



Massachusetts Bay Transportation Authority

Red Line/Orange Line Improvement Program Update

**Vehicle Procurement, Infrastructure Improvements,
State of Good Repair Improvements and Signal Upgrades**

April 02, 2018



OVERVIEW

The following summary provides an update to the Fiscal and Management Control Board on the progress of the Red Line/Orange Line Improvement Program; which includes new Vehicle Procurement, Infrastructure Improvements, State of Good Repair Improvements and Signal Upgrades.

This Program supports the MBTA's goal to improve the Level of Service on the Red Line and Orange Line.



Red Line/Orange Line Improvement Program

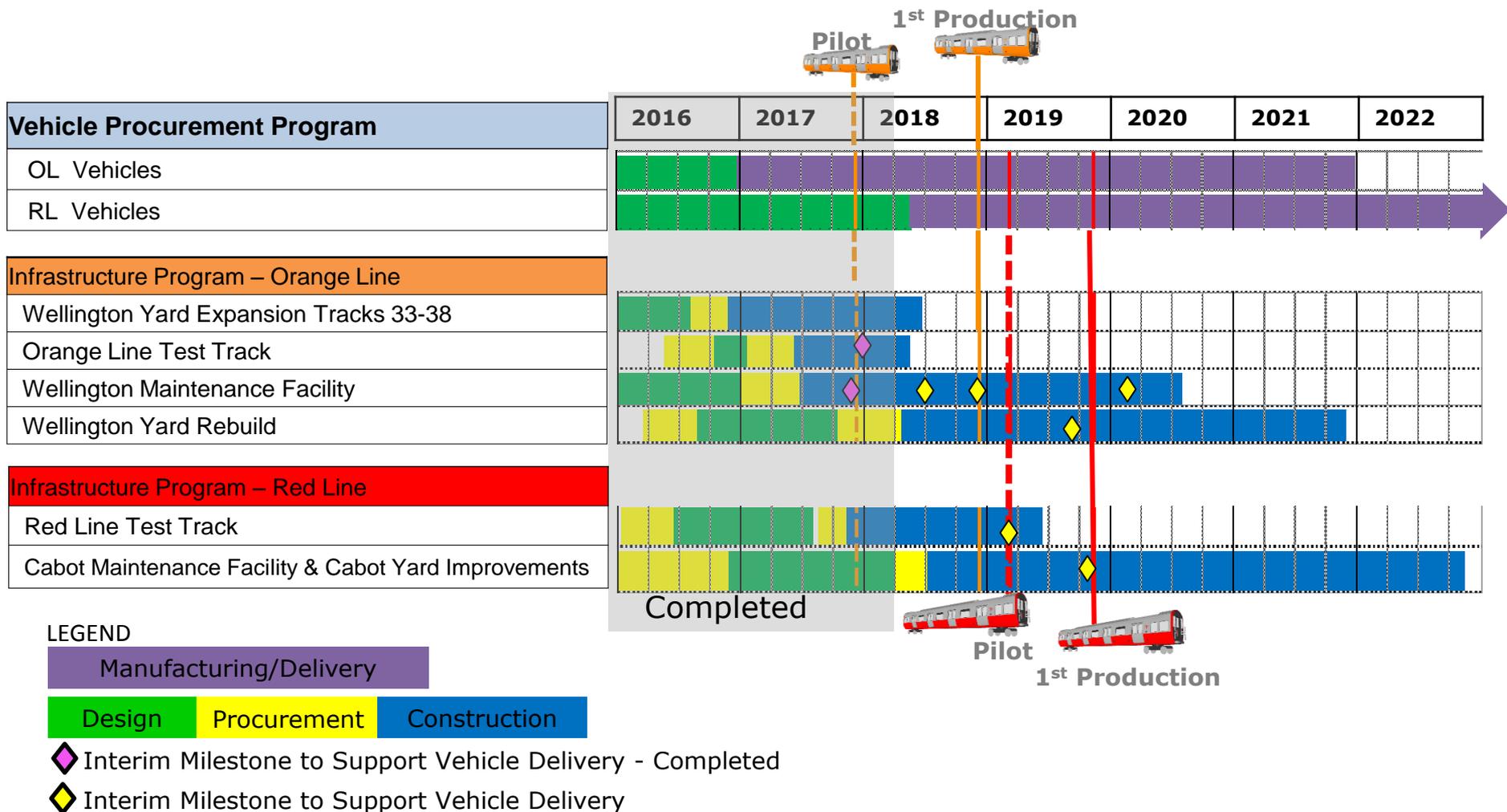
