Massachusetts Bay Transportation Authority

Track 61

The Red Line Car Test Track

July 2017

Overview

- Background of the Red Line Investment
- Implementation of Better Service on the Red Line
- Environmental Mitigation
- Timelines

Background

Investing in the Red Line to Improve Service Delivery

Initiative	Estimated Cost
Red Line Car Fleet	$458M
Red Line Signals	$191M
Red Line Infrastructure *includes $32M for Red Line Test Track	$177M

The Red Line Cars, Anticipated Benefits to Service

- More than 47,000 customers take public transportation each weekday from a South Boston Station (FY16).
- The new Red Line cars will support a 50% increase in customers carried per hour.
- Trains are designed to operate for up to 30 years.

Wait time will be 3 minutes, instead of between 4 and 5 minutes.

Implementing Better Service on the Red Line

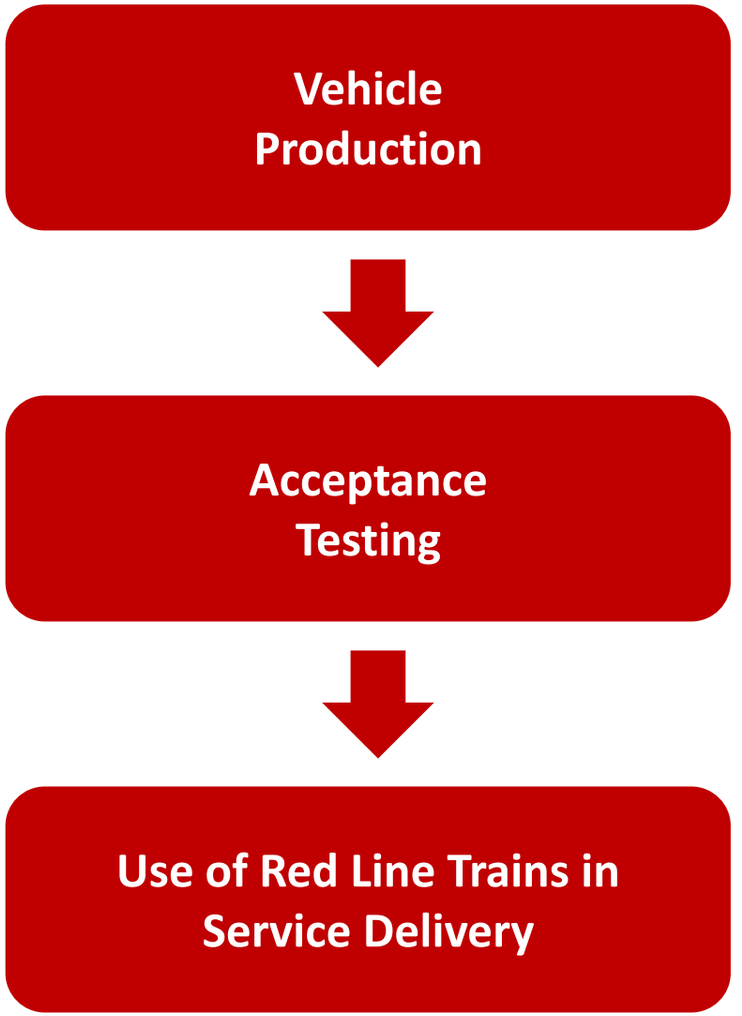
Testing and Accepting the new Red Line Cars

Testing and acceptance is the process used to test the new Red Line cars after they come from the production facility.

This process ensures the cars can run, stop and function safely on the MBTA third rail system.

Once fully tested, the cars are approved by an MBTA engineering team and they can officially be used for passenger service on the main Red Line.

Choosing a location for testing and accepting is extremely important. Without a location, newly produced cars are not able to carry passengers on revenue lines.



Testing Location Criteria for the new Red Line Cars

- No less than 1,800 feet of straight track for test runs
- Close proximity to the Red Line car house
- Ability to move between the Red Line Car House to the test track with no impact on the main line
- Additional storage for vehicles in close proximity to the test track

Identifying a Location for Testing and Accepting – Site Consideration

11 options – Within 5 locations

- Boston - Adjacent to South Boston Haul Road
- Boston – South of Cabot Maintenance Facility
- Boston – 1 Mile South of Cabot Yard
- Quincy – Between Wollaston & Quincy Ctr Stations
- Braintree - North of Braintree Station

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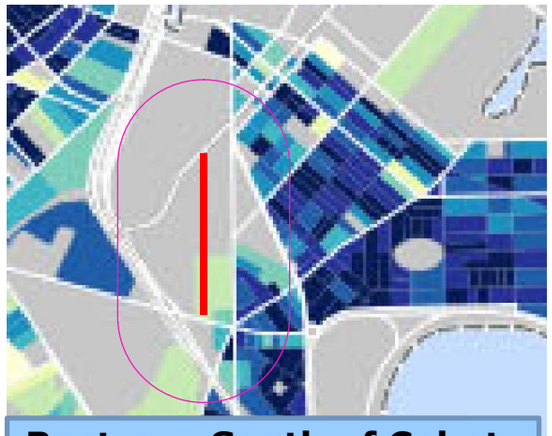
Identifying a Location for Testing and Accepting

