



# Advisory Board Field Trip – Pellet Plant and Nut Island





# Metropolitan Water Tunnel Program

*Final Design Engineering Services  
Contract 7556*

*Program Update &  
Recommendation for Contract Award*

September 11, 2024



# Program Update on Critical Path Tasks (from March 2024)

- Geotechnical Investigations
- Land Acquisitions
- Community/Stakeholder Agreements (MOU's)
- TBM Power Supply



- Tunnel Construction





# Geotechnical Explorations & Land Acquisition

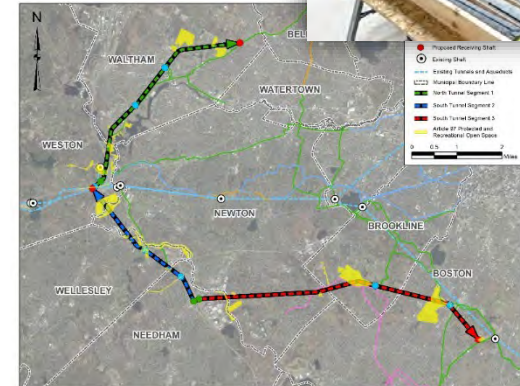
## Geotechnical Explorations - Progress since March:

- 6 additional deep rock test borings (46 vs. 40 planned) in GSS contract:
  - 43 drilled to date, 3 golf course locations planned in early 2025
  - Extra boring were drilled in targeted locations, geologically
  - Brings total deep rock borings drilled (will be drilled) in PDE and GSS contracts to 64 (of ~100 deep rock test borings planned)
- Over 20 more deep rock test boring locations have already been coordinated with property owners / permits, ready for FDE



## Land Acquisitions - Progress since March:

- Submitted 2 Access Permit applications to MassDOT - North Tunnel & South Tunnel
- These applications build on coordination that is ongoing with MassDOT related to:
  - Eversource power supply construction in Weston
  - MassDOT Newton-Weston Bridge project



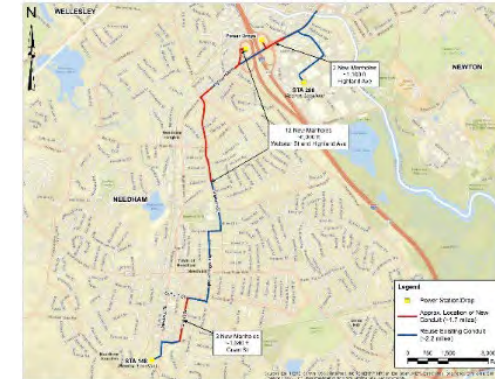
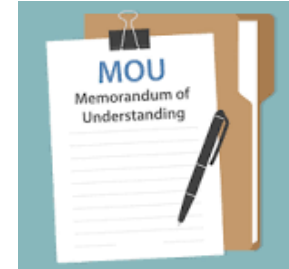




# Community/Stakeholder Agreements & Power Supply

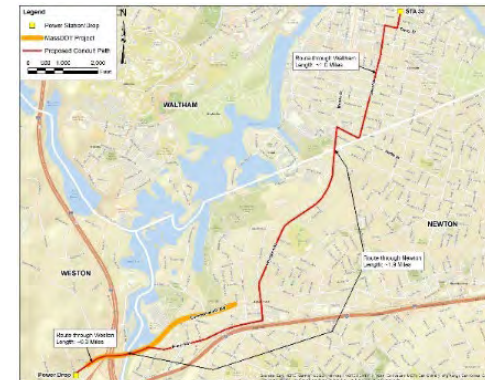
## Agreements - Progress since March:

- Continue coord with local fire & emergency response:
  - In person meeting set for late September
- Advanced coordination of pipeline locations in community roadways:
  - E.g., drain line in Needham (South tunnel launching shafts to Charles River) = early enabling package
- Preparing for ramped up coord in early 2025



## Power Supply - Progress since March:

- Eversource has advanced survey, design and permitting
- Eversource provided MWRA with cost estimates for work that is ~45% less than carried in preliminary design
- Staff are working with Eversource on drafting an agreement for Board approval





# Final Design Engineering Services (7556) Scope of Work

## Design Phase Services (5 years)

- Basis of Design reports
- Final phase of subsurface investigations (~35 deep borings, shallow borings, test pits)
- Complete design of two tunnel construction packages (North and South)
- Complete design of three early enabling works construction packages
- Cost estimating and construction scheduling
- Risk management and quality management
- Assistance with land acquisition, MOU's, outreach, and pre-procurement
- Assistance during bidding
- **Engineer-of-Record** for all designs for the Tunnel Program
- ESDC for three early enabling works construction packages

ESDC for tunnel construction by amendment (~10 years)



