



MWRA Water System Expansions Studies

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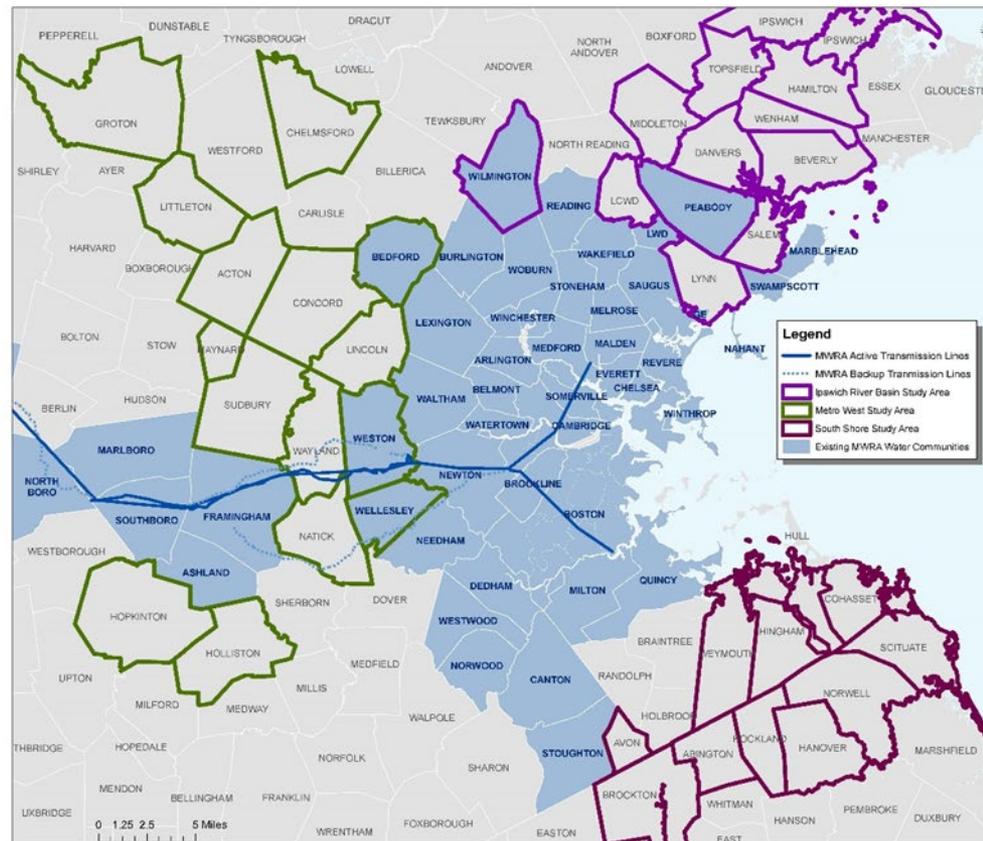
Director, Environmental and Regulatory Affairs

MWRA Advisory Board Meeting
November 17, 2022



Study Areas

- Ipswich River Basin (12 Communities, Demand \approx 42.1 MGD)
- South Shore (10 Communities, Demand \approx 40.5 MGD)
- Metro West (15 Communities, Demand \approx 35.1 MGD)



Note: Total demands in all three study areas exceed MWRA's available water supply.



Study Assumptions, Costs, and Schedules

- **Study Assumptions (Ipswich and South Shore):**

- Communities included in scenarios would be fully-served by MWRA to the greatest extent possible
- Assumed new connection to MWRA's system, no "wheeling" from one system to another
- MWRA's reservoirs have the capacity to supply an additional 51 million gallons per day (MGD) of water (average or ≈ 76.5 MDG on a maximum demand day)

- **Costs:**

- September 2022 and estimated 2027 dollars
- Conceptual, contingencies added to all line items and total cost
- Infrastructure costs vary significantly based on size

- **Schedule:**

- Variable, based on size and location of pipe
- Estimates are included with each option





Potential MWRA Expansion to Ipswich River Basin

- **Communities Included in Study:**

- Beverly, Danvers, Hamilton, Ipswich, Lynn, Lynnfield Center Water District, Middleton, Peabody, Salem, Topsfield, Wenham, Wilmington

- **Three options considered**

- Option #1: Fully serving all Ipswich River Basin Communities
- Based on existing distribution system capacity:
 - Option #2: Provide water to Peabody and Salem
 - Option #3: Provide water to Danvers/Middleton, Hamilton, Ipswich, Wenham, Topsfield



