



# CMF / CRF Details

CMF ID: 8733

## Install Variable Speed Limits

**Description:** The VSL system generally displayed information on dynamic speed limits, lane closures, merge arrows and other warning information through the overhead gantries. Speed adjustments in the system are automated based on real-time traffic conditions.

**Prior Condition:** Roadway without variable speed limits

**Category:** Advanced technology and ITS

**Study:** [Evaluating Safety Effects of Variable Speed Limit System using Empirical Bayesian Before-After Analysis, Pu et al., 2017](#)

Star Quality Rating:	
<input type="text" value="2 Stars"/>	<a href="#">[View score details]</a>

Crash Modification Factor (CMF)	
Value:	0.81
Adjusted Standard Error:	
Unadjusted Standard Error:	0.24

Crash Reduction Factor (CRF)	
Value:	19 (This value indicates a <b>decrease</b> in crashes)
Adjusted Standard Error:	

**Unadjusted Standard Error:**

24

### Applicability

**Crash Type:**

All

**Crash Severity:**

**Roadway Types:**

Principal Arterial Interstate

**Number of Lanes:**

8

**Road Division Type:**

Divided by Median

**Speed Limit:**

>40

**Area Type:**

Urban

**Traffic Volume:**

**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

**Date Range of Data Used:**

2007 to 2012

**Municipality:**

Seattle

**State:**

WA

<b>Country:</b>	USA
<b>Type of Methodology Used:</b>	2
<b>Sample Size Used:</b>	

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Nov-17-2017
<b>Comments:</b>	CMF of severe injury crashes, including fatal, evident injury, and serious injury crashes.

---

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

*The information contained in the Crash Modification Factors (CMF) Clearinghouse is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in the CMF Clearinghouse. The information contained in the CMF Clearinghouse does not constitute a standard, specification, or regulation, nor is it a substitute for sound engineering judgment.*