



CMF / CRF Details

CMF ID: 9771

Install adaptive traffic signal control

Description: ATSC is a traffic management strategy in which traffic signal timings change, or adapt, based on observed traffic demand. These systems utilize increased detection to continually collect data on observed demand, and signal timings are then re-optimized based on current data.

Prior Condition: Traditional traffic signal

Category: Intersection traffic control

Study: [*Estimating Safety Effects of Adaptive Signal Control Technology using the Empirical Bayes Method, Khattak et al., 2018*](#)

Star Quality Rating:



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

Crash Modification Factor (CMF)

Value: 0.6

Adjusted Standard Error:

Unadjusted Standard Error: 0.056

Crash Reduction Factor (CRF)

Value: 40 (This value indicates a **decrease** in crashes)

Adjusted Standard Error:	
Unadjusted Standard Error:	5.6

Applicability	
Crash Type:	Multiple vehicle
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 and suburban
Traffic Volume:	
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	4-leg
Traffic Control:	Signalized
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details	
Date Range of Data Used:	
Municipality:	Pittsburgh

State:	PA
Country:	United States
Type of Methodology Used:	2
Sample Size Used:	

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Oct-27-2018
Comments:	Applies to crashes within 350 feet of an intersection. Both SURTRAC and InSync adaptive signal systems 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.

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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