



# CMF / CRF Details

CMF ID: 7770

**Install shoulder rumble strips and widen shoulder width**

**Description:** A combination of adding shoulder rumble strips and widening shoulder width

**Prior Condition:** Roadways without shoulder rumble strips and narrow shoulders

**Category:** Shoulder treatments

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

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

Crash Modification Factor (CMF)	
Value:	0.63
Adjusted Standard Error:	
Unadjusted Standard Error:	0.15

Crash Reduction Factor (CRF)	
Value:	37 (This value indicates a <b>decrease</b> in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	15

## Applicability

**Crash Type:** Run off road

**Crash Severity:** K (fatal),A (serious injury),B (minor injury),C (possible injury)

**Roadway Types:** All

**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

<b>Type of Methodology Used:</b>	1
<b>Sample Size Used:</b>	

<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 and widening shoulder width 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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