Development of Predictive Median Barrier Warrants

Madhav V. Chitturi
Department of Civil and Environmental Engineering
University of Wisconsin, Madison
B 243 Engineering Hall
1415 Engineering Drive
Madison, WI 53706
mchitturi@wisc.edu

Andrew Ooms
Department of Civil and Environmental Engineering
University of Wisconsin, Madison
1241 Engineering Hall
1415 Engineering Dr
Madison, WI 53706
ooms@wisc.edu

David A. Noyce
Department of Civil and Environmental Engineering
University of Wisconsin, Madison
1204 Engineering Hall
1415 Engineering Dr
Madison, WI 53706
noyce@engr.wisc.edu

ABSTRACT

Crossover median crashes are a concern for transportation officials across the country. The nature of a crossover crash—a vehicle that traverses a median and collides with another vehicle either head-on or side-swap—creates a situation that is high cost, both financially and in terms of human injury. In Wisconsin, median barriers are installed on highways that meet a certain median width and average daily traffic (ADT) requirement. Under these requirements, highway segments with a speed limit greater than 55 mph are not required to install median barrier with a median width greater than 60 ft or under specific ADT conditions for median widths of less than 60 ft. Nevertheless, many crossover crashes occurred on highway segments that do not meet the current warrants for median barrier protection. This study developed a framework for developing predictive median barrier warrants and involved the development of crash frequency and severity prediction models for crossover median and median barrier crashes, as well as determining cost and benefit information.

Key words: crossover median crash—median barrier—predictive median barrier warrants