



Metropolitan Water Tunnel Program

Program Update

MWRA Advisory Board

November 17, 2022



Agenda

- Program Schedule
- Recent Activity
 - DEIR Submittal
 - Evaluation of Alternatives
 - Preferred Alternative
 - Draft Section 61 Findings
- Ongoing and Upcoming Contracts
- Where to Find Information / How to Contact Us





Program Schedule

- Overall Program Schedule
 - Currently in Preliminary Design - thru early Jan 2024
 - Targeting beginning Final Design in mid 2024
 - Targeting bidding first tunnel contract 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



Draft Environmental Impact Report

- Submitted in October 2022
- Public comment period ends Dec 9, 2022 (extended)
- Certificate will be issued on Dec 16, 2022
- Includes:
 - Alternatives evaluation process and results
 - Preferred alternative + 2 backups
 - Details of proposed shaft sites (location, limits, purpose, duration, land needs, etc.)
 - Construction impacts at each site (traffic, noise, air quality, vibrations, water supply, wetlands impacts, etc.)
 - Proposed management of impacts (Section 61 Findings)
 - Stakeholder and community outreach
- www.mwra.com/mwtp/resources.html#docs



Key Locations

Construction Shaft Sites

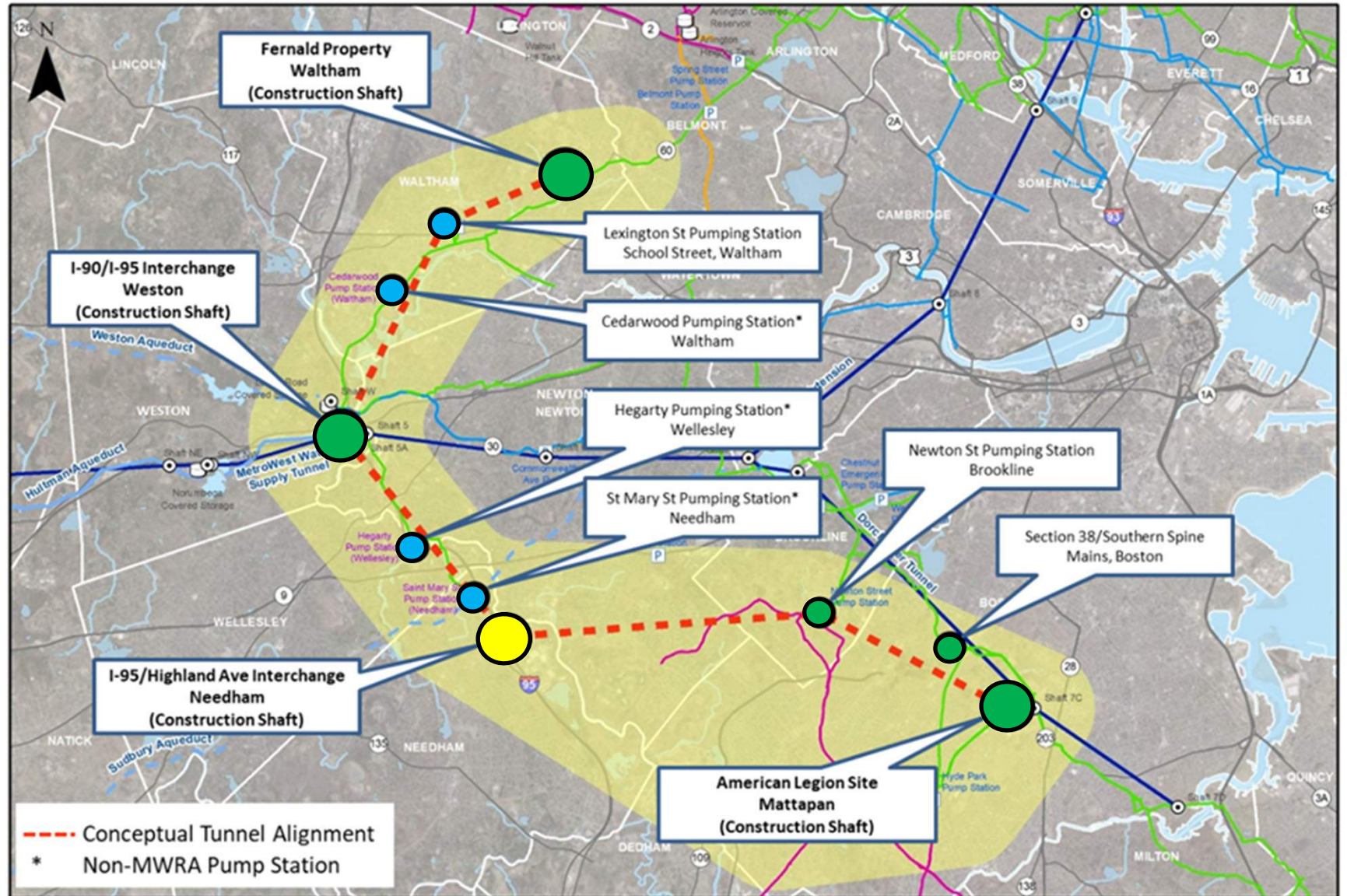
- Fernald Property, Waltham
- I90/I95 Interchange, Weston
- Highland Ave/I95 Interchange, Needham
- American Legion, Mattapan

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)



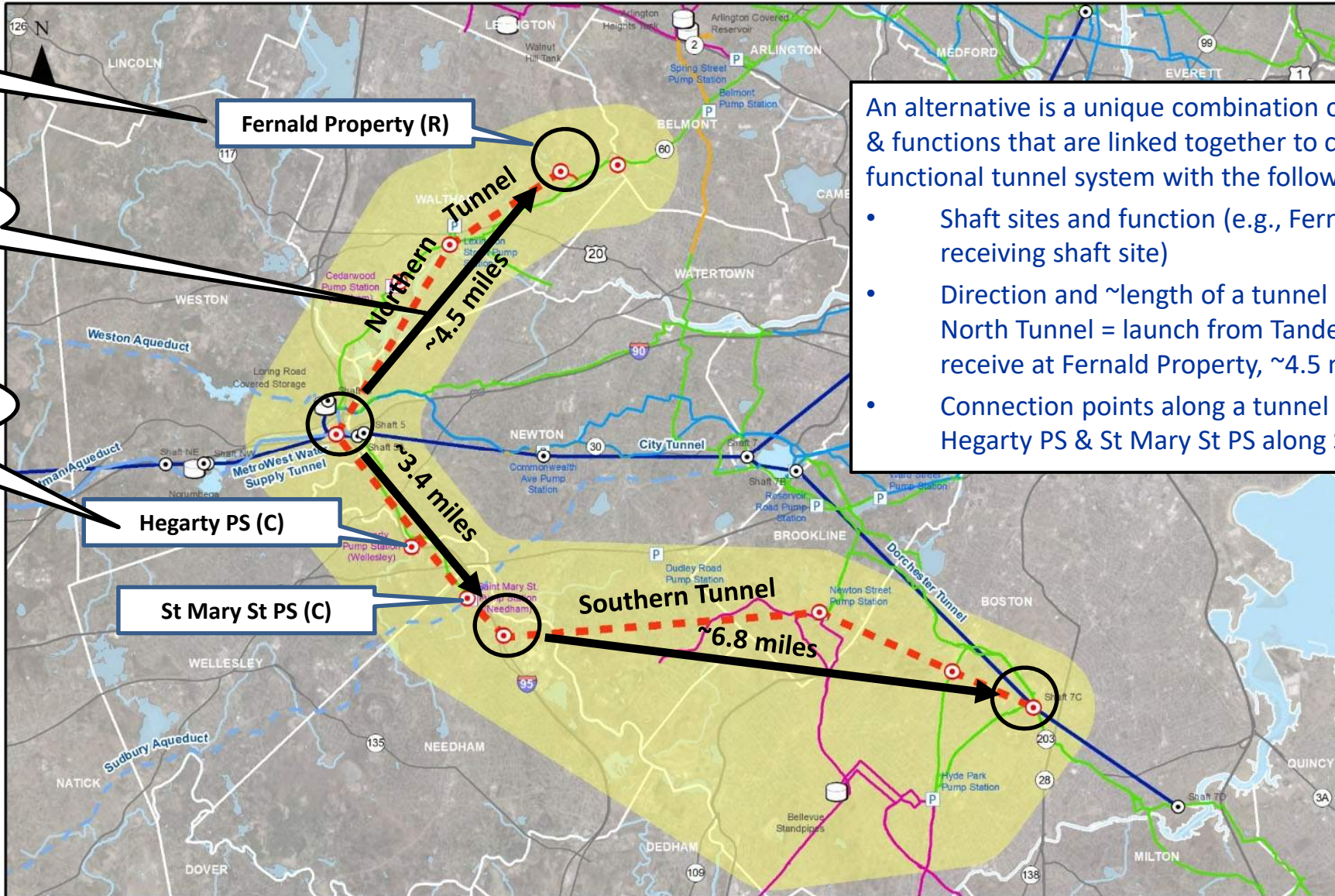


What is an "alternative"

Shaft site and Function

Tunnel Direction and Length

Connections along a tunnel segment



An alternative is a unique combination of specific shaft sites & functions that are linked together to create a complete functional tunnel system with the following items "fixed"

- Shaft sites and function (e.g., Fernald Property as a receiving shaft site)
- Direction and ~length of a tunnel segment (e.g., North Tunnel = launch from Tandem Trailer and receive at Fernald Property, ~4.5 miles)
- Connection points along a tunnel segment (e.g., Hegarty PS & St Mary St PS along South Tunnel)



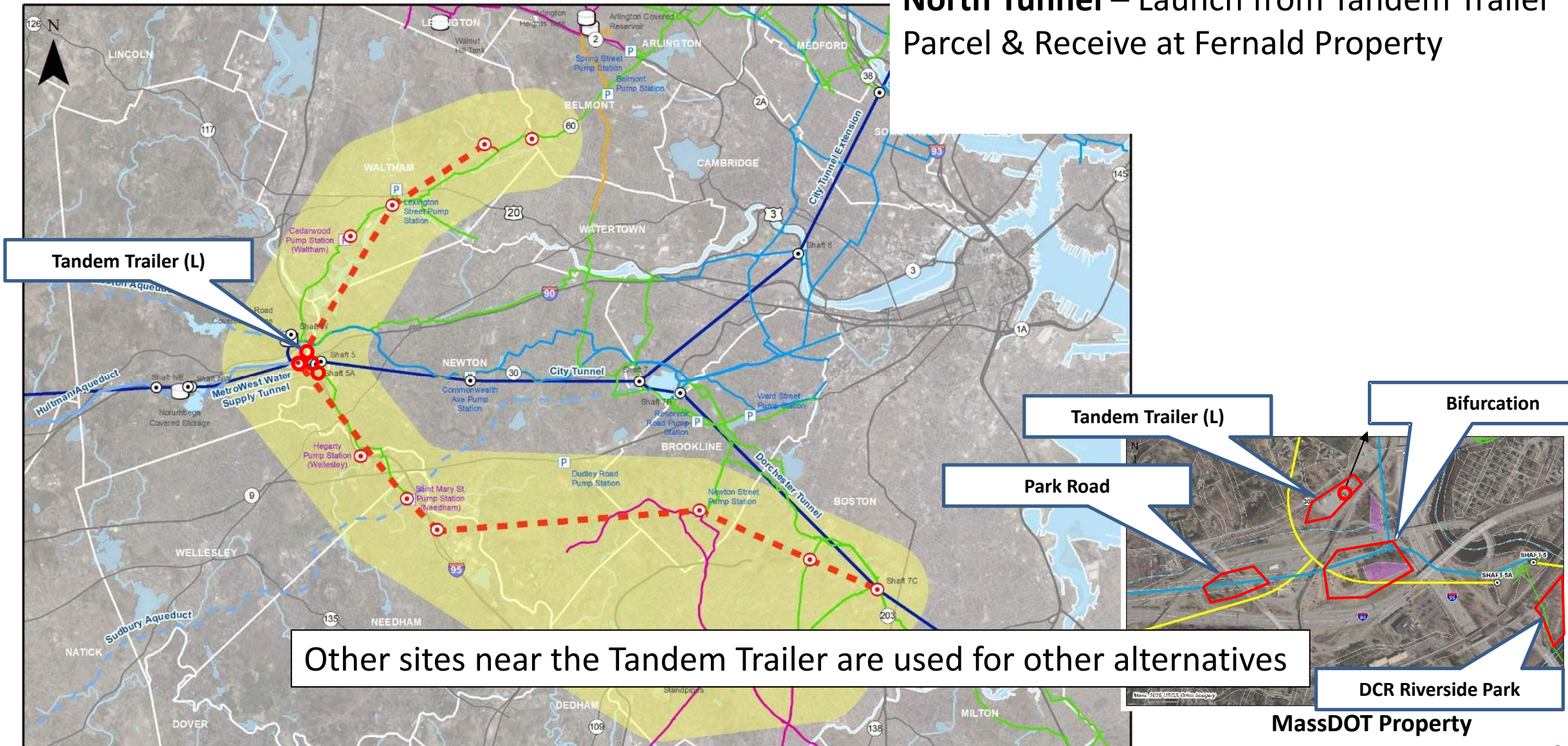
How We Assembled Alternatives and Narrowed the Selection

- Started with Two-Tunnel Concept (North and South Tunnels)
- > 30 alternatives:
 - Program study area, system hydraulics, connection points, possible shaft sites (undeveloped/suitable), link tunnel segments, etc.
- Narrowed to 10 alternatives:
 - Land availability, constructability, operations, environmental & social, reasonableness, etc. etc. etc.
- Reduce from 10 to 3 alternatives:
 - All 3 alternatives will be evaluated equally in the DEIR
- Select the preferred alternative:
 - Land availability, more constructability issues, contract packaging/interfaces, phasing, sequencing, schedule, in service, cost, etc.
 - Carried forward to preliminary design



