



Upcoming Projects in Newton

May 23, 2019



MWRA Service Area

- MWRA provides wholesale water and wastewater services to over 2.5 million customers in 61 communities
- On average, MWRA delivers 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





We Have One Of The World's Greatest Water Systems

Quabbin Reservoir

Storage: 412 billion gallons
Depth: 150 feet
Length: 17.9 miles
Width: 3 miles



Wachusett Reservoir

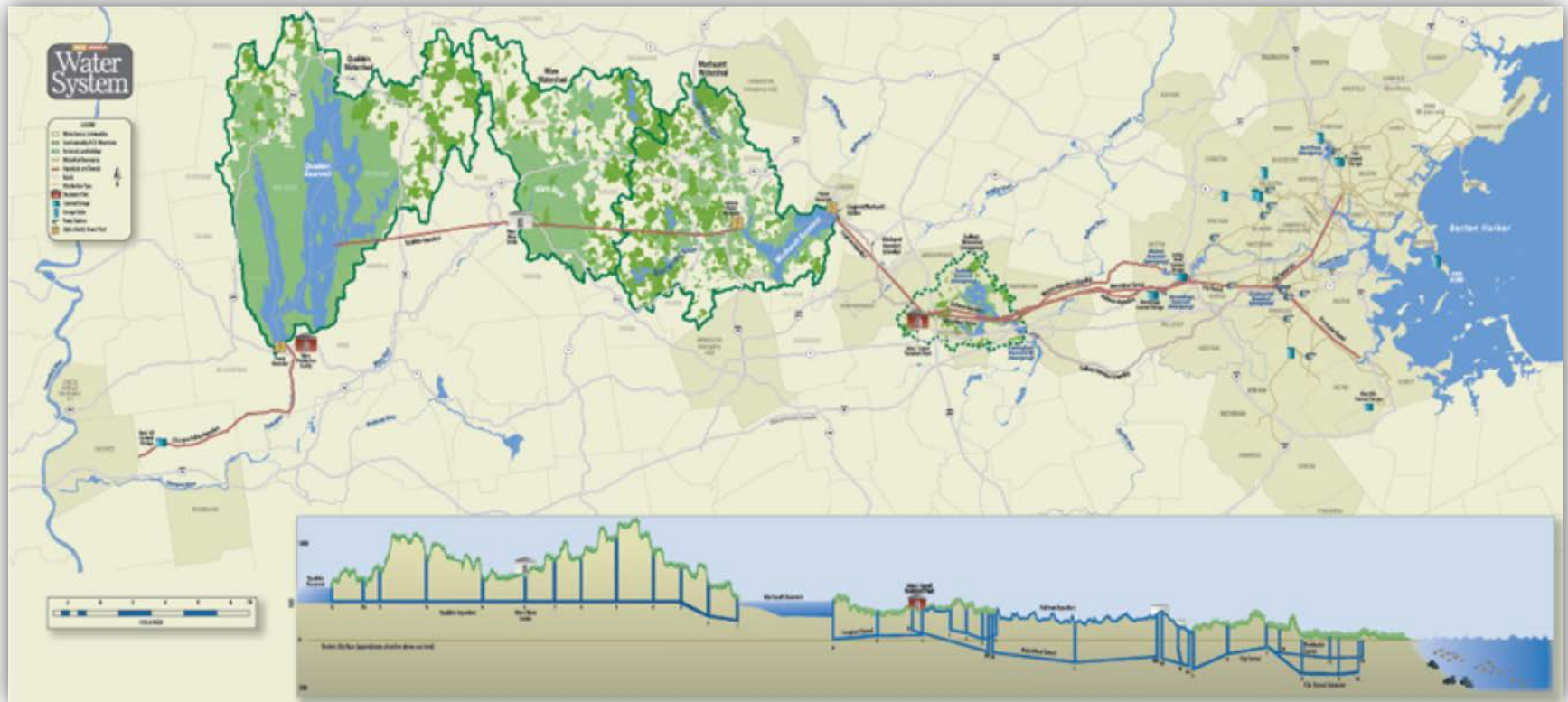
Storage: 65 billion gallons
Depth: 129 feet
Length: 8.5 miles
Width: 1 mile





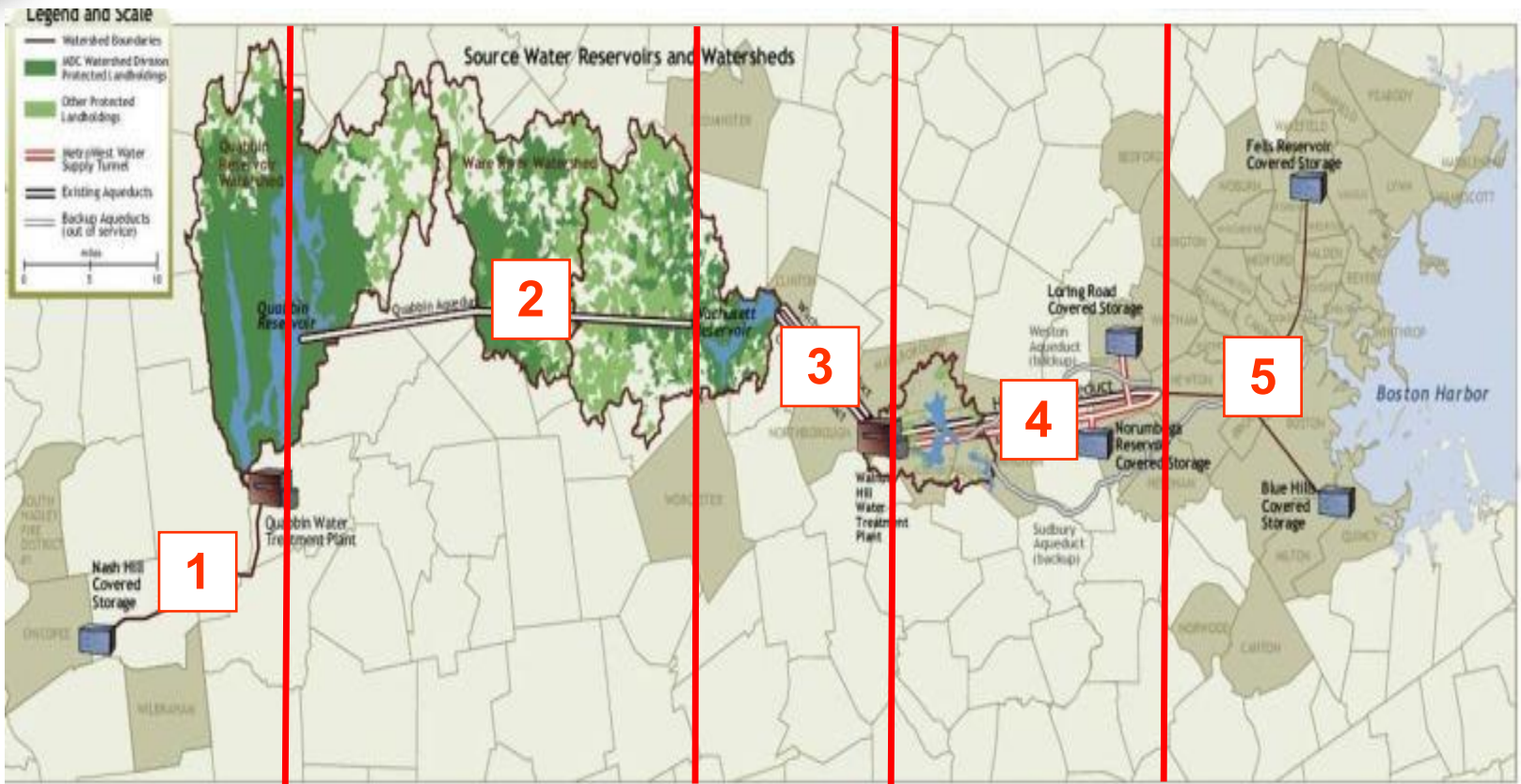
A Civil Engineering Marvel

- 102 miles of active transmission mains and tunnels (43 miles on standby)
- 284 miles of distribution mains with over 4,700 valves
- About 85% of the water is delivered by gravity
- 11 pump stations
- 5 years of storage





