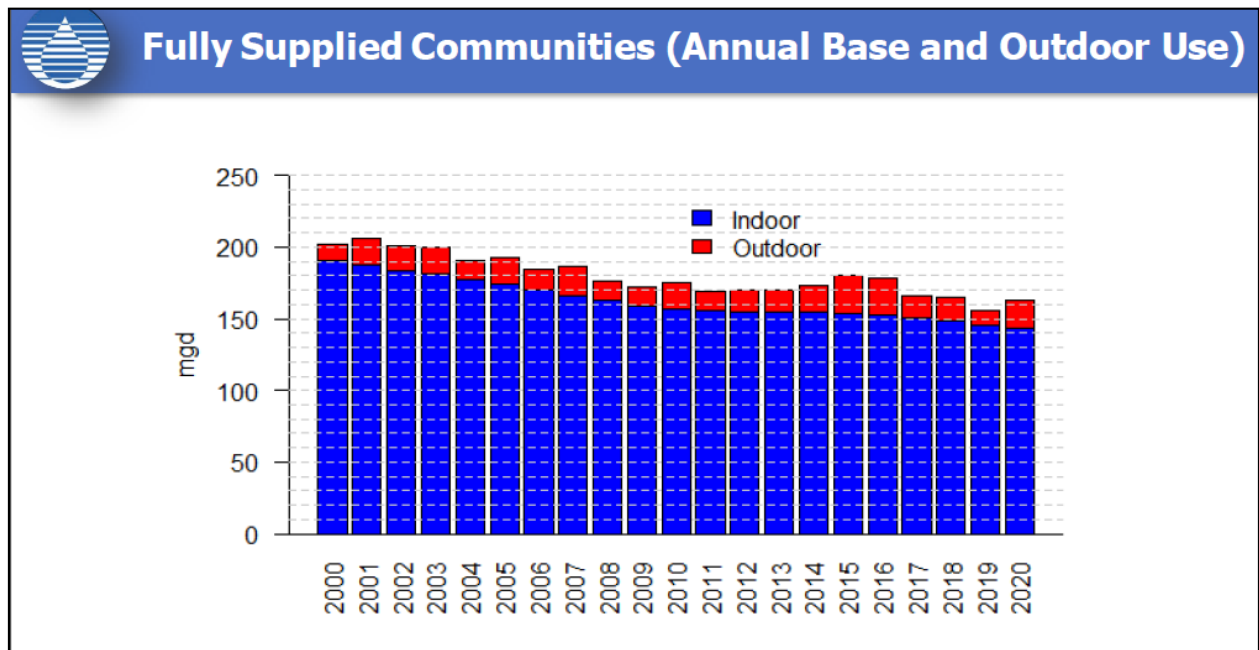
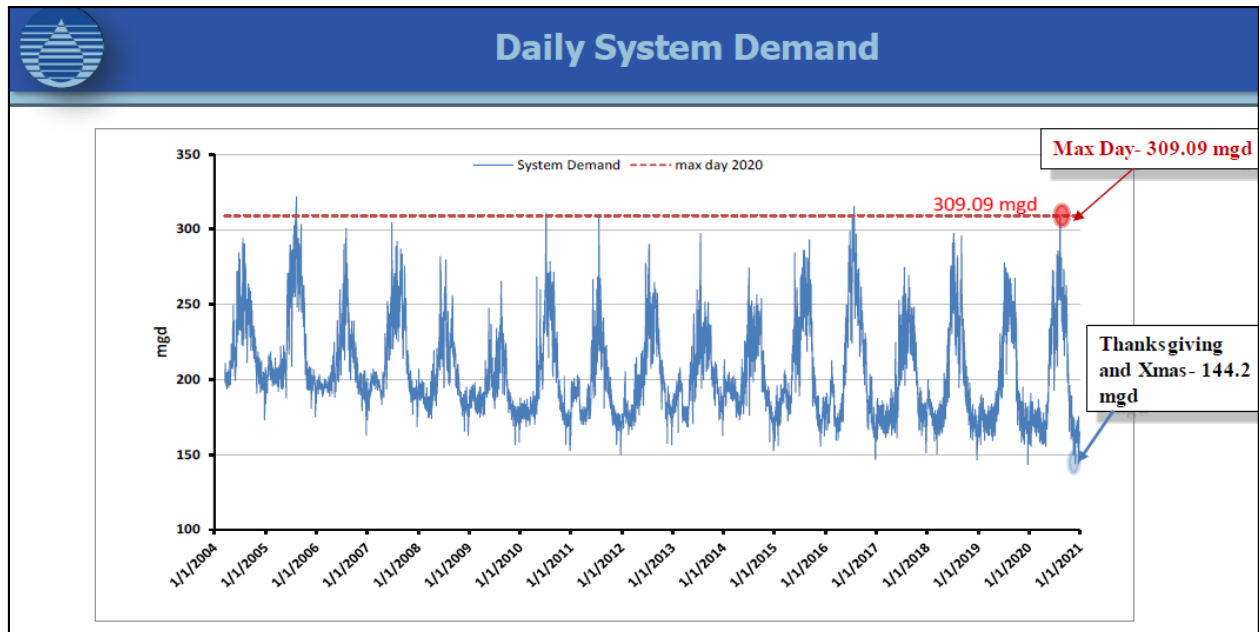


