



Presentation to

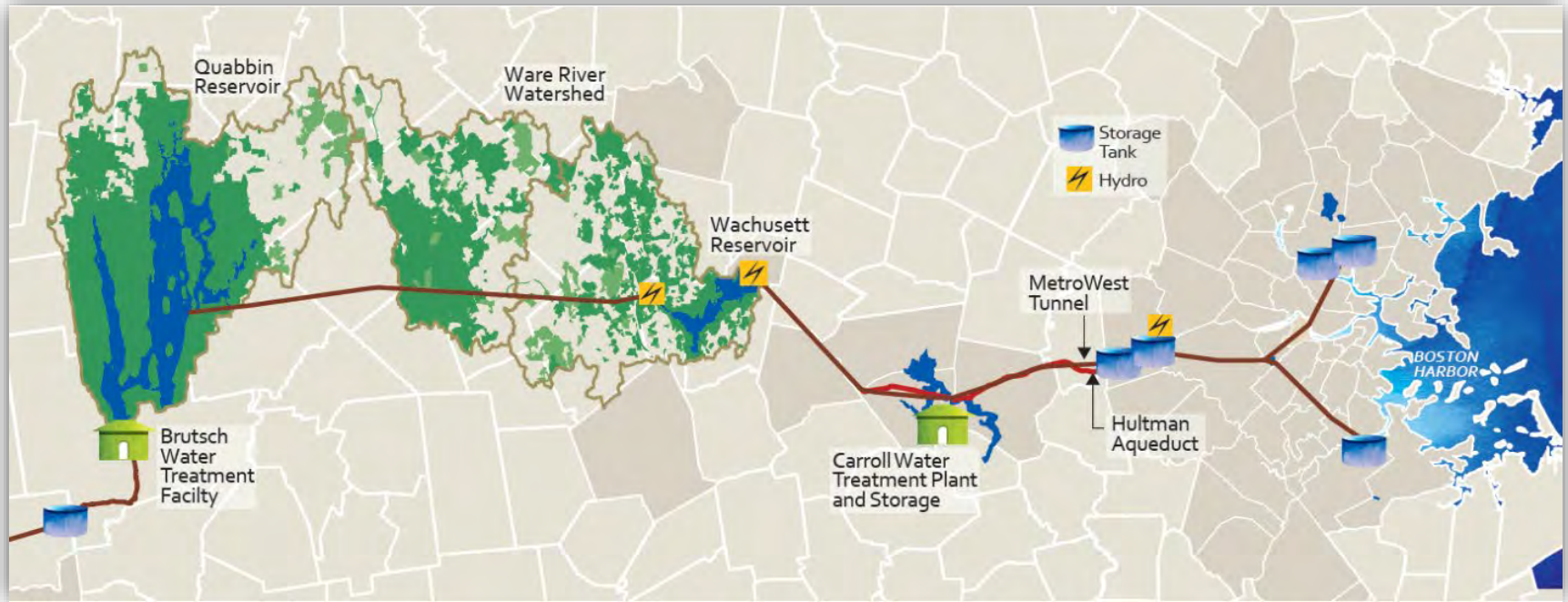
MWRA Board of Directors

*Report on 2023 Water Use Trends
and Reservoir Status*

April 17, 2024



MWRA Source – Quabbin + Ware + Wachusett



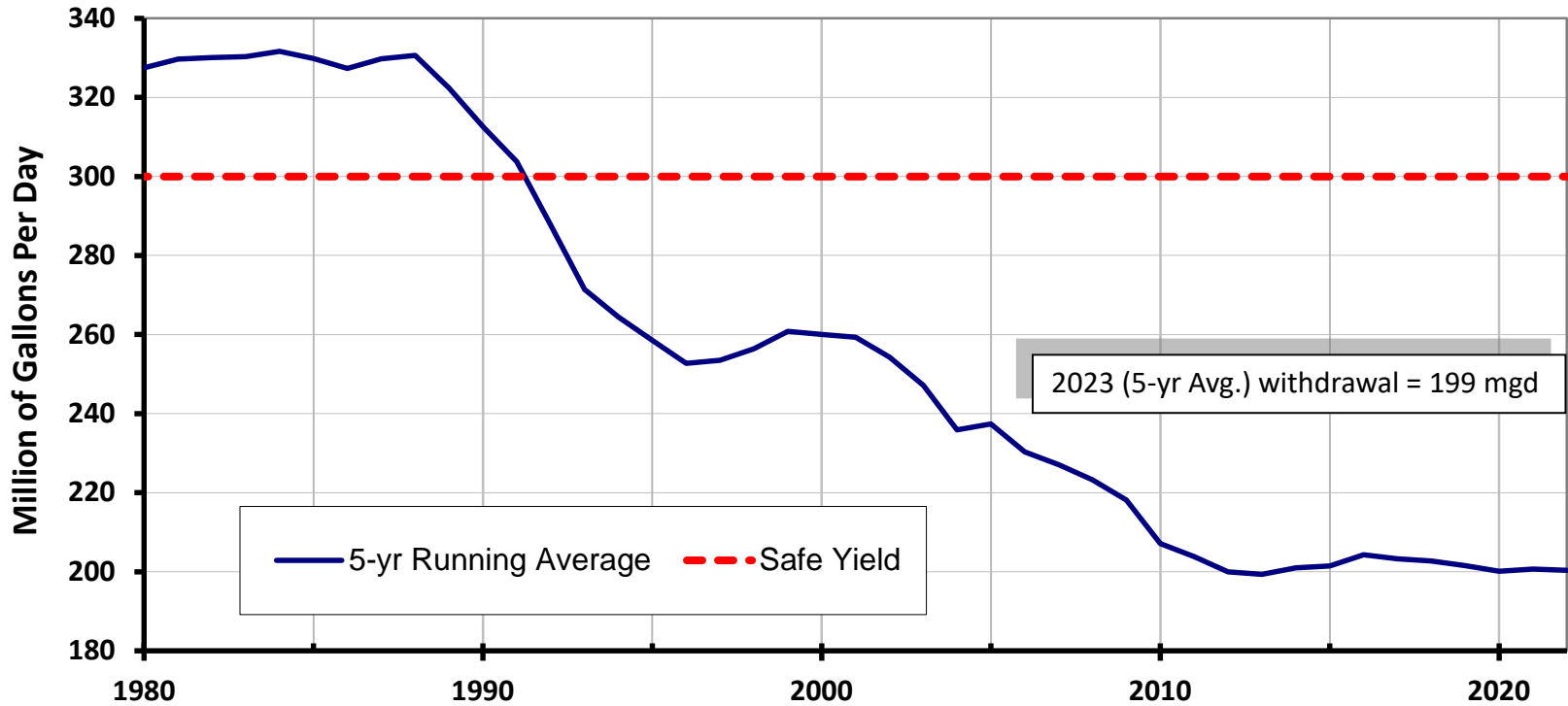


MWRA System Reliability Concepts

- Safe Yield – Quantity of water that can be reliably supplied over a period through periods of critical drought
- Critical planning focus -- the multi-year drought of the 1960's
- 300 million gallons per day (mgd) -- Combined safe yield of all three sources
 - Quabbin
 - Ware
 - Wachusett

