



## SHRP 2 Request for Proposals

**Focus Area:** Safety

**Project Number:** S08

**Project Title:** Analysis of the SHRP 2 Naturalistic Driving Study Data

**Date Posted:** December 7, 2010

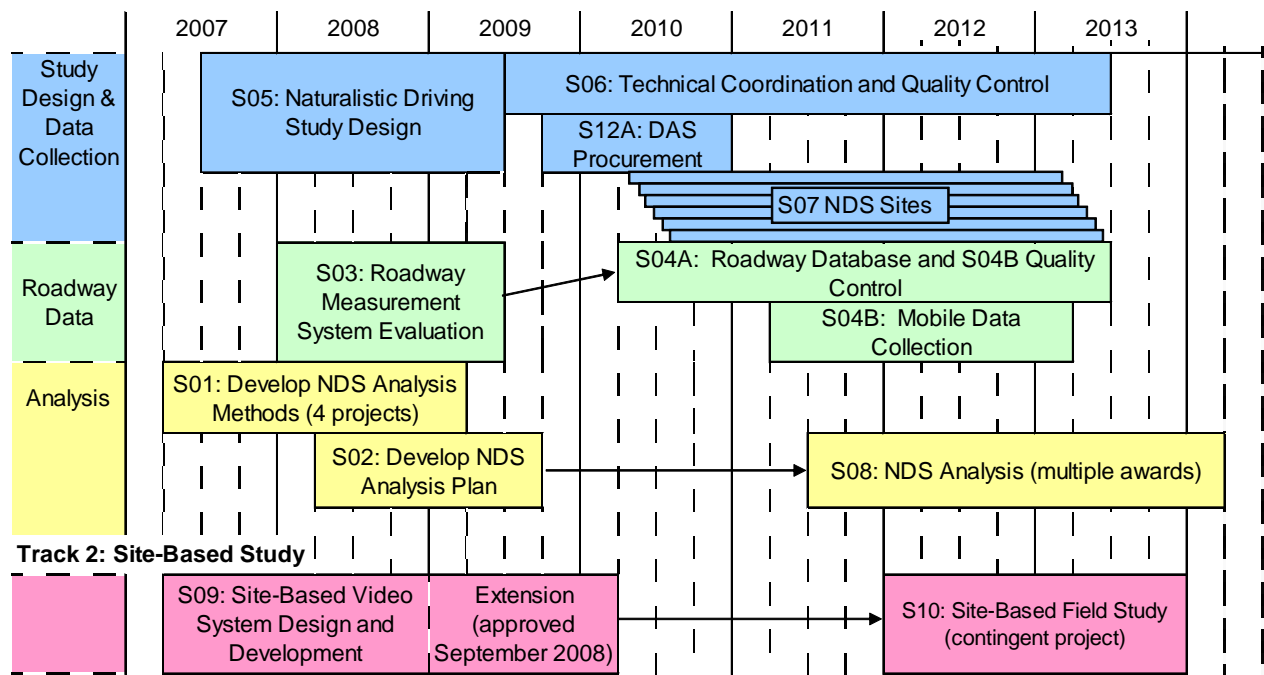
### SHRP 2 Background

To address the challenges of moving people and goods efficiently and safely on the nation's highways, Congress has created the second Strategic Highway Research Program (SHRP 2). 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 (Safety); rapid highway renewal (Renewal); improved travel time reliability through congestion reduction (Reliability); and transportation planning that better integrates community, economic, and environmental considerations into new highway capacity (Capacity). Under current legislative provisions, SHRP 2 will receive approximately \$230 million with total program duration of 9 years. Additional information about SHRP 2 can be found on the program's Web site at [www.trb.org/shrp2](http://www.trb.org/shrp2).

### Safety Focus Area

The objective of the safety focus area is to reduce traffic injuries and fatalities by preventing, or reducing the severity, of collisions. Every 1 percent reduction in crashes will prevent 330 deaths and about \$2 billion annually in medical expenses and other losses from these crashes. Moreover, crashes are a leading cause of nonrecurring congestion. Collision prevention has added benefits in terms of reduced delay, fuel consumption, and emissions.

The SHRP 2 safety research plan includes two tracks: a large naturalistic study of the driving behavior of volunteer drivers using their personal vehicles equipped with a comprehensive, state-of-the-art instrumentation package; and a site-specific study at intersections using a roadway-based video system to record the movements of all vehicles. The SHRP 2 field studies are intended to support a comprehensive safety assessment of how driver factors, including behavior and performance, interact with roadway, environmental, and vehicular factors to affect crash risk, especially for lane departure and intersection crashes, and to identify potential methods to improve safety. The accompanying chart lays out the main projects anticipated. The chart provides a general idea of the flow of work. The TRB SHRP 2 website provides further detail on all safety projects. The exact number, content, and timing of future projects is subject to change.

