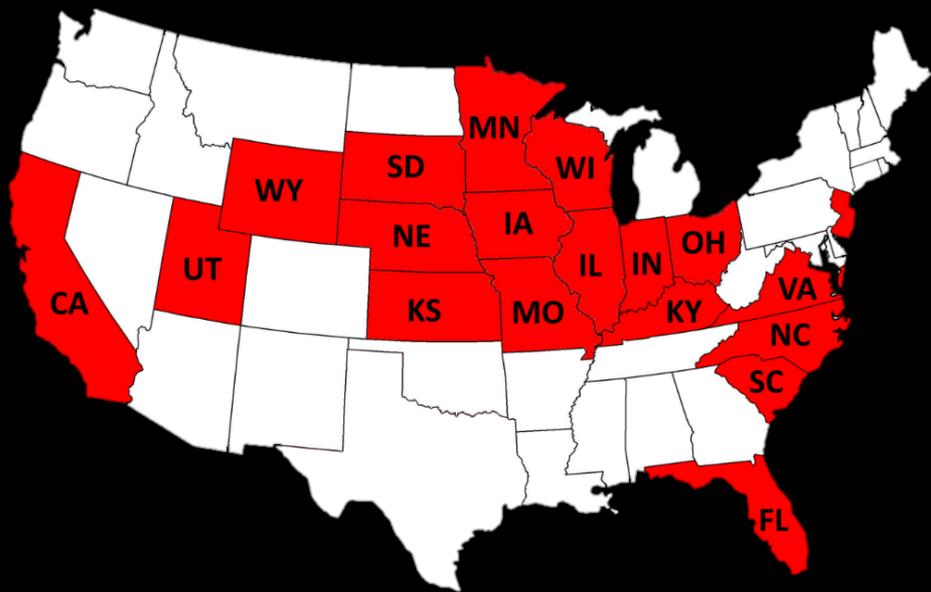


Midwest States Pooled Fund Program: Current and Planned Projects

Midwest Roadside Safety
Facility

University of Nebraska-
Lincoln



MASH TL-3 Evaluation of Thrie Beam Bullnose

- Objective
 - Evaluate thrie beam bullnose system to MASH TL-3
 - Evaluation with UBSP or CRT posts
- Recent Developments
 - Selection of breakaway post type
 - UBSP
 - All 7 full-scale crash tests completed to MASH TL-3



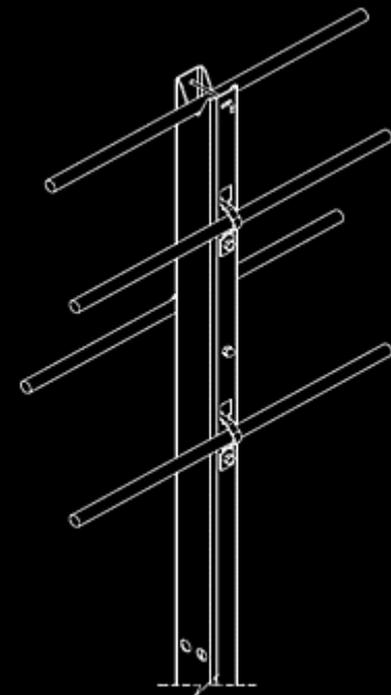
PCB Gap Hardware – Phase II

- Objective
 - Evaluate MASH TL-3 crashworthy system that accommodates variable gap lengths of 6” – 12.5’ between adjacent runs of PCB segments through full-scale crash testing
- Recent Developments
 - Two full-scale crash tests successfully completed
 - Test no. 3-11 for structural capacity
 - Test no. 3-11 for vehicle stability



High-Tension, Four-Cable Median Barrier System

- Objective
 - Develop MASH TL-3 high-tension, four-cable, median barrier system for placement anywhere within 6H:1V V-ditch
- Recent Developments
 - Floor pan tearing bogie testing of selected closed section post
 - Refinement of design details
- Level terrain testing
 - RFP-19-CABLE-1
 - Test nos. 3-11 and 3-17 planned



4-cable system
w/ tabbed bracket

Steel Post Downstream Anchorage System

- Objective
 - Develop steel post version of wood post downstream anchorage system
- Recent Developments
 - Designed & component tested anchorage concepts
 - Test no. 3-37a (2270P) conducted
 - Test no. 3-37b (1100C) planned



MGS with Curb

- Objective
 - Evaluate the MGS placed 6" behind a 6" tall, AASHTO type B curb to MASH TL-3
- Recent Developments
 - Successful crash tests
 - MASH 3-10 with 1100C
 - MASH 3-11 with 2270P



MGS w/ Curb and Omitted Post

- Objective
 - Evaluate the MGS placed 6" behind a 6" tall curb and with an omitted post to MASH TL-3 criteria
- Recent Developments
 - 2 full-scale tests
 - MASH 3-10 (failure)
 - MASH 3-10 (nested – passed)
- Test no. 3-11 planned for Year 29