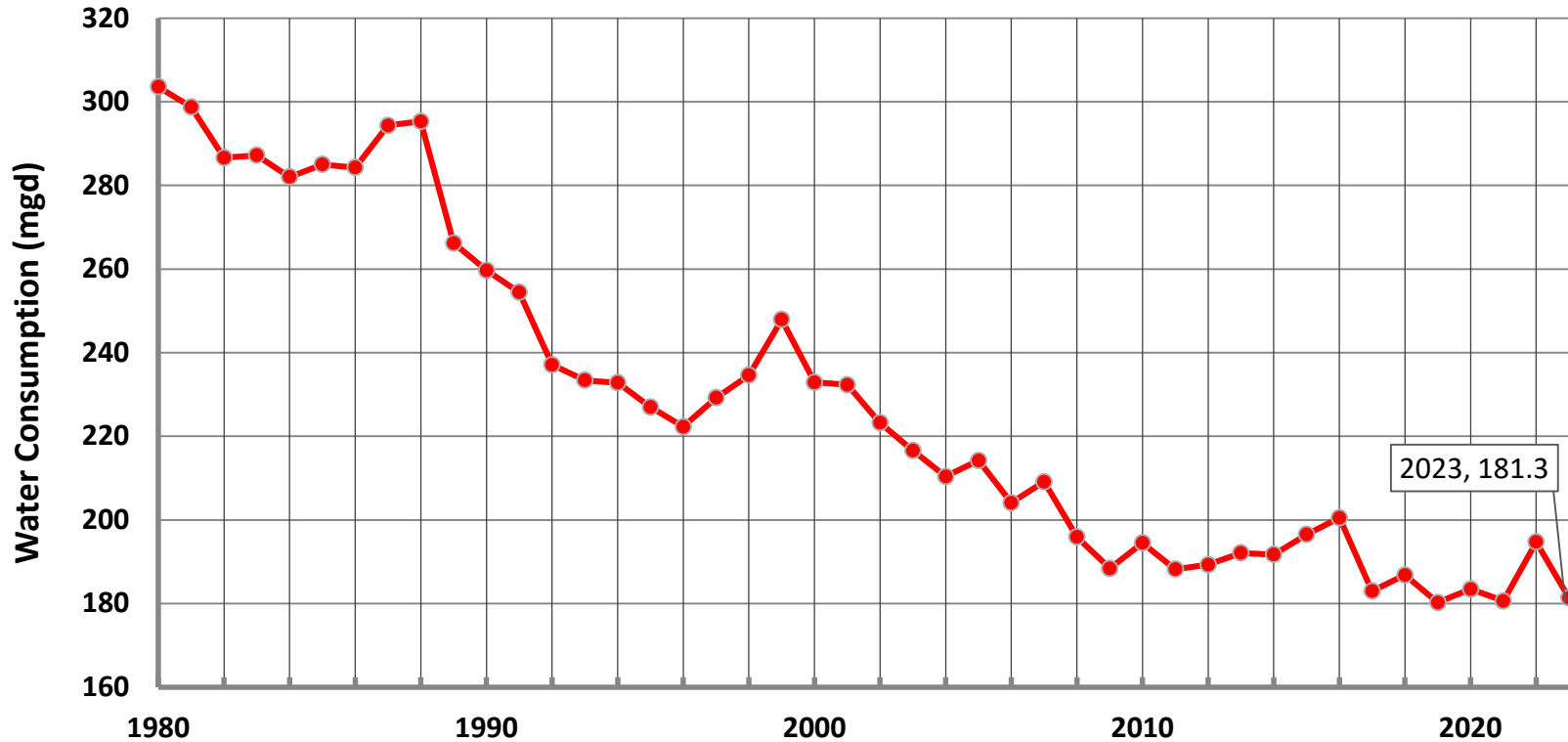


Reservoir Withdrawals Dropped Substantially Since 1980's



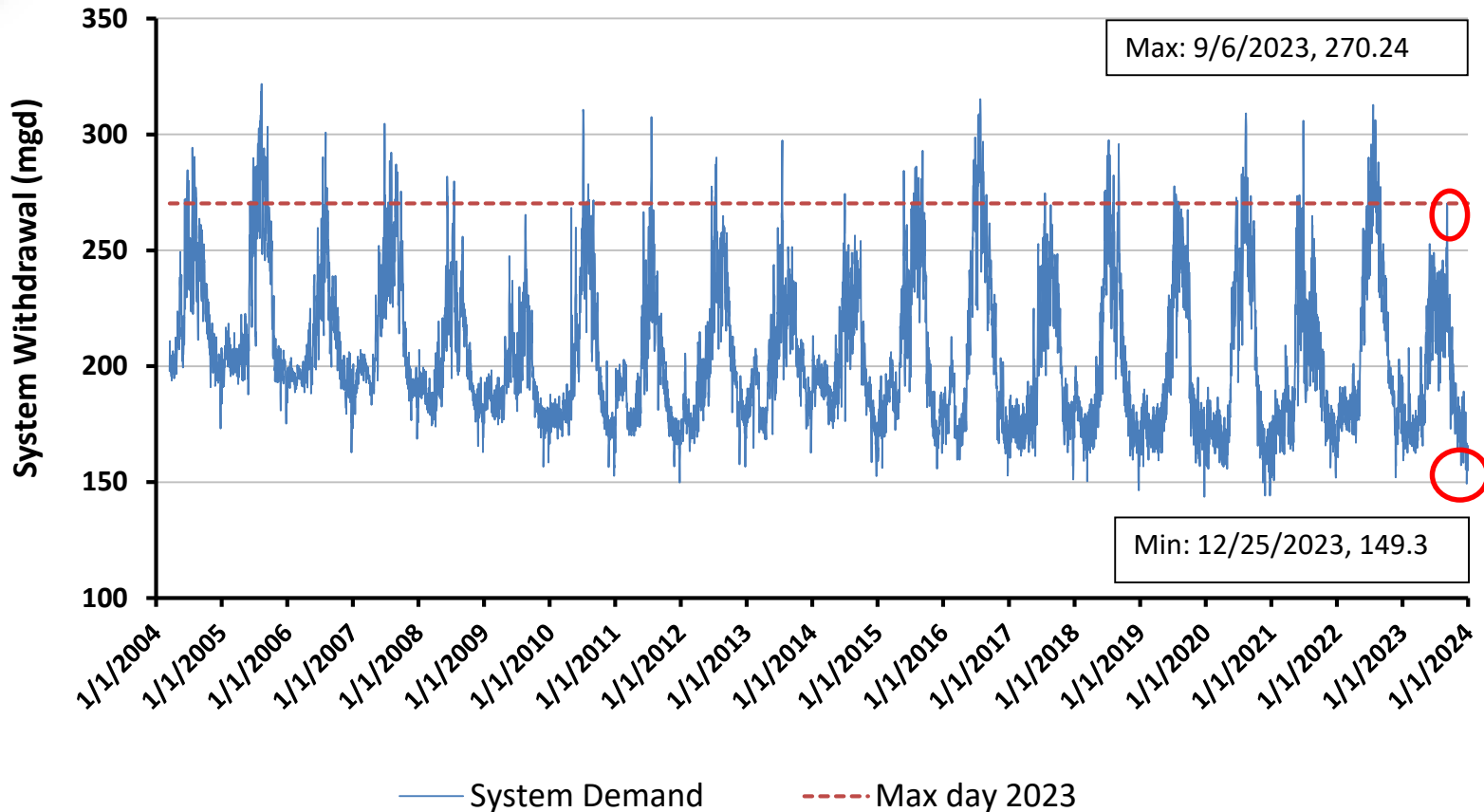


Total Consumption by MWRA Communities (1980 to 2023)