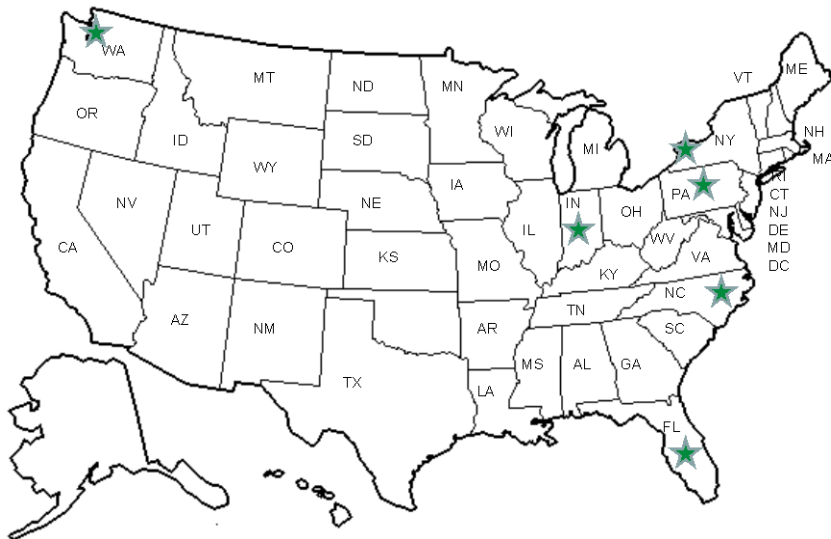


Revised December 2010

**SHRP 2 Safety Projects Timeline**

**Project Background**

Data collection (Project S07) for the SHRP 2 Naturalistic Driving Study (NDS) began in October 2010. The Project S07 NDS contractors and sites are listed below and shown in Figure 1.



**Figure 1: SHRP 2 S07 Projects**

- CUBRC – Erie County, New York
- Battelle – Seattle, Washington
- Pennsylvania State University – Central Pennsylvania
- Indiana University – Central Indiana
- CUBRC – Tampa Bay, Florida
- Westat – Durham, North Carolina

The NDS field study will track 1,950 Data Acquisition System (DAS) units on vehicles for two years, for a total of 3,900 vehicle-years of data. The study design seeks to control the distribution of drivers in the study by age and gender as shown in Table 1. The DAS is designed to be easily mounted on a wide range of vehicles, including passenger cars, vans, sport utility vehicles, and pickup trucks, but not all makes and models in these categories will be included in the study. As shown in Table 1, 798 DAS units will be installed and maintained for two full years. The remaining 1,152 DAS units will be installed and maintained on vehicles for one year; then new participants will be recruited for the second study year. As described below under Project Description, roadway data will be collected on some roads in each study site.

<b>Gender: Age Range</b>	<b>Age Range Description</b>	<b>One Year</b>	<b>Two Years</b>	<b>DAS units</b>	<b>Primary Participants</b>	<b>Data- Years</b>
M 16-17	Teen	72	28	100	172	200
M 18-20	Adult Teen	72	28	100	172	200
M 21-25	Young Adult	72	28	100	172	200
M 26-35	Adult	72	28	100	172	200
M 36-50	Middle Adult	72	28	100	172	200
M 51-65	Mature Adult	72	28	100	172	200
M 66-75	Younger Older Driver	72	28	100	172	200
M 76+	Older Older Driver	72	28	100	172	200
F 16-17	Teen	72	28	100	172	200
F 18-20	Adult Teen	72	28	100	172	200
F 21-25	Young Adult	72	28	100	172	200
F 26-35	Adult	72	28	100	172	200
F 36-50	Middle Adult	72	28	100	172	200
F 51-65	Younger Older Driver	72	28	100	172	200
F 66-75	Middle Older Driver	72	28	100	172	200
F 76+	Older Older Driver	72	28	100	172	200
Any	Advanced Vehicle Technology		350	350	350	700
<b>Totals:</b>		<b>1,152</b>	<b>798</b>	<b>1,950</b>	<b>3,102</b>	<b>3,900</b>

## **Project Objective**

The objective of this project is to conduct analyses of the SHRP 2 Naturalistic Driving Study (NDS) data to obtain new information and insights on critical safety issues. The results of these analyses should:

- lead to real-world applications and safety benefits – theoretical knowledge without potential applications is not a priority;
- be broadly applicable to a substantial number of drivers, roadways, and/or vehicles in the United States;
- demonstrate the use of the unique NDS data – similar results could not be obtained from existing non-naturalistic data sets.

