



# CMF / CRF Details

**CMF ID: 7752**

**Install shoulder rumble strips**

**Description:**

**Prior Condition: Roadways without should rumble strips**

**Category: Shoulder treatments**

**Study: [Validation and Application of Highway Safety Manual \(Part D\) in Florida, Abdel-Aty et al., 2014](#)**

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

<b>Crash Modification Factor (CMF)</b>	
<b>Value:</b>	0.64
<b>Adjusted Standard Error:</b>	
<b>Unadjusted Standard Error:</b>	0.15

<b>Crash Reduction Factor (CRF)</b>	
<b>Value:</b>	36 (This value indicates a <b>decrease</b> in crashes)
<b>Adjusted Standard Error:</b>	
<b>Unadjusted Standard Error:</b>	15

## 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:** All

**Speed Limit:** 45-70

**Area Type:** Rural

**Traffic Volume:** 2000 to 50000 *Annual Average Daily Traffic (AADT)*

**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:** 2005 to 2010

**Municipality:**

**State:** FL

**Country:** USA

**Type of Methodology Used:** 1

<b>Sample Size Used:</b>	
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<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Mar-08-2016
<b>Comments:</b>	CMFs of installing shoulder rumble strips on rural multi-lane highways apply to single-vehicle run-off-road crashes. The number of crashes in the after period were not reported in this study, however, they have been recorded as 300 to give 10 points as a benefit of doubt for one or more of the following: (1) number of miles/sites in the reference/treatment group, (2) number of crashes in the references/treatment group, (3) reporting AADTs for the aggregate dataset but not for the disaggregate dataset used for CMF development.

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