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| **Roadside Safety Pooled Fund Program** **Research Problem Statement** | State:  Illinois (IL-89) |
| Title:  Bike / Pedestrian Path Guardrail Protection | |
| Problem Statement:  In keeping with Illinois “Complete Streets Law”, in which accommodations are evaluated for multi-user facilities, off road bike accommodations (pedestrian / bike paths) are sometime constructed separate and adjacent to existing guardrail. Bicyclists have requested protection from the exposed side / back of guardrail posts in the event of a bicyclist falling; it is envisioned to extend about 42” above the ground surface after installation. Designs to affix a protection rail to the back of the post would provide protection for the bicyclists, but it is perceived that an apparatus like this might become airborne and penetrate an errant vehicle during a crash on the guardrail side. | |
| Objectives of the Study:  Research if a protection rail has been developed and approved by FHWA for use. This would identify the crashworthiness of such a protection rail installed on the back posts. If no such protection rail exists, design a bicyclist protection rail that will not affect the crashworthiness of the guardrail system to which it is attached. | |
| Expected Benefits:  The protection rail would prevent bicyclist from injuring themselves on exposed guardrail, and the protection rail would be considered safe to use from an errant motorist perspective. | |
| Description of the Proposed Feature to be Tested: *(Be as detailed as possible. Include drawings and/or plans, if available.)*  Phase I would begin with a literature review to determine if there is an existing acceptable design. If not, a new protection rail would be developed through engineering design and analysis. The crashworthiness of the design would be evaluated through finite element impact simulation. If an acceptable design is developed in Phase I, then Phase II would verify impact performance of the guardrail system through full-scale crash testing. | |
| Estimated Cost *(of the feature per linear foot installed):* | Total Estimated Cost of Crash Test:  $55,000 for Phase I |
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