Proposals are solicited for analyses of the SHRP 2 NDS data that will lead to real applications for improving one or more of the three fundamental components – driver behavior, vehicle design and operation, and roadway infrastructure design and operations – to reduce crash risk and improve safety. Proposals should address topics from at least one of the following four priority areas (not listed in priority order):

- roadway departure, especially on rural roads
- intersection crashes or other infrastructure-related crashes
- driver characteristics, behavior, and performance – frequency, relation to crash risk, and potential countermeasures; characteristics may include long-term (age, sex, etc.) and short-term (fatigue, alcohol) features; behavior and performance may include distraction (visual, manual, cognitive), driving skills, reactions to specific driving situations, and long-term high- and low-risk driving
- driver interaction with advanced vehicle technology

Bidders must develop one or more specific research questions within these four priority areas. For example, under the first area of roadway departure, a specific research question might be “What is the effectiveness of current countermeasures (chevrons, lane markings, illumination, rumble strips, curve speed warning signs, etc.) in reducing the risk of running off the road on small radius curves on two-lane rural roads?” The S02 Phase 1 report, “Integration of Analysis Methods and Development of Analysis Plan - Phase 1,” by L. N. Boyle et al., contains many examples of specific research questions within these four priority areas. The report is available on the SHRP 2 S08 Resource and Reference Materials website, see Special Note 4.

## **Project Description**

The project is divided into two phases. In Phase 1, the contractor will conduct preliminary proof-of-concept analyses using small datasets derived from data obtained in the first few months of SHRP 2 NDS data collection to develop, test, and validate the contractor’s analytic approach or to compare the feasibility of alternate approaches. If a contractor’s work is chosen to move into Phase 2, the contractor will conduct full analyses, with any appropriate modifications based on their Phase 1 analyses, to make the most appropriate use of the full SHRP 2 NDS data set.

Multiple Phase 1 awards are anticipated if sufficient qualified proposals are received. In particular, SHRP 2 expects to award at least one Phase 1 contract to investigate each of the four

priority areas listed in the Project Objective above. Additional RFPs may be released in 2011 to solicit proposals in any priority areas not sufficiently addressed in this first round.

Approval to conduct Phase 2 for each Phase 1 contractor will depend on satisfactory completion of Phase 1 and on other factors such as the potential usefulness of the contract's Phase 2 results to improve safety and reduce crash risk, the contract's Phase 2 budget, and the overall coverage of priority research areas across all contractors. It is possible that not all Phase 1 contracts will proceed to Phase 2.

#### *Data file preparation and user support*

The Virginia Tech Transportation Institute (VTTI) will provide data files and user support for all S08 analysis contractors. The Iowa State University Center for Transportation Research and Education (CTRE), the Project S04A Roadway Information Database contractor, will provide roadway data files and support. Funds for VTTI and CTRE data file preparation and support will be provided separately – S08 bidders should not include data file preparation and technical support costs for VTTI or CTRE in their Phase 1 proposals. (See Special Note 1)

VTTI will produce de-identified summary data sets, such as trip and event files, that will be available to all S08 contractors. During Phase 1, VTTI will work with each S08 contractor under the direction of SHRP 2 staff to develop sampling and data processing procedures to implement, test, and refine each contractor's analyses. Production of analysis data sets for each S08 contractor will be carried out by VTTI under the direction of the S08 contractors using algorithms provided by the S08 contractors. Several iterations may be needed as contractors become more familiar with the NDS data. Under the direction of SHRP 2 staff, VTTI also will work with each contractor to develop each contractor's sampling and data processing procedures and technical support budget for their Phase 2 proposal.

Bidders should take data file preparation costs into consideration in developing their analytical methodologies. The final SHRP 2 NDS data set will be very large – approaching one petabyte. Even one month of SHRP 2 NDS data will be approximately 160 vehicle-years (60% larger than the 100-car study) and the first four-month data retrieval cycle will be about 650 vehicle-years. The full 2 years of SHRP 2 NDS data will be nearly 40 times as large as the 100-car study. Data file preparation costs can be substantial to produce analysis files that have not been carefully thought out. No single Phase 2 S08 project can use a disproportionate part of the available VTTI and CTRE resources, which provide data file preparation and support for all S08 Phase 1 and Phase 2 analysis projects.

