



**Massachusetts Bay
Transportation Authority**

Commuter Rail Positive Train Control (PTC)

Program Update

March 6, 2017



Overview

To provide an update to the Fiscal and Management Control Board on the status of the MBTA's Commuter Rail Positive Train Control Program.

- PTC Summary
- Regulatory Schedule
- PTC Program
- PTC Commuter Rail Pilot Lines
- PTC Integrated Leadership
- PTCIP Design and Installation Schedule
- PTC Milestones / Progress
- Required Weekend Shutdowns
- Program Budget
- Near Term Actions



PTC Summary

- The Rail Safety Improvement Act (RSIA) of 2008 defines a PTC System as a system designed to prevent:
 - Train-To-Train Collisions
 - Over Speed Derailments
 - Incursions Into Established Work Zone Limits
 - Movement of Trains Through Track Switches That May Have Been Left In the Incorrect Position
- All PTC Systems are generally comprised of the same components:
 - An On-Board Apparatus for the Locomotive controlling each applicable train
 - Wayside devices, such as Wayside Interface Units (WIUs)
 - A centralized dispatch system (Back Office)
 - A communication system linking all components



Regulatory Schedule

- Legal deadline for PTC implementation is December 31, 2018.
- DOT/FRA can grant an additional 24 months (to December 31, 2020) to have PTC fully operational provided the MBTA meets certain criteria, including the installation of PTC hardware by the end of 2018.
- A PTC Implementation Plan has been submitted to the FRA which provides for installation of hardware on all Commuter Rail lines and two pilot lines (Stoughton Line and Lowell Line) by the end of 2018, with full PTC implementation by December 31, 2020.
- FRA has the authority to assess penalties (up to \$105K/day) if new statutory deadlines are not met.

