



# CMF / CRF Details

CMF ID: 4230

Increase inside paved shoulder width from 4ft to 8ft (outside paved shoulder width = 10ft)

**Description:** Interchange influence area on urban four-lane freeway with a 8-ft inside paved shoulder and a 10-ft outside paved shoulder with warning device.

**Prior Condition:** 4-ft paved inside shoulder and 10-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:	
<input type="text" value="3 Stars"/>	<a href="#">[View score details]</a>

Crash Modification Factor (CMF)	
Value:	1.224
Adjusted Standard Error:	
Unadjusted Standard Error:	0.1

Crash Reduction Factor (CRF)	
Value:	-22.4 (This value indicates an <b>increase</b> in crashes)
Adjusted Standard Error:	

<b>Unadjusted Standard Error:</b>	10
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### Applicability

<b>Crash Type:</b>	All
<b>Crash Severity:</b>	All
<b>Roadway Types:</b>	Principal Arterial Other Freeways and Expressways
<b>Number of Lanes:</b>	4
<b>Road Division Type:</b>	Divided by Median
<b>Speed Limit:</b>	
<b>Area Type:</b>	Urban
<b>Traffic Volume:</b>	
<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>	2005 to 2008
<b>Municipality:</b>	
<b>State:</b>	FL

<b>Country:</b>	United States
<b>Type of Methodology Used:</b>	7
<b>Sample Size Used:</b>	12078 Crashes

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Nov-01-2012
<b>Comments:</b>	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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