



### **WSCAC Meeting**

Location: Held virtually

March 8, 2022 – 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 Guidod, MWRA Advisory Board**

Bill Kiley, BWSC

**Paul Lauenstein, NepRWA**

**Martha Morgan, Nashua River Watershed**

**Martin Pillsbury, MAPC**

Janet Rothrock, League of Women Voters

Bruce Spencer, Retired DCR-DWSP Chief Forester

#### **Non-Members in Attendance**

Lexi Dewey, WSCAC staff

Lexi Dewey opened the meeting and welcomed members and friends to the virtual March 8, 2022 WSCAC meeting.

The February 2022 draft meeting minutes were voted and approved.

Lexi provided the following briefs:

- As a member of the Mass Rivers Alliance, WSCAC reviews proposed legislation supported by Mass Rivers to determine if the proposed legislation is within the range of WSCAC's mission. The drought bill (H.898/S.530) and the invasive species bill (H.999/S.563) are of interest to WSCAC due to our work on the MA Drought Task Force and with the work being done by MWRA and DCR-DWSP on aquatic and terrestrial invasives in the watersheds. We have previously submitted comments in support of the proposed drought legislation and will continue to monitor both bills.
- MassDEP's Annual Filtration Avoidance Reports are now available, and both Quabbin-Ware and the Wachusett watersheds continue to meet the criteria for filtration avoidance. MassDEP requires that DCR submit the delayed Ware River Public Access Plan by April 30, 2022. DCR is also required to submit a report on watershed rule infractions, an update on staffing vacancies, a report on any new land acquisitions and a progress report on the status of their newsletter, Watershed Currents.
- The report from the PFAS Interagency Task Force is not yet available to the public. Possibly by the end of April, and perhaps a topic for our virtual May meeting.
- Lexi asked Steve Estes-Smargiassi about a possible in person meeting at Southboro in the near future. Steve mentioned that the conference room isn't yet able to provide hybrid meetings.

## James Guidod, MWRA Advisory Board update:

James spoke about the \$300,000 in ARPA funds allocated by the legislature to do a feasibility of system expansion for water and wastewater first focusing on the South Shore, and then a separate study for the North Shore. The legislature has an interest in looking at this in terms of public health, infrastructure and the growing concern about PFAS contamination. The Adv. Bd. has put together a group of stakeholders to discuss these issues and to evaluate available state and federal funds that might be used for MWRA and community projects. To learn more, click on the link below:

<https://www.mwraadvisoryboard.com/system-expansion-feasibility-studies>

Paul Lowenstein mentioned that the Town of Sharon has found PFAS contamination in its largest public well that provides 45% of its drinking water. They are currently leasing a filtration system. Sharon has a successful water conservation program which may help with demand since the well cannot produce as much water with the filtration system in place.

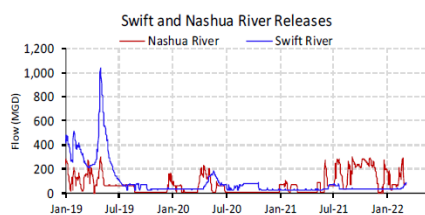
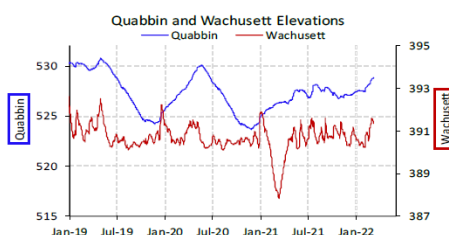
Lexi noted that there were enough members for a quorum to approve the February minutes. No questions or concerns were raised. Bill Copithorne made a motion to accept the minutes and Paul Lowenstein seconded. The minutes were unanimously approved by roll call vote.

## Reservoir Operations presentations: MWRA staff: Matt Walsh, John Gregoire and Steve Estes-Smargiassi

### Matt Walsh-Reservoir Status Update

Matt began by showing the slide below which shows MWRA's daily reservoir information and included data from USGS gauges and rain gauges.

