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| **Roadside Safety Pooled Fund Program****Research Problem Statement** | State:WV-107 |
| Title:W-beam guardrail on 3:1 slopes – Phase II |
| Problem Statement: In locations where a traversable slope is located at the edge of the shoulder, there may be a desire to offset the barrier to minimize impacts. A longitudinal system that can be placed on 3H:1V slopes would provide this flexibility. As a result of a previously funded pooled fund project, three barrier designs for placement on a 3H:1V slope were suggested for evaluation through predictive computer simulations with respect to *MASH* TL-3 criteria:* Design 1: 31-inch W-beam rail, 7-ft steel post, wood blockouts; 3H:1V slope with posts placed 1 ft from the slope break (face of the guardrail aligned with the slope break); No rubrail;
* Design 2: 31-inch W-beam rail, 8-ft steel post, wood blockouts; 3H:1V slope with posts placed 2 ft from the slope break; No rubrail;
* Design 3: 31-inch W-beam rail, 8-ft steel post, wood blockouts; 3H:1V slope with posts placed 2 ft from the slope break; with rubrail.

All systems appeared to be crashworthy and likely to pass safety evaluation criteria required for *MASH*. Depending on the desired system post distance location from the 3H:1V slope break, the researchers recommended evaluation of selected design through full-scale crash testing according to *MASH* TL-3 criteria. |
| Objectives of the Study: Full-scale crash testing of the selected 31” W-beam guardrail system in accordance with *MASH* criteria. |
| Expected Benefits:The information compiled from this testing research study will provide the Federal Highway Administration and State Departments of Transportation with a W-beam guardrail design as a crashworthy system to be placed with a 3H:1V slope in front of a barrier. Being able to place W-beam guardrail with a 3H:1V slope in front of the barrier would reduce the number of impacts on the system and would provide flexibility in the placement of W-beam systems.  |
| Description of the Proposed Feature to be Tested: *(Be as detailed as possible. Include drawings and/or plans, if available.)*The system to be tested would be a 31” W-beam guardrail with 8” blockout placed on a 3H:1V slope, with slope in front of the posts. Other details of the test article will depend on the selected design among those proposed as results of the previous completed pooled fund research study. |
| Estimated Cost *(of the feature per linear foot installed):* | Total Estimated Cost of Crash Test: |
| Contact Person: | Telephone: |