

Waltham City Council
June 21, 2021

MWRA
Metropolitan Water Tunnel Program



Agenda

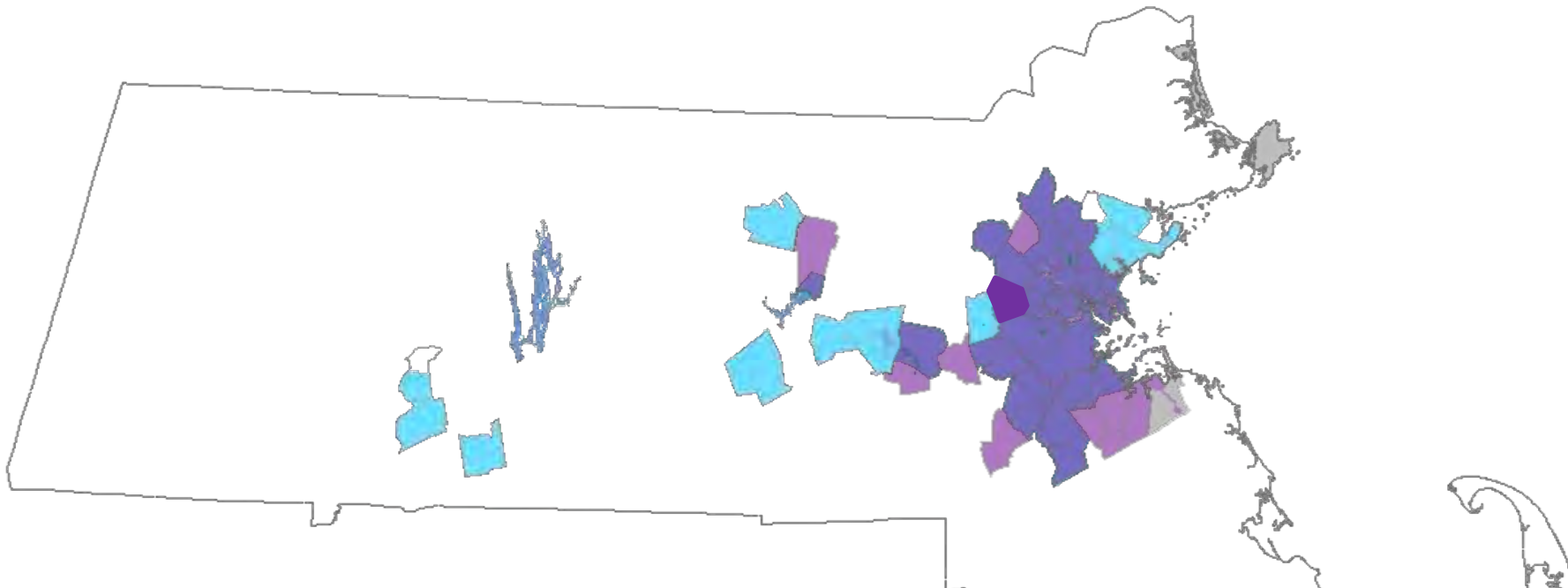
- Introduction
- Need for water supply redundancy
- Proposed water supply tunnels and timeline
- Information and outreach
- Field work
- Tunnel program alternatives evaluation
- Potential tunnel connections in Waltham





