



**Massachusetts Bay
Transportation Authority**

Red Line/Orange Line Improvement Program Update

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

January 8, 2018



OVERVIEW

Today's presentation provides an update to the Fiscal and Management Control Board on the progress of the Red Line/Orange Line Improvement Program as relates to Infrastructure Improvements necessary to support delivery of the new Red Line and Orange Line vehicles, State of Good Repair (SOGR) improvements and Signal Upgrades.



Red Line/Orange Line Improvement Program

Red Line

Orange Line

NEW VEHICLE PROCUREMENT PROGRAM

**INFRASTRUCTURE IMPROVEMENTS
PROGRAM**

STATE OF GOOD REPAIR PROJECTS

SIGNALS UPGRADE PROJECTS



Orange Line Projects



Draft for Discussion & Policy Purposes Only



Orange Line Projects: Wellington Yard Expansion Tracks 33 to 38

JF White

Construction NTP: 12/05/2016

Construction Substantial Completion:

Contractual: 06/23/18

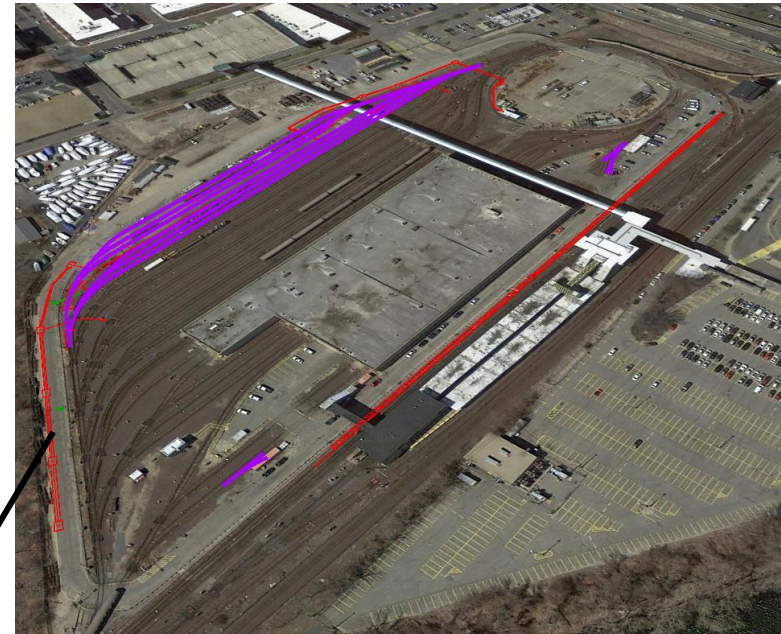
Projected: 06/23/18 (under review)

Construction Budget: \$17,977,777

Construction Expenditures to Date: \$1,012,667

Construction Percent Complete: 27%

* Anticipate completing approx. 3 months behind schedule due to unforeseen environmental work





Orange Line Projects: Orange Line Test Track

LM Heavy

Construction NTP: 06/20/17

Construction Substantial Completion:

Contractual: 09/11/18

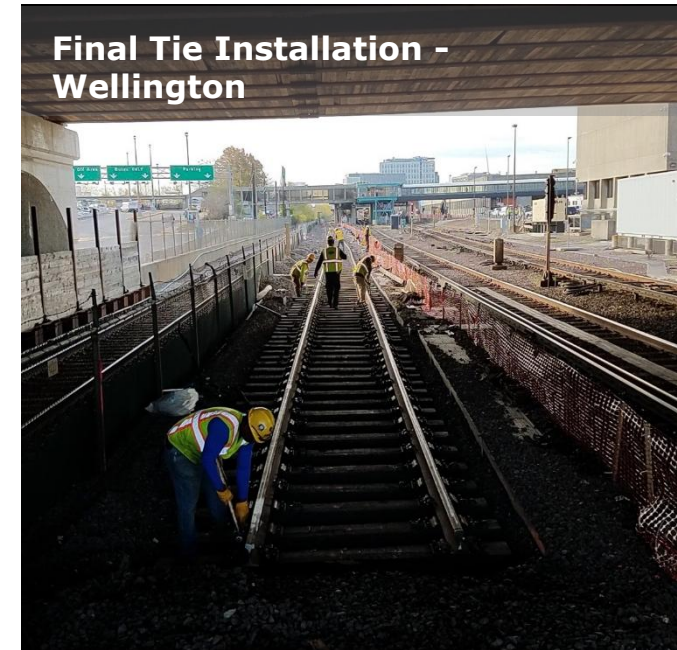
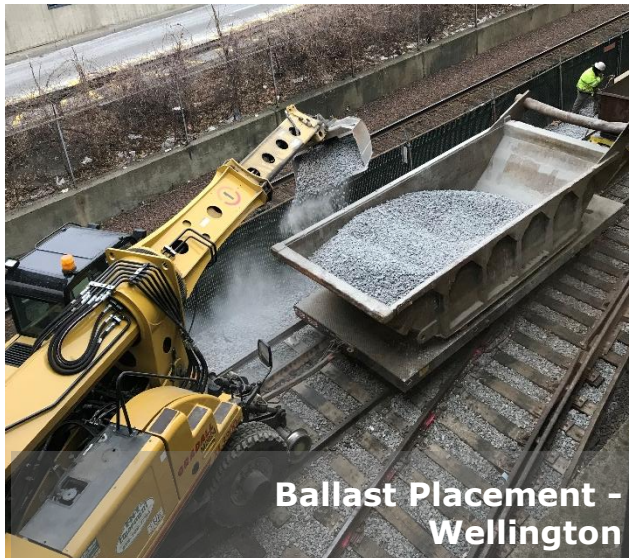
Projected: 05/07/18