#### *Data access, security, confidentiality, and IRB requirements*

SHRP 2 NDS data are being collected in a research project involving human subjects. Therefore, use of the data is subject to federal regulations governing protection of human subjects. Requirements for data confidentiality and security will be strictly followed in all S08 contracts. Institutional Review Board (IRB) approval by the contractor's home institution is likely to be required in most, if not all, S08 studies. A data sharing agreement will also be required.

During Phase 1, VTTI will work with each S08 contractor under the direction of SHRP 2 staff to establish procedures for accessing the SHRP 2 NDS data. De-identified data sets may be supplied to S08 researchers subject to the terms of a data access agreement which will be established under Task 1 of each project. Access to the most protected information such as driver face video will only be permitted at the VTTI secure data enclave. See the SHRP 2 Data Access Guide for additional detail. It is available on the SHRP 2 S08 Resource and Reference Materials website, see Special Note 4.

### *Roadway data*

A separate effort will collect roadway data on about 4,500 miles of roads in each site. A roadway data collection vehicle will drive selected roads and record roadway geometry (horizontal curvature information, grade, cross slope, lane and shoulder information), speed limit signs, and intersection locations and characteristics. Data will be obtained from the six study sites over a two-year period. The order in which the study sites will be collected has not been determined yet, but priority will be given to those sites that deployed DAS early in the study. The roadway data do not involve human subjects, so they should not raise confidentiality issues or require IRB approval for their use. As noted above, CTRE will provide roadway data files and support. (Roadway data descriptions are available on the SHRP 2 S08 Resource and Reference Materials website, see Special Note 4.

### **TASKS**

Task descriptions are intended to provide a framework for conducting the research. SHRP 2 is seeking the insights of proposers on how best to achieve the project objective. Proposers are expected to describe research plans that can realistically be accomplished within the constraints of available funds and contract time. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the issues and the soundness of their approach to meet the project objective.

### **PHASE 1: PRELIMINARY PROOF-OF-CONCEPT ANALYSIS**

#### **Task 1-1: Institutional Review Board Approval; Data Sharing Agreement.**

Each S08 contractor will be responsible for complying with all legal requirements in connection with the research to be undertaken under the S08 Contract, including without limitation all applicable Department of Health and Human Services (DHHS) policies and regulations on the protection of human research subjects (45 CFR Part 46, as amended). Each contractor shall have an approved Federal Wide Assurance on file with DHHS and shall conduct the research in accordance with an IRB-approved protocol. Without limitation of the following, each contractor shall be responsible for ensuring initial and continuing review by the contractor's IRB or another qualified IRB pursuant to an arrangement for cooperative research under 45 CFR Section 46.114, which shall be subject to approval by the National Academy of Sciences (NAS) IRB. Each contractor shall be responsible for maintaining the confidentiality of all research data in conformance with the approved research protocols, informed consent forms, and data sharing agreement.

Each S08 contractor shall cooperate with the NAS and the VTTI IRBs and shall comply with any requirements or conditions imposed on the research by these IRBs, including all conditions specified in the participant consent forms and a data sharing agreement which will be required for this project. Access to SHRP 2 NDS data is contingent upon IRB approval and execution of the data sharing agreement. The Data Access Guide contains the informed consent form for primary drivers in the SHRP 2 NDS and a sample data sharing agreement for use of the SHRP 2 NDS data.

Continuation of funding under this contract will be contingent upon NAS IRB approval. NAS reserves the right to terminate any S08 contract where IRB approvals are not obtained in a timely manner. Respondents to this RFP shall demonstrate: (1) the current status of its Federal Wide Assurance on file with DHHS; (2) training in the conduct of human subjects research provided to key staff members; (3) the organization's IRB approval process; and (4) an understanding of issues regarding the protection of participant privacy consistent with the specific terms of the participant consent form and data sharing agreement.

Products: All necessary IRB approvals and executed data sharing agreement.

**Task 1-2: Prepare detailed analysis plan, define and obtain initial access to data sets.**

Immediately upon award, S08 contractors will develop a complete Phase 1 analysis plan and schedule of activities. They will work with VTTI and CTRE to define and obtain initial access to the SHRP 2 NDS data sets needed for these analyses. They will begin initial analyses to test their data file definitions and structure and their analysis plans on sample datasets. They will submit their complete Phase 1 analysis plans to SHRP 2 for review and approval.

The S08 projects are likely to share and provide input on some common data needs such as triggers for various events (near collisions, other collision surrogates, traffic events such as left turns, and other useful identifiers), data file structures, and machine vision software to generate new information (e.g., recognize speed limit signs or detect angry drivers from the face video). Where appropriate, we wish to establish common definitions and implementation methods for S08 contractors. There will be an initial one-day kickoff meeting of all S08 contractors scheduled as soon as feasible at VTTI in Blacksburg, VA to initiate this dialogue.

