



# Massachusetts Water Resources Authority

## Metropolitan Water Tunnel Program

Working Group  
Meeting No 6

Preferred Alternative

September 22, 2022

Please visit the project website  
[www.mwra.com/mwtp.html](http://www.mwra.com/mwtp.html)



# Metropolitan Water Tunnel Program





# Agenda

- Metropolitan Water Tunnel Program Update
- Alternative Shortlist (3 tunnel alignments and shaft sites)
- Preferred Alternative
- Upcoming Meetings
- Thank You and Questions





# Metropolitan Water Tunnel Program Update

## Program Schedule

- Preliminary design – thru Jan 2024
- Begin final design in 2024
- Targeting construction to start in 2027

## MEPA Review Process

- Shortlisted three Alternatives (preferred and 2 backups)
- DEIR Submitted to MEPA Fall 2022
- FEIR late summer 2023

## Preliminary Design Investigations

- Ongoing Geotechnical Investigations
- Tunnel and shaft design
- Construction contract phasing and packaging

## Community & Stakeholder Outreach

- Working Group meetings
- Property acquisition discussions with MassDOT, DCR, DPH, DYS
- Permit Agency discussions with MEPA, DEP, MHC
- Community Outreach





# Preliminary Key Locations

## Construction Shaft Sites

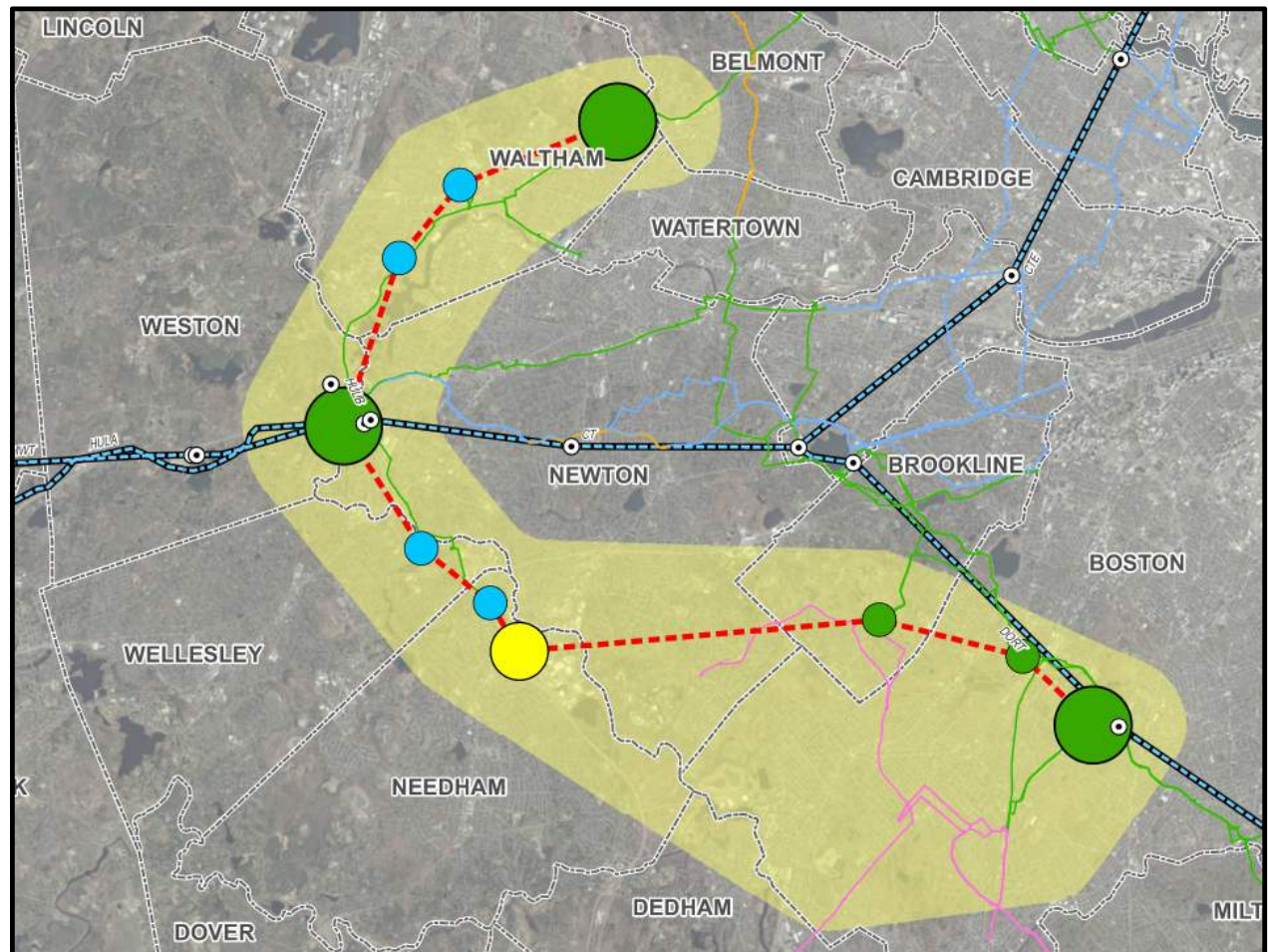
- Fernald Property, Waltham
- I90/I95 Interchange, Weston
- Highland Ave/I95 Interchange, Needham
- American Legion, Mattapan

## Connection Shaft Sites

- Lexington St Pump Station, Waltham
- Cedarwood Pump Station, Waltham
- Hegarty Pump Station, Wellesley
- St. Mary Street Pump Station, Needham
- Newton Street Pump Station, Brookline
- Southern Spine Mains, Boston

Final shaft locations subject to permits and real estate acquisition

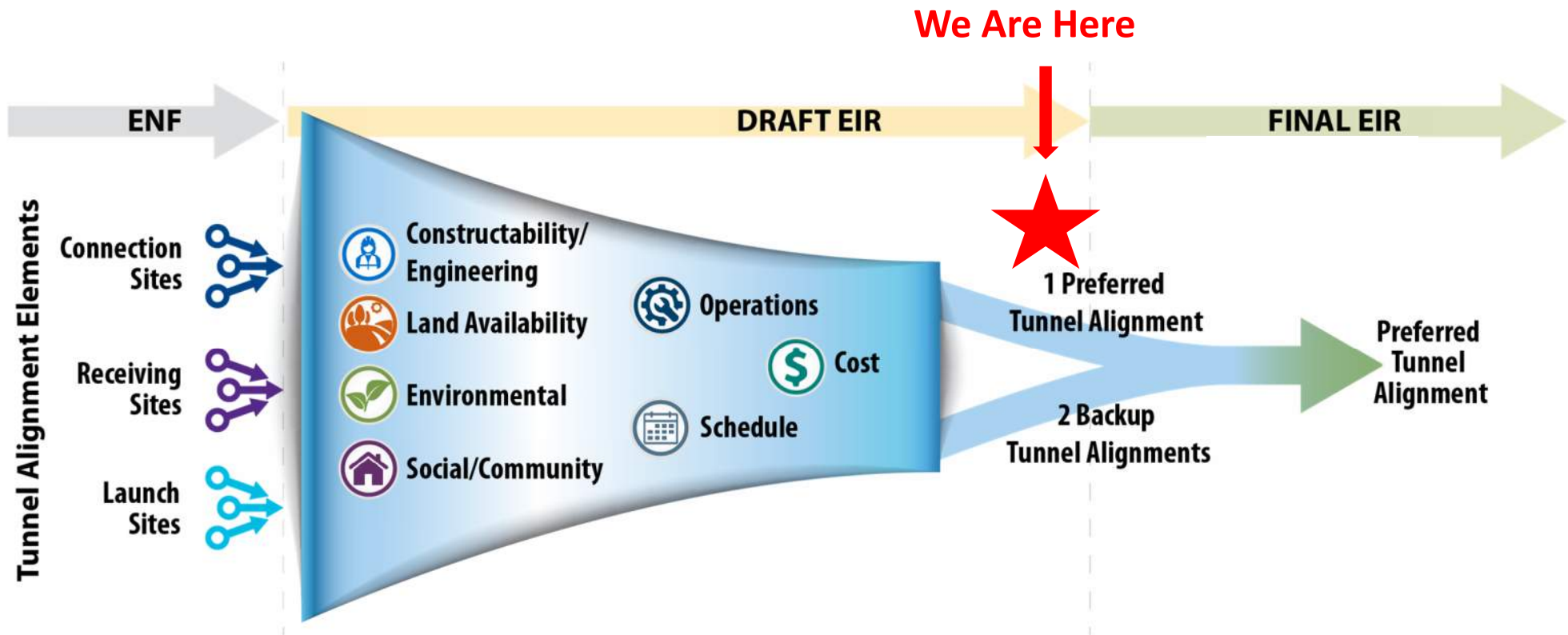
- \* Non MWRA Pump Station
- Required Connection (required for system redundancy)
- Secondary Connection (provides local benefit)
- Construction Shaft (no connection)



