

Safety Research within Strategic Highway Research Program 2:

Past, Present, Future

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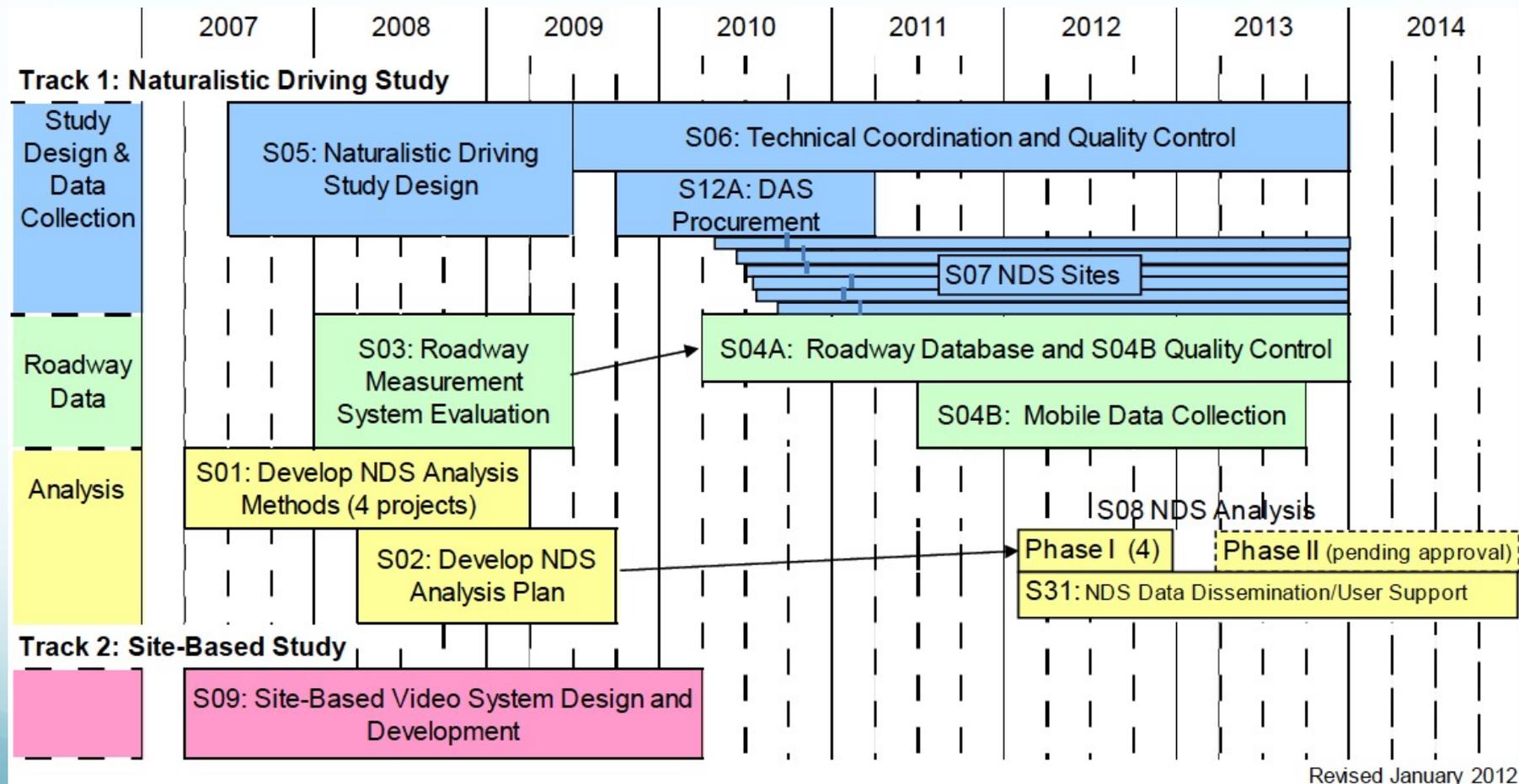
Past: SHRP 2 has had 4 program areas

Area	Focus
Safety	Prevent/Reduce crash severity by understanding driver behavior
Renewal	Address aging infrastructure
Reliability	Reduce congestion
Capacity	Integrate mobility, economic, environmental, community needs

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Past: SHRP 2 safety had overlapping program elements



