



## CMF / CRF Details

**CMF ID: 1854**

**Install a combination of chevron signs, curve warning signs, and/or sequential flashing beacons**

**Description: Along a curve with a small radius, large deflection angle, available sight distance smaller than stopping sight distance, and superelevation smaller than demanded at design and operating speed**

**Prior Condition: No curve delineation treatment**

**Category: Signs**

**Study: [Safety Evaluation of Curve Delineation Improvements An Empirical Bayes Observational Before-After Study, Montella, 2009](#)**

**Star Quality Rating:**



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

### Crash Modification Factor (CMF)

**Value:** 0.529

**Adjusted Standard Error:**

**Unadjusted Standard Error:** 0.09

### Crash Reduction Factor (CRF)

**Value:** 47.1 (This value indicates a **decrease** in crashes)

|                                   |   |
|-----------------------------------|---|
| <b>Adjusted Standard Error:</b>   |   |
| <b>Unadjusted Standard Error:</b> | 9 |

| <b>Applicability</b>       |  |
|----------------------------|--|
| <b>Crash Type:</b>         | Wet road   |
| <b>Crash Severity:</b>     | All  |
| <b>Roadway Types:</b>      | Principal Arterial Other Freeways and Expressways        |
| <b>Number of Lanes:</b>    | 4  |
| <b>Road Division Type:</b> |  |
| <b>Speed Limit:</b>        |  |
| <b>Area Type:</b>          | All  |
| <b>Traffic Volume:</b>     | 7400 to 13975 <i>Annual Average Daily Traffic (AADT)</i> |
| <b>Time of Day:</b>        | All  |

***If countermeasure is intersection-based***

|                                   |  |
|-----------------------------------|--|
| <b>Intersection Type:</b>         |  |
| <b>Intersection Geometry:</b>     |  |
| <b>Traffic Control:</b>           |  |
| <b>Major Road Traffic Volume:</b> |  |
| <b>Minor Road Traffic Volume:</b> |  |

| <b>Development Details</b>      |                                    |
|---------------------------------|------------------------------------|
| <b>Date Range of Data Used:</b> | 2001 to 2005                       |
| <b>Municipality:</b>            | Trans European Road Network, Italy |

|                                  |    |
|----------------------------------|----|
| <b>State:</b>                    |    |
| <b>Country:</b>                  |    |
| <b>Type of Methodology Used:</b> | 2  |
| <b>Sample Size Used:</b>         |    |
| <b>Before Sample Size Used:</b>  | 14 |
| <b>After Sample Size Used:</b>   | 14 |

| <b>Other Details</b>                      |             |
|---|-------------|
| <b>Included in Highway Safety Manual?</b> | No          |
| <b>Date Added to Clearinghouse:</b>       | Dec-01-2009 |
| <b>Comments:</b>                          |             |

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