



## CMF / CRF Details

**CMF ID: 7758**

**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:**



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

### Crash Modification Factor (CMF)

**Value:** 0.68

**Adjusted Standard Error:**

**Unadjusted Standard Error:** 0.19

### Crash Reduction Factor (CRF)

**Value:** 32 (This value indicates a **decrease** in crashes)

**Adjusted Standard Error:**

**Unadjusted Standard Error:**

19

### Applicability

**Crash Type:**

Run off road

**Crash Severity:**

All

**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

<b>Country:</b>	USA
<b>Type of Methodology Used:</b>	2
<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 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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