Bidders should note the SHRP 2 schedule for acquiring data from the field. The first data from the first instrumented vehicles will be available in approximately April 2011. Four months of data from all 1,950 vehicles should be available in approximately September 2011. The full data set from all vehicles should be available in approximately April 2013. This means that Phase 1 analyses will be able to use about four months of data from all vehicles, or about 650 vehicle-years, and Phase 2 interim reports will be able to use about 16 months of data from all vehicles, or about 2,600 vehicle-years.

Roadway data collection in the first study site will begin in approximately June 2011 and some data from the first study site should be available to S08 contractors for use in approximately October 2011. Most of the roadway dataset should be available by April 2013, when the full vehicle dataset is available.

Proposals must include the following:

- Priority area addressed, with specific research question or questions and hypotheses to test
- Background – what’s already known on these questions from other studies
- What’s new – how will the proposal’s analyses of SHRP 2 NDS data contribute new knowledge or lead to new countermeasures
- Likely applications of the project’s results to improve safety, based on solid evidence from potential users of the expected results
- Analytical plan and methodology, including:
  - discussion of why the analytical plan and methodology is preferable to alternate plans and methodologies
  - data needs and how to extract data
  - how crash surrogates will be defined and used
  - how the results generalize to the target population – weighting data
  - potential obstacles to the analytical plan and strategies to overcome them
  - appropriate references
- Full discussion of data access issues, including IRB considerations
- Budget for Phase 1 activities only. The budget should include funds for travel to the SHRP 2 Safety Symposium in July 2011. As discussed above, it should not include costs for data file preparation and support activities from VTTI and CTRE.

(Important resources and reference materials are provided on-line. Please see Special Note 4)

Products: Detailed analysis plan, defined data sets

### **Task 1-3: Present analysis plan at July 2011 SHRP 2 Safety Symposium**

S08 contractors will present their analysis plans, in as much detail as is known at the time, at the SHRP 2 Safety Symposium in Washington DC on July 14-15, 2011.

Product: PowerPoint and/or other presentation and hand-out materials

### **Task 1-4: Access data, test analysis methodology, conduct preliminary proof-of-concept analyses, iterate as needed.**

After their analysis plans are approved, contractors will test their analysis methodology on the SHRP 2 NDS data sets obtained in Task 1-2. As needed, they will revise their analysis plans and data needs, obtain additional data sets, access these data sets, and test again. Several iterations may be needed as contractors become familiar with the SHRP 2 NDS data, as they test various options for their data extraction and analysis, and as more data are available for analysis. The contractors’ Phase 1 analyses must confirm the viability of their analysis plans and must provide a basis for estimating the cost of their Phase 2 work, including preparation of all necessary datasets.

Products: Contained in Phase 1 interim and final reports.



### **Task 1-5: Phase 1 interim report**

Contractors will prepare a brief interim report on work through early December 2011. The report should document the contractor's progress in refining the analysis plan, obtaining the data, and applying the contractor's statistical methodologies to the data. It is not intended for publication. The report should include:

- The analysis plan and methodology, with all modifications, including
  - the data used and how they were extracted from the SHRP 2 NDS data files;
  - how any crash surrogates were defined and used;
  - the statistical or analytical methods used;
  - how the results generalize to the target population
- Lessons learned about the use of the SHRP 2 NDS data sets, including accessibility, usability, IRB experience/requirements, and any other areas in which the use of the database might be improved.
- Any indications of results that may be obtained from analyses of the full data set and potential implications of these results.

### **Task 1-6: Phase 1 final report**

Contractors will prepare a Phase 1 report documenting their results from Phase 1 and their plans for Phase 2. The report will include thorough discussions of the following:

- The priority area addressed and the specific research question or questions studied.
- Literature review of current knowledge on these research questions.
- The final Phase 1 analysis plan and methodology, including
  - the data used and how they were extracted from the full SHRP 2 NDS data files;
  - how any crash surrogates were defined and used;
  - the statistical or analytical methods used;
  - how the results generalize to address a significant highway safety problem.
- The results and their implications: what has been learned from the Phase 1 analyses and how these results can be applied to reduce crash and injury risk.
- Lessons learned about the use of the SHRP 2 NDS data sets, including accessibility, usability, IRB experience and requirements, and any other areas in which the use of the database might be improved.

It is recognized that the Phase 1 analyses will be able to address only a small portion of the SHRP 2 NDS data so that definitive results and implications may not be available after Phase 1.

