Accelerating solutions for highway safety, renewal, reliability, and capacity

SHRP 2 Safety

Making a Significant Improvement in Highway Safety

Third Safety Research Symposium
July 17-18, 2008

TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

SHRP 2 Safety Research Program

GOAL

Greatly increased knowledge of *driver behavior*

- How the driver interacts with and adapts to the vehicle, roadway characteristics, traffic environment, traffic controls, weather, etc.
- Differences in *crash risk* associated with these interactions
- Proposed countermeasures based on the findings

SHRP 2 Safety Research Program

Two Tracks

- Naturalistic Driving Study – Instrument 2,500 vehicles and observe and record *driver behavior*, roadway, surrounding traffic, environment, etc.

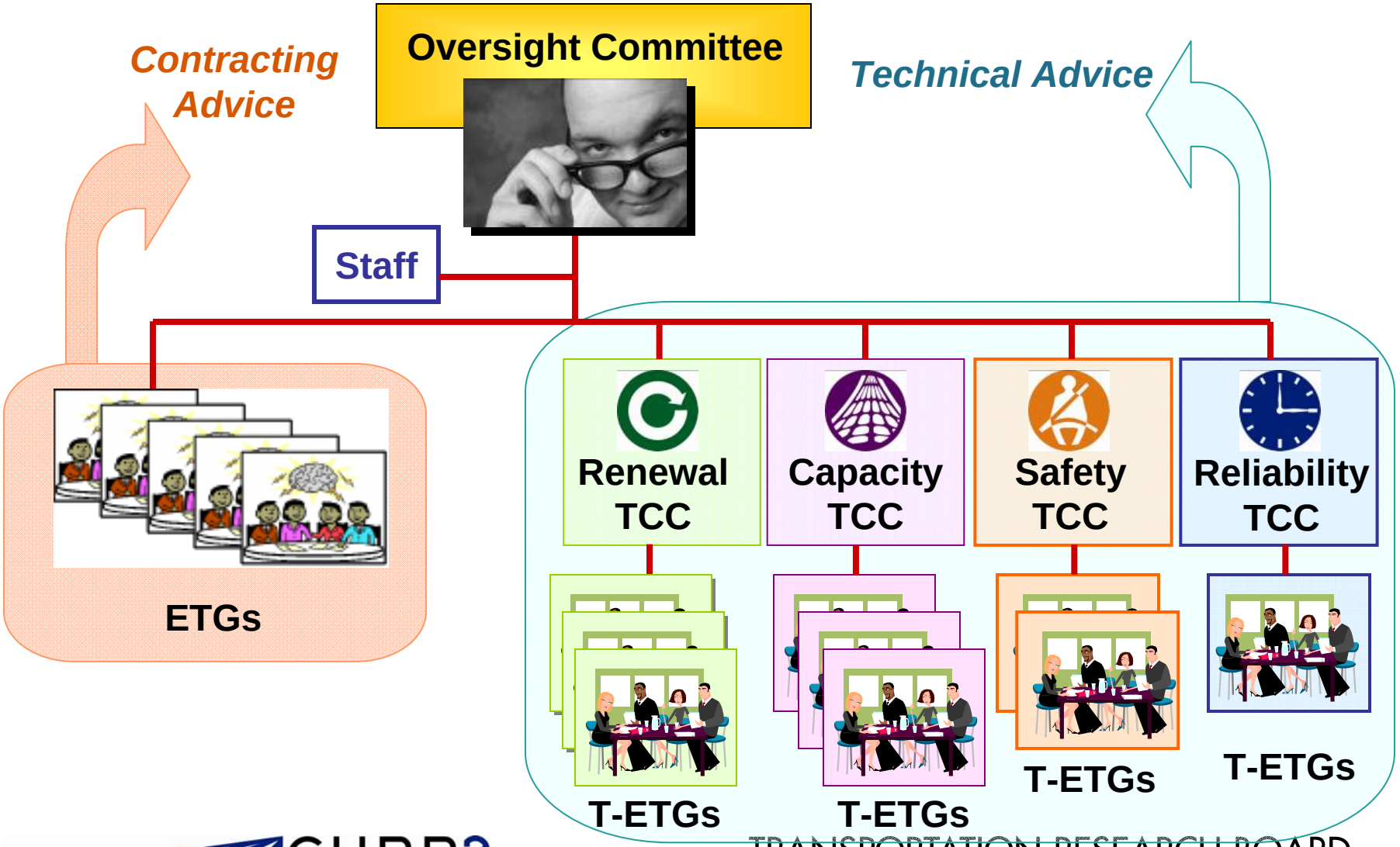
  Separately collect and link roadway data.