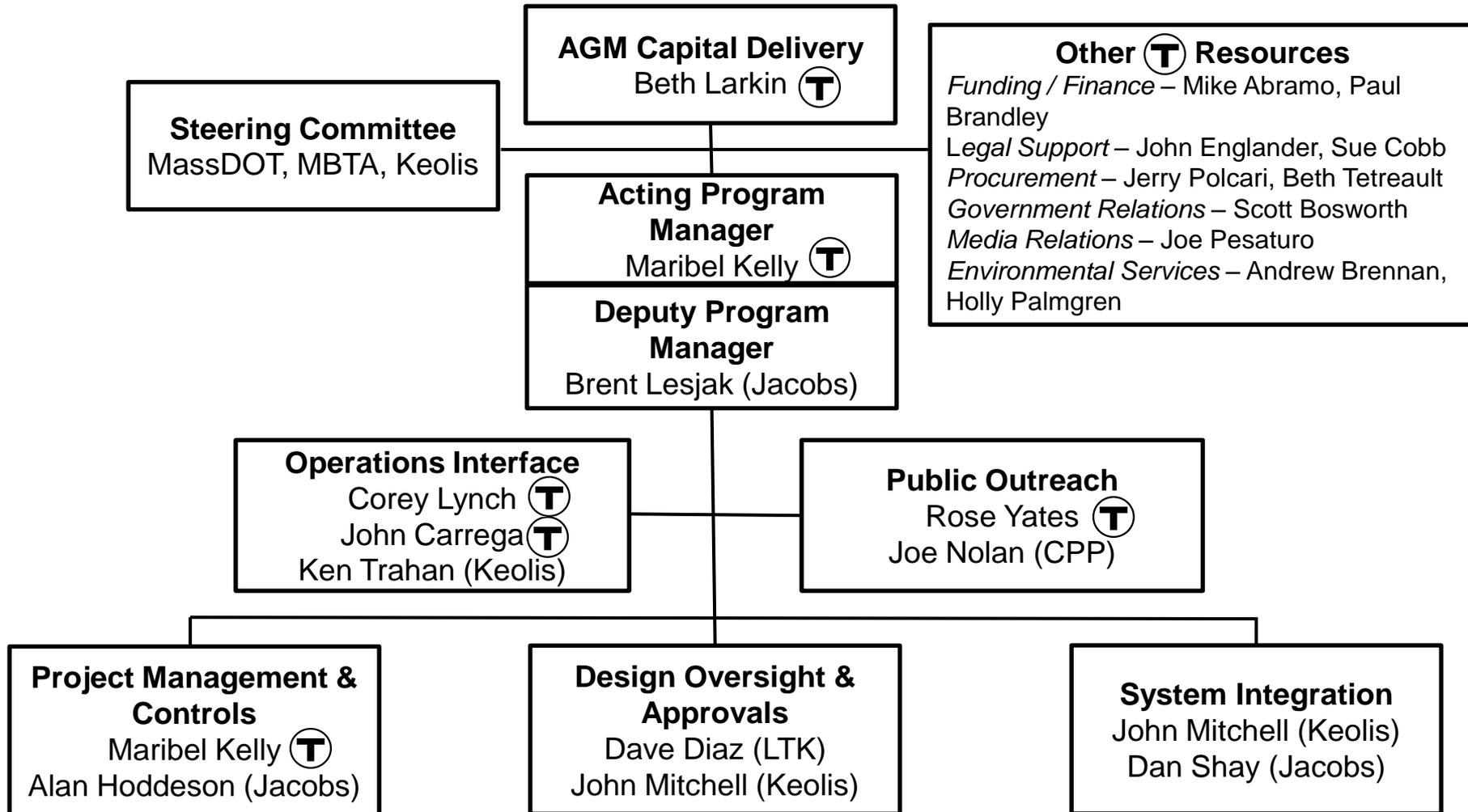


PTC Program

- MBTA has applied for RRIF and TIFIA loans and a PTC Discretionary Grant
- MBTA PTC Program includes:
 - 3rd Party PTC SI Contract (Ansaldo)
 - Railroad Operator (Keolis)
- PTC Implementation Plan
 - Spectrum to be acquired through PTC 220 LCC or Frequency Swap with FCC
 - ~ 180 PTC Antennas
 - ~ 250 PTC Wayside Installations
 - ~ 4500 PTC Transponders
 - Optical Fiber installation
 - ~ 230 miles new pole route
 - ~ 50 miles restored/existing pole route
 - MBTA PTC Vehicle Installations
 - 100 MBTA Locomotives + 25 Pan Am Locomotives
 - 114 Cab cars
 - Two Pilot Lines: Stoughton Line and Lowell Line
 - Dispatch Center Upgrades: CROCC and CTEC