Next, the Phase 1 report will provide a detailed plan for Phase 2, including thorough discussions of the following:

- Any revisions to the analysis plan and data file specifications proposed for Phase 2
- Potential amendments for IRB materials and data sharing agreement, if necessary

- Budget for the contractor's Phase 2 activities. The Phase 2 budget should include funds for travel to SHRP 2 Safety Symposia in 2012 and 2013 and one additional meeting each year. As discussed above, it should not include costs for data file preparation and support activities from VTTI and CTRE.
- A separate budget for VTTIs and CTRE data file preparation and support activities for the contractor's Phase 2 analyses, prepared in consultation with VTTI and CTRE. Funding for VTTI and CTRE data support in Phase 2 will be provided directly by SHRP 2 to VTTI and CTRE under separate contracts for each Phase 2 analysis contractor. Each S08 Phase 1 contractor must provide a budget for these VTTI and CTRE data file preparation and support activities.
- Anticipated results: how the Phase 2 analyses are expected to confirm, extend, or add to the Phase 1 results and how these final results can be applied to reduce crash and injury risk.

#### Phase 1 deliverables:

- Monthly and quarterly progress reports.
- Amplified work plan: two weeks after award. This should include any required modifications to the proposal and a schedule of major activities for the remainder of Phase 1.
- Detailed Phase 1 analysis plan and data set definitions: eight weeks after award.
- Research plan presentation at the SHRP 2 Safety Symposium in Washington DC on July 14-15, 2011.
- Phase 1 brief interim report: December 31, 2011.
- Phase 1 draft final report: March 31, 2012.
- Phase 1 final report: two weeks following receipt of comments on the draft report

#### **PHASE 2: FULL ANALYSIS**

Contractors cannot proceed with Phase 2 unless and until approval is given by SHRP 2. Approval to conduct Phase 2 for each Phase 1 contractor will depend on satisfactory completion of Phase 1 and on other factors, such as the potential usefulness of the contract's Phase 2 results to reduce crash and injury risk, the contract's Phase 2 budgets for both data file preparation and for analysis, and the overall coverage of priority research areas across all S08 contractors. It is possible that not all Phase 1 projects will proceed to Phase 2. The following tasks are anticipated for Phase 2; modifications may be made to Phase 2 tasks in light of results from Phase 1.

Proposers should provide their current expectations of tasks, data requirements, and outline analysis budget (in broad categories, excluding data file preparation and support) for Phase 2 with the understanding that these may be modified substantially following Phase 1.

#### **Task 2-1: IRB Approval and Data Sharing Agreement**

If the full analysis in Phase 2 requires modifications to the data request that may affect IRB approval or the terms of the data sharing agreement, appropriate amendments must be made to IRB documents and data sharing agreement and all necessary IRB approvals of amendments must be received.

Continuation of funding under this contract will be contingent upon approval by the contractor's IRB, the Virginia Tech IRB, and the NAS IRB. NAS reserves the right to terminate any S08 contract for which IRB approvals are not obtained in a timely manner.

### **Task 2-2: Conduct analyses**

Contractors will continue their analyses on the rapidly-growing SHRP 2 NDS data set. They will continue to work with VTTI and CTRE to define and access the SHRP 2 NDS data sets needed for these analyses. As needed, they will revise their analysis plans and data needs, access the revised data sets, and conduct additional analyses. Contractors will report summary results in their monthly reports.

### **Task 2-3: Interim reports**

Contractors will prepare interim reports documenting work through about November 2012 and May 2013, respectively. The reports should document the following:

- The analysis plan and methodology, with all modifications, including
  - the data used and how they were extracted from the SHRP 2 NDS data files;
  - how any crash surrogates were defined and used;
  - the statistical or analytical methods used;
  - how the results generalize to the target population
- The results and their implications: what has been learned from the analyses so far and how these results can be applied to reduce crash and injury risk.
- Lessons learned about the use of the SHRP 2 NDS data sets, including accessibility, usability, IRB experience/requirements, and any other areas in which the use of the database might be improved.

SHRP 2 desires to release important results from these analyses as soon as results are verified and reviewed. Contractors should plan on preparing brief summaries of important results as appropriate throughout the course of Phase 2, in a form suitable for public release.

### **Task 2-4: Present interim results at July 2012 and 2013 SHRP 2 Safety Symposia**

Contractors will present their interim results at the SHRP 2 Safety Symposia in Washington DC in July 2012 and 2013.

