

Research in Progress

Evaluating the Safety Impacts of Flashing Yellow Permissive Left-Turn Indications in Massachusetts: Approach Level Analysis

Research Need

Identifying the safety contributions of the Flashing Yellow Arrow (FYA) permissive indication through an approach-level crash analysis. Understanding the benefits of infrastructure & operational elements will likely improve performance at intersections with FYAs.

Goals/Objectives

Given the novelty of the Flashing Yellow Arrow (FYA) in Massachusetts, this research study will provide MassDOT with a greater understanding of their impacts from an approach-level perspective. More so, this study will provide the agency with a holistic overview of infrastructure and operational impacts at each of these intersections, ultimately leading to an improved understanding of future design characteristics.

Approach level analysis is the most appropriate method to assess the true impact of the permissive indication as well as infrastructure (e.g. turn lane length, LT lane offset, etc.) and operational (e.g. clearance intervals, phase sequence, etc.) elements. Thus, this study will aim at evaluating the before/after crashes of these FYA intersections from the approach-level to better understand the safety impacts of the LT permissive FYA signal. The advancement of these crash data analytics, methodologies, and applications will continue to remain important in years to come, and will increase safety by providing an increased understanding of conflict risk at signalized intersections involving FYAs.

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Project Information

This project is being conducted as part of the Massachusetts Department of Transportation (MassDOT) Research Program with funding from Federal Highway Administration (FHWA) State Planning and Research (SPR) funds.

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Performing Organization:

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Project Champion:

Jim Danila, MassDOT

Project Start Date:

November 2021

Expected Project Completion Date:

September 2022

Methodology

The following presents a list of the four main objectives that will be completed through the course of this research project:

Task 1: Stratify Approach-Level Before & After Crash Information Using FYA location Database

Task 2: Develop and Disseminate Survey to MassDOT District Traffic Engineers to Obtain Design Specs for Each FYA Intersection in Massachusetts

Task 3: Analyze Safety Impacts with Left-Turn FYA Related Infrastructure (Post-Installation)

Task 4: Develop Guidance and Recommendations for Left-Turn FYAs based on Newly Identified Approach-Level Crash Data