Red Line **Orange Line**

Total \$1,982.03M

NEW VEHICLE PROCUREMENT PROGRAM	\$1,009.00M
INFRASTRUCTURE IMPROVEMENTS PROGRAM	\$470.36M
SIGNALS UPGRADE PROJECTS	\$350.95M
STATE OF GOOD REPAIR PROJECTS	\$151.72M

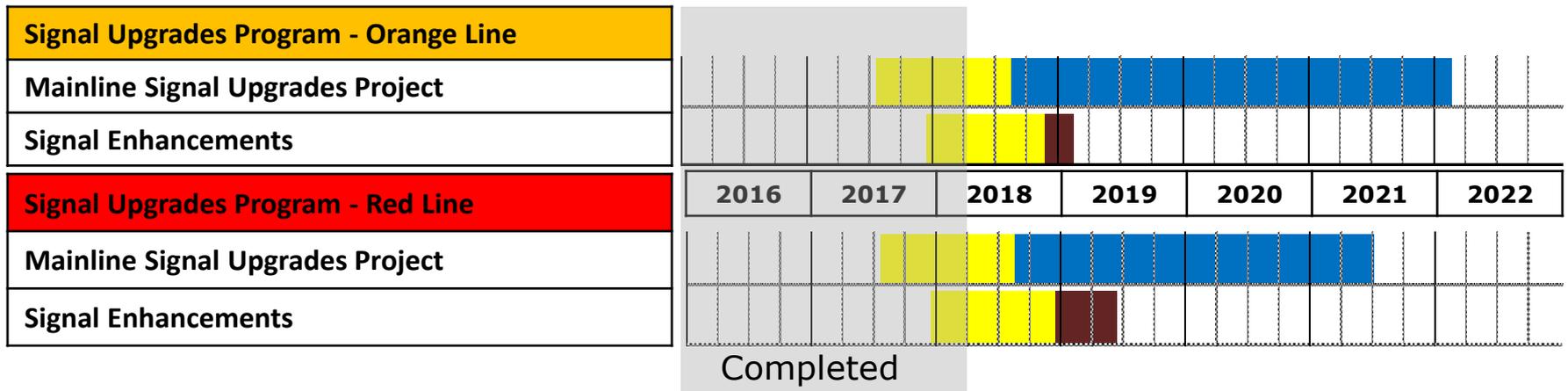


Red Line and Orange Line Schedule by Project





Red Line/Orange Line Schedule – Signals Upgrades



LEGEND





New Vehicle Procurement Program

New Vehicle Procurement Program

Total Project Value: \$ 1,009,871,671

Expenditure to date: \$ 152,862,655

Carbuilder Percent Complete: 16.7%



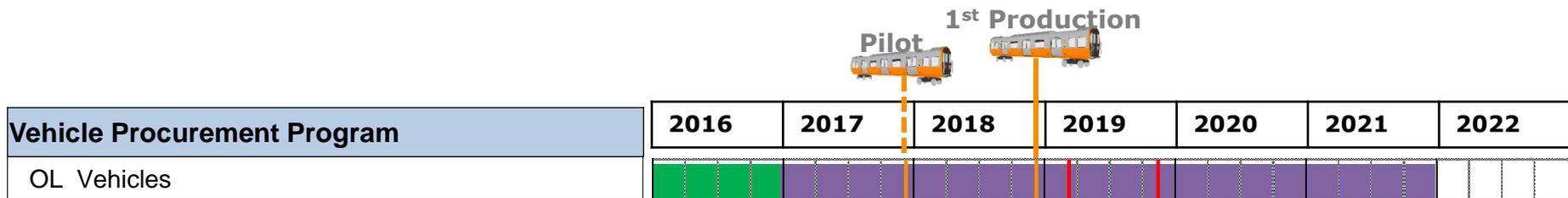
- Replace 218 Red Line cars
- 34 new cars
- Total = 252 vehicles