- Site-based Risk Study – Instrument series of locations (e.g., intersections, curves) and observe and record *vehicle interactions* under different roadway, traffic, and traffic control/warning conditions

Outline

- Safety program overview
- Status of current projects (8)
- Symposium overview

SHRP 2 Governance



SHRP2
STRATEGIC HIGHWAY RESEARCH PROGRAM

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Safety Contracts

Program Coordination

Safety TCC

Project Management

SHRP 2 Staff

Research

Contractor

Technical Advice

T-ETGs

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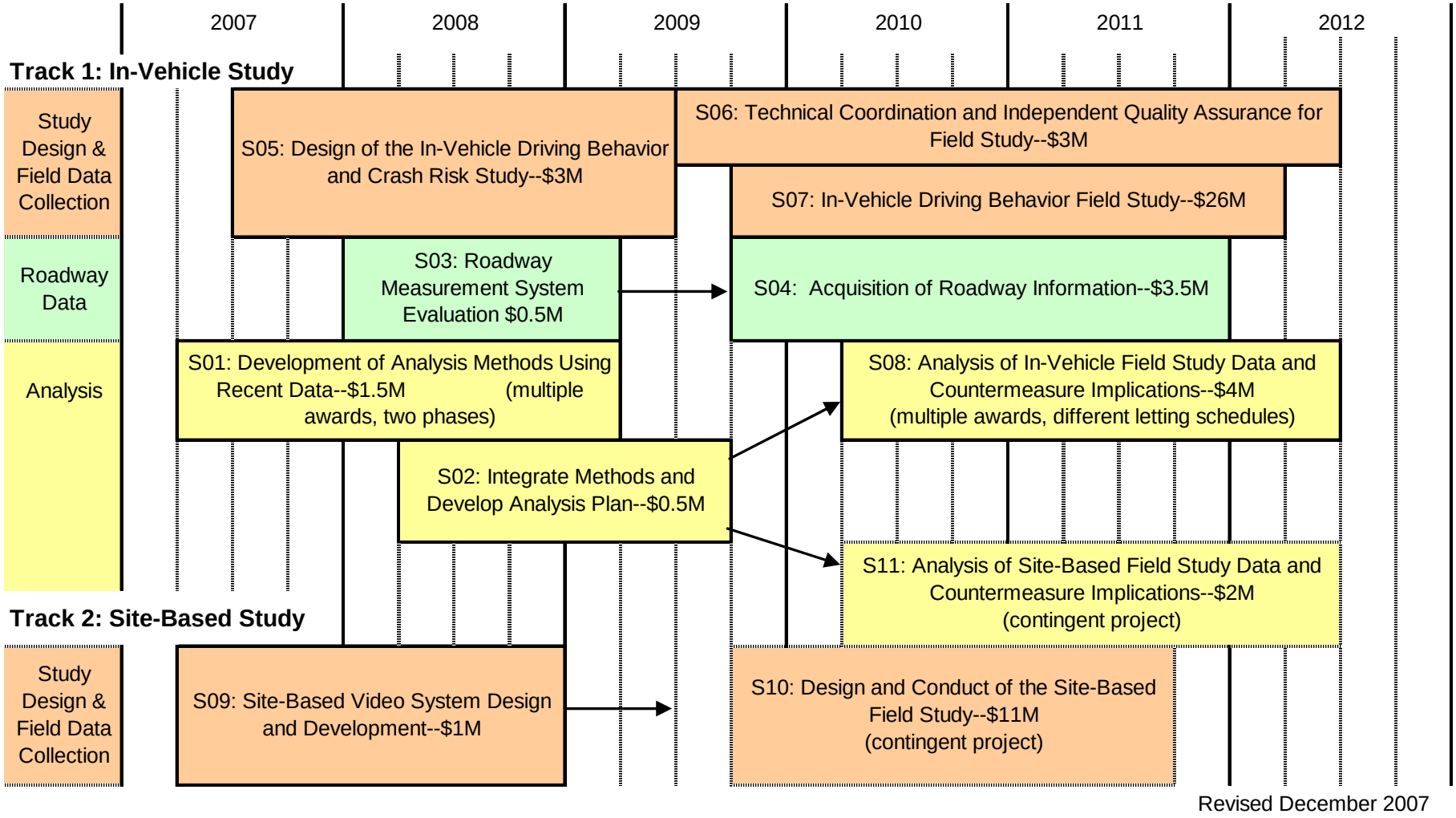
What's Happened?