MWRA Water Transmission System

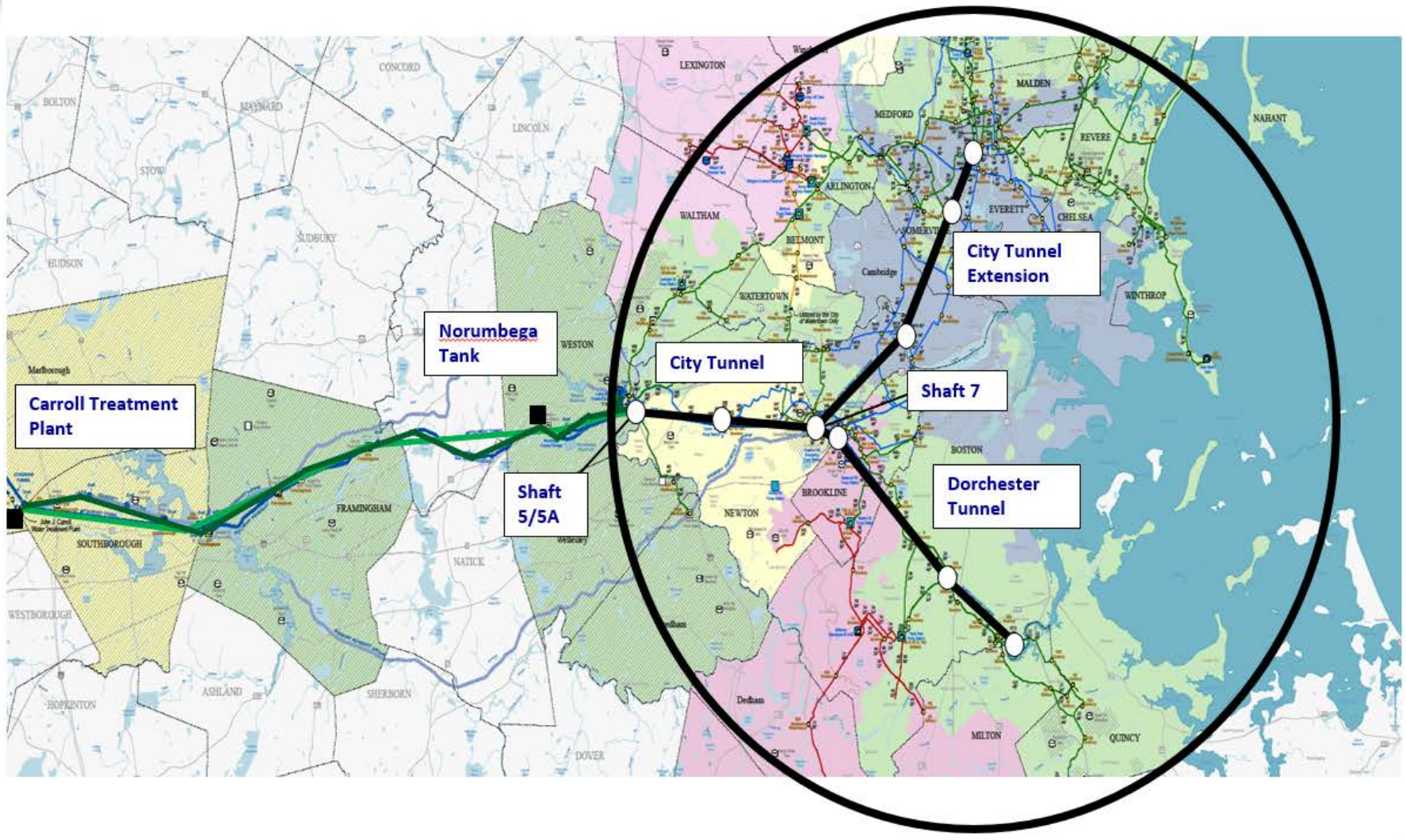


1. Chicopee Valley Aqueduct
2. Quabbin Aqueduct
3. Cosgrove Tunnel / Wachusett Aqueduct
4. MetroWest Tunnel / Hultman Aqueduct
5. Metropolitan Tunnels

- 2007 Improvements
- Inspection planned
- Project underway
- 2003/2013 Improvements
- Significant Needs



Metropolitan Tunnel System





Current Major Initiative - Long-Term Water System Redundancy

To provide redundancy for Metropolitan Tunnels which deliver water to 60% of the system

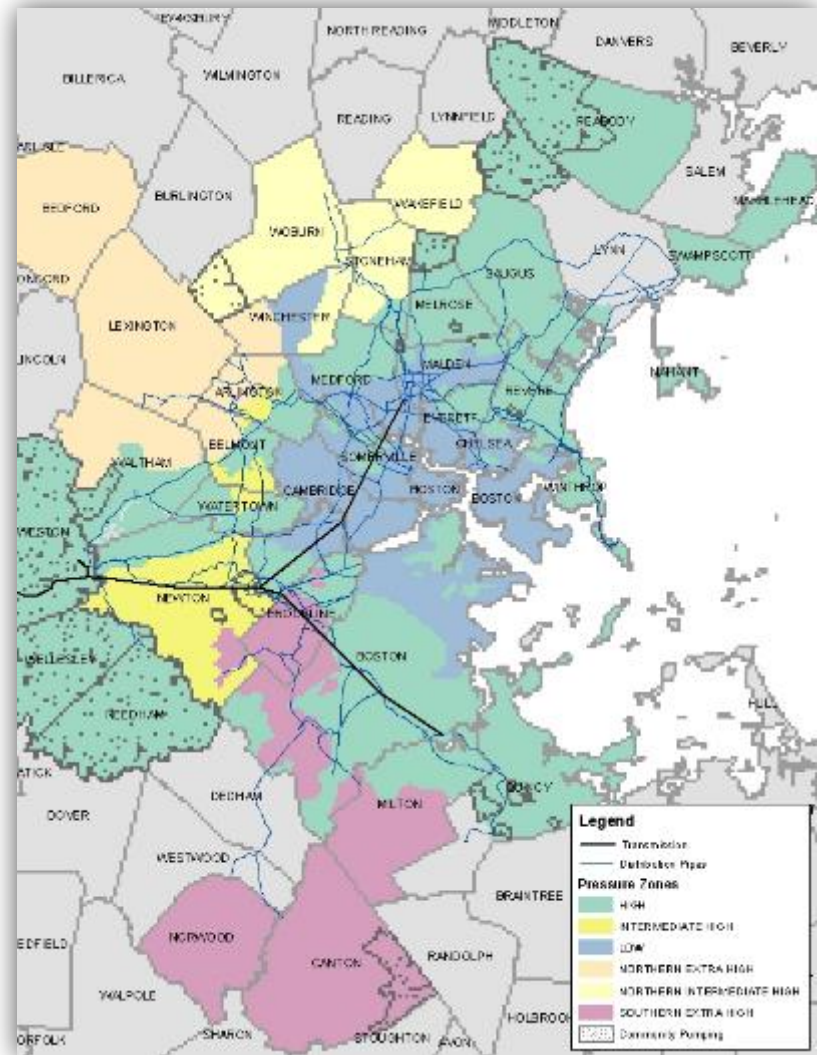
- \$1.54 billion
- Project duration 2018 – 2039
- Staff are currently developing the first contract for Preliminary Design/ Geotech/MEPA Review