Yield

System Yield is defined as the water produced by its sources, and is reported as the net change in water available for water supply and operating requirements.



Lexi introduced Steve Estes-Smargiassi, MWRA Director of Planning & Sustainability. Steve discussed the annual 2020 Water Use Trends and the updated Lead & Copper Rule.



Steve noted that 2020 was a fascinating year for a variety of reasons. Due to the pandemic, demand went down in Boston (58 mgd, the lowest since 1897 and down almost 6% from the previous year). Demand shifted up in the more suburban communities. People began working from home and businesses closed. A dry summer and fall also played a role in overall water use. The max day in summer was 309 mgd. Christmas (144 mgd) and Thanksgiving were the second and third lowest we've seen for low demand days. Both base indoor daily demand (Nov.-March) and outdoor seasonal demand (in red) continue to go

down. It does vary year-to-year with the weather and other things, but both indoor and outdoor water use is still trending down, and an overall decrease in use by customers.

Reservoir withdrawals is the metric used to compare to safe yield which is 300 mgd. Five year averages that smooths out some of the year to year variability with weather. We have been relatively flat since the early 2010 decade. If you subtracted out new customers and also the pipe to the Hatchery, the trend line would be a bit lower showing that “new user” demand and increased efficiency are about equal creating the net withdrawal plateau seen in the chart.

The goal for the reservoir, according to MWRA’s Drought Plan is to be filling the reservoir in the winter and draining down in the summer. Refilling begins again in the fall. Charts and graphs show that the reservoir is currently in pretty good shape.

From the community’s point of view, the cost of their share on an annual basis is directly related to the amount of water the other communities are using. Towns may have sold more water in 2020 (Boston sold less) and so they will see the cost of their allocation go up. If Boston’s share decreases due to a decrease in sales, other communities in the system will have their shares go up. It is a question on how current revenues per community affect the following calendar years cost allocation.

Paul Lauenstein asked if growing populations or other things affect demand. Steve mentioned that both increased population and reservoir withdrawals like the hatchery increase demand while efficiency continues to decrease it.

Whit Beals asked if MWRA has a program to notify communities regarding their water use. Steve said yes, there is a MWRA monthly water use report on their website that is also sent to communities so they know how they’re doing in addition to all other communities use. If a community has a sudden increase in use, they receive a phone call from MWRA staff to help them determine if there is a leak or unexpected issue.

Steve changed topics from water use to water quality. He started with the significant changes to the Lead & Copper Rule (LCR).

In January 2021, EPA published revisions of the LCR after 16 years of work. There are seven significant changes that will require additional effort by communities and which have to be completed within the first three years with a deadline of January 2024. They are:

- Develop and submit complete service line inventories
- Develop and submit plans for lead service line replacement and annual notifications to occupants
- Provide risk mitigation efforts including filters after activities that disturb service lines
- Provide 24 hour notification of any exceedance of the 15ppb Action Level
- Conduct “find and fix” at any home where their sample is over the lead Action Level
- Change how required sampling is conducted
- Conduct mandatory sampling in 20% of all schools and licensed childcare facilities annually

These required changes will make it more likely that MWRA will be required to make changes to its corrosion control treatment if the water system is over the new Trigger Level of 10ppb or the existing Action Level of 15ppb. Staff are anticipating this and are working toward a review if needed. They have constructed a series of pipe loop test racks with lead pipes and are in the process of acclimating the pipes with system water at the Carroll Water Treatment Plant. Experts and stakeholders including the MWRA Advisory Board will assist MWRA staff with identifying feasible alternatives for evaluating the current

system to make sure there aren't any unintended consequences to water quality, public health or the environment.