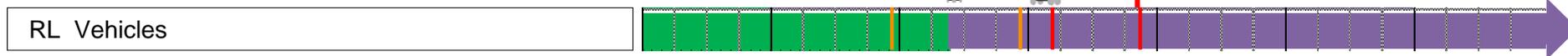
- Replace 120 Orange Line cars
- 32 new cars
- Total = 152 vehicles



Vehicle Procurement Project Status – Current/Look Ahead



- OL Pilot Car Qualification & Acceptance Testing - (through December 2018)
- OL Final Assembly Starts (Springfield MA) - (April 2018)
- OL Production Delivery Starts - (December 2018)



- RL Design Review Meetings - (January 2018)
- RL Evaluation of Mock-Up - (March 2018)
- RL Carbody Testing - (May 2018)
- RL Delivery of Pilot Cars - (March 2019)

LEGEND





Orange Line Vehicle Procurement Project Status

Wellington - On December 20, 2017, the MBTA received the first 4 Orange Line Cars (pilots) at Wellington Carhouse. The cars have moved into qualification testing and are expected to begin Dynamic Testing the end of the March.

Changchun - MBTA will be inspecting the remaining 4 Pilot Cars to validate the updated design. The cars will then undergo high speed and EMI testing utilizing CRRC's dedicated test track. This testing will be completed prior to shipment to Boston.





Orange Line Vehicle Procurement Project Status

Changchun - Car shell fabrication is ongoing in China. The shells will be shipped to support production in the Springfield, MA. Facility. The first 4 production car shells are already enroute to the United States.





Red Line Vehicle Procurement Project Status

The Red Line design process cars is continuing. Interior and cab Final Design meetings are scheduled for the week of March 26, 2018 in Changchun, China. During that visit, the MBTA will also review of the Red Line mock-up (shown right).

Carbody Final Design Meetings were held in Changsha, China during the week of March 19, 2018. Structural carshell testing is on schedule for performance in May 2018. Construction of the Red Line test carshell is already underway





Orange Line Projects: Wellington Yard Expansion Tracks 33 to 38

JF White

Construction NTP: 12/05/2016

Construction Substantial Completion:

Contractual: 06/23/18

Projected: 12/23/18 *

Construction Budget: \$17,977,777

Construction Expenditures to Date: \$4,833,403

Construction Percent Complete: 32%

* Adjusted to account for unforeseen environmental work



Pre-plating Operation



Switches 361 - 359 - 357 Preassemble



Orange Line Projects: Orange Line Test Track

LM Heavy

Construction NTP: 06/20/17

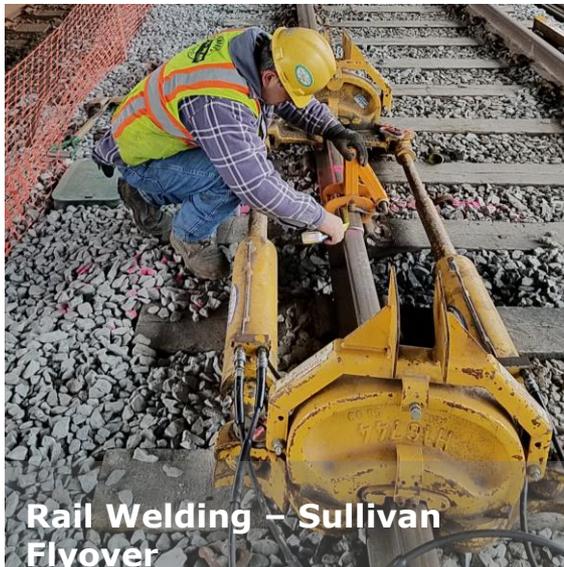
Construction Substantial Completion:
Contractual: 09/11/18
Projected: 06/15/18