Alternative 1 North Tunnel

North Tunnel – Launch from Tandem Trailer Parcel & Receive at Fernald Property

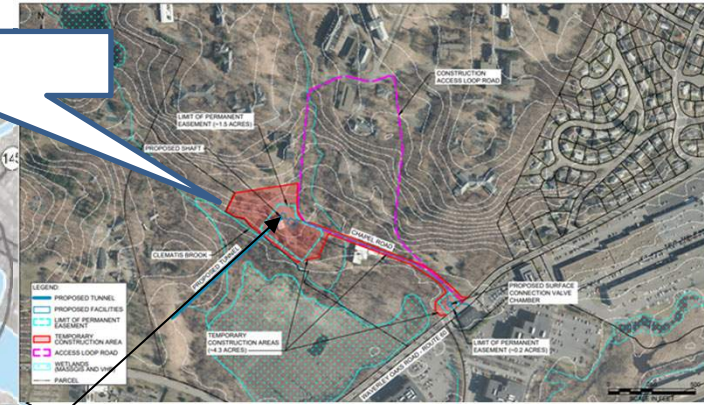
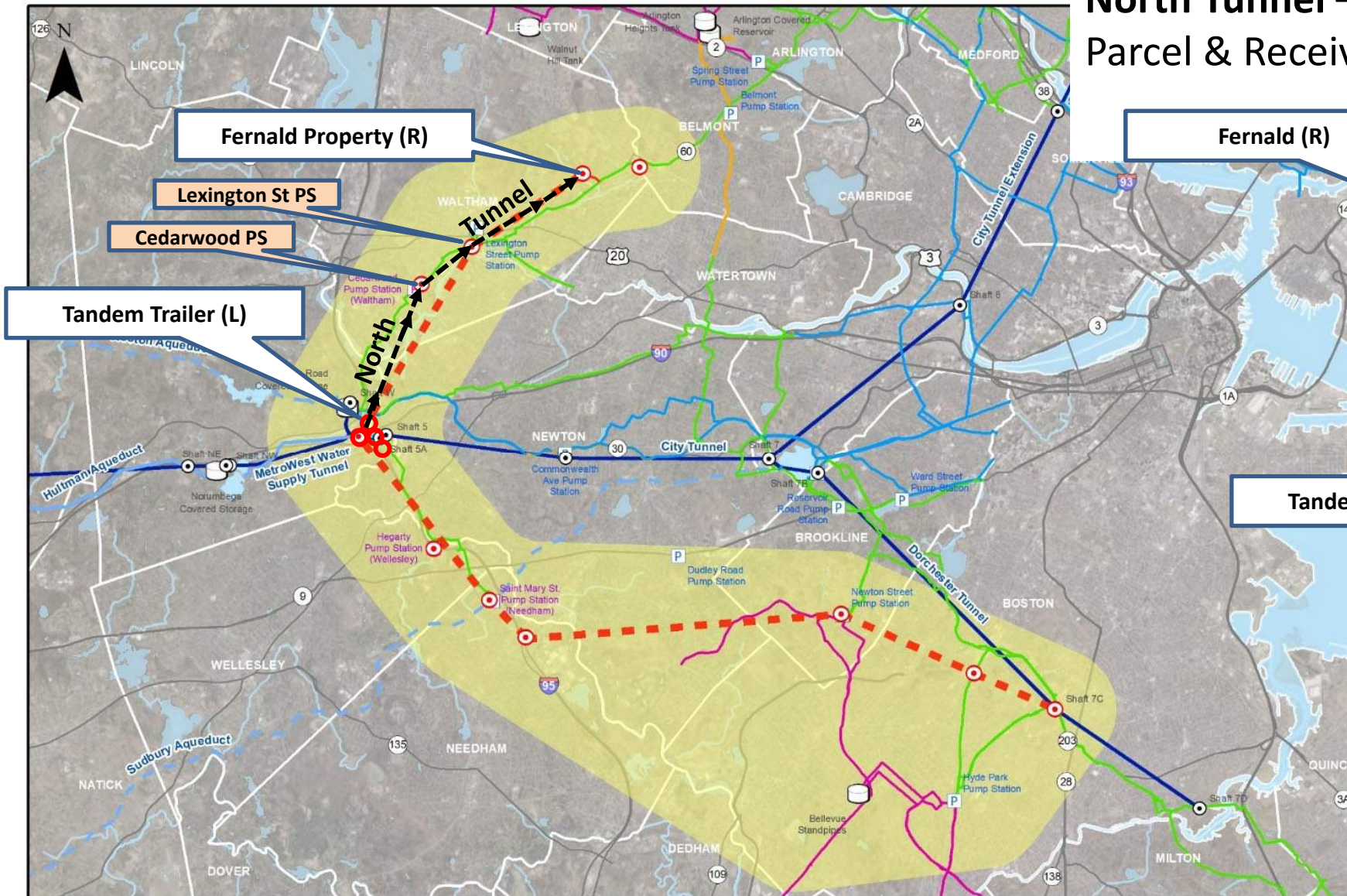


Other sites near the Tandem Trailer are used for other alternatives



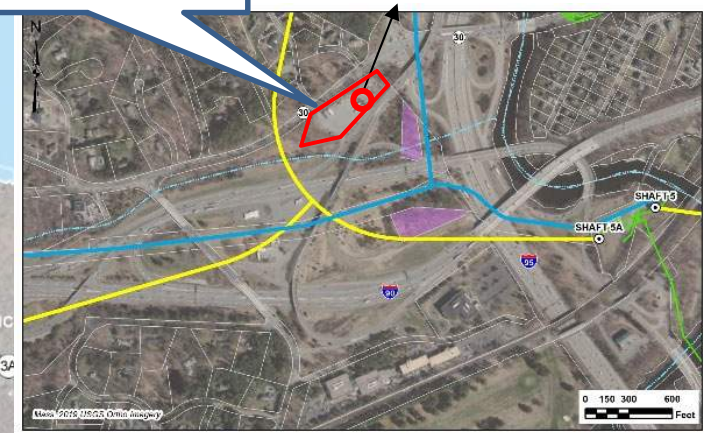
Alternative 1 North Tunnel

North Tunnel – Launch from Tandem Trailer Parcel & Receive at Fernald Property



Fernald Property

Tandem Trailer (L)

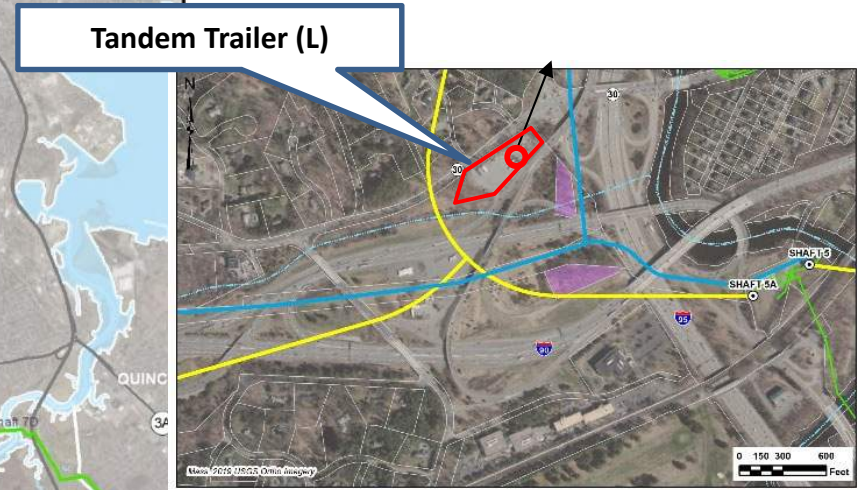
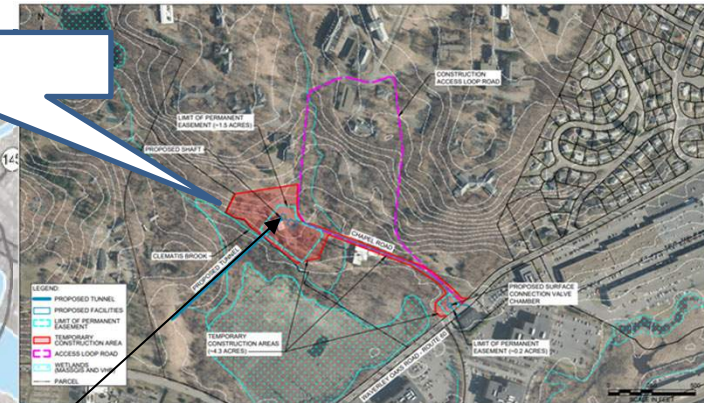
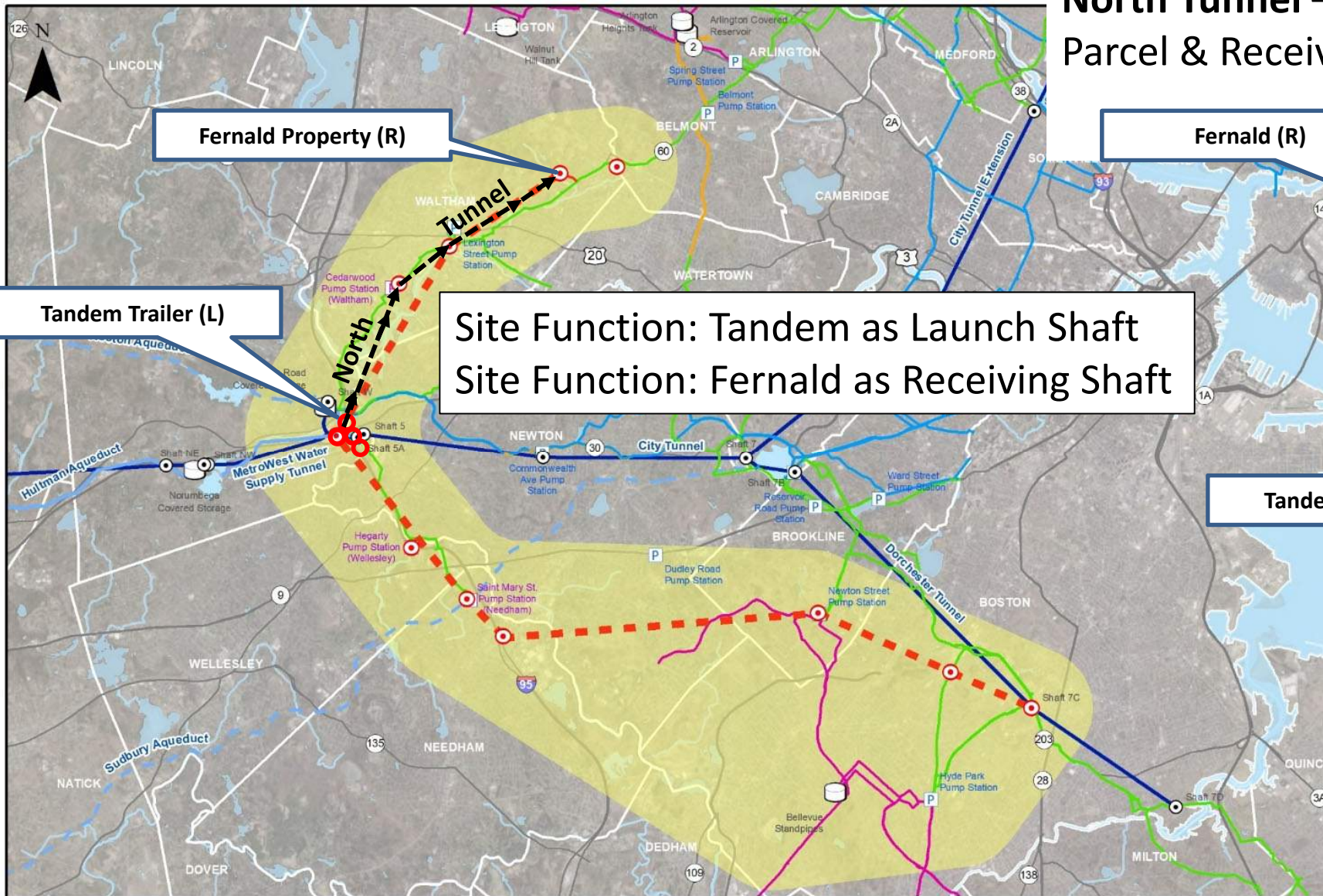


