



**Massachusetts Bay
Transportation Authority**

Red Line/Orange Line Improvement Program Update

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

January 28, 2019



OVERVIEW

The following summary provides an update to the FMCB on the progress of the \$1.98 billion 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 to 3 minute headways and the Orange Line to 4.5 minute headways. This would increase capacity by 50% on the Red Line and 40% on the Orange Line from scheduled headways.



Red Line/Orange Line Improvement Program

Red Line

Orange Line

Total \$1,982.03M

NEW VEHICLE PROCUREMENT PROGRAM \$1,009.00M

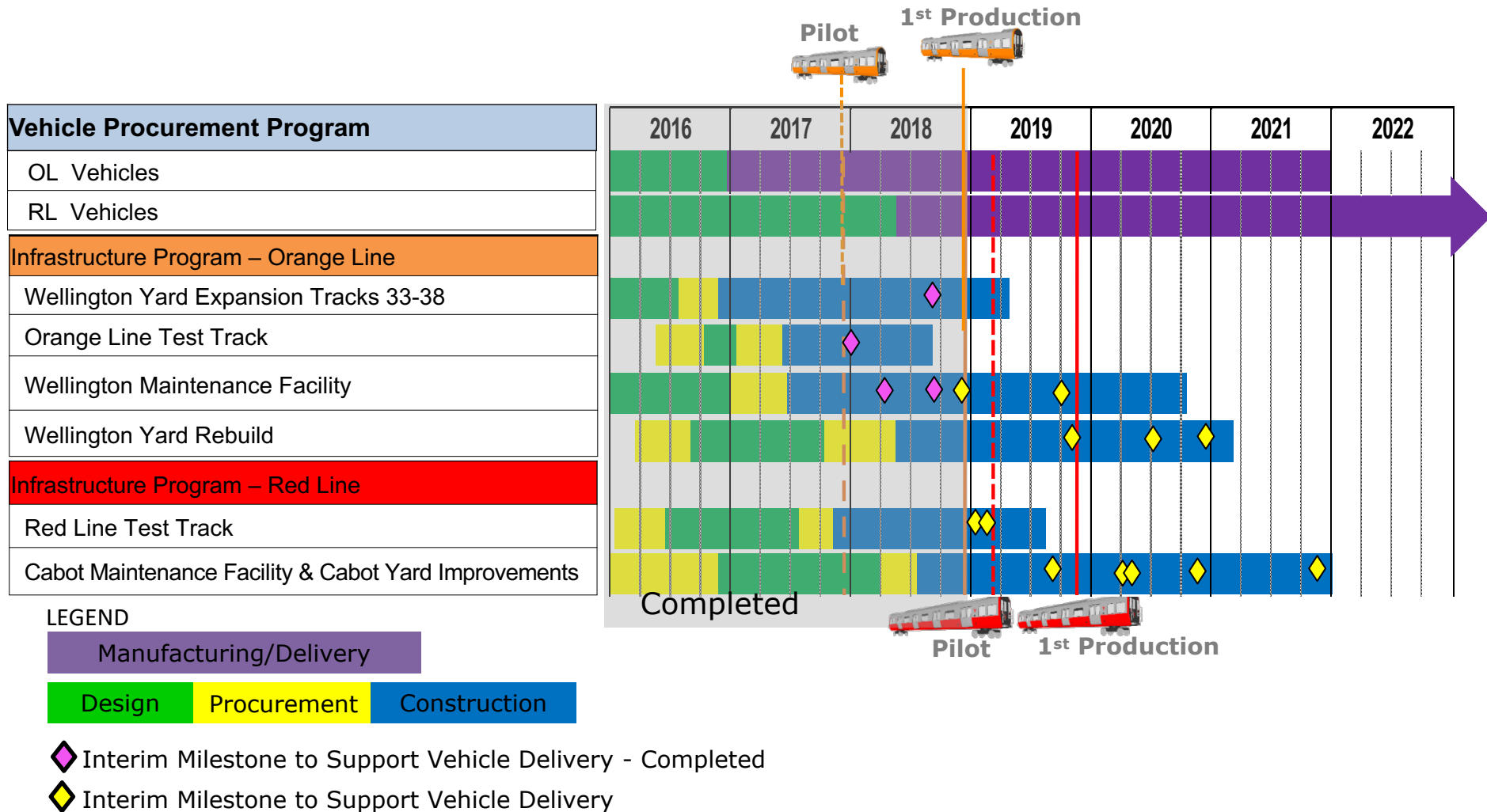
INFRASTRUCTURE IMPROVEMENTS PROGRAM \$470.36M