11 options – Within 5 locations

Boston - Adjacent to South Boston Haul Road



Boston – South of Cabot Maintenance Facility

Boston - South of Cabot Yard

Quincy – Between Wollaston & Quincy Ctr Stations

Braintree - North of Braintree Station

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Identifying a Location for Testing and Accepting - Residential

11 options – Within 5 locations

Boston - Adjacent to South Boston Haul Road

0.25 Mile radius population (approx.): **3,300**

Boston - South of Cabot Maintenance Facility

0.25 Mile radius population (approx.): **2,500**

Boston – 1 Mile South of Cabot Yard

0.25 Mile radius population (approx.): **6,800**

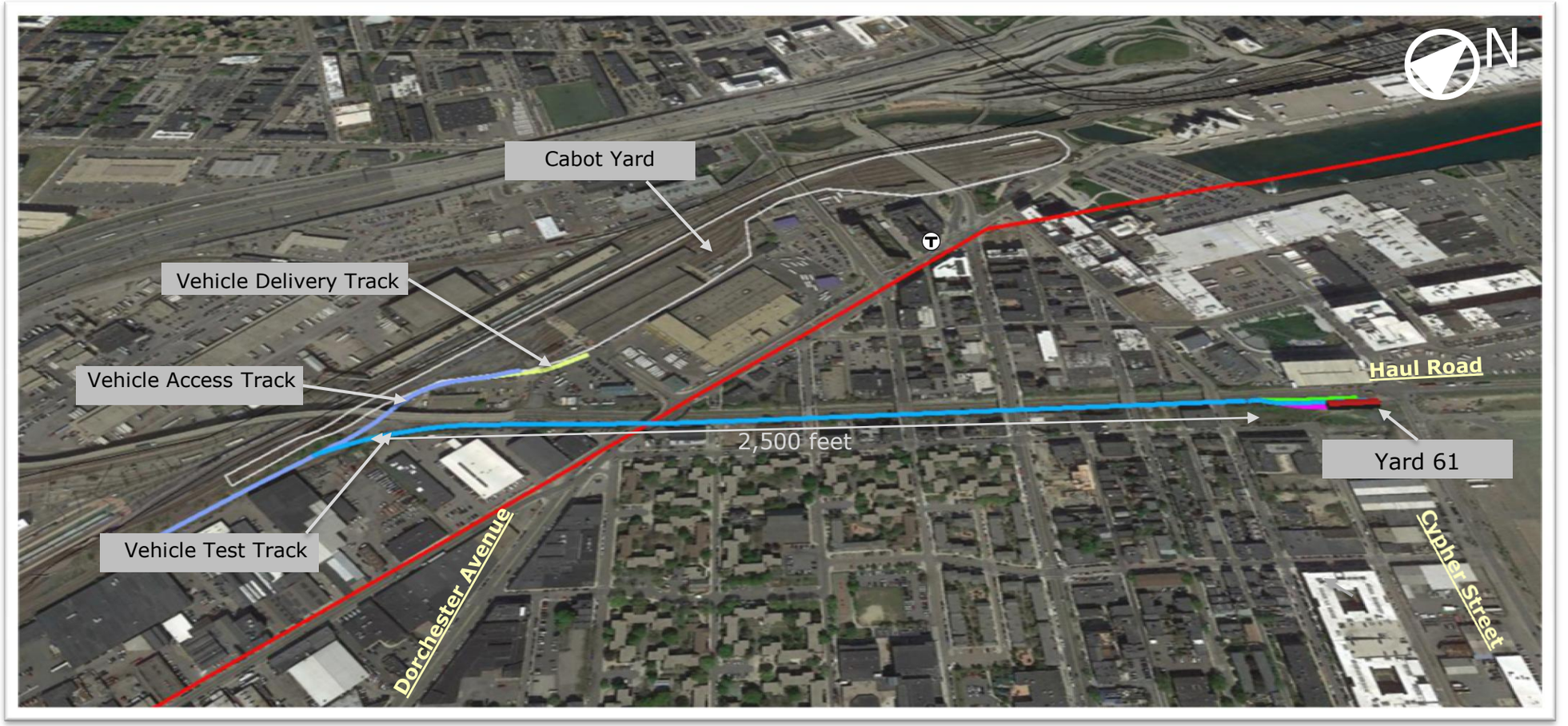
Quincy – Between Wollaston & Quincy Ctr Stations