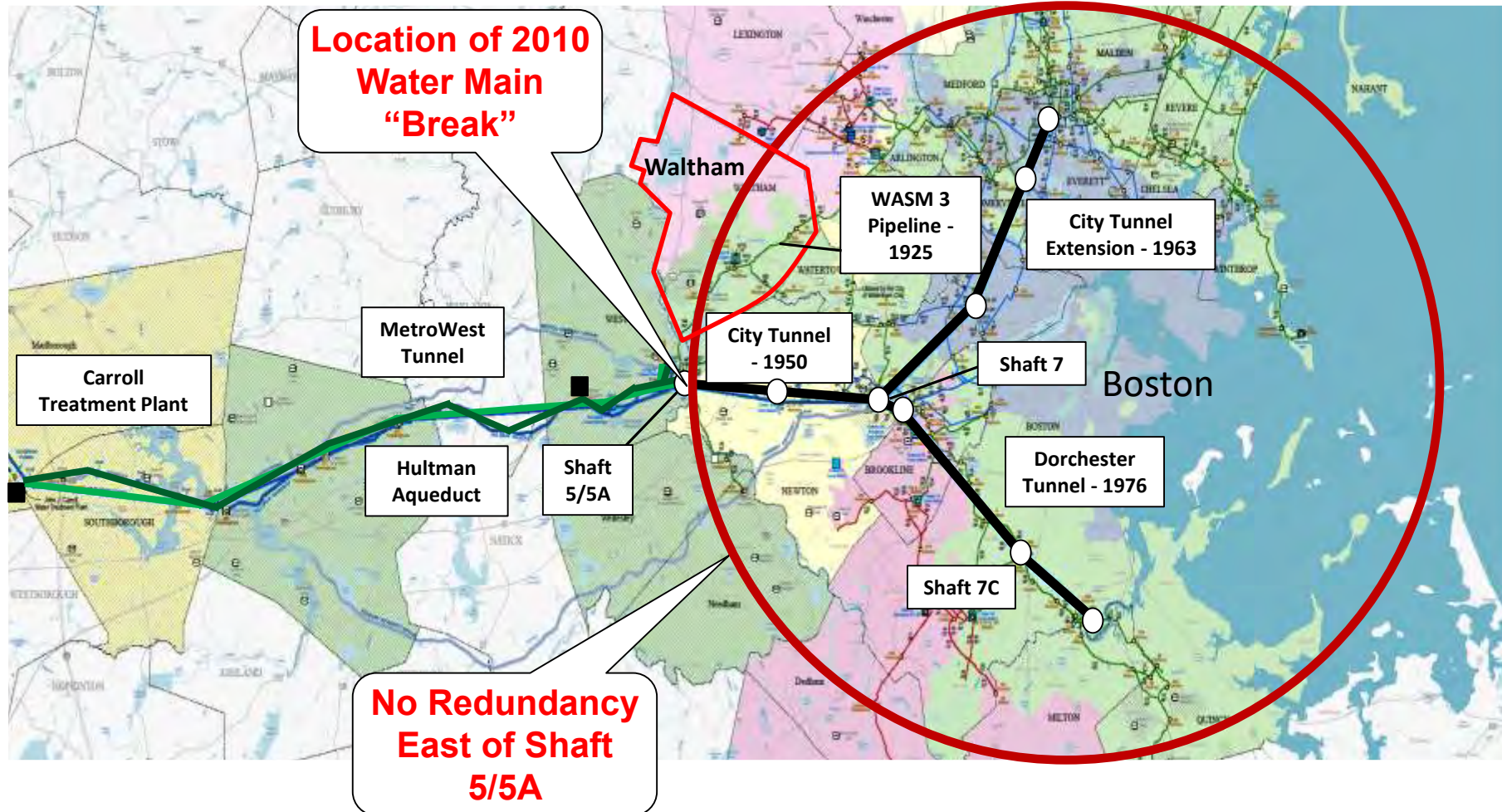
MWRA Service Area

- MWRA provides wholesale water and wastewater services to over 3.1 million customers in 61 communities
- On average, MWRA delivers an average of 200 million gallons per day to its water customers
- MWRA collects and treats an average of 350 million gallons of wastewater per day, with a peak capacity of 1.2 billion gallons
- Waltham receives 100% of its water and sewer services from MWRA





Metropolitan Tunnel System Supplies About 60 Percent of the Water Demand for the Boston Metropolitan Area