For discussion only



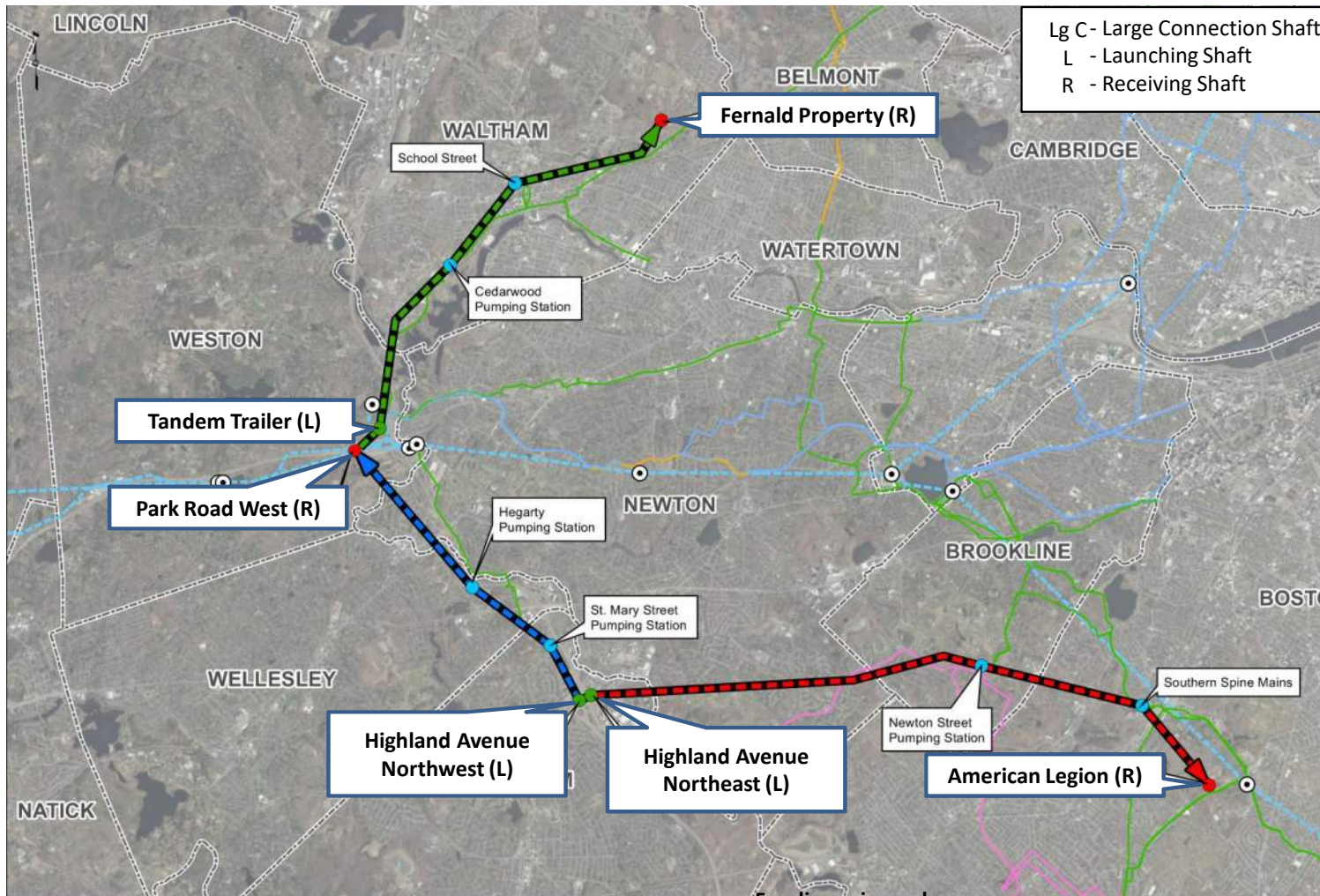
# Alternatives Evaluation Process



For discussion only



# Alternative 4 – Preferred



## Key Challenges

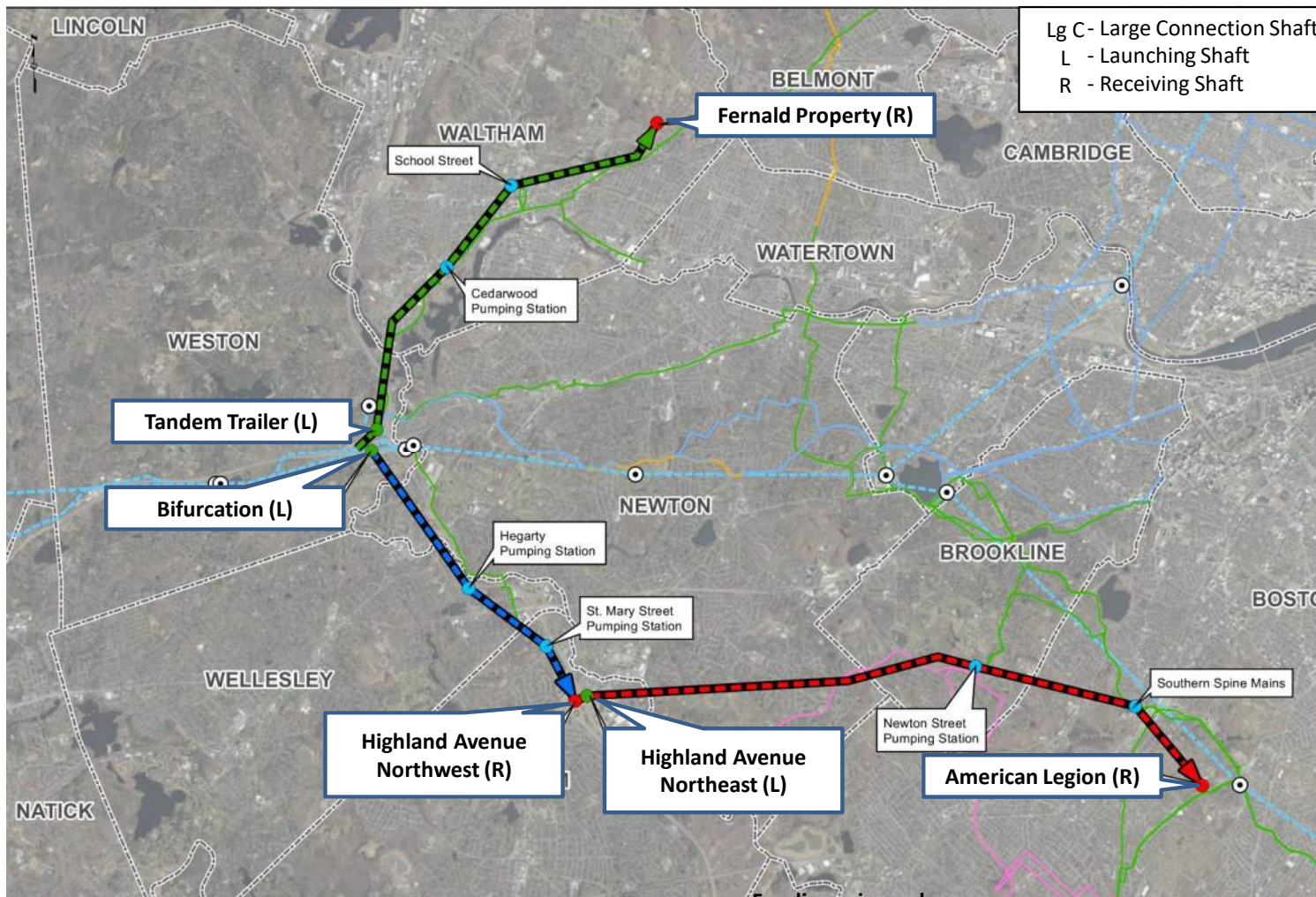
- Use of Tandem Trailer Parcel after completion of future MassDOT bridge construction

