



CMF / CRF Details

CMF ID: 9899

Change permissive left-turn phasing to protected only or protected/permissive

Description: Treatment group includes intersections where signal phases were changed from permissive to protected-only or protected/permissive.

Prior Condition: Intersections with permissive left-turn signal phasing.

Category: Intersection traffic control

Study: [*Safety Evaluation of Protected Left-Turn Phasing and Leading Pedestrian Intervals on Pedestrian Safety, Goughnour et al., 2018*](#)

Star Quality Rating:	
<input type="text" value="5 Stars"/>	[View score details]

Crash Modification Factor (CMF)	
Value:	0.942
Adjusted Standard Error:	
Unadjusted Standard Error:	0.028

Crash Reduction Factor (CRF)	
Value:	5.8 (This value indicates a decrease in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	2.8

Applicability

Crash Type: Other

Crash Severity: K (fatal),A (serious injury),B (minor injury),C (possible injury)

Roadway Types: All

Number of Lanes:

Road Division Type:

Speed Limit:

Area Type:

Traffic Volume:

Time of Day: All

If countermeasure is intersection-based

Intersection Type: Roadway/roadway (not interchange related)

Intersection Geometry: Not specified

Traffic Control: Signalized

Major Road Traffic Volume:

Minor Road Traffic Volume:

Development Details

Date Range of Data Used: 2001 to 2014

Municipality: Chicago, New York City, Toronto

State: notusa, IL, NY

Country: USA, Canada

Type of Methodology Used:	2
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Mar-11-2019
Comments:	Crash Type = Vehicle-Vehicle Crashes

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

The information contained in the Crash Modification Factors (CMF) Clearinghouse is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in the CMF Clearinghouse. The information contained in the CMF Clearinghouse does not constitute a standard, specification, or regulation, nor is it a substitute for sound engineering judgment.