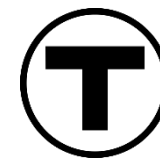
Construction Budget: \$5,867,000

Construction Expenditures to Date: \$2,162,309

Construction Percent Complete: 84%

* Forecast completing 4 months ahead of schedule





Orange Line Projects: Wellington Maintenance Facility

Barletta Heavy Division

Construction NTP: 06/30/17

Construction Substantial Completion:

Contractual: 08/04/20

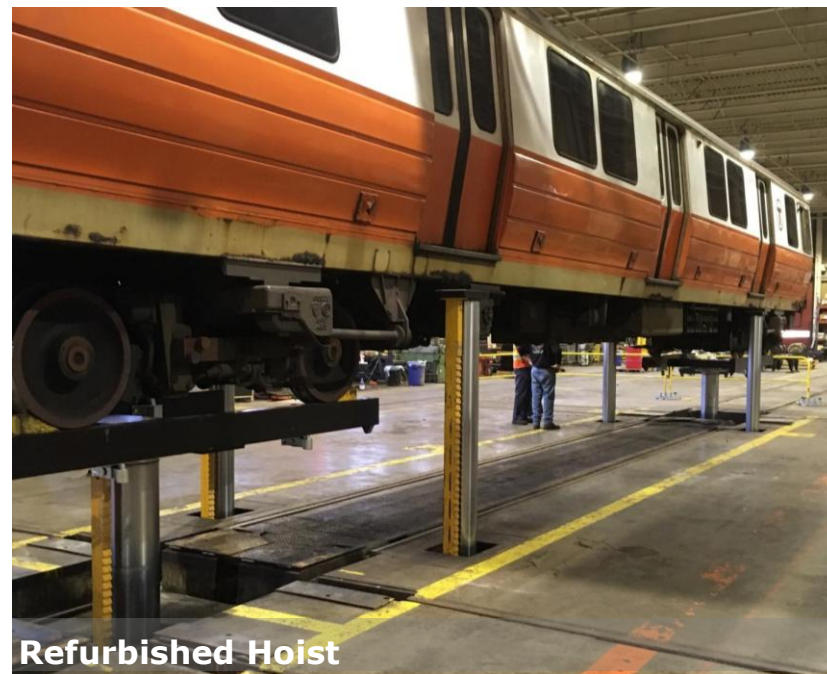
Projected: 08/04/20

Construction Budget: \$72,582,000

Construction Expenditures to Date: \$1,378,404

Construction Percent Complete: 5%

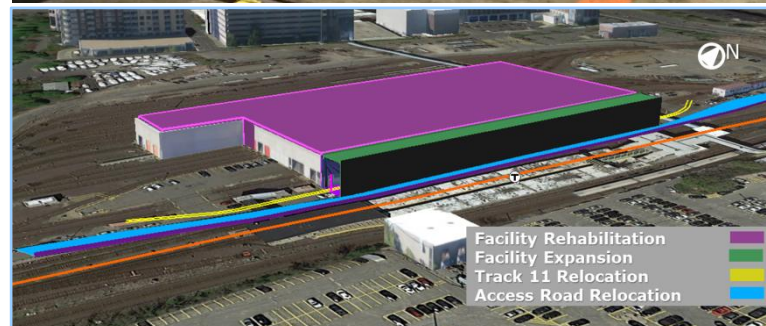
* Forecast completing on schedule

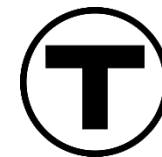


