

GLTPS



GREEN LINE TRAIN PROTECTION SYSTEM

A CAPITAL TRANSFORMATION PROJECT

Monthly Review and Lookahead

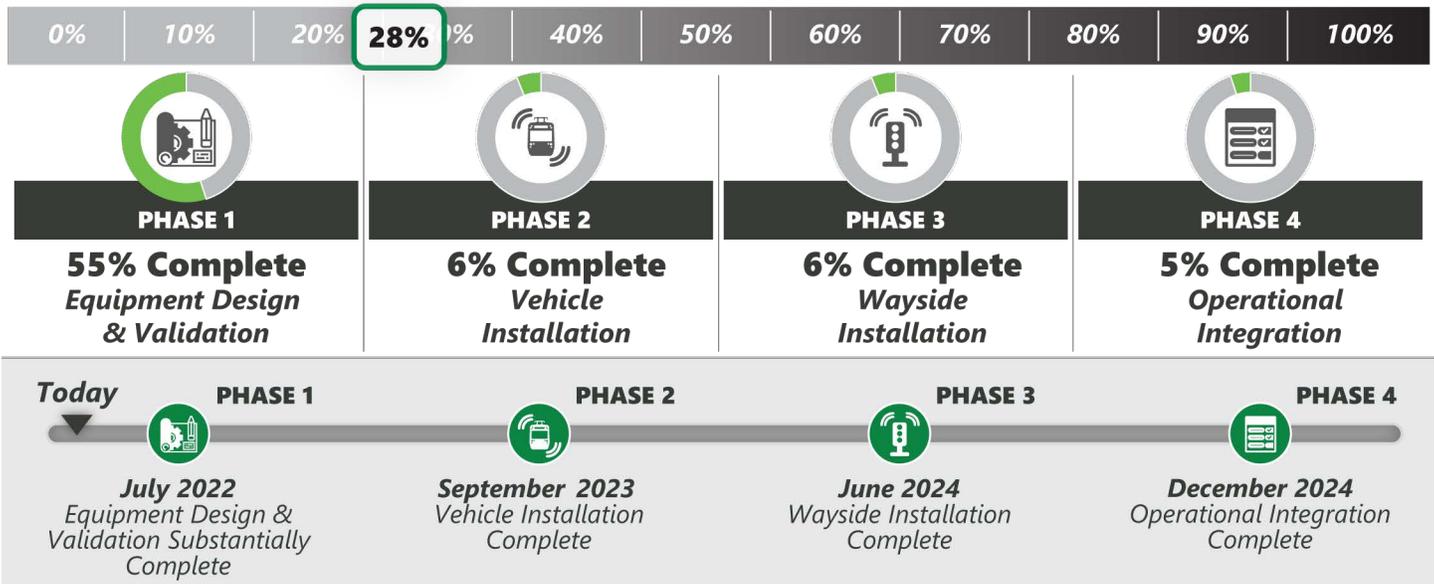
Wednesday, December 15, 2021

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** that integrates new components into the legacy system. The **Vehicle** and **Wayside Installation** phases are currently in planning. The final **Operational Integration** phase prepares the MBTA to use the new safety system on its Green Line. Currently our primary focus is working toward the baseline design finalization for Wayside and Type 7 vehicle, after that designs for the rest of the fleet, Type 8s and Type 9s, will be completed.

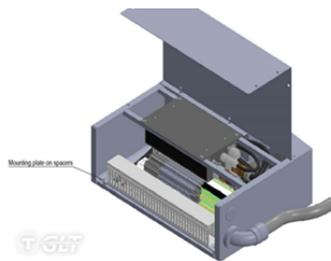
Did you know...

GLTPS integrates different types of safety monitoring equipment into the vehicles that all work together to alert the operator of a risk, and then if no response is observed, apply the brakes automatically to stop the vehicle.

GLTPS by the Numbers



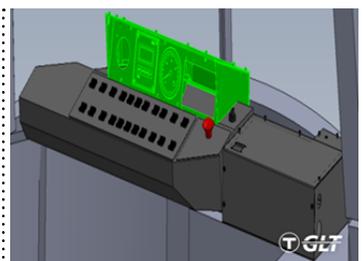
Prototype Vehicle Cab Enclosure (Fig. 1)



Vehicle Cab Enclosure Concept Design (Fig. 2)



Prototype Dashboard (Fig. 3)



Dashboard Concept Design (Fig. 4)

This Past Month

- **Design review comments for Wayside & Type 7 drawing package are being addressed** by the System Integrator/ Designer. Working sessions between the project team and the System Integrator continue in order to advance project activities and finalize design.
- **Project personnel traveled to the manufacturing site** to review the preparation of prototype material and required documentation for the formal First Article Inspection where the major components are tested and compliance with design criteria is validated. Key equipment included the Vehicle Cab Enclosure which houses electronic components (see Figures 1 & 2), the Dashboard which provides information to the motorperson (Figures 3 & 4), and a System Test Bench for validating components (Figure 6).
- **Wayside Installation Package is being updated to reflect recent optimized approach.** The updated package will be shared with internal stakeholders for review and finalization.
- **Signal timing measurements were taken at key locations** to determine if any conflicts exist with the overlay system being added to existing infrastructure. Preliminary results are being analyzed (Figure 5).
- **Type-7 major component fit-ups were performed** to determine if any dimensional adjustments are required to effectively mount these different components on the vehicle. These fit-ups resulted in a more finalized design of enclosures and brackets.



Timing Measurement of Signals (Fig. 5)



Manufacturer System Test Bench (Fig. 6)

Lookahead for January



Equipment Design & Validation

- Close remaining Wayside & Type 7 Design Package actions and discrepancies
- Conduct major component First Article Inspections
- Begin wayside surveys of available Green Line Extension track locations



Wayside Installation

- Revise current wayside installation plans to reflect the optimized approach
- Update timeline and labor resourcing for wayside pilot installation



Vehicle Installation

- Begin setup of vehicle installation location
- Update timeline and labor resourcing for Type-7 pilot installation
- Advance vehicle installation contract actions



Operational Integration

- Receive updated GLTPS test equipment for the Riverside Test Track
- Start an operational readiness group to be engaged with overseeing the integration efforts as the project starts to transition to manufacturing and installation