



## CMF / CRF Details

**CMF ID: 3941**

**Improve signal visibility**

**Description:** Includes such treatments as larger signal heads and reflective backboards.

**Prior Condition:** Unknown

**Category:** Intersection traffic control

**Study:** [\*A full Bayes multivariate intervention model with random parameters among matched pairs for before-after safety evaluation, El-Basyouny and Sayed, 2011\*](#)

**Star Quality Rating:**



[\[View score details\]](#)

### Crash Modification Factor (CMF)

**Value:** 0.71

**Adjusted Standard Error:**

**Unadjusted Standard Error:**

### Crash Reduction Factor (CRF)

**Value:** 29 (This value indicates a **decrease** in crashes)

**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:**

**Road Division Type:**

**Speed Limit:**

**Area Type:**

Urban

**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 2008

**Municipality:**

**State:**

<b>Country:</b>	Canada
<b>Type of Methodology Used:</b>	2
<b>Sample Size Used:</b>	Site-years
<b>Before Sample Size Used:</b>	37 Site-years
<b>After Sample Size Used:</b>	26 Site-years

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Jun-04-2012
<b>Comments:</b>	The number of crashes in the after period were not reported in this study, however, they have been recorded as 300 to give 10 points as a benefit of doubt for one or more of the following: (1) number of miles/sites in the reference/treatment group, (2) number of crashes in the references/treatment group, (3) reporting AADTs for the aggregate dataset but not for the disaggregate dataset used for CMF development.

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