



Caltrans Division of Research,
Innovation and System Information

Research



Notes

Transportation
Safety and
Mobility

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Project Title:
Midwest Roadside Safety Facility
Pooled Fund TPF-5(430)

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Midwest Roadside Safety Facility Pooled Fund TPF-5(430)

Various highway roadside appurtenances were crash tested to ensure they meet criteria established nationally. Under the pooled fund program, Midwest Roadside Safety Facility (MWRSF) performed research and Department of Transportation (DOT) supported full scale crash testing.

WHAT IS THE NEED?

Road owner and operators, such as State DOTs, including California Department of Transportation (Caltrans), are required to meet federal crash testing safety guidelines. In order to have non-proprietary designs available for use, they need to be developed, tested, analyzed and submitted to Federal Highway Administration (FHWA) for evaluation. This work requires specific expertise and for the testing lab to be accredited by the International Organization for Standardization (ISO) 17025. In addition, Caltrans has a large tort liability for vehicle accidents in our right of way. Caltrans can improve safety for the traveling public as well as reduce legal judgment costs by partnering with other DOTs on research to continually improving roadside safety systems.

WHAT ARE WE DOING?

As one of more than 20 state Department of Transportation, Caltrans is participating in the MWRSF Roadside Safety Pooled fund project to improve safety for California and the nation. Caltrans participates through a fund transfer to the pooled fund lead state, Nebraska State DOT. Caltrans also participates in the pooled fund project prioritization process, project meetings, as well as the annual and mid-year pooled fund meetings. Lastly, we work with our internal Caltrans customers to review and help implement MWRSF developed and tested hardware.

WHAT IS OUR GOAL?

Caltrans' goal in participating in this pooled fund project is to benefit by sharing expertise and receiving nonproprietary roadside safety hardware designs for use on its highways while realizing savings in terms of shared costs.



DRISI provides solutions and knowledge that improves California's transportation system

WHAT IS THE BENEFIT?

Caltrans benefits by sharing expertise and receiving roadside safety details and designs for use on our highways. The result is a statewide improvement in safety, reducing injuries and deaths for run of road accidents. There is also a reduction in Caltrans tort liability for accidents, ultimately resulting in significant savings for the state of California.

WHAT IS THE PROGRESS TO DATE?

See the following links for the pooled fund quarterly reports and the Midwest Roadside Safety Facility Research Hub for completed research:

<https://pooledfund.org/Details/Study/653> and
<https://mwrfsf.unl.edu/researchhub.php>

MwRSF recently completed a project to test the safety performance of the Hawaii Department of Transportation's (HDOT's) Thrie-Beam, Approach Guardrail Transition (AGT) attached to the 42-in. tall, solid concrete bridge rail with aesthetic, recessed, rounded panels and 6-ft wide sidewalk according to the Test Level 3 (TL-3) criteria of the Association of State Highway and Transportation Officials (AASHTO) Manual for Assessing Safety Hardware, Second Edition (MASH 2016). While the project was conducted for Hawaii DOT, other states including California may benefit from this research. A photo of the test article and two photos from the full-scale crash tests are shown below. The final reports can be found here: <https://mwrfsf.unl.edu/researchhub/files/Report453/TRP-03-472-22.pdf>.

IMAGE



Image 1: Approach Guardrail Transition with Sidewalk



Image 2: MASH 2270P Pickup test 3-21



Image 3: MASH 1100C Small Car Test 3-20