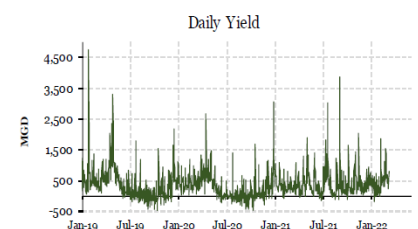
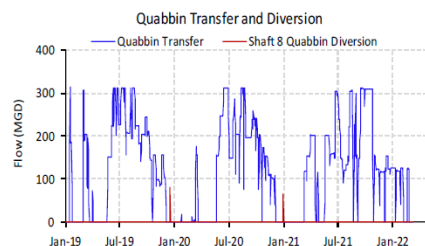
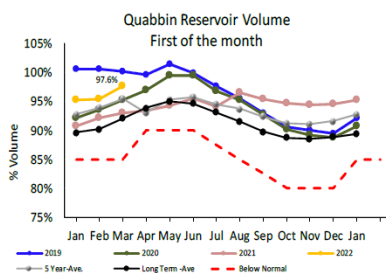
Quabbin	
Elevation *7 am* :	528.88
Percent Full:	97.9%
Spillway:	46.02 MG
Quabbin Transfer:	0.0 MG
Swift River Release @ USGS West Ware Gage:	84.02 MG
Connecticut River @ Montague City:	20,300 CFS
3 Day Connecticut River Avg:	16,633 CFS
Ware River Release: Shaft 8 Diversion (to Quabbin):	193.90 MG 0.0 MG



Tuesday, March 08, 2022

Wachusett	
Elevation*7 am* :	391.39
Percent Full:	92.8%
Spillway:	0.00 MG
Fountain + APSV:	78.00 MG
Total release to Nashua River:	78.00 MG
Nashua River Release @ Water St. USGS Gage:	70.45 MG
Wachusett Aqueduct:	0.0 MG

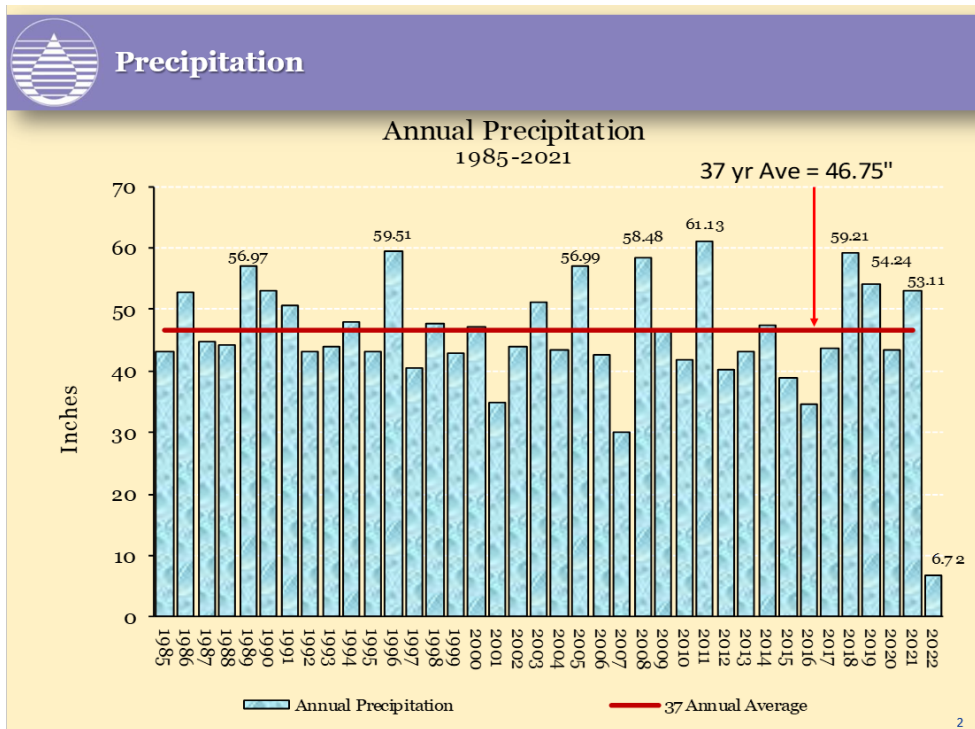
System Yield	
Daily Yield:	729.44



Lexi asked if there have been any diversions from the Ware River this past fall and winter. John Gregoire said no and mentioned that Shaft 2 is under construction. Steve Estes-Smargiassi reminded the committee that MWRA can divert water from the Ware River (during specific times of the year and if flow in the river is at or over 85 MCD) if Quabbin is below normal. MWRA staff also try to exercise the valves routinely in the winter to make sure the transfer infrastructure is working smoothly. Ware River water comes into the Quabbin beyond the baffle dams so it has several years of retention time.

