

# GLTPS



## GREEN LINE TRAIN PROTECTION SYSTEM

A CAPITAL TRANSFORMATION PROJECT

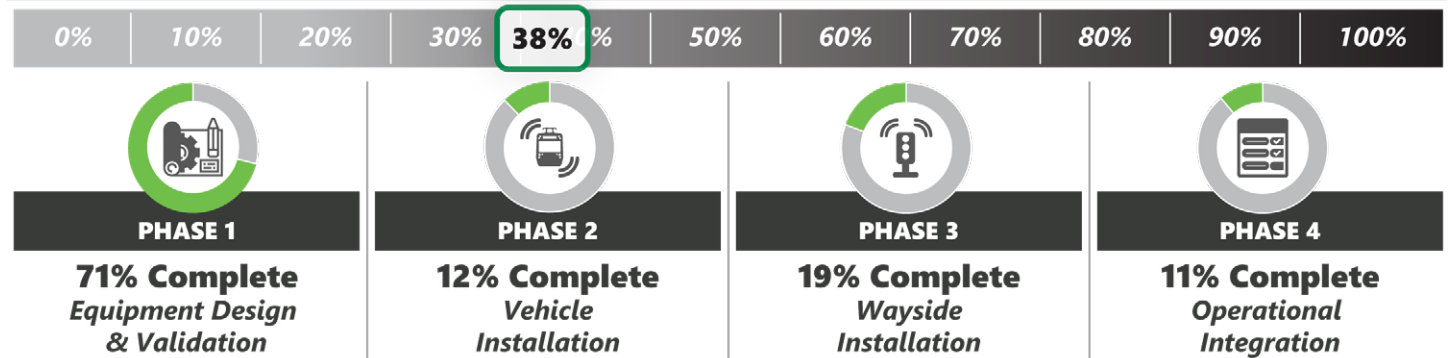
### February 2023 Review and Lookahead

The **Green Line Train Protection System (GLTPS)** combines vehicle and wayside equipment that work together to avoid train-on-train collisions, incorporate speed enforcement, and add red light signal protection. The project has four overlapping phases which are all currently underway:

- **Phase 1 Equipment Design** which integrates new technology into the legacy system.
- **Phase 2 Vehicle Installation** which installs new equipment in existing vehicles and is currently in process at the GLX Maintenance Facility in Somerville on pilot vehicle 3708.
- **Phase 3 Wayside Installation** has been delayed and future surges will resume later this year according to an updated schedule to support speed enforcement functionality.
- **Phase 4 Operational Integration** where MBTA personnel will receive information and training on the new GLTPS system and plans for cutover.

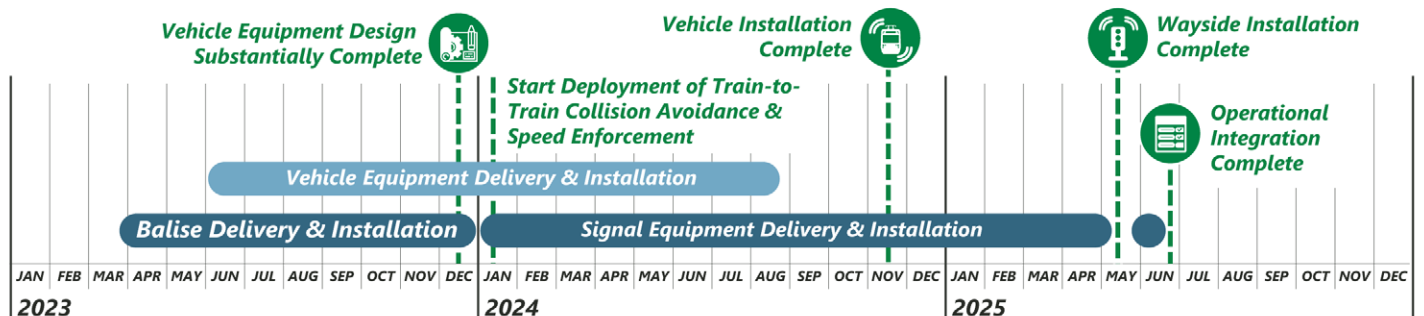


### GLTPS by the Numbers



### Did you know...

The GLTPS System utilizes two speed sensors. The existing speed sensor monitors real time speed of the vehicle for normal operation and braking. The additional sensor provides input to the GLTPS monitoring for comparison against the speed profile from the wayside balise



## This Past Month



### Equipment Design & Validation

- **Both the Type 7 & 8 vehicles require speed sensor mounting redesigns** to accommodate the 2<sup>nd</sup> speed sensor for full GLTPS functionality. The Type 8 brackets will be based off the existing design and have the 2<sup>nd</sup> sensor mounting surface cantilevered to the left of center as the first iteration had interference issues with the vehicle underframe.
- **The Type 7 speed sensor housings can be reworked to accept the 2<sup>nd</sup> sensor.** 40 new housings were purchased and recently received to create a “float” of materials which allow the legacy housings to be removed and sent for modification. The yellow area indicates a newly machined flat surface which is then tapped to a unique thread pitch for the 2<sup>nd</sup> sensor.



*40 newly manufactured speed sensor housings received*



### Vehicle Installation

- **Abatement of the 3600 series vehicles has continued** with 46 of 86 vehicles completed, which is 54% of the affected fleet. This is a mitigation strategy to reduce the installation timeline once kits are available. Per the current schedule, abatement will conclude in June.



*Abatement area quarantined between two vehicles*



### Operational Integration

- **A wayside equipment demonstration was held at the Cabot Signaling Training Center** on February 23<sup>rd</sup>. Attendees included the Project Team, multiple Stakeholders, FTA, DPU, and System Integrator representatives. A system overview was given including electrical schematics & mechanical drawings then an equipment demonstration was completed to show how a signal, junction box, and balise work together in providing train protection



*Junction box design review with stakeholders*

## Lookahead For Next Month



### Equipment Design & Validation

- Receive Type 7 Critical Design Review (CDR) documentation for review
- Perform “form & fit” activities on Type 8 prototype enclosures



### Wayside Installation

- Update Safety Compliance Assessment for all wayside installation scenarios
- Continue production and stockpiling of wayside kits for planned installations



### Vehicle Installation

- Continue abatement of installation areas on the 3600 series vehicles
- Continue manufacturing of conditionally approved assemblies at Transitair



### Operational Integration

- System Integrator to engage production company for training video
- Receive and review draft Operations & Maintenance Manuals