## Key Benefits

- Shares Tandem Trailer parcel
- Substantially mitigates impact from MassDOT bridge project
- Highland Ave splits southern tunnel into shorter tunnel segments
- Provides additional security by separating Hultman connections
- Contract packaging flexibility (2 or 3 packages)
- Earliest opportunity to put either north or south tunnel “in service”



# Alternative 3 - Backup



## Key Challenges

- Use of Tandem Trailer Parcel after completion of future MassDOT bridge construction
- Heavily relies on MassDOT I-90/I-95 sites for two launching shaft sites
- Includes three launch sites, which complicates contract packaging

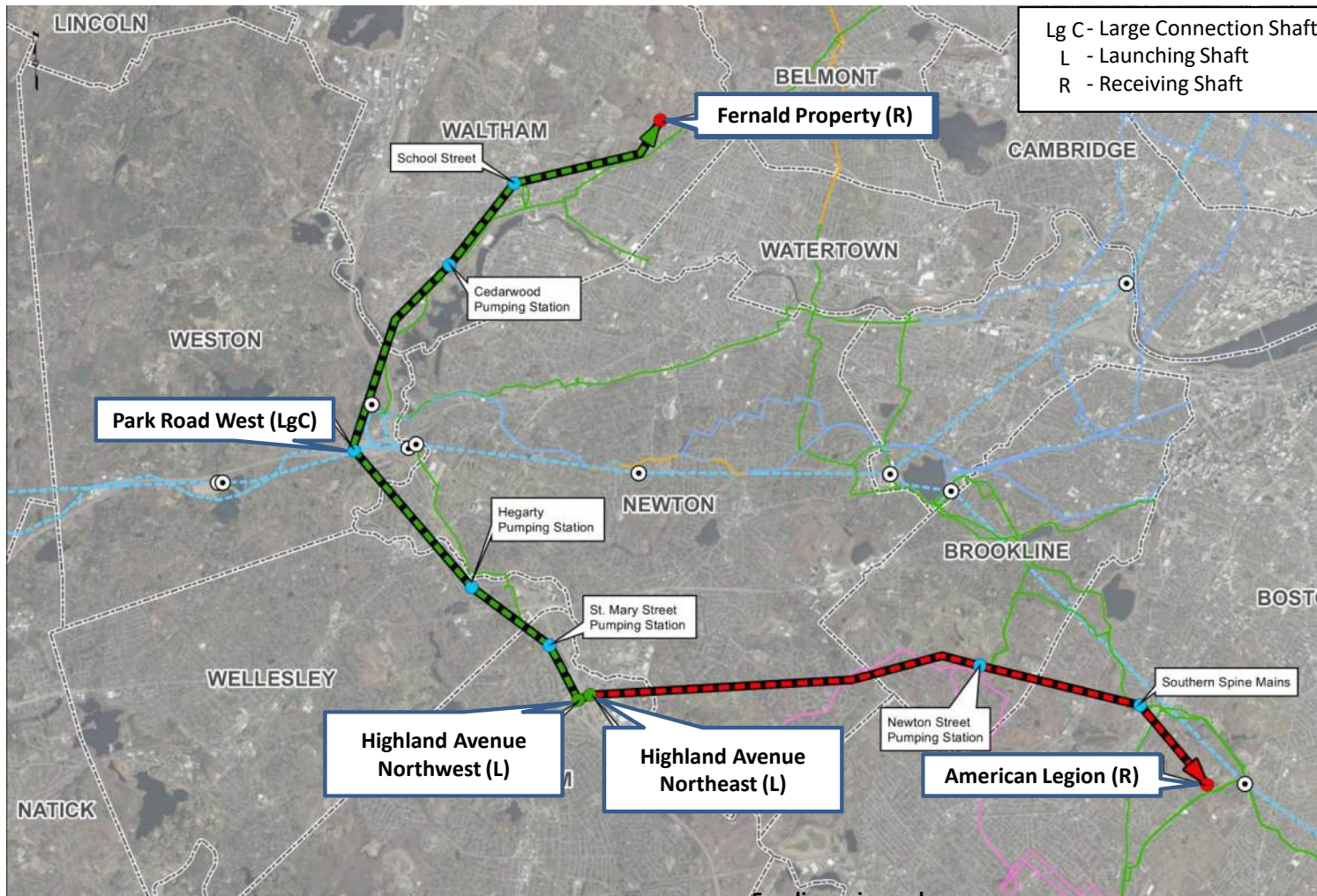
## Key Benefits

- Shares Tandem Trailer parcel
- Highland Ave splits southern tunnel into shorter tunnel segments
- Provides additional security by separating Hultman connections
- Earliest opportunity to put either north or south tunnel "in service" (tied with Alt 4)





# Alternative 10 - Backup



## Key Challenges

- Latest “in service” of North or South Tunnel
- Long 8-mile long tunnel to construct
- Relies on completion of both contract packages for South Tunnel to be “in service”
- Two tunnel construction contracts. No option for 3 tunnel contract packages
- Provides least separation between Hultman connections

## Key Benefits

- Does not need to share Tandem Trailer parcel
- Substantially mitigates impact from MassDOT bridge project
- Least reliance on MassDOT I-90/95 interchange property



## Draft Environmental Impact Report

- DEIR evaluates the preferred and 2 backup alternatives equally
  - All 3 alternatives meet hydraulics, redundancy, and operational needs
  - Similar environmental impact (land alteration, open space, wetlands, rare species habitat, water management act, and climate change) for both the construction period and for the build condition
  - Similar social/community impacts (EJ, Traffic, Noise, Vibration)
  - Key differences between alternatives are a few shaft sites, direction of tunneling, tunnel segment length, and schedule
- DEIR filing (with draft Section 61 Findings) to the MEPA office in fall 2022 with Final EIR in late summer 2023 addressing public comments received



## What Happens at a Shaft Site?

	Launch	Receive	Intermediate Connection
Mobilization	✓	✓	✓
TBM fabrication (off site)			
Shaft Excavation	✓	✓	✓
TBM assembly and launch	✓		
Tunnel mining, muck removal, tunnel dewatering	✓		
Emergency egress and ventilation	✓		✓
Break through into the receiving shaft		✓	
Tunnel lining	✓	✓	Possible
Shaft lining	✓	✓	✓
Construction of surface connections (piping and vaults)	✓	✓	✓
Disinfection and flushing	✓	✓	✓
Site security, landscaping and restoration	✓	✓	✓
Tunnel system is put into operation!	✓	✓	✓