Product: PowerPoint and/or other presentation and hand-out materials

### **Task 2-5: Final report**

Contractors will prepare a final report documenting all work on both Phase 1 and Phase 2. The report will include thorough discussions of the following:

- The priority area addressed and the specific research question or questions studied.
- Literature review of current knowledge on these research questions.
- The final analysis plan and methodology, including
  - the data used and how they were extracted from the full SHRP 2 NDS data files;
  - how any crash surrogates were defined and used;
  - the statistical or analytical methods used;
  - how the results generalize to the nation
- The results and their implications: what has been learned from the analyses and how these results can be applied to reduce crash and injury risks.
- Lessons learned about the SHRP 2 NDS data sets.

Phase 2 deliverables:

- Monthly and quarterly progress reports.
- Amplified phase 2 work plan: two weeks following award of Phase 2. This should include any required modifications to the proposal and a schedule of major activities for the remainder of Phase 2.
- Interim result presentations at the SHRP 2 Safety Symposia in Washington DC in July 2012 and 2013.
- Brief summaries of important results: as appropriate throughout the course of Phase 2.
- Phase 2 draft interim reports: December 31, 2012 and June 30, 2013.
- Phase 2 interim reports: two weeks following receipt of comments on the draft reports.
- Phase 2 draft final report: December 31, 2013.
- Phase 2 final report: two weeks following receipt of comments on the draft report.

## Summary of Deliverables

### Phase I

1. Monthly and quarterly progress reports.
2. Amplified work plan: two weeks after award. This should include any required modifications to the proposal and a schedule of major activities for the remainder of Phase 1.
3. A one-day kickoff meeting for all S08 contractors will be held at VTTI in Blacksburg, VA as soon as feasible after contract start.
4. Detailed Phase 1 analysis plan and initial data set definitions: eight weeks after award.
5. Research plan presentation at the SHRP 2 Safety Symposium in Washington DC on July 14-15, 2011.
6. Phase 1 interim report: December 31, 2011.
7. Briefing for SHRP 2 staff and the S08 ETG in Washington, DC shortly after submission of the interim report.
8. Phase 1 draft final report: March 31, 2012.
9. Phase 1 final report: two weeks following receipt of comments on the draft report.

## Phase II

10. Monthly and quarterly progress reports.
11. Amplified Phase 2 work plan: two weeks following award of Phase 2. This should include any required modifications to the proposal and a schedule of major activities for the remainder of Phase 2.
12. Interim result presentations at the SHRP 2 Safety Symposia in Washington DC in July 2012 and 2013.
13. Brief summaries of important results: as appropriate throughout the course of Phase 2.
14. Phase 2 draft interim reports: December 31, 2012 and June 30, 2013.
15. Phase 2 interim report: two weeks following receipt of comments on the draft report.
16. Phase 2 draft final report: December 31, 2013.
17. Phase 2 final report: two weeks following receipt of comments on the draft report.

## SPECIAL NOTES

**Note 1:** NDS and Roadway Data Technical Support: Technical support for the NDS data by VTTI and for the roadway data by CTRE will be provided by SHRP 2 to the S08 projects through separate contracts. Support may include consulting, data access, data linking, data transformations, data tabulations, specialized data subsets, manual or automated video analysis, use of the VTTI secure data enclave and other feasible activities based on VTTI/CTRE capabilities and the available budget.

**Note 2:** VTTI and CTRE should not be contacted in the preparations of these proposals. Proposers should rely on the provided materials.

**Note 3:** VTTI will not bid on this RFP.

**Note 4:** Resources and reference materials listed below are likely to be useful to all proposers. Access is provided on this page of the SHRP 2 website:

[http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/Public/Pages/RFP\\_S08\\_Resources\\_and\\_Reference\\_Material\\_487.aspx](http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/Public/Pages/RFP_S08_Resources_and_Reference_Material_487.aspx)

1. The SHRP 2 NDS Data Website
  - Data dictionaries
  - Sample data sets of SHRP 2 NDS pilot test data
  - Matlab reader for viewing data
2. SHRP 2 NDS Data Access Guide, including excerpts from the Consent Form for Primary Drivers and a Sample Data Sharing Agreement
3. Roadway data description
4. Final Reports from Project S01: Development of Analysis Methods:
  - S01A
  - S01B
  - S01C
  - S01E
5. Phase reports from Project S02, Integration of Analysis Methods and Development of Analysis Plan
  - The Phase I report contains an extensive list of research questions and priority areas.

The Phase II Final Report discusses issues that bidders should consider in their proposals and presents five outline analysis project work plans.