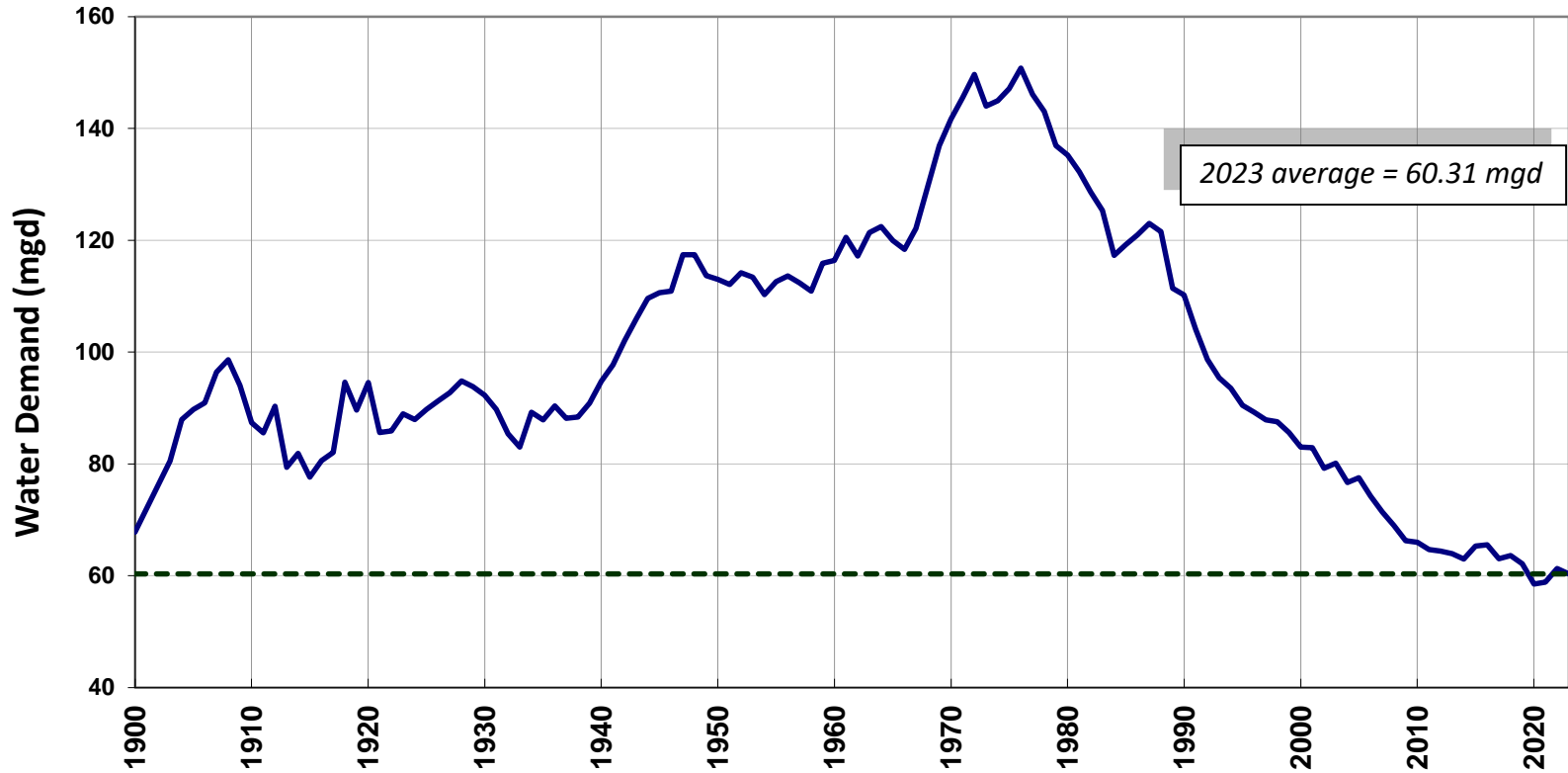


Daily System Withdrawals (2004 to 2023)



