



## CMF / CRF Details

**CMF ID: 5413**

**Convert lane width from 12 ft to 11 ft, with a total shoulder of X ft**

**Description:** The cmf is for a combination of lane width and shoulder width. The total shoulder width includes paved and unpaved shoulder width and X is in ft

**Prior Condition:** 12 ft lane width with 6 ft shoulder width

**Category:** Roadway

**Study:** [Safety Effects of Cross Section Design on Urban and Suburban Roads, Le and Porter, 2012](#)

**Star Quality Rating:**



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

### Crash Modification Factor (CMF)

**Value:**

$$CMF = 1.142 * e^{-0.0335 * totshld}$$

**Adjusted Standard Error:**

**Unadjusted Standard Error:**

### Crash Reduction Factor (CRF)

**Value:**

$$CRF = 100 * \left(1 - \left(1.142 * e^{-0.0335 * totshld}\right)\right)$$

**Adjusted Standard Error:**

**Unadjusted Standard Error:**

### Applicability

**Crash Type:**

All

**Crash Severity:**

K (fatal),A (serious injury),B (minor injury),C (possible injury)

**Roadway Types:**

Not specified

**Number of Lanes:**

**Road Division Type:**

All

**Speed Limit:**

**Area Type:**

Urban and suburban

**Traffic Volume:**

1183 to 47067 *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

<b>Date Range of Data Used:</b>	2007 to 2009
<b>Municipality:</b>	
<b>State:</b>	IL
<b>Country:</b>	USA
<b>Type of Methodology Used:</b>	Regression cross-section
<b>Sample Size Used:</b>	2004 Crashes

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Jan-09-2014
<b>Comments:</b>	The function includes an interaction between lane width and shoulder width

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