



▶ PURPOSE

This activity provides you an opportunity to learn to estimate safety performance of your alignment alternative using the HSM's predictive model for rural two-lane, two-way roads.

▶ LEARNING OBJECTIVE

Be able to apply HSM's predictive model for rural two-lane, two-way roads to a rural highway with specific geometric and operational features.

▶ REQUIRED RESOURCES

- *Highway Safety Manual* (Chapters 10 and 13)
- Completed Design Controls and Criteria (*A5_design_controls_criteria.xlsx*)
- Completed alignment alternative (Activity 10)
- Completed typical section drawings (Activity 12)
- Completed roadside barrier design (Activity 13)

▶ TASKS

The details for applying the HSM predictive model for rural two-lane, two-way road are included in Chapter 10 of HSM. Descriptions of the Crash Modification Factors (CMF) are included in Chapter 13.

The first step in applying the HSM method to your alignment design is to divided the alignment into segments of tangents and curves. You also need to separate segments with grades from level segments. The average number of crashes per year is first estimated for each segment. Then number of crashes per year of all individual segments are summed to estimate the total number of crashes per year for your design.

It is most effective to run your HSM analysis in an Excel spreadsheet, which facilitates the analysis of all individual segments at the same time.

▶ DELIVERABLE

Completed spreadsheet table of average crashes per year calculation.

▶ INFORMATION

AASHTO and FHWA web sites on HSM have many resources available, including calculation spreadsheets, to help you perform the calculation required for this activity. You can download one of them to help you get started. Make sure you fully understand how to use the spreadsheet and enter your design values correctly. Consult the instructor for more information.

