FHWA Report Summary

Innovative Intersection Safety Improvement Strategies and Management Practices: A Domestic Scan

Background
Intersections are critical components of the highway network and are used by all road users—motorists, bicyclists, pedestrians and others. They are among the greatest highway safety challenges because they are some of the most common highway features, each having numerous conflict opportunities. It is estimated that there are over 3 million intersections in the United States, of which around 300,000 are signalized.

Intersection crashes account for more than 45 percent of all reported crashes, approximately 50% of all injuries, and 21 percent of all fatalities. This safety problem is complex and typically requires a balanced application of engineering, enforcement, and education measures.

Report Features
This 2006 publication documents the findings of a domestic scan of innovative intersection safety processes, practices and treatments in the states of Florida, Michigan, North Carolina, Oregon and Texas that have been demonstrated to, or have the potential to, improve safety at intersections.

The safety practices and treatments are presented in the following broad areas:

- Safety management and comprehensive safety processes;
- Traffic control devices for motorists;
- Traffic control and other devices for pedestrians, bicyclists, and other non-motorists;
- Traffic operational practices;
- Geometric design treatments; and,
- Enforcement practices and educational programs.

Descriptions and photographs are presented for these treatments, along with names of individuals who can be contacted for additional information on each one.

Contacts
For more information on how to obtain a copy of this report, please see the FHWA website at http://safety.fhwa.dot.gov, or contact Ed Rice, Intersection Safety Team Leader at (202) 366-9064, ed.rice@dot.gov. The report number is FHWA-SA-06-016.
FHWA Report Summary

Roundabouts: An Informational Guide

Background
Modern roundabouts are a form of intersection control that allows traffic to flow in a one-way counterclockwise motion around a center island. Roundabouts have been used successfully throughout the world. However, in the United States, many transportation professionals and agencies have been hesitant to recommend and install roundabouts due to a lack of objective nationwide guidelines on planning, performance, and design.

Report Features
This 2000 guide (which is presently being updated) provides information and guidance on roundabouts, aimed at producing designs that are suitable for a variety of typical conditions in the U.S. The scope of the guide is to provide general information, planning techniques, evaluation procedures for assessing operational and safety performance, and design guidelines for roundabouts.

The guide has been structured to address the needs of a variety of readers including the general public, policy makers, transportation planners, operations and safety analysts and engineers, and designers. Roundabout categories discussed range from mini and urban compact roundabouts to rural double-lane roundabouts, with design characteristics provided for each category.

Roundabouts have demonstrated safety benefits, exhibiting average overall crash reductions of 37% and injury crash reductions of 51% at 11 U.S. intersections converted to either single-lane or double-lane roundabouts. The safety benefits over traditional intersections are a result of slower operating speeds, fewer conflict points, elimination of left turns, fewer stops and delays, and the yield-upon-entry operation. Also, given sufficient space, roundabouts can be designed to accommodate high traffic volumes.

Contacts
For more information on how to obtain a copy of this report, please see the FHWA website at http://safety.fhwa.dot.gov, or contact Ed Rice, Intersection Safety Team Leader, at 202-366-9064, ed.rice@dot.gov. The report number is FHWA-RD-00-067.

U.S. Department of Transportation
Federal Highway Administration

Safe Roads for a Safer Future
Investment in roadway safety saves lives

03/08
Background
Traffic signals are a common form of traffic control used to address highway operations for all users. They allow the shared use of road space by separating conflicting movements in time and allocating delay. However, in some cases the dual objectives of mobility and safety conflict, and one element may need to be sacrificed to some degree to achieve improvements in the other.

It is estimated that there are 300,000 signalized intersections in the United States. Approximately 2,700-2,800 traffic fatalities, or 30-31% of all intersection fatalities, occur annually at these signalized intersections.

Report Features
This 2004 guide provides a single, comprehensive document with methods for evaluating the safety and operations of signalized intersections and tools to remedy deficiencies. The treatments presented in the guide range from low-cost measures, such as improvements to signal timing and signage, to high-cost measures such as intersection reconstruction or grade separation.

Some of the topics covered include: fundamental principles of user needs, geometric design, and traffic design and operations; safety and operational analysis techniques; and, a wide variety of treatments to address existing or projected problems, including individual movements and approaches, pedestrian and bicycle treatments, and corridor techniques.

In addition, this guide covers alternative intersection forms that aid in improving intersection performance through the use of indirect left turns and other treatments. Each treatment includes a discussion of safety, operational performance, multimodal issues, and physical and economic factors that should be considered.

Contacts
For more information on how to obtain a copy of this report contact the FHWA Report Center by email to report.center@dot.gov, by fax to (301) 577-1421 or by phone at (301) 577-0818; or visit the website www.fhwa.dot.gov/safety/pubs/04091. The report number is FHWA-HRT-04-091.