



CMF / CRF Details

CMF ID: 4856

Installation of an actuated advance warning dilemma zone protection system at high-speed signalized intersections

Description: Installation of an actuated advance warning dilemma zone protection system at high-speed signalized intersections. The design algorithm continually monitors an upstream detector as well as traffic at the intersection in order to predict the onset of the yellow signal indication. Flashing beacons are then used to get the driver's attention and also to warn the driver of the impending end of the green indication.

Prior Condition: Untreated signalized intersection

Category: Intersection traffic control

Study: [*Safety Effect of Dilemma-Zone Protection Using Actuated Advance Warning Systems, Appiah et al., 2011*](#)

Star Quality Rating:



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

Crash Modification Factor (CMF)

Value: 0.995

Adjusted Standard Error:

Unadjusted Standard Error: 0.133

Crash Reduction Factor (CRF)

Value: 0.5 (This value indicates a **decrease** in crashes)

Adjusted Standard Error:

Unadjusted Standard Error: 13.3

Applicability

Crash Type: Truck related

Crash Severity: All

Roadway Types: Not specified

Number of Lanes:

Road Division Type:

Speed Limit:

Area Type: Not specified

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: 2420 to 21477 Annual Average Daily Traffic (AADT)

Minor Road Traffic Volume: 995 to 8948 Annual Average Daily Traffic (AADT)

Development Details

Date Range of Data Used:	1996 to 2008
Municipality:	
State:	NE
Country:	
Type of Methodology Used:	Before/after using empirical Bayes or full Bayes
Sample Size Used:	
Before Sample Size Used:	108
After Sample Size Used:	110

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	May-01-2013
Comments:	

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