



CMF / CRF Details

CMF ID: 9781

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: | |
| 8 Stars | [View score details] |

| Crash Modification Factor (CMF) | |
|---------------------------------|-------|
| Value: | 0.22 |
| Adjusted Standard Error: | |
| Unadjusted Standard Error: | 0.107 |

| Crash Reduction Factor (CRF) | |
|------------------------------|--------------------------------------------------------|
| Value: | 78 (This value indicates a decrease in crashes) |
| Adjusted Standard Error: | |

| | |
|-----------------------------------|------|
| Unadjusted Standard Error: | 10.7 |
|-----------------------------------|------|

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: | 3-leg |
| Traffic Control: | Signalized |
| Major Road Traffic Volume: | |
| Minor Road Traffic Volume: | |

Development Details

| | |
|---------------------------------|----|
| Date Range of Data Used: | |
| Municipality: | |
| 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. InSync adaptive signal control system installed 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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