SIGNALS UPGRADE PROJECTS \$350.95M

STATE OF GOOD REPAIR PROJECTS \$151.72M

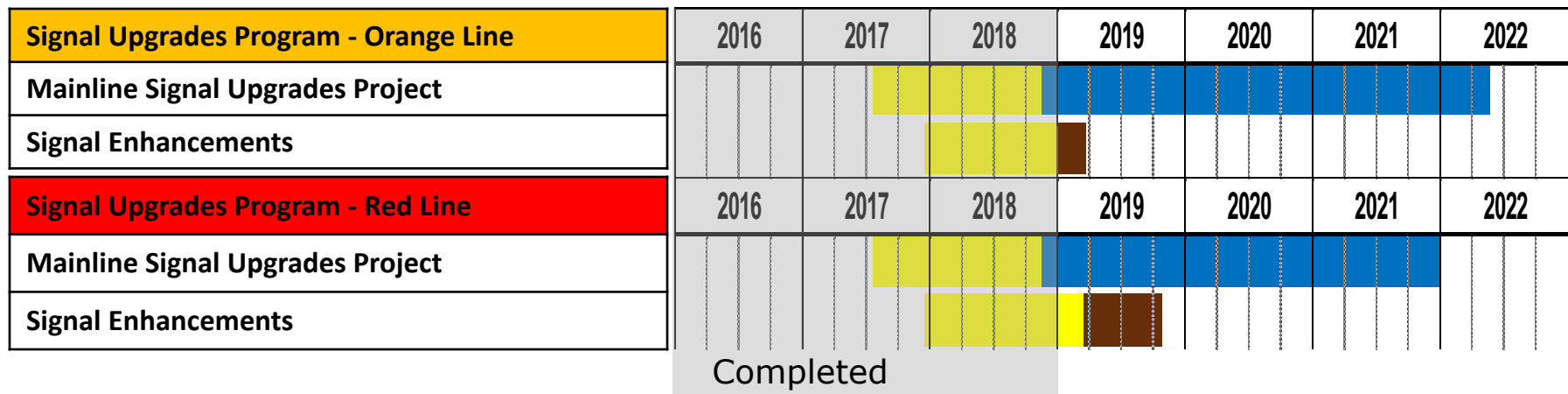


Red Line and Orange Line Schedule by Project





Red Line/Orange Line Schedule – Signals Upgrades



LEGEND

Procurement	Design/Build
Procurement	MBTA Installation



New Vehicle Procurement Program

New Vehicle Procurement Program

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

Expenditure to date: \$ 202,223,955

Carbuilder Percent Complete: 22.25%



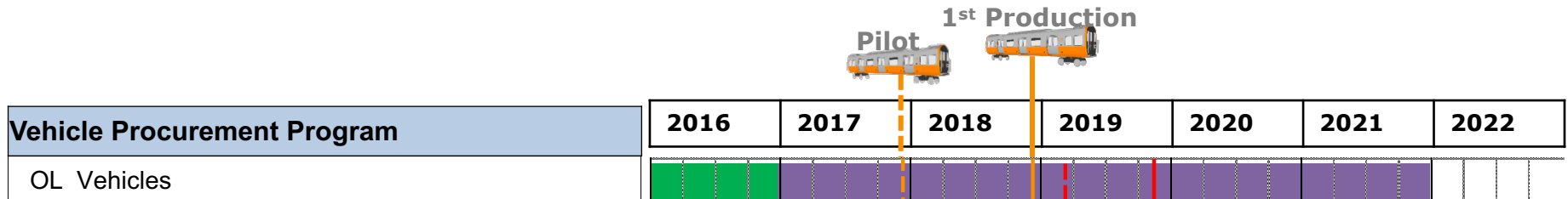
- Replace 218 Red Line cars
- 34 new cars
- Total = 252 vehicles



