



# CMF / CRF Details

CMF ID: 5522

Increase inside shoulder width from 10ft to 12ft

Description: Increase inside shoulder width from 10ft to 12ft

Prior Condition: 10 ft inside shoulder width

Category: Shoulder treatments

Study: [Using multivariate adaptive regression splines \(MARS\) to develop crash modification factors for urban freeway interchange influence areas , Haleem et al., 2013](#)

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

Crash Modification Factor (CMF)	
Value:	0.669
Adjusted Standard Error:	
Unadjusted Standard Error:	0.092

Crash Reduction Factor (CRF)	
Value:	33.1 (This value indicates a <b>decrease</b> in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	9.2

**Applicability**

<b>Crash Type:</b>	All
<b>Crash Severity:</b>	K (fatal),A (serious injury),B (minor injury),C (possible injury)
<b>Roadway Types:</b>	Principal Arterial Other Freeways and Expressways
<b>Number of Lanes:</b>	4 to 6+
<b>Road Division Type:</b>	Divided by Median
<b>Speed Limit:</b>	
<b>Area Type:</b>	Urban
<b>Traffic Volume:</b>	5700 to 309000 <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>	2007 to 2010
<b>Municipality:</b>	
<b>State:</b>	FL
<b>Country:</b>	USA

<b>Type of Methodology Used:</b>	7
<b>Sample Size Used:</b>	18525 Crashes

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Apr-30-2014
<b>Comments:</b>	CMF for urban freeway interchange areas

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