Water System

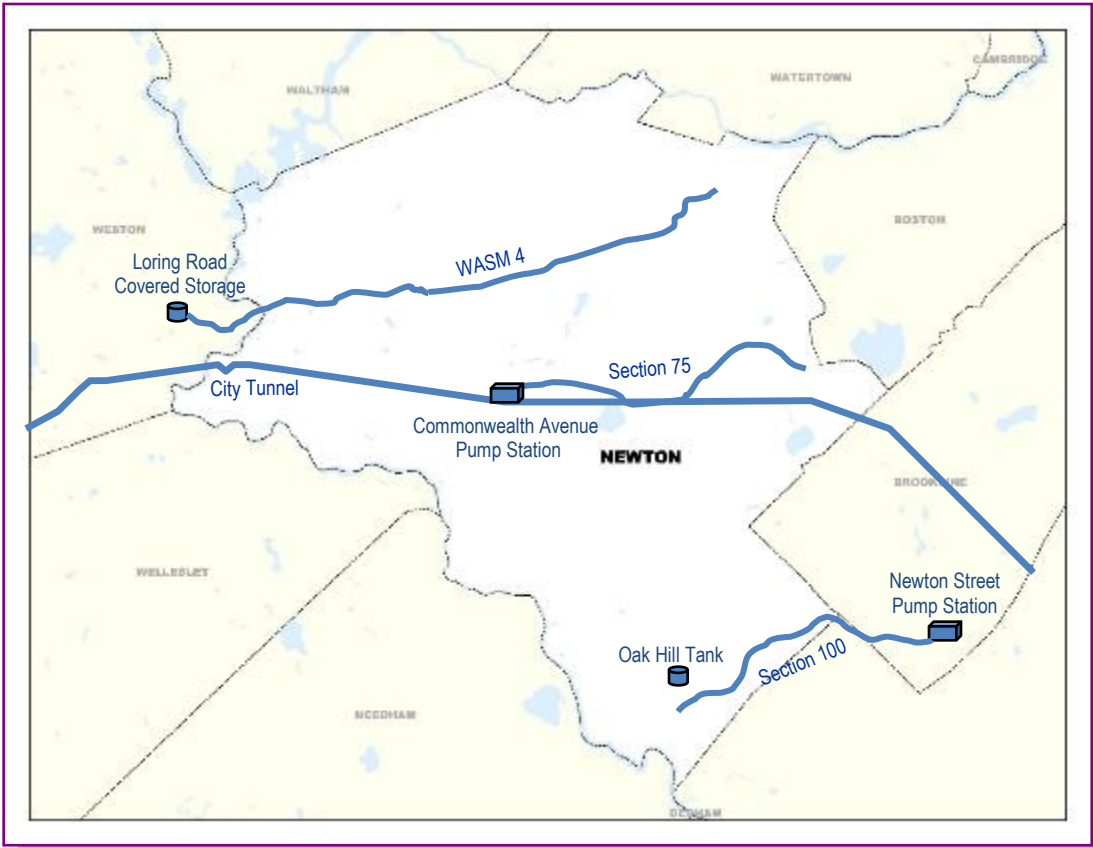
- Newton is one of 22 communities that receives both its water and sewer services from MWRA
- Newton uses an average of 8.3 million gallons of water per day, accounting for 4.8% of total system usage





MWRA Water Supply To Newton

- Water is supplied to three different zones:
- North of the Mass Pike, water comes from the MetroWest Tunnel through Weston Aqueduct Supply Main 4
- South of the Mass Pike, water comes from the City Tunnel, up through the Commonwealth Avenue Pump Station
- In the higher elevation near Brookline, the Newton Street Pump Station sends water up through Section 100 to Newton's Oak Hill Tank





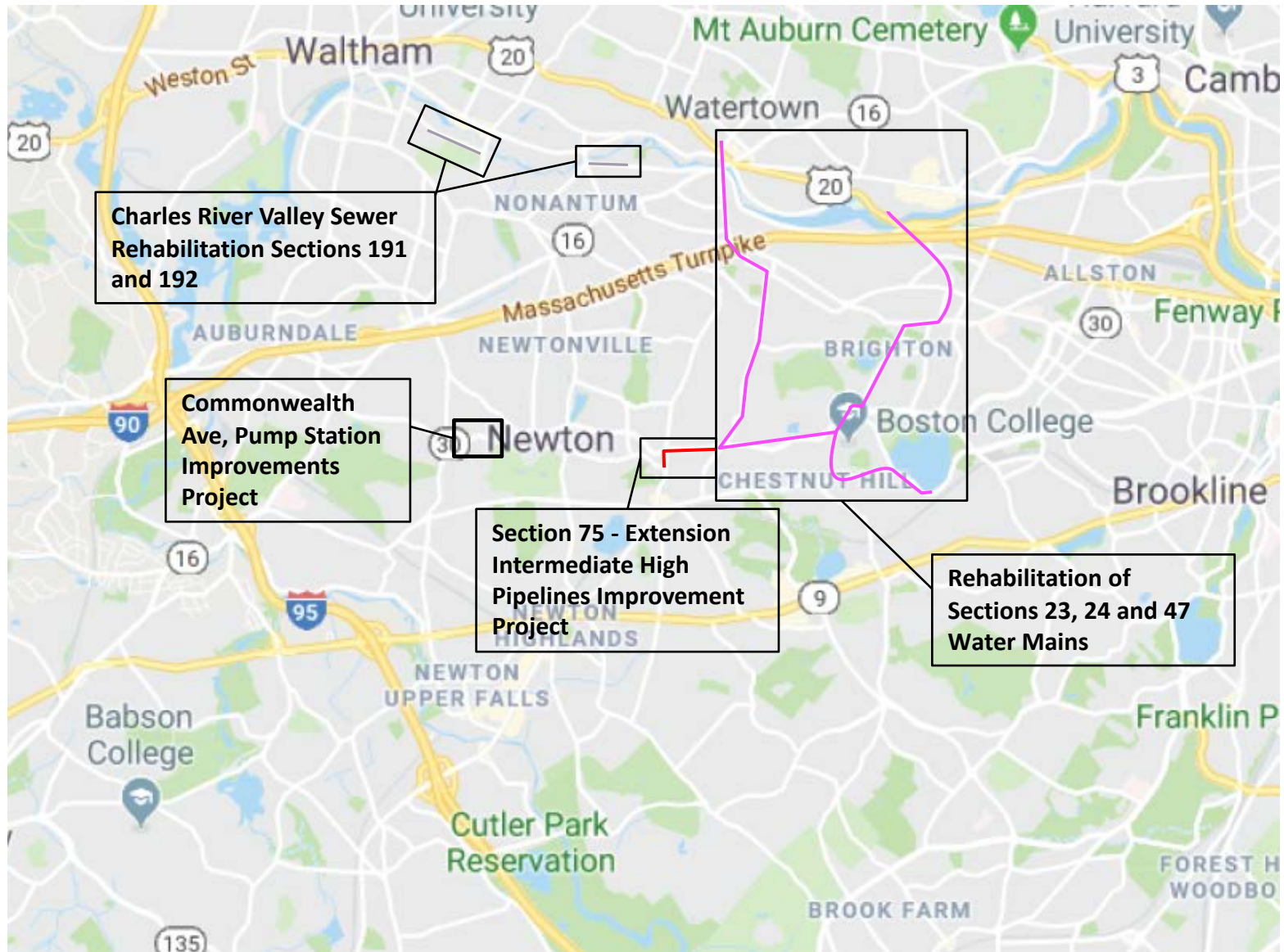
Upcoming MWRA Projects In Newton

Over the next few years, MWRA will work on several projects that will help continue to provide safe, secure, and reliable water and wastewater services to the City of Newton

- Commonwealth Avenue Pump Station Improvements, MWRA Contract 7524
- The Charles River Valley Sewer Rehabilitation Sections 191 and 192, MWRA Contract 7643
- Rehabilitation of Sections 23, 24 and 47 Water Mains, MWRA Contract 6392
- Intermediate High Pipelines Improvement Project, MWRA Contract 6955



Project Locations





Commonwealth Avenue Pumping Station Improvements



Commonwealth Avenue Pumping Station Improvements



Contractor:
WES Construction Corp.

