



# Massachusetts Water Resources Authority

Metropolitan Water Tunnel Program

Jamaica Plain Neighborhood Council  
Public Service Committee

Tunnel Program Summary  
and  
Geotechnical Investigation Overview

April 04, 2023

**For discussion only**

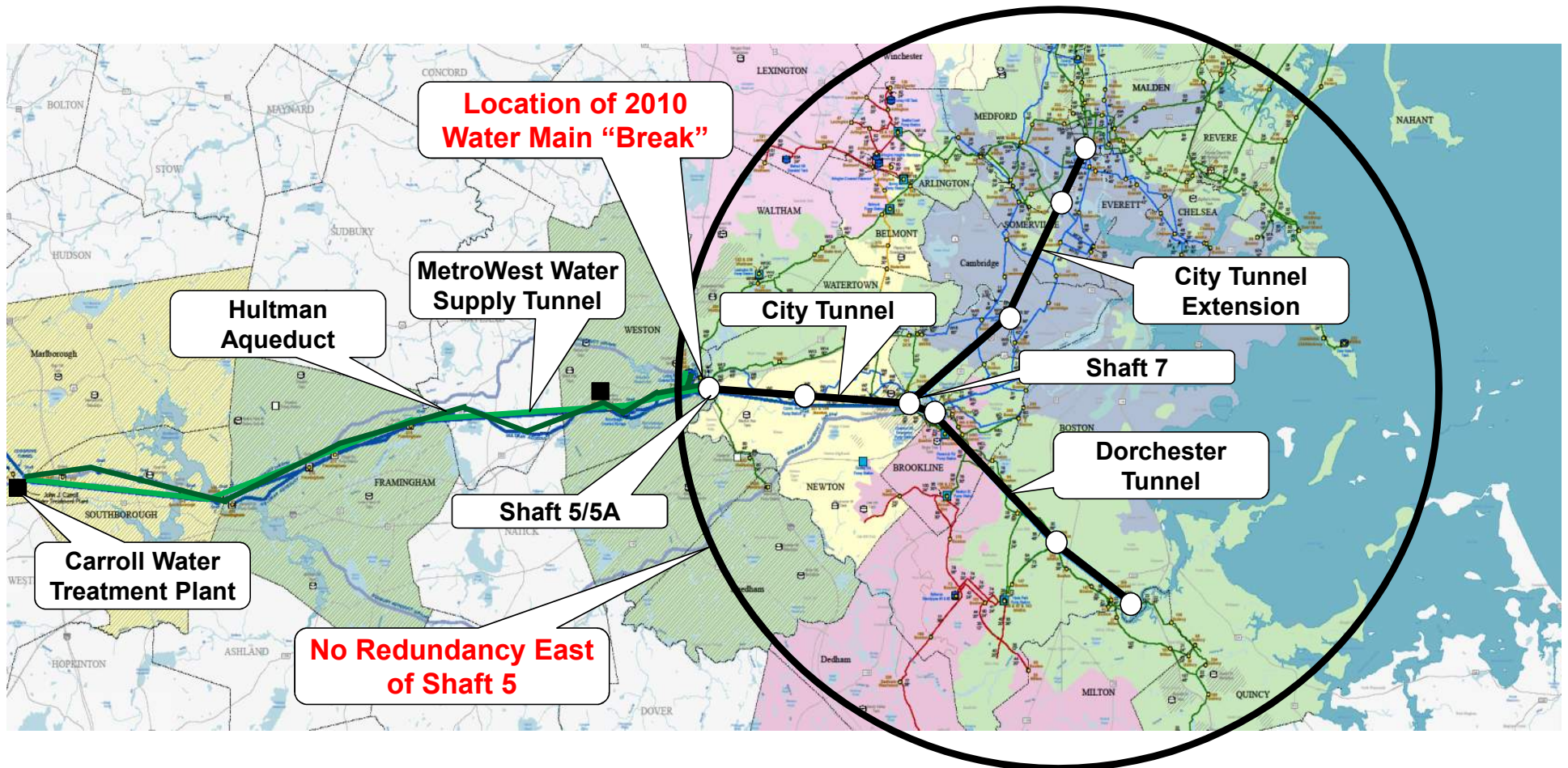


## Topics

- Metropolitan Water Tunnel Program
- Tunnel Program Schedule
- Geotechnical Investigation Program
- Where to Find Information / How to Contact Us
- Questions?



