

# SAFETY

Both the nature and scope of the SHRP 2 Naturalistic Driving Study (NDS) posed a host of challenges that could have crashed the project at many points during its design and conduct. This year, as processing of the data collected from the cars of study participants commenced, we learned that the goals of the study were, in fact, met and in some cases exceeded. The chart below shows the types and amounts of data that constitute the 2 petabytes of driving data available for analysis in the SHRP 2 NDS database.

The first three projects to use data from the SHRP 2 NDS were completed this year. These early projects pioneered procedures for analyzing processed NDS data to glean new insights on critical issues such as safety on rural two-lane curves, driver inattention, and offset left-turn lanes.

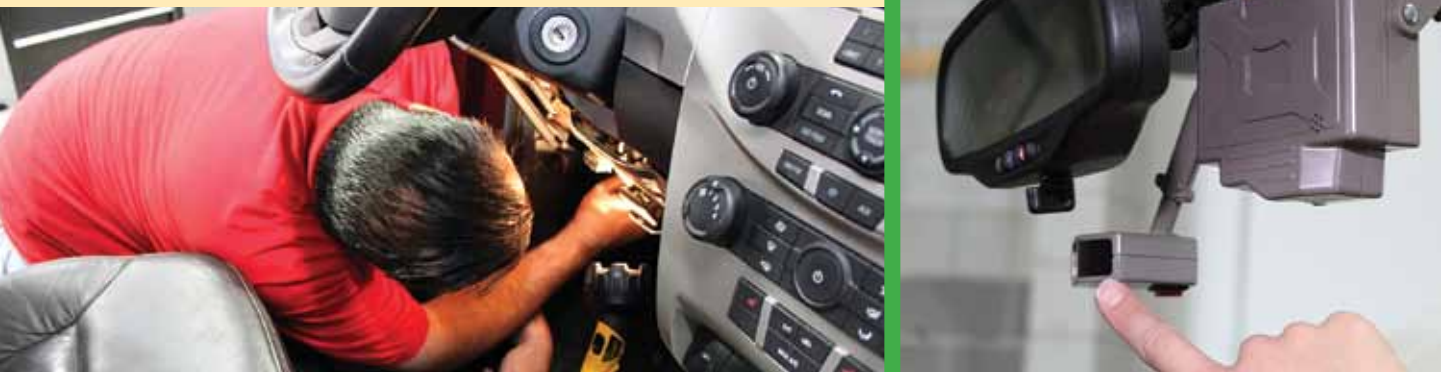
These three analysis projects were at the core of knowledge transfer activities in which SHRP 2 staff and contractors worked with AASHTO and FHWA staff to support their Implementation Assistance Program and the transition to Phase 1 of the Safety Data Implementation program. Phase 1 is a five-year program to develop and test strategies for making the data set available, facilitate its productive use, evaluate efforts to ensure confidentiality, and identify long-term and sustainable funding strategies for subsequent phases.

A final data collection activity was the acquisition of cell phone records from participants in the SHRP 2 Naturalistic Driving Study. With the cooperation of two major carriers, 620 participants agreed to provide records of their cell phone use that indicate the times of calls/texts but do not include any content or phone numbers. This information will be merged with the driving data.

This year an NDS data access website, InSight<sup>1</sup> was launched with descriptive information (that does not include any personally identifying information) on the drivers, vehicles, summary characteristics on each of 5 million trips, and crashes. Information linking the NDS trips with the roads traveled will be displayed on the website later this year when the linking project is complete.

Primary Drivers	3,073
Data Years	4,000
Data Miles	50 million
Trip Files	5 million
Crashes	998 (more are discovered as processing continues through December)
Roadway Data (New)	12,542 centerline miles
Roadway Data Collected from DOTs	200,000 centerline mile

<sup>1</sup> <https://insight.shrp2nds.us>



# RENEWAL

All remaining Renewal research projects were completed during 2014, bringing the total of completed projects to 32. The products of this research are tools and resources to renew roads and bridges in less time, with less disruption to traffic and communities. They include advanced methods for bridges, nondestructive testing techniques, pavements, project delivery, and underground utilities. Several videos are now available that illustrate how these methods are being used, separately and in combination, to improve transportation renewal project efficiency and outcomes. The video collection is available on the Multimedia page of the FHWA GoSHRP2 website.<sup>2</sup>

Through FHWA's Implementation Assistance Program, 17 Renewal products are currently available for transportation agencies to use. Preparing for the rollout of these products through knowledge exchange activities was the primary focus for TRB's SHRP 2 Renewal program this year. Importantly, knowledge exchange included user communities as well as those at AASHTO and FHWA who are taking the lead on implementation.

<sup>2</sup> [www.fhwa.dot.gov/goshrp2](http://www.fhwa.dot.gov/goshrp2)



# RELIABILITY

In Reliability, the work of the past year has woven together research from projects that addressed how to include the value of reliability in project decision making. That effort created an archive of all the SHRP 2 Reliability related data and operations training products. The archive provides one-point access to resources that transportation agencies can use to help deliver travel time reliability at a regional level. Four pilot projects were completed. Each carried out independent assessments of the suite of data and analysis tools from the SHRP 2 Reliability Program. As a result, reports, guides, and analytical tools were updated and revised based on feedback from the pilot tests. For example, new versions of the Urban Street Travel Time Reliability software and its accompanying user guide are now available. In addition, improvements to the existing Freeway Reliability Methodology Computational Engine, Scenario Generator, and user guide have been incorporated into freeway evaluation methods. Other pilot projects continued the Regional Operations Forums, that provide training in new strategies and technologies for improving transportation systems operations. These and other products of the 27 Reliability research projects provide opportunities to improve travel time reliability by reducing the impact of factors that cause congestion. The products address better data, analytic tools, planning and programming, organizational capability, and innovation.



