

## Ensuring Consistency in Decision Making: Why and How Your State Should Develop a State CMF List

### What does CMF mean?

A Crash Modification Factor (CMF) is a numerical value that shows the expected change in crashes after implementing a countermeasure. It provides a *quantitative* estimate to replace *anecdotal* estimates of the safety effect of the countermeasure in benefit/cost analyses or project funding requests.

### What is a State CMF list?

A State CMF list is a list of pre-selected CMFs that can be used for all safety projects in a particular State. It could be a short list of the most commonly used CMFs or a longer, more comprehensive list. Each State can determine the type of list that best suits their needs.

### Why is a State CMF list helpful?

A State CMF list is helpful because it:

- **Ensures Consistency:** Some State agencies develop a State CMF list to improve consistency within their State regarding CMF use on proposed projects.
- **Leverages Experience:** A State CMF list leverages the knowledge and expertise of those experienced with CMFs to assist those with less experience.
- **Improves Communication:** A State CMF list can be a way to communicate to public officials the reason for using certain countermeasures, especially those which are relatively new to the State.

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*Real world example: a State DOT district might assume that installing a particular countermeasure would result in a CMF of 0.80 (20% reduction in crashes), while another district assumes a CMF of 0.60 (40% reduction in crashes) for the same countermeasure. This inconsistency makes it difficult to compare proposed projects for safety funding. A State CMF list could help streamline and improve this process!*

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### Who develops a State CMF list

Any state can develop their own State CMF list by examining CMF resources, such as the FHWA CMF Clearinghouse ([www.cmfclearinghouse.org](http://www.cmfclearinghouse.org)), and determining which countermeasures and CMFs should be included on the State CMF list. This is typically done by a committee of experts within the State who have experience in using or developing CMFs. The committee should include people with a range of responsibilities, focus areas, and agency affiliation, such as state safety engineers, design engineers, district staff, local agency staff, and federal division staff.

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*“Oregon DOT’s All Roads Transportation Safety Program addresses safety on both state highways and local agency roads. Given this wide range of road types, we consider it imperative that all agencies use the same information to calculate the economic effect of a proposed safety project. This includes a need to use the same CMFs for similar projects. We developed a state CMF list to make the project selection process consistent and fair.”*

*- Zahidul Siddique, Highway Safety Engineer, Oregon Department of Transportation*

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## Issues to consider in the development process

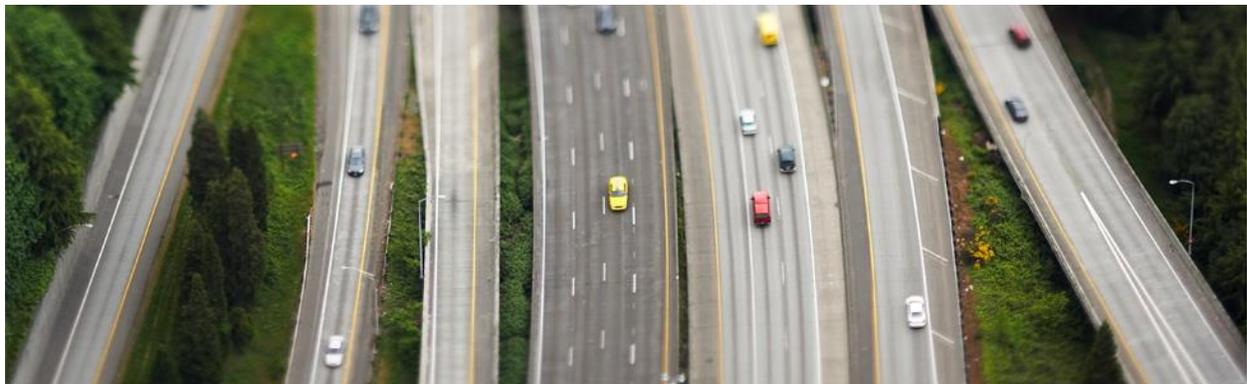
A State will need to consider a variety of issues when developing a State CMF list. Those leading the development process should gather input from the committee as well as feedback from those who will be using the CMF list, such as other DOT staff and local agency users.

Potential questions to consider in the development of a State CMF list:

- Which resources will be used to identify potential CMFs for the State list? (e.g., FHWA CMF Clearinghouse, Highway Safety Manual, studies from state research, expert panel opinion, etc.)
- What aspects of the CMFs will be important in the selection? (e.g., roadway class, area type, state of origin, commonly used countermeasures vs. new ones the state would like to implement, etc.)
- Will there be a minimum rating criteria for the countermeasures included on the list? (e.g., three stars and above on the CMF Clearinghouse, only those CMFs in the Highway Safety Manual, etc.)
- How will selections be made between similar CMFs? (e.g., select the most appropriate one for the state, calculate a combined value from multiple CMFs, etc.)
- What if there is no CMF for a particular countermeasure of interest? (e.g., omit the countermeasure from the list or estimate a CMF based on state experience, simple before after evaluations of implemented projects, engineering judgement, etc.)
- What information will be included on the State CMF list? (e.g., description of countermeasure, CMF or range of CMFs, specifics about the type of crash or roadway the CMF applies to, etc.)
- How often should the list be updated?



*Browse sample State CMF lists developed by Texas, Oregon, New York, North Carolina, and others at [www.cmfclearinghouse.org/stateselectedList.cfm](http://www.cmfclearinghouse.org/stateselectedList.cfm)*



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**Federal Highway Administration** For more information, visit [www.cmfclearinghouse.org](http://www.cmfclearinghouse.org)