



CMF / CRF Details

CMF ID: 5311

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="✘ Star"/>	[View score details]

Crash Modification Factor (CMF)	
Value:	0.847
Adjusted Standard Error:	
Unadjusted Standard Error:	0.599

Crash Reduction Factor (CRF)	
Value:	15.3 (This value indicates a decrease in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	59.9

Applicability

Crash Type:	Run off road
Crash Severity:	K (fatal),A (serious injury)
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:	
Before Sample Size Used:	4
After Sample Size Used:	4

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 fatal and injury 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.