



Caltrans Division of Research,
Innovation and System Information

Research



Results



Transportation
Safety and
Mobility

FEBRUARY 2022

Project Title:

Midwest States Pooled Fund Crash
Test Program TPF-5(193)

Task Number: 3066

Start Date: July 1, 2016

Completion Date: June 30, 2019

Task Manager:

David Whitesel
Transportation Engineer
david.whitesel@dot.ca.gov

Midwest States Pooled Fund Crash Test Program

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 WAS THE NEED?

Road owner and operators, such as State DOTs, including Caltrans, are required to meet federal crash testing safety guidelines. In order to have nonproprietary 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, California Department of Transportation (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 continually improving roadside safety systems.

WHAT WAS OUR GOAL?

Caltrans' goal in participating in this pooled fund project, was 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.

WHAT DID WE DO?

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



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

WHAT WAS THE OUTCOME?

One significant project completed under the pooled fund program, was to develop a taller approach guardrail transition to be used with the taller concrete barriers and bridge rails that are currently being used. Some photos from the testing are featured below.

Refer to <https://pooledfund.org/Details/Study/418> and <https://mwrsf.unl.edu/researchhub.php> for a complete list of projects completed during the duration of this task.

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, which ultimately resulted in significant savings for the state of California.

LEARN MORE

<https://pooledfund.org/Details/Study/418>
<https://mwrsf.unl.edu/researchhub.php>

IMAGES

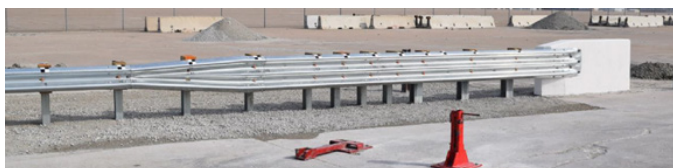


Image 1: 34-inch Approach Guardrail Transition



Image 2: Pickup Test Prior to Impact

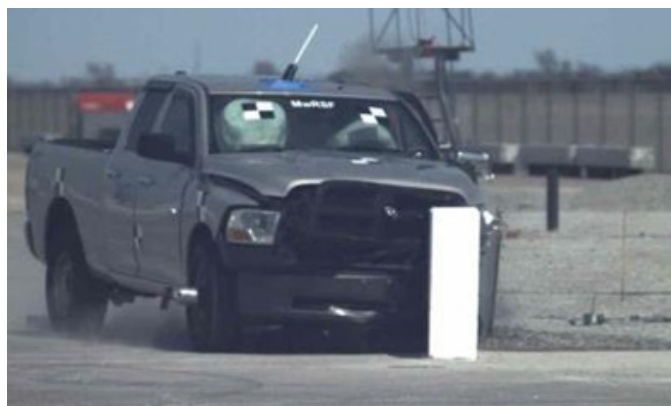


Image 3: Pickup Test During Impact



Image 4: Pickup Test After Impact

The contents of this document reflect the views of the authors, who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the California Department of Transportation, the State of California, or the Federal Highway Administration. This document does not constitute a standard, specification, or regulation. No part of this publication should be construed as an endorsement for a commercial product, manufacturer, contractor, or consultant. Any trade names or photos of commercial products appearing in this document are for clarity only.