Refurbished Hoist



Proposed Road – Utility Relocation





Orange Line Projects: Wellington Yard Rebuild

HNTB

Design 100%: 10/16/17

Advertisement: 01/24/18

Construction NTP: 04/23/18

Substantial Completion: 12/20/21

Estimated Construction Budget: \$104M

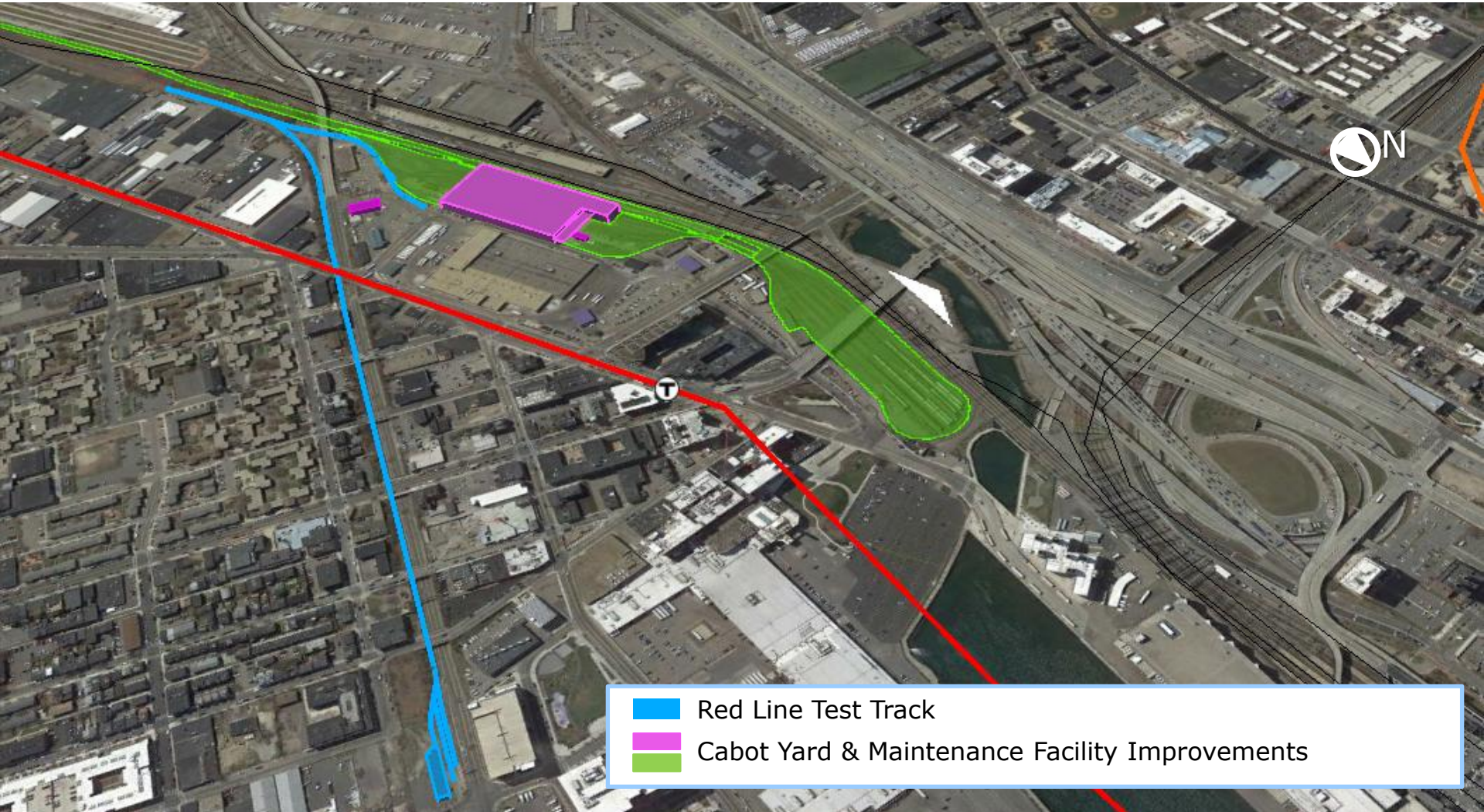


Wellington Yard Rebuild

Draft for Discussion & Policy Purposes Only

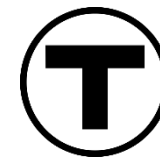


Red Line Projects



- Red Line Test Track
- Cabot Yard & Maintenance Facility Improvements

Draft for Discussion & Policy Purposes Only



Red Line Projects: Red Line Test Track

Barletta Heavy Division

Construction NTP: 11/17/17

Construction Substantial Completion:

Contractual: 02/20/19

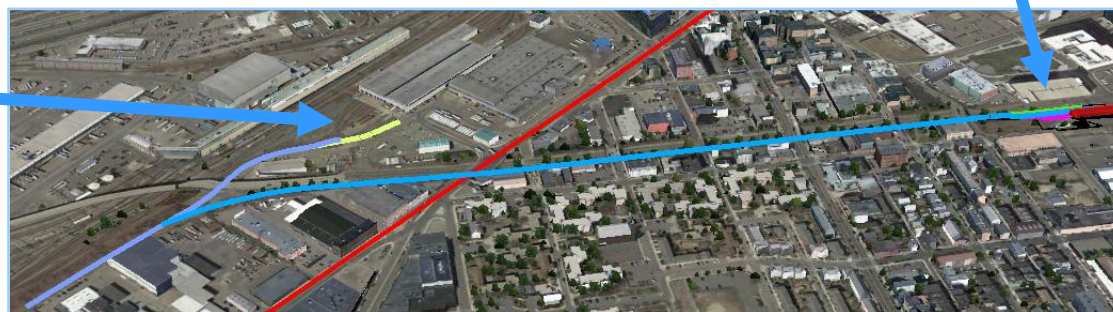
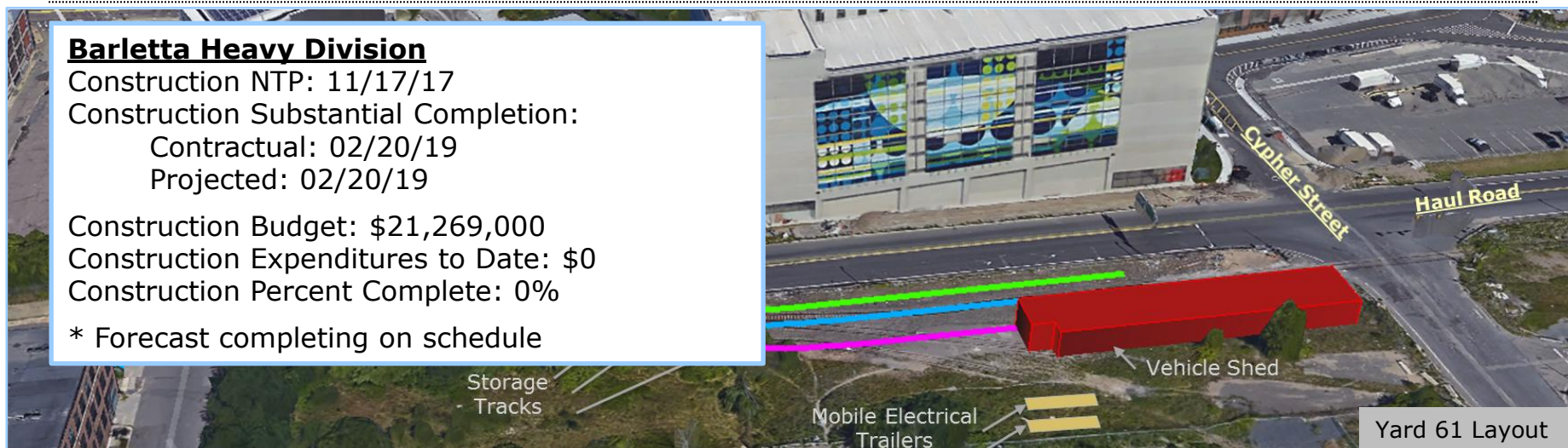
Projected: 02/20/19