For discussion only



# Conceptual Construction Schedule

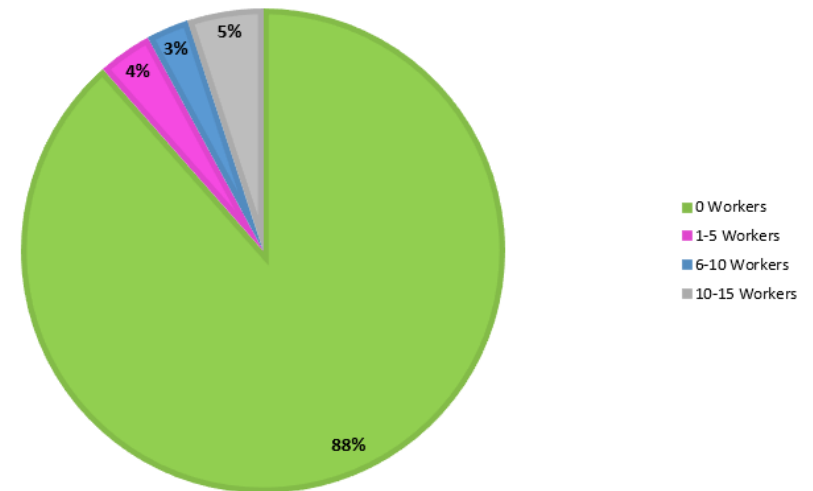
## Launch and Receiving Shaft Sites

- Mobilization
  - ~1 to 2 months
- Shaft construction
  - ~12 months
- TBM launch and mining (24 x 7)
  - ~27 – 36+ months
- Tunnel & Shaft lining
  - ~20 - 24 months
  - Concrete trucks
- Surface connections (piping and vaults)
  - ~ 6 to 8 months
- Disinfection and flushing
- Site security, landscaping and restoration

## Intermediate Connection Shaft Sites

- Construction will be discontinuous with gaps of little construction activity within the larger tunnel construction contract duration

METROWEST WATER SUPPLY TUNNEL CP-1 & CP-2  
AVERAGE CONNECTION SHAFT CREW SIZES THROUGH CONSTRUCTION

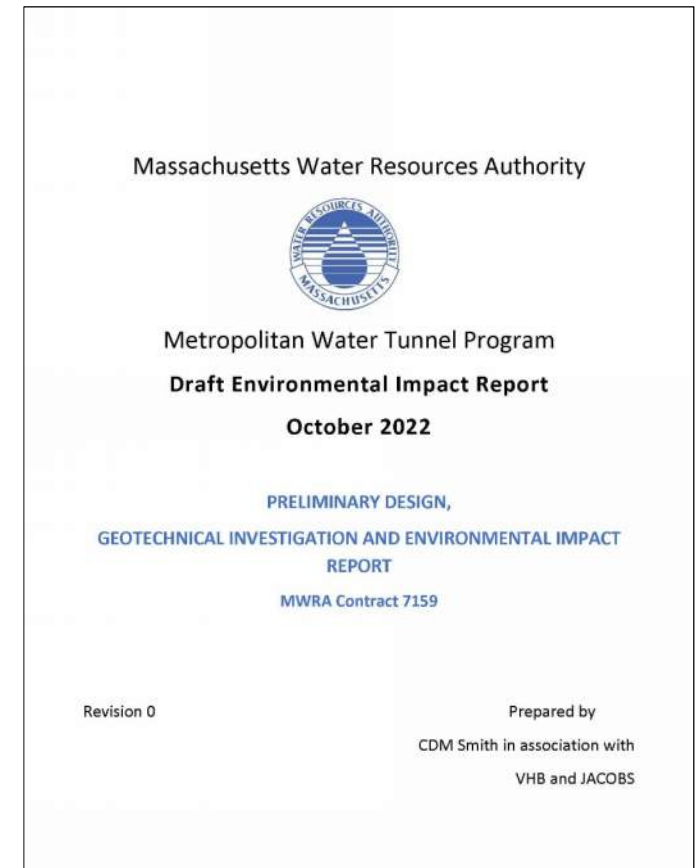


For discussion only



## Possible Construction Impacts & Management

- Different construction methods at Launching and Receiving Shafts vs. Intermediate Connections
- Different impacts and means to manage
- Common issues for all communities:
  - Traffic
  - Water Supply
  - Groundwater Control
  - Noise, vibrations
- Draft Section 61 Findings included in DEIR



For discussion only



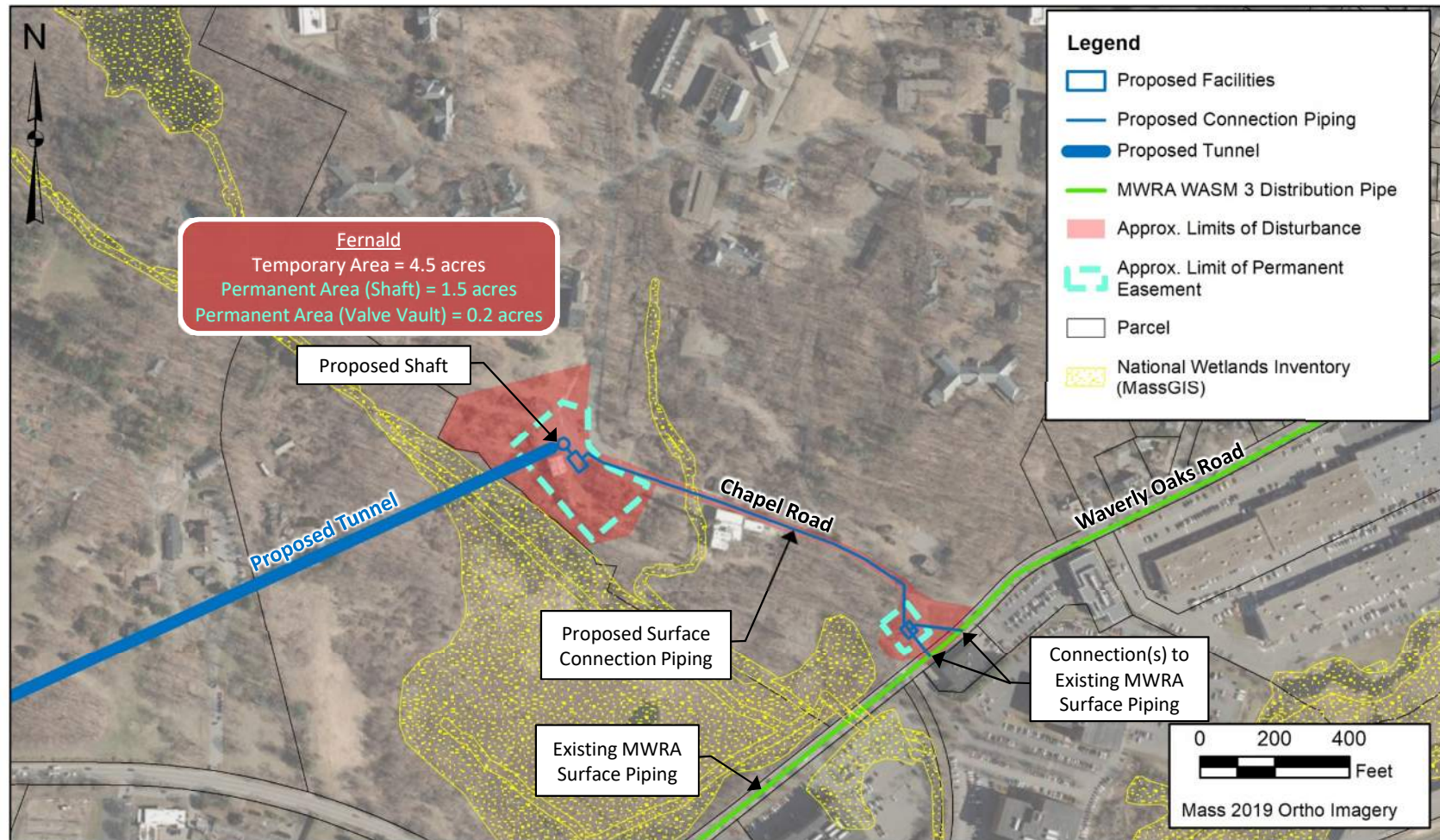
# Fernald Property – Same for all 3

## Alternative 3, 4, and 10

- Receive at Fernald

## Site Characteristics:

- Owned by City of Waltham
- Wetlands Present
- Historic properties
- MCP sites
- Previously disturbed