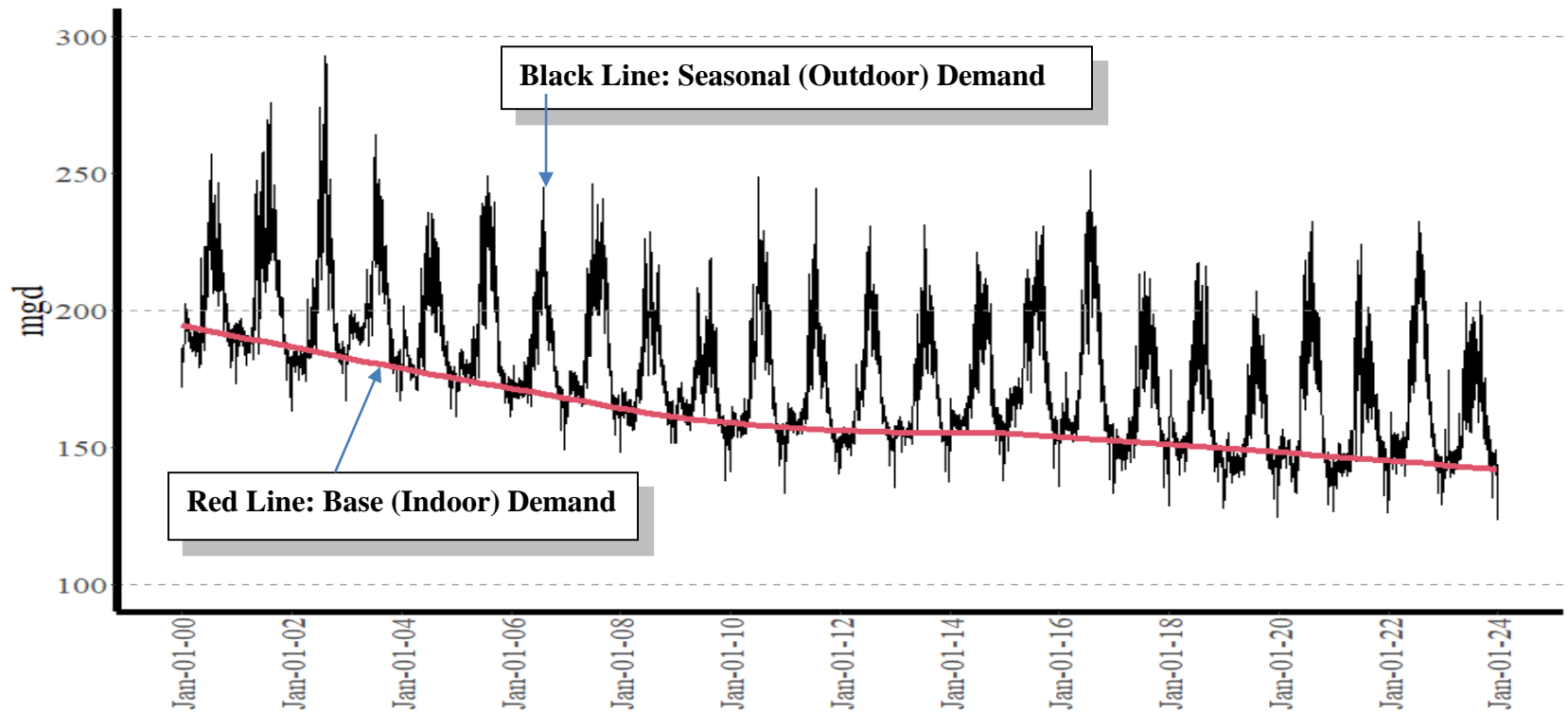


Boston Water Demand (1900 to 2023)





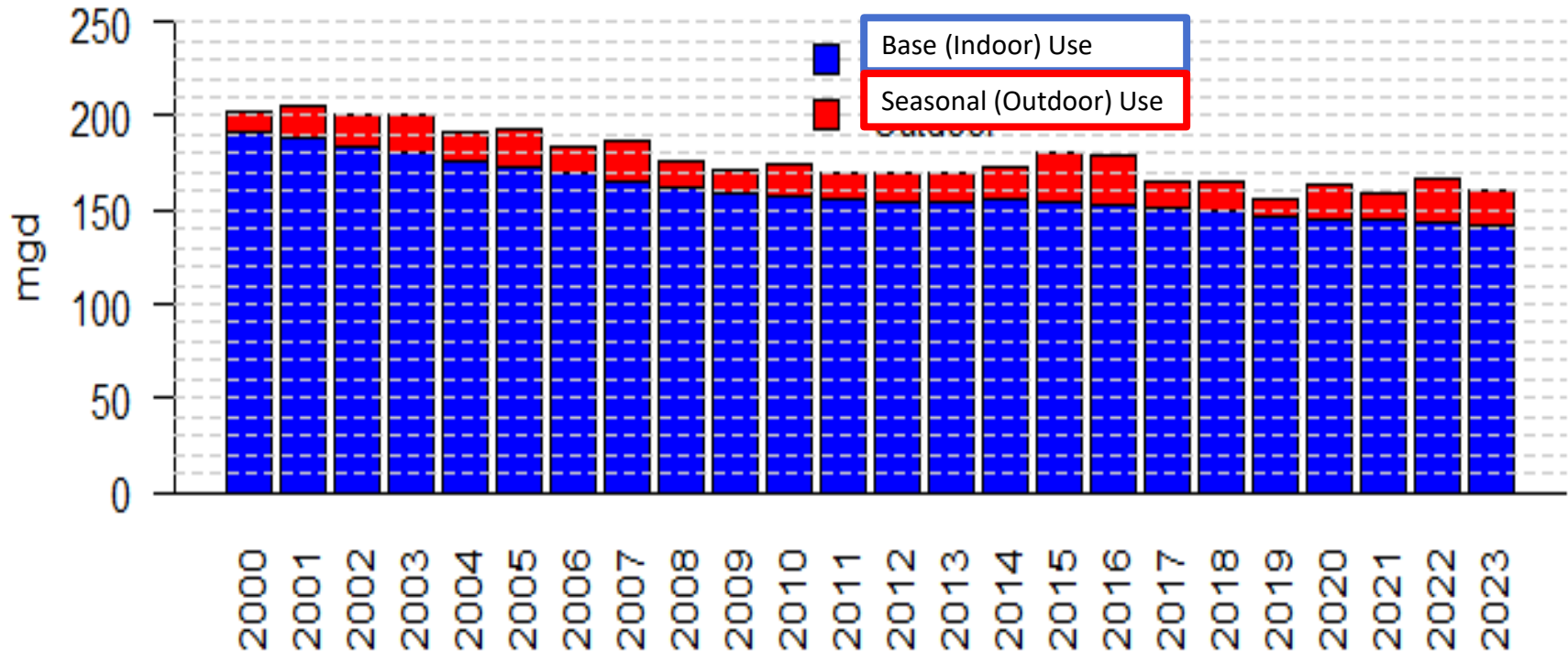
Base (Indoor) Demand vs. Seasonal (Outdoor) Demand



Based on fully supplied communities demand (1999 to 2023)

