



CMF / CRF Details

CMF ID: 4239

Increase inside paved shoulder width from 4ft to 12ft (outside paved shoulder width = 8ft)

Description: Interchange influence area on urban four-lane freeway with a 12-ft inside paved shoulder and a 8-ft outside paved shoulder with warning device.

Prior Condition: 4-ft paved inside shoulder and 8-ft paved outside shoulder within interchange influence area

Category: Shoulder treatments

Study: [Developing Crash Modification Factors for Interchange Influence Areas on Urban Four-Lane Freeways Using Multivariate Adaptive Regression Splines, Haleem, Gan, and Lu, 2012](#)

Star Quality Rating:



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

Crash Modification Factor (CMF)

Value: 1.043

Adjusted Standard Error:

Unadjusted Standard Error: 0.1

Crash Reduction Factor (CRF)

Value:	-4.3 (<i>This value indicates an increase in crashes</i>)
Adjusted Standard Error:	
Unadjusted Standard Error:	10

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Principal Arterial Other Freeways and Expressways
Number of Lanes:	4
Road Division Type:	Divided by Median
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Time of Day:	Not specified

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:	2005 to 2008
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Municipality:	
State:	FL
Country:	United States
Type of Methodology Used:	7
Sample Size Used:	12078 Crashes

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Nov-01-2012
Comments:	Applies only to interchange influence areas. Countermeasure name changed in Jan 2014 to be more consistent with other CMFs from same study.

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