

Step 3 Gather Risk Factor Information

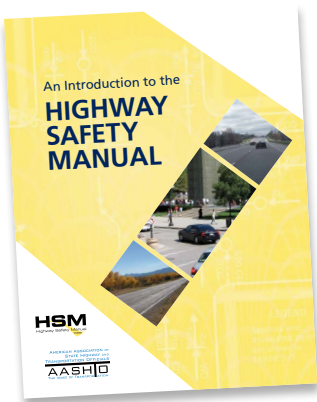
The next step is to *define, document, and assess* the most common roadway characteristics, or risk factors, associated with the focus crash type and focus facility type. Again, an agency does not necessarily need a robust dataset to identify locations that can benefit from safety improvements. Examples of methods an agency can use to quantify roadway and intersection characteristics for risk factor evaluation include:

- Roadway and intersection inventories
- Online aerial imagery

- Photo and video logs
- Field visits

It's important to remember that a roadway feature itself is not the risk factor; rather, it is the degree to which the characteristic contributes to crash severity or frequency. For example, a 90 degree horizontal curve is more likely to contribute to a crash than a 5 degree curve. Translated: the 90 degree curve poses a greater risk for future crashes.

Step 4 Identify and Evaluate Risk Factors



Identifying risk factors can largely come from engineering judgment and experience, but it can also come from documented resources, including the *Highway Safety Manual* (HSM), field visits, conversations with field staff about their first-hand observations, and the

Federal Highway Administration's guide to *Potential Risk Factors*.²

A few of the many examples of potential risk factors include:

- Number of lanes.
- Lane/Shoulder/Clear zone width.
- Curve radius or density.
- Roadside edge features and quality.
- Traffic volume.
- Intersection elements.
- Speed limit or differential.
- Pavement condition.

Note that practitioners can use the *Highway Safety Manual* and the *Crash Modification Factor (CMF) Clearinghouse*³ to estimate the degree to which each risk factor contributes to the overall reduced level of safety within the facility type.

Step 5 Apply Risk Factors to the Entire Focus Group Population to Identify a Ranked List of Sites

Expand the vetting process from the severe crash locations (used to determine the focus group and risk factors) to all roads within the focus facility type. For each crash location, determine the number of risk factors (determined in Step 4) the site exhibits. This can be accomplished by using a roadway or intersection inventory, online aerial imagery, photo or video logs,

or field visits. Rank locations based on the number of risk factors present. Some agencies choose to use a weighted ranking system, emphasizing roadway characteristics with greater risk. The result will be a ranked list with severe crash locations near the top along with non-severe crash locations that have a high-risk of experiencing a severe crash in the future.

² Federal Highway Administration, *Potential Risk Factors*, Washington, D.C. (n.d.). Available at: https://safety.fhwa.dot.gov/systemic/pdf/FHWA_SystemicApproach_PotentialRiskFactors.pdf.

³ Federal Highway Administration, *CMF Clearinghouse User Guide*, Washington, D.C. Available at: <http://www.cmfclearinghouse.org/userguide.cfm>.

