



## CMF / CRF Details

**CMF ID: 1416**

**Add signal (additional primary head)**

**Description:**

**Prior Condition: Intersection has one primary signal head per approach**

**Category: Intersection traffic control**

**Study: [Safety Benefits of Additional Primary Signal Heads, Felipe et al., 1998](#)**

**Star Quality Rating:**



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

### Crash Modification Factor (CMF)

**Value:** 0.69

**Adjusted Standard Error:**

**Unadjusted Standard Error:**

### Crash Reduction Factor (CRF)

**Value:** 31 (This value indicates a **decrease** in crashes)

**Adjusted Standard Error:**

**Unadjusted Standard Error:**

**Applicability**

<b>Crash Type:</b>	All
<b>Crash Severity:</b>	O (property damage only)
<b>Roadway Types:</b>	Not specified
<b>Number of Lanes:</b>	
<b>Road Division Type:</b>	
<b>Speed Limit:</b>	
<b>Area Type:</b>	Urban
<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>	Signalized
<b>Major Road Traffic Volume:</b>	
<b>Minor Road Traffic Volume:</b>	

**Development Details**

<b>Date Range of Data Used:</b>	
<b>Municipality:</b>	Richmond, British Columbia
<b>State:</b>	
<b>Country:</b>	Canada

<b>Type of Methodology Used:</b>	Before/after using empirical Bayes or full Bayes
<b>Sample Size Used:</b>	Sites
<b>Before Sample Size Used:</b>	8 Sites
<b>After Sample Size Used:</b>	8 Sites

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Dec-01-2009
<b>Comments:</b>	The authors state that "three year of data were used for this analysis" (p. 7). This statement does not indicate if the before period was 3 years, the after period was 3 years, both were 3 years, or the total time period was 3 years (i.e. 1.5 years for before period and 1.5 years for after period).

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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

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