# Metropolitan Tunnel System Serves About 60 Percent of Water Demand in Metropolitan Area



For discussion only



## Metropolitan Water Tunnel Program Purpose

- Our current Metropolitan Tunnel System, servicing the Boston area, is in need of repair
- The tunnels, valves, chambers & pipelines are between 50 – 80 years old

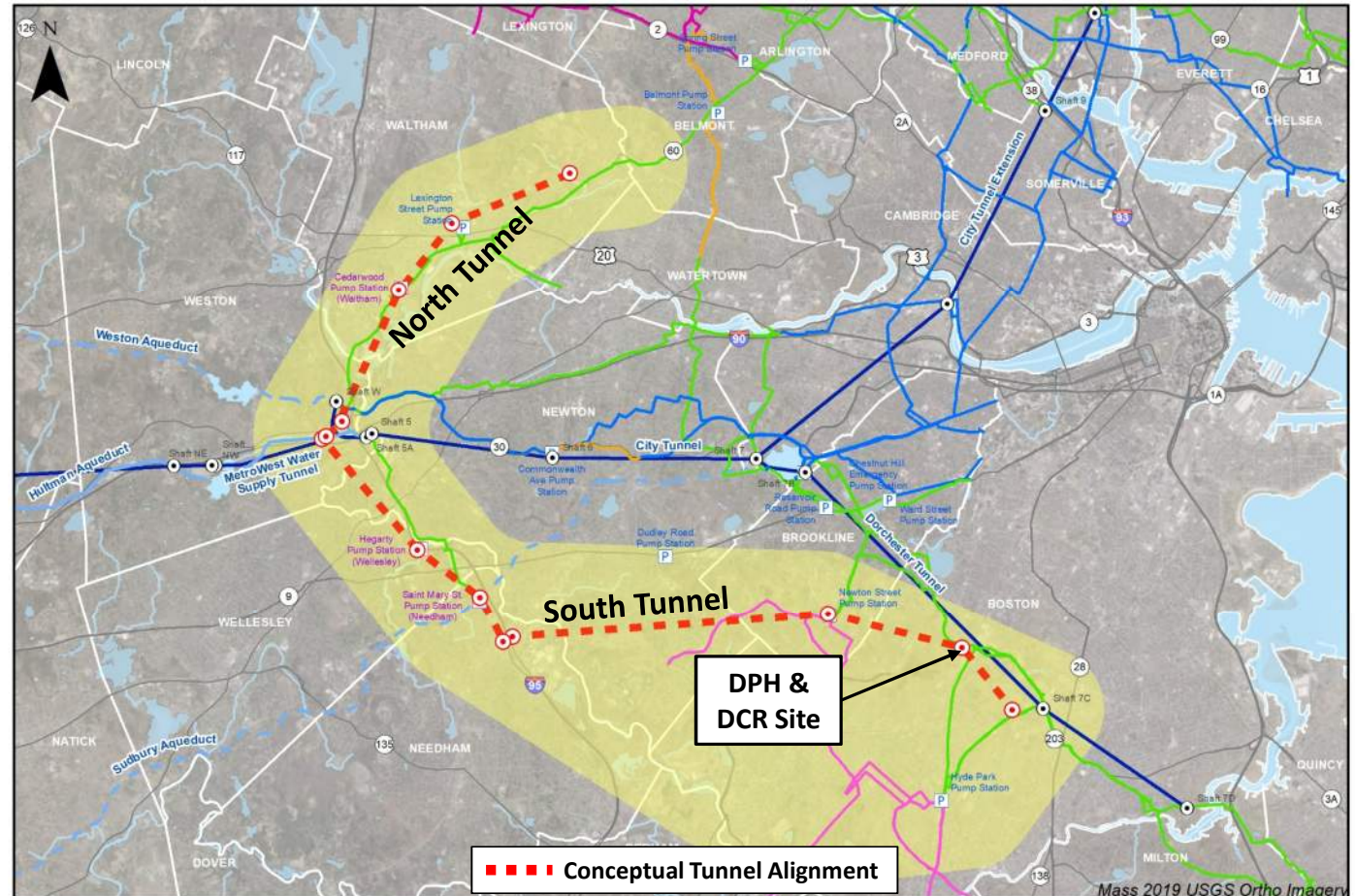


- Currently we cannot maintain our tunnel system east of Shaft 5 in Weston because a shutdown of the entire Metropolitan Tunnel System would be required
- The **Metropolitan Water Tunnel Program** will solve that problem by creating a redundant water tunnel system allowing the old system to be completely taken offline for inspection, maintenance, and repair