For discussion only



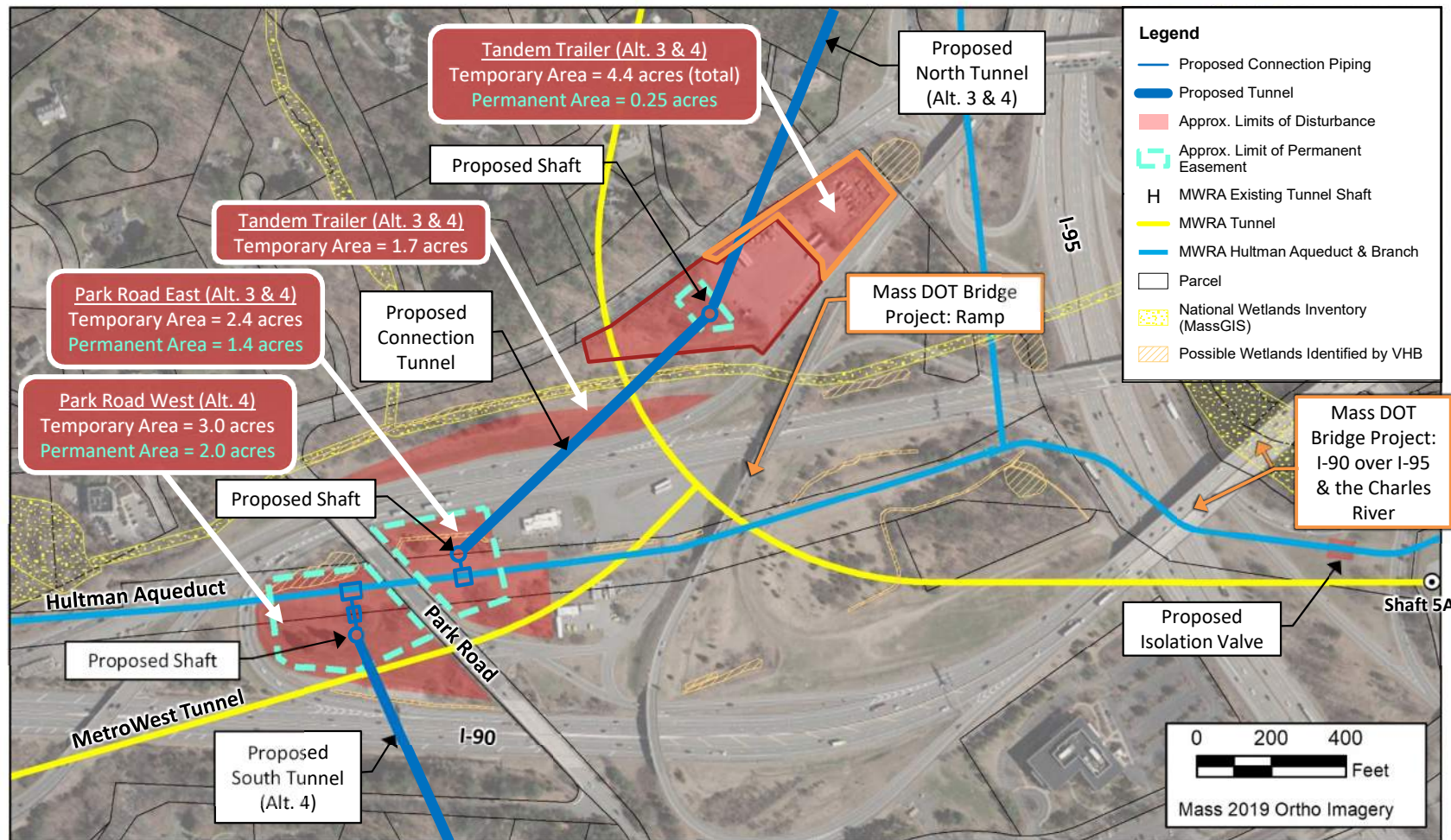
# I-90 / I-95 Interchange – Alternative 4

## Alternative 4

- Launch from Tandem Trailer with Connection at Park Road East
- Receive at Park Road West

## Site Characteristics:

- Owned by MassDOT and MWRA
- Wetlands Present
- Previously disturbed, portions paved
- MWRA Hultman Aqueduct



For discussion only



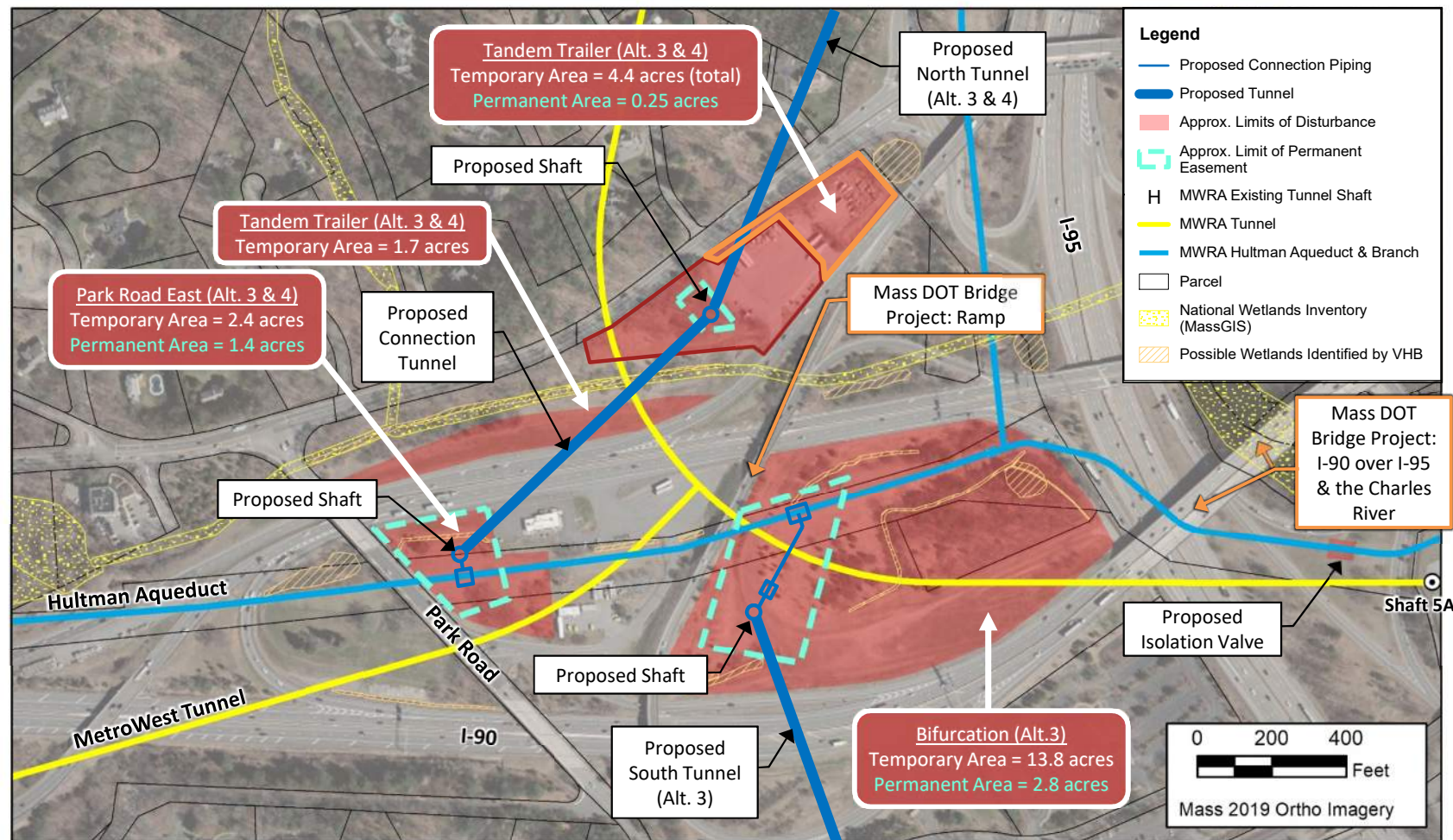
# I-90 / I-95 Interchange – Alternative 3 - Backup

