



## CMF / CRF Details

**CMF ID: 8969**

**Implement systemic signing and visibility improvements at signalized intersections**

**Description:** Replace all signal heads. Replace pedestrian signal heads, pushbuttons, and signs. Install backplates with retroreflective borders on all signal heads. Re-stripe stop lines. Re-stripe crosswalks. Install advance warning signs. Install overhead signs (e.g., R1012, R35L, R35R in the MUTCD(4)). Install curb ramps.

**Prior Condition:** Signalized intersection without systemic signing and visibility improvements

**Category:** Intersection traffic control

**Study:** [\*Safety Effects of Low-Cost Systemic Safety Improvements at Signalized and Stop-Controlled Intersections, Le et al., 2017\*](#)

**Star Quality Rating:**



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

### Crash Modification Factor (CMF)

**Value:** 0.895

**Adjusted Standard Error:**

**Unadjusted Standard Error:** 0.114

## Crash Reduction Factor (CRF)

<b>Value:</b>	10.5 <i>(This value indicates a <b>decrease</b> in crashes)</i>
<b>Adjusted Standard Error:</b>	
<b>Unadjusted Standard Error:</b>	11.4

## Applicability

<b>Crash Type:</b>	Rear end
<b>Crash Severity:</b>	All
<b>Roadway Types:</b>	All
<b>Number of Lanes:</b>	2
<b>Road Division Type:</b>	
<b>Speed Limit:</b>	
<b>Area Type:</b>	All
<b>Traffic Volume:</b>	
<b>Time of Day:</b>	All

### *If countermeasure is intersection-based*

<b>Intersection Type:</b>	
<b>Intersection Geometry:</b>	4-leg
<b>Traffic Control:</b>	Signalized
<b>Major Road Traffic Volume:</b>	4272 to 41100 Annual Average Daily Traffic (AADT)
<b>Minor Road Traffic Volume:</b>	111 to 20000 Annual Average Daily Traffic (AADT)

## Development Details

<b>Date Range of Data Used:</b>	2005 to 2014
<b>Municipality:</b>	
<b>State:</b>	SC
<b>Country:</b>	
<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>	Nov-17-2017
<b>Comments:</b>	CMF for 2 mainline lanes and 2 cross street lanes 4-legged intersections. 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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