

GLTPS



GREEN LINE TRAIN PROTECTION SYSTEM

A CAPITAL TRANSFORMATION PROJECT

Monthly Review and Lookahead

Tuesday, August 30, 2022

Overview: The **Green Line Train Protection System (GLTPS)** combines vehicle and wayside equipment, that work together to avoid train-on-train collisions, add red light signal protection, and incorporate speed enforcement. The project has four (4) overlapping phases starting with **Equipment Design** which integrates new components into the legacy system. The **Vehicle Installation** Contractor has completed mobilization at the GLX facility in Somerville and the Pilot installation is underway on car 3708. The **Wayside Installation** Contractor has completed the scheduled B & C-Branch Surges in June & July. The **Operational Integration** phase prepares MBTA to use the new safety system on its Green Line.

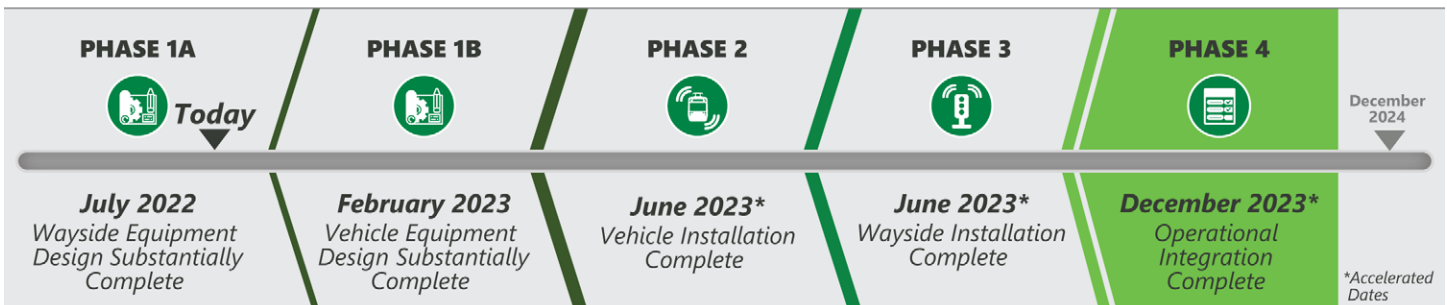
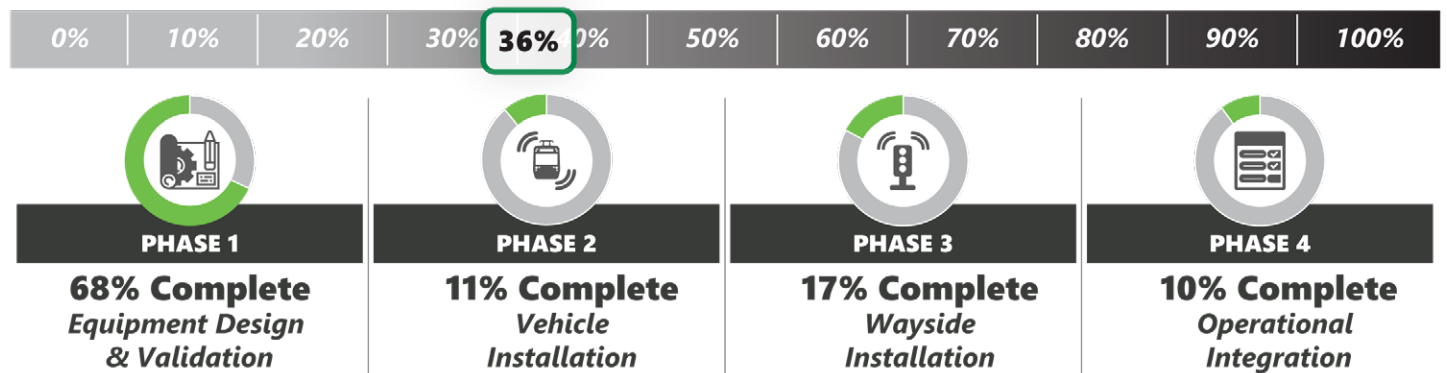


Currently, our focus is planning the **D-Branch** work during the full access closure, which requires material kitting, programming, site prep, installation, and post-installation testing.

Did you know...

... balises utilized in the GLTP system are transponders mechanically mounted beside the tracks which can be passive or active depending on the application. Speed balises are "passive" and not connected to any wayside equipment but relay speed restrictions to a vehicle when passed over per preprogrammed software parameters. Signal and upgrade balises are "active" in that they are connected to the wayside equipment and enforce speed restrictions accordingly or allow the vehicles the resume safe operating speed depending on the associated signal status.

GLTPS by the Numbers



December 2024

*Accelerated Dates

This Past Month



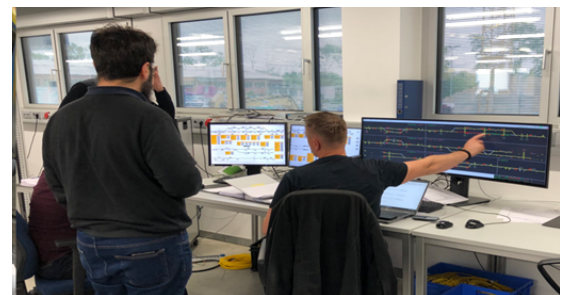
Equipment Design & Validation

- **An extended rail claw has been designed to accommodate for special applications where balises will be mounted and restraining rail exists.** This application was tested on the Riverside test track to ensure proper length was added and thread penetration by Engineering standards can be achieved.
- **Before GLTPS assemblies are delivered to the MBTA and installed on the wayside or vehicles, factory acceptance tests** are completed at BBR in Braunschweig Germany and Transitair in Hornell, NY respectively for all components & assemblies. A sequence of validation tests also takes place post-installation to ensure that no damage occurred during shipping or installation and the GLTP system functions as designed.



Vehicle Installation

- **The System Integrator is completing qualification testing on a test bench at the Transitair facility in Hornell, NY.** This test bench will allow a complete “kit” of GLTPS vehicle components to be tested at one time before being shipped to the MBTA.
- **The System Integrator is completing a safe braking analysis at their facility in Braunschweig Germany.** Engineers use simulated speeds, brake rates, track curvature and grade to specify the areas in need of speed enforcement. These parameters are then programmed into the printed circuit boards (PCBs) and installed into the balises which are then strategically mounted at exact **track locations to realize the functionality of the system.**



Wayside Installation

- **The E-Branch Surge was completed between Heath St and Symphony Stations from August 6 – August 21.** The Installation Contractor installed GLTPS speed balises on the surface branch and eight GLTPS signal assemblies, radio upgrade antennas, junction boxes, and associated balises between Symphony & Prudential Stations.
- **D-Branch materials are being manufactured in Braunschweig Germany and Hornell, NY in preparation of the September 24 – October 30 Surge.** Project personnel have been in Braunschweig as Project Oversight and a Resident Inspector is in place in Hornell monitoring the manufacturing process and shipping of materials to the MBTA.



Lookahead for September



Equipment Design & Validation

- Complete First Article Inspections (FAIs) for Type 7 vehicle & wayside assemblies
- Complete the Type 8 prototype enclosure manufacturing



Wayside Installation

- Begin installation of D-Branch signals and balises during September-October Surge
- Continue production of wayside kits for Central Tunnel Surge beginning in January



Vehicle Installation

- Begin Type 8 prototype fitment of enclosures to further design progress
- Begin static and dynamic qualification testing upon 3708 Pilot completion



Operational Integration

- Receive revised maintenance manuals and begin scheduling training sessions
- Receive revised storyboard & video to begin scheduling training sessions