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

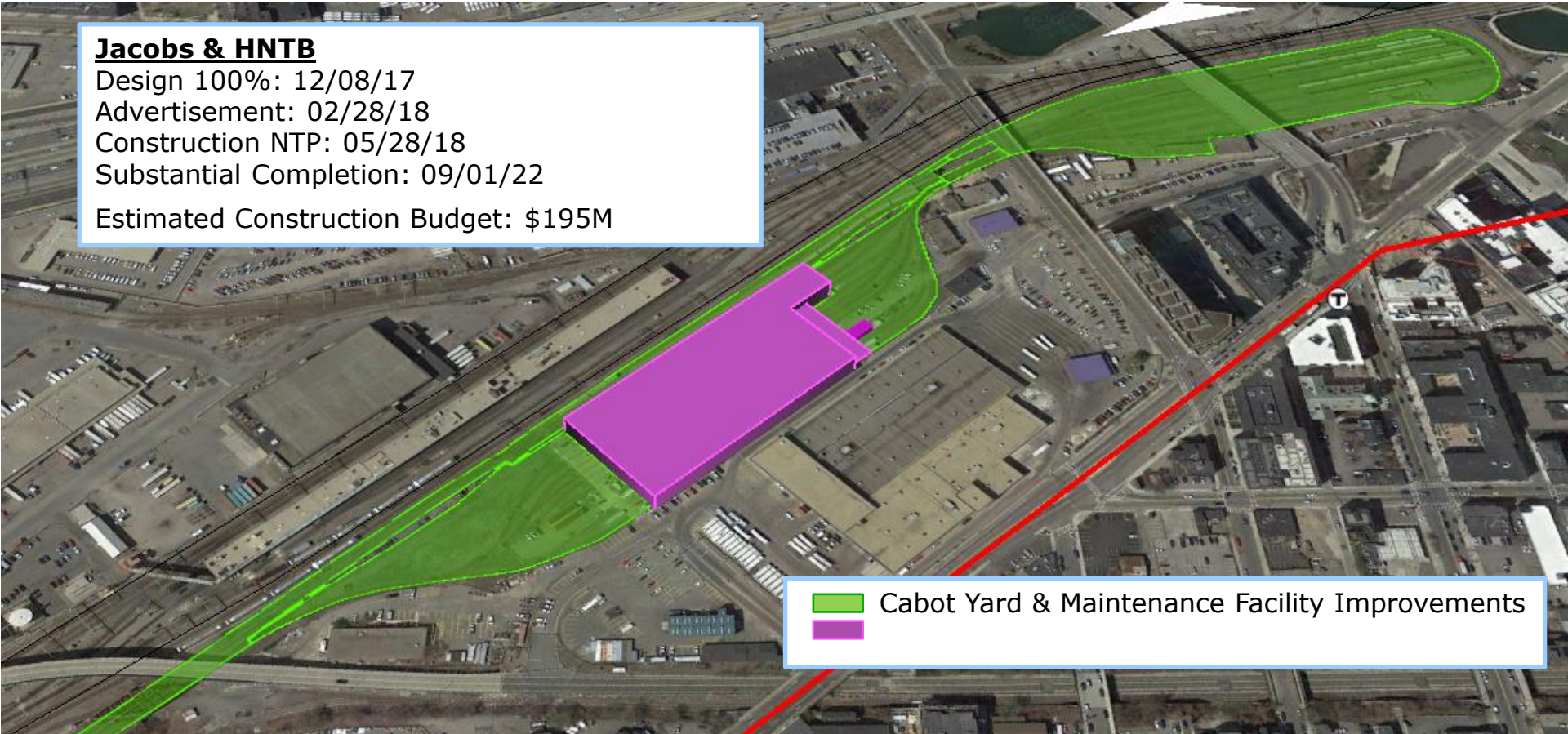
Design 100%: 12/08/17

Advertisement: 02/28/18

Construction NTP: 05/28/18

Substantial Completion: 09/01/22

Estimated Construction Budget: \$195M