Lexi noted that Quabbin began spilling on February 4<sup>th</sup> and is continuing to spill. She asked if MWRA is transferring water to the Wachusett. Steve said that the Wachusett already is at the upper end of the operating band, and because it is spring which can bring more rain, they are trying to lower the reservoir level at the Wachusett before beginning the annual Quabbin transfer of higher quality water.

Paul asked if the water transferred from the Ware River to the Quabbin is by gravity and Steve said yes. Martha Morgan noted that there is 100 million gallons going down the Nashua River. Matt said that so far only the angle batten is open but they will be opening the crest gate in the next day or two to move more water down the Nashua in order to lower the operating band of the reservoir.

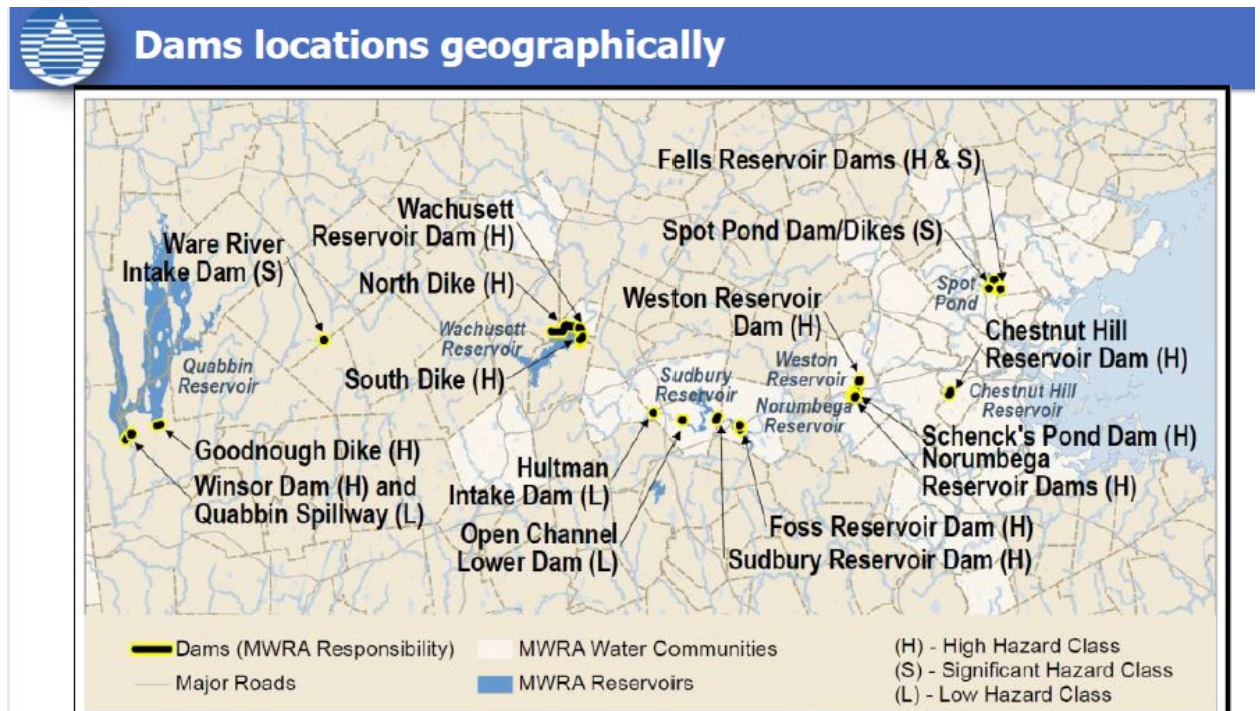


Matt sends out a daily withdrawal and daily reservoir status Excel sheet five days a week.

**John Gregoire-Dams and Invasives Update**

John opened his presentation by showing the slides below on the dams MWRA is responsible for and their location. The MWRA must meet MA Dam Safety Regulations (302 CMR 10.00) for biennial inspections, studies, monitoring, maintenance and deficiency repairs. To date, MWRA has invested over \$25 million in water supply dams.