6. Draft final report from Project S05: Design of the SHRP 2 Naturalistic Driving Study

**Funds Available:**

Phase I: \$100,000 for each Phase I award  
Phase II: to be determined  
Total, Phases I & II: \$5,000,000 for multiple awards

**Contract Period:** 34 months for Phase 1 and Phase 2

Anticipated contract award: May 1, 2011  
Phase I: 11 calendar months from notice to proceed  
Phase II: Begins approximately 14 calendar months after Phase I begins and goes on for 20 calendar months from notice to proceed on Phase II.  
Phase I and II: 34 months

**Responsible Staff:** Kenneth L. Campbell, [kcampbell@nas.edu](mailto:kcampbell@nas.edu), 202-536-5187

**Authorization to Begin Work:** May 2011, estimated

<p><b>Proposals (20 single-bound copies) are due not later than 4:30 p.m. on January 20, 2011</b></p>
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This is a firm deadline, and extensions simply are not granted. In order to be considered, all 20 copies of the agency's proposal, accompanied by the executed, unmodified Liability Statement must be in our offices not later than the deadline shown, or they will be rejected.

**Delivery Address**

PROPOSAL-SHRP 2  
ATTN: Neil F. Hawks  
Director, Strategic Highway Research Program 2  
Transportation Research Board  
500 Fifth Street, NW  
Washington, DC 20001

Phone: 202-334-1430

### Liability Statement

The signature of an authorized representative of the proposing agency is required on the unaltered statement in order for SHRP 2 to accept the agency's proposal for consideration. **Proposals submitted without this executed and unaltered statement by the proposal deadline will be rejected.** An executed, unaltered statement indicates the agency's intent and ability to execute a contract that includes the provisions in the statement. Here is a printable version of the [Liability Statement \(pdf\)](#). A free copy of the Adobe Acrobat PDF reader is available at <http://www.adobe.com>. The Liability Statement is included as Figure 1 in the *Manual for Conducting Research and Preparing Proposals for SHRP 2* referred to in General Note 4.

### General Notes

1. Proposals will be evaluated by SHRP 2 staff and Expert Task Groups (ETGs) consisting of individuals collectively very knowledgeable in the problem area. Selection of an agency is made by the SHRP 2 Oversight Committee, based on the recommendation from SHRP 2 staff and the ETG. The following factors are considered: (1) the proposer's demonstrated understanding of the problem; (2) the merit of the proposed research approach and experimental design; (3) the experience, qualifications, and objectivity of the research team in the same or closely related problem area; (4) the proposer's plan for participation by disadvantaged business enterprises (DBEs)—small firms owned and controlled by minorities or women; and (5) the adequacy of facilities.

TRB and the SHRP 2 Oversight Committee strongly encourage the significant participation of DBEs in SHRP 2 research contracts. Although no quota is specified nor is DBE participation mandated, the proposer's plan for involvement of DBEs is a factor in contractor selection, and the contractor's adherence to its DBE plan will be monitored during the contract period. The Research Team Builder section of the SHRP 2 website is a resource for proposers interested in participating on research teams.

2. Any clarifications regarding this RFP will be posted on the SHRP 2 Web site ([www.TRB.org/SHRP2](http://www.TRB.org/SHRP2)). Announcements of such clarifications will be posted on the front page and, when possible, will be noted in the TRB e-newsletter. Proposers are advised to check the Web site frequently until January 4, 2011, when no further comments will be posted.

3. According to the provisions of Title 49, Code of Federal Regulations, Part 21, which relates to nondiscrimination in federally assisted programs, all parties are hereby notified that the contract entered into pursuant to this announcement will be awarded without discrimination on the grounds of race, color, religion, sex, national origin, or disability.

4. The essential features required in a proposal for research are detailed in the [Manual for Conducting Research and Preparing Proposals for SHRP 2](#). **Proposals must be prepared according to this document, and attention is directed specifically to Section IV for mandatory requirements. Proposals that do not conform to these requirements will be rejected.**

5. The total funds available are made known in the project statement, and line items of the budget are examined to determine the reasonableness of the allocation of funds to the various tasks. If the proposed total cost exceeds the funds available, the proposal is rejected.

6. All proposals become the property of the Transportation Research Board. Final disposition will be made according to the policies thereof, including the right to reject all proposals.

## IMPORTANT NOTICE

**Potential proposers should understand that the research project described herein is tentative. The final content of the program depends on the level of funding made available. Nevertheless, to be prepared to execute research contracts as soon as possible after sponsors' approvals, the Strategic Highway Research Program is assuming that the tentative program will become official in its entirety and is proceeding with requests for proposals and selections of research agencies.**