Need for Redundancy and Alternatives Evaluated

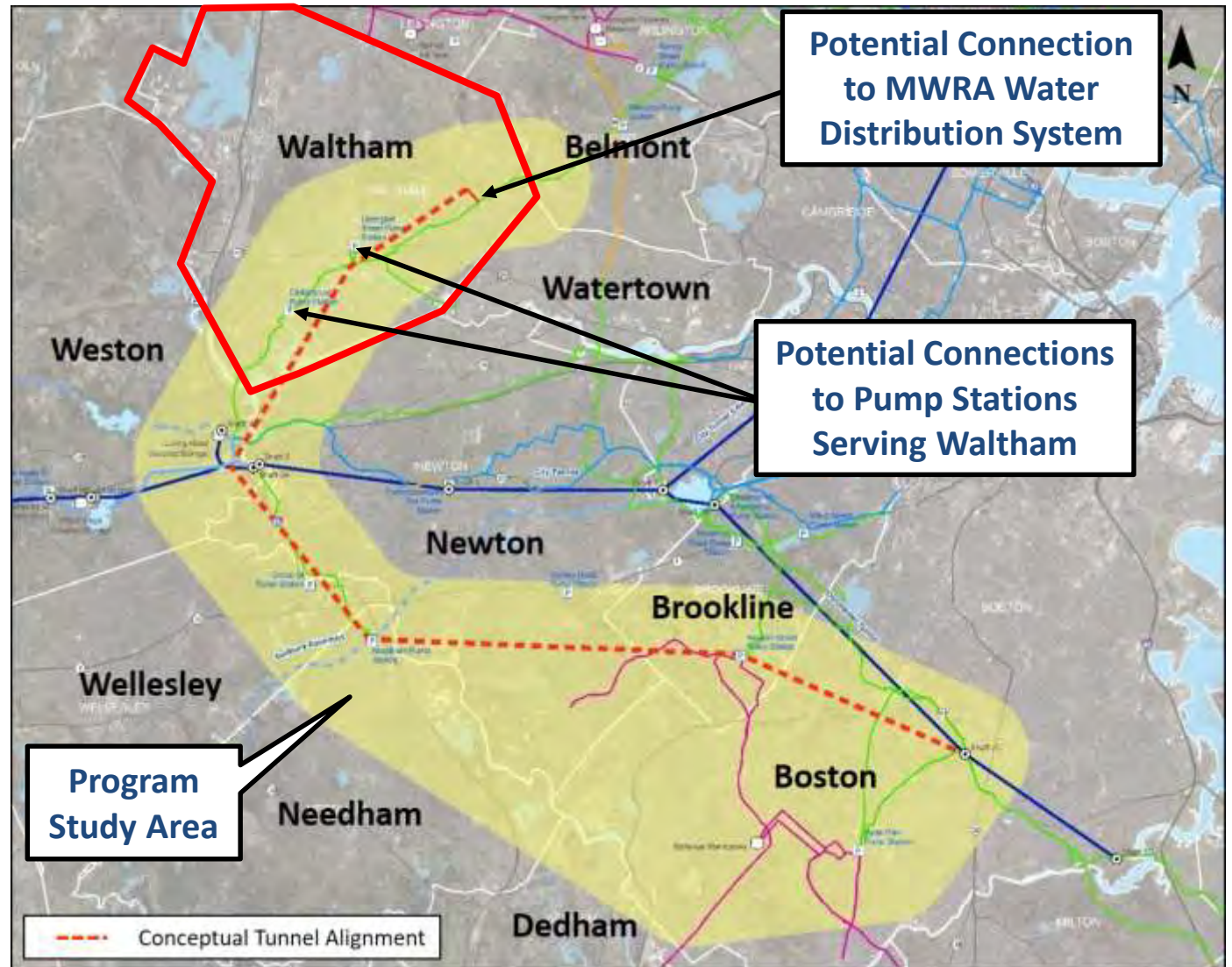
- Pipe, valves and appurtenances need maintenance, rehabilitation, replacement
- Currently we cannot maintain the tunnel system east of Shaft 5 because a shutdown of the entire Metropolitan Tunnel System would be required
- Great Water Main Break in May 2010 resulted in state of emergency and DEP required Boil Water Order for 2 million people in 30 communities
- Extensive alternatives were identified and evaluated by MWRA
 - 25+ surface and tunnel alignments analyzed
 - Long distance, large diameter pipeline alternatives present significant implementation challenges





Two Tunnel Concept and Study Area

- **Two Tunnel Concept** meets service objectives and goals:
 - Allows planned maintenance year-round of 60+ year old infrastructure that are beyond their useful life
 - Allows emergency response at normal level of service
 - Constructible
- ~14 miles of 10 ft diameter, hard rock, pressure tunnel
- Time to complete: 17 to 23 years (design - commissioning)
- Anticipate tunnel construction to start in 2026 or 2027





Metropolitan Water Tunnel Program - Timeline

Preliminary Design/Environmental Impact Report

- Filed the ENF on March 31, 2021
- Initiated Working Group meetings in April, 2021
- Began geotechnical field program this spring
 - Drill 3 borings in Waltham
- Began alternatives evaluation (to support EIR)
 - Includes 3 potential shaft sites in Waltham (2 connection & 1 construction shaft)



Final Design

- Final Design to start in 2024, after Preliminary Design is complete

Construction

- Anticipate tunnel construction to start in 2026 or 2027
- Anticipate construction will complete by 2037