# Metropolitan Water Tunnel Program

- ~14.5 miles of deep, hard rock, pressure tunnel
- Tunnels will begin in the Weston (I-90/I-95 vicinity)
- Northern Tunnel - ~4.5 miles, ends in Waltham/Belmont line
- Southern Tunnel - ~10 miles, ends in Mattapan near American Legion
- Six intermediate connections to existing water infrastructure
- Construction anticipated between 2027 and 2040



For discussion only



# Tunnel Program Schedule

- Overall Program Schedule
  - Preliminary Design is ongoing thru early Jan 2024
  - Currently planning a large geotechnical investigation program to start in 2023
  - Targeting Final Design to start in mid 2024
  - Targeting first tunnel construction contract to bid in 2027
  - Program completion by 2040
- Preliminary Design Status
  - Evaluate tunnel alignment alternatives
  - Geotechnical investigations
  - Environmental Impact Reports
  - Preliminary Design Report
  - Establish contract packages
  - Refine Program cost and schedule

We are Here





# Program Wide Geotechnical Investigation Overview

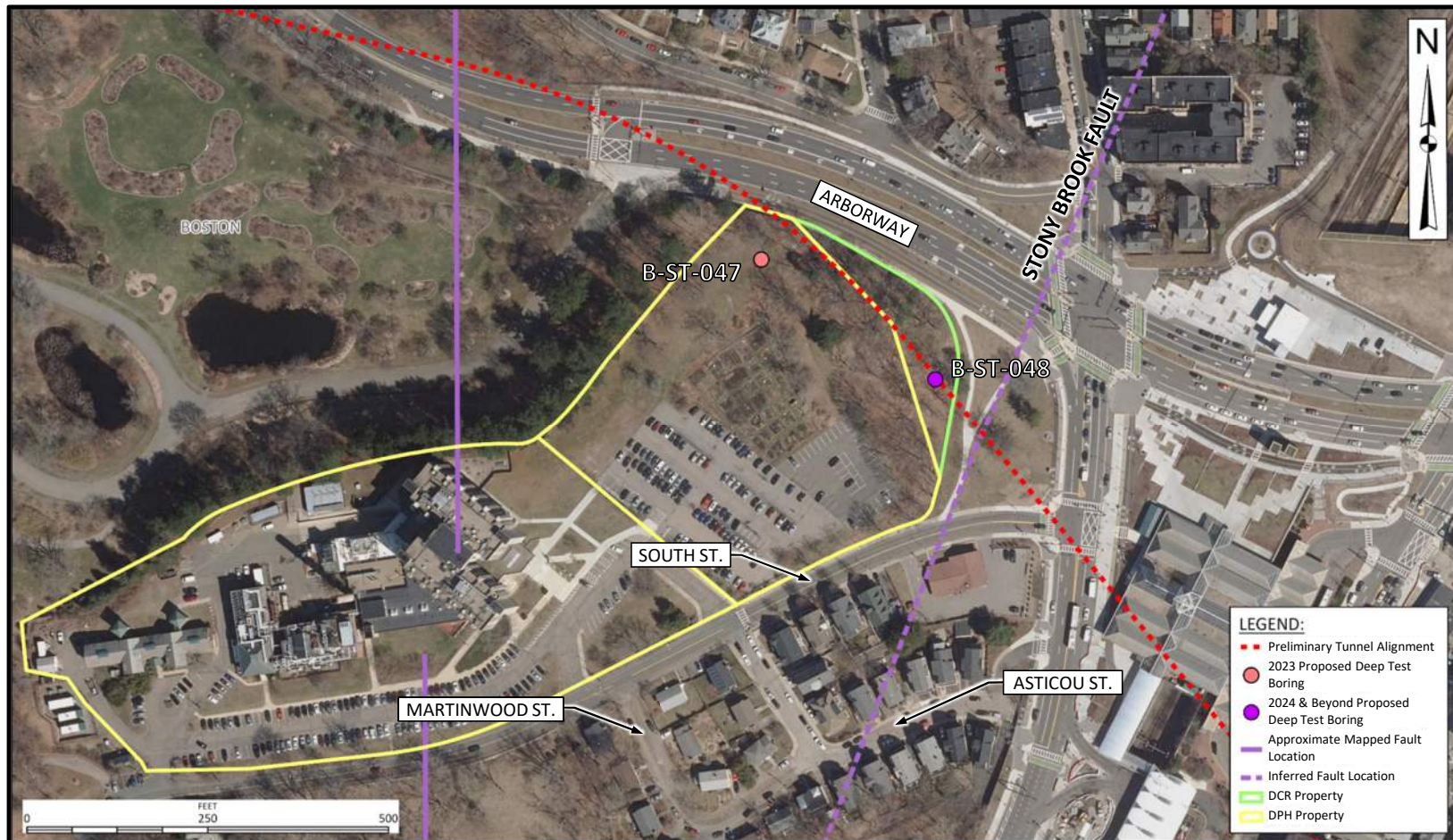
- The geotechnical investigation started in the spring of 2021 and will last multiple years to support the design and construction of the Program
- The investigation consists of conducting deep test borings and surface geophysical survey along the proposed tunnel alignment
- The purpose of the investigation is to:
  - Build upon the data we have collected
  - Continue to refine our understanding of the geology along the proposed tunnel alignment, with target on areas with challenging geology (faults, river beds, etc.)



