2020 RESEARCH PROJECT STATEMENT

Research Topic:
Evaluating the Safety Impacts of Flashing Yellow Permissive Left-Turn Indications in Massachusetts [maximum award - $100,000]

Problem Statement and Objectives

The 2009 Edition of the Manual on Uniform Traffic Control Devices (MUTCD) introduced the Flashing Yellow Arrow (FYA) as a permissive left-turn indication. Massachusetts has since set out to implement this innovative traffic control device at intersections across the Commonwealth. A recent MassDOT retrofit project sought out to convert over 350 traditional steady green ball protected-permissive left-turn (PPLT) traffic signals to FYA protected-permissive operation. With the completion of the retrofit project in sight, this research initiative aims to investigate the safety impact of converting to the permissive left-turn FYA indication.

The following objectives will be completed through the course of this research project:

- Conduct a review of crash history at retrofit locations in Massachusetts prior to the adaptation to permissive FYA indications
- Investigate the crash history since the FYA permissive indications were implemented at locations across the Commonwealth
- Explore the specific PPLT phasing of each location to evaluate potential safety impacts
- Complete a cost-benefit analysis of FYA implementation across the Commonwealth

Anticipated Outcomes and Deliverables

- In-depth crash analysis of the implementation of FYA for permissive left-turns
- Proposed guidelines for future FYA retrofitting procedures
- Proposed recommendations to MassDOT for designing the sequence of PPLT phasing at different locations