



# CMF / CRF Details

CMF ID: 10407

Install shoulder rumble strips

Description:

Prior Condition: *No Prior Condition(s)*

Category: Shoulder treatments

Study: [Evaluation of the safety effectiveness of lane departure countermeasures on two-lane undivided roadways using crash modification factors, Dissanayake and Galgamuwa, 2019](#)

Star Quality Rating:

8 Stars

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

## Crash Modification Factor (CMF)

Value: 1.25

Adjusted Standard Error:

Unadjusted Standard Error: 0.105

## Crash Reduction Factor (CRF)

Value: -25 (This value indicates an **increase** in crashes)

Adjusted Standard Error:

Unadjusted Standard Error: 10.5

**Applicability**

<b>Crash Type:</b>	Run off road
<b>Crash Severity:</b>	All
<b>Roadway Types:</b>	Not specified
<b>Number of Lanes:</b>	2
<b>Road Division Type:</b>	Undivided
<b>Speed Limit:</b>	
<b>Area Type:</b>	Rural
<b>Traffic Volume:</b>	50 to 8550 <i>Annual Average Daily Traffic (AADT)</i>
<b>Time of Day:</b>	Not specified

***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>	2009 to 2014
<b>Municipality:</b>	
<b>State:</b>	KS
<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>	Jun-01-2020
<b>Comments:</b>	CMF for lane departure crashes on curved road segments

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