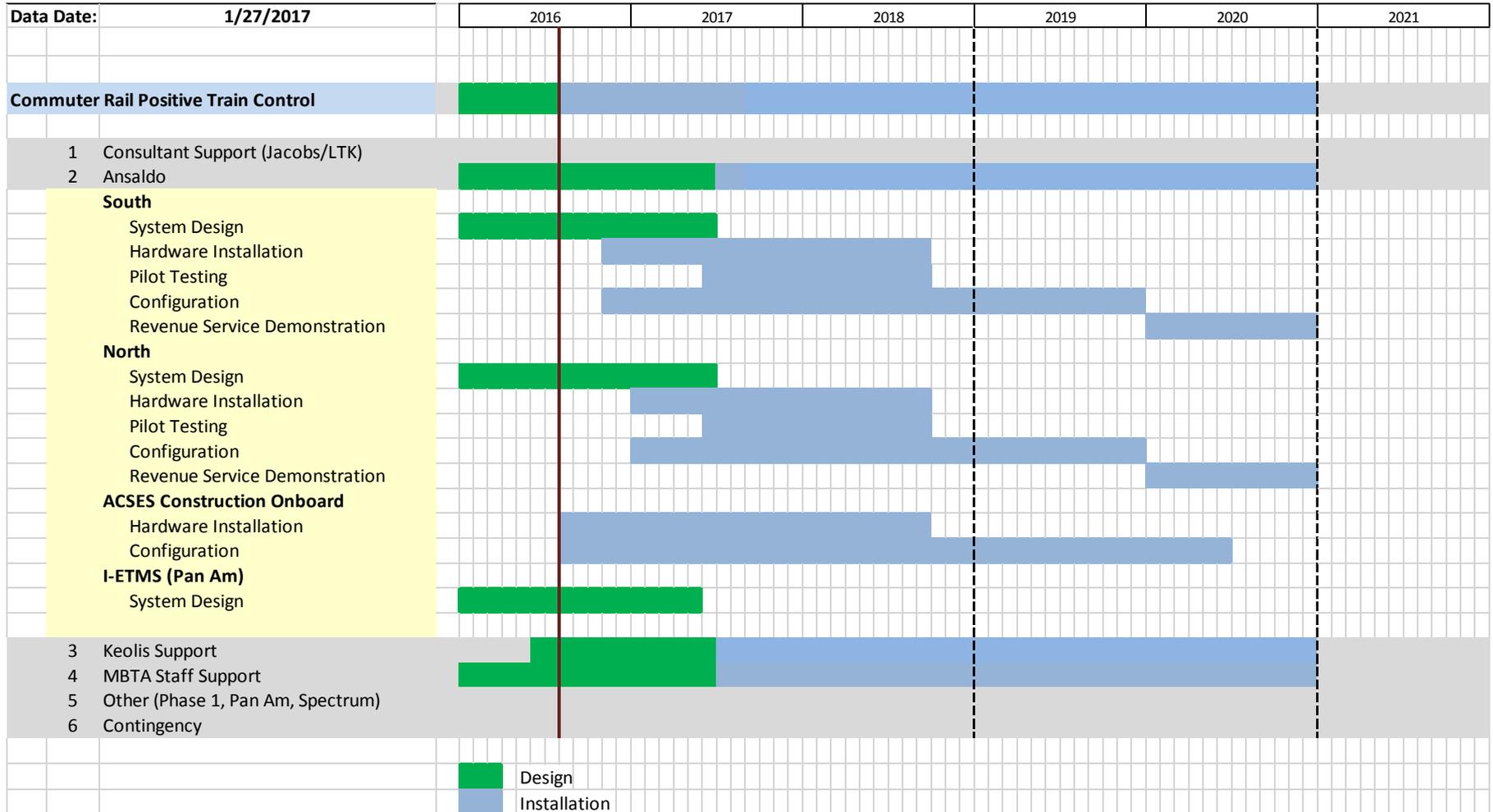


PTC Integrated Leadership





PTCIP Design and Installation Schedule





PTC Milestones / Progress

Deadline	Segment	Activity	Start	Finish	Planned % Complete	Actual % Complete	Status
30 Sept 2018 Deadline for extension of FRA mandate	Wayside/Comms	Detail Design	July 16	June 18	43%	40%	
		Install	March 17	Sept 18	0%	0%	
	Vehicle	Detail Design	July 16	Sept 17	66%	66%	
		Install	March 17	Sept 18	0%	0%	
	Pilot Lines (x2)	Integration	October 17	June 18	0%	0%	
		Certification	July 18	Sept 18	0%	0%	
31 Aug 2020 Substantial completion	System	Local Testing	October 18	March 20	0%	0%	
		Line Testing	January 19	June 20	0%	0%	
		Cutover	November 19	August 20	0%	0%	

- Manufacture commenced per plan in January 2017.
- Vehicle, Wayside and Comms Installation is planned to commence per plan in March 2017.



Program Budget

Item	Value
Ansaldo Contract (*)	\$338,457,134
Keolis Support	\$25,000,000
MBTA / Pan Am Site Prep	\$470,000
MBTA Program Staff Costs	\$4,600,000
MBTA Spectrum Procurement	\$240,000
MBTA Spectrum Legal Services	\$50,000
MBTA Program Consultant Services (Initial)	\$10,000,000
MBTA Program Consultant Services (Future)	\$15,000,000
Other	<u>\$3,500,000</u>
Total Program Budget	\$397,317,134
Contingency (13.5%)(*)	\$61,835,762
Total Program Cost	\$459,152,896

* \$9.5M will be transferred from Contingency to Ansaldo Contract upon execution of the Change Order for acceleration to meet the current regulatory schedule requirements



Near Term Actions

- Obtain Loans (anticipated by July 2017)
- Obtain Environmental Clearance for Communications Infrastructure Construction by July 2017
- Swap Spectrum to accommodate Amtrak/CSX (anticipated by August 2017)
- Meetings with FRA and FTA (ongoing)
- Meetings with tenant railroads (Amtrak, CSX and Pan Am) planned for upcoming weeks
- Approve remaining system elements Preliminary and Final Designs
- Conduct Outreach for Weekend Shutdowns
- Continue with Vehicle Equipment Installations
- Begin Wayside Installation (install antennae, fiber optic, transponders, signal system interfaces)