



# CMF / CRF Details

CMF ID: 5189

## Change intersection skew angle

**Description:** Skew angle is defined as the absolute value of the difference between 90 degrees and the actual intersection angle (see illustration).

**Prior Condition:** *No Prior Condition(s)*

**Category:** Intersection geometry

**Study:** [Prediction of the Expected Safety Performance of Rural Two-Lane Highways, Harwood et al., 2000](#)

Star Quality Rating:	

Crash Modification Factor (CMF)	
Value:	$CMF = e^{0.0054(\text{proposedSkewAngle} - \text{existingSkewAngle})}$
Adjusted Standard Error:	
Unadjusted Standard Error:	

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

**Applicability**

<b>Crash Type:</b>	All
<b>Crash Severity:</b>	All
<b>Roadway Types:</b>	Minor Arterial
<b>Number of Lanes:</b>	2
<b>Road Division Type:</b>	
<b>Speed Limit:</b>	
<b>Area Type:</b>	Rural
<b>Traffic Volume:</b>	
<b>Time of Day:</b>	

***If countermeasure is intersection-based***

<b>Intersection Type:</b>	Roadway/roadway (not interchange related)
<b>Intersection Geometry:</b>	4-leg
<b>Traffic Control:</b>	Stop-controlled
<b>Major Road Traffic Volume:</b>	
<b>Minor Road Traffic Volume:</b>	

**Development Details**

<b>Date Range of Data Used:</b>	
<b>Municipality:</b>	
<b>State:</b>	No state(s) chosen.
<b>Country:</b>	

<b>Type of Methodology Used:</b>	
<b>Sample Size Used:</b>	

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	
<b>Date Added to Clearinghouse:</b>	Dec-01-2009
<b>Comments:</b>	A related form of this equation is found in the HSM 1st Ed, page 14-17. The HSM form is presented with an assumption that the existing skew angle (base condition) is 90 degrees. The formula has been rearranged for presentation on the CMF Clearinghouse to allow the user to input the existing and proposed skew angles in a single equation.

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