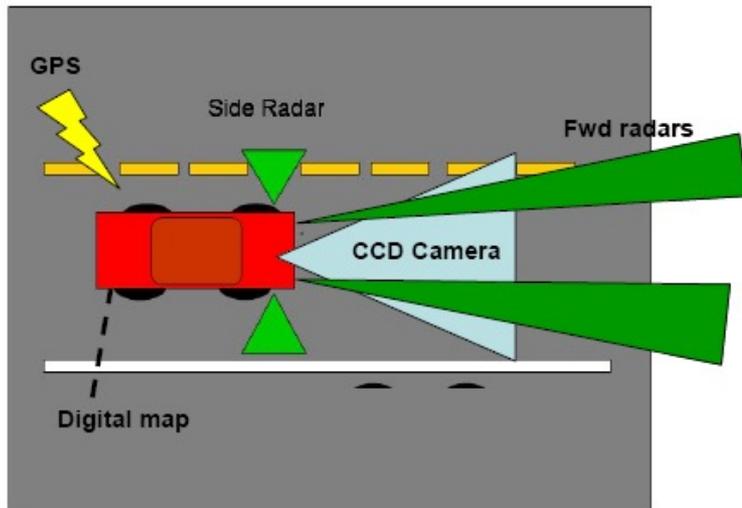
Revised January 2012

Past: What types of data were collected in SHRP 2?

- Naturalistic Driving Study (NDS Data)
 - Oversight and study design by Virginia Tech Transportation Institute (VTTI)
 - 6 sites for data collection across U.S. for range of drivers and vehicle types
 - Driver recruitment not a random sample of drivers or vehicles; used many different methods of contact
- Roadway Information Database (RID Data)
 - Very detailed information on geometric features not normally in state roadway files
 - To be linked to NDS through common location referencing system
 - ***Driver/Vehicle/Roadway interactions critical to safety analysis***

Past: What are the two key elements of an NDS design?

On-Board Devices



“Natural” Driving

The screenshot shows a software interface for reviewing driving data. The main window is titled 'Exposure Review' and displays a table of data for 'Driver 85, trip 85, 30010-30500'. The table has columns for Driver, Trip, Starttime, Endtime, Week, Speed, Precipita, RoadCol, Seatbel, EyesAF(F), EyesOn(F), HandLoc, EyesIn(F), and Tim. The data rows show various driving events and their durations.

Driver	Trip	Starttime	Endtime	Week	Speed	Precipita	RoadCol	Seatbel	EyesAF(F)	EyesOn(F)	HandLoc	EyesIn(F)	Tim
75	82	30010	30500	3	777773	0	1	0	0	1	3	0	
75	108	60040	60630	3	111103	0	0	0	9	1	3	3	
85	73	60130	60620	2	1638884	0	0	0	0	1	3	3	
85	85	30010	30500	3	1944439	0	0	0	0	1	3	3	

Below the table, there are several control panels. On the left, there is a 'NondrivingBehaviors' list with radio buttons for various activities like 'Cell phone: conversation, in use', 'Eating: high involvement', etc. On the right, there are video playback windows for 'Face Video' and 'Forward Video'. The 'Face Video' window shows a driver smiling and talking on a phone. The 'Forward Video' window shows a view from the driver's perspective on a road with other vehicles.

Present: What is the current experience with SHRP 2 data?

- Four *pre-studies* completed in late-2000's using existing data from other NDS studies
- 3 in-depth studies completed using portions of NDS data

Future: Who else will be using the NDS/RID?

- Continue support for AASHTO/FHWA Implementation Assistance Program (IAP)
 - Initially received 33 proposals for grants to use NDS/RID
 - 11 states selected; start proof-of-concept analysis January 2015; to be completed October 2015
 - Phase 2 to select 4-5 of 11 for more in-depth analysis of countermeasures
- Other studies make use of data and are expected to continue
- FHWA Safety Training and Analysis Center (STAC) will provide additional support for NDS implementation

Future: Challenges remain

- Most studies are problem-specific: road departures
- Limited attention to basic methodological issues
 - How to address relative lack of crashes in NDS
 - How to combine with “near-crash” (NC) or “safety-critical events” to conduct a safety analysis
 - SHRP 2 NDS: 100’s of crashes; thousands of NC’s
 - State Crash: 10,000 crashes; no NC’s