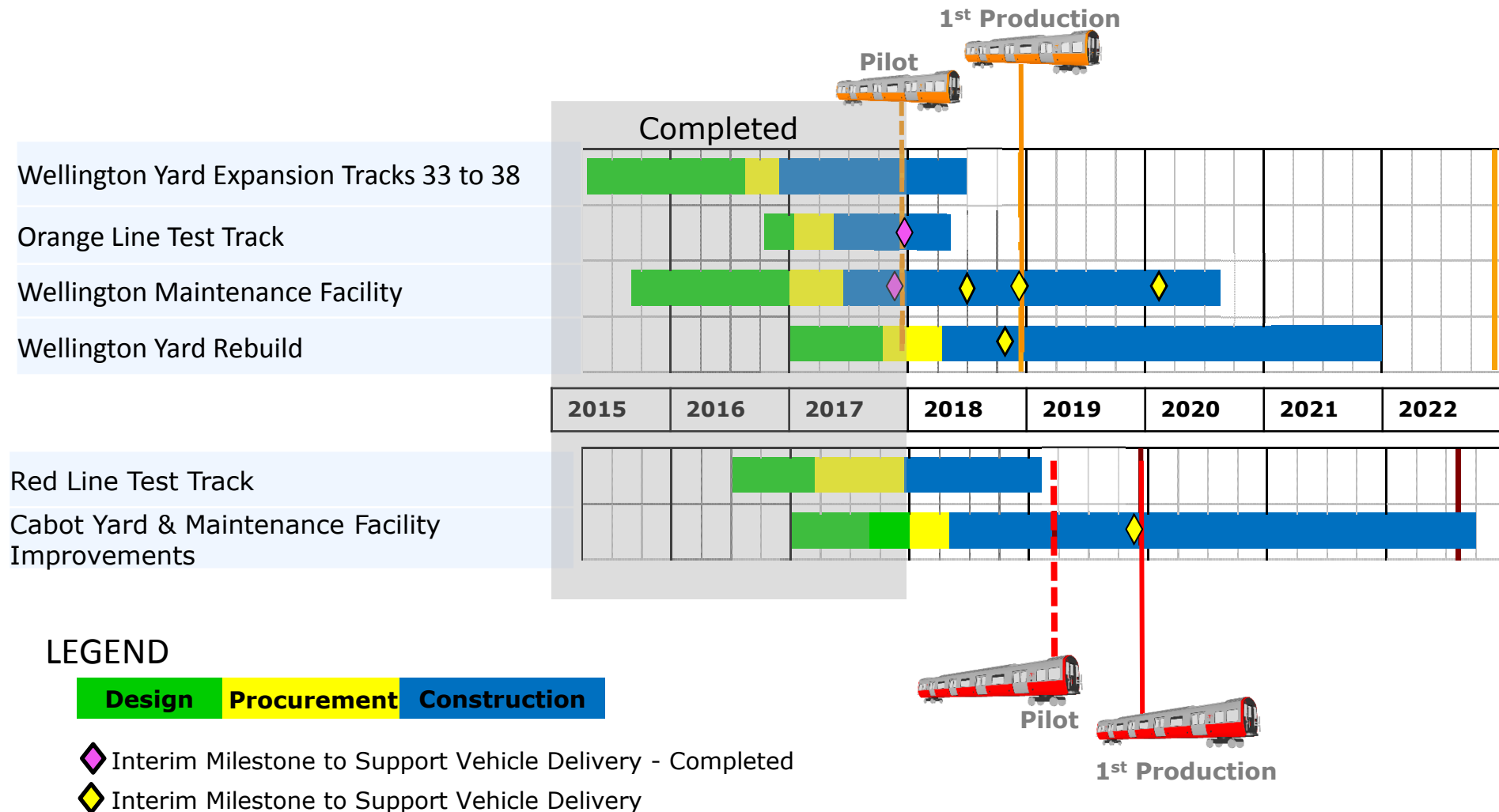
 Cabot Yard & Maintenance Facility Improvements



 Cabot Yard & Maintenance Facility Improvements



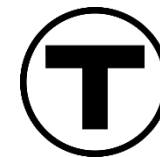
Red Line and Orange Line Infrastructure Schedule by Project