0.25 Mile radius population (approx.): **4,800**

Braintree - North of Braintree Station

0.25 Mile radius population (approx.): **2,100**

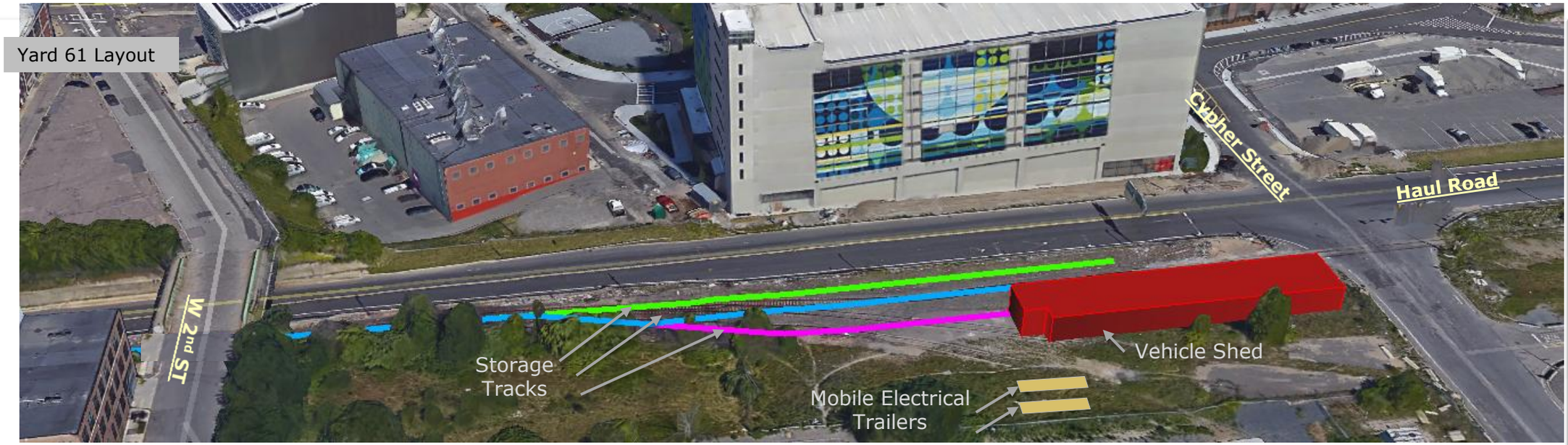
Track 61, Testing Location Criteria for the new Red Line Cars



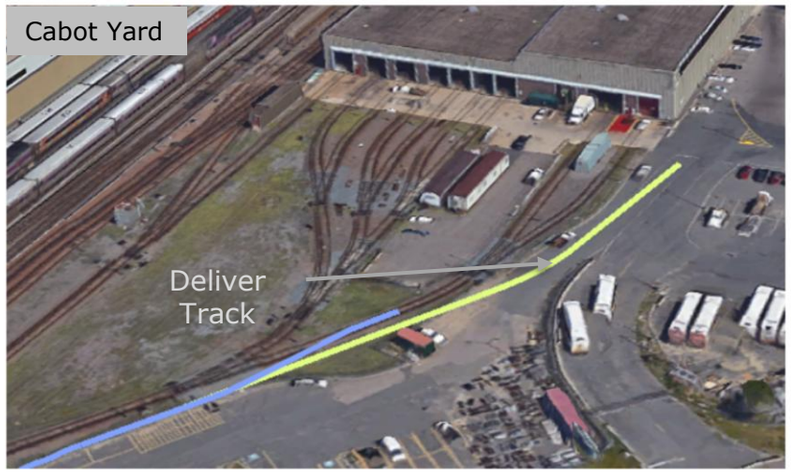
- Sufficient track length and configuration to accommodate the new vehicle testing
- Testing can occur without impacting revenue service
- Long term infrastructure improvements to the existing Seaport Track
- Close proximity to Cabot Yard

The Vehicle Shed on Track 61

Yard 61 Layout



Cabot Yard



- A vehicle shed will expedite testing by up to 18 months (3.5 years).
- The shed measures 6,000 sq. ft. and is approximately 20ft high.
- Within the shed, employees will test HVAC, utilities, make minor modifications, test communications and security.
- The building is estimated at $2.5M and will be used during testing between 2019 and 2024.

Environmental Consideration

Environmental Considerations – Excavated Materials, Noise & Dust

Noise Control Specification

- Must make every effort and every means possible to minimize noises during construction operations.
- Provide working machinery and equipment designed to operate with the least possible noise, and when gearing is used, such gearing shall be of a type designed to reduce noise to a minimum.
- Equipment compressors with silencers on intake lines. Equipment gas or oil operated equipment with silencers or mufflers on intake and exhaust lines.
- Wherever practicable, electricity shall be used for power to reduce noise.
- Dumping bins, hoppers, and trucks used for disposal of excavated materials shall be lined with wood or other sound-deadening material if required.

Dust Control Specification

- Health and Safety Plan prior to construction activities commencing.
- Air quality monitoring during construction activities.

