CRASH MODIFICATION FACTORS CLEARINGHOUSE

CMF / CRF Details

CMF ID: 10204

Change unpaved shoulder width from X to Y (in meters)

Description: Change unpaved shoulder width from X meters to Y meters

Prior Condition: Unpaved shoulder width of X meters, where X is greater than or equal to 0.9 meters

Category: Shoulder treatments

Study: *The influence of shoulder characteristics on the safety level of two-lane roads: A case-study*, Gitelman et al., 2019

Star Quality Rating:	★★★☆☆ [View score details]

Crash Modification Factor (CMF)	
Value:	$CMF = e^{[-0.211*(Y-2.25)-0.463*(X-2.25)]}$ Y = proposed average unpaved shoulder width, in meters X = existing average unpaved shoulder width, in meters
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)	
Value:	$CRF = 100 * (1 - e^{[-0.211*(Y-2.25)-0.463*(X-2.25)]})$ Y = proposed average unpaved shoulder width, in meters X = existing average unpaved shoulder width, in meters

Adjusted Standard Error:	
Unadjusted Standard Error:	

Applicability

Crash Type:	All
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Not specified
Number of Lanes:	2
Road Division Type:	Undivided
Speed Limit:	
Area Type:	Rural
Traffic Volume:	
Time of Day:	All
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:	2008 to 2010
Municipality:	
State:	
Country:	Israel
Type of Methodology Used:	5
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-07-2019
Comments:	This applies when the existing unpaved shoulder width (X) is greater than or equal to 0.9 meters and the proposed unpaved shoulder width (Y) is less than 0.9 meters.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center