



# CMF / CRF Details

**CMF ID: 5298**

**Install shoulder rumble strips**

**Description:**

**Prior Condition: No Rumble strips present**

**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](#)**

<b>Star Quality Rating:</b>	
<input type="text" value="✖ Star"/>	<a href="#">[View score details]</a>

<b>Crash Modification Factor (CMF)</b>	
<b>Value:</b>	1.404
<b>Adjusted Standard Error:</b>	
<b>Unadjusted Standard Error:</b>	1.623

<b>Crash Reduction Factor (CRF)</b>	
<b>Value:</b>	-40.4 (This value indicates an <b>increase</b> in crashes)
<b>Adjusted Standard Error:</b>	
<b>Unadjusted Standard Error:</b>	162.3

## 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:**

*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

<b>Sample Size Used:</b>	Crashes
<b>Before Sample Size Used:</b>	1 Crashes
<b>After Sample Size Used:</b>	3 Crashes

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Dec-02-2013
<b>Comments:</b>	VMT based study VMT before = 27.03 MVMT VMT After = 57.69 MVMT Crash type is run off the road right

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