

# GLTPS



# GREEN LINE TRAIN PROTECTION SYSTEM

A CAPITAL TRANSFORMATION PROJECT

## Monthly Review and Lookahead

Monday, August 1, 2022

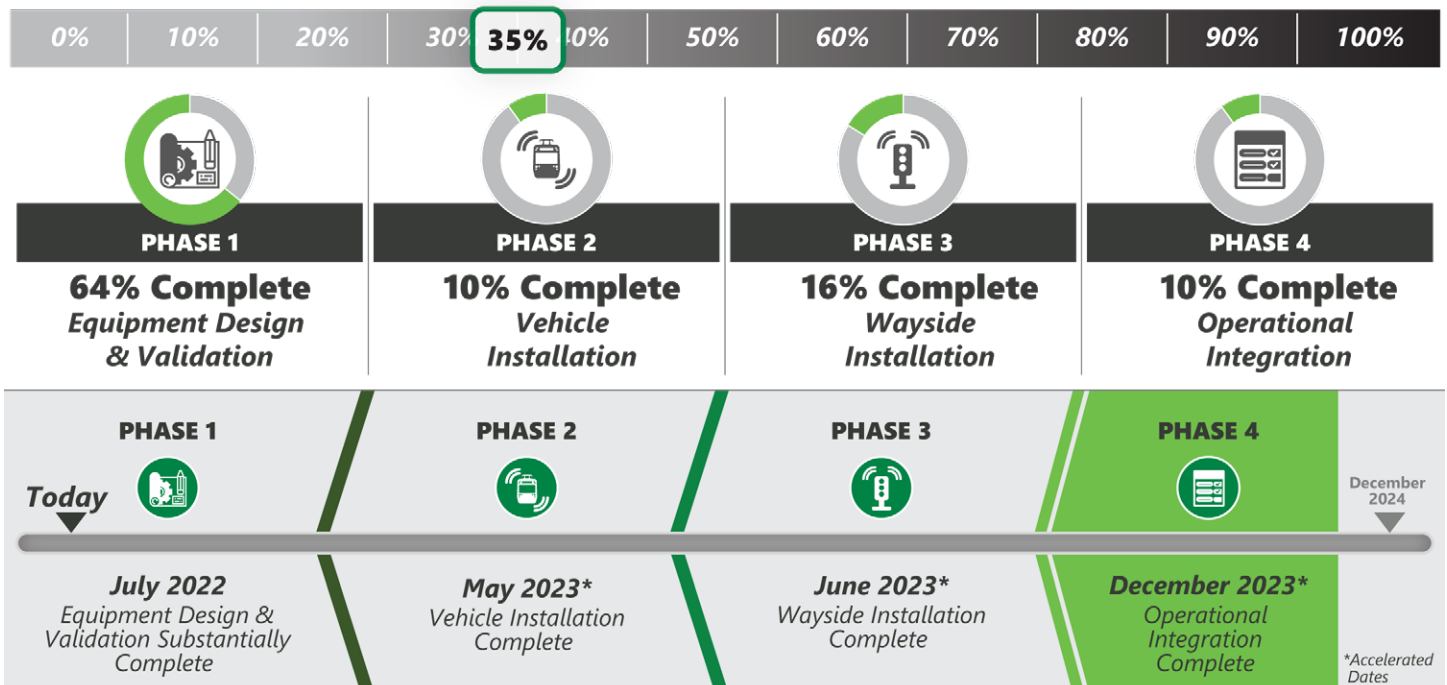
**Overview:** The **Green Line Train Protection System (GLTPS)** combines vehicle and wayside equipment, that work together to avoid train-on-train collisions, add red light signal protection, and incorporate speed enforcement. The project has four (4) overlapping phases starting with **Equipment Design** 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 E-Branch work during the full access closure, which requires material kitting, programming, site prep, installation, and post-installation testing.

### Did you know...

... A new speed sensor housing was designed to accommodate a second sensor and will be installed onto both trailer truck axels of every Type 7 vehicle as part of the GLTPS system. An onboard speed comparator monitors the enforced speed versus the actual speed via the second sensor. If the vehicle is traveling above the enforced speed by specific incremental amounts, the vehicle will undergo forced braking and can be brought to a full stop as part of the over-speed protection.

### GLTPS by the Numbers

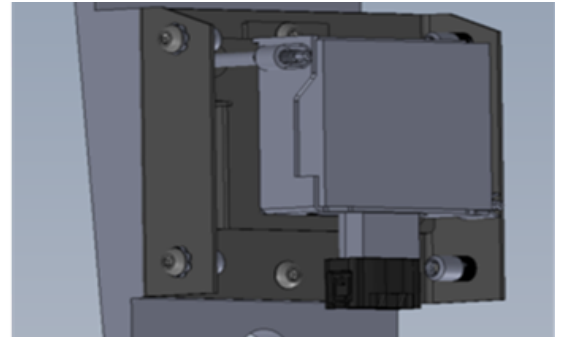


## This Past Month



### Equipment Design & Validation

- **The First Article Inspection for the Type 7 speed sensor housing was held in Harleyville, PA on June 29.** The speed sensor housing design was changed only by adding a threaded mounting hole for a second speed sensor. The second speed sensor monitors enforced speed by the GLTP system while the original sensor monitors the actual speed of the vehicle.
- **Conceptually designed collision avoidance radar sensor assemblies and radio upgrade antenna assemblies** have been developed by the system integrator and will be mounted on the nose of every Green Line vehicle. The radar sensor functions even when the vehicles are not in signalized areas while the GLTP system is active. The radio upgrade antenna is in constant communication with the wayside electronics and can change the enforced speed of the vehicle if the signal status changes from the last commanded speed.



### Vehicle Installation

- **GLTPS Program Management completed a tour with MBTA Safety and the DPU** at the Green Line Extension (GLX) vehicle maintenance facility in Somerville on July 15. The group also visited the Riverside test track and the C-Branch balise installation to witness first-hand the GLTPS vehicle and wayside activities progressing.
- **Serial production of GLTPS wiring harnesses and equipment continues at Transitair in Hornell, NY.** Assemblies are being built, inspected, and stored and will be shipped to GLX prior to dynamic qualification testing completion in anticipation of serial installation on the Type 7 Green Line fleet.



### Wayside Installation

- **The B-Branch Surge was completed between Boston College & Kenmore from June 20 to July 1 and twenty-five GLTPS speed balises were installed.** Speed balises are placed in strategic areas considering various factors including braking analysis, track grade, and curvature and are stand-alone speed enforcement devices not connected to the wayside.
- **The C-Branch Surge was completed between Cleveland Circle and Kenmore from July 11 to 22 and included fifteen GLTPS speed balises.** Balises are mounted below the top of rail (TOR) at a specific height and when a train passes over, the coupling coil mounted on the truck reads the preprogrammed speed of the balise. The speedometer then reflects that speed with a secondary display, so the Operator is always aware of the enforced speed



## Lookahead for August



### Equipment Design & Validation

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



### Wayside Installation

- Complete installation of E-Branch speed balises & Pilot Signals during August Surge
- Begin receiving and staging materials for the D-Branch Surge in September-October



### 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 to begin scheduling training sessions