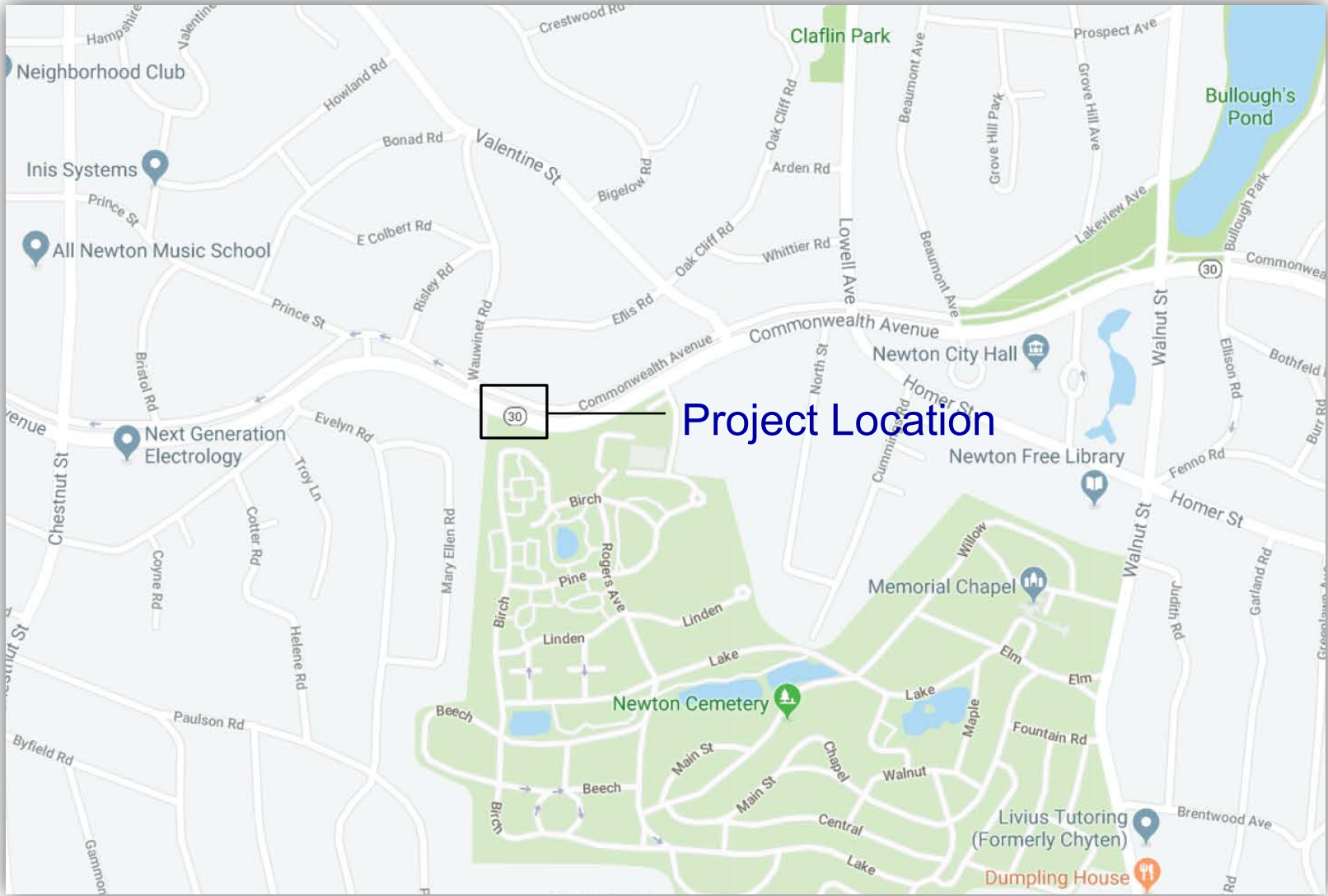


Commonwealth Avenue Pumping Station Improvements – Project Overview

- City Tunnel, Shaft 6, and the pumping station provide water to 85% of the City of Newton
- This project provides a redundant water supply to the pumping station in the event that the City Tunnel needs to be taken out service
- The alternate supply will be established by connecting the pumping station to two existing MWRA water pipe lines located in Carriage Road, via a new 24-inch water main
- The project also includes pump, mechanical and instrumentation equipment upgrades to the station's two existing buildings
- Project duration – 18 months (Feb. 2019 – Sept. 2020)
- Cost - \$6.8 million

