

- A Study of Safety Impacts of Different Types of Driveways and Their Density (*Michael Williamson, Huaguo Zhou, Ph.D. - Southern Illinois University, Edwardsville*)

The newly published Highway Safety Manual (HSM) has defined six different driveway types based on land use and parking lot size, including major commercial, minor commercial, major industrial-institutional, minor industrial-institutional, major residential, and minor residential. Major driveways are defined as having more than 50 parking spaces, while minor driveways are defined as those having less than 50 parking spaces. The HSM crash prediction models require the inputs of driveway type and density. However, the actual impacts of different types of driveways on the number of crashes are not clear. The crash modification factors were provided based on few past studies, with high standards of error.

The purpose of this research is to develop a method to quantify the impact of driveway types and density on traffic crash frequencies, types, and severities. The different driveway types were collected in the State of Illinois and crashes occurring in the function area of each driveway were identified from the IDOT crash database (from 2005 to 2009). A cross section comparison was conducted to compare the mean crash frequency among different driveways. A further statistical analysis was used to develop a relationship between the density of each driveway type and crash frequency and rates.