Red Line and Orange Line Infrastructure Budget and Spend Forecast

	Prior to FY2018	Anticipated Spending					TOTAL Budget/ Spend
		FY2018	FY2019	FY2020	FY2021	Post 2021	
Infrastructure Program							
Wellington Yard Expansion - Tracks 33 to 38	\$ 1.77 M	\$ 14.25 M	\$ 6.35 M				\$ 22.37 M
Orange Line Test Track	\$ 0.96 M	\$ 6.19 M	\$ 0.65 M				\$ 7.80 M
Wellington Maintenance Facility	\$ 3.93 M	\$ 11.32 M	\$ 28.10 M	\$ 30.94 M	\$ 12.49 M	\$ 0.11 M	\$ 86.89 M
Wellington Yard Rebuild Vehicle Critical - Infrastructure	\$ 1.39 M	\$ 4.81 M	\$ 34.47 M	\$ 8.55 M			\$ 49.22 M
Signal Systems OL Enhancements		\$ 0.85 M	\$ 0.07 M				\$ 0.92 M
Red Line Test Track	\$ 1.57 M	\$ 2.44 M	\$ 19.34 M	\$ 2.05 M			\$ 25.40 M
Cabot Maintenance Facility	\$ 0.97 M	\$ 2.57 M	\$ 36.78 M	\$ 33.14 M	\$ 29.23 M	\$ 8.90 M	\$ 111.59 M
Cabot Yard Rebuild Vehicle Critical - Infrastructure	\$ 1.55 M	\$ 4.39 M	\$ 31.58 M	\$ 16.93 M			\$ 54.45 M
Signal Systems RL Enhancements		\$ 0.16 M	\$ 1.80 M	\$ 0.52 M			\$ 2.48 M
RL/OL Program Level (PM/CM, OR & Project Admin.)	\$ 19.72 M	\$ 10.77 M	\$ 6.03 M	\$ 7.73 M	\$ 6.15 M	\$ 10.08 M	\$ 60.48 M
Unallocated Contingency				\$ 14.28 M	\$ 20.77 M	\$ 13.71 M	\$ 48.76 M
Infrastructure Program Total:	\$ 31.86 M	\$ 57.75 M	\$ 165.17 M	\$ 114.14 M	\$ 68.64 M	\$ 32.80 M	\$ 470.36 M
Yards SOGR & Signal Upgrades							
Wellington Yard Rebuild SOGR - Infrastructure				\$ 43.14 M	\$ 23.16 M		\$ 66.30 M
Wellington Yard Rebuild - Signal Control System	\$ 0.08 M	\$ 1.10 M	\$ 4.79 M	\$ 8.59 M	\$ 10.27 M	\$ 8.57 M	\$ 33.40 M
Cabot Yard Rebuild SOGR - Infrastructure				\$ 8.86 M	\$ 40.87 M	\$ 24.83 M	\$ 74.56 M
Cabot Yard Rebuild - Signal Control System	\$ 0.12 M	\$ 1.43 M	\$ 8.15 M	\$ 16.70 M	\$ 16.78 M	\$ 6.74 M	\$ 49.92 M
RL/OL Program Level SOGR (PM/CM, OR & Project Admin.)				\$ 3.95 M	\$ 4.96 M	\$ 1.95 M	\$ 10.86 M
Yards SOGR & Signal Upgrades Total:	\$ 0.20 M	\$ 2.53 M	\$ 12.94 M	\$ 81.24 M	\$ 96.04 M	\$ 42.09 M	\$ 235.04 M
Total	\$ 32.06 M	\$ 60.28 M	\$ 178.11 M	\$ 195.38 M	\$ 164.68 M	\$ 74.89 M	\$ 705.40 M



Red Line and Orange Line Signal Upgrades Program Update

	Total Budget/ Spend	Description	Procurement
Signal Upgrades as part of SOGR			
Wellington Yard Rebuild - Signal Control System	\$ 33.40 M	Replace existing train control system within Wellington Yard with latest generation equipment.	Advertise Jan. 2018 as part of Wellington Yard Rebuild project
Cabot Yard Rebuild - Signal Control System	\$ 49.92 M	Replace existing train control system within Cabot Yard with latest generation equipment.	Advertise Feb. 2018 as part of Cabot Yard & Maintenance Facility Improvements project
RLOL Signal Upgrades Design-Build Project			
Orange Line Signaling and Train Control Systems Upgrade	\$ 72.70 M	Replace all existing audio frequency track circuits with latest generation equipment and microprocessor based signal control systems.	Design Build Proposals due Spring 2018
Southwest Corridor Wayside Signal Replacement	\$ 39.34 M	Replace-in-kind all cabling, switch machines, and signals along the OL Southwest Corridor.	
Red Line Signaling and Train Control Systems Upgrade	\$ 77.15 M	Replace all existing audio frequency track circuits with latest generation equipment and microprocessor based signal control systems.	
Columbia Junction Phase II	\$ 28.94 M	Replace central instrument houses (CIH) and equipment with latest generation train control equipment to interface with the existing equipment.	
RL/OL Signals Program Level (PM/CM, OR & Project Admin.)	\$ 36.74 M		
Signals Unallocated Contingency	\$ 12.76 M		
Program Total Anticipated Spending Signals:	\$350.95 M		