Information and Outreach

- Tunnel Program Website: <https://www.mwra.com/mwtp.html>
 - Program Information
 - Reports and other Documents
 - Meeting Agendas and Minutes
- Program email address: Tunnels.info@mwra.com
 - Public inquiries and information requests
- Metropolitan Tunnel Program Working Group
 - Initially one Working Group including all ten communities
 - One (or more) representative from each community
 - Michael Chiasson is Waltham's representative
 - Provide transparent process for evaluating and selecting shaft sites and tunnel alignments
 - First Working Group meeting was held in April 2021
 - Regular meetings through the evaluation of alternatives (Spring 2021 – Spring 2022)
 - As Program becomes more refined, potentially split into two Working Groups (e.g., Northern Tunnel and Southern Tunnel Working Groups)





Field Work – Start in Spring 2021

- Test Borings
- Geophysical Surveys
- Bedrock Outcrop Mapping
- Survey/Wetlands Flagging

Geophysical Survey



Test Boring Drilling



Monitoring Wells





Tunnel Program Alternatives Evaluation

- Currently shown tunnel alignment is conceptual
- Started Identifying alternatives for shaft sites and tunnel alignments
- Proposed Shaft Sites and Tunnel Alignment will be presented in Draft Environmental Impact report
 - Fall 2022