# Two Step Procurement Process

- Contract will be awarded for the full duration of the contract including completion of tunnel construction (15 years)
- Received four Qualifications Statements, shortlisted three firms to submit proposals
  - Delve Underground
  - Mott MacDonald
  - WSP
- Request for Proposal/Scope of Work was issued with multiple evaluation criteria
  - Cost (20 points)
  - Qualifications/Key Personnel (20 points)
  - Technical Approach (20 points)
  - Capacity/Organization/Management (20 points)
  - Relevant Experience/Past Performance (15 points)
  - MBE/WBE Participation (5 points)



# Scope Of Work & Request For Proposal

- Provided a detailed SOW to all proposers
  - Set clear **expectations**, enable **transparency** and long term **management**
- Provided **significant** existing Tunnel Program documents for proposers to review
- Set contract **milestones** for:
  - Execution of enabling packages prior to tunnel construction bidding
  - Start South Tunnel construction in 2028
- Required each proposer submit:
  - 25 Key Personnel to ensure a **complete team**
  - **Full** explanation of their management structure/approach
  - **Detailed** technical approach addressing: design development, risk management, quality management, cost estimating/scheduling, project controls, cost controls & change management, value engineering, stakeholder engagement, etc.
  - Identification of **all** subconsultants and subcontractors including MBE/WBE participation
  - **Detailed** cost estimate and design phase schedule (with **critical path**)
  - Key **financial parameters** for ESDC phase (overhead rate and fee)





# Selection Committee Proposal Evaluation

- Reviewed all 3 proposals in detail
- Asked for clarifications from all 3 proposers
- Interviewed each team
- Use established evaluation criteria to score and rank the proposals

Proposer	Total Final Score	Ranking
WSP	431.85	1
Mott	383.00	2
Delve	341.55	3



# Cost Proposal Summary

Proposer	Proposed Cost (Loaded Labor & Direct Costs)	Proposed Level of Effort (Hours)
WSP	\$93,605,158	307,348
Mott	\$88,606,894 <sup>1</sup>	311,148
Delve	\$80,342,423	259,579
Staff Estimate	\$77,800,000	222,051

1 Two required cost items were not included in the original proposal response that would increase the Proposed Cost by approximately \$2 million.



## First Ranked, WSP Team

- Best overall plan to complete the SOW and meet milestone schedule
- Integrated & cohesive team, subconsultants were carefully selected
- WSP is involved and accountable for all aspect of the work
- Demonstrated best approach to integrate MWRA Operations requirements
- Full time PM & Dept. PM, 3 Contract Package Managers
- Most in-person management team & embedment in Needham
- Highest participation of much needed technical experts
- Best overall geotechnical team, i.e., “rock stars”
- Chief Engineer!





## WSP Team Costs

- Lowest overall overhead rate/indirect cost rate (ICR) for the design phase
- Lowest field overhead rate/ICR
- Highest use of field overhead rate/ICR
- Exceeds minimum WBE/MBE participation
- Lowest proposed overhead rate/ICR for ESDC
- Best value for the \$

**Selection Committee unanimously recommends  
award of the FDES contract to  
WSP USA, Inc.**



MBE

WBE





*Presentation to*

## **MWRA Board of Directors**

*Section 4 Walnut Street Bridge  
Pipe Restraint Replacement  
MWRA Contract 7483, Change Order 7*

September 11, 2024





# Project Location



Walnut Street  
Pipe Bridge

Somerville HS

Commuter Rail &  
Green Line Extension (GLX)



