



CMF / CRF Details

CMF ID: 7764

Install shoulder rumble strips and widen shoulder width

Description: A combination of adding shoulder rumble strips and widening shoulder width

Prior Condition: Roadways without shoulder rumble strips and narrow shoulders

Category: Shoulder treatments

Study: [Validation and Application of Highway Safety Manual \(Part D\) in Florida, Abdel-Aty et al., 2014](#)

Star Quality Rating:	
<input type="text" value="2 Stars"/>	[View score details]

Crash Modification Factor (CMF)	
Value:	0.66
Adjusted Standard Error:	
Unadjusted Standard Error:	0.11

Crash Reduction Factor (CRF)	
Value:	34 (This value indicates a decrease in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	11

Applicability

Crash Type:	All
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	All
Number of Lanes:	>2
Road Division Type:	All
Speed Limit:	45-70
Area Type:	Rural
Traffic Volume:	2000 to 50000 <i>Annual Average Daily Traffic (AADT)</i>
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	2005 to 2010
Municipality:	
State:	FL
Country:	USA

Type of Methodology Used:	1
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Mar-08-2016
Comments:	CMFs of installing shoulder rumble strips and widening shoulder width on rural multi-lane highways The number of crashes in the after period were not reported in this study, however, they have been recorded as 300 to give 10 points as a benefit of doubt for one or more of the following: (1) number of miles/sites in the reference/treatment group, (2) number of crashes in the references/treatment group, (3) reporting AADTs for the aggregate dataset but not for the disaggregate dataset used for CMF development.

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