



SHRP2 Safety Implementation

AASHTO Research Advisory Committee Meeting – July 16, 2013
Baton Rouge, LA

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U.S. Department of Transportation
Federal Highway Administration



TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

What I'll Cover

- SHRP2 Safety Intent & Goals
- Key FHWA Implementation Efforts
 - Long-term Ownership & Stewardship
 - Safety Data Analysis Support Enclave
 - Exploratory Advanced Research (EAR) studies/activities to improve SHRP2 Safety Data utilization



One of these things is not like the others.



Intent & Goals

- SHRP2 Safety – created a RESEARCH tool
- Implementation – makes the tool available
- Actual benefits – derived from future research conducted using the tool/data.
 - New Safety CMFs, design standards, safety policies & programs, etc.
 - Non-safety transportation applications
 - Non-transportation applications



Long-term Ownership & Stewardship - Goals

- Make it as widely available as possible
- Provide efficient, convenient and cost-effective access
- Ensure privacy of participants in accordance with consent agreements
- Make it sustainable
- Maximize the value of the investment
- Save lives



Long-term Ownership & Stewardship – Key Terms

- **Steward (Governance)** – responsible for the overall governance of the data – establishment of policies for data access, privacy and information security. Could be handled by governance board or oversight committee.
- **Owner** – responsible for upholding privacy protections, meeting legal requirements, controlling user access to data, and overseeing operation and maintenance of the d/b. May also be the operator.
- **Operator** – provides infrastructure and support necessary to house the data and make it available to researchers. Includes hardware, software, O&M, access control, and researcher support.



Long-term Ownership & Stewardship - Activities

- Volpe Long-term O&S Study
- Federal Ownership Legal Analysis
- FISMA Compliance Review of NDS data
- RFI – owners, operators, sponsors

Activities by Others

- TRB Advisory Committee Letter Report
- AASHTO Implementation TF



Legal Analysis

Contract, Cooperative Agreement, or Grant

Federal Ownership	Legal Requirement	Non-Federal Ownership
Applies	Privacy Act	Not applicable
Applies	FOIA	Not applicable unless DOT exerts control
Applies	FACA	Not applicable unless DOT exerts control
Applies	FISMA	Not required unless DOT exerts control
Applies	Miscellaneous Receipts Act	Applicable under a Contract



Long-term Ownership & Stewardship – Next Steps

Pursue phased approach

Establish owner – craft RFA

- Establish cooperative agreement between FHWA & owner
- \$25M in implementation budget for operation and maintenance (O&M) of safety data system

Establish Governance Board

- Determine representation
- Populate through TRB

Migrate to multiple operators



Long-term Ownership & Stewardship – Next Steps

Pursue phased approach (cont.)

Work with TRB Advisory Committee on:

