



# CMF / CRF Details

CMF ID: 10220

Convert from paved shoulder to other

**Description:** Replace paved shoulder with either raised curb, lawn, gravel, valley gutter, or curb and gutter

**Prior Condition:** Paved shoulder

**Category:** Shoulder treatments

**Study:** [Estimation of bicycle crash modification factors \(CMFs\) on urban facilities using zero inflated negative binomial models, Raihan et al., 2019](#)

Star Quality Rating:	
8 Stars	<a href="#">[View score details]</a>

Crash Modification Factor (CMF)	
Value:	0.48
Adjusted Standard Error:	
Unadjusted Standard Error:	0.13

Crash Reduction Factor (CRF)	
Value:	52 (This value indicates a <b>decrease</b> in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	13

**Applicability**

<b>Crash Type:</b>	Vehicle/bicycle
<b>Crash Severity:</b>	All
<b>Roadway Types:</b>	Not specified
<b>Number of Lanes:</b>	2
<b>Road Division Type:</b>	Divided by Median
<b>Speed Limit:</b>	30-55 MPH
<b>Area Type:</b>	Urban
<b>Traffic Volume:</b>	1300 to 42000 <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>	2011 to 2014
<b>Municipality:</b>	
<b>State:</b>	FL
<b>Country:</b>	USA

<b>Type of Methodology Used:</b>	7
<b>Sample Size Used:</b>	

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Dec-07-2019
<b>Comments:</b>	This CMF applies to vehicle/bicycle crashes on urban two-lane divided segments. "Other" shoulder types include raised curb, lawn, gravel, valley gutter, or curb and gutter.

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