MassDOT Property



Alternative 1 North Tunnel

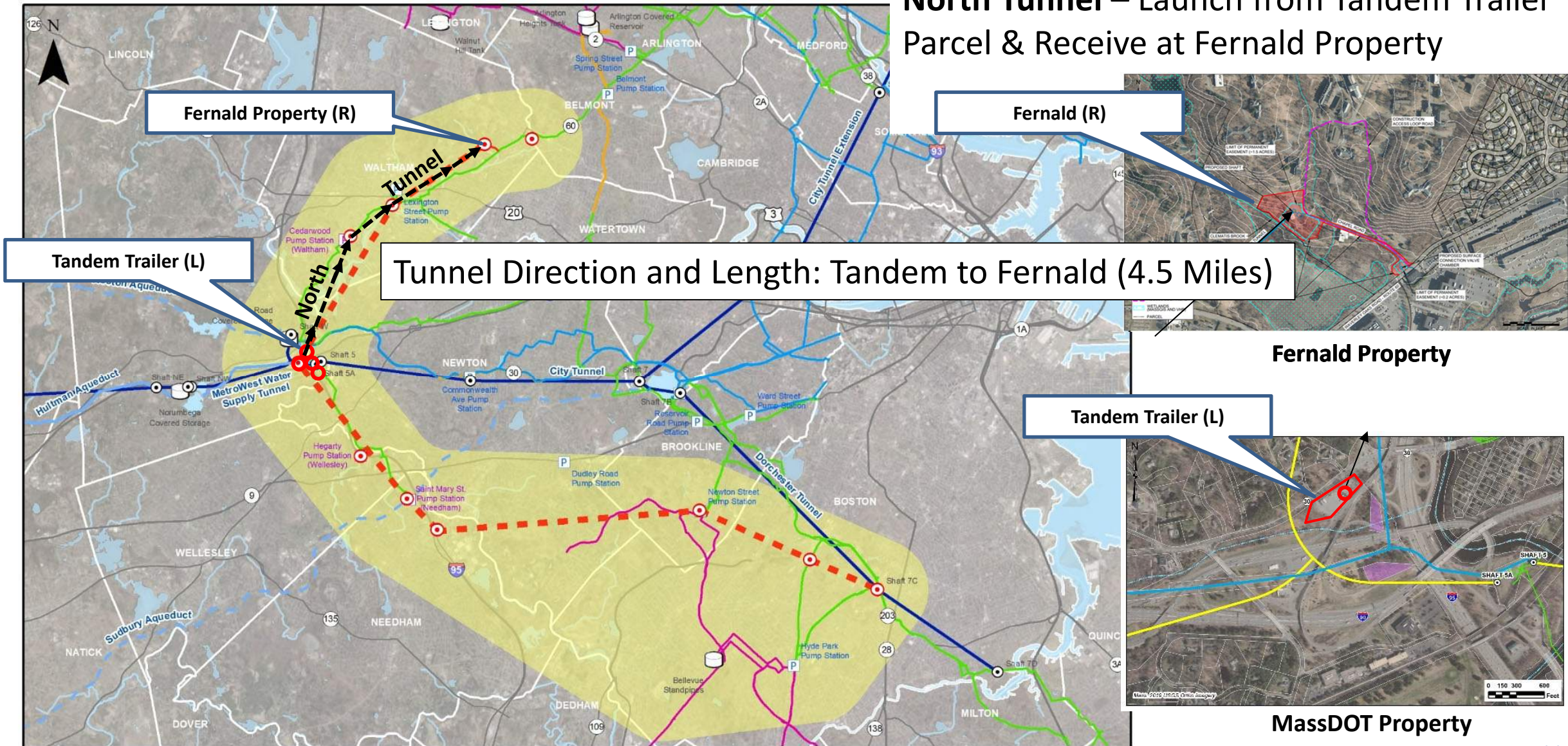
North Tunnel – Launch from Tandem Trailer Parcel & Receive at Fernald Property





Alternative 1 North Tunnel

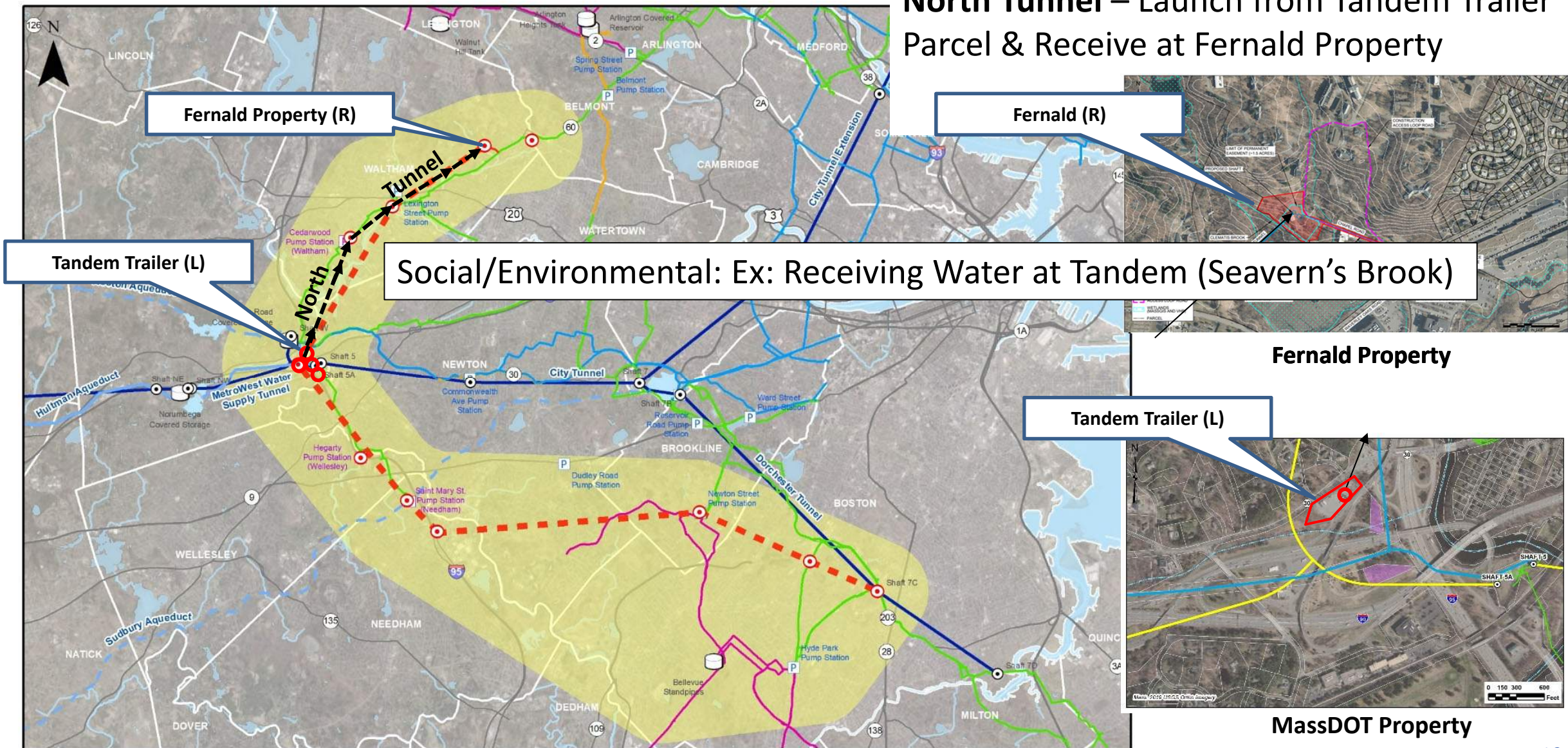
North Tunnel – Launch from Tandem Trailer Parcel & Receive at Fernald Property





Alternative 1 North Tunnel

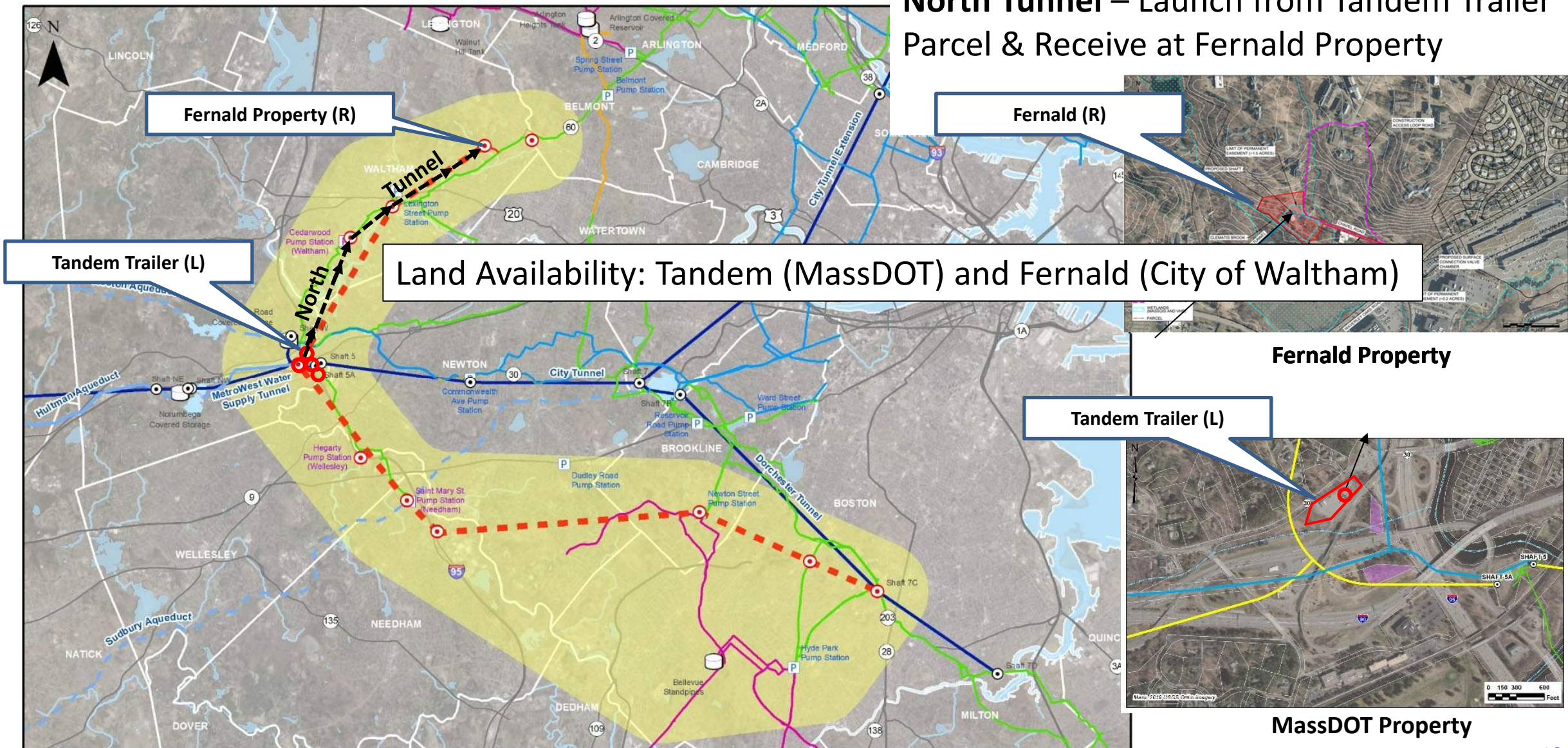
North Tunnel – Launch from Tandem Trailer Parcel & Receive at Fernald Property





Alternative 1 North Tunnel

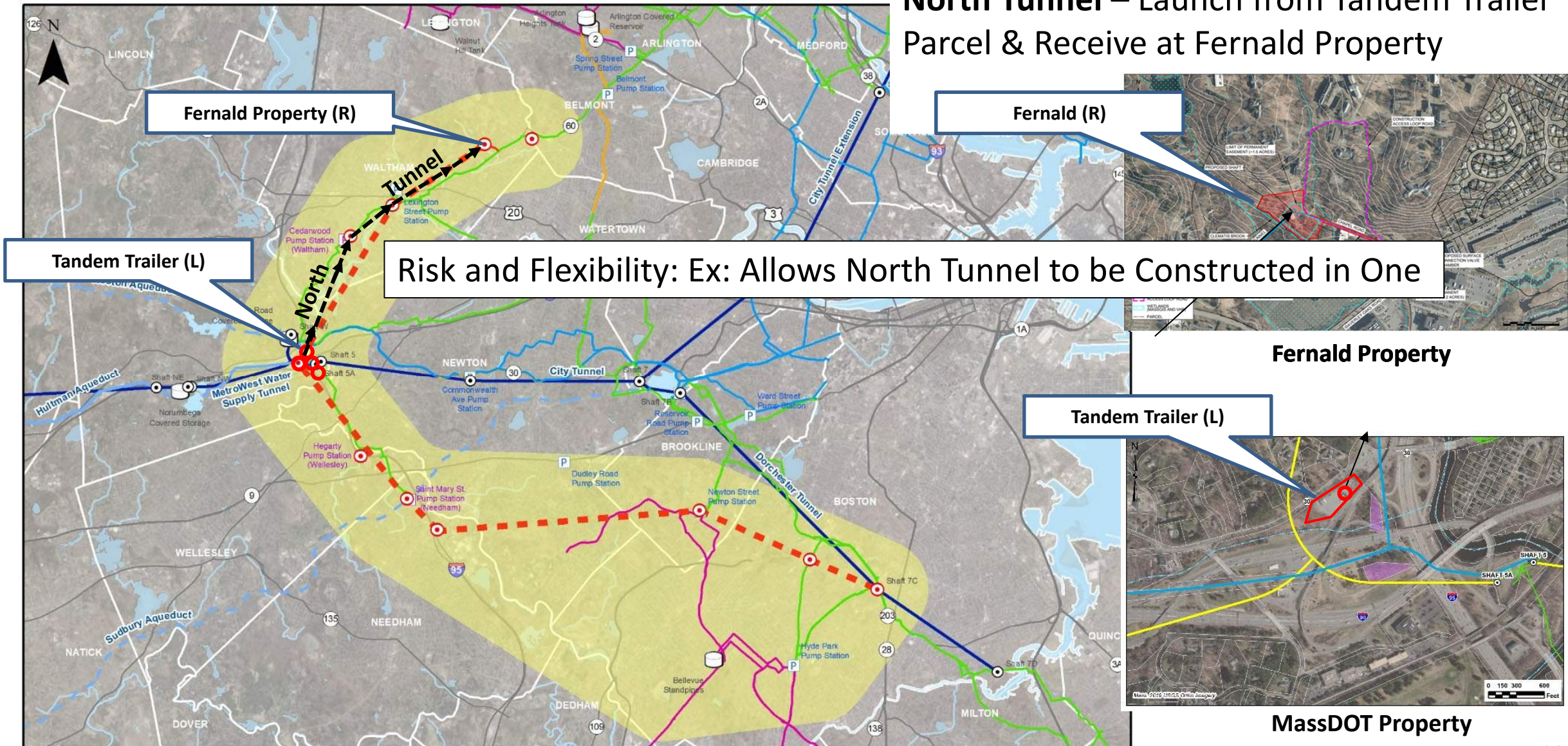
North Tunnel – Launch from Tandem Trailer Parcel & Receive at Fernald Property





