

## Frequently Asked Questions about the SHRP 2 Naturalistic Driving Study

### What is SHRP 2?

In 2005, the United States Congress created the second Strategic Highway Research Program (SHRP 2) to address the challenges of moving people and goods efficiently and safely on the nation's highways. SHRP 2 is administered by the Transportation Research Board of The National Academies, under a Memorandum of Understanding with the Federal Highway Administration (U.S. Department of Transportation) and the American Association of State Highway and Transportation Officials.

SHRP 2 is a targeted, short-term research program carried out through competitively awarded contracts to qualified researchers in the academic, private, and public sectors. SHRP 2 addresses four strategic focus areas: the role of human behavior in highway safety; rapid renewal of aging highway infrastructure; congestion reduction through improved travel time reliability; and transportation planning that better integrates community, economic, and environmental considerations into new highway capacity. Additional information about SHRP 2 can be found on the program's Web site at [www.trb.org/shrp2](http://www.trb.org/shrp2).

### What is a "naturalistic" driving study?

A naturalistic driving study investigates ordinary driving under real-world conditions in order to make the driving experience safer. In the SHRP 2 study, 3000 volunteer drivers will agree to have their cars fitted with cameras, radar, and other sensors to capture data as they go about their usual driving tasks.

Experience with earlier naturalistic driving studies demonstrates that drivers quickly forget the presence of cameras and sensors, which are as inconspicuous as possible. This allows researchers to study driving behavior that is as close to "natural" as possible: thus a "naturalistic driving study." This kind of study is needed because driver behavior contributes to more than 90 % of crashes and is the primary factor in more than 60 % of crashes.

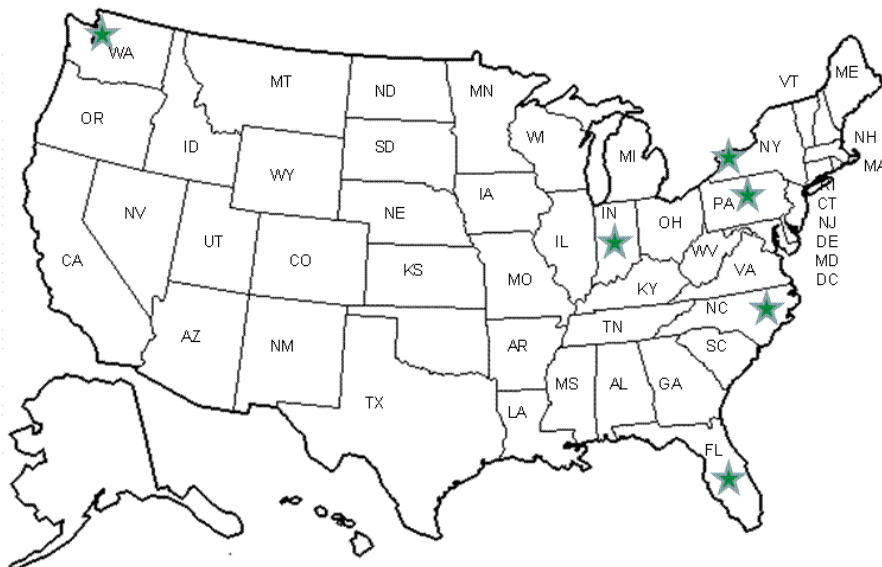
## Who will be included in the study?

The drivers in the study will be men and women in various age groups, from different socioeconomic strata, and from different geographic areas across the United States, driving different types of light vehicles. Volunteer drivers will be recruited in a variety of ways, including through a national call center and local outreach efforts to attract drivers in each category.

Volunteers will be assessed for their visual perception, driving knowledge, reaction time, lower limb strength, and other factors so that these factors can be studied in relation to actual driving behavior under normal driving conditions.

## Where will data be collected?

Six sites have been selected through a process that required contractors to present their qualifications and demonstrate the suitability of the site they wished to manage. The sites that were ultimately chosen from the 19 contractors who responded to the requests for qualifications are in Tampa, Florida; central Indiana; Durham, North Carolina; Erie County, New York; central Pennsylvania, and Seattle, Washington.



## What types of data will be collected?

Video images of the view out the front and rear windshields, the passenger side view, the driver's face and hands, and the cabin will be recorded. Additionally, rates of acceleration, lateral and vertical motion, the presence of alcohol within the cabin, position information, turn signal actuation and other variables such as steering wheel angle, speed, seat belt use and air bag deployment will be recorded through various sensors. Radar will be used to identify objects in the front of the cars, their range, and the rates at which the range changes. An incident push button will allow participants to report critical events and emergencies. Separately, data will

also be collected on roadway elements such as road type, geometry, shoulders, safety furniture, signage, pavement markings, and more for the roads most frequently used by the volunteer drivers. Detailed investigations of selected crashes will also be conducted.



### **Are there privacy protections?**

All the data recorded in the study participants' cars are encrypted as they are stored on a hard drive in the vehicle. No one can access the drive until it is uploaded to an isolated and secure server. Only authorized users of the data will be permitted access and different levels of authorization are required for access to various types of data. The policies and procedures for secure data storage and access are being developed and will be overseen by one or more ethics review boards established to protect research volunteers.

### **How will the data be used?**

The primary objective of the study is to produce a rich cache of data on driving behavior that researchers for decades to come can use as the basis for safety improvements. Nearly 500 research questions have been gathered from safety researchers and practitioners. Currently the questions are being prioritized according to their potential for improving safety and additional studies are under way to develop the best methods for analyzing the data. There will be some focus on crashes at intersections and those that involve road departure, because these crash types account for more than half of highway fatalities.

In addition to these safety questions and many more that will be raised in the future, there may be still broader applications for the data, in areas such as highway operations and planning, environmental impact of vehicles, and psychological study of drivers. The SHRP 2 study is not specifically designed for these uses, but the database may well be able to support more than highway safety research.

## When will the study begin?

In May of 2010 we expect that contractors will begin to instrument vehicles, assess drivers, and start the 2-year data collection process. Several steps must be accomplished before that, such as acquiring the data collection equipment and recruiting volunteers and the target start time must accommodate these prerequisites.

## Why is this worth doing?

Every 1 % improvement in highway safety through implementing SHRP 2 research (a very modest expectation) would save more than 400 lives, avoid more than 25,000 injuries, and save \$2.3 billion in costs associated with injuries and deaths annually in the United States.

## Where can I find more detailed information?

The complete research plan and project schedule are available on the SHRP 2 web site, as are presentations, project descriptions, and contact information for all SHRP 2 staff. As details of the study are refined, further information including how to reach people designated as contacts for the study will be announced on the website and through other channels, including the TRB e-newsletter.

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