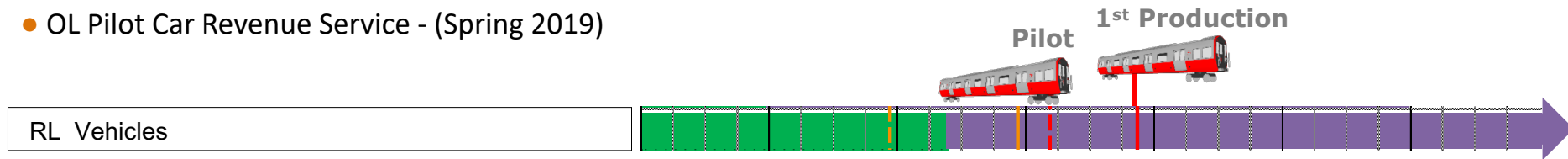
- Replace 120 Orange Line cars
- 32 new cars
- Total = 152 vehicles



Vehicle Procurement Project Status – Current/Look Ahead



- OL Production Delivery from Springfield Facility Started - (December 2018)
- OL Production Acceptance Testing Begins - (January 2019)
- OL Pilot Car Revenue Service - (Spring 2019)



- RL Complete Vehicle FAI (Changchun) – (Spring 2019)
- RL Delivery of Pilot Cars - (June 2019)
- RL Pilot Cars Acceptance Testing - (through November 2019)

LEGEND





Orange Line Vehicle Procurement Project Status

Three Married Pairs (6 cars) are currently undergoing Communications and Vehicle Monitoring System testing. The Passenger Emergency Intercom (PEI), a critical component in the Communications system, can be seen in the top picture to the right.

The 1st production car from Springfield completed its incoming inspection at Wellington carhouse and is now undergoing acceptance testing.

Representatives from the door supplier are currently assisting with the routine tests.





Red Line Vehicle Procurement Project Status

Manufacturing the first six Red Line Pilot carshells in Changchun, China is ongoing. In addition to the vehicle-level inspections after the cars are complete, the Project Team performs inspections on subcomponents before installation.

The passenger area sidewall panels (including the LCD monitor enclosure) were inspected recently and can be seen in the top picture to the right.

The cab sidewall and ceiling panels were inspected recently and can be seen in the bottom picture to the right.





Production Vehicle Final Assembly – Springfield MA

The Springfield team is nearing completion on the second pair of production cars (Married Pair #6). This is the next pair of cars to be delivered to the Authority.

Ten more carshells were recently delivered to the Springfield facility, bringing the total number at Springfield to 20.





Orange Line Projects: Wellington Yard Expansion Tracks 33 to 38

JF White

Construction NTP: 12/05/16

Construction Substantial Completion:

Contractual: 01/04/19

Projected: 05/03/19*

Construction Budget: \$17,977,777

Construction Expenditures to Date: \$10,498,701

Construction Percent Complete: 84%

*Projected substantial completion date under evaluation



Completed Track Bonding T35 North



Orange Line Projects: Orange Line Test Track

LM Heavy

Construction NTP: 06/20/17

Construction Substantial Completion: 08/29/18

Contractual: 09/11/18

Actual: 08/29/18

Construction Budget: \$5,867,000

Construction Expenditures to Date: \$3,939,146

Construction Percent Complete: 99%

New Train On Test Track



Draft for Discussion & Policy Purposes Only



Orange Line Projects: Wellington Maintenance Facility

Barletta Heavy Division

Construction NTP: 06/30/17

Construction Substantial Completion:

Contractual: 08/04/20

Projected: 10/22/20*

Construction Budget: \$72,582,000

Construction Expenditures to Date: \$23,162,074

Construction Percent Complete: 46%

*Working with Contractor to mitigate 2 month delay due to scope being added to the contract.



Building Expansion Windows/Frames and Paneling



Orange Line Projects: Wellington Yard Rebuild

Barletta Heavy Division

Construction NTP: 05/31/18

Construction Substantial Completion:

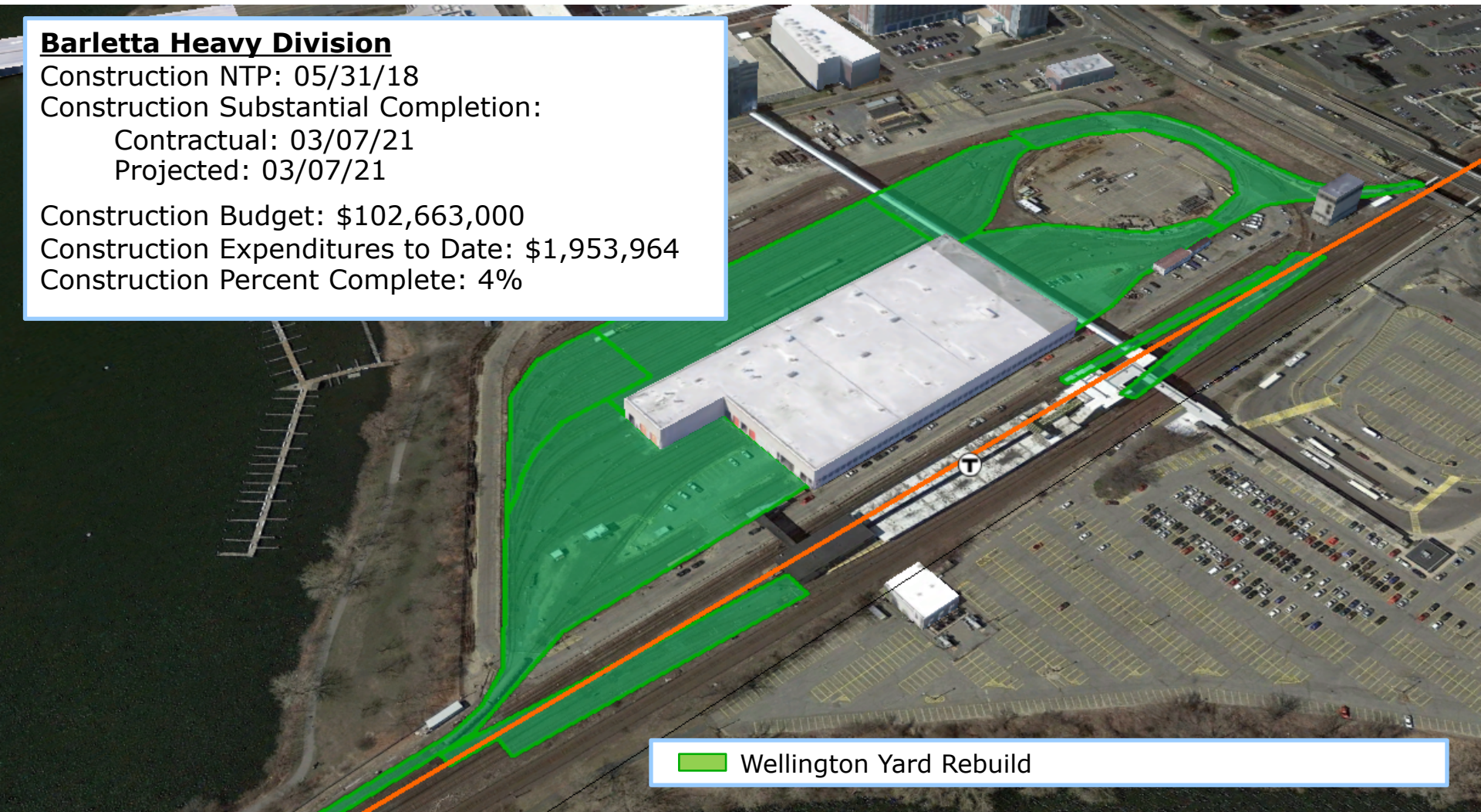
Contractual: 03/07/21

Projected: 03/07/21

Construction Budget: \$102,663,000

Construction Expenditures to Date: \$1,953,964

Construction Percent Complete: 4%





Red Line Projects: Red Line Test Track

Barletta Heavy Division

Construction NTP: 11/17/17

Construction Substantial Completion:

Contractual: 04/07/19

Projected: 08/22/19*

Construction Budget: \$21,269,000

Construction Expenditures to Date: \$4,376,677

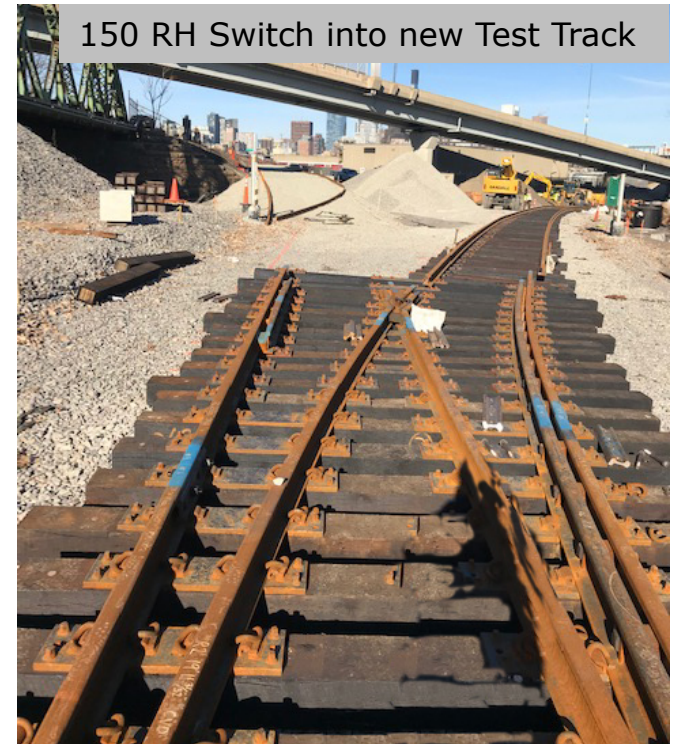
Construction Percent Complete: 44%

*Working with Contractor to mitigate delay.

Installed Modified No. 6 Turnout



150 RH Switch into new Test Track



Yard 61_VTF_AC & DC Trailer and MTPSS Location



Red Line Projects: Cabot Yard & Maintenance Facility Improvements

LM Heavy/Lane Construction

Construction NTP: 08/02/18

Construction Substantial Completion:

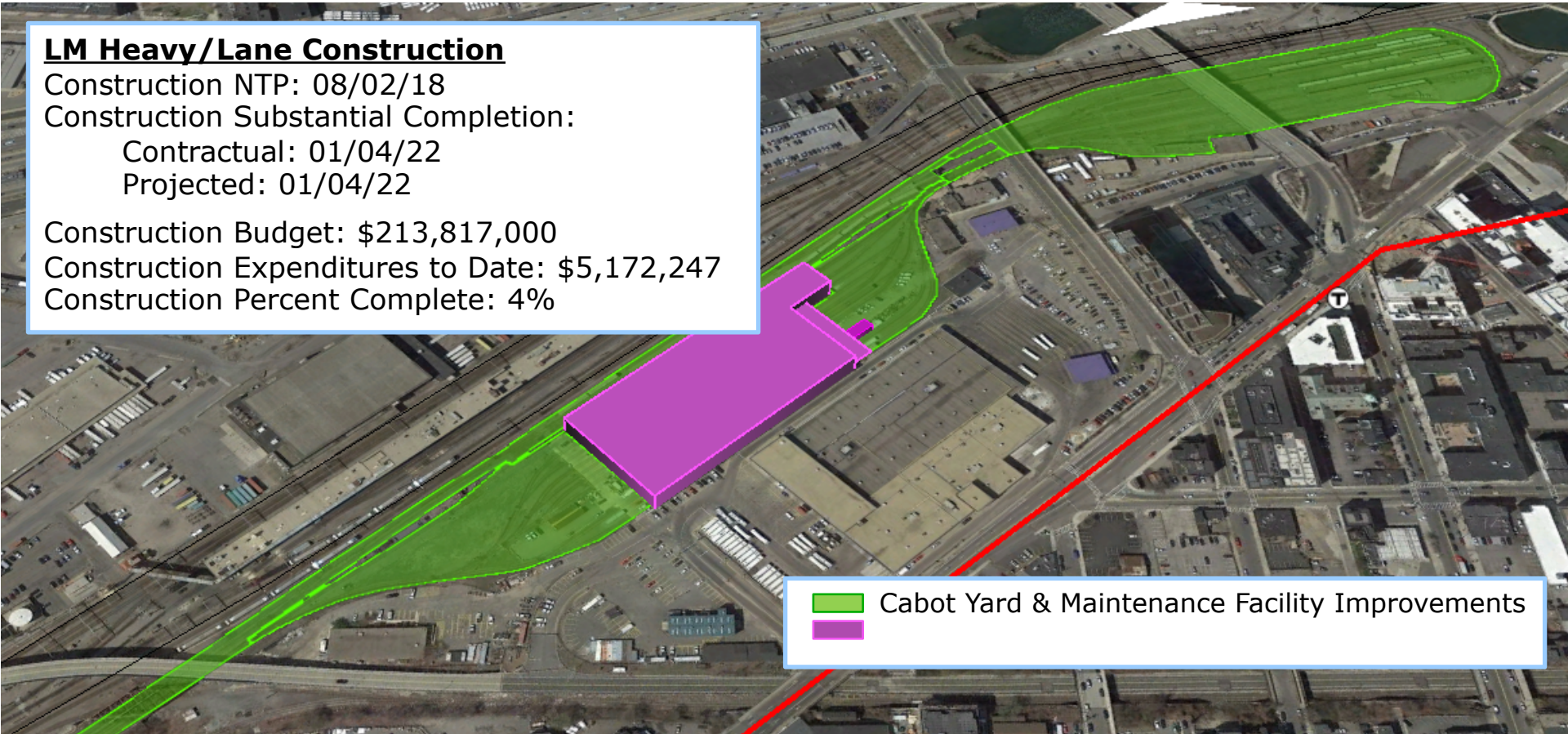
Contractual: 01/04/22

Projected: 01/04/22

Construction Budget: \$213,817,000

Construction Expenditures to Date: \$5,172,247

Construction Percent Complete: 4%





Signals Upgrade Projects Status

NTP – 11/30/18

Substantial Completion RL – 01/04/22

Substantial Completion OL – 05/25/22

Progress:

- Design meeting with DB Entity - 12/11/18
- Kickoff meeting with FTA Project Manager Oversight Consultant - 12/19/18
- Project Kickoff Meetings Held

Red Line

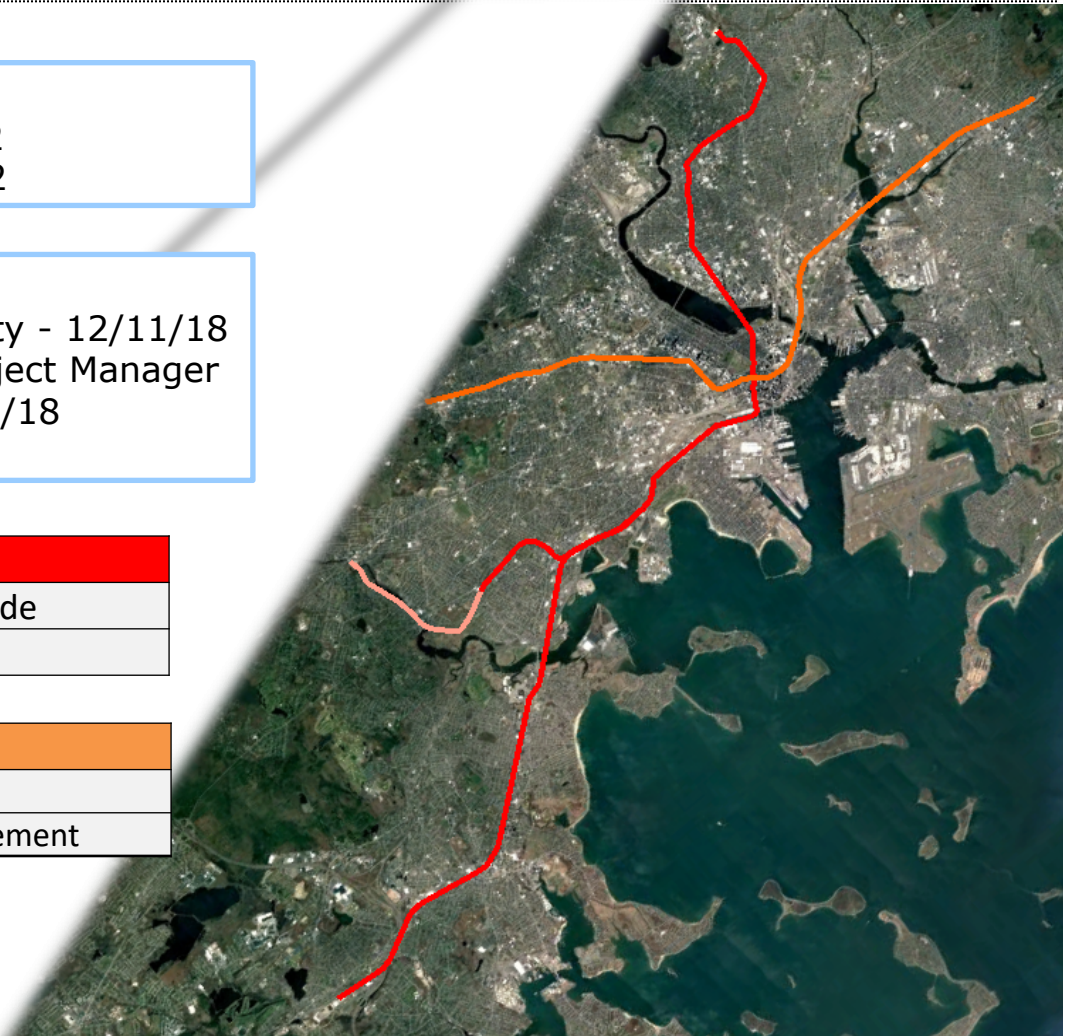
RL Signaling and Train Control System Upgrade