Construction Budget: \$5,867,000

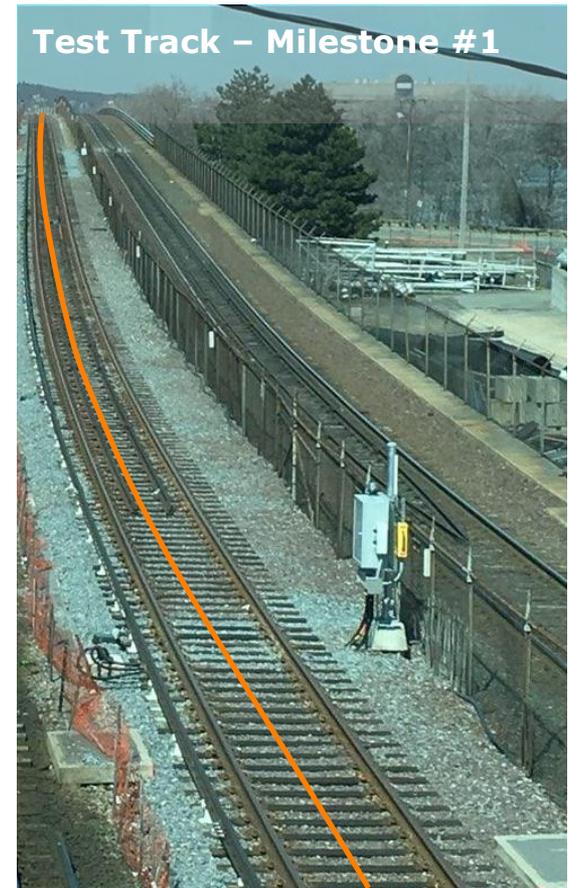
Construction Expenditures to Date: \$3,911,832

Construction Percent Complete: 87%

* Forecast completing 3 months ahead of schedule



**Rail Welding – Sullivan
Flyover**



Test Track – Milestone #1



Orange Line Projects: Wellington Maintenance Facility

Barletta Heavy Division

Construction NTP: 06/30/17

Construction Substantial Completion:

Contractual: 08/04/20

Projected: 08/04/20

Construction Budget: \$72,582,000

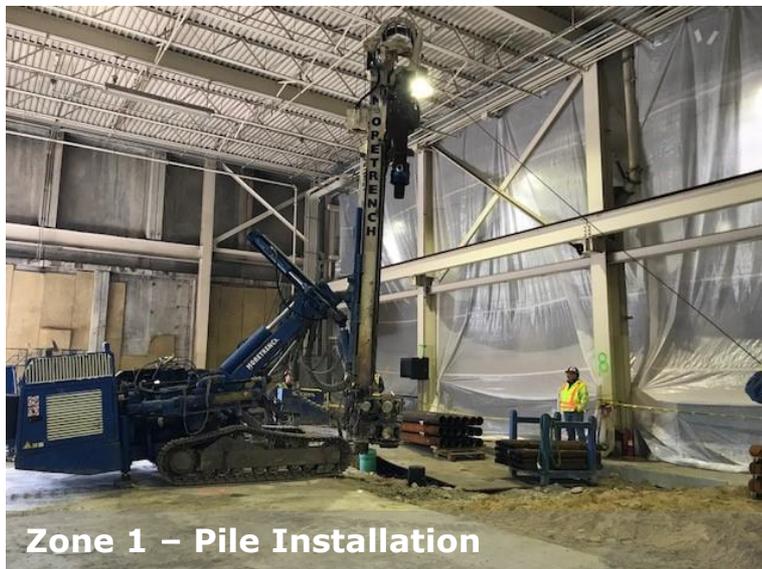
Construction Expenditures to Date: \$2,150,974

