PEDESTRIAN AND BICYCLE SAFETY RESEARCH

• NEW RESEARCH AND REPORTS

- **New Research Project -- Measuring Pedestrian Exposure Using Electronic Devices.** A lack of pedestrian exposure data makes it difficult to understand changes in pedestrian crash rates. While the changes may be due to increases or decreases in exposure, there are a variety of other factors that can influence the changes such as congestion, infrastructure, pedestrian age, and impairment. The inability to separate exposure changes from other factors impairs the ability to design effective countermeasure programs to reduce pedestrian crashes. This project will identify existing sources of pedestrian data, develop an operational definition of pedestrian exposure, measure and analyze pedestrian exposure, and develop analytical models using integrated GPS data, survey data, and operational definition.

- **New Research Note -- Pedestrian and Bicyclist Data Analysis.** This report presents fatality and injury data for pedestrians and bicyclists, and identifies similarities and differences between these two types of non-motorist road users. The first section examines long-term trends for both pedestrian and bicyclist fatalities over 35 years, from 1980 to 2015. It focuses on fatality numbers and percentages, gender and age, and considers changes that have taken place over time. The second section examines characteristics of both pedestrian and bicyclist fatalities including urban or rural locations, hours of the day, light conditions, month of the year, day of the week, and non-motorist actions prior to the crashes. (DOT HS 812 205)

- **New Report -- Countermeasures that Work: A Highway Safety Countermeasures Guide for State Highway Safety Offices – 9th edition, 2017.** This reference, assists SHSOs to select effective, science-based traffic safety countermeasures for major highway safety problem areas, including pedestrian and bicycle safety. It describes major strategies and countermeasures relevant to SHSOs, summarizes their use, effectiveness, costs, and implementation time, and references important research summaries and individual studies. Countermeasures that relate to pedestrians (Chapter 8) and bicyclists (Chapter 9) are included. (DOT HS 812 478)

• ONGOING RESEARCH

- **Safety in Numbers.** Increases in pedestrian and bicyclist crashes as well as an increased emphasis on walking and biking for transportation, health, environmental, and other reasons, compel a look at how increased numbers of pedestrians and bicyclists on and around roadways influence motorist behavior. One way to examine motorist, pedestrian, and bicyclist behavior and interactions is by focusing on the number of crashes that occur between pedestrians and motor vehicles and bicyclists and motor vehicles as more pedestrians and bicyclists are entering the roadway system. The concept known as Safety in Numbers (SIN) has been used to make planning and policy decisions; however, this causal inference has received scrutiny and calls for caution based on a lack of empirical evidence supporting the SIN claim. This project entails summarizing and evaluating the literature on SIN. (Final report expected: Summer 2019.)

- **State of the Knowledge on Pedestrian and Bicyclist Safety.** The objective of this project is to improve the understanding of pedestrian and bicyclist behaviors and its relationship to traffic safety through a comprehensive review/report of the existing research literature on pedestrians and bicyclists. Topics include the definition of pedestrian, latest data trends, information on counts, exposure, conspicuity, distraction, helmet use, demographics (including age and sex differences), alcohol and drug impairment, environment (urban vs. road type, time of day), vehicle travel speeds, crash typology, countermeasures [safe systems (e.g., Vision Zero, Road to Zero, Sustainable Safety Approach), engineering (not the focus of this report, but will be addressed), education, enforcement (including automated), laws and policies, and planning, communication, and coordination], data sources, and emerging technologies. (Awarded September 2017, 36-month effort.)

- **Impact of Speed on Pedestrian and Bicyclist Safety.** This project assesses the extent to which vehicle speeds, pedestrian/bicyclist crashes and conflicts and pedestrian/bicyclist injury severity change as a result of implementation of speed related programs to reduce pedestrian and bicyclist incidents and conflicts. Additionally, the impact each speed related countermeasure had on changing behavior outcomes – vehicle speeds, number of pedestrian/bicyclist crashes and conflicts, and pedestrian/bicyclist injury severity will be examined. Based on the effectiveness study of the existing data, a prospective evaluation of the most effective speed-related countermeasures will be conducted. (Awarded September 2017, 60-month effort.)
Evaluating Enforcement of Bicycle Safety Laws. This research study is assessing the extent and typology of bicyclist/motor vehicle crashes, injuries, and fatalities based on bicyclist and motor vehicle driver action; determining what methodologies have been developed and are being used to observe and measure bicyclist/motor vehicle interactions; conducting a literature review of studies that have investigated safety laws including passing and yielding laws and detail the role passing distance or yielding versus other actions plays in bicycle/motor vehicle crashes; conducting naturalistic observations to quantify the targeted behavior; and determining the impact law enforcement combined with increased education about bicycle safety laws has on motorists driving near bicyclists. (Final report expected: Winter 2019.)

Evaluation of the Effectiveness of Cameras as a Deterrent to Reduce School Bus Stop-Arm Violations. This project investigated if using stop-arm cameras reduces violations and the extent to which drivers do not stop for school buses loading and unloading students before and after a public information program and implementation of a stop-arm bar camera enforcement program. (Final report expected: Fall 2019.)

Effect of Electronic Device Use on Pedestrian Safety. This project explored the use of electronic devices (and other distractors) by pedestrians and drivers when interacting on the roadway, and the extent to which the use of such distractors are involved in pedestrian/motor vehicle crashes and conflicts. This project was divided into three phases.
  o Literature Review (Phase 1) - review of pedestrian distraction research including electronic device use and the role distraction on the part of pedestrians and/or drivers plays in pedestrian/motor vehicle conflicts.
  o Naturalistic Observations (Phase 2) - naturalistic observations to quantify distraction including electronic device use by pedestrians and motor vehicle drivers when interacting.
  o Crash Report Analysis (Phase 3) - pedestrian/motor vehicle crash data analysis to quantify the extent to which electronic device use by either the pedestrian or driver is involved and to determine crash typology. (Phase 2 and 3 final report expected: Summer 2019.)

RESOURCES FOR STATES AND COMMUNITIES

- Pedestrian and Bicycle Information Center: www.pedbikeinfo.org/

COMING SOON FROM THE OFFICE OF SAFETY PROGRAMS

- Law Enforcement Training on Bicycle and Pedestrian Safety. The objective of this project is to recommend and complete updates and enhancements to two existing NHTSA law enforcement training courses: one on bicycle safety and one on pedestrian safety for use at police academies and/or for continuing education credit by law enforcement personnel. (Training Expected: Winter 2019.)

- Determining Impaired Pedestrians Among DWI Offenders. NHTSA awarded a Task Order contract to Dunlap and Associates to conduct a demographic analysis of alcohol impaired pedestrians killed in motor vehicle crashes in recent years and to identify whether additional analysis of particular groups, such as DWI offenders, is warranted to develop appropriate countermeasures. Alcohol involvement—for the driver and/or the pedestrian—was reported in 48% of all fatal pedestrian crashes in 2014. An estimated 34% of fatal pedestrian crashes had a pedestrian with a BAC of .08 grams per deciliter (g/dL) or higher. An estimated 14% of fatal pedestrian crashes had drivers with BACs of .08 g/dL or higher. (Final report expected: Winter 2019.)

- Impact Analysis of Bicyclist Safety Laws. This project will conduct an analysis of traffic safety laws on bicyclist safety to determine whether particular traffic safety laws protect or create potential environments harmful to bicyclists or whether there is a need for specific traffic safety laws that treat bicyclists as a separate class of road user. (Awarded September 2018, 12-month effort.)

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