Option #1: Fully Serving the Ipswich River Basin Communities

Option for Full 42.1 MGD Northern Expansion

Full Maximum Day Demand

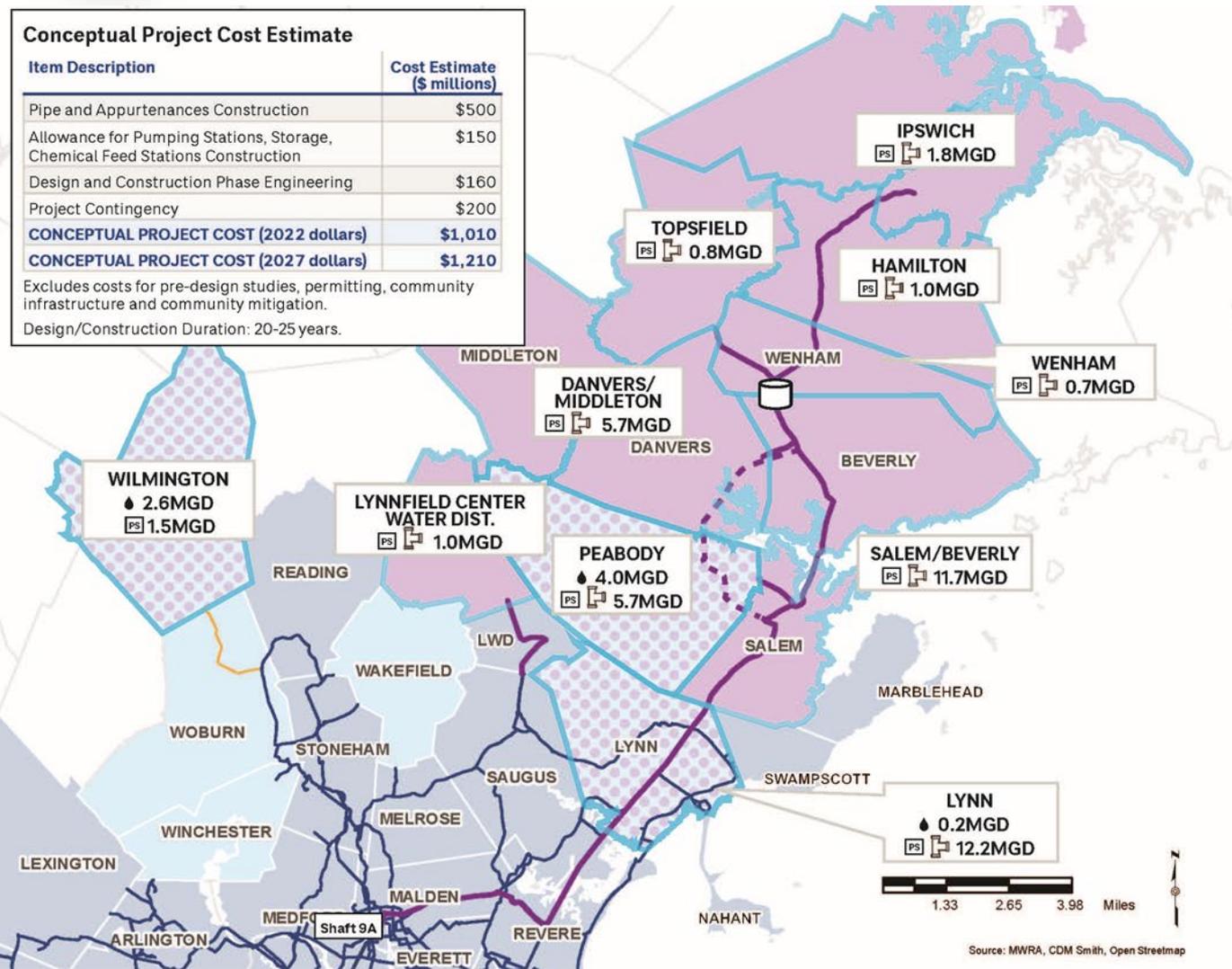
LEGEND

- Study Community
- Study Community (partially MWRA served)
- MWRA Member Community
- MWRA Partially Served Community
- Expanded MWRA Service Area
- Existing Community Connection to MWRA
- Existing MWRA system
- Proposed Pipe Route
- Option to avoid harbor crossing
- Proposed Community Pipe Connection
- Proposed Community Pump Station
- Existing MWRA Service Volume
- Proposed MWRA Storage (approx.)

Note: Maximum Daily Demand is based on 2019 or 2020 Annual Statistical Reports.



Source: MWRA, CDM Smith, Open Streetmap





Potential MWRA Expansion to the South Shore

- **Communities Included in Study:**

- Abington, Avon, Brockton, Hanover, Hingham, Norwell, Rockland, Scituate, and Weymouth
- Former Naval Air Force Station (a.k.a., Union Point Development)

