Multi-directional Base Design for Steel Beam Non-proprietary Large Sign Supports-PHASE I 2020-02-BD

PS Developers

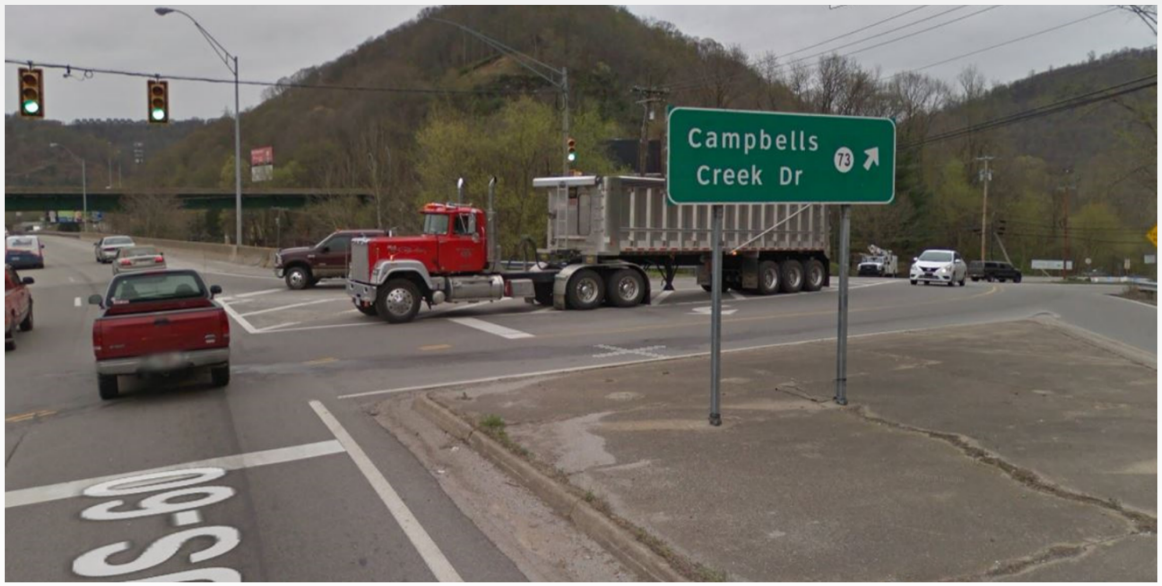
- Ted Whitmore (WVDOT)

Project Synopsis

- Multi-directional breakaway mechanism design for large sign assemblies is desired
- Retrofit is ideal to minimize inventory

Project Goal(s)

- Develop a design for a multi-directional breakaway mechanism design for large sign assemblies for installations near intersections



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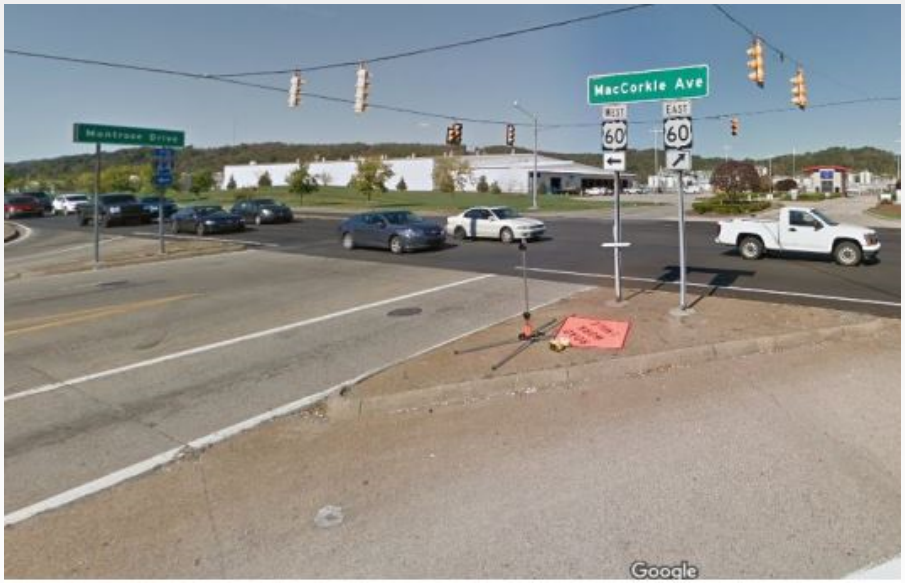
Project Background

- Non-proprietary large sign support design typically includes unidirectional slip base
- Multi-directional system is needed for installations with raised concrete islands or at T-intersections
- Designs exist for smaller supports, such as u-channel or square tubing, but no non-proprietary MASH-compliant design for these large assemblies
- Ongoing research regarding unidirectional design is recommended to be completed, and this project can subsequently begin



Proposed Work Plan

- Task 1: Engineering Analysis– PHASE I
  - Review current standards of Roadside Safety Pooled Fund
  - Develop critical design or designs to be tested
- Task 2: Surrogate Vehicle Testing – PHASE I
  - Use bogie testing to verify release mechanisms of designs
- Task 3: MASH Crash Testing– PHASE II
  - Next FY
  - Crash test the critical design(s) to MASH TL-3.

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Deliverables

- MASH compliant multi-directional design
- Recommendations for future research if designs do not meet MASH criteria
- Technical report documenting the project

Urgency and Expected Benefit

- Allow states to install large sign assemblies near intersections
- Retrofit option would minimize cost and maximize use of existing stock

Funding

- $135,000 (PHASE I)

Research Period

- 12 months