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| **Roadside Safety Pooled Fund Program****Research Problem Statement** | State:IL-99 |
| Title:IL Bicycle Railing (Parapet Mounted) |
| Problem Statement: The Illinois Department of Transportation has a bicycle policy that adheres to the AASHTO “Guide For The Development of Bicycle Facilities”, the FHWA publication “Selecting Roadway Design Treatments to Accommodate Bicycles”, and the Illinois’ “Complete Streets Law”. In addition, as part of the IL Strategic Highway Safety Plan (SHSP), one of the objectives included is to “Develop bicycle policies, design guidelines and programs that support the IDOT zero fatality policy”. In our efforts to safely accommodate bicyclists, we have not been able to identify a suitable railing for new or existing structures with concrete parapets that satisfies the bicycle design requirement set forth in AASHTO LRFD Bridge Design Specifications, and has been crash tested satisfactory to a TL-2 or TL-4 level. In Illinois, we estimate that we have 537 structures that would be affected. |
| Objectives of the Study: Illinois has preliminarily consulted with the Midwest Research Safety Facility (MwRSF) regarding the proposed design. Midwest has indicated that the bicycle railing design should satisfy TL-2 requirements as designed. The study objective would be to obtain a successful TL-4 crash test on the proposed parapet mounted bicycle railing. Attached is the Midwest letter dated January 28, 2014, and the IDOT Bicycle Railing (2 pages). |
| Expected Benefits:This bicycle railing would enable all states to provide bicyclists a safe mode of transportation on structures with New Jersey barriers, F-Shape barriers, and Constant-Slope barriers, ranging in height from 32” – 36”, and with either straight or variable sloped backs. This railing would also facilitate states to comply with FHWA Complete Streets guidelines and other AASHTO and FHWA publications. |
| Description of the Proposed Feature to be Tested: *(Be as detailed as possible. Include drawings and/or plans, if available.)*The bicycle railing provides the following:* It satisfies the pedestrian and bicycle geometric and load requirements of the AASHTO LRFD Bridge Design Specification.
* It can be mounted to new or existing parapets with straight or sloped backs.
* It is designed to handle any amount of expansion and still satisfy the geometric requirements.
* It is mounted outside the Zone of Intrusion for a TL-2 barrier as designed – however, the railing attachments is presumably located in the TL-4 zone, and so the posts have been designed to yield when contacted by an errant vehicle, thus not having a detrimental impact on the vehicle. The TL-4 crash testing will verify this.
* The railing has continuous horizontal railing elements with splices to maintain continuity and containment during an impact, thus mitigating concerns of the crash emitting debris from the railing.
* MwRSF’s January 28, 2014 letter indicates the raining design should satisfy TL-2 requirements as designed.
* The MwRSF letter and IDOT Bicycle Railing details (2 pages) are attached.
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| Estimated Cost *(of the feature per linear foot installed):*$100 / lf of metal railing | Total Estimated Cost of Crash Test: |
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