- **Two options considered**

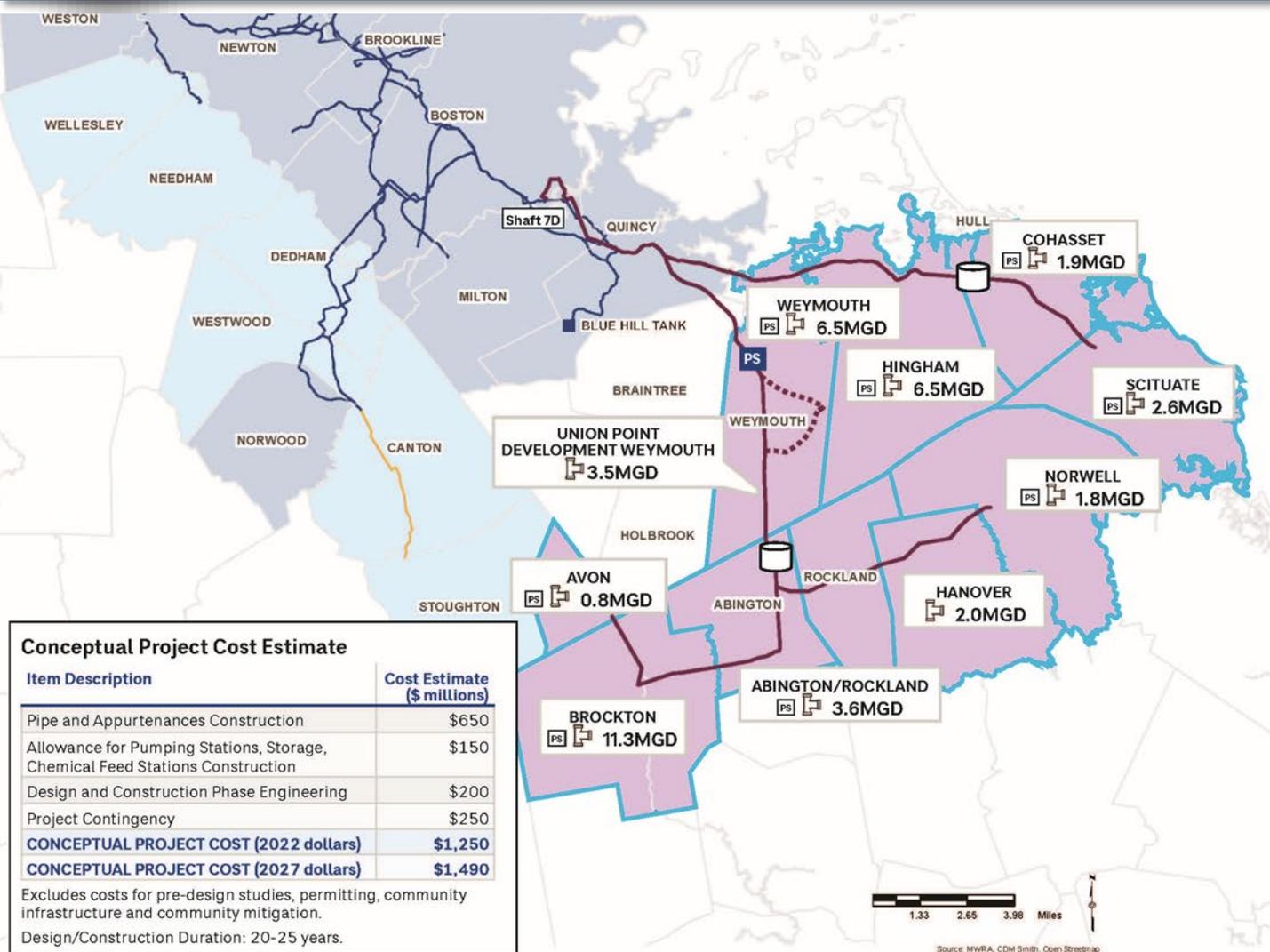
- Option #1: Fully serving all South Shore Communities included in the study
- Based on existing distribution system capacity:
 - Option #2: Partial supply to Avon, Brockton, and Weymouth/Formal Naval Air Station



Option #1: Fully Serving the South Shore Communities

Option for Full 40.5 MGD Southern Expansion

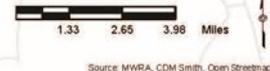
Full Maximum Day Demand



LEGEND

- Study Community
- MWRA Member Community
- MWRA Partially Served Community
- Expanded MWRA Service Area
- Existing Community Connection to MWRA
- Existing MWRA system
- Proposed Pipe Route
- Proposed Community Pipe Connection
- Proposed Community Pump Station
- Proposed MWRA Storage (approx.)
- Proposed MWRA Pump Station

Note: Maximum Daily Demand is based on 2019 or 2020 Annual Statistical Reports.



Source: MWRA, CDM Smith, Open Streetmap

Conceptual Project Cost Estimate

Item Description	Cost Estimate (\$ millions)
Pipe and Appurtenances Construction	\$650
Allowance for Pumping Stations, Storage, Chemical Feed Stations Construction	\$150
Design and Construction Phase Engineering	\$200
Project Contingency	\$250
CONCEPTUAL PROJECT COST (2022 dollars)	\$1,250
CONCEPTUAL PROJECT COST (2027 dollars)	\$1,490

Excludes costs for pre-design studies, permitting, community infrastructure and community mitigation.

Design/Construction Duration: 20-25 years.



Study Update and Next Steps

- **Ipswich River Basin Study: Complete**
- **South Shore Study: Complete**
- **Metro West Study: On-going**
 - Acton, Bedford, Chelmsford, Concord, Groton, Holliston, Hopkinton, Lincoln, Littleton, Maynard, Natick, Sudbury, Wayland, Wellesley, Weston
 - Beginning to explore pipeline options
- **Next Steps:**
 - Outreach to Legislators, Communities, and Regional Organizations
 - Advisory Board Workshop on December 5, 2022
 - Funding Opportunities?