



CMF / CRF Details

CMF ID: 7767

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:	0.4
Adjusted Standard Error:	
Unadjusted Standard Error:	0.08

Crash Reduction Factor (CRF)	
Value:	60 (This value indicates a decrease in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	8

Applicability

Crash Type: Run off road

Crash Severity: All

Roadway Types: All

Number of Lanes: >2

Road Division Type: All

Speed Limit: 65-70

Area Type: Rural

Traffic Volume: 2000 to 50000 *Annual Average Daily Traffic (AADT)*

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 apply to single-vehicle run-off-road crashes. 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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