## Alternative 3

- Launch from Tandem Trailer with Connection at Park Road East
- Launch/Connection at Bifurcation

## Site Characteristics:

- Owned by MassDOT and MWRA
- Wetlands Present
- Previously disturbed, portions paved
- MWRA Hultman Aqueduct



For discussion only





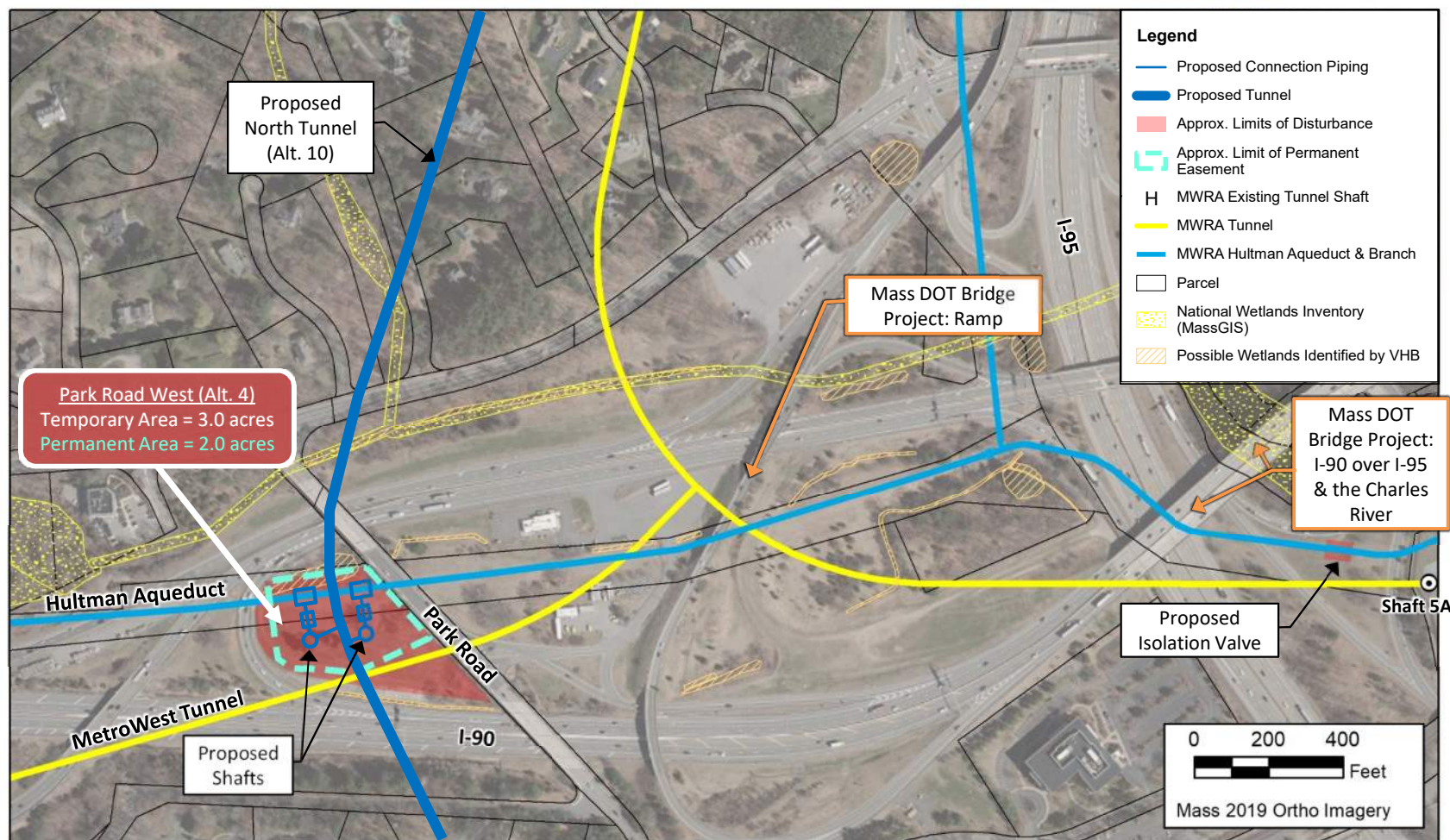
# I-90 / I-95 Interchange – Alternative 10 Backup

## Alternative 10

- Launch from Highland Ave NW with Connection at Park Road East

## Site Characteristics:

- Owned by MassDOT and MWRA
- Wetlands Present
- Previously disturbed, portions paved
- MWRA Hultman Aqueduct



For discussion only



# Highland Avenue Northwest or Northeast

## Alternative 3

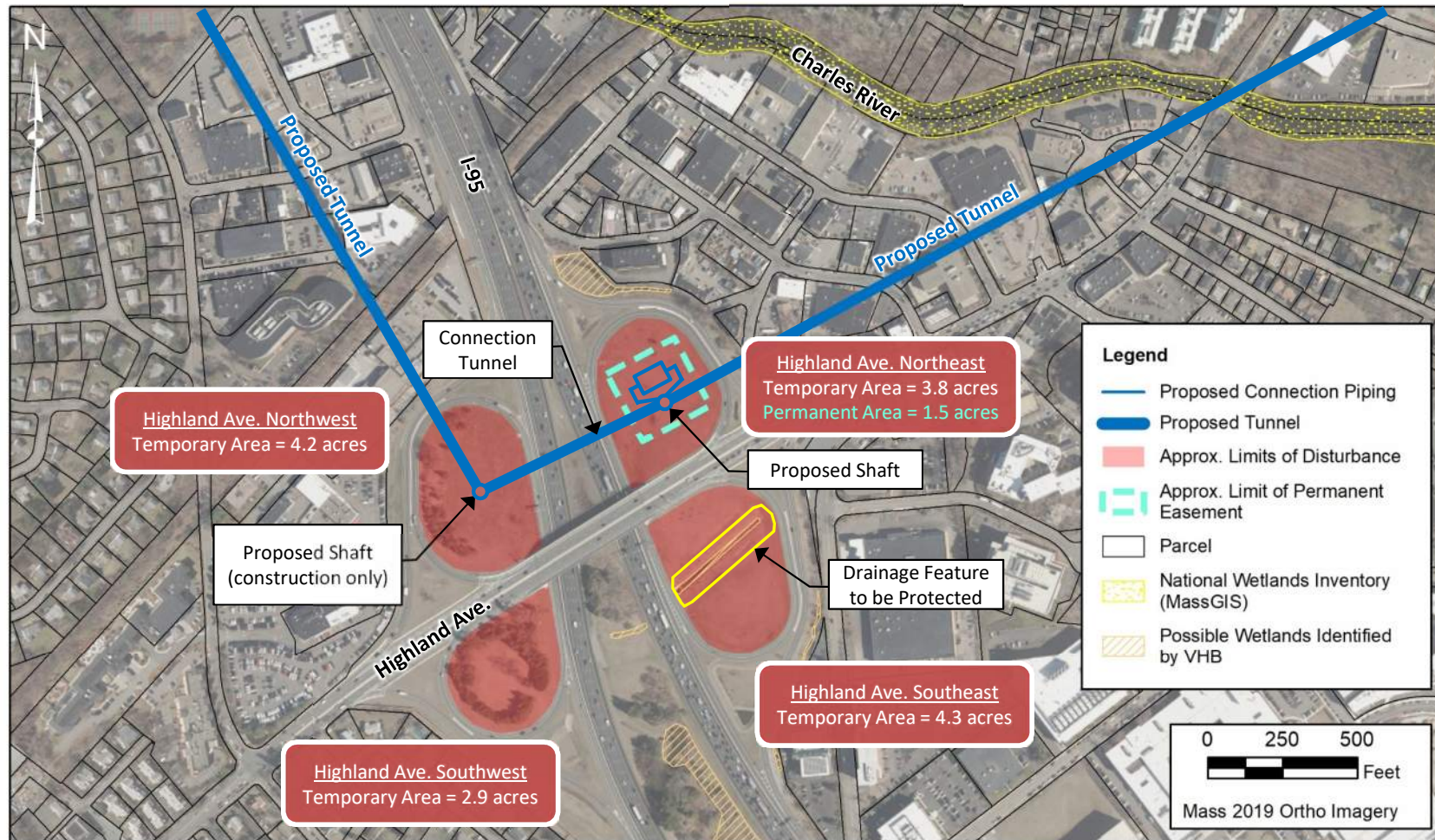
- Receive at Northwest Cloverleaf
- Launch from Northeast Cloverleaf