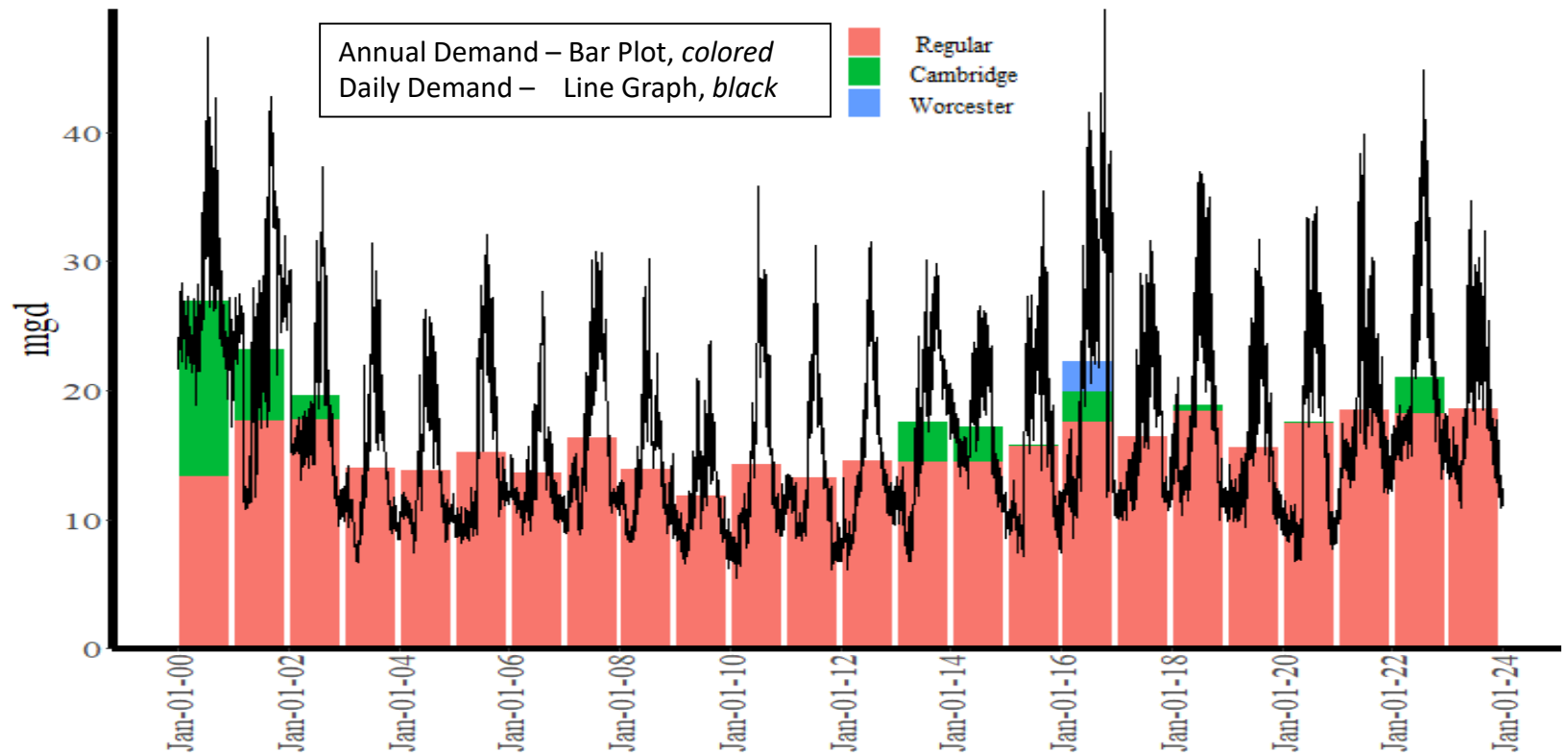


Fully Supplied Communities (Annual Based and Seasonal Use)



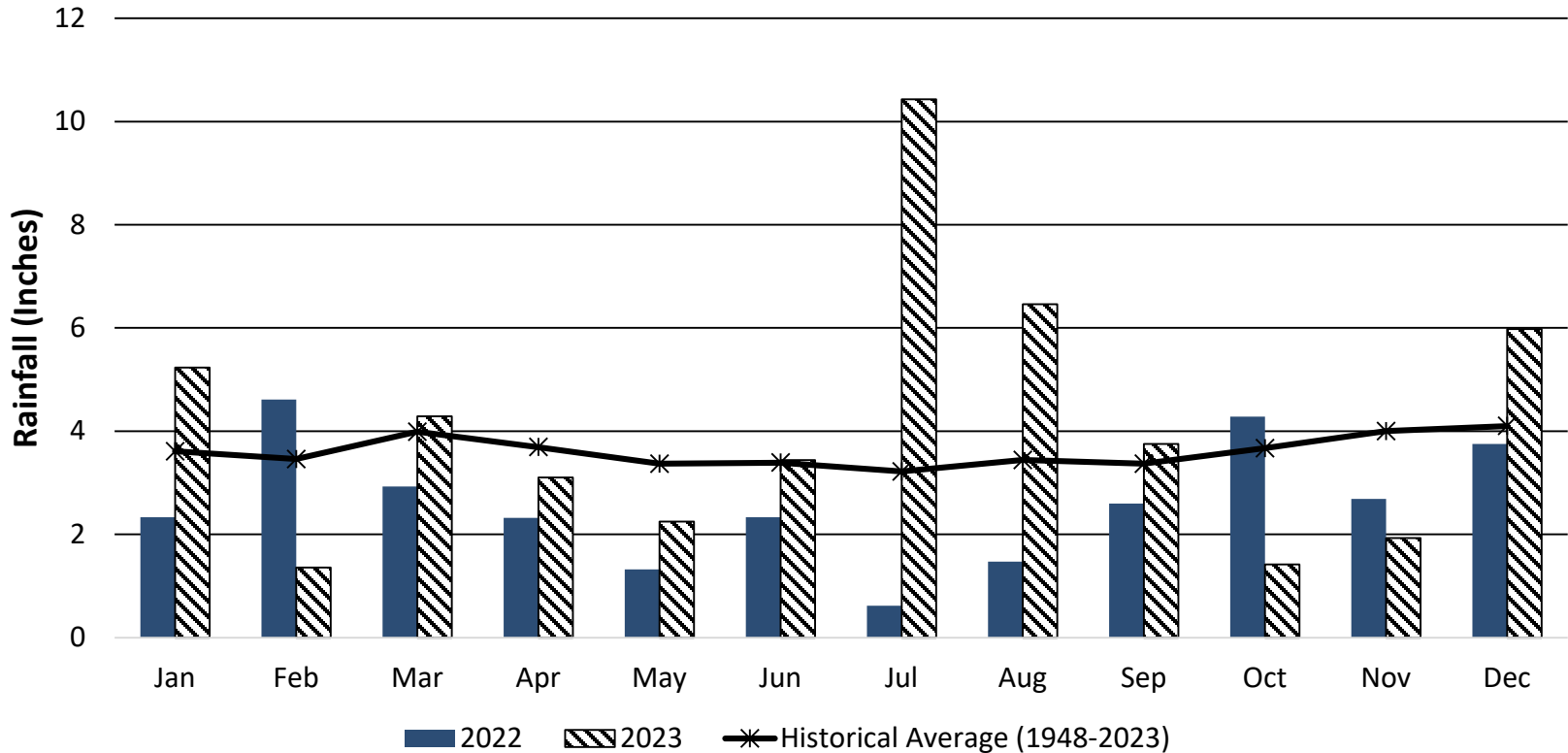


Partially Supplied Communities Have More Variable MWRA Demand





Boston Monthly Average Rainfall (inches)





Conclusion for 2023: Lowest water demand since 1950

- The system stayed in the normal operating range during the entire year.
- Despite adding new customers to the system, water demand in 2023 was the lowest since 1950.