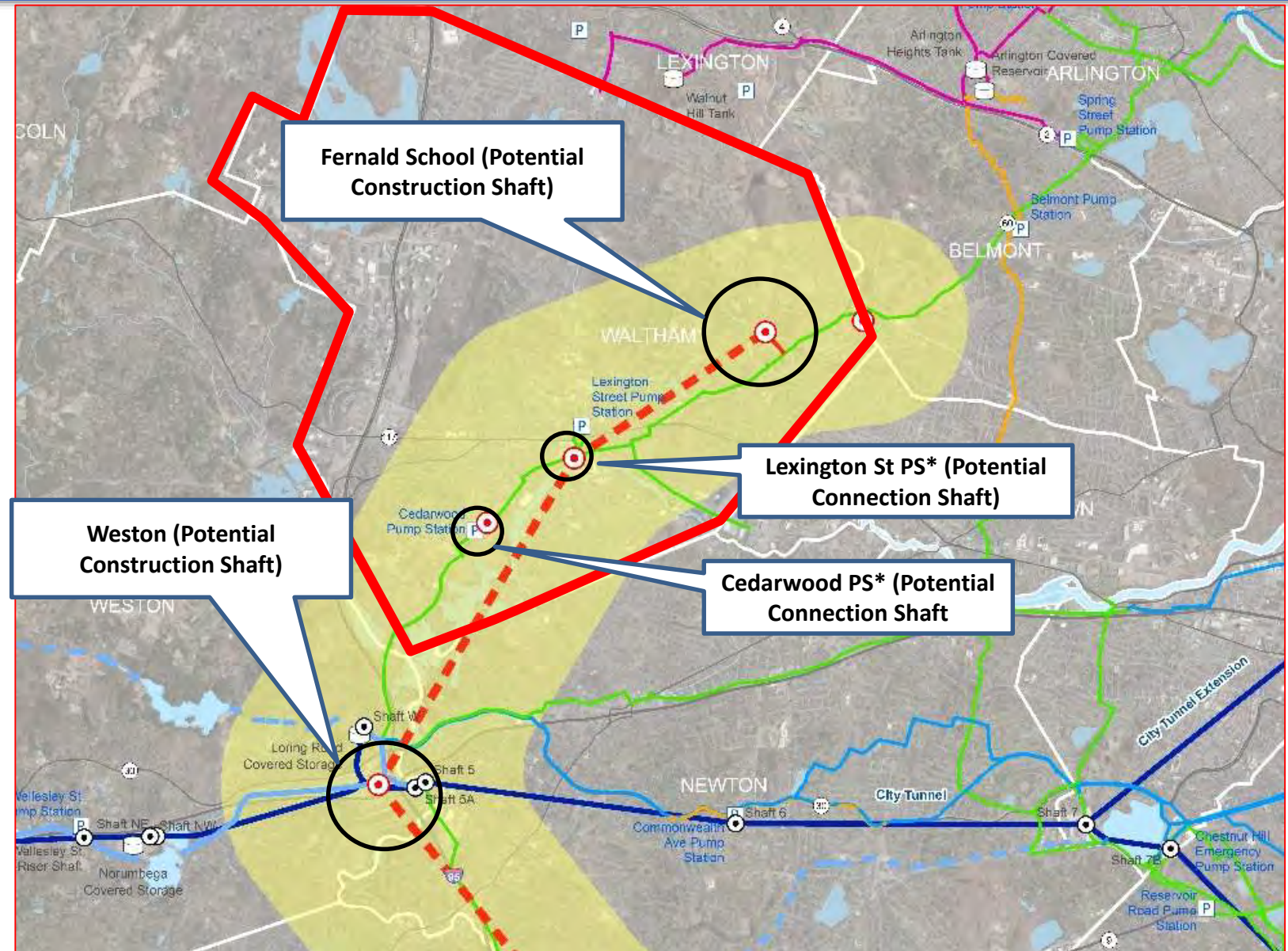


Waltham – Potential Tunnel Connections

- Fernald Property:
 - either a TBM launching or TBM receiving construction shaft site
 - south side of site, non-CPA land
- Near MWRA’s Lexington St Pump Station:
 - connection shaft site
- Waltham’s Cedarwood Pump Station:
 - connection shaft site

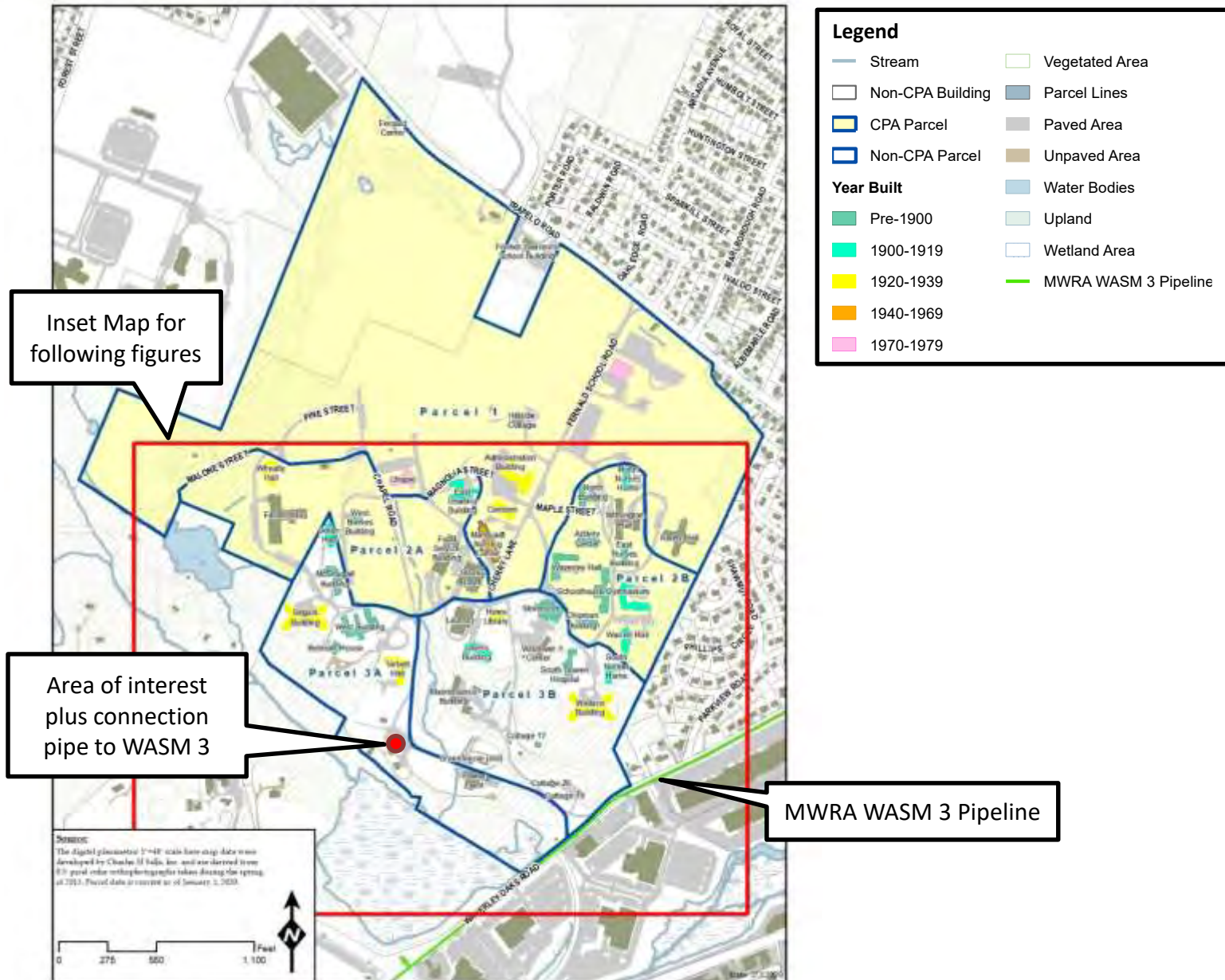
Final tunnel alignment, shaft sites and connections will be established during the EIR process