Dam Name and Location		Year Completed	Construction/Type	Storage (MG)
Quabbin Reservoir	Winsor Dam, Belchertown	1939	Earthen Embankment	412,000
	Goodnough Dike, Ware	1938	Earthen Embankment	
	Quabbin Spillway	1938	Masonry - Gravity	
Ware River	Lonegan Intake Dam, Barre	1931	Masonry - Arch	Run of River
Wachusett Reservoir	Wachusett Reservoir Dam, Clinton	1905	Masonry - Gravity	65,000
	North Dike, Clinton	1905	Earthen Embankment	
	South Dike, Clinton	1905	Earthen Embankment	
Wachusett Aqueduct	Open Channel Lower Dam, Southborough	1880s	Masonry - Gravity & Earthen Embankment	8
Wachusett Aqueduct	Hultman Intake Dam, Marlborough	1940s	Earthen Embankment	8
Sudbury Reservoir	Sudbury Dam, Southborough	1898	Earthen Embankment	7,200
Foss Reservoir	Foss Reservoir Dam, Framingham	1890s	Earthen Embankment	1500
Norumbega Reservoir	Dams 1, 2, 3, 4 and East Dike, Weston	1940s	Earthen Embankment	163
Schenck's Pond	Schenck's Pond Dam, Weston	1940s	Earthen Embankment	43
Weston Reservoir	Weston Reservoir Dam, Weston	1903	Earthen Embankment	360
Spot Pond	Dams 1, 4 and 5, Stoneham	1899	Earthen Embankment	2,500
Fells Reservoir	Dams 2, 3, 6, 7, and 8, Stoneham	1898	Earthen Embankment	63



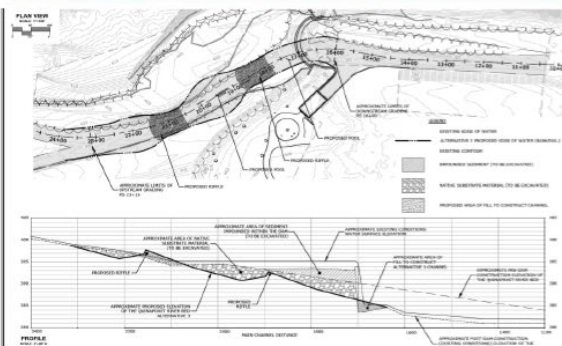
He discussed the following upcoming projects:



- Piezometers (required in High Hazard Class earthen dams) in North and South Dikes, Norumbega/Schenks Reservoir, Weston Reservoir, Fells Reservoir and Chestnut Hill Reservoir
- North Dike Overtopping Protection-Installation of a 18” high parapet wall for wave run-up protection
- Sudbury Dam Spillway Masonry Repair and Gatehouse Vent Pipe
- Foss Dam Overtopping Erosion Protection
- Quinepoxet Dam Removal
- River Road Rehabilitation-completed except for some improved slope erosion control
- Upcoming Dam Safety Compliance and Consulting Contract (FY23-FY25)



## CIP: Quinapoxet Dam Removal



### Goal:

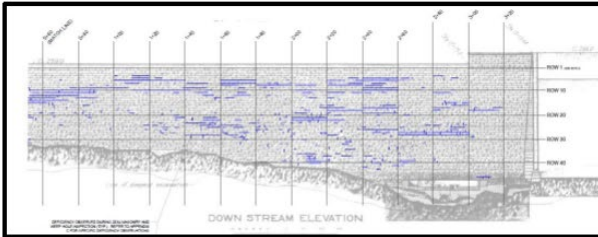
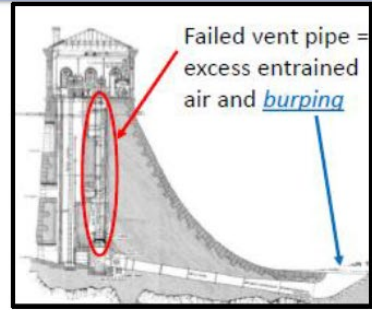
Remove the obsolete dam and modify the channel to restore free passage of fish and wildlife while managing sediment and protecting water quality

### Status

- 100% Design Underway
- Expanded Environmental Notification Form: Received approval for EIR Waiver
- Sediment Management Plan: **SMP Finalized.**
- MHC Field Archaeology Work: **Completed**
- Landscape architectural work for ADA/DCR Universal Access design for pathways, fishing platform and signage: **Completed.**
- Federal grant funding application: **Underway**
- **FY 23 Governor's Supplemental Budget has earmarked \$2.4M for this project!**
- Construction November 2023 to April 2024



## CIP: Sudbury Dam Spillway Masonry Repair and GH Vent Pipe



- Repair of mortar on the Sudbury Dam spillway
- Repair of the Sudbury Dam gatehouse vent pipe
- Cost for engineering and construction: \$2,285,000
- Construction July 2023 to December 2024

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## Detention Basin outlet for southern end of system



River Road rehabilitation at the Wachusett Reservoir

John continued his presentation by updating members on the Invasives Control Program.