Presentation to

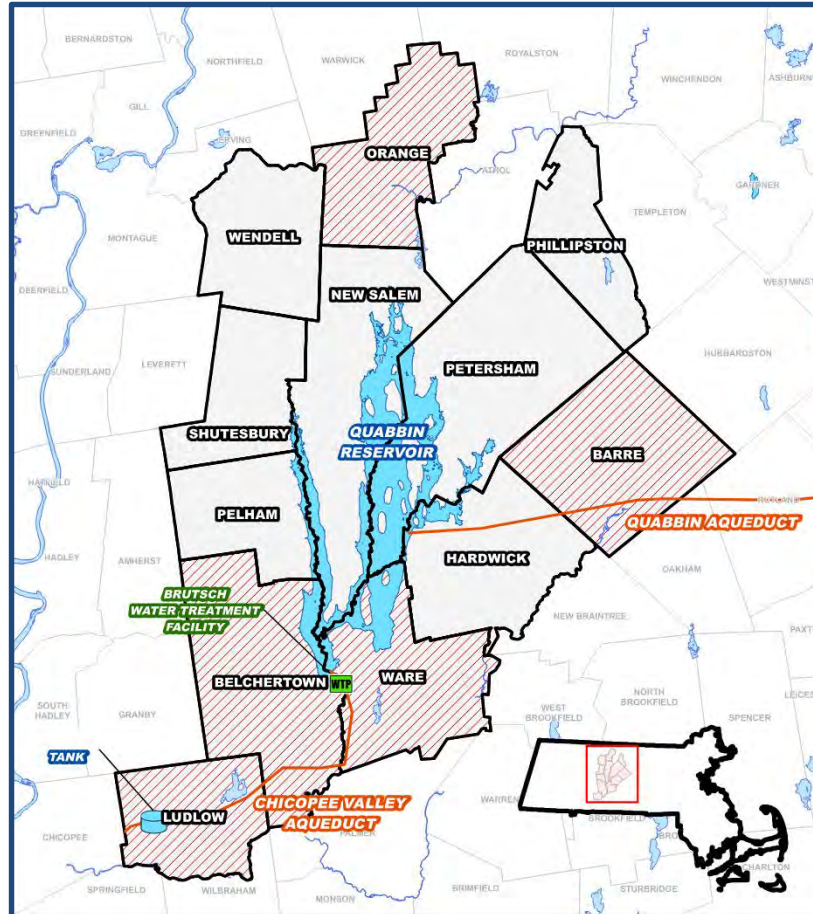
MWRA Board of Directors

*Quabbin Reservoir Watershed
Communities System Expansion
Evaluation Update*

April 17, 2024



Study Area



Legend

WTP Water Treatment Facility	Municipality in MWRA Expansion Study
Water Storage Tank	Municipality in MWRA Expansion Study with Water System
Aqueduct (Approximate Location)	Other Municipality



Study Objectives

- Provide planning level evaluation
- Use similar methodology as 3 completed studies
- Quantify MWRA's existing system capacity available to serve new customers
- Identify critical infrastructure needed to add capacity and deliver to new communities
- Identify potential water supply alternatives, such as surface water intake and treatment or groundwater supply
- Provide high level cost and schedule for alternatives



MWRA is seeking the following technical information regarding each community's water system/water supplies:

- Presence of public water supply
- Population served/demands
- Water distribution system maps/GIS
- Master plans
- Water quality data



Study Schedule

- Engaged Hazen and Tighe & Bond – March 2024
- Information Session with Community Staff – April 12, 2024
- Public Meeting – Prior to Final Report
- Final Report – End of 2024



Presentation to

MWRA Board of Directors

Contract 6392

*Rehabilitation of Sections 23, 24 & 47 Water Mains
Boston & Newton - Change Order 4*

April 17, 2024

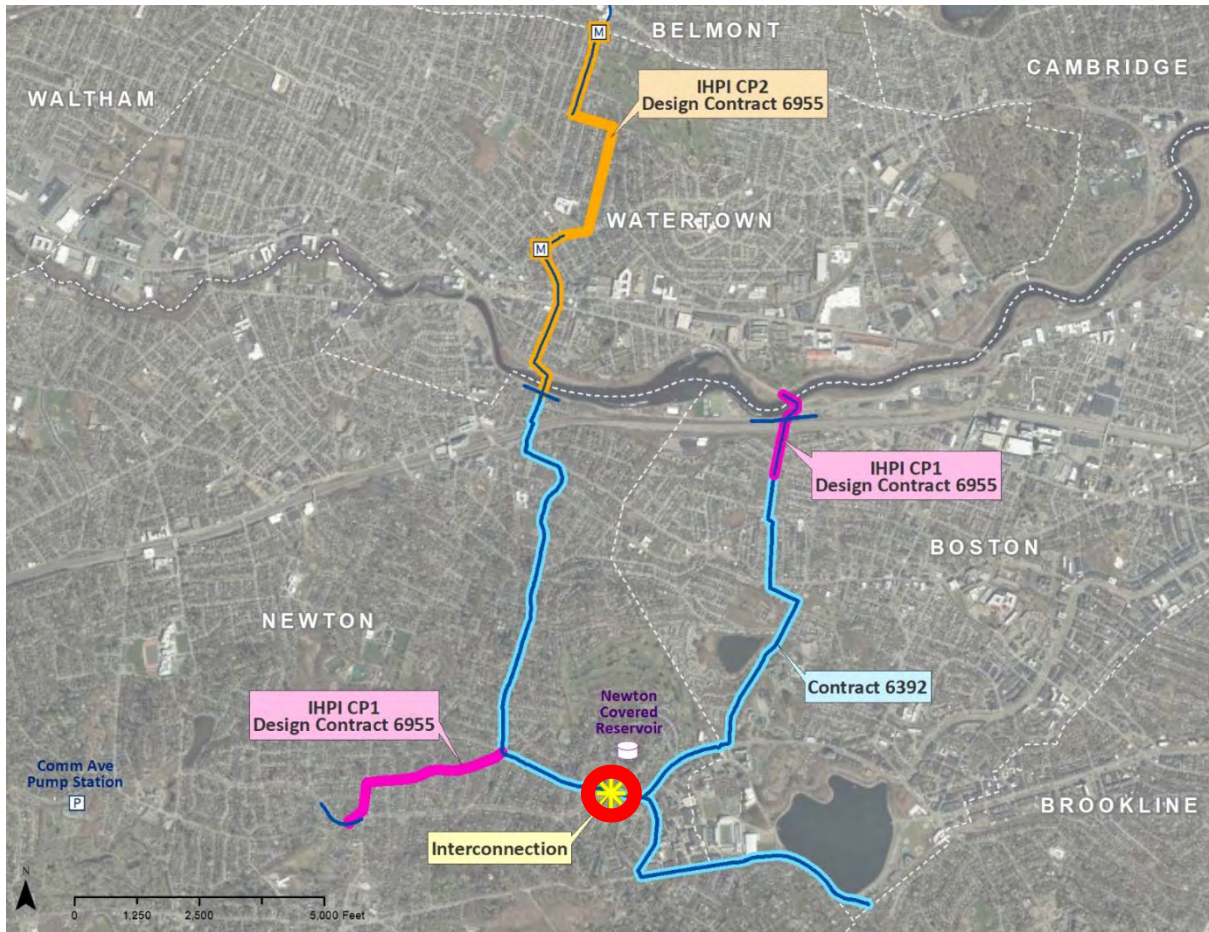


Contract 6392: Rehabilitation of Sections 23, 24 & 47 Soil Overruns





Contract 6392: Rehabilitation of Sections 23, 24 & 47 Emergency Interconnection at Manet Avenue in Newton





Contract 6392: Rehabilitation of Sections 23, 24 & 47 Emergency Interconnection at Manet Avenue in Newton





Contract 6392: Rehabilitation of Sections 23, 24 & 47 Replacing Section 23 on Beacon Street in Boston





Contract 6392: Rehabilitation of Sections 23, 24 & 47 Replacing Section 23 on College Road in Newton





Contract 6392: Rehabilitation of Sections 23, 24 & 47 Cleaning and Lining Section 23 on Commonwealth Avenue





Contract 6392: Rehabilitation of Sections 23, 24 & 47 Installing Section 23 Valve Vault on Ward Street in Newton





Contract 6392: Rehabilitation of Sections 23, 24 & 47 Interconnection on Ward Street in Newton





