



# CMF / CRF Details

**CMF ID: 9894**

**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\*](#)

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

<b>Crash Modification Factor (CMF)</b>	
<b>Value:</b>	1.106
<b>Adjusted Standard Error:</b>	
<b>Unadjusted Standard Error:</b>	0.061

<b>Crash Reduction Factor (CRF)</b>	
<b>Value:</b>	-10.6 (This value indicates an <b>increase</b> in crashes)
<b>Adjusted Standard Error:</b>	
<b>Unadjusted Standard Error:</b>	6.1

**Applicability**

<b>Crash Type:</b>	Vehicle/pedestrian
<b>Crash Severity:</b>	All
<b>Roadway Types:</b>	All
<b>Number of Lanes:</b>	
<b>Road Division Type:</b>	
<b>Speed Limit:</b>	
<b>Area Type:</b>	
<b>Traffic Volume:</b>	
<b>Time of Day:</b>	All

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

<b>Intersection Type:</b>	Roadway/roadway (not interchange related)
<b>Intersection Geometry:</b>	Not specified
<b>Traffic Control:</b>	Signalized
<b>Major Road Traffic Volume:</b>	4355 to 73697 Annual Average Daily Traffic (AADT)
<b>Minor Road Traffic Volume:</b>	886 to 47128 Annual Average Daily Traffic (AADT)

**Development Details**

<b>Date Range of Data Used:</b>	2005 to 2014
<b>Municipality:</b>	Toronto
<b>State:</b>	
<b>Country:</b>	Canada

<b>Type of Methodology Used:</b>	2
<b>Sample Size Used:</b>	

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

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