Construction Percent Complete: 8%

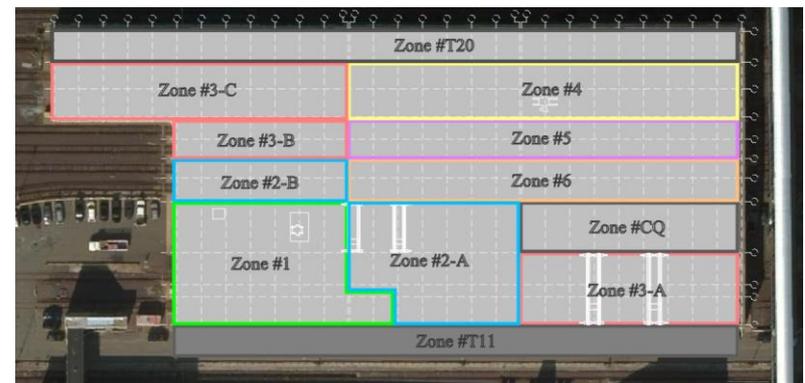
* Forecast completing on schedule



Zone 1 – Excavation for Electronics Building



Zone 1 – Pile Installation





Orange Line Projects: Wellington Yard Rebuild

HNTB

Design 100%: 10/16/17

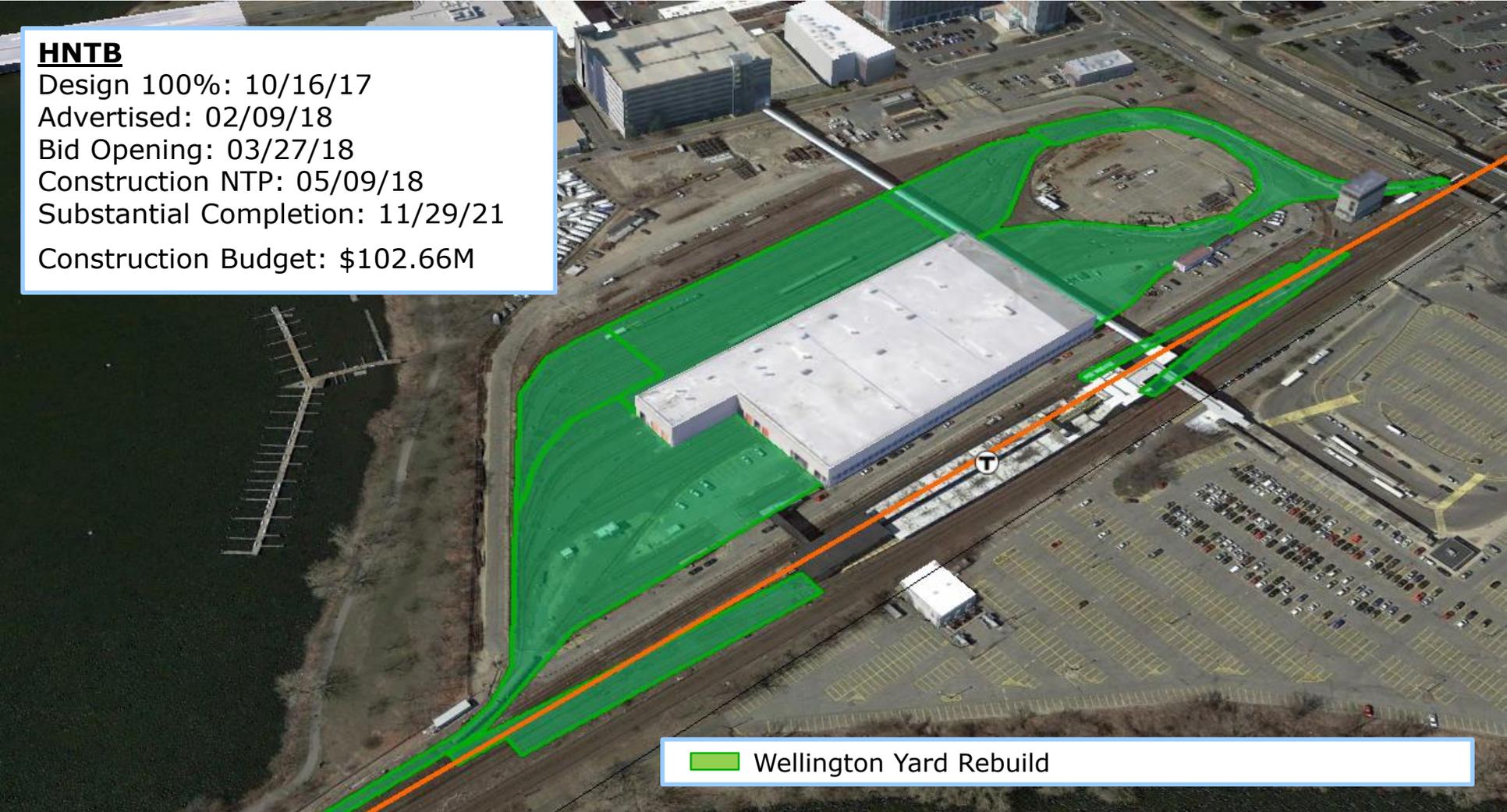
Advertised: 02/09/18

Bid Opening: 03/27/18

Construction NTP: 05/09/18

Substantial Completion: 11/29/21

Construction Budget: \$102.66M



 Wellington Yard Rebuild



Red Line Projects: Red Line Test Track

Barletta Heavy Division

Construction NTP: 11/17/17

Construction Substantial Completion:

Contractual: 02/20/19

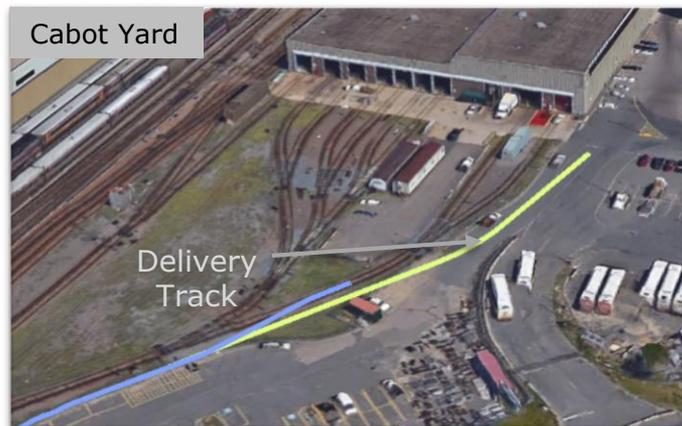
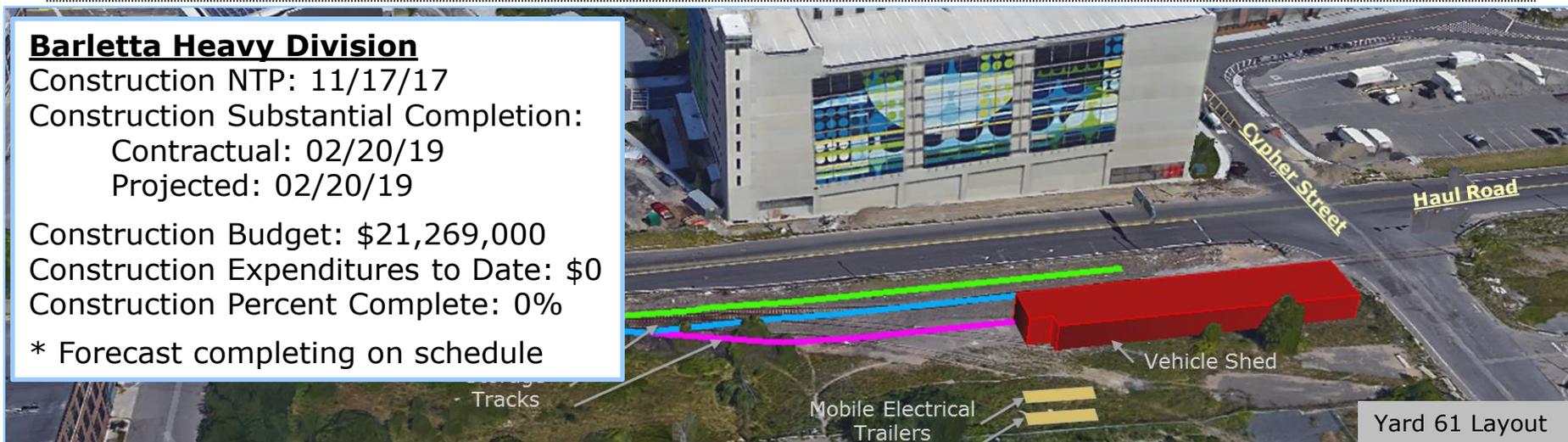
Projected: 02/20/19

