

A Strategic View of SHRP 2 Reliability Research Products

National studies indicate that the highway system is becoming more unreliable over time in terms of delivering consistent travel times for journeys. Large inconsistencies in day-to-day travel times are troubling, inconvenient, and expensive for commuters, freight shippers, and other transportation users. Reliability research commissioned by SHRP 2 is developing new knowledge about travel time reliability and how to improve it.

Perhaps more important, SHRP 2 is developing new tools for highway agencies so they can proactively improve travel time reliability. These tools will help highway agencies:

- Organize to better address travel time reliability.
- Collect the right data and use new methods and tools to understand and improve travel time reliability.
- Understand driver behavior that causes nonrecurring congestion and travel time reliability problems.
- Communicate reliability-focused traveler information to motorists and other highway system users.
- Directly address travel time reliability in transportation planning, capital programming, roadway design, and project delivery.
- Discover new ideas and innovations that will improve travel time reliability.

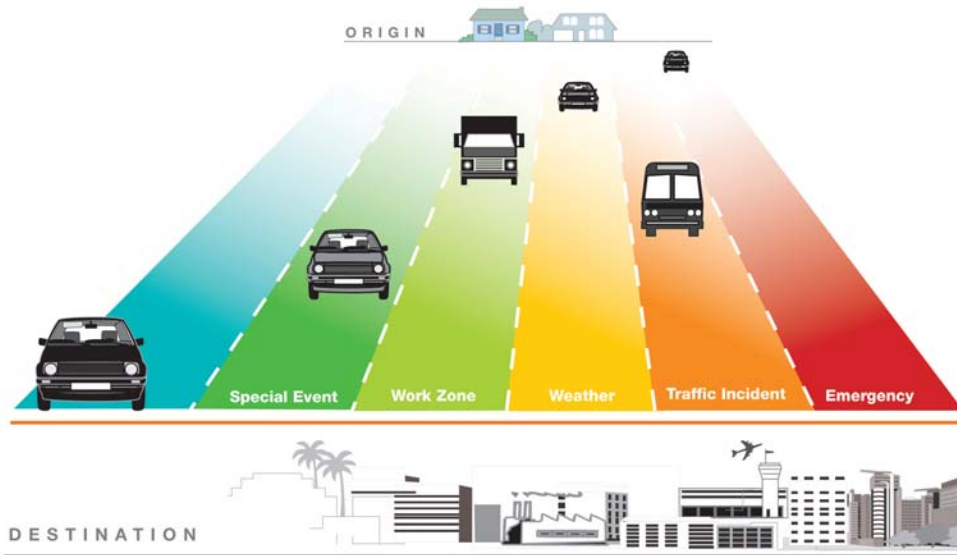
The program includes 20 projects that support these goals and is funded at \$20 million over 7 years. The expected products are listed here for implementation planning purposes. Much of the research is recently underway and almost all of the products are still in development. The lists also provide SHRP 2 project numbers which can be cross-referenced with the Products Chart and project descriptions found on the website at <http://onlinepubs.trb.org/onlinepubs/shrp2/ProductsChart.pdf>.



Details at
www.TRB.org/SHRP2

Improving Reliability

Roadway congestion that arises from crashes, weather, special events, work zones, and other causes contributes to wide variations in the time it may take drivers to arrive at their destinations. This variation translates to real and significant costs for highway users. For instance, travelers and shippers have started to build extra time into their



FACTORS AFFECTING TRAVEL TIME RELIABILITY

from those that address congestion that predictably occurs daily in the same places when traffic volume is highest.

When developing strategies for improving travel time reliability, one must consider the many diverse factors that influence reliability including: driver behavior, traffic incidents and crashes, incident management, construction and maintenance work zones, roadway design features, weather, special events, and how transportation agencies are organized. These factors were considered by SHRP 2 to determine how best to group reliability products. Mainstream acceptance and implementation of these products will significantly contribute to reducing nonrecurring congestion problems and achieving improved operational performance for transportation agencies and all transportation system users. As new knowledge and products from the SHRP 2 Reliability focus area are disseminated and implemented by transportation agencies at the state, metropolitan, and local levels, noticeable improvements in travel time reliability should occur. Uncertainty and frustration for motorists should be reduced.

Key products and product groupings for the SHRP 2 Reliability focus area are listed in the following tables.

schedules to account for potential delays. Because congestion from causes such as crashes and weather doesn't occur in the same places at the same times every day, it is referred to as "nonrecurring congestion." Effectively managing nonrecurring congestion requires strategies quite different

Organizing Agencies to Improve Reliability

<u>Project Number</u>	<u>Anticipated Products</u>	<u>Investment (\$M)</u>
L01	Guide to transportation agency business processes that will improve travel time reliability	0.40
L06	Guide to structuring organizations to improve traffic operations	1.00
L12	Training and certification programs for traffic incident responders to improve safe and quick clearance	1.00
L17	An overall reliability program framework with specific best practices and outreach materials that make the case for highway agencies to focus on improved travel time reliability	1.50

TOTAL INVESTMENT: \$3.90 Million

Interested communities: State DOT and MPO executives and traffic operations professionals; incident responders (police, fire, EMS, towing companies); traffic technology and service businesses, researchers

New Data Collection and Analysis Tools

<u>Project Number</u>	<u>Anticipated Products</u>	<u>Investment (\$M)</u>
L02	Guide and tools for developing effective travel time reliability monitoring programs	1.80
L03	Methods and tools for analyzing the impacts of highway projects on travel time reliability	1.75
L04	Guide for building reliability considerations into travel demand models and traffic simulation models	1.25
L13, L13A and L16	Web-based archive of all SHRP 2 reliability research data to support additional agency and university research	1.85

TOTAL INVESTMENT: \$6.65 Million

Interested communities: State DOT and MPO executives, traffic operations professionals, and planners; travel demand and simulation modelers; traffic technology and service businesses; researchers

Understanding and Influencing Driver Behavior

<u>Project Number</u>	<u>Anticipated Products</u>	<u>Investment (\$M)</u>
L10, L10 a,b,c	Strategies to modify driver behaviors that cause nonrecurring traffic congestion	1.50
L14	Guide for effectively communicating travel time reliability information to system users	1.00

TOTAL INVESTMENT: \$2.50 Million

Interested communities: State DOT and MPO traffic operations professionals; traffic technology and service businesses, researchers, commuters, shippers, and other highway users

Improving Planning, Programming, and Design

<u>Project Number</u>	<u>Anticipated Products</u>	<u>Investment (\$M)</u>
L05	Tools to improve reliability performance measures and link them to transportation planning and capital programming	1.80
L07	Analysis of cost-effective design features that will improve travel time reliability	2.75
L08	Tools to link reliability to highway capacity calculations and methods (including potential additions to the Highway Capacity Manual)	0.50
L09	Design guidance on specific roadway features that will improve reliability (including potential additions to the AASHTO Policy on Geometric Design)	0.50

TOTAL INVESTMENT: \$5.55 Million

Interested communities: State DOT and MPO executives, traffic operations professionals, and planners; highway designers; travel demand modelers and researchers

Adopting New Ideas and Innovations

<u>Project Number</u>	<u>Anticipated Products</u>	<u>Investment (\$M)</u>
L11	Developing innovative future operations strategies to improve travel time reliability	1.00
L15	Supporting promising innovations to improve travel time reliability	0.50

TOTAL INVESTMENT: \$1.50 Million

Interested communities: State DOT and MPO traffic operations professionals; incident responders (police, fire, EMS, towing companies); traffic technology and service businesses; researchers

Transportation Research Board of the National Academies
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