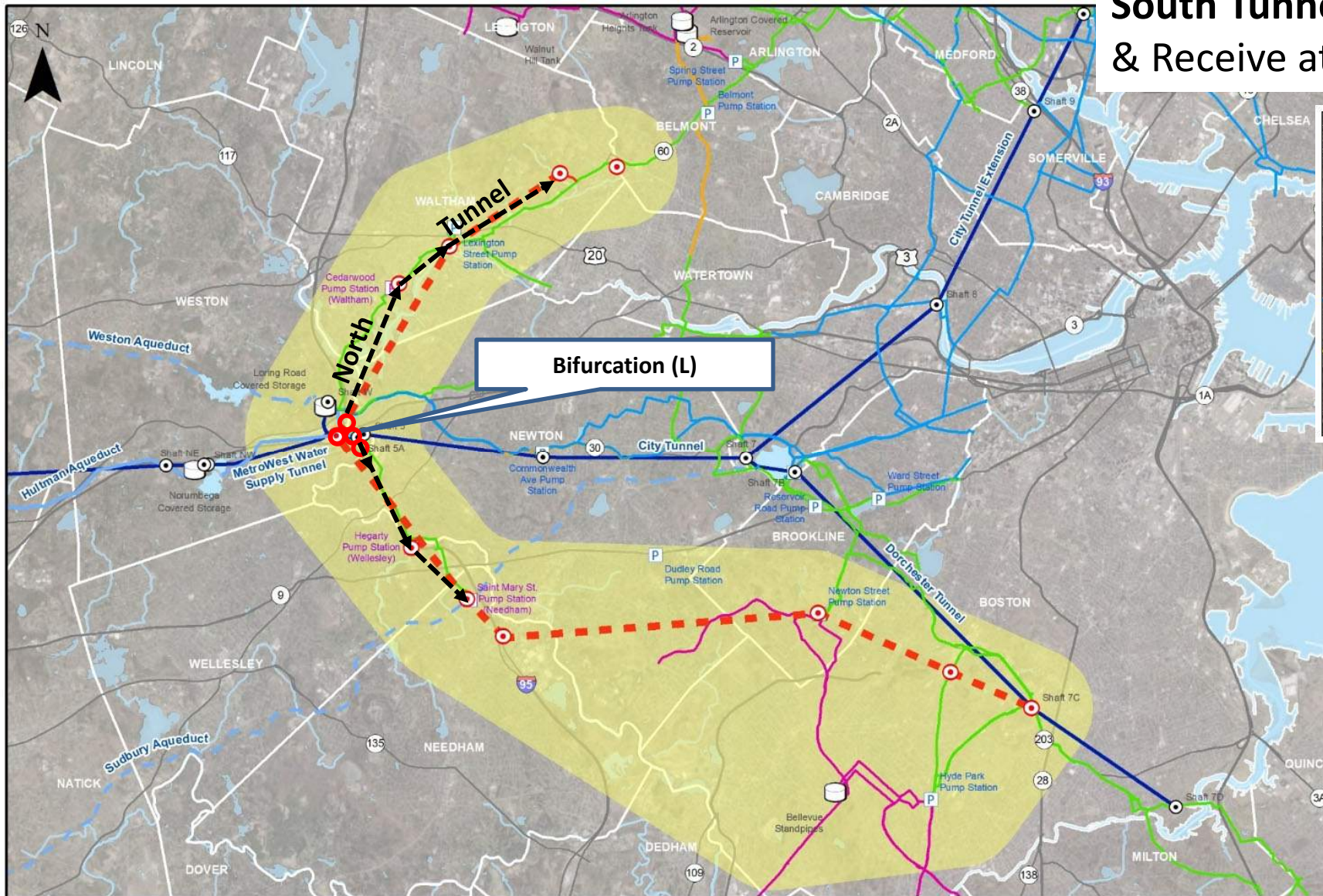
Alternative 1 North Tunnel

North Tunnel – Launch from Tandem Trailer Parcel & Receive at Fernald Property

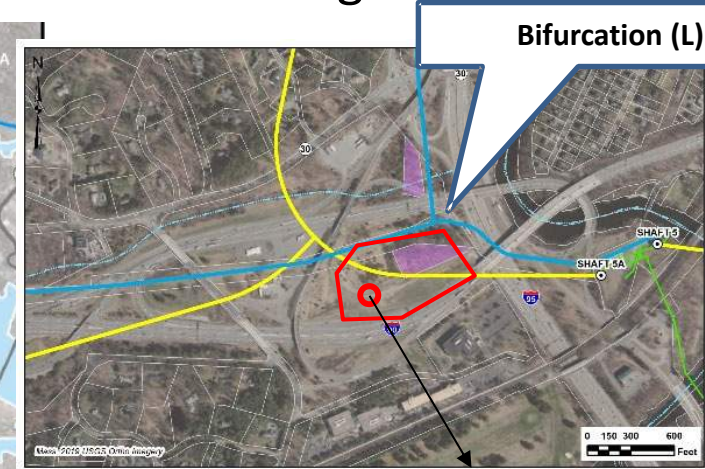




Alternative 1 South Tunnel



South Tunnels – Launch from Bifurcation & Receive at American Legion

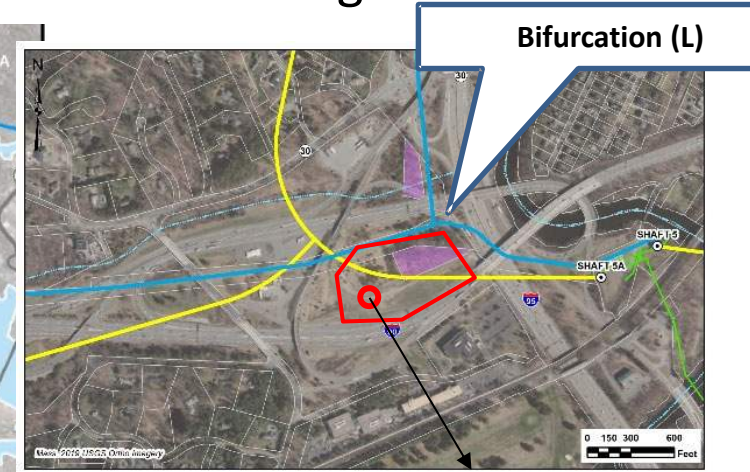
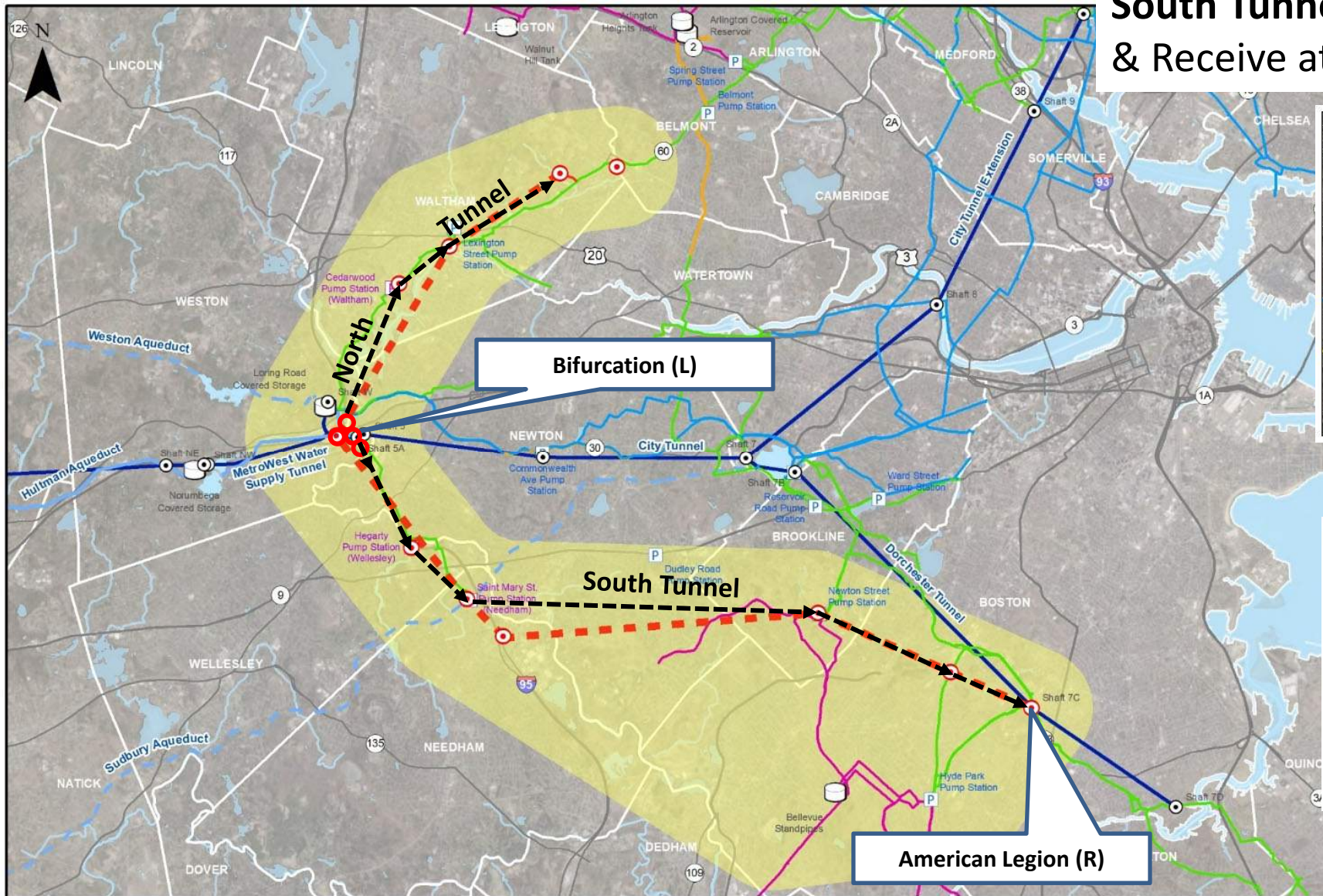