## Alternative 4 and 10

- Launch from Northwest Cloverleaf
- Launch from Northeast Cloverleaf

## Site Characteristics:

- Owned by MassDOT
- Wetlands Present
- Previously used for construction staging



For discussion only



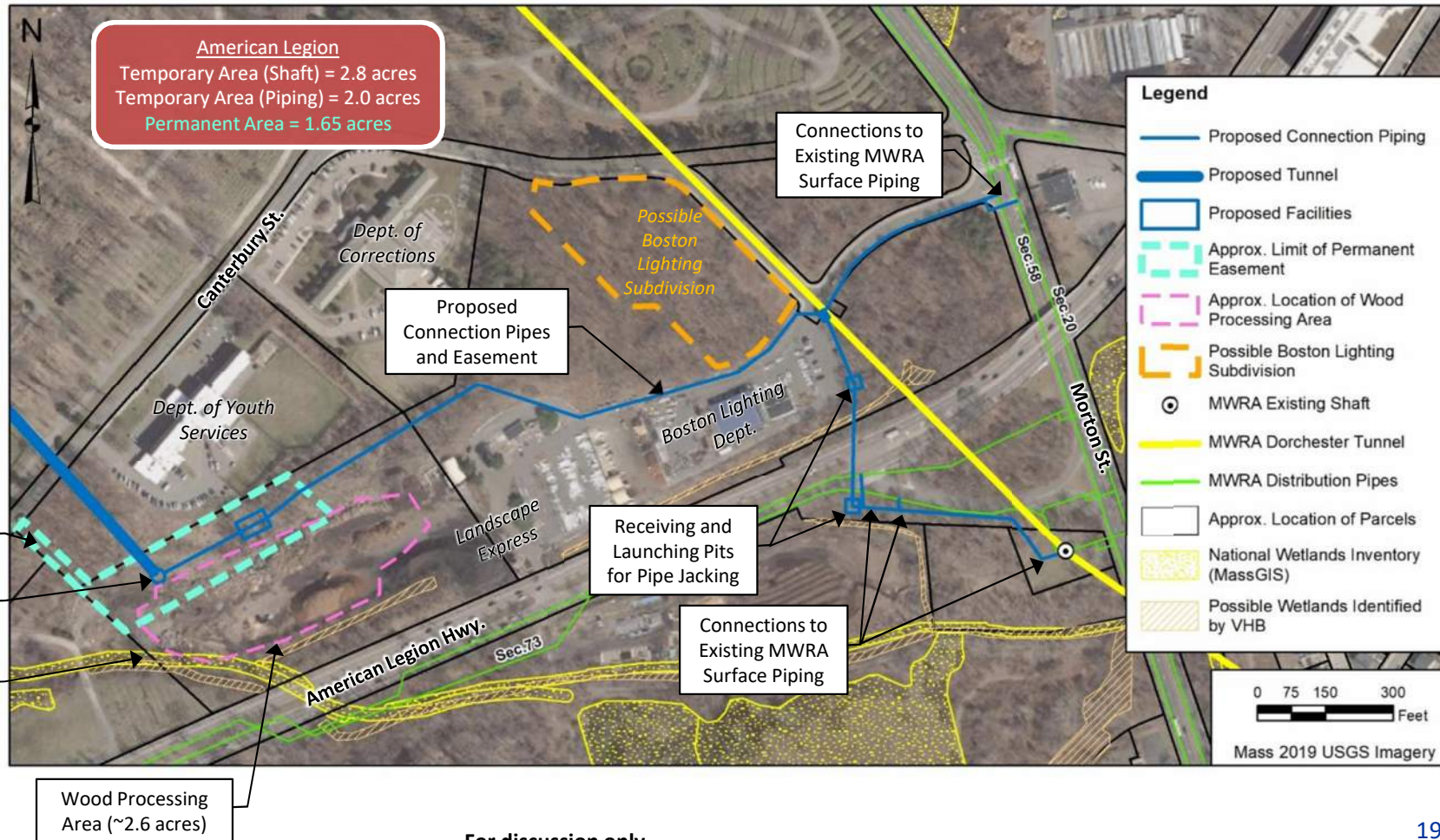
# American Legion

## Alternative 3, 4, and 10

- Receive at American Legion

## Site Characteristics:

- Owned by DCR and DYS
- Wetlands Present
- Article 97 Required
- Commercial business on site



For discussion only



## Alignment Shortlist - Connection Shafts (North Tunnel)

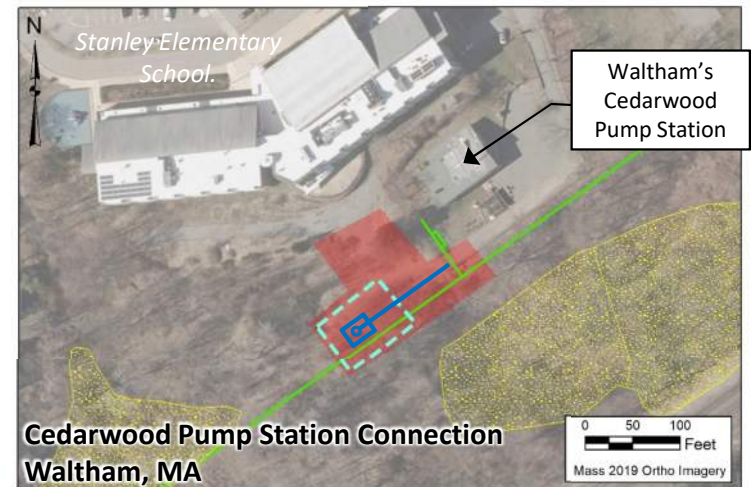
Common to All Alternatives

### Site Characteristics School Street:

- Owned by MWRA
- Previously a restaurant parking lot, all paved

### Site Characteristics Cedarwood PS:

- Owned by City of Waltham
- Wetlands Present
- Previously disturbed



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## Alignment Shortlist - Connection Shafts (South Tunnel)

