



CMF / CRF Details

CMF ID: 3424

Install shoulder rumble strips

Description:

Prior Condition: *No Prior Condition(s)*

Category: Shoulder treatments

Study: [NCHRP Report 641: Guidance for the Design and Application of Shoulder and Centerline Rumble Strips, Torbic et al., 2009](#)

Star Quality Rating:

4 Stars

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

Crash Modification Factor (CMF)

Value:

0.94

Adjusted Standard Error:

Unadjusted Standard Error:

0.0641

Crash Reduction Factor (CRF)

Value:

6 (This value indicates a **decrease** in crashes)

Adjusted Standard Error:

Unadjusted Standard Error:

6.41

Applicability

| | |
|----------------------------|---|
| Crash Type: | All |
| Crash Severity: | K (fatal),A (serious injury),B (minor injury),C (possible injury) |
| Roadway Types: | Principal Arterial Other Freeways and Expressways |
| Number of Lanes: | |
| Road Division Type: | Divided by Median |
| Speed Limit: | |
| Area Type: | Rural |
| Traffic Volume: | 11539 to 37112 <i>Average Daily Traffic (ADT)</i> |
| 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: | 1997 to 2006 |
| Municipality: | |
| State: | MO |
| Country: | U.S.A. |
| Type of Methodology Used: | 2 |

| | |
|---------------------------------|-------------|
| Sample Size Used: | Crashes |
| Before Sample Size Used: | 417 Crashes |
| After Sample Size Used: | 241 Crashes |

| Other Details | |
|---|---|
| Included in Highway Safety Manual? | No |
| Date Added to Clearinghouse: | Mar-21-2011 |
| Comments: | The authors collected data on thru lanes and speed limits but did not provide those data in the report (see p. 50). |

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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