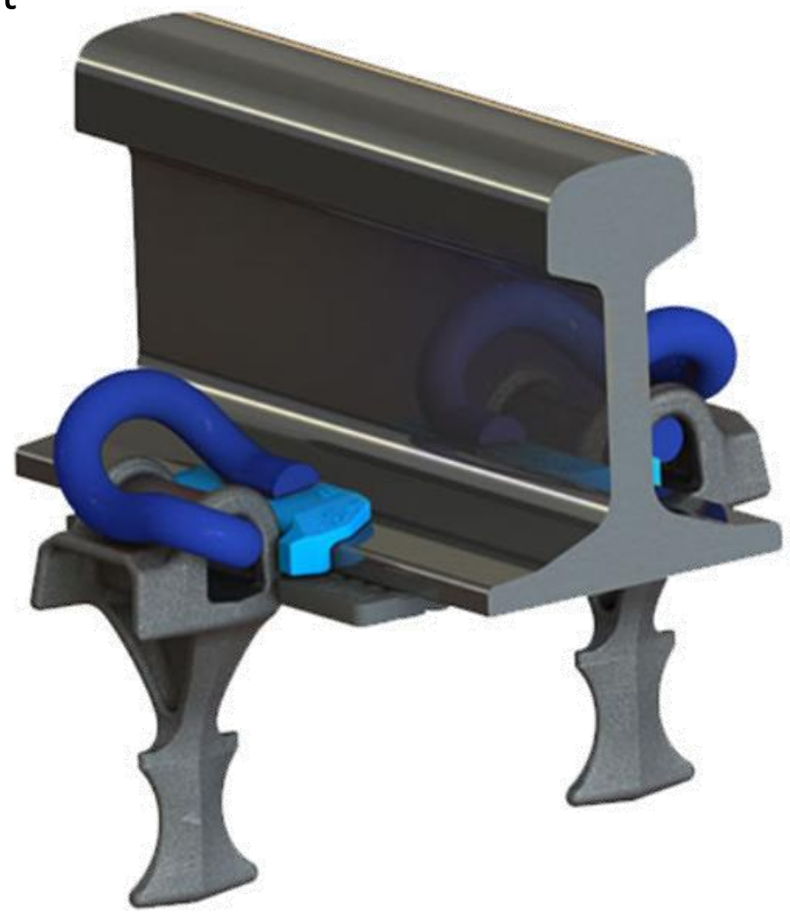
Excavated Materials Specification

- Excavated Materials Management Plan
- Must submit for approval an Environmental Consultant (Ma Registered LSP) to perform soil screening, soil sampling and compliance efforts.
- Quality Assurance / Quality Control Plan