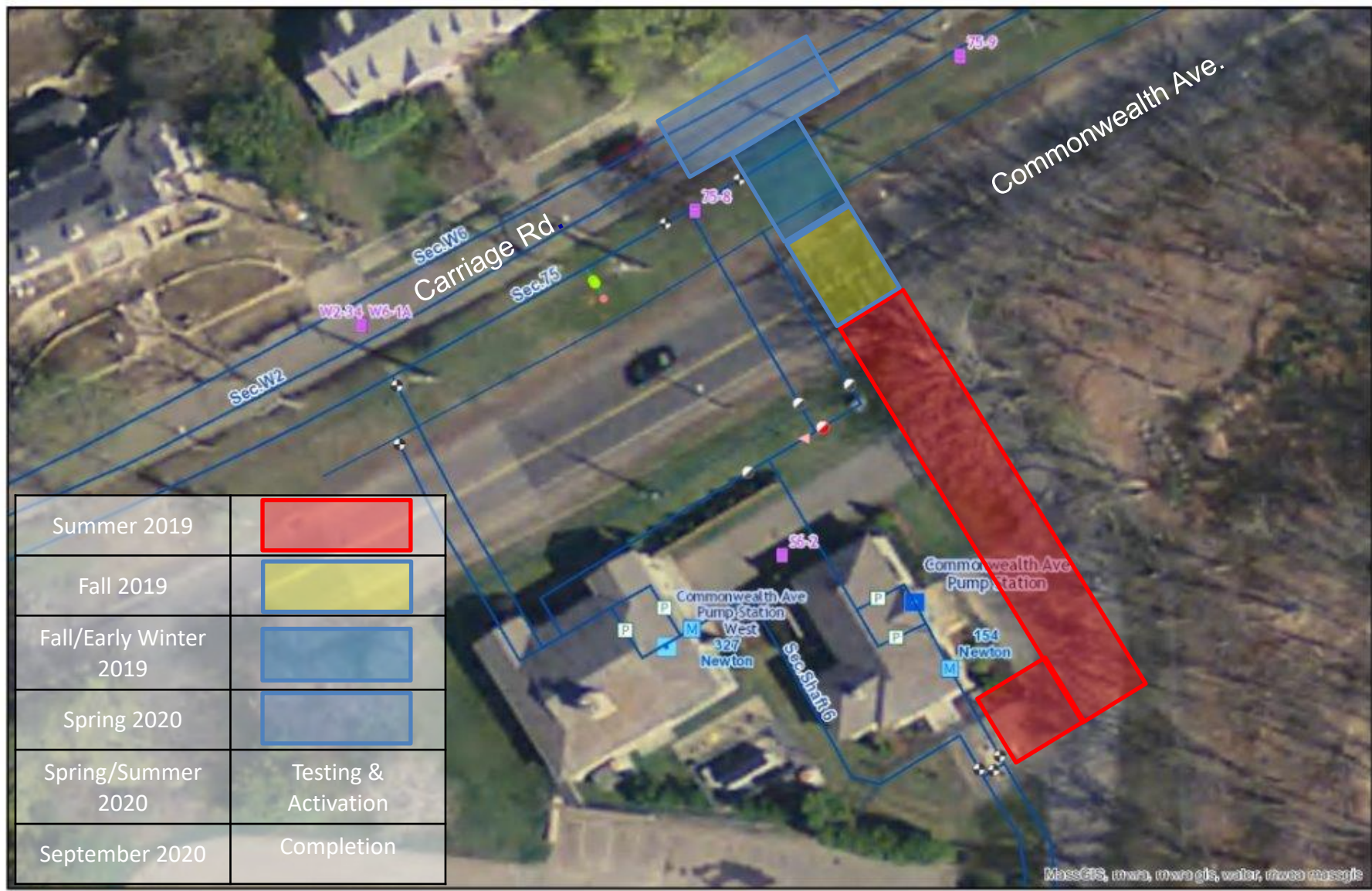


Commonwealth Avenue Pump Station Improvements Project Map





Commonwealth Avenue Pump Station Improvements Construction Sequencing





Work Hours/Restrictions

- Work on Commonwealth Ave - 9:00 AM to 3:00 PM
Monday thru Friday
- Equipment and Machinery will not be allowed to operate
before to 7:00 AM
- No work on Commonwealth Ave December 1st to March 15th
- The Contractor will not be allowed to work in
Commonwealth Ave or Carriage Rd. the Friday before
through the Tuesday after the Boston Marathon
- No construction outside of the pumping station will be
allowed on Rosh Hashanah and Yom Kippur



Traffic Detours

Comm. Ave Lane Closure – Late Fall 2019.

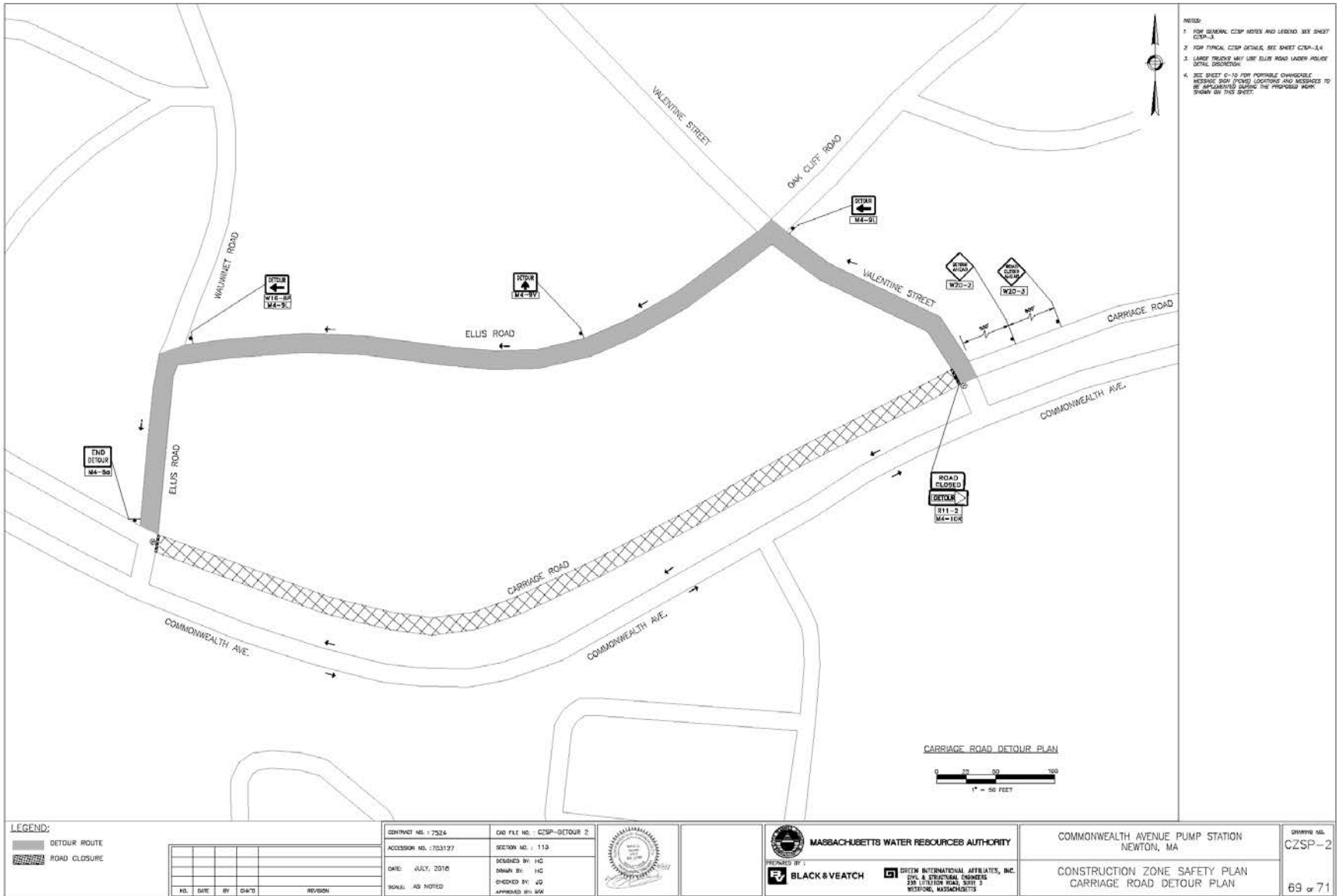
- West bound between 9:00 AM-3:00 PM M-F
- Contractor will setup detour starting at 9:00 AM and have road reopened by 3:00 PM
- Westbound traffic detoured up Valentine St to either Carriage Rd. or Ellis Rd

Carriage Road Closure - Various Time-frames

- Carriage Rd. will be closed (local access only) from Valentine St. to Ellis Rd. Traffic will be detoured to Ellis Rd. Local traffic west of the excavation will have access via Ellis Rd. Local access east of the excavation will have access via Valentine St
- Will occur for test pits in June. Road will be repaved & reopened.
- Will occur for connection to 48-inch line (WASM 1) late fall/early winter 2019.
- Will occur for connection to 60-inch line (WASM 2) winter/spring 2020.



