



CMF / CRF Details

CMF ID: 3657

Widen shoulder width to 5 feet or greater

Description:

Prior Condition: Roadway with no rumble strips and a shoulder width less than 5 feet

Category: Shoulder treatments

Study: [NCHRP Report 641: Guidance for the Design and Application of Shoulder and Centerline Rumble Strips, Torbic et al., 2009](#)

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

Crash Modification Factor (CMF)	
Value:	0.73
Adjusted Standard Error:	
Unadjusted Standard Error:	0.1485

Crash Reduction Factor (CRF)	
Value:	27 (This value indicates a decrease in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	14.85

Applicability

Crash Type: Run off road

Crash Severity: K (fatal),A (serious injury),B (minor injury),C (possible injury)

Roadway Types: Not Specified

Number of Lanes: 2

Road Division Type: Undivided

Speed Limit:

Area Type: Rural

Traffic Volume: 180 to 12776 *Average Daily Traffic (ADT)*

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: 1997 to 2006

Municipality:

State: MN, MO, PA

Country: U.S.A.

Type of Methodology Used:	7
Sample Size Used:	Crashes

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Mar-21-2011
Comments:	The authors collected data on thru lanes and speed limits but did not provide those data in the report (see p. 50).

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