MassDOT Property

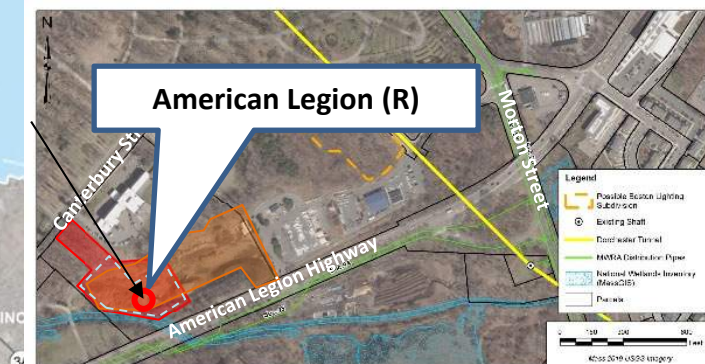


Alternative 1 South Tunnel

South Tunnels – Launch from Bifurcation & Receive at American Legion



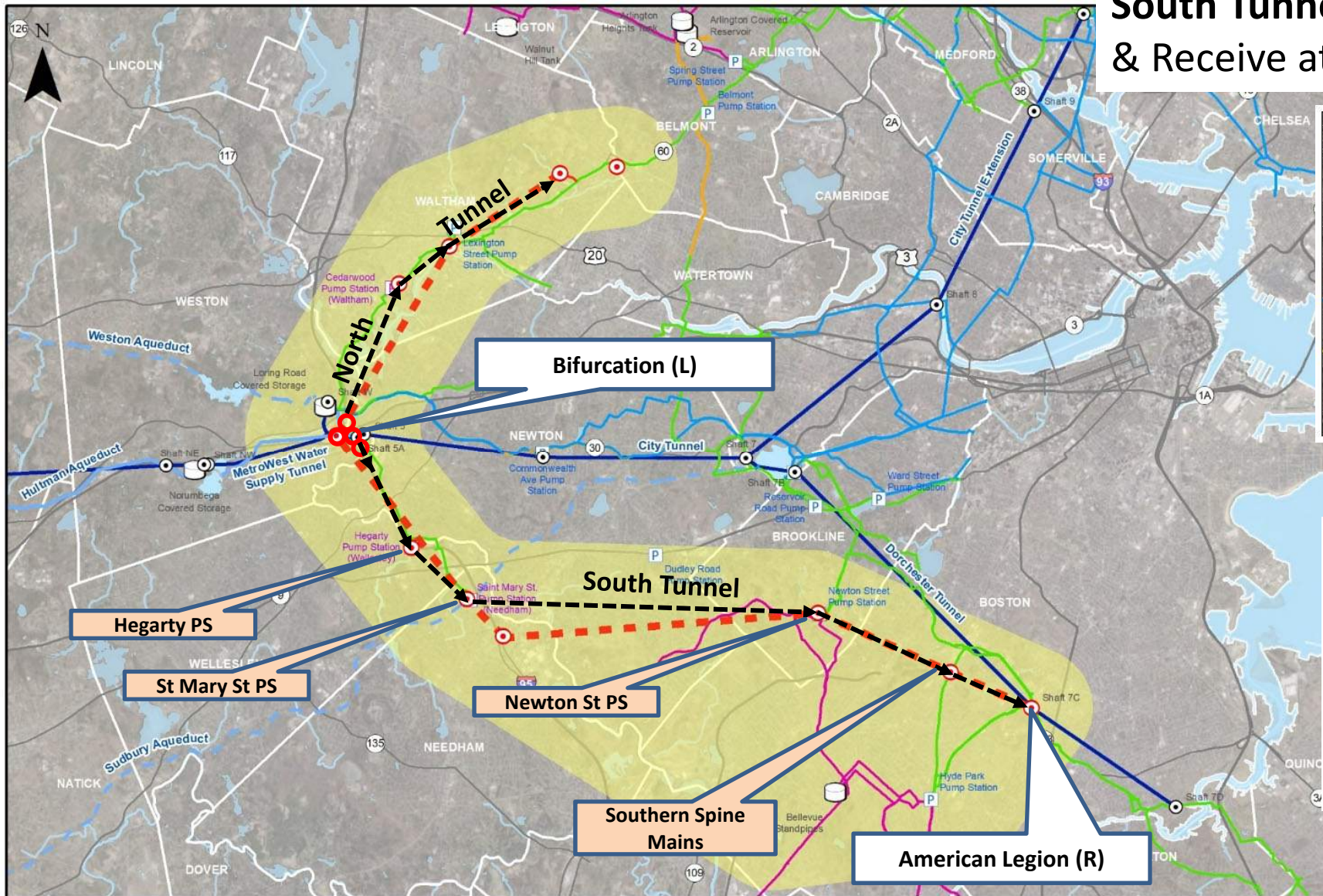
MassDOT Property



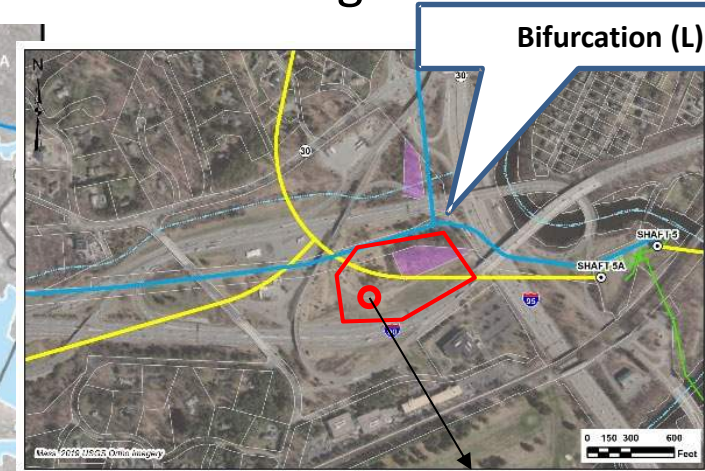
DCR Property



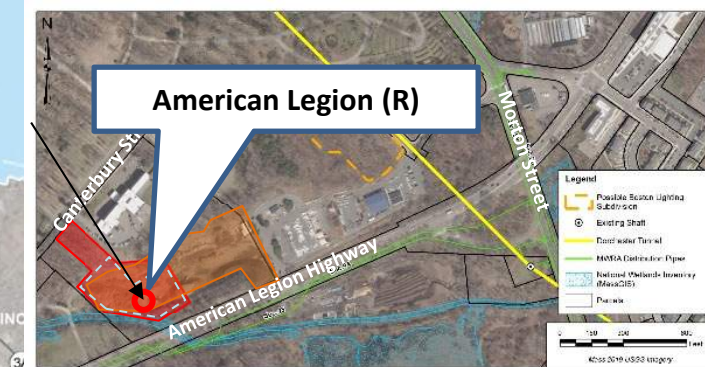
Alternative 1 South Tunnel



South Tunnels – Launch from Bifurcation & Receive at American Legion



MassDOT Property

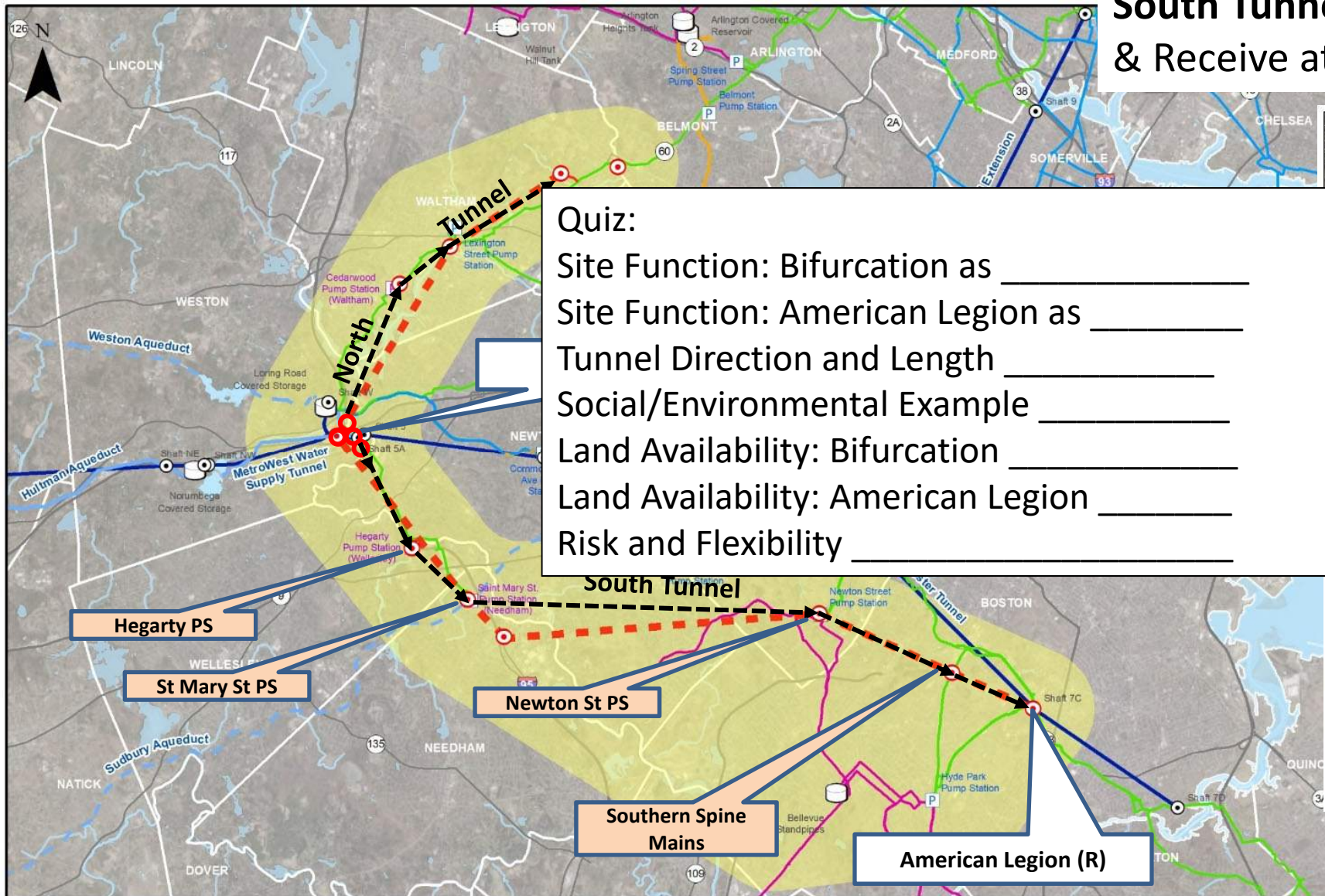


DCR Property



Alternative 1 South Tunnel

South Tunnels – Launch from Bifurcation & Receive at American Legion



Quiz:

Site Function: Bifurcation as _____

Site Function: American Legion as _____

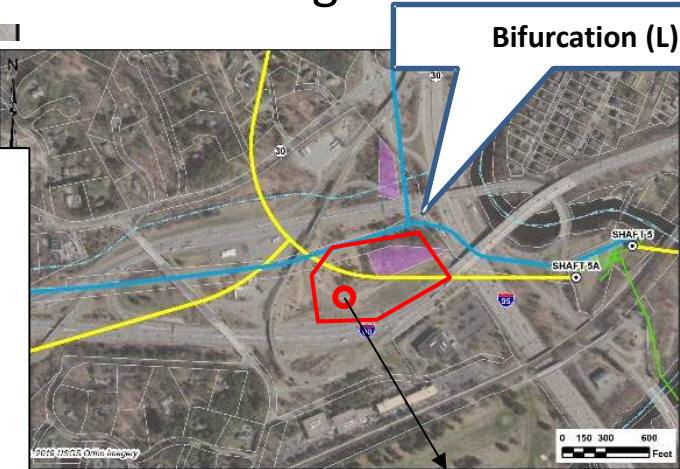
Tunnel Direction and Length _____

Social/Environmental Example _____

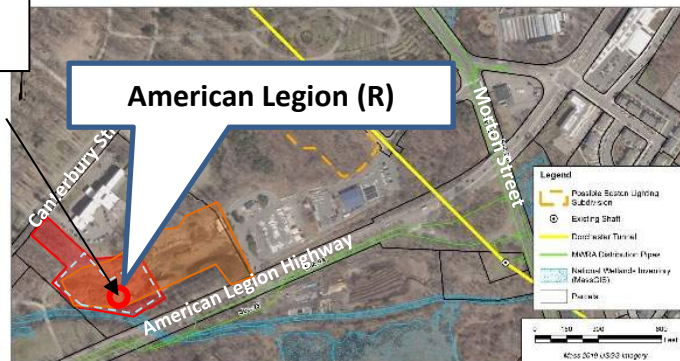
Land Availability: Bifurcation _____

Land Availability: American Legion _____

Risk and Flexibility _____



MassDOT Property

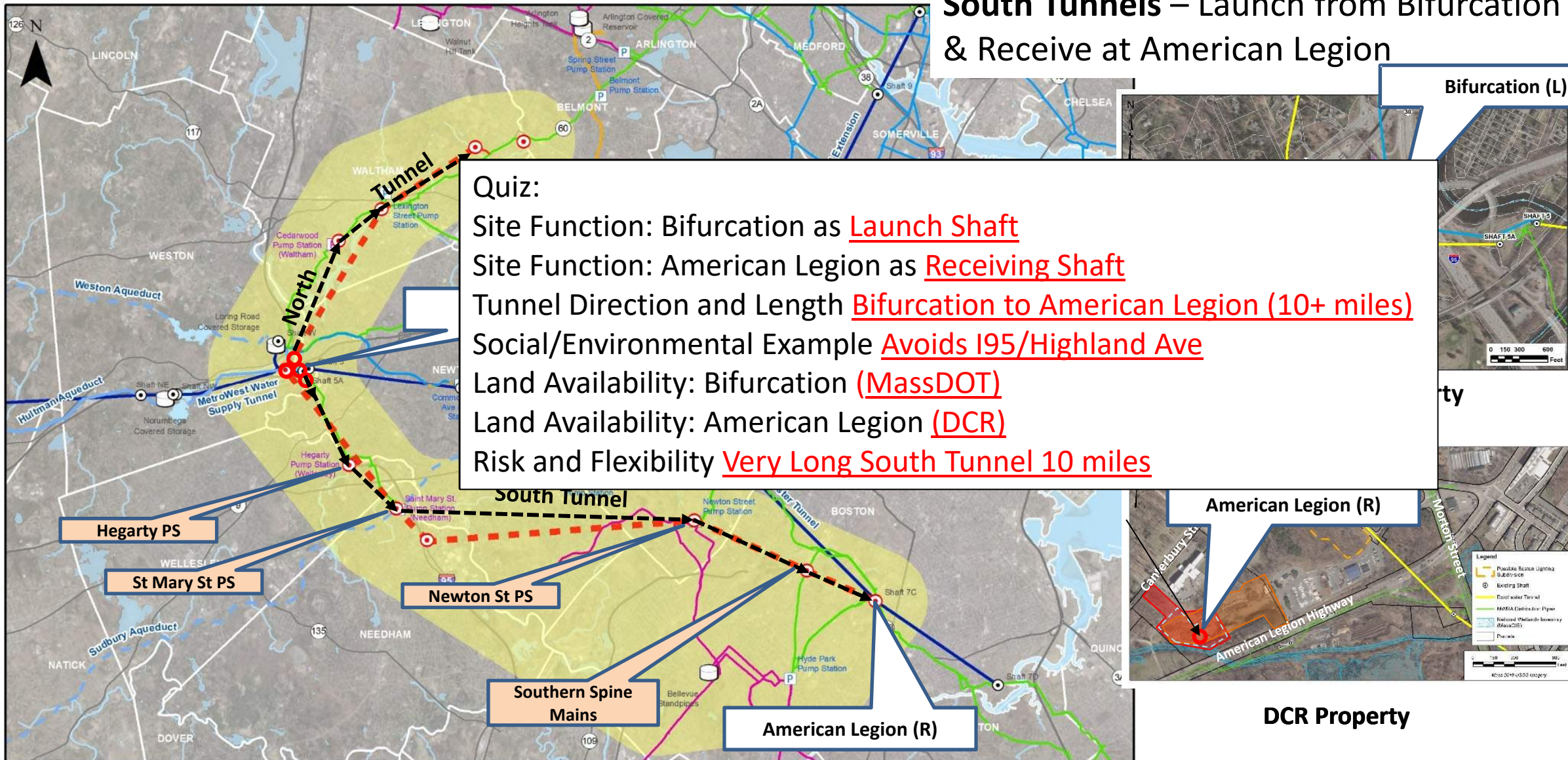


DCR Property



Alternative 1 South Tunnel

South Tunnels – Launch from Bifurcation & Receive at American Legion



Quiz:

Site Function: Bifurcation as Launch Shaft

Site Function: American Legion as Receiving Shaft

Tunnel Direction and Length Bifurcation to American Legion (10+ miles)

Social/Environmental Example Avoids I95/Highland Ave

Land Availability: Bifurcation (MassDOT)

Land Availability: American Legion (DCR)

Risk and Flexibility Very Long South Tunnel 10 miles



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property
↑	↑	↑	↑	↓	↑	↑	↑	↑	↑
Tandem Trailer		Tandem Trailer	Tandem Trailer	Tandem Trailer	Tandem Trailer	Tandem Trailer	Tandem Trailer	Tandem Trailer	<i>Park Road West</i>
Bifurcation	<i>Bifurcation</i>	Bifurcation	Park Road West	Bifurcation	Bifurcation	Bifurcation	Riverside Park	Bifurcation	↑
↓	↑	↓	↑	↑	↓	↑	↑	↑	
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE
	↓	↓	↓	↓	↑	↓	↓	↓	↓
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion

↑ Denotes direction of tunnel mining

Conceptual for discussion only



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10	
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	
↑	↑	↑	↑	↓	↑	↑	↑	↑	↑	
Tandem Trailer		Tandem Trailer				Long South Tunnel (10 miles)				
Bifurcation	<i>Bifurcation</i>	Bifurcation	Park Road West	Bifurcation	Bifurcation	Bifurcation	Riverside Park	Bifurcation	↑	
↓	↑	↓	↑	↑	↓	↑	↑	↑		
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	
	↓	↓	↓	↓	↑	↓	↓	↓	↓	
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	

↑ Denotes direction of tunnel mining



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property
↑	↑	↑	↑	↓	↑	↑	↑	↑	↑
Tandem Trailer		Tandem Trailer	Tandem Trailer	Tandem Trailer	Use Bifurcation as Launch and Receive				
Bifurcation	<i>Bifurcation</i>	Bifurcation	Park Road West	Bifurcation	Bifurcation	Bifurcation	Riverside Park	Bifurcation	↑
↓	↑	↓	↑	↑	↓	↑	↑	↑	
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE
	↓	↓	↓	↓	↑	↓	↓	↓	↓
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion

↑ Denotes direction of tunnel mining



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10	
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	
↑	↑	↑	↑	↓	↑	↑	↑	↑	↑	
Tandem Trailer		Tandem Trailer				Use Bifurcation as Launch Only				
Bifurcation		<i>Bifurcation</i>	Bifurcation	Park Road West	Bifurcation					
↓	↑	↓	↑	↑	↓	↑	↑	↑	↑	
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	
↓	↓	↓	↓	↓	↑	↓	↓	↓	↓	
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	

↑ Denotes direction of tunnel mining

Conceptual for discussion only



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10	
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	
↑	↑	↑	↑	↓	↑	↑	↑	↑	↑	
Tandem Trailer		Use Park Rd as Receiving								
			Tandem Trailer	Tandem Trailer	Tandem Trailer					
Bifurcation	<i>Bifurcation</i>	Bifurcation	Park Road West	Bifurcation	Bifurcation	Bifurcation	Riverside Park	Bifurcation	↑	
↓	↑	↓	↑	↑	↓	↑	↑	↑		
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	
	↓	↓	↓	↓	↑	↓	↓	↓	↓	
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	

↑ Denotes direction of tunnel mining

Conceptual for discussion only



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property
↑	↑	↑	↑	↓	↑	↑	↑	↑	↑
Tandem Trailer		Tandem Trailer	Tandem Trailer	Tandem Trailer	One to look at Fernald as Launch				
Bifurcation	<i>Bifurcation</i>	Bifurcation	Park Road West	Bifurcation					
↓	↑	↓	↑	↑	↓	↑	↑	↑	↑
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE
	↓	↓	↓	↓	↑	↓	↓	↓	↓
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion

↑ Denotes direction of tunnel mining

Conceptual for discussion only



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property
↑		↑	↑	↓	↑	↑	↑	↑	↑
One to look at American Legion as Launch					Tandem Trailer	Tandem Trailer	Tandem Trailer	Bifurcation	Park Road West
Bifurcation	Bifurcation	Bifurcation	Park Road West	Bifurcation	Bifurcation	Bifurcation	Riverside Park	Bifurcation	↑
↓	↑	↓	↑	↑	↓	↑	↑	↑	
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE
	↓	↓	↓	↓	↑	↓	↓	↓	↓
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion

↑ Denotes direction of tunnel mining

Conceptual for discussion only



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property
↑		↑	↑	↓	↑	↑	↑	↑	↑
Use I95/Highland NE as Launch in two directions					Tandem Trailer	Tandem Trailer	Tandem Trailer	Bifurcation	Park Road West
Bifurcation	Bifurcation	Bifurcation	Park Road West	Bifurcation	Bifurcation	Bifurcation	Riverside Park	Bifurcation	↑
↓	↑	↓	↑	↑	↓	↑	↑	↑	↑
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE
	↓	↓	↓	↓	↑	↓	↓	↓	↓
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion

↑ Denotes direction of tunnel mining



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property
↑		↑	↑	↓	↑	↑	↑	↑	↑
Use Riverside Park as Receive					Tandem Trailer	Tandem Trailer	Tandem Trailer	Bifurcation	<i>Park Road West</i>
Bifurcation	<i>Bifurcation</i>	Bifurcation	Park Road West	Bifurcation	Bifurcation	Bifurcation	Riverside Park	Bifurcation	↑
↓	↑	↓	↑	↑	↓	↑	↑	↑	Highland Avenue NW
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE
	↓	↓	↓	↓	↑	↓	↓	↓	↓
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion

↑ Denotes direction of tunnel mining

Conceptual for discussion only



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property
Use Bifurcation as Two Shafts (Receive and Launch)					↑	↑	↑	↑	↑
					Tandem	Tandem Trailer	Tandem Trailer	Bifurcation	Park Road West
Bifurcation	Bifurcation	Bifurcation	Park Road West	Bifurcation	Bifurcation	Bifurcation	Riverside Park	Bifurcation	↑
↓	↑	↓	↑	↑	↓	↑	↑	↑	
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE
	↓	↓	↓	↓	↑	↓	↓	↓	↓
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion

↑ Denotes direction of tunnel mining

Conceptual for discussion only



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property
↑		↑	↑	↓	↑	↑	↑	↑	↑
Long Tunnel from I95/Highland					Tandem Trailer	Tandem Trailer	Tandem Trailer	Bifurcation	Park Road West
Bifurcation	Bifurcation	Bifurcation	Park Road West	Bifurcation	Bifurcation	Bifurcation	Riverside Park	Bifurcation	↑
↓	↑	↓	↑	↑	↓	↑	↑	↑	↑
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE
	↓	↓	↓	↓	↑	↓	↓	↓	↓
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion

↑ Denotes direction of tunnel mining

Conceptual for discussion only



Summary of the Ten Alternatives

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9	Alternative 10
Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property	Fernald Property
↑	↑	↑	↑	↓	↑	↑	↑	↑	↑
Tandem Trailer		Tandem Trailer	Tandem Trailer	Tandem Trailer	Tandem Trailer	Tandem Trailer	Tandem Trailer	Bifurcation	Park Road West
Bifurcation	Bifurcation	Bifurcation	Park Road West	Bifurcation	Bifurcation	Bifurcation	Riverside Park	Bifurcation	↑
↓	↑	↓	↑	↑	↓	↑	↑	↑	Highland Avenue NW
	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW	Highland Avenue NE	Highland Avenue NW	Highland Avenue NW	Highland Avenue NW
	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE	Highland Avenue NE
↓	↓	↓	↓	↓	↑	↓	↓	↓	↓
American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion	American Legion

↑ Denotes direction of tunnel mining

Conceptual for discussion only



Alternatives Evaluation Process – Cont.

Alternatives Comparison

Alternative	1	2	3	4	5	6	7	8	9	10
Tunnel Alignment ⁽¹⁾	TT>FE B>AL	NW>FE (B) NE>AL	TT>FE B>NW NE>AL	TT>FE NW>PRW NE>AL	FE>TT NW>B NE>AL	TT>FE B>NW AL>NE	TT>FE NE>B NE>AL	TT>FE NW>RP NE>AL	B>FE NW>B NE>AL	NW>FE (PRW) NE>AL
Constructability / Engineering	Yellow	Yellow	Green	Green	Green	Red	Green	Green	Yellow	Yellow
Land Availability	Yellow	Yellow	Yellow	Yellow	Red	Red	Yellow	Yellow	Yellow	Green
Environmental	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Red	Yellow	Green
Social / Community	Red	Green	Yellow	Yellow	Red	Red	Yellow	Red	Yellow	Green
Operations	Red	Green	Green	Green	Green	Green	Green	Red	Green	Green
Cost ⁽²⁾	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Schedule (tunnel(s) in service)	Red	Yellow	Green	Green	Green	Green	Green	Green	Green	Yellow
Retain Alternative	N	N	Y	Y	N	N	N	N	N	Y

(1) Site Abbreviations: TT – Tandem Trailer; FE – Fernald Property; B – Bifurcation; NW – Highland Avenue Northwest; NE – Highland Avenue Northeast; AL – American Legion; RP – Riverside Park; PRW – Park Road West; (B) or (PRW) indicates Large Connection Shaft in that tunnel segment: > indicates tunnel mining direction

(2) Construction cost only for the differential in capital construction costs among the alternatives.



Three Shortlisted Alternatives

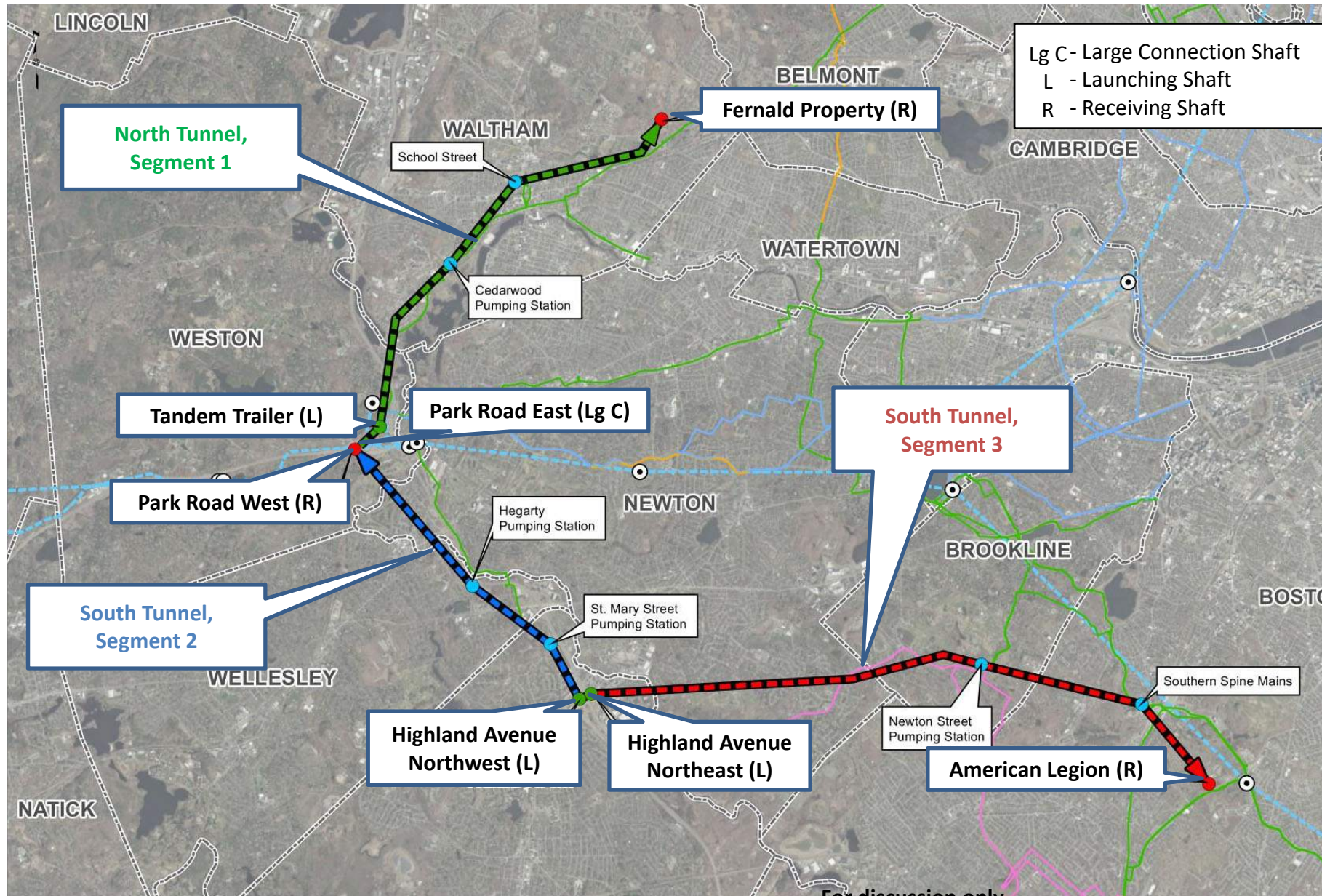
The three shortlisted alternatives are:

- **Alternative 4 - Preferred**
- **Alternative 3**
- **Alternative 10**





Preferred Alternative



Preferred Alternative Includes:

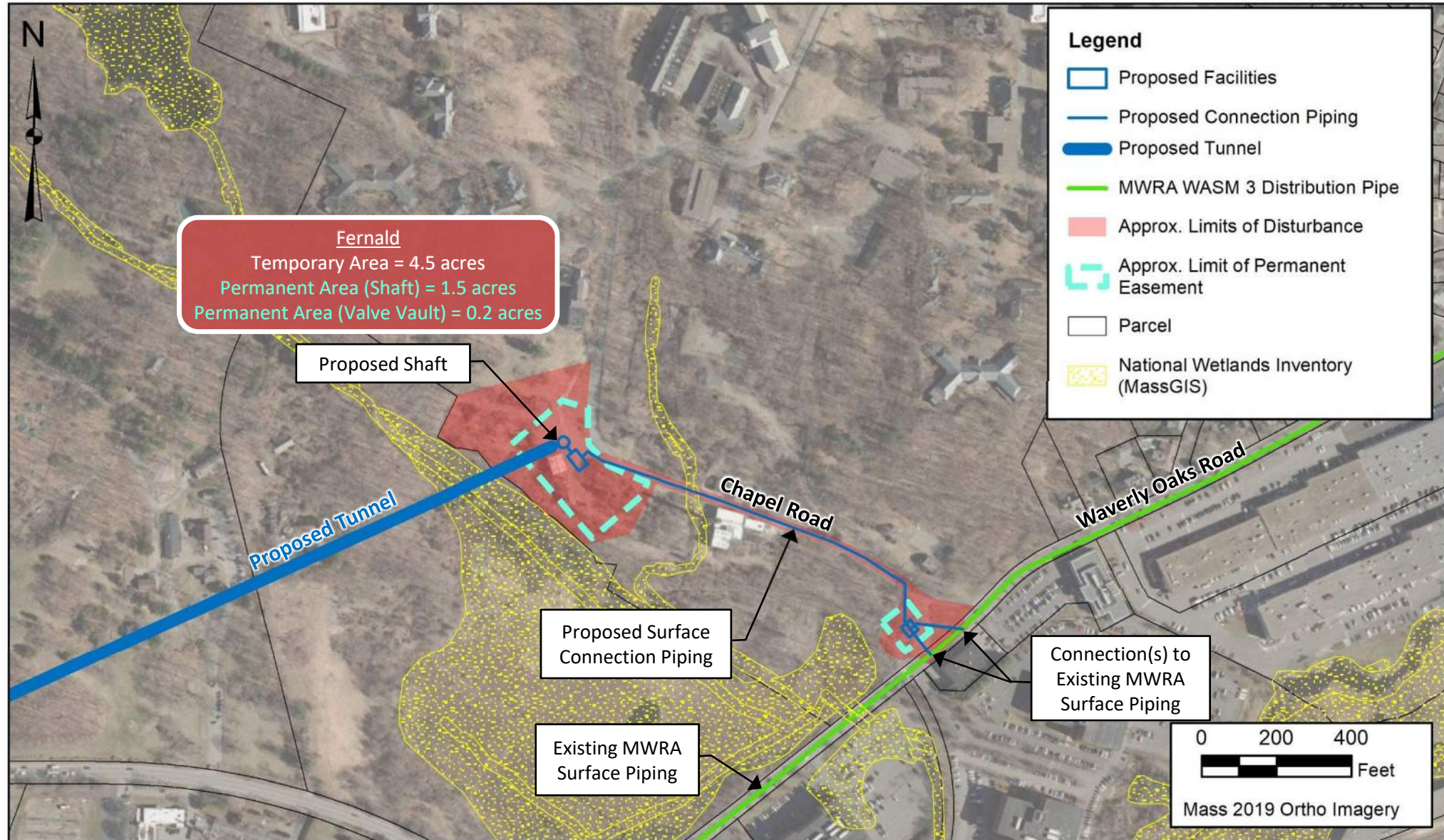
- 14.7 miles to deep rock tunnel
- 3 launching shaft sites
- 3 receiving shaft sites
- 1 large connection shaft site
- 6 connection shaft sites
- 3 tunnel segments
 - Segment 1 = tunnel from Weston (Tandem Trailer) ~4.5 miles to Waltham (Fernald Property)
 - Segment 2 = tunnel from Needham (Highland Ave NW) ~3.4 miles to Weston (Park Road W)
 - Segment 3 = tunnel from Needham (Highland Ave NE) ~6.8 miles to Mattapan (American Legion)
- Tunnel system will operate as 2 tunnels (North Tunnel & South Tunnel)



Fernald Property

Site Characteristics:

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

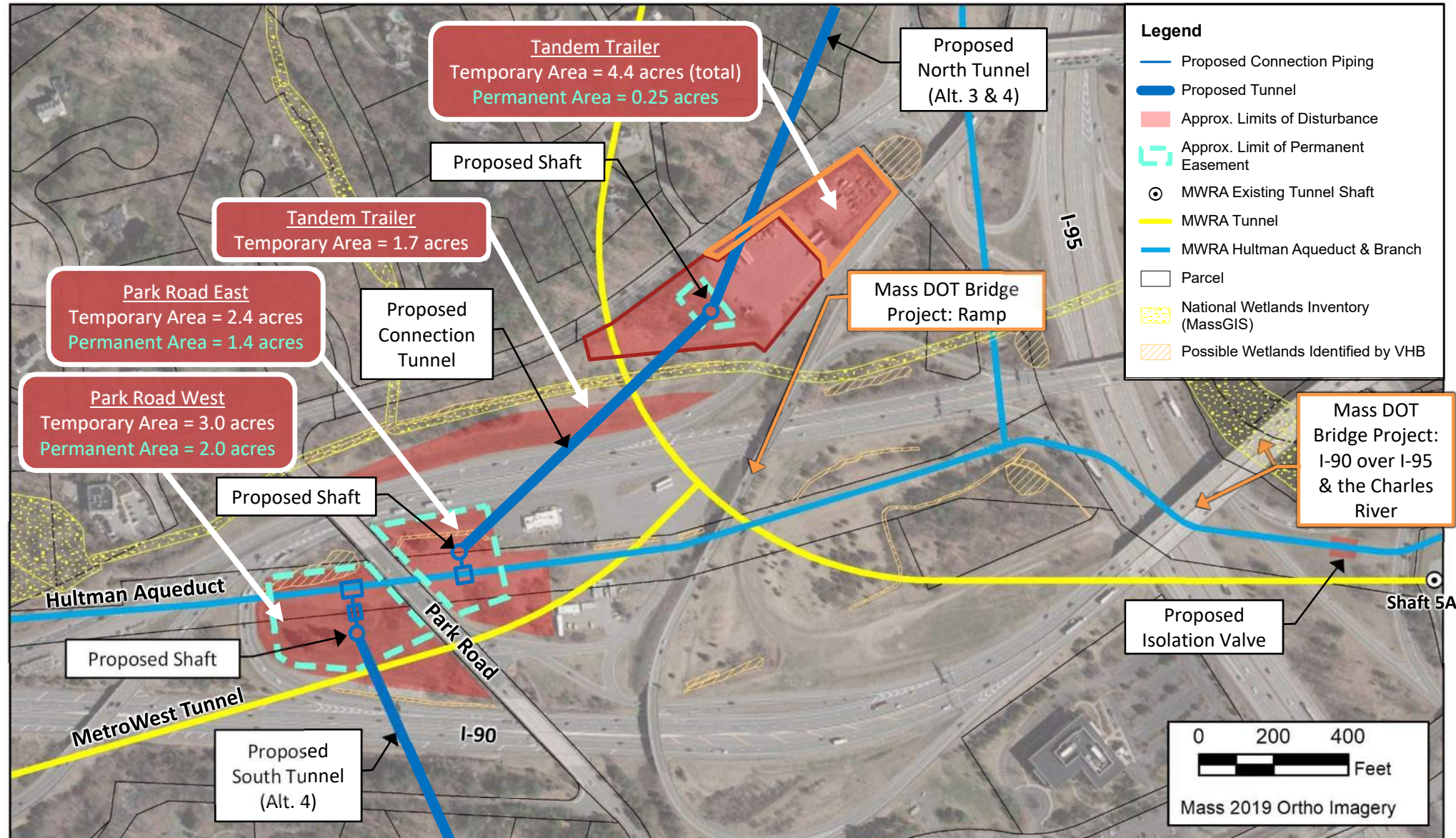




I-90 / I-95 Interchange

Site Characteristics:

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

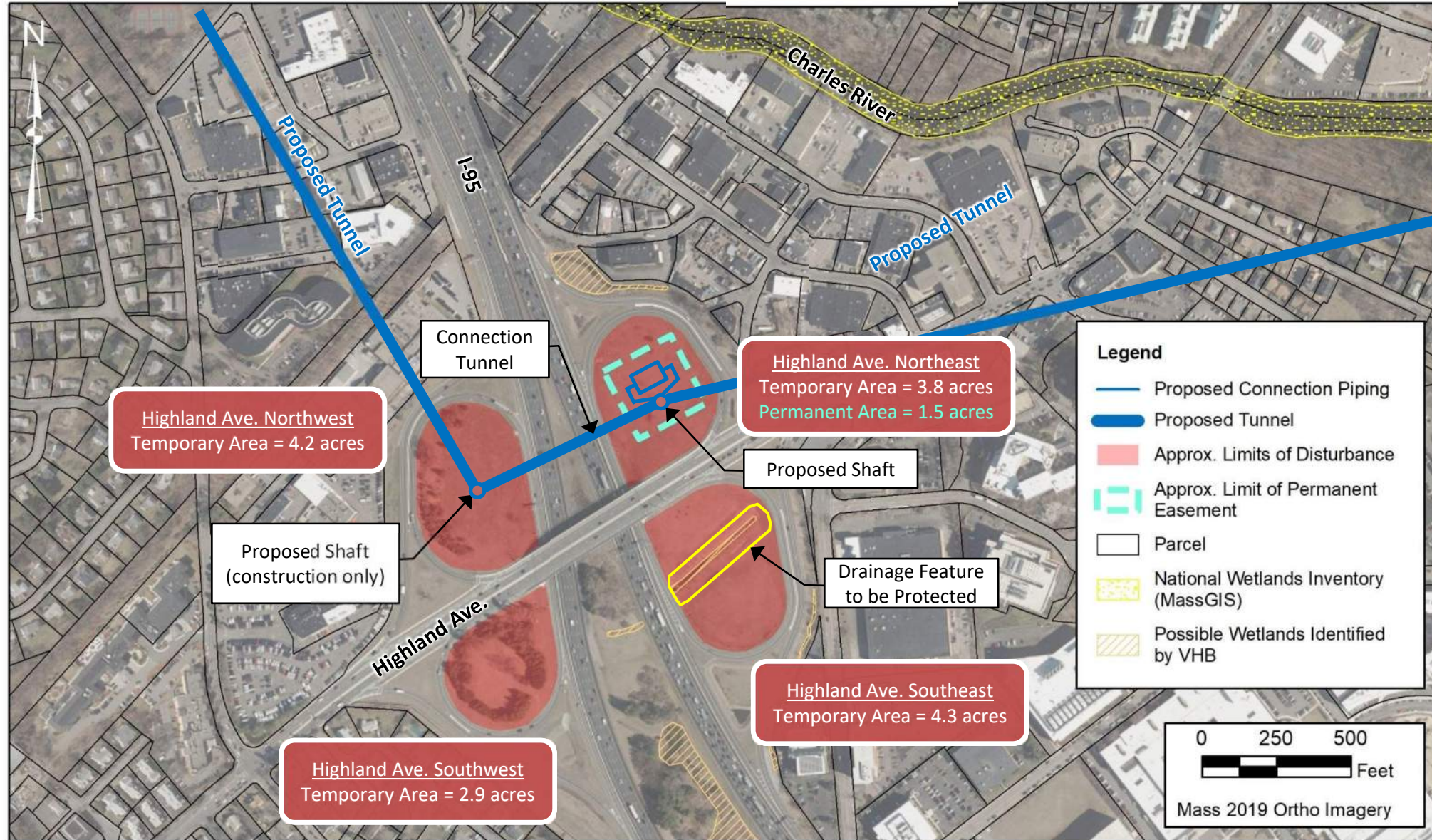




Highland Avenue Northwest or Northeast

Site Characteristics:

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

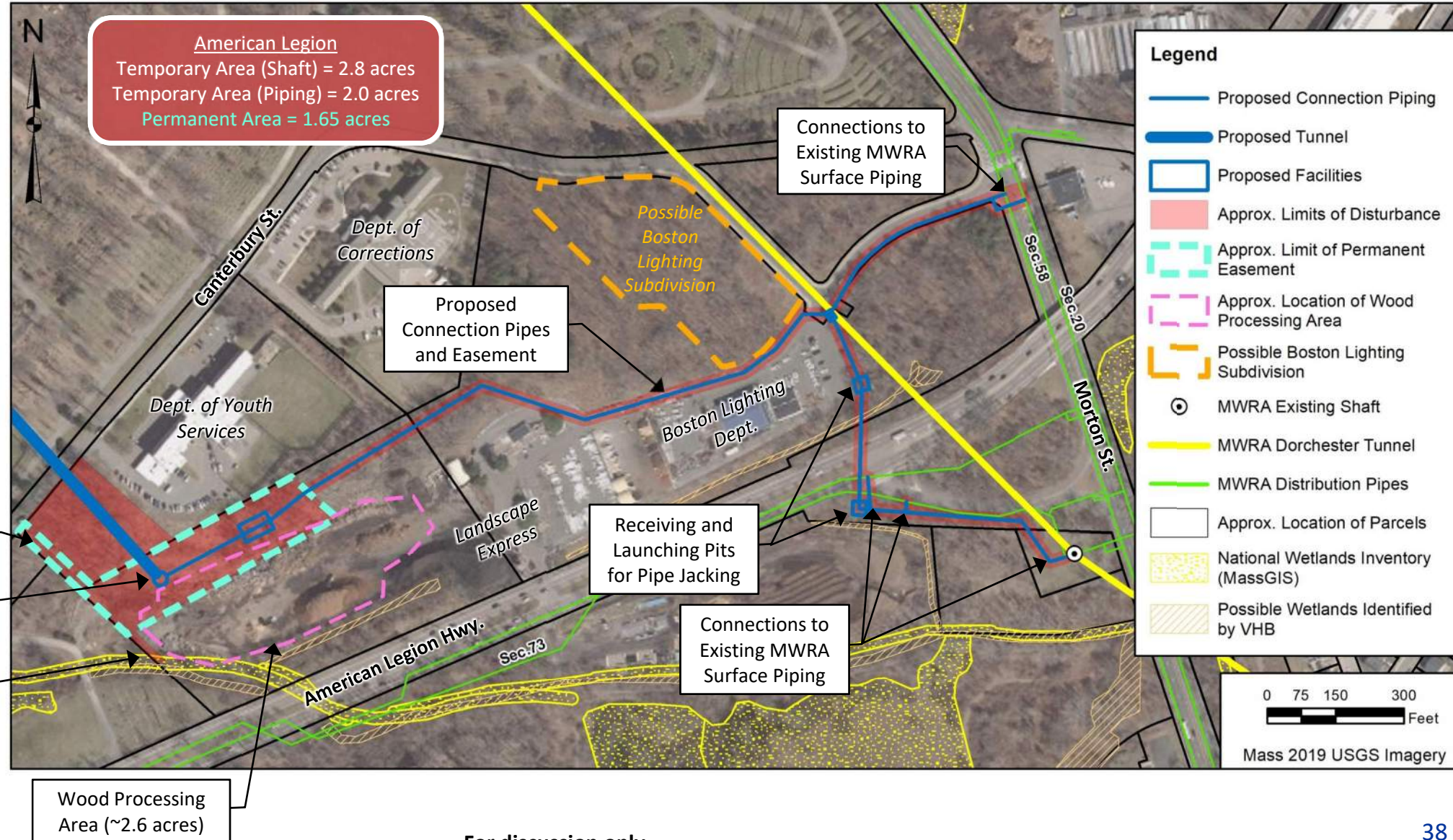




American Legion

Site Characteristics:

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





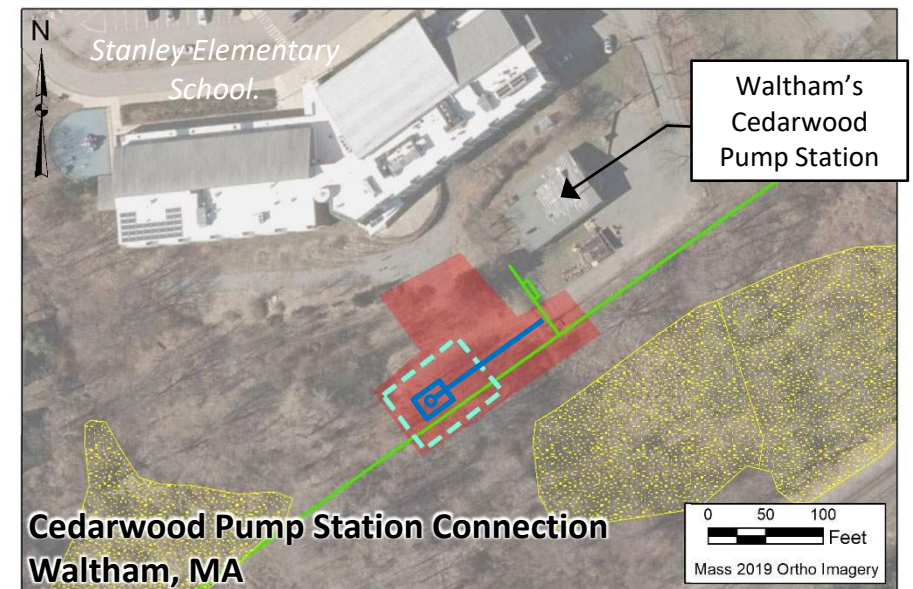
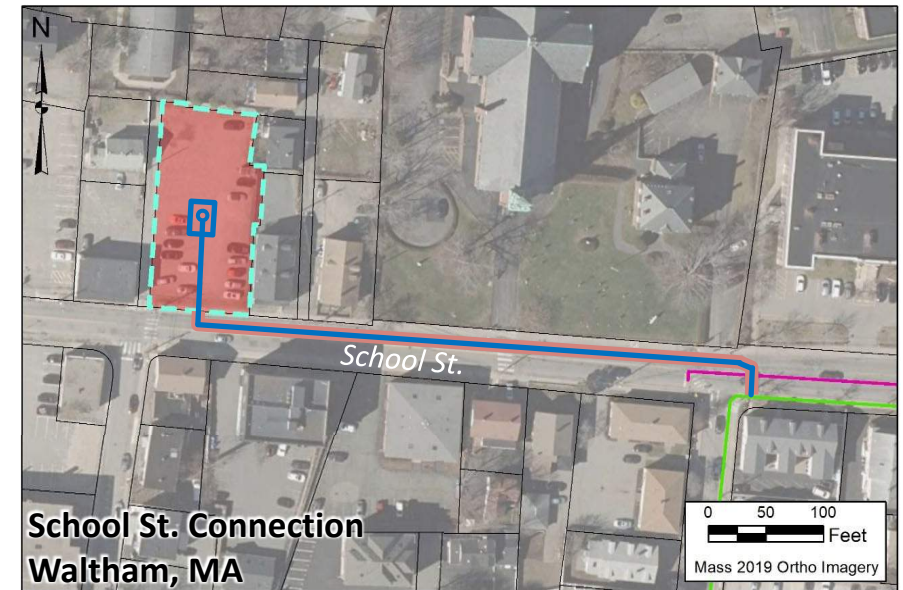
Alignment Shortlist - Connection Shafts (North Tunnel)

School Street:

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

Cedarwood PS:

- Owned by City of Waltham
- Behind elementary school and pump station





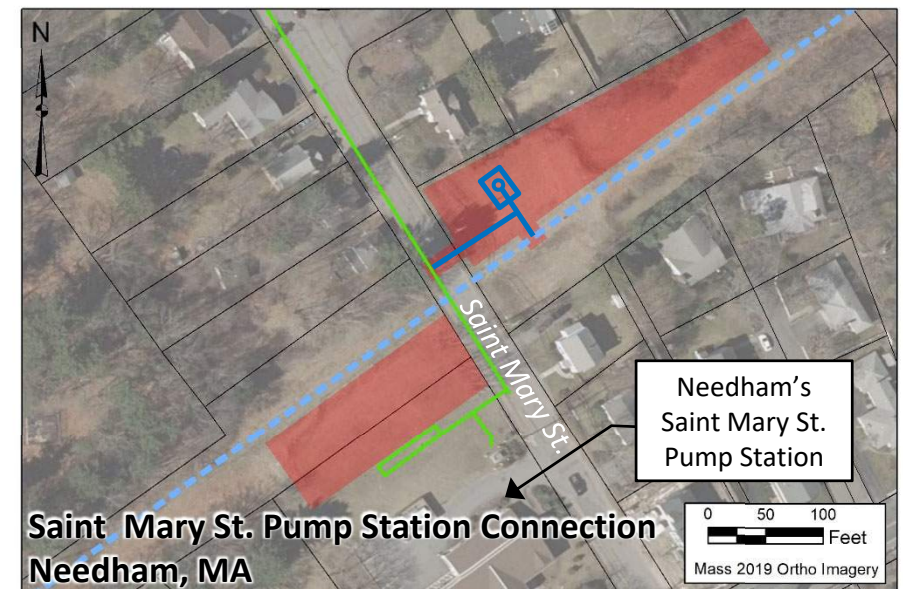
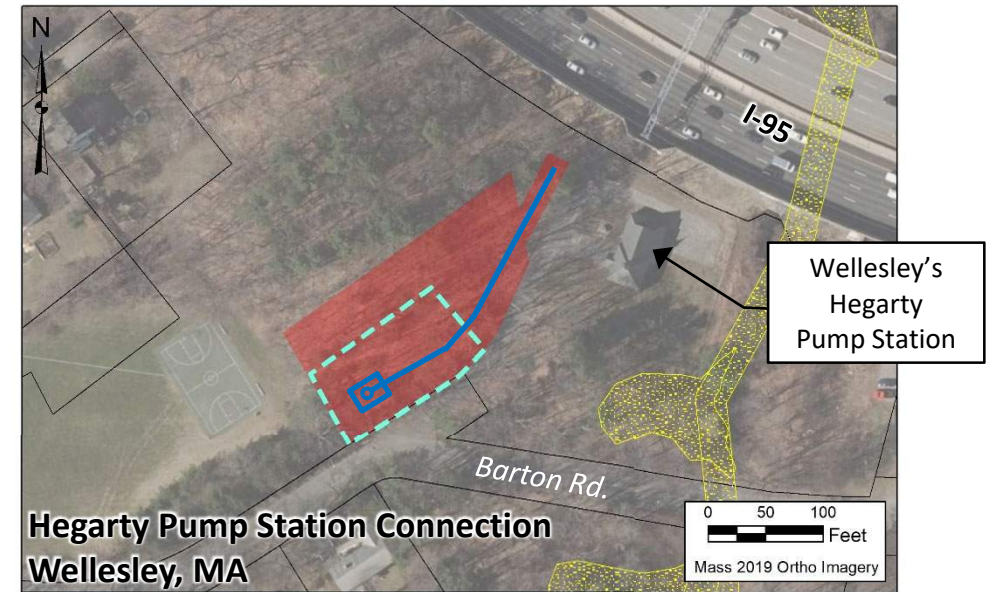
Alignment Shortlist - Connection Shafts (South Tunnel)

Hegarty PS:

- Owned by Town of Wellesley
- Potential Article 97

St Mary Street PS:

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





Alignment Shortlist - Connection Shafts (South Tunnel)

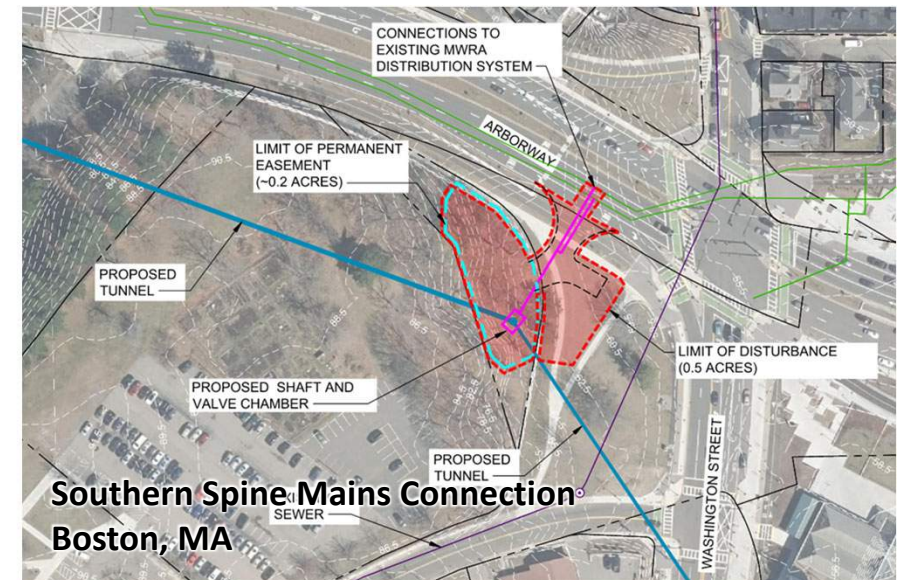
Newton Street PS:

- Owned by MWRA
- Existing pump station in operation



Southern Spine Mains:

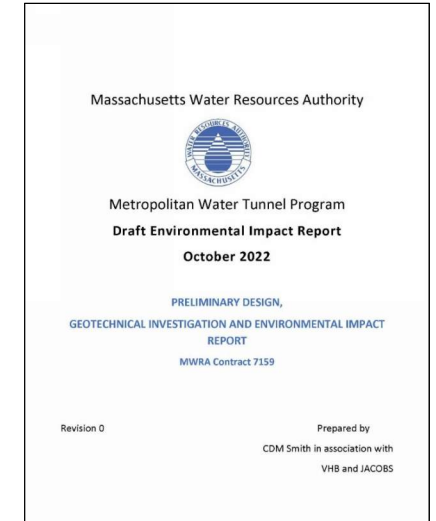
- Controlled by DCR adjacent to Mass DPH





Potential Construction Impacts & Planned Management

- Construction activity (amount and duration) and potential impacts will vary between shaft sites based on function & phase of construction
- Not all tunnel segments & shaft sites will be active at the same time
- Some sites (i.e., connection shaft sites) will have least and infrequent activity
- Some sites (i.e., launching shaft sites) will have the most activity
- Potential impacts include
 - Traffic
 - Water supply
 - Noise and vibrations
- Details are presented in the DEIR, Chapter 7 (Draft Section 61 Findings)



www.mwra.com/mwtp/resources.html#docs



Traffic & Water Supply

- Traffic increases will be most noticeable near launching shaft sites at shift change
 - Less traffic is expected near receiving shaft site and least near connection shaft sites
 - Adjustments to existing traffic signals or new traffic signals will help limit these impacts
 - Haul routes and hauling hours will be established, no exceptions
 - Police details and flaggers will be used to keep everyone moving
 - Wheel wash and street sweeping will help keep areas clean
-
- Tunnel construction will not impact the existing MWRA water tunnels
 - There are no public water supply wells close to the new tunnel alignment
 - Prior to construction any private wells near the tunnel alignment will be checked and monitored during construction
 - During construction water levels along the tunnel alignment will be monitored
 - The construction the contractor will limit groundwater inflow into the tunnel
 - A water supply contingency plan will be put in place, just in case



Noise & Vibrations

- Noise levels will vary by shaft site, function, and phase of construction
- Launch shaft site ~ 24/7 once TBM excavation begins
- Receiving shaft site – Mostly daytime work, some nighttime work
- Connection shaft site – Day time work, no night work planned
- Noise level criteria will be set & monitored during construction
- Permanent condition will not increase noise levels above existing
 - Construction methods will be adjusted to control vibrations, where needed
 - No blasting for connection shaft construction, use drilling methods
 - Rock removal for launch/receiving shafts will be done via controlled blasting
 - Max vibration criteria will be set & vibration monitoring will occur to protect nearby homes/businesses/infrastructure
 - Close coordination with local Fire Department, Emergency Personal, and MassDOT



Other Topics To be Worked Out - Not Included in the DEIR

Other Community related topics not detailed in the DEIR:

- Connections to community systems
 - Cedarwood PS, Waltham
 - Hegarty PS, Wellesley
 - St Mary St PS, Needham
- Emergency Egress & Fire Rescue

- Thru preliminary and final design, we plan to work with your community to address these topics, and others, in full
- MWRA would like to eventually execute a MOA with each City/Town in which the tunnel will be constructed to address....
- MOA's will be in compliance with MWRA guidelines & practices



Ongoing and Upcoming Contracts

- Program Support Services and Preliminary Design Engineering contracts are both ongoing
- Core Storage Facility
 - Board of Directors approved the lease of a new facility in Needham
 - Planning for late winter/early spring move in
- Geotechnical Support Services (2023 – 2025)
 - Currently in procurement phase
 - ~40 deep borings over ~3 years
 - Targeting Jan 2023 NTP
- Final Design Engineer
 - Targeting mid 2024 NTP
 - Currently conducting industry outreach
- Construction Manager
 - Targeting NTP in 2026



Where to Find Information / How to Contact Us

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



Questions/Comments?



Thank you for your support!