## Reservoirs Aquatic Invasives Plants Control Program

### Annual Invasive Plants Control Projects:

- All Reservoirs Macrophyte Survey + Emergency Reservoirs WQ Assessment
- Chestnut Hill Reservoir Invasives Plants Harvesting and Cyanobacteria Control, drawdown (target **Eurasian milfoil -EWM**)
- Ware River /Shaft 8 Intake Pool Invasive Plants Control, drawdown, (Target **Variable milfoil - VLM**)
- Wachusett Reservoir (Lower Basins/coves, Stillwater Basin and Quinapoxet Basin) Diver Assisted Suction Harvesting (DASH) (Target **VLM, EWM, Fanwort**)
- Sudbury/Foss Manual Invasives Control, drawdown, (Target **Water Chestnut**)
- Sudbury Reservoir DASH (Target **Fanwort**)
- Weston Reservoir DASH (Target **EWM**)
- Quality Control Diver Inspection of DASH Contracts
- Floating fragment barriers at strategic locations

FY 23 Project Budgets	
Sudbury/Weston DASH	\$ 35,000.00
QC Diver - DASH	\$ 55,000.00
Chestnut Hill Mechanical	\$ 80,000.00
All Reservoirs macrophyte and Emerg WQ	\$ 86,350.00
Sudbury/Foss Manual	\$ 12,500.00
Wachusett Basins and Coves DASH	\$ 425,000.00
Ware River Manual	\$ 40,000.00
	\$ 733,850.00



## Four invasive plants are the main concerns to our reservoirs



Eurasian Watermilfoil



Fanwort



Variable Leaf Milfoil



Water Chestnut

Spread by roots, seed and fragments

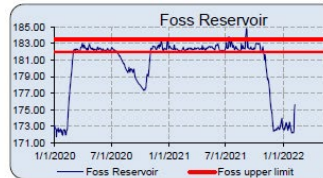
Spread by seed

These invasive fast-growing plant colonies are a reservoir intake headache. They grow in shallow areas and coves around the Wachusett reservoir. A lot of progress has been made removing plants, and in some areas, only a small amount of annual maintenance is required now. With the removal of these invasives, native plants are now returning.

John talked about the winter drawdowns at Foss and Chestnut Hill reservoirs. These drawdowns expose invasive plants to freezing temperatures. The desiccated plants are then harvested along the shoreline and composted.



## Winter drawdown – Foss EWM Control



Foss Res. exposed bed freeze penetration test hole 01.19.2

Very hard to penetrate.  
Note ice. Used iron bar to  
Break through to softer material



### Steve Estes-Smarigiassi–2021 Water Use Trends and Reservoir Status

Steve said 2021 was an interesting year as most are. He provided updates on :

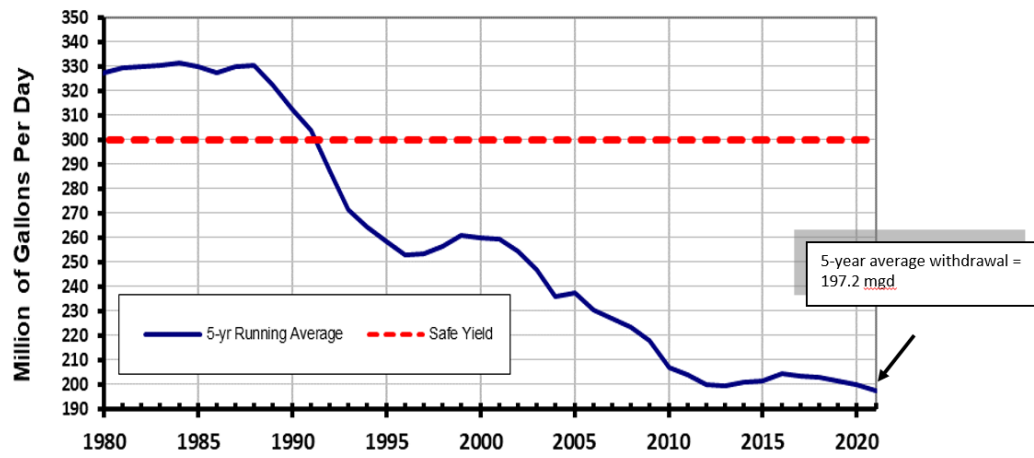
- Water consumption by communities
- Base & seasonal water use trends
- Use by partial and emergency communities
- Reservoir status and withdrawals

