



# CMF / CRF Details

**CMF ID: 4591**

**Convert paved shoulder to gravel shoulder (maintain 2 ft width)**

**Description: Convert paved shoulder to gravel shoulder (maintain 2 ft width)**

**Prior Condition: Paved shoulder (HSM notes that to determine the CMF for changing the shoulder type, divide the "new" condition CMF by the "existing" condition CMF.**

**Category: Shoulder treatments**

**Study: [Highway Safety Manual, 1st Edition, Various, 2010](#)**

Star Quality Rating	
Star Quality Rating:	

Crash Modification Factor (CMF)	
Value:	1.01
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)	
Value:	-1 (This value indicates an <b>increase</b> in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	

## Applicability

**Crash Type:**

Head on,Run off road,Sideswipe,Single vehicle

**Crash Severity:**

Not specified

**Roadway Types:**

Minor Arterial

**Number of Lanes:**

2

**Road Division Type:**

**Speed Limit:**

**Area Type:**

Rural

**Traffic Volume:**

**Time of Day:**

*If countermeasure is intersection-based*

**Intersection Type:**

**Intersection Geometry:**

**Traffic Control:**

**Major Road Traffic Volume:**

**Minor Road Traffic Volume:**

## Development Details

**Date Range of Data Used:**

**Municipality:**

**State:**

No state(s) chosen.

**Country:**

**Type of Methodology Used:**

<b>Sample Size Used:</b>	
<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	
<b>Date Added to Clearinghouse:</b>	
<b>Comments:</b>	HSM 1st Ed, Table 13-9

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