

Reliability of Roadway Safety Management Methods

Systemic Safety Programs



High quality data and reliable analytical methods are the foundation of data-driven decision-making. The new Reliability of Roadway Safety Management Methods series includes a guide that identifies opportunities and the latest tools to employ state-of-the-art (more reliable) methods to support systemic safety analysis and decisions. The [Reliability of Roadway Safety Management Methods: Systemic Safety Programs](#) guide identifies and describes the systemic approach as a complementary process to the crash-based approach. Together, these processes support a comprehensive approach to roadway safety management.

Using the systemic approach, agencies select and treat sites based on site-specific geometric and operational attributes known to increase crash risk.

OBJECTIVES OF THE GUIDE

Systemic roadway safety improvements are generally low-cost and widely implemented at sites characterized by specific geometric and operational attributes (i.e., those factors known to increase crash risk). This provides an effective way to address safety concerns at a large number of sites, particularly for sites that have few, if any, crashes each but which cumulatively account for a large percentage of crashes in a jurisdiction. The objectives of this guide are to:

1. Raise awareness of the systemic approach to roadway safety management.
2. Characterize typical projects identified and implemented through a comprehensive roadway safety management program.
3. Demonstrate the value of integrating systemic approaches as part of a comprehensive roadway safety management program.
4. Provide information on allocating funding to systemic projects within a comprehensive roadway safety management program.



■ USER BENEFITS

The guide provides information to the user toward implementation of more reliable methods for systemic roadway safety programs. This guide will help users to:

UNDERSTAND:

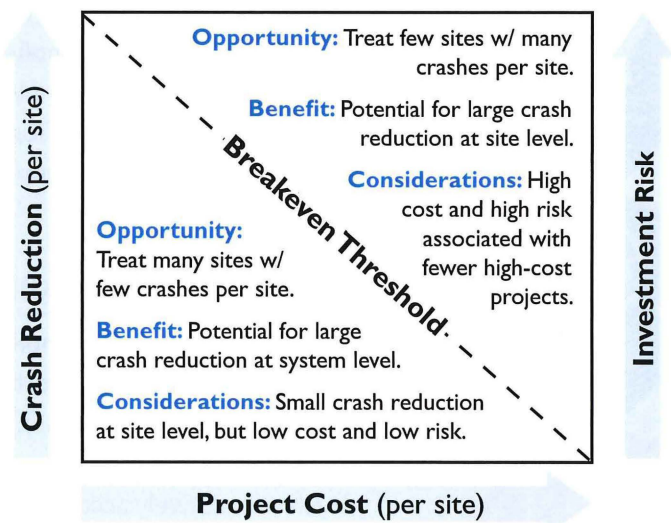
- The roadway safety management process and the purpose of safety programs.
- How the systemic approach relates to the roadway safety management process.
- The complementary nature of the systemic approach and crash-based approach.
- The high-level strengths and limitations of systemic and crash-based approaches.
- The value of integrating systemic approaches as part of a comprehensive roadway safety management program.

IDENTIFY:

- Typical projects implemented through systemic and crash-based approaches.
- Opportunities to allocate funding to systemic projects within a comprehensive roadway safety management program.
- Data requirements to employ systemic approaches.
- Tools and resources to support the systemic approach.
- Future research needs to enhance systemic approaches.

■ COMPREHENSIVE ROADWAY SAFETY DATA PROGRAM

Crash-based and systemic roadway safety projects are complementary, serving different purposes within an overall safety management program. High-cost projects may be a sound investment in the highest crash sites when there is a clear opportunity for a large crash reduction. The systemic approach can address safety concerns across the network with relatively low-cost countermeasures. These represent a large potential benefit considering the widespread implementation. The guide presents a framework for allocating funds to crash-based and systemic projects. It also presents the results of a simulated roadway safety program, characterizing the cost-effectiveness of typical crash-based and systemic projects.



■ TOOLBOX

The Systemic Safety Programs guide and other guides from the The Reliability of Roadway Safety Management Methods series are available free of charge from the FHWA Roadway Safety Data and Analysis Toolbox. To access the Toolbox, go to <http://safety.fhwa.gov/rsdp/>

■ ROADWAY SAFETY DATA CONTACTS

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