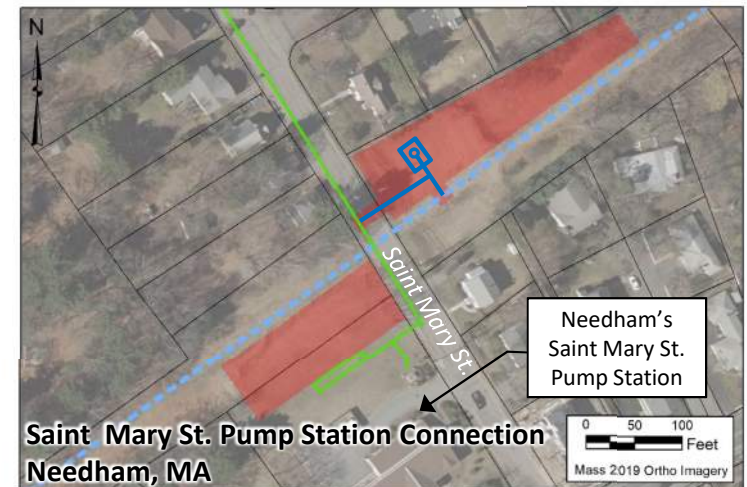
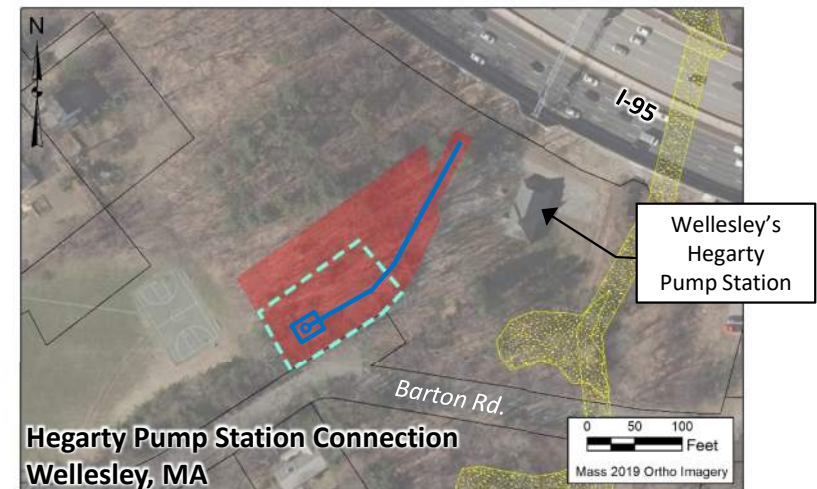
Common to All Alternatives

### Site Characteristics Hegarty PS:

- Owned by Town of Wellesley
- Potential Article 97
- Wetlands Present

### Site Characteristics St Mary Street PS:

- MWRA's Sudbury Aqueduct Easement
- Pump Station Owned by Town of Needham
- Previously disturbed



For discussion only



# Alignment Shortlist - Connection Shafts (South Tunnel)

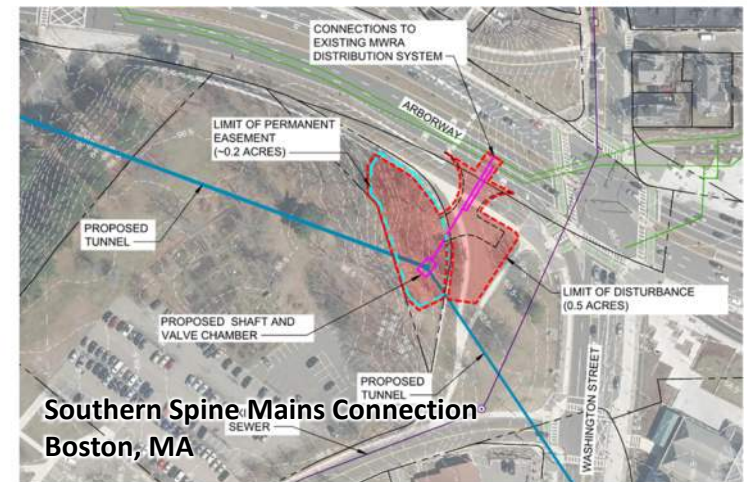
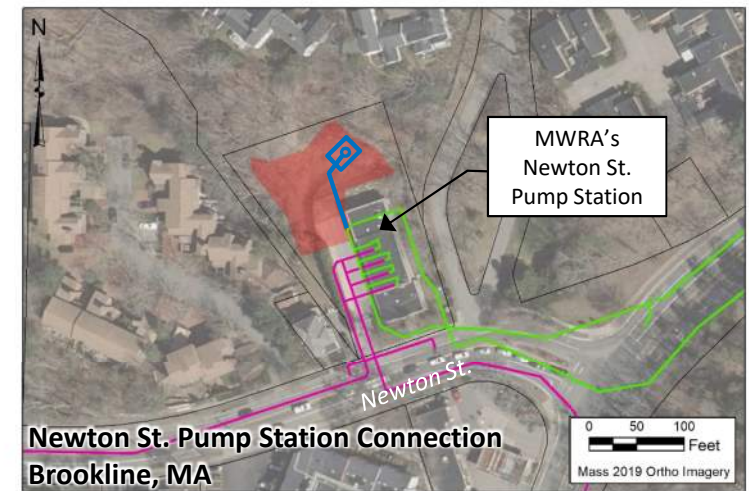
Common to All Alternatives

## Site Characteristics Newton Street PS:

- Owned by MWRA
- Existing pump station in operation

## Site Characteristics Southern Spine Mains:

- Controlled by DCR adjacent to Mass DPH
- Previously disturbed



For discussion only



## Preliminary Design

- Preliminary Design will be based on the preferred alternative only
  - Preliminary design report and drawings
  - Contract packaging, phasing, sequencing, etc.
  - Identify land acquisition needs
  - Updated Program cost estimates
  - Updated Program schedule
- Stakeholder and Community Outreach
  - Consultations held with MEPA, DEP, MHC, MassDOT, DPH, DCR, DYS, DOC
  - Working Group (6<sup>th</sup> meeting leading up to DEIR)
  - Additional meetings with community representatives of the seven communities in which the tunnel will be constructed.



# DEIR Impacts Analysis Methodology

The Tunnel Program is in the early phases of preliminary design

- Construction packaging and phasing (i.e., which tunnel project is constructed first) = TBD
- Sequence of constructing will be by the selected contractor(s)
- DEIR impact assessment is based on conservative construction sequencing
- Construction activities and equipment occur concurrently = conservative (higher) peak cumulative impacts

Estimates of equipment and worker activities were conservatively assumed:

- Construction of the launching and receiving shaft sites would occur at the same time and not sequentially
- All connection shaft sites would be constructed at the same time
- All surface piping connections would also be constructed at the time

However, it is important to note :

- Conservative DEIR approach = allows the contractor flexibility in future construction sequencing without increasing impacts above those evaluated in the DEIR
- Highly unlikely that assumed concurrent activities would happen. Peak periods would likely be distributed with lesser impact over a longer duration
- Highly unlikely that the activities will occur during the exact year or quarter projected for the cumulative impact analysis. These will vary based on construction packaging and sequencing within a construction package





## DEIR Pubic Comment Process

- Targeted submittal Oct. 17<sup>th</sup>
  - Published in Environmental Monitor Oct. 24<sup>th</sup>
  - 30 day public comment period (Nov. 23<sup>rd</sup> ) unless extended (likely for this Program)
  - Secretary's Certificate 7 days after close of public comment period
- Notice of Availability will be emailed to stakeholders (city/town offices, State agencies, etc.)
- Community meetings in time for public involvement DEIR comment period (?)



## Upcoming Meetings

- Winter/Spring 2022/2023
  - Focused Community Meetings (Public)
- Future topics
  - Environmental Protection at Shaft Sites, Community Engagement Opportunities, Costs & Financing, Site Visits
  - Tell us what you want to hear about/discuss
- MWRA Program Team can provide individual briefings/presentations to your community/organization at any time. Just ask!



## Metropolitan Water Tunnel Program

- 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)
- <https://www.mwra.com/mwtp.html>
  - Meeting notices, agendas, presentations, minutes



## Questions/Comments?



Thank you for your  
continued partnership!