# Original Pipe Bridge Installation in 1897







# Commuter Rail and Green Line Extension Crossing







# Green Line Extension Catenary Lines





*Presentation to*

**MWRA Board of Directors**

*Somerville Marginal CSO Facility  
New Pipe Connection  
Contract 7985*


September 11, 2024







# Project Location and Purpose

## LEGEND

Flow Direction 

Somerville Combined  
Sewer 

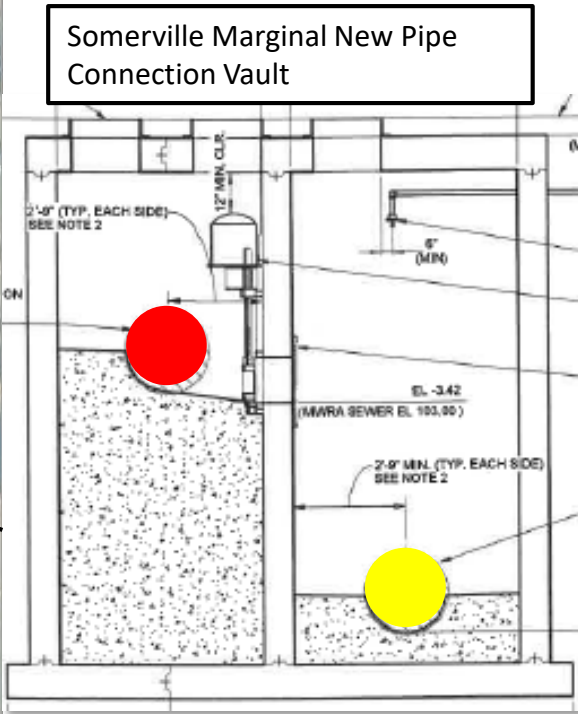
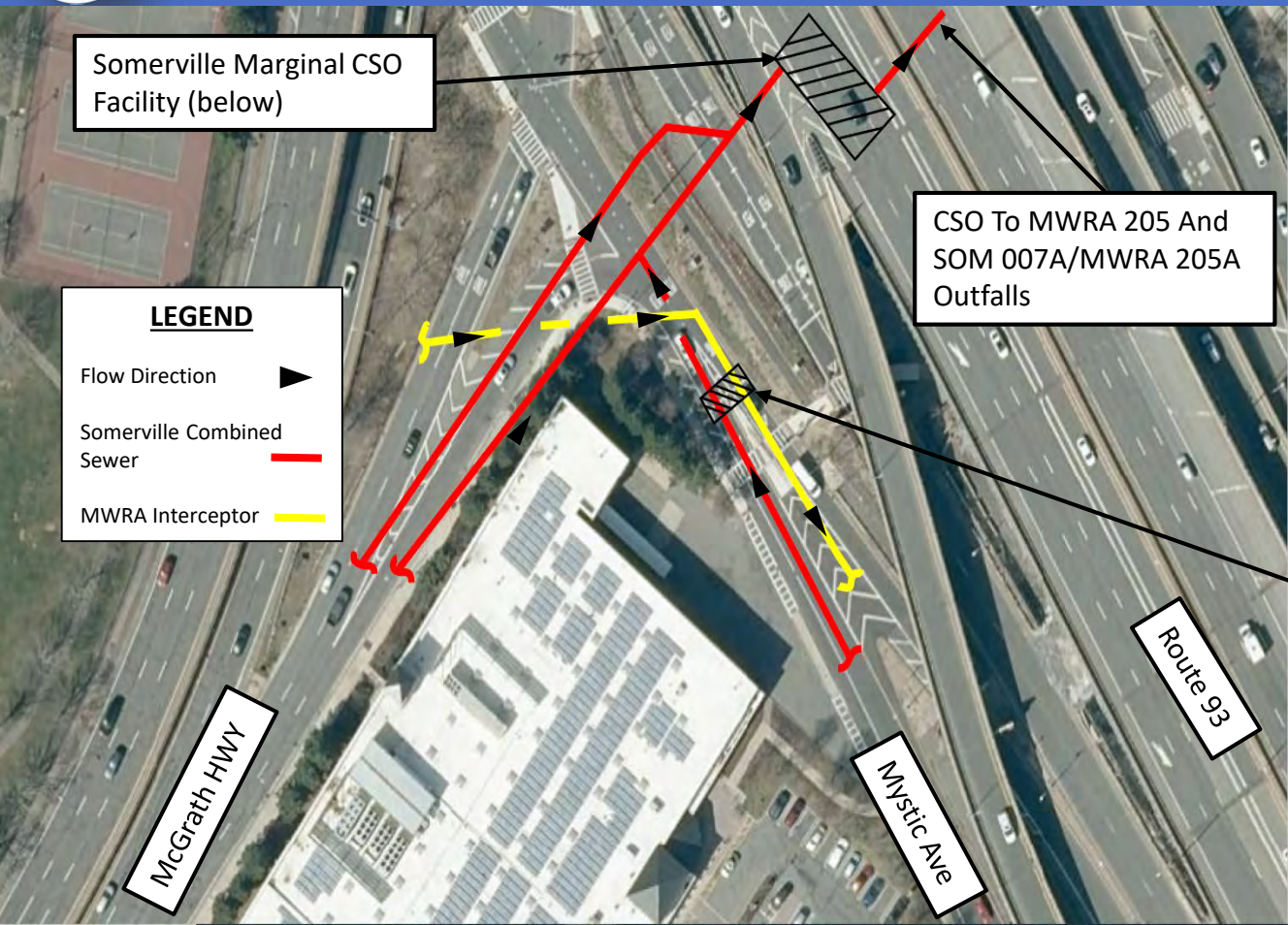
MWRA Interceptor 







# Somerville Marginal New Pipe Connection





## Contract 7985 Bid Results

Bidders	Bid Amount
RJV Construction Corp.	\$4,436,384
R. Zoppo, Corp.	\$4,857,000
<i>Engineer's Estimate</i>	<i>\$5,080,000</i>
Albanese D&S, Inc.	\$5,485,000