Construction Budget: \$21,269,000

Construction Expenditures to Date: \$0

Construction Percent Complete: 0%

* Forecast completing on schedule





Red Line Projects: Cabot Yard & Maintenance Facility Improvements

Jacobs & HNTB

Contractor Forum: 02/07/18

Advertisement: April 2018

Construction NTP: July 2018

Substantial Completion: 11/30/21

Estimated Construction Budget: \$216M



 Cabot Yard & Maintenance Facility Improvements





Signals Upgrade Projects Status

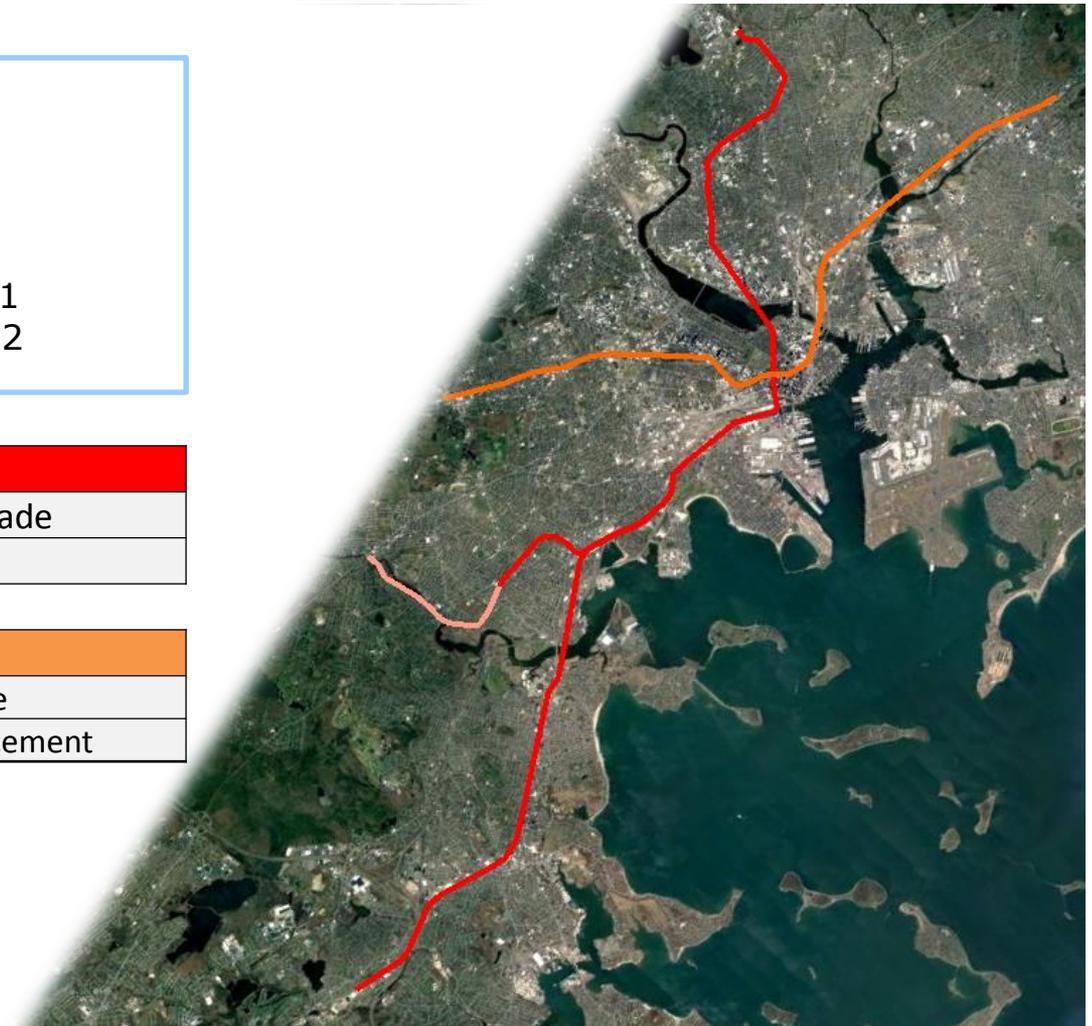
RFLOI – 08/29/2017
RFQ/SOQ – 10/02/17
Short List Proposers – 1/16/18
RFP Issued – 02/12/18
NTP – 08/30/18
Substantial Completion RL – 07/07/21
Substantial Completion OL – 02/23/22

Red Line

RL Signaling and Train Control System Upgrade
RL Columbia Junction Phase II

Orange Line

OL Signaling and Train Control System Upgrade
OL South West Corridor Wayside Signal Replacement