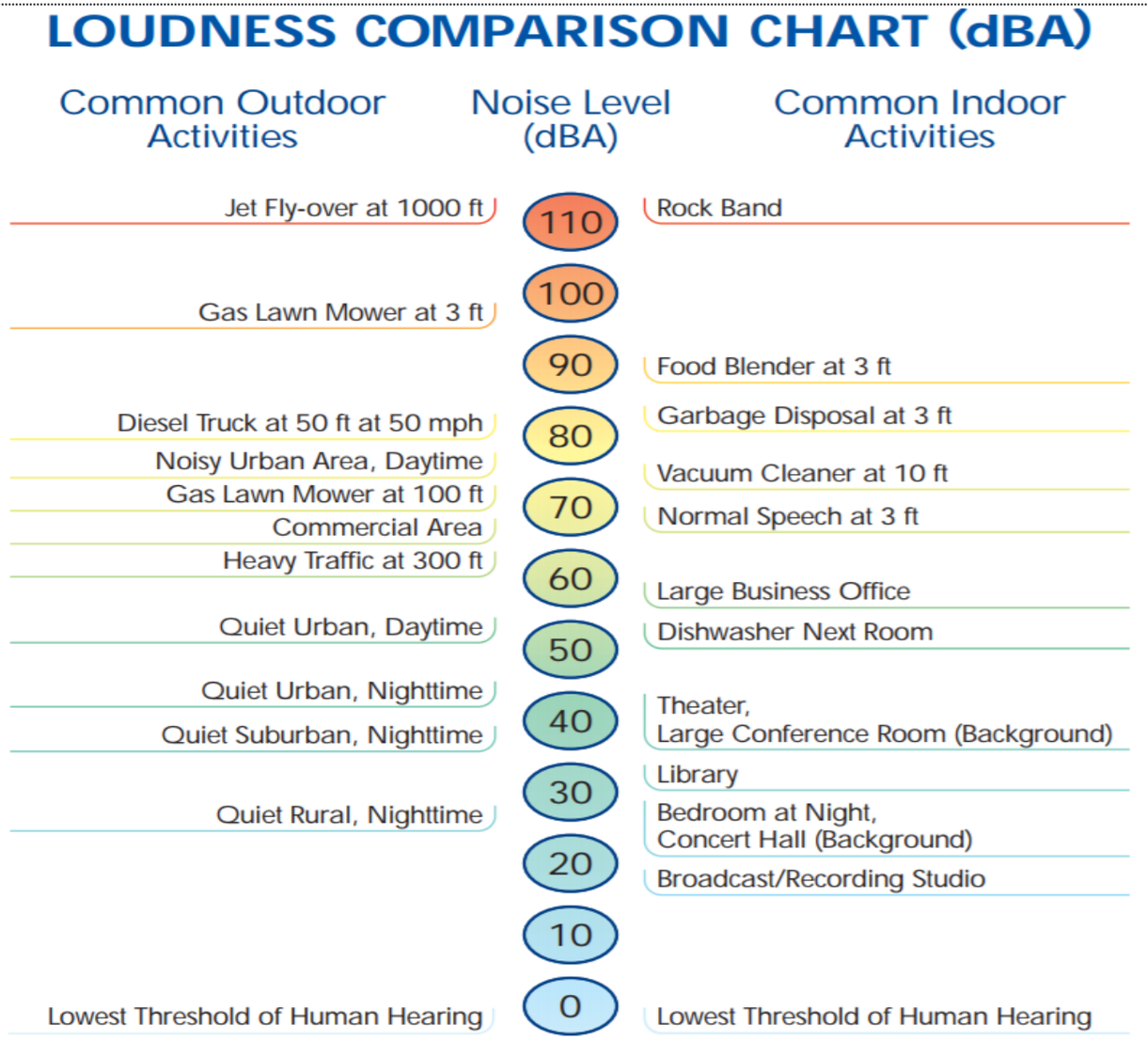
Environmental Considerations – Noise

Project will remove the old freight track and install a new test track. The following attributes will allow for noise reduction:

- Updated vehicle cars
- Refreshed track bed
- Resilient fasteners will help maintain a rigid connection
- Refreshed plan/profile of new track
- Third rail layout and insulators should reduce friction between vehicle shoes and third rail
- New vehicles will be quieter and lighter than heavy freight rail vehicles.



Environmental Considerations – Noise



Test Track Construction

A Baseline study is being performed in order to determine noise limits during construction. The noise criteria within specifications is 10 dB(A) above baseline (DEP noise regulation 310 CMR 7.10).

Environmental Considerations – Prior PCB Remediation at Yard 61

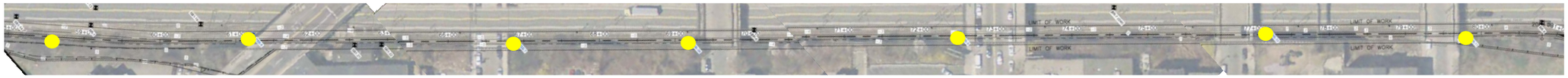
Yard 61

- (1992) PCB removal and remediation in preparation for the construction of the South Boston haul road for the central artery/tunnel project.
- (2014) Additional PCB removal and remediation.
- (2017) Investigation performed in planning for the proposed Red Line Test Track. Investigation consisted on deep and shallow borings (total of 8). No elevated levels of PCB detected in samples collected in Yard 61.

Vehicle Test Track

- Investigation performed in planning for the proposed Red Line Test Track (2017). Investigation consisted of deep and shallow borings (total of 7). No elevated levels of PCB detected in samples collected in track area adjacent to haul road.

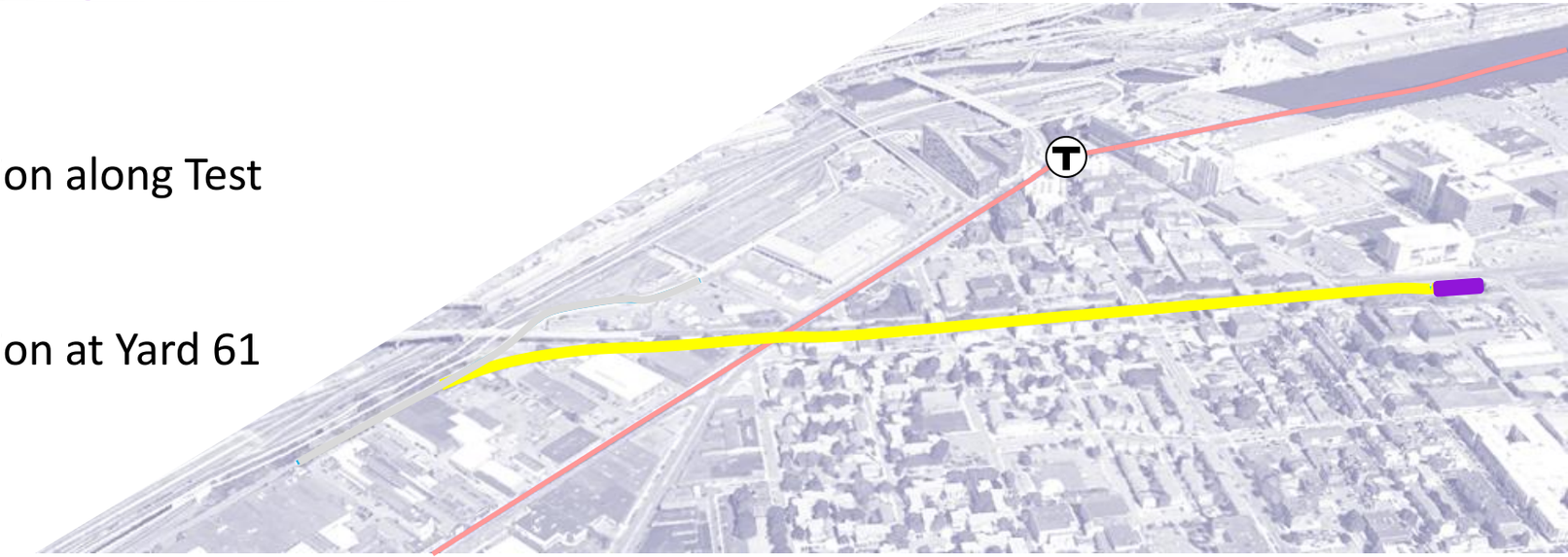
Environmental Considerations – Prior PCB Remediation at Yard 61