How are people using the water? Calendar year 2021 water use by all MWRA communities was 180.6 mgd which was 3.3 mgd lower than 2020.





## Reservoir Withdrawals – 5 Year Running Average



Total Consumption by MWRA Communities (1980-2021)

MWRA looks at daily demand and also the days of lowest demand. Maximum day demand was on June 28 with a withdrawal of 305 mgd. The days of lowest demand were the day after Thanksgiving at 156 mgd, and the day after Christmas at 151 mgd as expected.

Boston's water use was interesting as it was impacted by the pandemic. People left their work in the city and began working from home. Demand in the suburbs increased. There has been a shift toward normal again with Boston showing a slight increase in demand in 2021, but still lower than before the pandemic.

Partially supplied communities used additional water. Wellesley increased demand due to PFAS contamination as did Burlington, a new member of the MWRA water system.

Steve discussed water use reductions in indoor demand due to continued efficiencies in residential and commercial water use. MWRA and its communities use of leak reduction programs are also a factor in indoor water use reduction.

Seasonal demand varies year to year depending on the weather which includes the amount and timing of rainfall, number of sunny days and temperatures. Dry years show increased demand due to the use of outdoor irrigation. The price of water influences seasonal use as well.

Steve discussed reservoir withdrawals and releases. Withdrawals includes water sold to MWRA communities as well as non-revenue generating uses such as the 6.2 mgd provided to the McLaughlin Fish Hatchery in Belchertown and water used within the MWRA system for various infrastructure uses. Total withdrawals in 2021 decreased by 2.44% from 199.4 mgd to 194.6 mgd.

With efficiencies and slightly lower demand, as the graph above shows, Steve said that water is available to sell to new communities that need it.

Paul noted the incredible feat of reducing demand to this level and how it helps with reducing the MWRA's carbon footprint.

Steve reminded the committee of the early waste from leaks in the water system. The MWRA's pipe rehabilitation program, raising public awareness and appropriate pricing have helped reduce demand as the public is paying closer attention.

An update to greenhouse gas report will be available soon. Steve introduced Michael O'Keefe as a new senior planning manager to the MWRA from NYC DEP. He will be working on master planning and greenhouse gas tracking. WSCAC members introduced themselves to Michael.

Lexi asked about lower demand and its effect on reservoir operations. Steve said that last year there was a lot of rainfall in July and September causing a rise in UV254. Chlorine doses were increased at the CWTP, but chlorine residuals remained low for communities at the edge of the MWRA service area. Total coliform levels increased in some of these communities. Managing local systems during this time was challenging.

Lexi asked about the longer than usual length of the Quabbin transfer. The transfer usually begins in sometime in May and closes down sometime in October. Due to all the rain in the summer of 2021, several options were used to release more water down the Nashua to help keep the Wachusett to within its regular operating band. When this level is reached, the Quabbin transfer of higher quality water is able to continue. Steve talked about the challenges of balancing water quality and quantity due to lower demand. The Quabbin reservoir began spilling over the lower spillway in February 2002. It continues to spill and now from the higher spillway. Steve mentioned that uncontrolled spilling is not helpful, so staff use the transferring options they have to avoid spilling if possible.

All presenters were thanked for their presentation.

Lexi mentioned topics for upcoming virtual WSCAC meetings:

- April –Annual WSCAC-WAC meeting on the MWRA proposed FY23 Current Expense Budget (CEB) and Capital Improvements Plan (CIP) meeting
- May-Possibly a joint meeting with WAC on the Final Report of the PFAS Interagency Task Force
- June-Prescribed burn presentation and Barre heath tour (in person)

The next virtual joint WSCAC-WAC meeting will be held on April 19, 2022 at 10:30 AM

The topic is our annual meeting on the FY23 MWRA Capital Expense Budget and Capital Improvements Plan.

The meeting was adjourned.

