



CMF / CRF Details

CMF ID: 10231

Convert paved shoulder to curb and gutter


Description: Convert paved shoulder to curb and gutter

Prior Condition: Paved shoulders

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:

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

Crash Modification Factor (CMF)

Value: 1.21

Adjusted Standard Error:

Unadjusted Standard Error: 0.1

Crash Reduction Factor (CRF)

Value: -21 (This value indicates an **increase** in crashes)

Adjusted Standard Error:

Unadjusted Standard Error:	10
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Applicability

Crash Type:	Vehicle/bicycle
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	6
Road Division Type:	Divided by Median
Speed Limit:	40-55 MPH
Area Type:	Urban
Traffic Volume:	8000 to 98500 <i>Annual Average Daily Traffic (AADT)</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:	2011 to 2014
Municipality:	
State:	FL

Country:	USA
Type of Methodology Used:	7
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-07-2019
Comments:	This CMF applies to vehicle-bicycle crashes on urban six-leg divided highways.

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