



CMF / CRF Details

CMF ID: 5310

Install shoulder rumble strips on roads with existing centerline rumble strips

Description: Install shoulder rumble strips on roads with existing centerline rumble strips

Prior Condition: Existing Centerline Rumble Strips

Category: Shoulder treatments

Study: [Performance Analysis of Centerline and Shoulder Rumble Strips Installed in Combination in Washington State, D. Olson, M. Sujka, and B. Manchas, 2013](#)

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

Crash Modification Factor (CMF)	
Value:	0.53
Adjusted Standard Error:	
Unadjusted Standard Error:	0.15

Crash Reduction Factor (CRF)	
Value:	47 (This value indicates a decrease in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	15

Applicability

Crash Type: Run off road

Crash Severity: All

Roadway Types: Not specified

Number of Lanes: 2

Road Division Type:

Speed Limit:

Area Type: Rural

Traffic Volume:

Time of Day: Not specified

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: 2002 to 2010

Municipality:

State: WA

Country:

Type of Methodology Used:	3
Sample Size Used:	Crashes
Before Sample Size Used:	32 Crashes
After Sample Size Used:	20 Crashes

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-02-2013
Comments:	Exposure is presented as VMTBefore MVMT = 196.26After MVMT = 231.34Crash type is total run off the road right crashes

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.