For discussion only



# Deep Test Borings Overview



For discussion only





# Geotechnical Investigation – Deep Test Borings

## Deep Test Borings

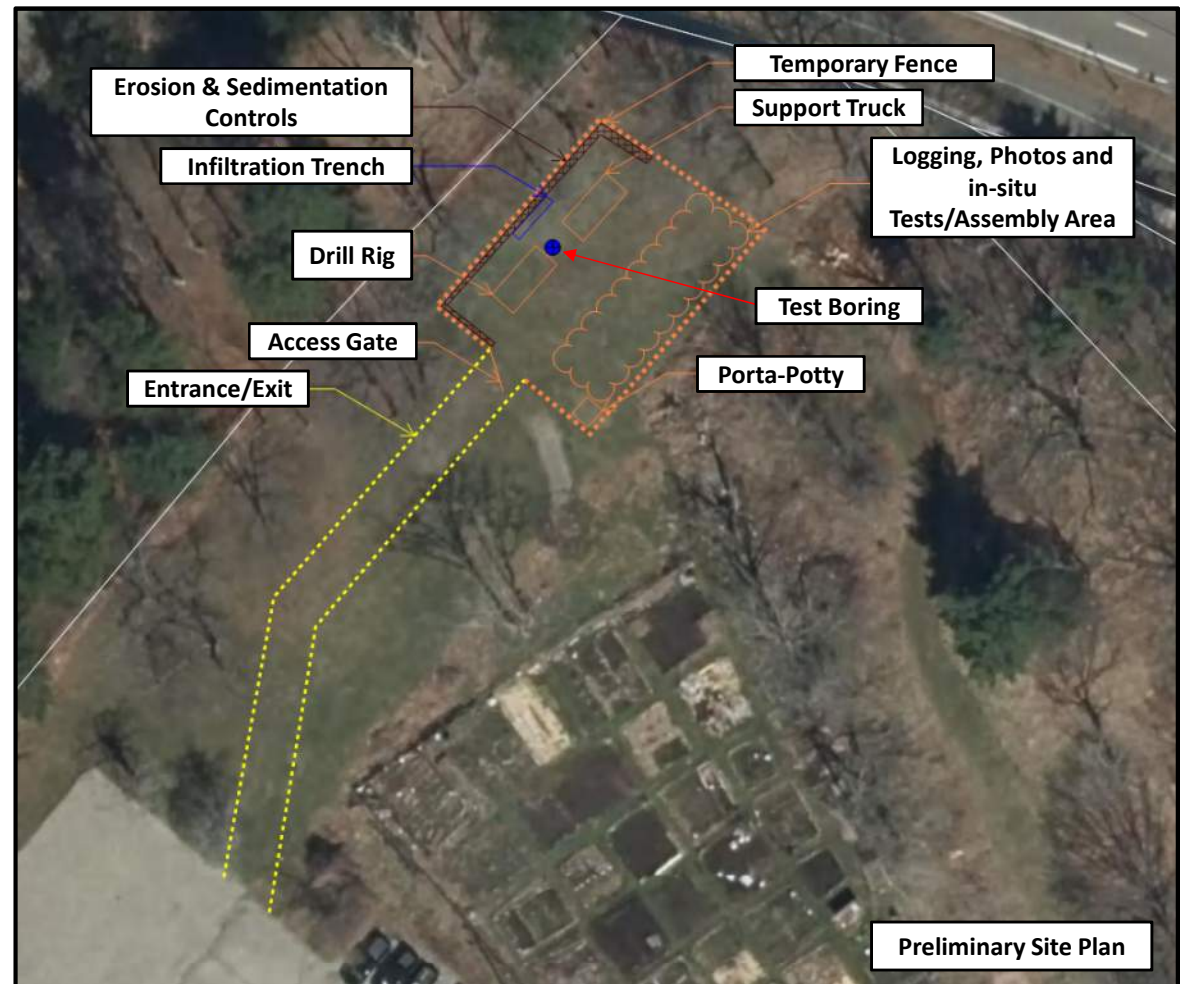
- ~4-inch diameter, ~400 feet deep
- No analytical (chemical) testing of soil/rock/groundwater
- Downhole geophysical logging and permeability testing
- Piezometers installed for water level measurement