*Presentation to*

## **MWRA Board of Directors**

*CSO Post-Construction Monitoring and  
Performance Assessment  
AECOM Technical Services, Inc.  
Contract 7572, Amendment No. 5*

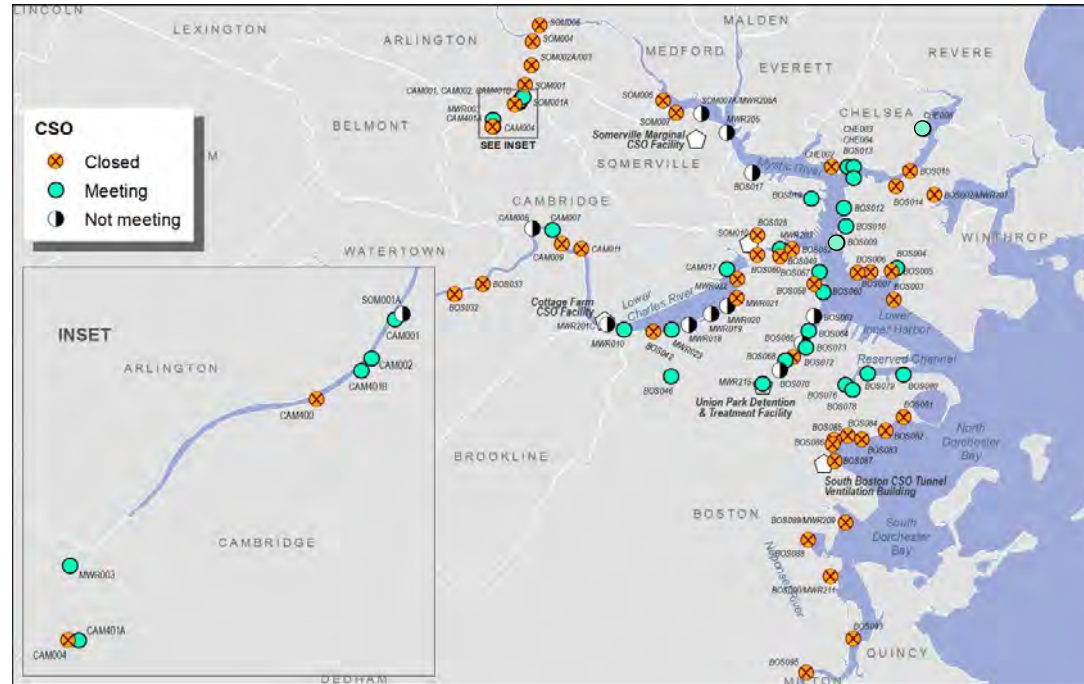
September 11, 2024



# Past and Ongoing CSO Program Efforts

## Contract 7572 – Started Oct. 2017

- Inspections, Metering, Hydraulic Modeling, and Water Quality Modeling to support assessment
- Final Performance Assessment submitted in Dec. 2021
- Further work to investigate 16 underperforming CSO
- Supplemental Report due Dec. 2024





# Past and Ongoing CSO Program Efforts (Cont.)

## 2019 – 2024 Variances

- Updated CSO Control Plan for Variance Waters
- Further investigations to reduce CSOs
- Ongoing annual report requirements
- In 2022 DEP required:
  - Coordination of planning w/ Cambridge and Somerville
  - Inclusion of climate change projections
  - More extensive public participation process
- MWRA/communities file extension request







# CSO Program Efforts going Forward

## New 2024 – 2029 Variance

- Updated CSO Control Plan responsive to DEP requirements
  - Significant Coordination Efforts and Public/Stakeholder Input
- Extent of Analysis Increased
- New DEP/EPA guidance documents to be followed
- Ongoing annual reports required
- Additional Feasibility Analysis requirement







## Amendment 5

### Time

Additional 4+ years to Align with New Variances

### Cost

Continuation of Existing Tasks	\$1,546,000
Addition PM Service	\$842,000
Allowances	\$450,000
Receiving Water Modeling for 2050 TY	\$193,000
Unified Model Maintenance/Update	<u>\$63,000</u>
	\$3,095,000



*Presentation to*

## **MWRA Board of Directors**

*Siphon and Junction Structure Rehabilitation  
Contract 6224  
Amendment 1*

September 11, 2024



# Amendment 1

- Rehabilitation of 40 siphon and junction structures in 17 communities
- 36 months additional time
  - Large number of permitting entities
  - Permit sequence impacts
  - Easement acquisition
  - Longer construction phase
- Additional \$145,690
  - Project management during extension
  - Additional design services

