



# CMF / CRF Details

CMF ID: 7766

**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:                          | 0.4  |
| Adjusted Standard Error:        |      |
| Unadjusted Standard Error:      | 0.08 |

| Crash Reduction Factor (CRF) |  |
|------------------------------|--|
| Value:                       | 60 (This value indicates a <b>decrease</b> in crashes) |
| Adjusted Standard Error:     |  |
| Unadjusted Standard Error:   | 8  |

**Applicability**

|                            |  |
|----------------------------|--|
| <b>Crash Type:</b>         | Run off road   |
| <b>Crash Severity:</b>     | All  |
| <b>Roadway Types:</b>      | All  |
| <b>Number of Lanes:</b>    | >2   |
| <b>Road Division Type:</b> | All  |
| <b>Speed Limit:</b>        | 45-70  |
| <b>Area Type:</b>          | Rural  |
| <b>Traffic Volume:</b>     | 2000 to 50000 <i>Annual Average Daily Traffic (AADT)</i> |
| <b>Time of Day:</b>        | All  |

***If countermeasure is intersection-based***

|                                   |  |
|-----------------------------------|--|
| <b>Intersection Type:</b>         |  |
| <b>Intersection Geometry:</b>     |  |
| <b>Traffic Control:</b>           |  |
| <b>Major Road Traffic Volume:</b> |  |
| <b>Minor Road Traffic Volume:</b> |  |

**Development Details**

|                                 |              |
|---------------------------------|--------------|
| <b>Date Range of Data Used:</b> | 2005 to 2010 |
| <b>Municipality:</b>            |              |
| <b>State:</b>                   | FL           |
| <b>Country:</b>                 | 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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