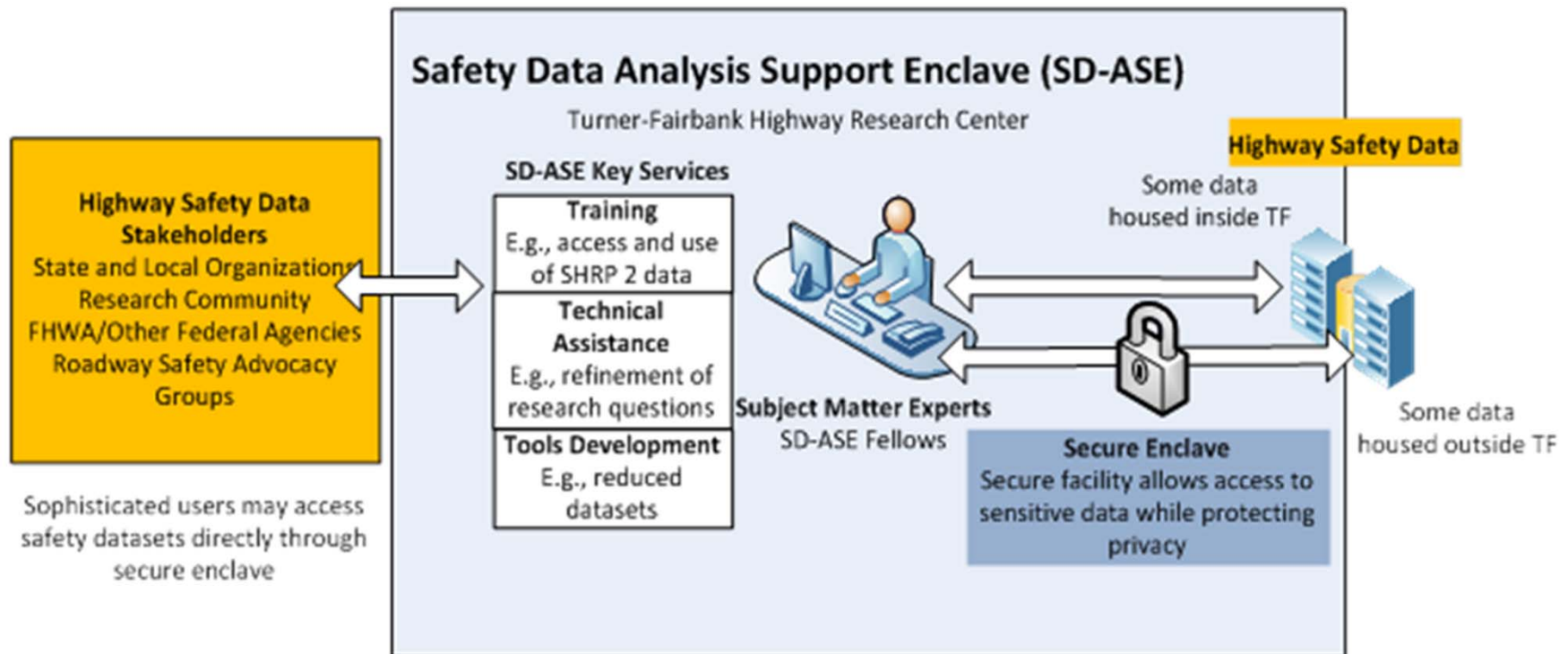
- Transition plan elements
- Learning Objectives for Phase I
- Cost recovery models & parameters

Evaluate M&O under Phase I to determine:

- Workable user fee / cost recovery structure
- Institutional arrangements & funding options in future phases



Safety Data Analysis Support Enclave



Safety Data Analysis Support Enclave

Volpe SD-ASE Feasibility Study

- Budget: \$312,500 *non-SHRP2 funds*
- Duration: ~ 9 months (June 2013 – Feb. 2014)
- Volpe's Team: Luisa Paiewonsky, Tech. Lead plus 7 other members
- FHWA Lead: Carol Tan
- Upcoming milestones
 - Environmental scan
 - Stakeholder workshop – Sept. 2013 in DC



Safety Data Analysis Support Enclave

Volpe SD-ASE Feasibility Study – Deliverables

- Benefit/Cost Analysis
- Products & Services
- Infrastructure Requirements
- Governance structure and processes
- Potential partnerships

Next Steps

- Stand up the enclave: \$1.0M, *SHRP 2 funds*
- 2 new SHRP2 Safety research positions



Exploratory Advanced Research Studies

Challenges:

- Large, complex data sets (4 petabytes)
- Require highly skilled users
- Costly manual data extraction (1.2 million hours video)
- Provide wide access while protecting privacy

Goals:

- Efficient data mining through automation
- More convenient access to videos of occupants
- Tools for users with mixed levels of expertise



Exploratory Advanced Research Studies

Automated video decoding/data extraction

- Awarded to Carnegie Mellon University on 9/26/2012

Video Analytics Workshop – *October 10-11, 2012*

- Experts in autonomous vehicles, machine vision, machine learning, etc.
- Focus on extracting behavioral elements – e.g. gestures.
- Workshop summary published on FHWA EAR website



Exploratory Advanced Research Studies

BAA (DTFH61-13-R-00011): Closed on 3/15/2013

In contracting – Multiple awards per topic anticipated Sept. 2013

- **Topic 2A: Automated Feature Extraction**
 - Duration: 12 mo. (Phase I), Ph II – 12 mo. (optional)
 - Funding: Ph I --\$300,000, Ph II -- \$300,000
- **Topic 2B: Automated Identity Masking**
 - Duration: 12 mo.
 - Funding: Up to \$400,000 per project



Thank You

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