- ❖ Lexington St Pump Station is owned by MWRA
- ❖ Cedarwood Pump Station is owned by Waltham



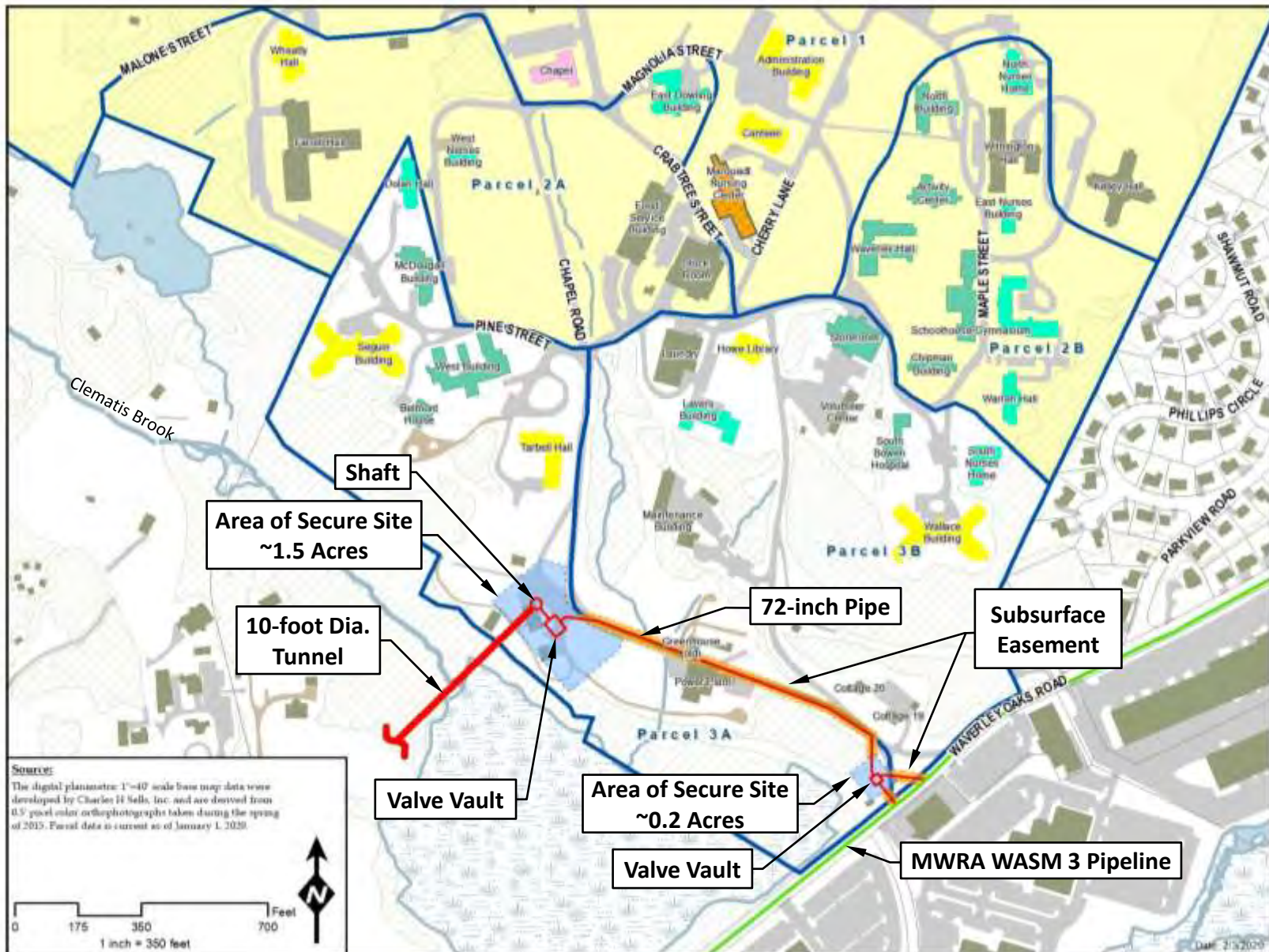


Fernald School – Potential Construction Shaft Site





Conceptual Permanent Infrastructure Layout



Legend

Stream	Vegetated
Non-CPA Building	Paved
CPA Parcel	Unpaved
Non-CPA Parcel	Water Bodies
Parcel Lines	Upland
Year Built	
Pre-1900	MWRA WASM 3 Pipeline
1900-1919	Proposed 10-ft Diameter Tunnel
1920-1939	Proposed Facilities & Surface Pipe
1940-1969	Secure Site Area
1970-1979	Subsurface Easement

Source:
The digital planimetric 1"=40' scale base map data were developed by Charles H Sells, Inc. and are derived from 0.5' pixel color orthophotographs taken during the spring of 2015. Parcel data is current as of January 1, 2020.