Road Detour – Various Times in 2019/2020





Charles River Valley Sewer Rehabilitation Sections 191 and 192

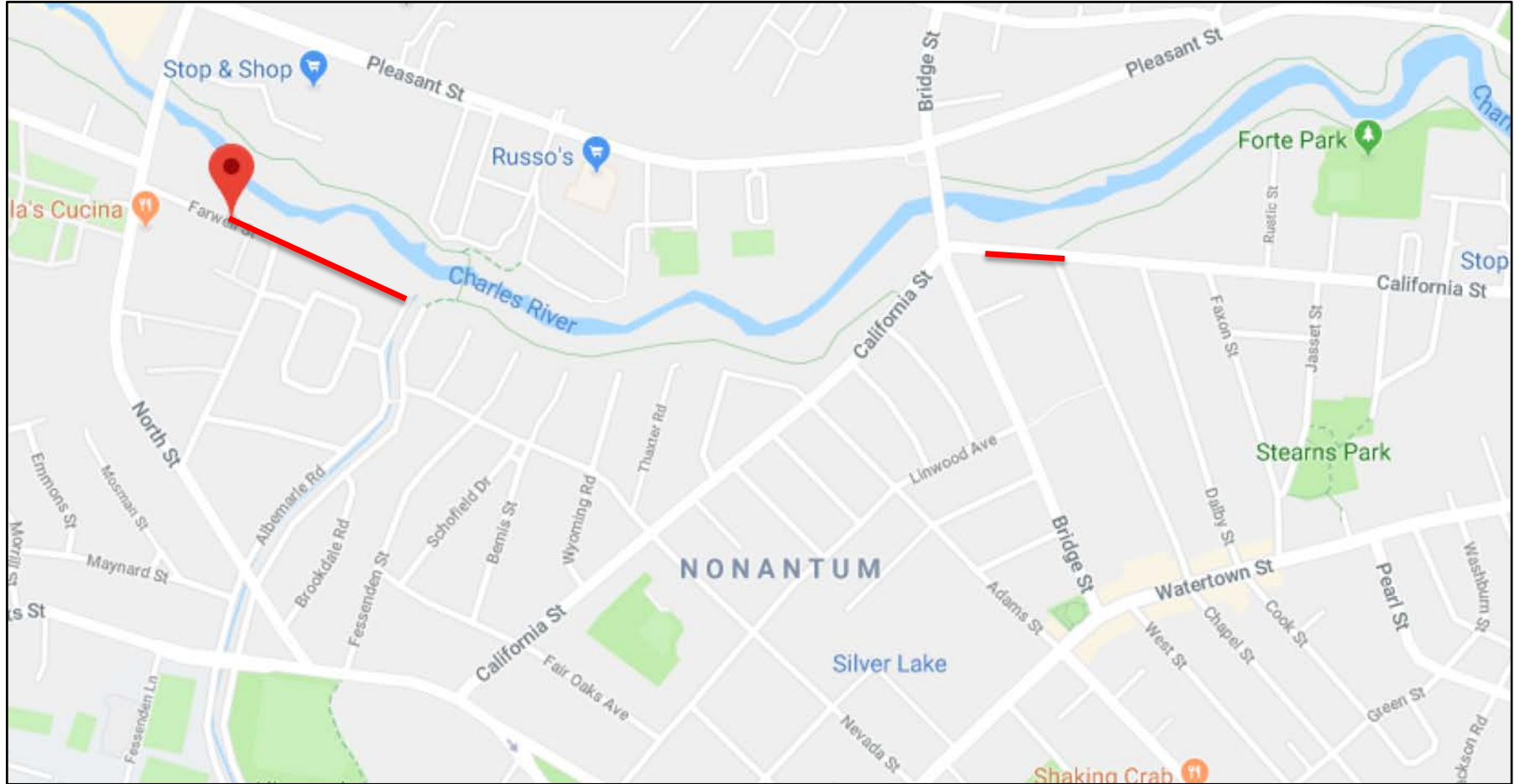


Charles River Valley Sewer Rehabilitation





Charles River Valley Sewer Rehabilitation Sections 191 and 192



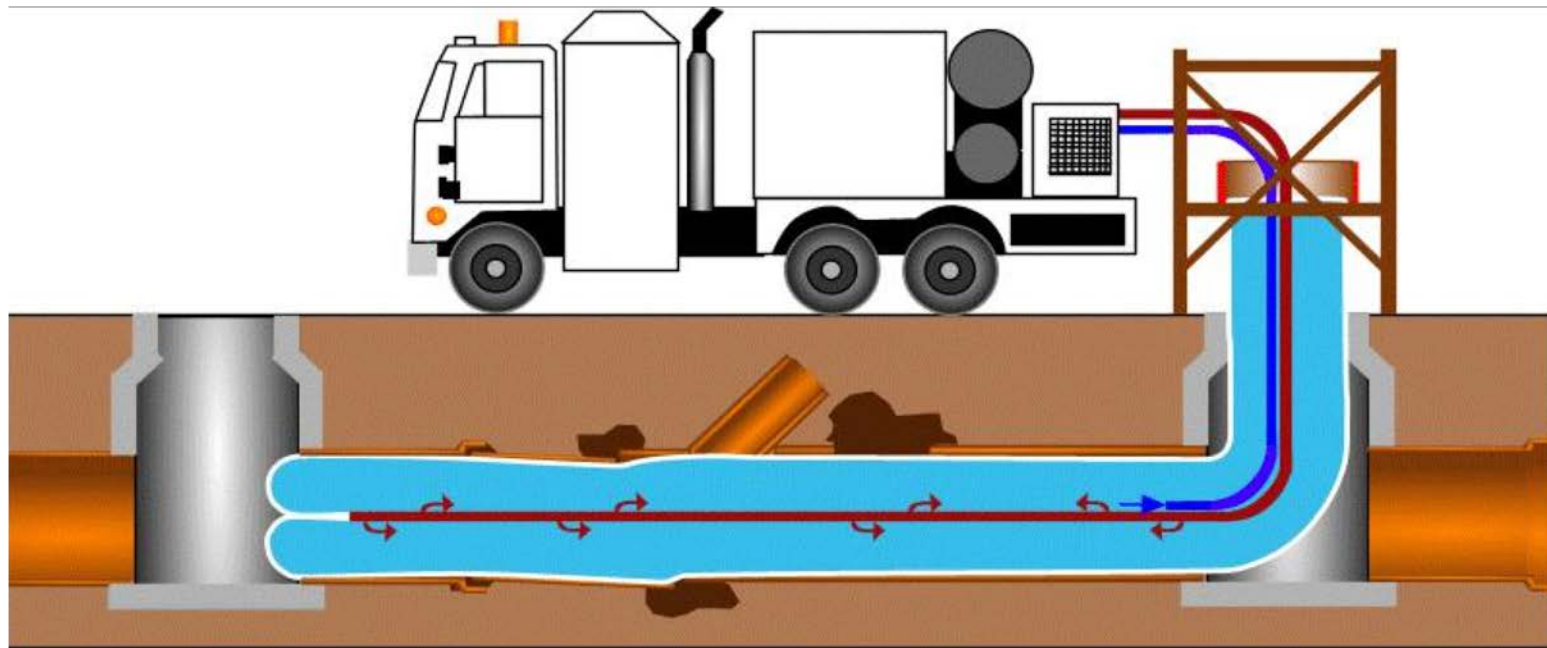


Charles River Valley Sewer Rehabilitation Sections 191 and 192

- 42"x48" Brick Sewer Built in 1892
- Flows range up to 12.3 mgd
- Requires rehabilitation due to crown cracks
- Plan to rehabilitate with Cured-In-Place Pipe (CIPP)
- Construction to begin in Fall/Winter, 2019
- Six month duration
- Estimated construction cost of \$2.5 million



Charles River Valley Sewer Rehabilitation: CIPP Liner Process





Charles River Valley Sewer Rehabilitation Typical CIPP Project Setup :





