



# CMF / CRF Details

CMF ID: 7755

Widen shoulder

Description:

Prior Condition: Roadways with 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:

4 Stars

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

## Crash Modification Factor (CMF)

Value: 0.66

Adjusted Standard Error:

Unadjusted Standard Error: 0.12

## Crash Reduction Factor (CRF)

Value: 34 (This value indicates a **decrease** in crashes)

Adjusted Standard Error:

Unadjusted Standard Error: 12

## 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:**

2

**Sample Size Used:**

**Other Details**

**Included in Highway Safety Manual?**

No

**Date Added to Clearinghouse:**

Mar-08-2016

**Comments:**

CMFs of widening shoulder width 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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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

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