

The Calibrator: An SPF Calibration and Assessment Tool

Calibrate, Critique, CURE

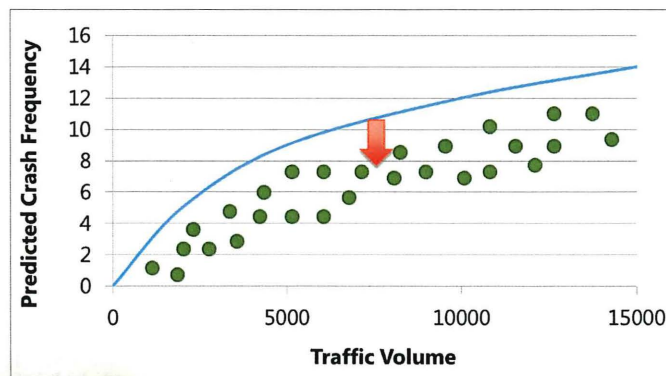


Safety performance functions (SPFs) are integral to the roadway safety management process and Highway Safety Manual (HSM) predictive method. In the roadway safety management process, agencies use SPFs to screen their network for sites with potential for improvement and to account for changes in traffic volume when estimating the safety effects of completed projects. In the predictive method, analysts combine the crash predictions from SPFs with observed crash history to estimate the expected safety performance of design alternatives.

■ WHY CALIBRATE?

Users must calibrate SPFs to ensure they reflect local and temporal conditions. Calibration accounts for differences and changes within and among jurisdictions, which can include:

- Crash reporting (e.g., minimum reporting thresholds).
- Crash type/severity proportions.
- Roadway maintenance practices.
- Road user population and behavior.
- Weather and terrain.



The Calibrator Tool is now available to help users calibrate SPFs and assess SPF compatibility and applicability.

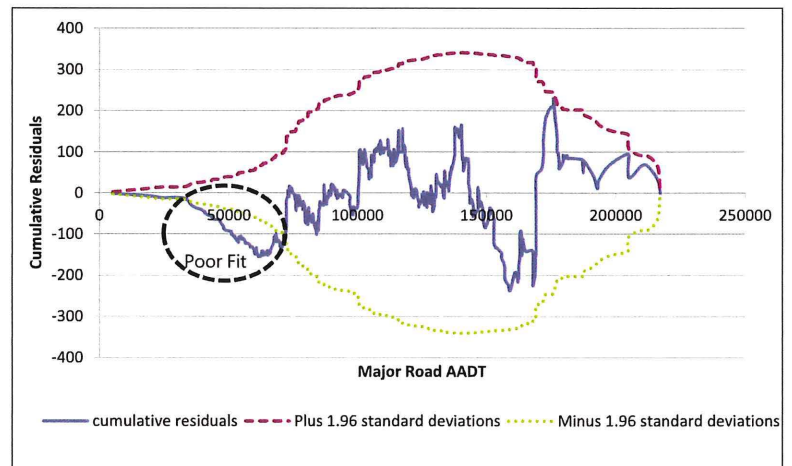
The audience for The Calibrator includes road safety practitioners responsible for developing new SPFs and calibrating existing SPFs to data from their jurisdiction. The tool helps to automate the calibration process, generate cumulative residual (CURE) plots, and provide information to users that will allow them to assess the suitability of, or to compare between, alternate SPFs.



■ USER BENEFITS

The spreadsheet-based tool can help users:

- Assess performance of the HSM Predictive Method on local data.
- Assess performance of the uncalibrated HSM Part C SPFs on local data.
- Assess performance of SPFs and crash modification factors (CMFs) from other sources on local data.
- Calibrate existing SPFs to local data using the HSM calibration procedure.
- Calibrate the dispersion parameter of an existing SPF to local data.
- Compare performance of multiple SPFs.
- Identify most appropriate SPFs and CMFs to apply from a list of alternatives.
- Create CURE plots and assessment tables for evaluating SPF performance.



■ DATA REQUIREMENTS

The following are the data requirements for using The Calibrator:

- SPF(s) for calibration or assessment. The tool contains SPFs from the HSM and AASHTOWare Safety Analyst™.
- Calibration dataset, including the following:
 - Crash data for each reference site.
 - Traffic volume data for each reference site.
 - Roadway data to define the reference group (e.g., area type, number of lanes, median type, number of approaches, and traffic control).

The data should only include sites to which the calibrated SPFs will be applied, and no sites should have missing values.

■ ONLINE RESOURCES

The following resources are available online free of charge:

- [The Calibrator](#) (tool, user guide, & narrated tutorial).
- [User's Guide to Develop Calibration Factors.](#)
- [SPF Decision Guide.](#)
- [SPF Development Guide.](#)

To access these and other resources to support your safety data and analysis needs, visit the Roadway Safety Data and Analysis Toolbox (<http://safety.fhwa.dot.gov/rsdp/>).

■ ROADWAY SAFETY DATA CONTACTS

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