# CAPACITY

The Capacity focus area celebrated the completion of all research and development work this year. Pilot tests of several major projects were completed and the results were incorporated into the research products. For example, a cornerstone product of the Capacity focus area is the web-based framework for collaborative decision making related to planning new highway projects. Transportation agencies can use it to navigate critical decision points in planning, programming, and environmental review and permitting. Four additional pilot projects this year tested the framework's functionality and the findings were integrated into a revised version of the web tool, which has been rebranded as PlanWorks. In another example, a practitioner's guide to including market-driven freight considerations when planning new capacity was developed from pilot tests. The guide and many other products of the Capacity focus area are integrated into PlanWorks, which has been delivered to FHWA for implementation.

During the research phase of SHRP 2, the Capacity focus area conducted 34 projects related to collaborative decision making, economic impact analysis, integrated models and networks that provide more realistic estimates of demand, conservation and environmental review, and planning for freight demand. The resulting products support a systematic way to integrate community and national goals into highway planning and can help agencies deliver better transportation projects faster.





To the more than 700 people who contributed their knowledge and expertise by serving on committees and groups that guided SHRP 2 research,

## THANK YOU

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# IMPLEMENTATION

The FHWA and AASHTO are carrying out an ambitious program of implementation activities to encourage adoption of SHRP 2 products among transportation agencies. Groups of SHRP 2 products are being rolled out through a formal Implementation Assistance Program that offers technical and financial assistance in response to proposals by transportation agencies interested in learning to use advanced methods and new tools. The next round of products eligible for assistance will be announced in January 2015. The Implementation Assistance Program has so far put 27 SHRP2 Solutions into the hands of transportation agencies for use on approximately 250 transportation projects.

The GoSHRP2 website is a rich resource for information about SHRP2 Solutions and implementation activities.

SHRP 2 staff have been a continuing resource for these activities, participating in knowledge transfer activities such as webinars and workshops in which AASHTO and FHWA staff, who now have responsibility for SHRP 2 product-level implementation, can deepen their understanding. In addition, SHRP 2 has responded to requests for in-person briefings from leaders of 18 state departments of transportation this year, bringing the total number of state visits to 40.



[www.fhwa.dot.gov/GoSHRP2](http://www.fhwa.dot.gov/GoSHRP2)

# Publications and Communications

The SHRP 2 editorial staff has ably handled the expected flood of final research reports, publishing 39 reports and guides this year, as well as 56 additional deliverables, such as user's guides, software, spreadsheets, training materials, presentations, management plans, and technical documentation. Once all deliverables are available, the total number of publications produced by this group of editorial experts during the SHRP 2 program will exceed 250.

SHRP 2 made good use of the 2014 TRB annual meeting. At the request of 42 Standing Committees, staff and research contractors provided updates on research topics of interest to the committee. In addition, 12 podium sessions, six workshops, and three poster sessions featured SHRP 2 research, and visitors to the Exhibit Halls could learn more about the products and implementation opportunities at both the TRB booth and the SHRP2 Solutions booth provided by AASHTO and FHWA.

Notable communications products this year include the animated video, Driving Innovation, which in 90 seconds conveys the essence of the program and encourages viewers to test-drive the products of SHRP 2 research. The popular SHRP 2 Products Chart was updated this year. It briefly describes each product and its potential impact on practice, its availability, and contact information for assistance with product implementation. The series of 4-page Project Briefs, which summarize research reports, continued; about 45 Briefs are available online. The SHRP 2 Tuesday webinar series, which began in April 2013, was completed at the end of September. In all, 37 webinars were conducted and more than 13,000 people attended to learn how the research question was addressed and how the research products can be used. The webinars were recorded and are available online<sup>3</sup>.



<sup>3</sup> [www.TRB.org/SHRP2](http://www.TRB.org/SHRP2)



## You and SHRP 2: Driving Innovation

## 2014 OUR YEAR IN REVIEW

By mid-2014, transportation agencies in every state and the District of Columbia were engaged with at least one SHRP 2 product. Paving the way for this achievement has been the focus of TRB's second Strategic Highway Research Program this year. Working closely with the Federal Highway Administration (FHWA) and the American Association of State Highway and Transportation Officials (AASHTO), SHRP 2 has been driving innovation across the country.

While most research projects conducted under the original plan for SHRP 2 were completed last year, a series of development projects and pilot tests were a high priority this year. These projects typically tested research products under real-world conditions, convened workshops and forums to gain input from potential users that could be used to further refine the products, or created web-based delivery methods for various products. Additionally, projects to pioneer use of the world's largest source of data on driving behavior, collected in the SHRP 2 Naturalistic Driving Study, were completed and planning for future access to the data was initiated.

SHRP 2 was created to find strategic solutions to three national transportation challenges: improving highway safety, reducing congestion, and improving methods for renewing roads and bridges. The challenges were addressed through research in four focus areas: driving behavior to improve safety and reduce crashes; systematically integrating environmental, economic, and community requirements into planning and design of new highway capacity and improving travel time reliability to address congestion; and infrastructure renewal methods with minimal impact that deliver long-lasting structures. This year's activities in each focus area are summarized in the sections that follow. The SHRP 2 program will end in March 2015.

An overview of SHRP 2 is available in a 90-second video at [www.TRB.org/SHRP2](http://www.TRB.org/SHRP2)