Conceptual Fernald Property - Shaft Site Plan

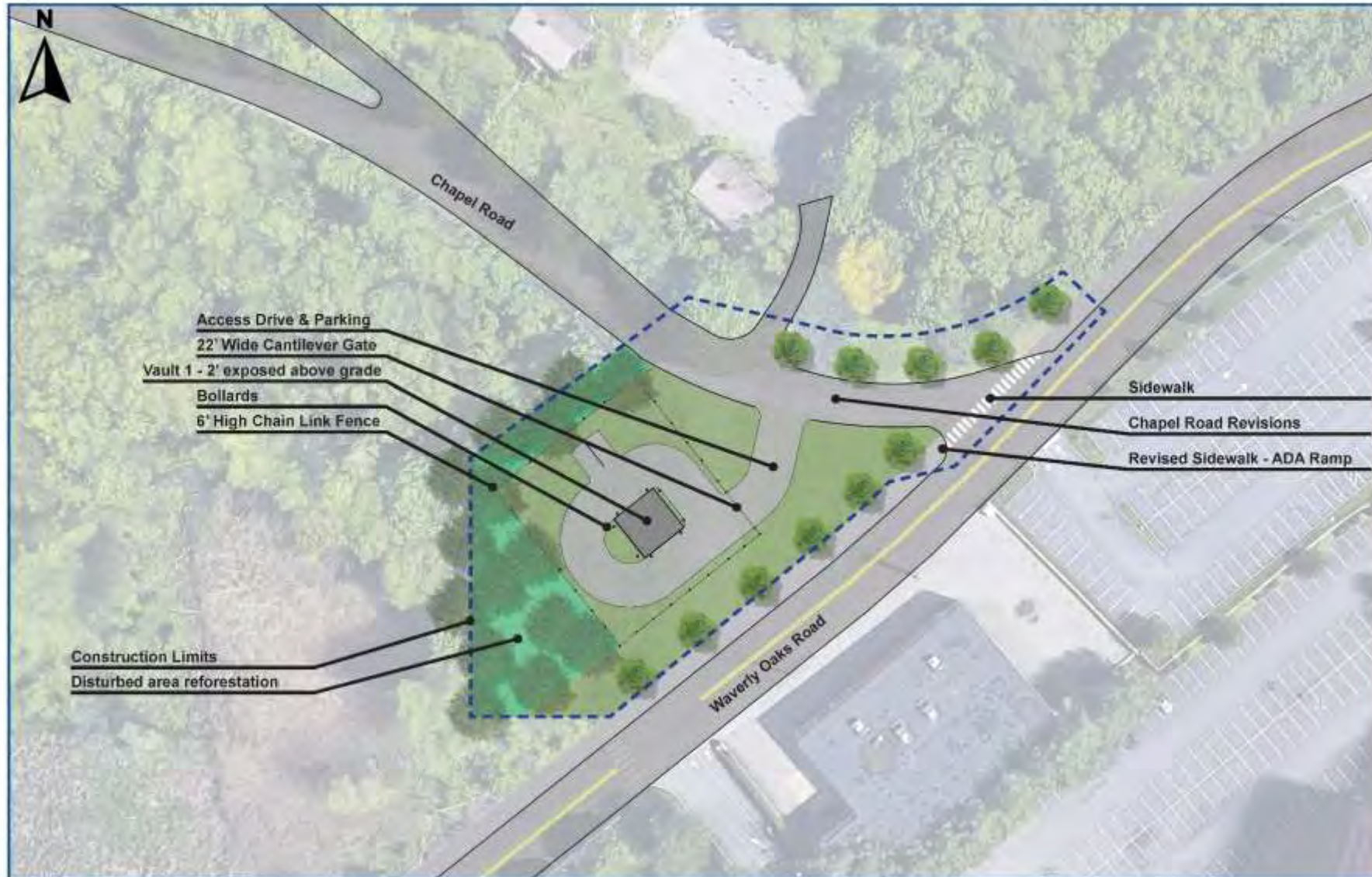
Post Construction:

- Regular security checks
- Maintenance
- Mow the lawn
- Plow the snow



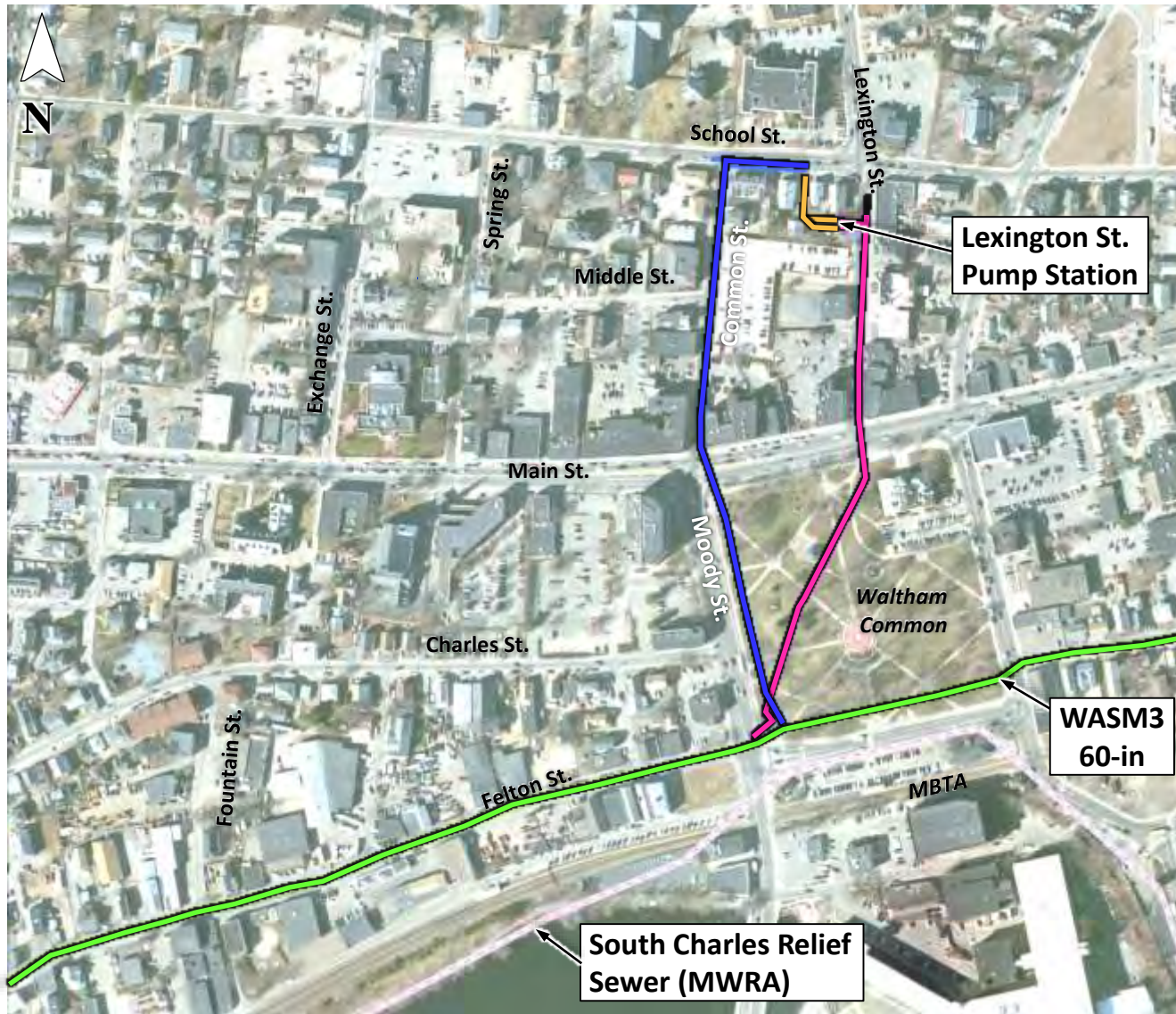


Conceptual Waverley Oaks Road – WASM 3 Connection Plan





Potential Connection Shaft Site – near Lexington St Pump Station



LEGEND

- Existing 60-in Main WASM3
- Existing 24-in Main
- Existing 18-in Main
- Existing 12-in Main
- Existing 36-in South Charles Relief Sewer
- ? Connection Shaft Site - TBD



Potential Connection Shaft Site – Cedarwood Pump Station





Metropolitan Water Tunnel Program



Thank You!