



CMF / CRF Details

CMF ID: 5264

Install centerline and shoulder rumble strips

Description: Milled or rolled rumble strips.

Prior Condition: No centerline or rumble strips present

Category: Roadway

Study: [*Rumble Strips in North Dakota: A Comparison of Road Segments, Safety, and Crash Patterns*, A. Kubas, P. Kayabas, K. Vachal, and M. Berwick, 2013](#)

Star Quality Rating:



[\[View score details\]](#)

Crash Modification Factor (CMF)

Value: 1.21

Adjusted Standard Error:

Unadjusted Standard Error: 0.348

Crash Reduction Factor (CRF)

Value: -21 (This value indicates an **increase** in crashes)

Adjusted Standard Error:

Unadjusted Standard Error: 34.8

Applicability

Crash Type: All

Crash Severity: 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:

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: 2007 to 2011

Municipality:

State: ND

Country:	
Type of Methodology Used:	3
Sample Size Used:	Crashes
Before Sample Size Used:	22 Crashes
After Sample Size Used:	32 Crashes

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-02-2013
Comments:	Traffic volume was reported in VMT. VMT before was 86,522,040 vehicle-miles and 104,286,686 after.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

The information contained in the Crash Modification Factors (CMF) Clearinghouse is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in the CMF Clearinghouse. The information contained in the CMF Clearinghouse does not constitute a standard, specification, or regulation, nor is it a substitute for sound engineering judgment.