MWRA Water Main Rehabilitation of Sections 23, 24 and 47

Newton & Boston



Rehabilitation of Sections 23, 24 and 47 Water Mains Contract 6392

Before



After





Rehabilitation of Sections 23, 24 and 47 Water Mains

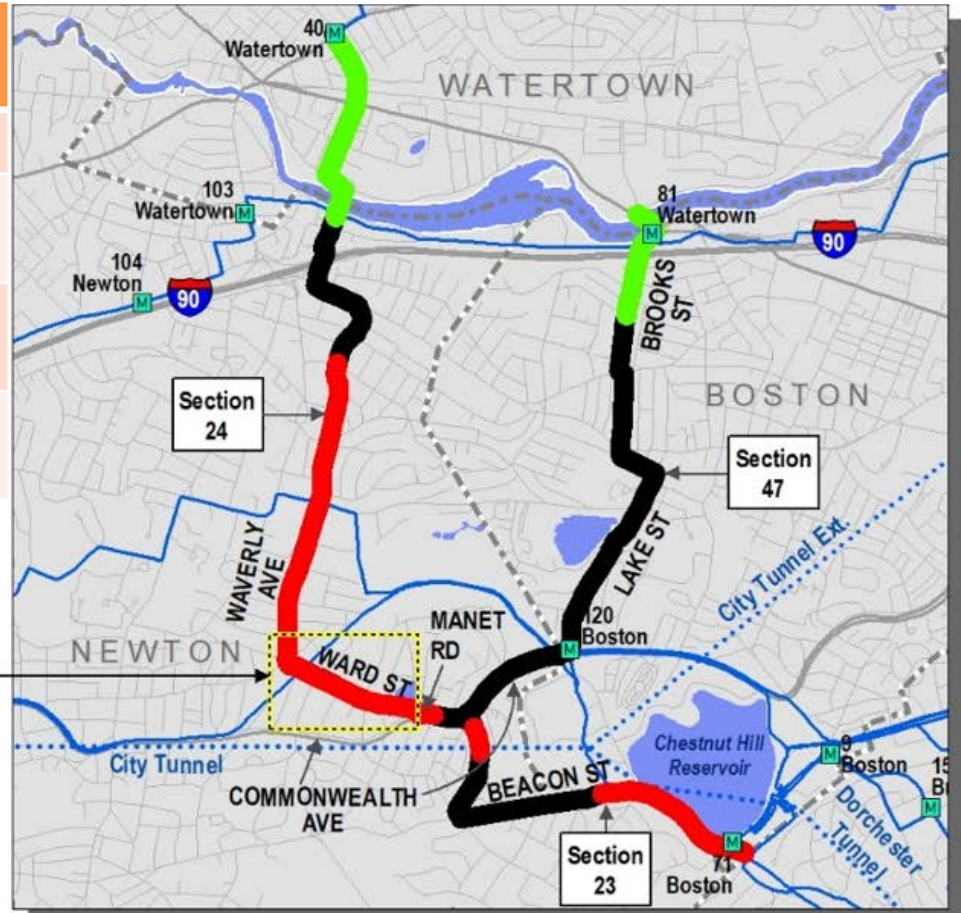
MWRA Work \$14.5M + Newton work \$2.7M = Total Cost Estimate: \$17.2M

Pipeline	Age (years)	Diameter (inches)	Length
City of Newton	140	20	2,400
MWRA Section 23	122	36	8,100
MWRA Section 24	122	20	9,391
MWRA Section 47	101	20	8,200

Replace City of Newton's 20-inch water main approximately 2,400 feet parallel to MWRA 36-inch water main

Legend

- █ Pipe Replacement Limits
- █ Pipe Cleaning & Lining Limits
- █ To Be Rehabilitated in Future Contract





Rehabilitation of Sections 23, 24 and 47 Water Mains: Project Overview

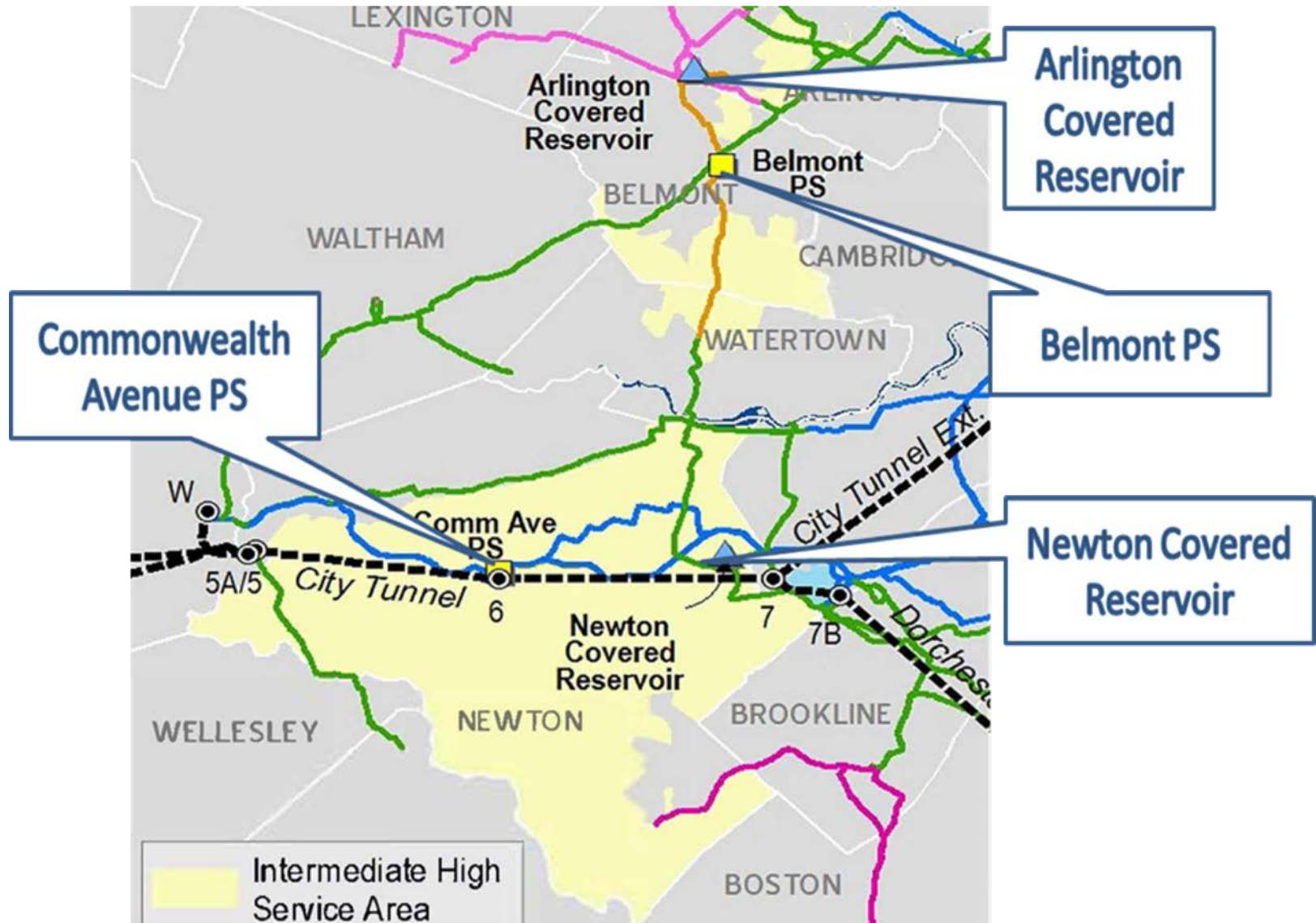
- Rehabilitation of 25,700 feet of 100+ Year Old Water Mains in Newton and Boston
- Replacement of 2,400 feet of Newton 20-inch diameter water mains
- Design is completed
- Construction Schedule: 30 months
- National Grid needs to relocate gas mains in advance of this work