NOTE: No elevated levels of PCB's detected in samples collected in track area adjacent to haul road or Yard 61.

Legend

- Approximate boring location along Test Track
- Approximate boring location at Yard 61



Flaherty Park

Timelines

Track 61, Time Line and Expectations

- Testing will begin in 2019. Testing is expected to end in 2024. The total timeline is estimated at 60 months.
- Testing hours will be established as the Red Line car delivery gets closer.
- Noise will be monitored and mitigation, where necessary, will occur.
- The MBTA will employ up to 16 people to test the Red Line cars.

Red Line Infrastructure Program Schedule

2017 2018 2019

Red Line Test Track Construction

Notice to Proceed
Fall 2017

Vehicle Testing

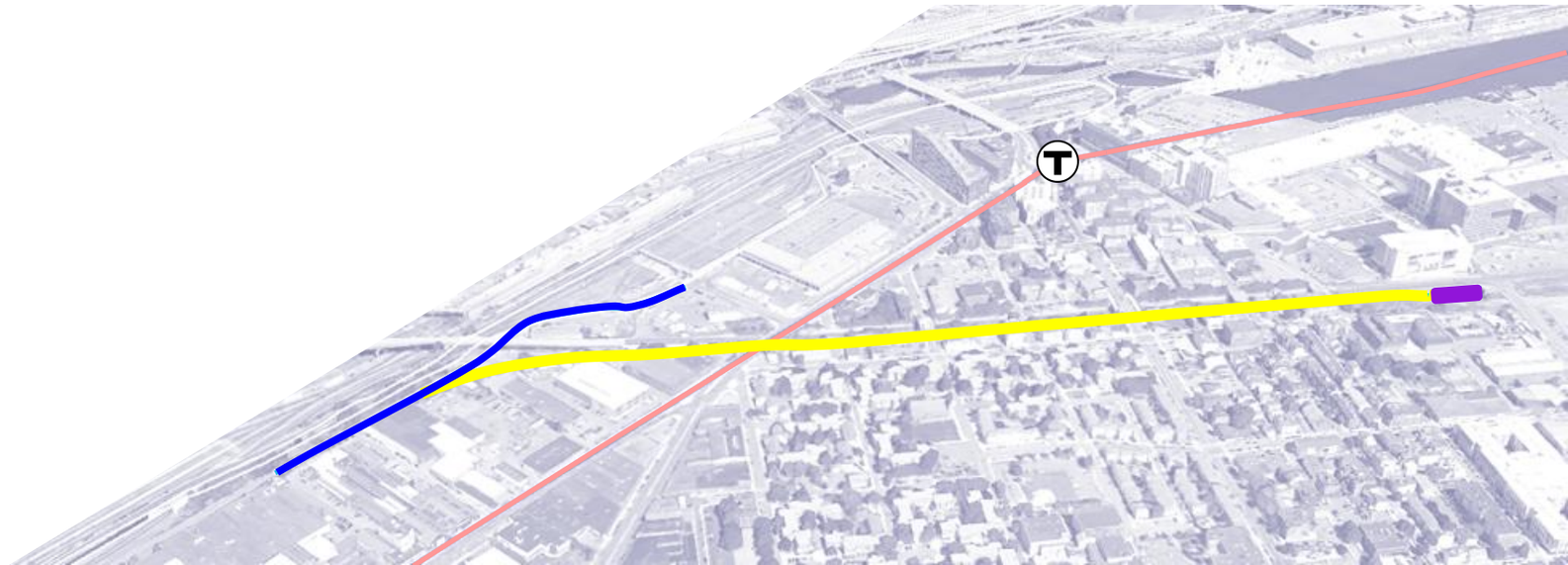
Pilot