State of Good Repair Projects Status – Bridge Hardening

Status

Bridge Repairs

RL Substantial Completion – 9/01/18

OL Substantial Completion – 8/01/18

Long Fellow Approach – Interim Repairs

Substantial Completion – 11/10/18

Red Line

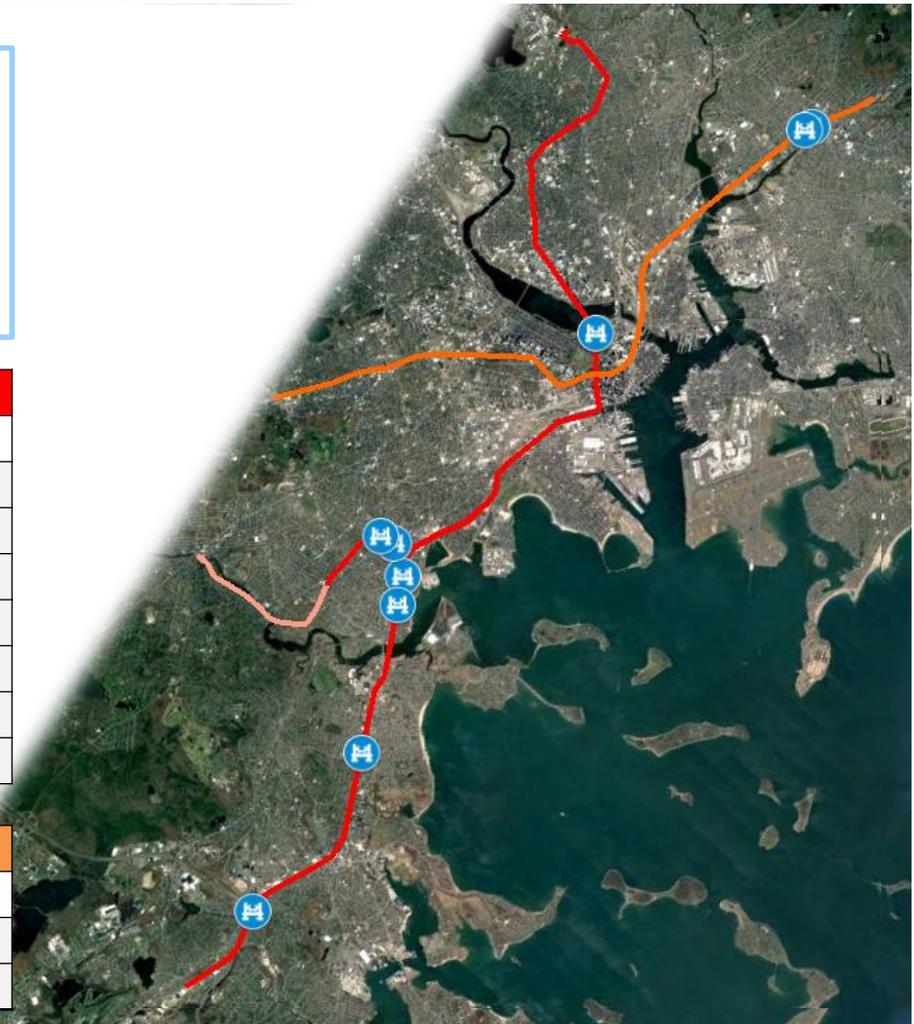
Bridge Repairs

- Granite Spur-B-21-069 (A23)
- Conley St.-B-16-136 (A38)
- Fields Corner Busway-B-16-418 (A3N)
- Wollaston Station-Q-01-028 (74K)
- Victory Rd -B-16-134 (A36)
- Geneva Ave-B-16-142 (A3D)
- Long Fellow Approach - Interim Repairs

Orange Line

Bridge Repairs

- Charles Street-M-01-003 (85)
- Adams Street-M-01-002 (85J)





Vehicle Procurement & Improvement Program Collaboration

- Early involvement and collaboration with preparation of the Infrastructure Improvement Strategic Program Plan lead to:
 - Definition of support categories: testing, storage, maintenance and reliability
 - Interim milestones to support the vehicle arrival
 - Scope in the Improvements Program to accommodate maintenance of the New Vehicle Features (overhead platforms, vehicle diagnostic room, Wifi, etc.)
- Coordination meetings with Program Managers and PM/CM Interface Manger
- Development of vehicle storage models to analyze storage impacts due to both New Vehicle commissioning schedule and construction contracts in the Infrastructure Improvements Program.
- Pilot Vehicle Delivery Assessment and logistic coordination
- Assessment of Vehicle Delivery at Cabot Yard proposed delivery track



Collaboration – Vehicle Delivery at Proposed Red Line Delivery Track

Delivery Track – Access to Cabot Yard Test Track