Nested W-Beam
37.5 ft



Standardized Concrete Parapet for AGTs

- Objective
 - Develop a concrete end buttress that is compatible with all NCHRP 350 and MASH approved thrie-beam approach guardrail transitions (with or without curbs)
- Recent Developments
 - Completed MASH TL-3 evaluation with 31" tall and 34" tall thrie beam AGTs
 - Test no. 3-11 (31" AGT)
 - Test nos. 3-10 and 3-11 (34" AGT)



Optimized TL-4 Concrete Bridge Rail

- Objective
 - Develop an optimized, concrete bridge rail to MASH TL-4 safety performance standards
 - Account for 3” overlays
- Recent Developments
 - Barrier design and optimization
 - Deck design
 - Successful test no. 4-12



Phase I Evaluation of Single Post, U-Channel Sign Supports

- Objective
 - Evaluate the MASH crashworthiness of single-post, U-channel sign supports
 - Determine critical U-channel sign support configuration(s) and recommendations for full-scale crash testing
- Recent Developments
 - Literature search and sponsor survey
 - Selection of initial bogie tests



Guidance for MGS Placed Adjacent to Slopes

- Objective
 - Develop recommendations for MGS installed with slopes and offsets
 - Combine recommendations regarding MGS installed near slopes into a selection guide
- Recent Developments
 - Literature search
 - Developed guidance
 - Report in progress



Top-Mounted Socket for Weak-Post MGS

- Objective
 - Develop top-mounted, socketed attachments for Weak-Post MGS on culverts with soil fill heights of 1-3 ft.
- Two designs



Cylindrical Concrete Foundation



Steel Tube Assembly



Annual Pooled Fund Consulting Support

- Objective
 - Provide consulting services related to roadside safety to Pooled Fund members
- Website: <https://mwrsf-qa.unl.edu>
- Additional Consulting Support
 - Unique/problematic installation sites
 - Review of new standards

Pooled Fund Center for Highway Safety

- Objective
 - Provide an organized and searchable database containing all MwRSF reports, system CAD details, and videos
- Recent Developments
 - Added newly published reports, test videos, and drawings

Midwest Pooled Fund Year 29

- **Research starts October 2018**
 - **RPFP-19-CABLE-1: Redesign of the High-Tension Cable Median Barrier**
 - **RPFP-19-CONC-1: Evaluation of Permanent Concrete Barriers to MASH 2016**
 - **RPFP-19-MGS-3: Evaluation of MGS with Curb and Omitted Post - Continuation**
 - **RPFP-19-AGT-1: Guidelines for Flaring Thrie-Beam Approach Guardrail Transitions**
 - **RPFP-19-TERM-1: Generic End Terminal – Phase II**

Midwest Pooled Fund Year 29

- **Research starts October 2018**
 - **RFPF-19-MASHIMP-1: MASH 2016 Implementation Support**
 - **RFPF-19-MASHHC-1: Midwest Pooled Fund MASH Hardware Clearinghouse**
 - **RFPF-19-MWQA-1: Midwest Pooled Fund Q&A Website Improvements**
 - **RFPF-19-MWQA-2: Revisions to Midwest Pooled Fund Q&A Website Technical Information**
 - **RFPF-19-CONSULT: Annual Consulting Services Support**
 - **RFPF-19-PFCHS: Pooled Fund Center for Highway Safety**
 - **RFPF-19-LSDYNA: LS-DYNA Modeling Enhancement Support**

Individual State Research

- Wisconsin
 - Evaluation of a Culvert Mounted, Strong Post MGS to MASH 2016 TL-3
 - Evaluation of Anchored Temporary Concrete Barrier to MASH 2016 TL-3
 - Modification and MASH 2016 TL-3 Evaluation of the Asphalt Pin Tie-Down For F-shape PCB
 - Development of a New MASH 2016 TL-3 Portable Barrier System
- New Jersey
 - Evaluation of New Jersey TCB Performance under MASH TL-3

Individual State Research

- New Jersey/CALTRANS
 - Evaluation of Modified Thrie Beam Guardrail under MASH TL-3
- Minnesota
 - Test Level 3 Dynamic Testing and Evaluation of MnDOT's Noise Wall System Under AASHTO MASH 2016
- Missouri
 - Crash Testing MoDOT Devices

Individual State Research

- Iowa
 - MASH TL-2 Iowa DOT Combination Bridge Separation Barrier with Bicycle Railing
 - Crash Safety Evaluation of Concrete Barrier Sloped End Treatments
 - Development and Evaluation of a MASH TL-3 Compliant Parapet Mounted Fence
- Ohio
 - MASH TL-3 Evaluation of the Ohio Single-Slope Concrete Barrier (Unreinforced)

Individual State Research

- Ohio/Illinois
 - MASH TL-4 Steel Tube Bridge Rail and Guardrail Transition
- Nebraska
 - Cost-Efficient, TL-2 Bridge Rail for Low Volume Roads
 - Phase II Conceptual Development of an Impact Attenuation System for Intersecting Roadways
 - Redesign of Low-Tension Cable Barrier Adjacent to Steep Slopes

Questions

- For more information on these projects contact Midwest Roadside Safety Facility
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