1st Production

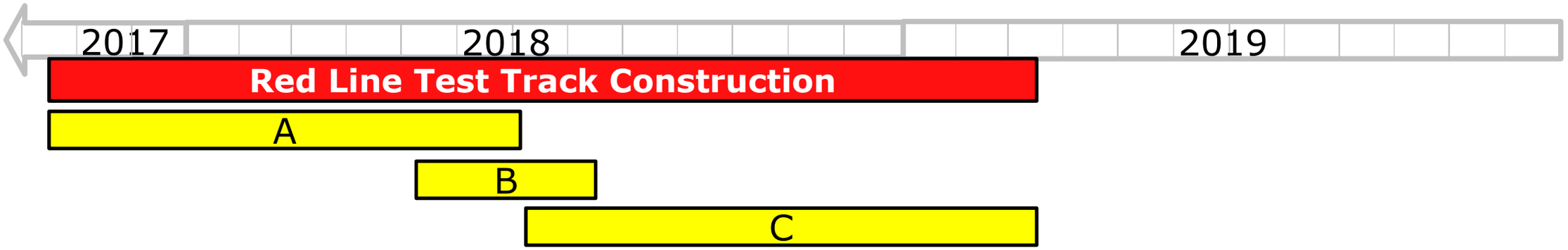
Test Track

Yard 61

Vehicle Access Track



Red Line Infrastructure Improvements Program Schedule



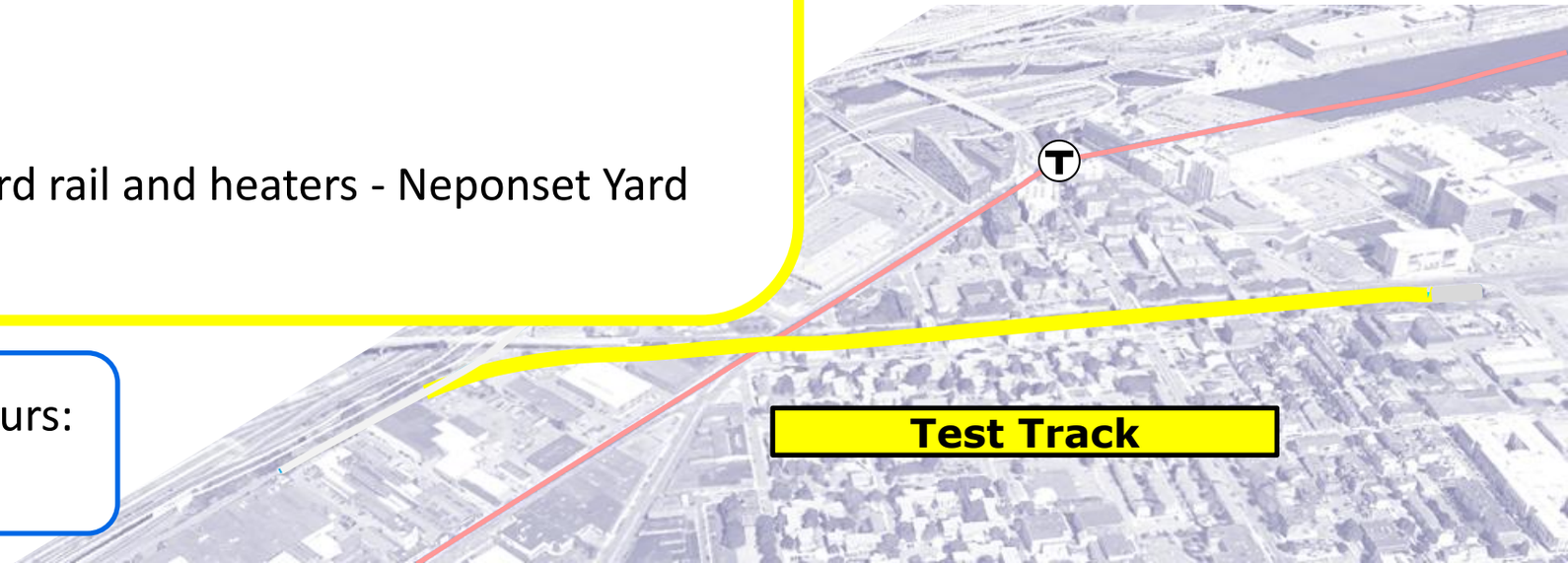
Adjacent to South Boston Haul Road

A. Mobilization, site preparation, and demolition of existing track

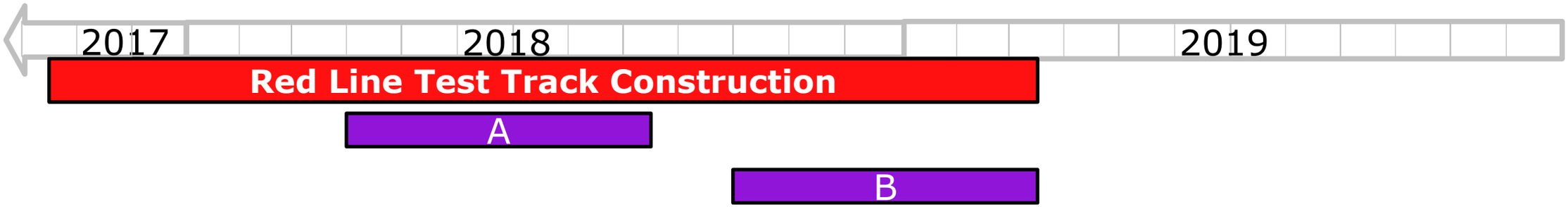
B. Set TPSS/Connect/Test

C. Complete Track work incl. 3rd rail and heaters - Neponset Yard through Yard 61

Anticipated Construction Hours:
First Shift / Second Shift



Red Line Infrastructure Improvements Program Schedule



Yard 61

A. Site Prep. Construct New Vehicle Testing Facility Foundations, pit and slab on grade. Install traction power sub station (TPSS) mobile electrical trailers. Connect and test.

B. Erect VTF, fit-out/Test/Inspect

