



## CMF / CRF Details

CMF ID: 8715

Widen shoulder

Description:

Prior Condition: Roadway with narrower shoulders

Category: Shoulder treatments

Study: [Evaluation of Safety Effectiveness of Multiple Cross Sectional Features on Urban Arterials, Park and Abdel-Aty, 2016](#)

Star Quality Rating:



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

### Crash Modification Factor (CMF)

Value:

$$CMF = \exp \{-0.0673 \times (SW - Base_{SW})\}$$

Where:

$SW$  = Shoulder Width (feet)

$Base_{SW}$  = Baseline Shoulder Width (feet)

Adjusted  
Standard  
Error:

Unadjusted  
Standard  
Error:

## Crash Reduction Factor (CRF)

**Value:** *(This value indicates an **increase** in crashes)*

**Adjusted Standard Error:**

**Unadjusted Standard Error:**

## Applicability

**Crash Type:** Vehicle/bicycle

**Crash Severity:** All

**Roadway Types:** Principal Arterial Other

**Number of Lanes:** 2-8

**Road Division Type:** All

**Speed Limit:** 20-65

**Area Type:** Urban

**Traffic Volume:** 1000 to 94500 *Annual Average Daily Traffic (AADT)*

**Time of Day:** All

### *If countermeasure is intersection-based*

**Intersection Type:**

**Intersection Geometry:**

**Traffic Control:**

**Major Road Traffic Volume:**

**Minor Road Traffic Volume:**

## Development Details

<b>Date Range of Data Used:</b>	2008 to 2012
<b>Municipality:</b>	
<b>State:</b>	FL
<b>Country:</b>	USA
<b>Type of Methodology Used:</b>	7
<b>Sample Size Used:</b>	

## Other Details

<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Nov-06-2017
<b>Comments:</b>	The CMF is for KABCO crashes. CMF applies to urban arterials.

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