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 Strengthening

Status

Bridge Repairs

RL Substantial Completion – 05/01/19

OL Substantial Completion – 03/15/19

Longfellow Approach – Interim Repairs

Substantial Completion – 06/31/19

Red Line

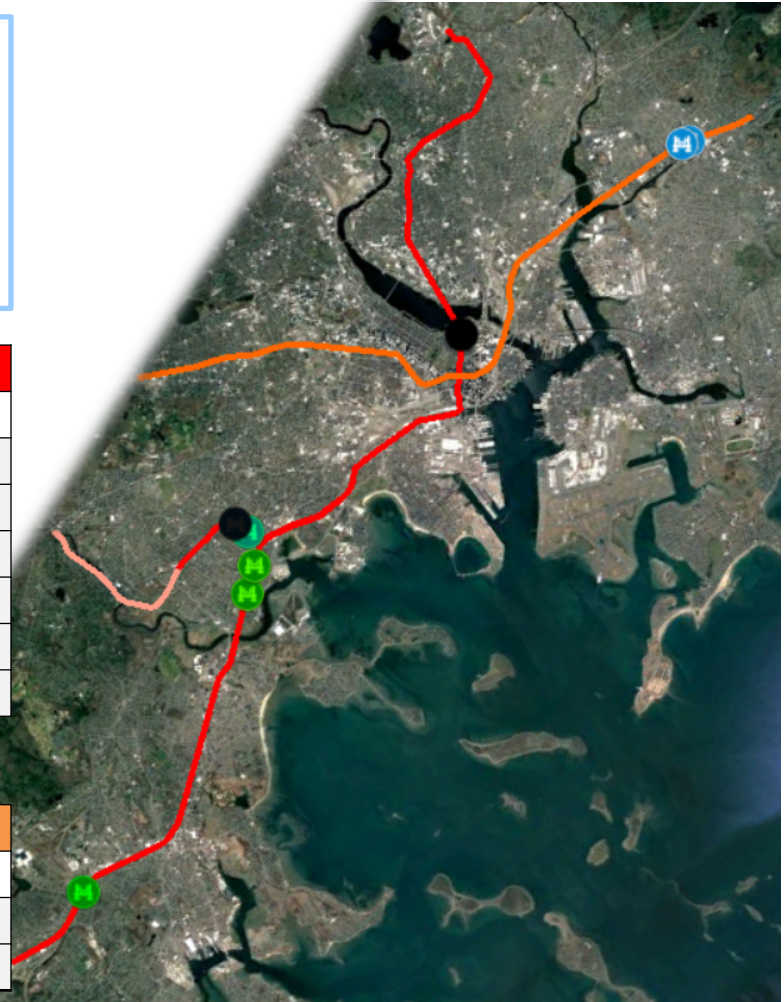
Bridge Repairs

- Granite Spur-B-21-069 (A23) **(COMPLETE)**
- Conley St.-B-16-136 (A38) **(COMPLETE)**
- Fields Corner Busway-B-16-418 (A3N) **(COMPLETE)**
- Victory Rd -B-16-134 (A36) **(COMPLETE)**
- Geneva Ave-B-16-142 (A3D) **IN CONSTRUCTION**
- Longfellow Approach - Interim Repairs **(IN PROGRESS)**

Orange Line

Bridge Repairs

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





Vehicle Procurement & Improvement Program Collaboration

- Preparation of Production Vehicle Arrival at Wellington Yard and Pilot Vehicle Arrival at Cabot Yards

Delivery Location at Wellington Yard



New Truck Pad at Track 38

