



# CMF / CRF Details

CMF ID: 7747

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](#)

Star Quality Rating:

Stars

[\[View score details\]](#)

## Crash Modification Factor (CMF)

Value: 0.73

Adjusted Standard Error:

Unadjusted Standard Error: 0.07

## Crash Reduction Factor (CRF)

Value: 27 (This value indicates a **decrease** in crashes)

Adjusted Standard Error:

Unadjusted Standard Error: 7

## Applicability

**Crash Type:**

All

**Crash Severity:**

All

**Roadway Types:**

Not specified

**Number of Lanes:**

>2

**Road Division Type:**

All

**Speed Limit:**

65-70

**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 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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