## What will I see?

- Fenced-in work area
- Erosion & sedimentation controls
- Drill rig, support truck, water truck/tanks, testing equipment, area for rock core logging, portable toilet etc.
- ~3 to 6 person crew

## When will it happen?

- Summer or Fall of 2023



For discussion only



# Geotechnical Investigation – Deep Test Borings

- Upon completion:
  - All excess materials drummed and remove from site
  - Borehole patched at the surface with a roadbox
  - Work site restored upon completion (before, during, and after photos taken at all locations)



Before

During

After



St Mary St, Needham  
For discussion only



## Geotechnical Investigation – Deep Test Borings

- How long will it take?
  - Given the depth and the testing to be done within each borehole, it is anticipated each boring will take about 6 to 8 weeks to complete
  - Work will be during normal business hours (typically Monday-Friday, 7am to 5pm)





## Schedule Sequence

- Anticipated Schedule Sequence
  - Distribute Notice to Abutters and Program Field Work Fact Sheets door-to-door
  - Site Preparations
  - Conduct Deep Test Boring
  - Site Restoration
  - Periodic Groundwater Level Reading – long term(ish)





# Conceptual Permanent Condition & Access – Southern Spine Mains



Conceptual Permanent Site Access

## Conceptual Permanent Condition:

- Off Arborway, at grade site access
- Maintain pedestrian & bike paths
- Secure but also fitting for the neighborhood (e.g., stone retaining wall, iron-work fencing, and landscaping)
- Low impact use by MWRA



Conceptual Permanent Condition

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## MWRA Operations – Post Construction Site Use

- Regular security checks
- Operations
  - Daily inspections
  - Occasional water quality sampling
- Occasional Maintenance/Repairs
  - Valve operations
  - Valve replacement
  - Cathodic protection testing and anode replacement, etc.
- Site Maintenance
  - Snow removal
  - Lawn care



MWRA Shaft 7C  
Morton St/American Legion, Boston



## Where to Find Information / How to Contact Us

- <https://www.mwra.com/mwtp.html>
  - Program documents (ENF, DEIR, fact sheets)
  - Meeting notices, agendas, presentations, minutes
- Contact Us
  - Carmine DeMaria, Community Relations Coordinator
  - 617-305-5725
  - [Carmine.DeMaria@mwra.com](mailto:Carmine.DeMaria@mwra.com)
  - [Tunnels.info@mwra.com](mailto:Tunnels.info@mwra.com)



# Metropolitan Water Tunnel Program



**Thank You!**