There will also likely be a greater volume of samples and a higher level of technical assistance requested by communities. More communities will be required to replace lead service lines and may make use of the MWRA's loan program. On May 20, the Advisory Board will hold a Lead & Copper workshop for communities to learn more about the new requirements and how MWRA and Advisory Board staff can assist.

The Biden Administration has added a delay on this rule. MWRA had to plan on the January 2024 deadline but it's possible that the deadline could slide out and that some of the requirements could be changed by the new EPA staff.

Bill Fadden asked about the copper portion of the rule. MWRA has a very low copper level so they don't anticipate any problems with these levels.

Janet Rothrock asked if it's customary to replace both the public and private portions of a lead service line, and what if the customer doesn't know if they have a lead service line? If a community only replaces the public portion, this can cause a problem with higher lead levels remaining in the private part of the line. MWRA suggests replacing both public and private whenever possible. Several MWRA fully supplied communities have used funds from MWRA's interest-free lead service replacement loan program. Steve mentioned that when a community offers to pay for both lines, many customers participate in this offer. Under the new LCR, only full replacements, including both lines count.

Whit Beals asked if older homes with copper pipes and lead solder could be problematic. Steve said that lead pipes are more problematic because more water comes into contact in the lead pipes than into contact with the solder. Corrosion control is still necessary due to lead solder and brass fixtures.

Paul Lauenstein asked if all lead service lines were replaced tomorrow, would MWRA save money on treatment chemicals to raise the pH? Steve said no, due to legacy brass and lead solder still present. Paul asked how much money is spent on raising pH annually. Steve recalled that approximately 3.6 million dollars is spent each year for the chemicals involved in corrosion control treatment.

Members thanked Steve for his presentation. It can be viewed in more detail here: *Report on 2020 Water Use Trends and Drought Status and the MWRA February Staff Summary on the Update on EPA's Revised Lead and Copper Rule* <https://www.mwra.com/monthly/wscac/presentations.htm>

Lexi mentioned that WSCAC's letter on Green Certification was given to the MWRA Board of Directors for their February meeting.

Whit asked Steve to discuss the MWRA Staff Summary that will be discussed at the Board of Directors March meeting. Steve said he wasn't able to speak about it at this time because it was currently being written. A draft of the Staff Summary would not be available to WSCAC until after the Board packet was complete on Friday.

Whit discussed WSCAC's position on green certification and why it is a good option for MWRA support.

Paul commented on the previous DCR forestry moratorium and that there is another petition circulating with over 2000 signatures calling for another moratorium. This shows that DCR's view is incorrect when they say that the public doesn't care about forestry. Green certification is worth the cost.

Lexi reviewed the high points of the recent Advisory Board meeting, the Trust meeting, the Mass Rivers Water Policy meeting and the two DEP WMA stakeholder meetings on the proposal to condition PWS

registrations. Registered only communities, under the proposed regulations, would be subject to drought restrictions within the state's Drought Management Plan. Towns with Water Management Act permits have conditions already in their permits. MWRA has a registration of 300mgd with a fully approved Drought Management Plan and a multi-year reservoir so they would not be included in these proposed regulations. Fully supplied MWRA communities follow MWRA's Drought Plan which is separate from the state plan.

Michael Baram asked if there was an intersection between green certification and biomass. Whit said there probably is. There is very little demand for pulp wood at this point. Pellets and biomass are different. A logger is always looking for the best market for their products. There is an ongoing debate between groups who don't want any trees cut and those who see the benefit of wood products. Our priority is protecting water quality through forest management that best serves the public water supply. The STAC report provides recommendations to meet this goal. WSCAC believes green certification can offer additional benefits to the DWSP forestry program by providing oversight, transparency and collaboration with other forestry professionals.

Martha offered several corrections to the draft meeting minutes which Lexi will correct and integrate. Martha made a motion to approve the minutes and Paul seconded. Lexi did a roll call vote and the January 12, 2021 meeting minutes were voted and approved.

Lexi and Andreae mentioned the joint April 20 virtual meeting on the MWRA budget.

The meeting was adjourned.

WSCAC and WAC will hold a joint meeting on April 20, 2021 via Zoom.

The topic will be MWRA's FY22 budget update

Please visit [our website](#) for more information on these meetings.