



**Massachusetts Bay
Transportation Authority**

Commuter Rail Positive Train Control (PTC)

Program Update

April 29, 2019



OVERVIEW

This presentation is to update the Fiscal and Management Control Board regarding the current status of ongoing activities and progress of MBTA's system-wide implementation of Commuter Rail Positive Train Control, including Revenue Service Demonstration (RSD), Extended RSD, and Current Program Issues.



CURRENT PTC ACTIVITIES AND PROGRESS

- Extended RSD (PTC Implemented) on South Side Lines
 - Stoughton Line - started December 27, 2018
 - Fairmount Line – started December 29, 2018
 - Middleboro Line – started March 16, 2019
 - Greenbush Line – started April 13, 2019

- RSD on North Side Lines
 - Lowell Line (Pilot) – approved by FRA on January 29, 2019 and phase in of RSD operation started February 4, 2019
 - Requires 384 consecutive runs without anomalies to enter Extended RSD
 - MBTA has not yet achieved this number of runs due to Siemens hardware and software issues
 - No other North Side lines can be put into Extended RSD until the Lowell Line is in Extended RSD



SIEMENS HARDWARE ISSUES

- Siemens, as a subcontractor to ASTS, is supplying transponder reader hardware that was used to upgrade certain MBTA vehicles under the PTC program
 - On February 5, 2019 Siemens notified MBTA of a national recall of 3 components of this equipment that could be the cause of missed transponder issues that the MBTA had been investigating
 - On April 11, 2019 Siemens identified an improperly installed capacitor on a circuit board as the cause of the problem and recalled the equipment again for retrofit
 - Repair and reinstallation of the recalled equipment is in process; testing will follow to ensure the problem has been corrected
 - Executive level meetings with ASTS and Siemens continue to be held to ensure that correction of MBTA's equipment is given Siemens' highest priority



SIEMENS SOFTWARE ISSUES

- Siemens, as a subcontractor to ASTS, is supplying the ACSES software that is used on all of the MBTA's locomotives and cab cars
 - Siemens Software updates are required to correct functionality issues that impact the North Side Lines in particular due to the lack of ATC on those lines
 - These updates are expected in two releases – the first in June 2019 and the second in November 2019
 - Siemens software updates that are needed to fix defects with the ACSES system require a 6 to 9-month lead time, creating a risk to the MBTA PTC System Implementation Schedule
 - Executive level meetings with ASTS and Siemens continue to be held to reduce the lead time and shorten the time between software updates



NEXT STEPS

- Complete RSD on Lowell Line and enter Extended RSD – this will allow other North Side Lines to enter Extended RSD
- Implement South Side ATC on Needham, Franklin and Worcester Lines
 - Weekend Service shutdowns (partial and full) will be required for ATC implementation (between 8 and 12 weekends planned per line from August 2019 through February 2020)
- Complete testing of remaining South Side lines and place in Extended RSD
- Continue to coordinate with Amtrak, CSX, & Pan Am for Interoperability Testing
- Commission all North Side and South Side lines by December 31, 2020



BUDGET AND FUNDING

- The budget for the PTC Program is \$459 million
- Long-term financing is primarily through the RRIF and TIFIA Loan Programs
 - MBTA Revenue Bonds used to interim finance early project work and implementation
 - RRIF/TIFIA Loan to be drawn on after substantial completion
 - FTA (\$9.8M) and FRA PTC grants (\$7.5M and \$20M) obtained to reduce the draw amount on RRIF/TIFIA loan
 - Financing solution minimizes borrowing costs to the MBTA and adds optionality to the Authority's debt portfolio



SUMMARY

- PTC continues to be the MBTA's highest priority capital program
- Siemens hardware and software issues present a risk to the program that is being closely managed at the executive level
- MBTA will continue to execute PTC Program Plans in order to deploy PTC across the entire Commuter Rail System in compliance with the FRA regulations, which require complete deployment by December 31, 2020
- The PTC Program is on budget