



CMF / CRF Details

CMF ID: 8949

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: 0.866

Adjusted Standard Error:

Unadjusted Standard Error: 0.091

Crash Reduction Factor (CRF)

Value:	13.4 <i>(This value indicates a decrease in crashes)</i>
Adjusted Standard Error:	
Unadjusted Standard Error:	9.1

Applicability

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

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	3-leg,4-leg
Traffic Control:	Signalized
Major Road Traffic Volume:	4272 to 41100 Annual Average Daily Traffic (AADT)
Minor Road Traffic Volume:	111 to 20000 Annual Average Daily Traffic (AADT)

Development Details

Date Range of Data Used:	2005 to 2014
Municipality:	
State:	SC
Country:	
Type of Methodology Used:	2
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Nov-17-2017
Comments:	CMF for 2 mainline lanes and 2 cross street lanes 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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