Contract 6392: Rehabilitation of Sections 23, 24 & 47 Replacing Section 24 Blowoff between Mass Pike & MBTA





Contract 6392: Rehabilitation of Sections 23, 24 & 47 Meter 120 Piping and Valves on Lake Street in Boston





Contract 6392: Rehabilitation of Sections 23, 24 & 47 Final Paving on Waverley Avenue in Newton





Presentation to

MWRA Board of Directors

*2023 Annual Update on New Connections
to the MWRA System*

April 17, 2024



MWRA System Expansion Policies

- OP.04 - Sewer Connections Serving Property Partially Located in a Non-MWRA Community (“Sewer Straddle”)
- OP.05 - Emergency Water Supply Withdrawals
- OP.09 - Water Connections Serving Property Partially Located in a Non-MWRA community (“Water Straddle”)
- **OP.10 - Admission of New Community to MWRA Water System**
- OP.11 - Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area

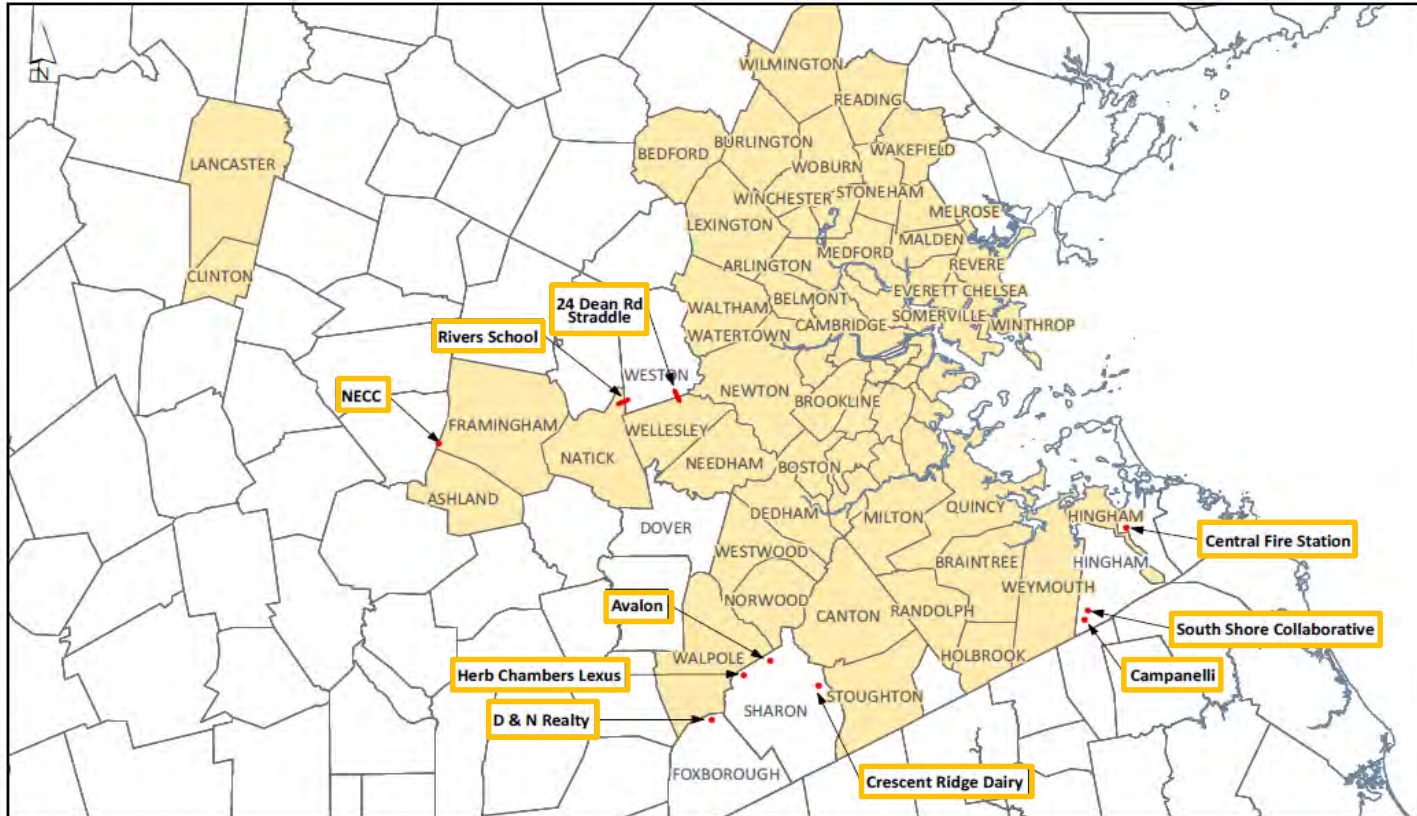


Entrance Fee Wavier

- Entrance Fee charged to new communities
 - Pursuant to OP.10
 - As of FY2024, roughly \$4.5 million per 1 MGD
- Waiver recommended by the MWRA Advisory Board and approved by the Board of Directors in September 2022
- Extends through December 31, 2027 with up to 20 MGD available to new communities that meet one of the following criteria:
 - Local sources are impacted by water quality issues
 - Local sources are located in a stressed basin
 - Economic development is significantly constrained by existing local sources