- S02 and S03 RFPs July 30, 2007
- Safety TCC meeting September 2007
- Oversight Committee meeting November 2007
- S03 Roadway Measurement System Evaluation Awarded Applied Research Associates (ARA), December 2007
- TRB Annual Meeting Safety Session
- S02 Integration of Analysis Methods Awarded University of Iowa and Iowa State January 2008
- Video Expert panel meeting March 2008, Blacksburg, VA
- Safety TCC meeting April 21-22, 2008
- S07 ETG met June 2008 Blacksburg, VA
- SHRP 2 safety contractors meeting June 2008 Blacksburg, VA
- Oversight Committee meeting June 11-12, 2008

SHRP II Safety Projects Timeline



Revised December 2007

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Safety Projects

	Project	Cost	RFP
S01	Analysis Methods	$1.5M	2006
S05	In-Vehicle Study Design	$3.0M	2006
S09	Site-Based Development	$1.0M	2006
S02	Analysis Integration	$0.5M	2007
S03	Roadway Evaluation	$0.5M	2007
S06	Technical Coordination	$3.0M	2008
S04	Roadway Data	$3.5M	2008
S07	In-Vehicle Field Study	$26.0M	2008
S08	In-Vehicle Analysis	$4.0M	2009
	Total	$43M	

Project Status: S01
Development of Analysis Methods Using Existing Data

Objective:
Identify and develop analytic methods for the SHRP 2 driving behavior and crash risk studies and carry out demonstrations of the methods using data from recent naturalistic driving studies

5 Contracts

A) University of Minnesota Center for Transportation Studies
B) Pennsylvania Transportation Institute
C) University of Michigan Transportation Research Institute (UMTRI) with Virginia Tech Transportation Institute (VTTI)
D) University of North Carolina HSRC with TransAnalytics
E) Iowa State University Center for Transportation Research and Education (CTRE) with the University of Iowa

Period: 27 Months

Budget: (each contract)
Phase I: $100,000
Phase II: $200,000

TOTAL: $1,500,000 (all 5 contracts)

Project Status: S01
Development of Analysis Methods Using Existing Data

Phase I reports completed November/December 2007

Phase II Approved for 4 contracts

A) University of Minnesota Center for Transportation Studies

B) Pennsylvania Transportation Institute, PSU

C) University of Michigan Transportation Research Institute (UMTRI) with Virginia Tech Transportation Institute (VTTI)

E) Iowa State University Center for Transportation Research and Education (CTRE) with the University of Iowa

Project Status: S05
Design of the In-Vehicle Driving Behavior and Crash Risk Study

Contractor:

Virginia Tech Transportation Institute (VTTI) with
The University of Michigan Transportation Research Institute (UMTRI) and Battelle

Start date: June 2007

Period: 24 months

Budget: $3,000,000

Objective:

Develop the design for a field study involving ~2,500 instrumented vehicles operated over a period of 2 years, including the development of a complete data collection system, a field trial of the system, and a management plan for the full study

Deliverables:

Sample Design Interim Report December 2007
Pilot Study Design Report May 2008

Project Status: S05
Design of the In-Vehicle Driving Behavior and Crash Risk Study

Activities:

- Driver Assessment—TETG
- Sample Design
  Driver selection—Sampling TETG
  Driver age and gender sample sizes
  Vehicle type—working with mfg. on CAN Bus data
- Instrumentation
  Video issues—TETG
- IRB
  VTTI IRB approval April 2008
  NAS IRB approval June 2008
- Pilot Study to started June 2008 (6 mo.)

EVERYTHING IS LIMITED BY COST

Project Status: S09
Site-Based Video System Design and Development

Contractor:

University of Michigan Transportation Research Institute (UMTRI) with
Virginia Tech Transportation Institute (VTTI),
Soar Technology and
University of California, Berkeley (PATH)

Start date: March 2007

Period: 21 months

Budget: $1,000,000

Objective:

(1) develop a portable, automated video system that provides exposure-based, surrogate measures of collision risk and
(2) conduct a field study to demonstrate the relationship of the surrogate measures produced to actual crash frequencies

Deliverables:

System Design Interim Report received March 2008

Project S02:
Integration of Analysis Methods and Development of Analysis Plan

Contractor:

University of Iowa with Iowa State University, University of Minnesota and University of Montana

Start Date: April 1, 2008

Period: 19 months

Budget: $425,000

Objective:

Integrate the results of the S01 projects and produce an analysis plan for the SHRP 2 field studies

Project S03:
Roadway Measurement System Evaluation

Contractor:

Applied Research Associates
with Cambridge Systematics and KCI Technologies

Start Date: January 2007

Period: 15 months

Budget: $500,000

Objective:

Select and measure a roadway test site and conduct a roadway measurement system evaluation

Events:

Rodeo (evaluation) scheduled for September 14-20, 2008

Symposium Overview

Started with Research Questions

S01 projects: candidate analysis methods

S05 project: study design and data collection system

S03 project: evaluating roadway data collection systems

Immediate Goal:

Review how well the study design and data collection supports the candidate analysis methods to address the research questions.