Intermediate High Pipelines Improvement Project

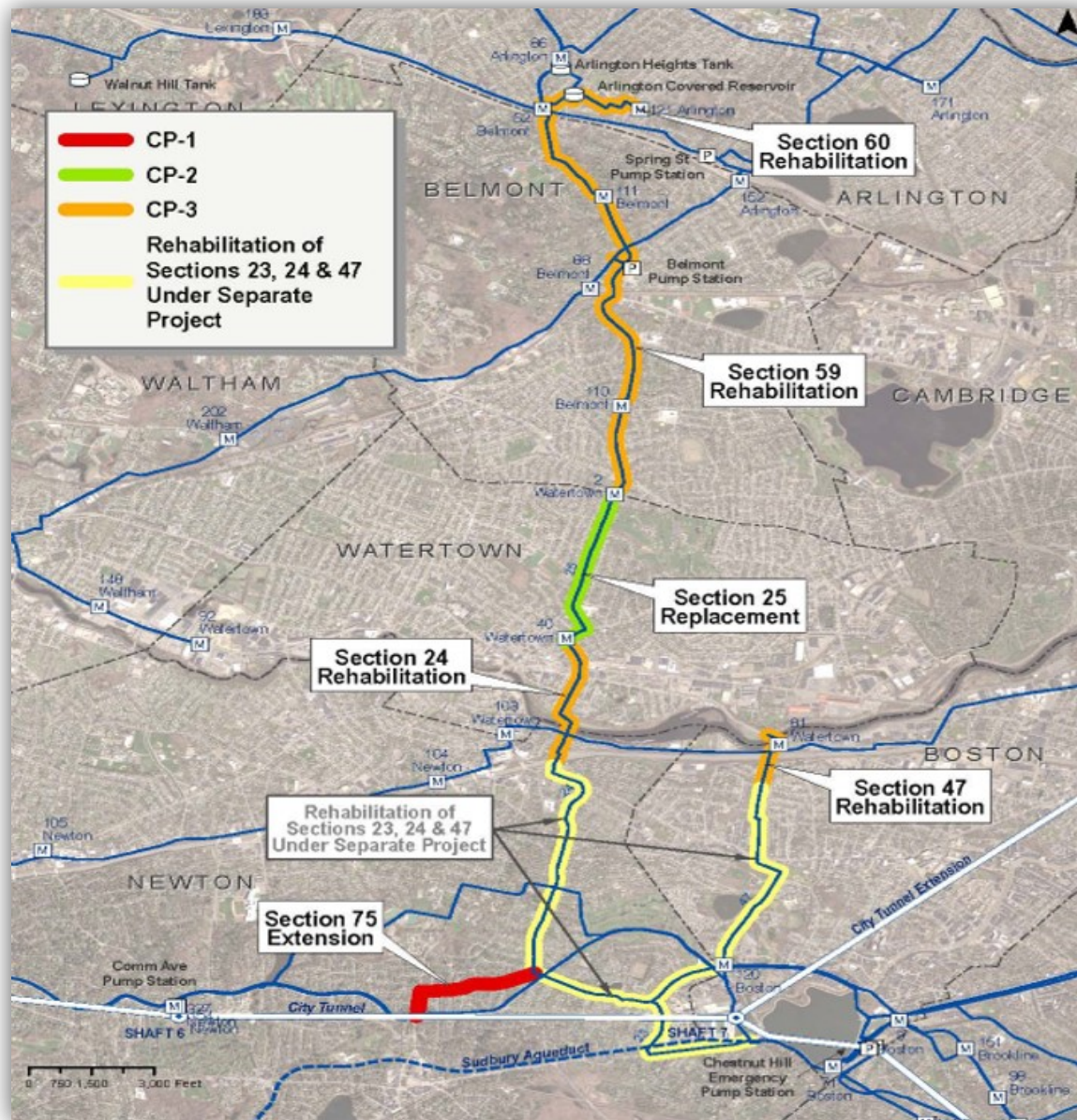


Intermediate High Pipelines Improvement Project





Intermediate High Pipeline Improvements Project Map



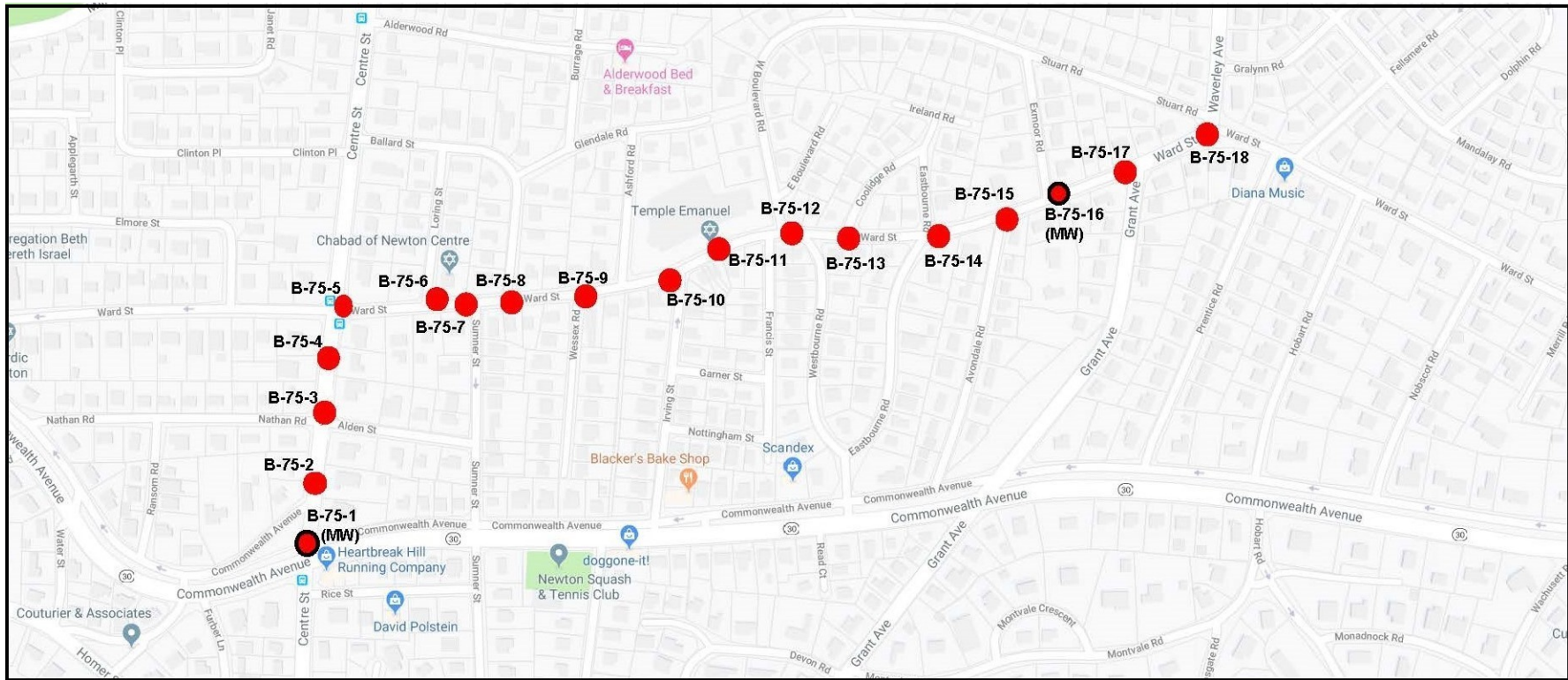


Intermediate High Pipelines Improvement Project : Overview



- Pipeline Extension to interconnect two MWRA pressure zones
- Provides Redundancy in the MWRA system
- Overall project includes rehabilitation and/or replacement of MWRA pipelines in Brighton, Watertown, Belmont and Arlington
- Proposing 3,600 feet of new pipe between Commonwealth Avenue and Centre St. to Ward St. & Waverley Ave
- Currently Preliminary Design including Field Investigations
- 18 Borings proposed for new pipe route along Centre St. and Ward St.
Schedule:
 - Preliminary Design 2019 to 2020 including Borings Summer 2019
 - Final Design 2020 to 2022
 - Construction 2022 to 2024



Section 75 Pipeline Extension - Soil Boring Program Centre Street & Ward Street, Newton



LEGEND

-  Proposed Boring Location
-  Proposed Monitoring Well Location



For More Information

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Or visit the project page on www.mwra.com

You can also sign-up for project updates delivered to you by text or email