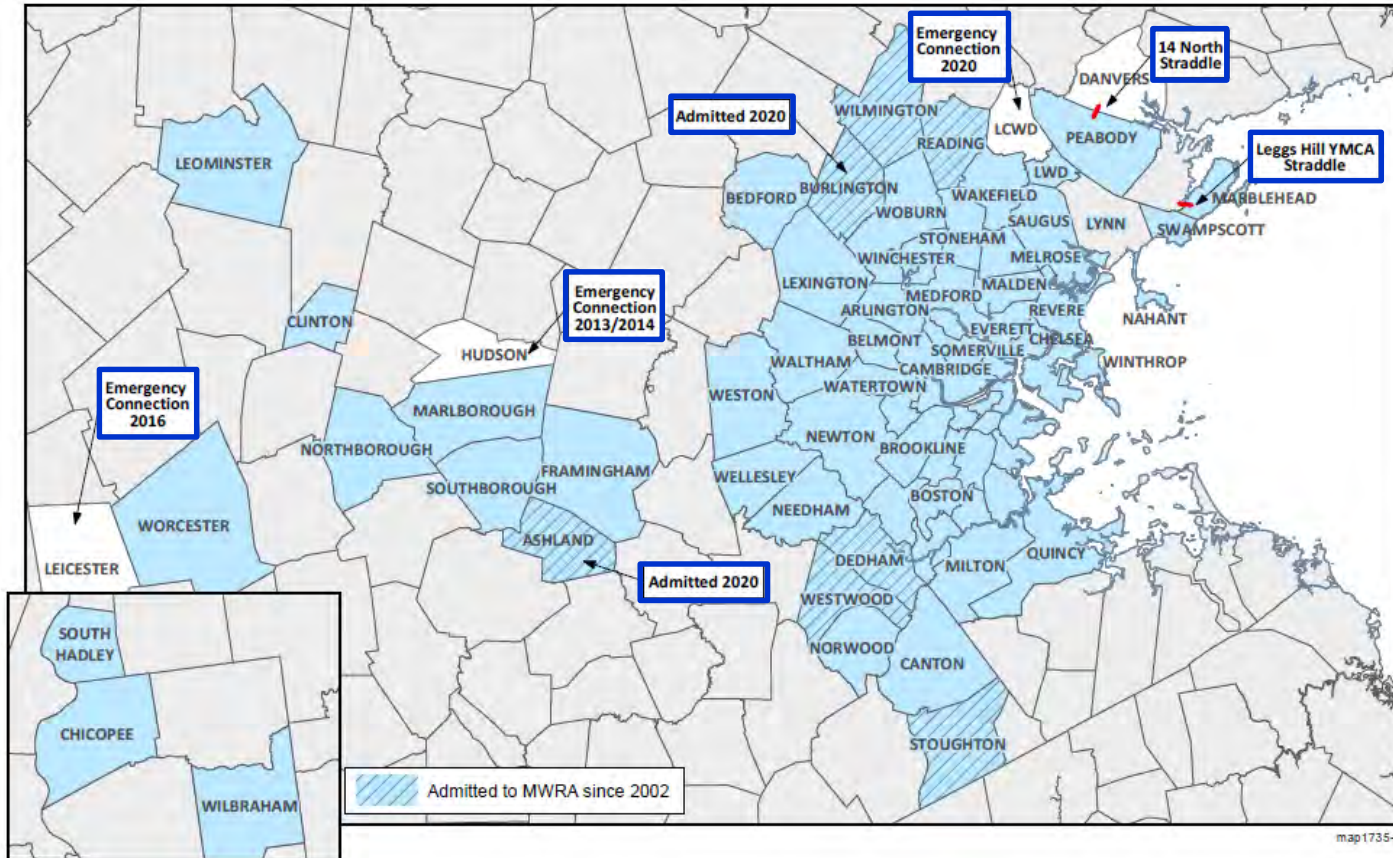
New Sewer Connections Since 2002



map1736-6

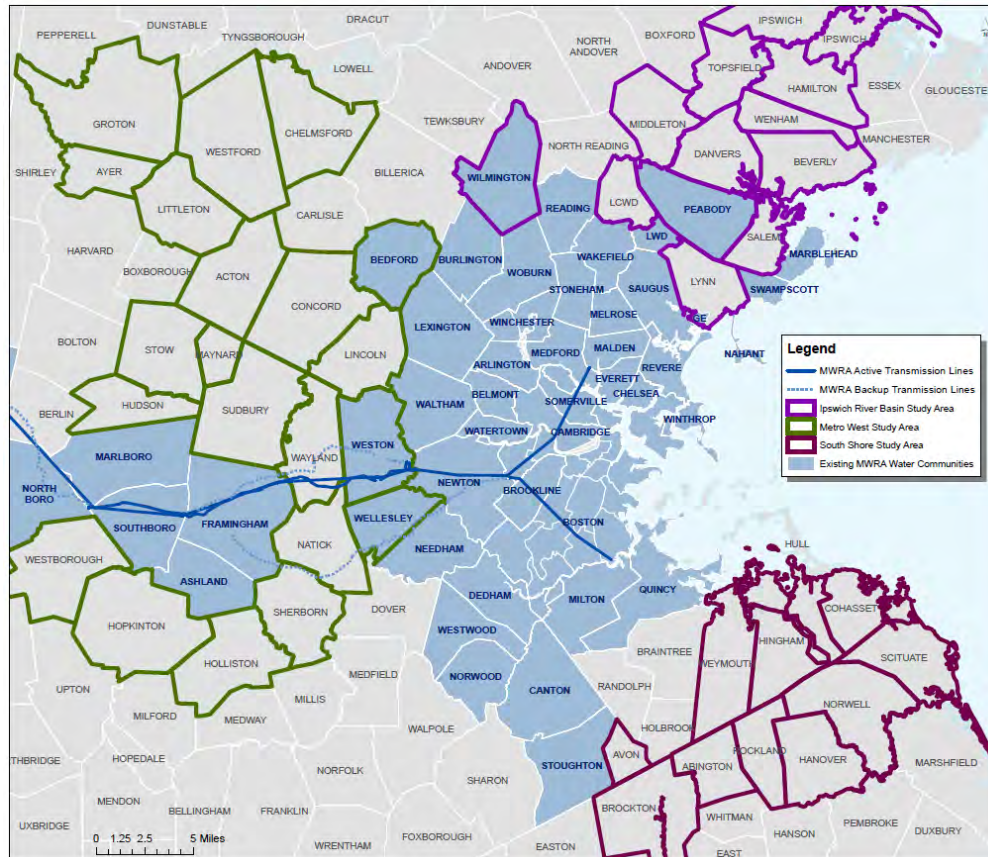


New Water Connections since 2002





System Expansion Study Areas





Communities Pursuing or Considering Admission (OP.10)

- Avon – Partial supply via Stoughton to serve an industrial area
- Billerica – Partial supply, with potential for full in future
- Hopkinton – Supplemental supply via Southborough
- Lynnfield Center Water District – Supplemental supply via Wakefield
- MetroWest Communities – Continued discussions with 21 communities included in System Expansion Study
- Natick – Supplemental supply from new connection, with potential for future increase



Communities Pursuing or Considering Admission (OP.10)

- North Sherborn Water and Sewer District – Developer in Sherborn seeking supply for proposed development via Framingham
- Walpole – Supplemental supply via Norwood
- Wayland - Partial Supply from MWRA Tunnel System
- Wellesley – Currently partial MWRA, seeking increased supply
- Weymouth – Supply for Town and former Naval Air Force Station development
- Wilmington – Currently partial MWRA, seeking increased supply



Presentation to

MWRA Board of Directors

*Struvite, Sludge, Scum & Grit Removal Services
Moran Environmental Recovery, LLC
Contract WRA-5396*

April 17, 2024



Struvite, Sludge and Scum Service Contract

- 2 year specialty services contract for Struvite, Sludge and Scum blockage removal
- MWRA staff are first response to identify and remove blockages
- This contract provides support services with specialized expertise and equipment





Process Blockages

- Contract assists with severe blockages throughout the treatment plant
- Major issues caused by wipes
- Mostly effect Primary Clarifiers & Residuals Complex
- Spending over \$1 Million in equipment repairs annually related to floatables





Gravity Thickener Major Blockages





Impacts due to Wipes





Recommend award to Moran Environmental

- Moran Environmental Recovery LLC is the lowest responsible qualified bidder out of 2 bids.
 - *Engineers Estimate (EE)* \$2,196,185
 - Boston Green Fuel Company \$1,724,500 (6.7% > Moran)
 - Moran Environmental Recovery LLC \$1,616,150 (26% < EE)
- 18% cost increase from last contract, 5.3 % due to labor cost increase
- Increased 5 person crew from 100 days to 150 days
- Decreased 3 person crew from 200 days to 175 days
- Increased solids disposal from 700 tons to 800 tons