Anticipated Construction Hours:
First Shift / Second Shift

Red Line Infrastructure Improvements Program Schedule

2017 | 2018 | 2019

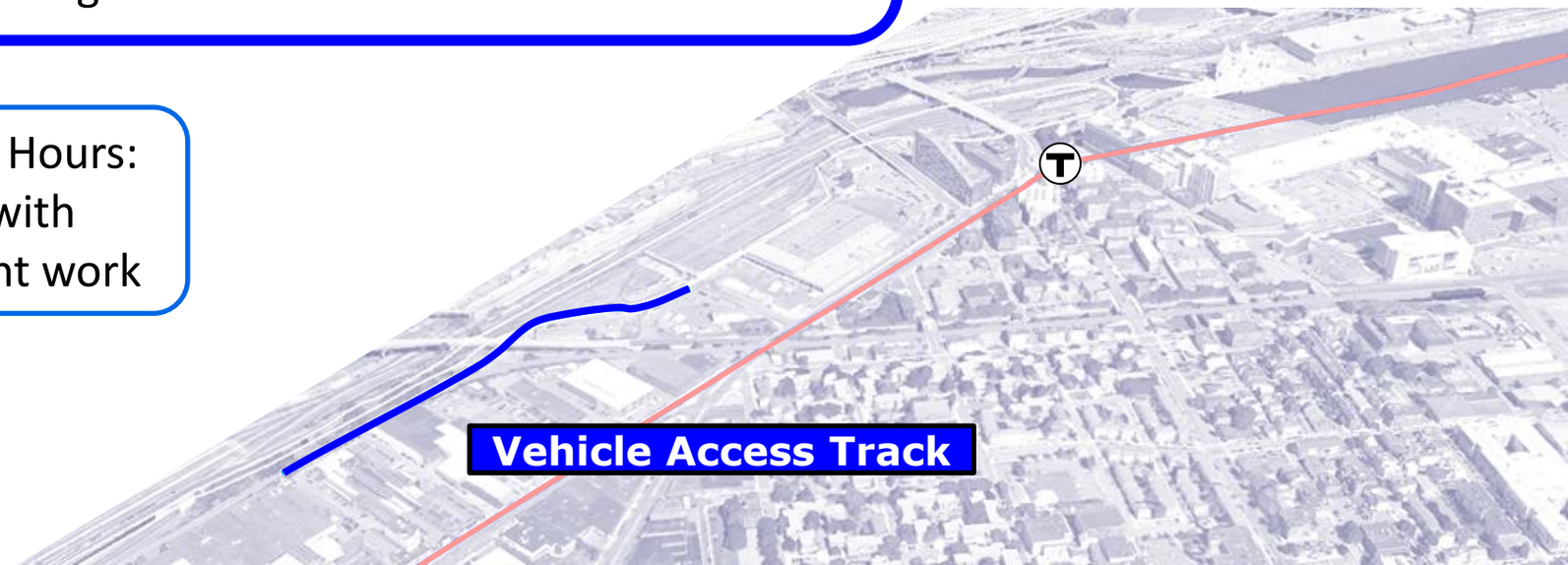
Red Line Test Track Construction

A

Vehicle Access Track at Cabot Yard

A. Construct Access Track at Cabot Yard including turnouts, 3rd rail & heaters. Construct retaining structure at Cabot Yard.

Anticipated Construction Hours:
First Shift / Second Shift with limited weekend and night work



Overall Timeline

- Design: **Winter/Spring 2017**
- Advertise: **August 2017**
- Construction**:** **Fall 2017 to Early 2019**
- Red Line Pilot Car Delivery**:** **Begins in Early 2019**
- Red Line Production Car Delivery: **Late 2019**
- End of Delivery/Acceptance: **Early 2024**
- Completion of Project: **Summer 2024**