



SHRP 2 Oversight Committee

Reliability Implementation Update

Jeff Lindley, FHWA

Gummada Murthy, AASHTO

June 25, 2014



U.S. Department of Transportation
Federal Highway Administration



TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES



Early SHRP2 Reliability Implementation Priorities



- L12/32A/32B/32C – Training for Traffic Incident Responders and Managers
- L01/06/31/34 – Organizing for Reliability Tools
- L17/13A – Knowledge Transfer System/Reliability Data Archive

Early Reliability Implementation Priorities

Coordinated Training for Traffic Incident Management Responders and Managers (L12/32)

- Product is multi-disciplinary training for traffic incident first responders
- Four elements
 - Classroom training for responders – Developed and being delivered
 - Train the Trainer workshop – Developed and being delivered
 - e-training course – Under development
 - Post course evaluation tool - Under development
- Part of FHWA Every Day Counts 2 initiative

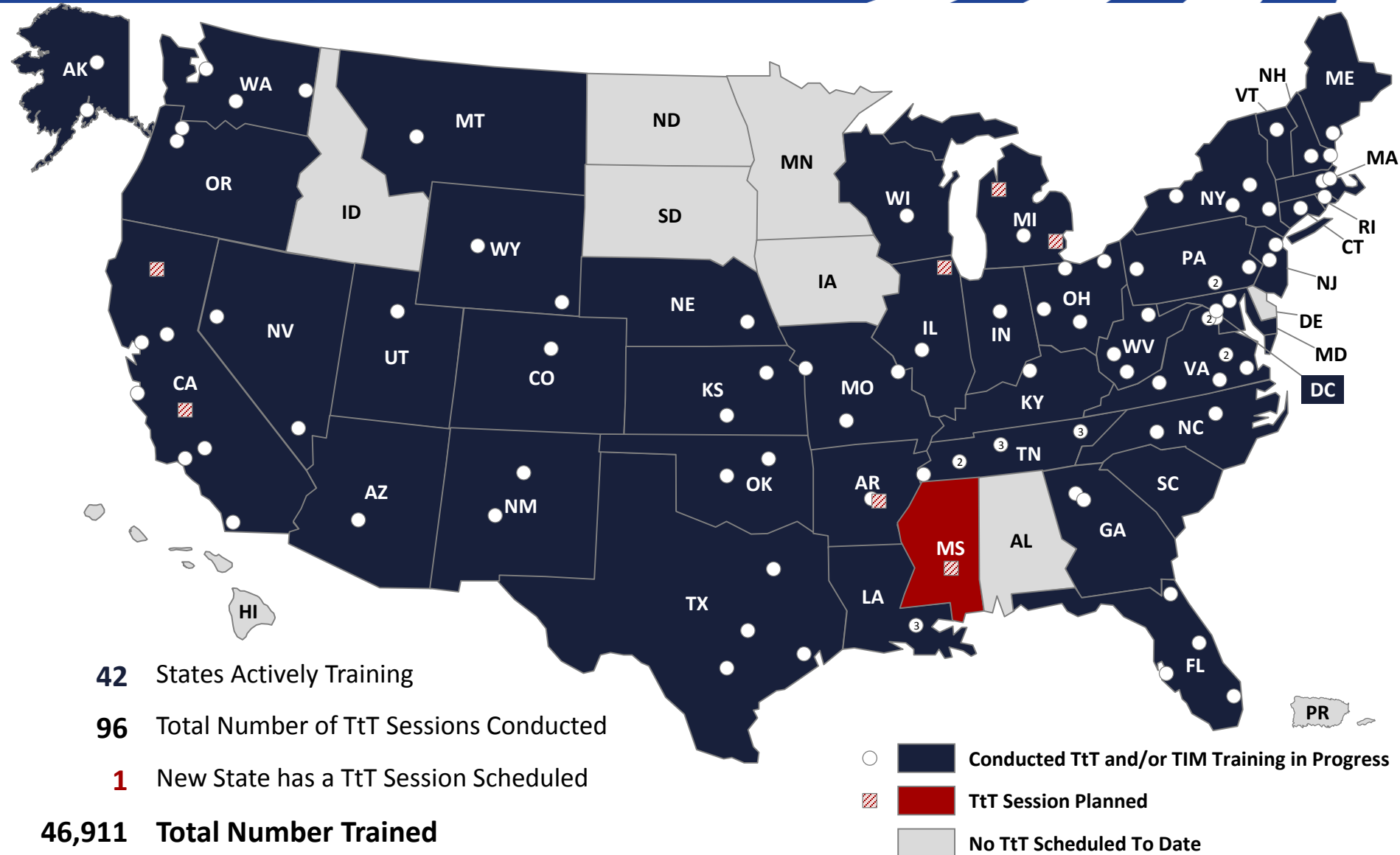
Early Reliability Implementation Priorities

Coordinated Training for Traffic Incident Management Responders and Managers (L12/32)

- Targets a range of users
 - High level support from the law enforcement, fire, towing
 - Ongoing outreach and collaboration
- Wide reach - goals by end of 2014
 - Train-the-trainer workshop in each State, and most of 75 largest metro areas
 - 50,000 responders trained
- Status
 - **42** States reached through **96** TtT Sessions
 - **Almost 47,000** responders trained by L12 training and L32 trainers

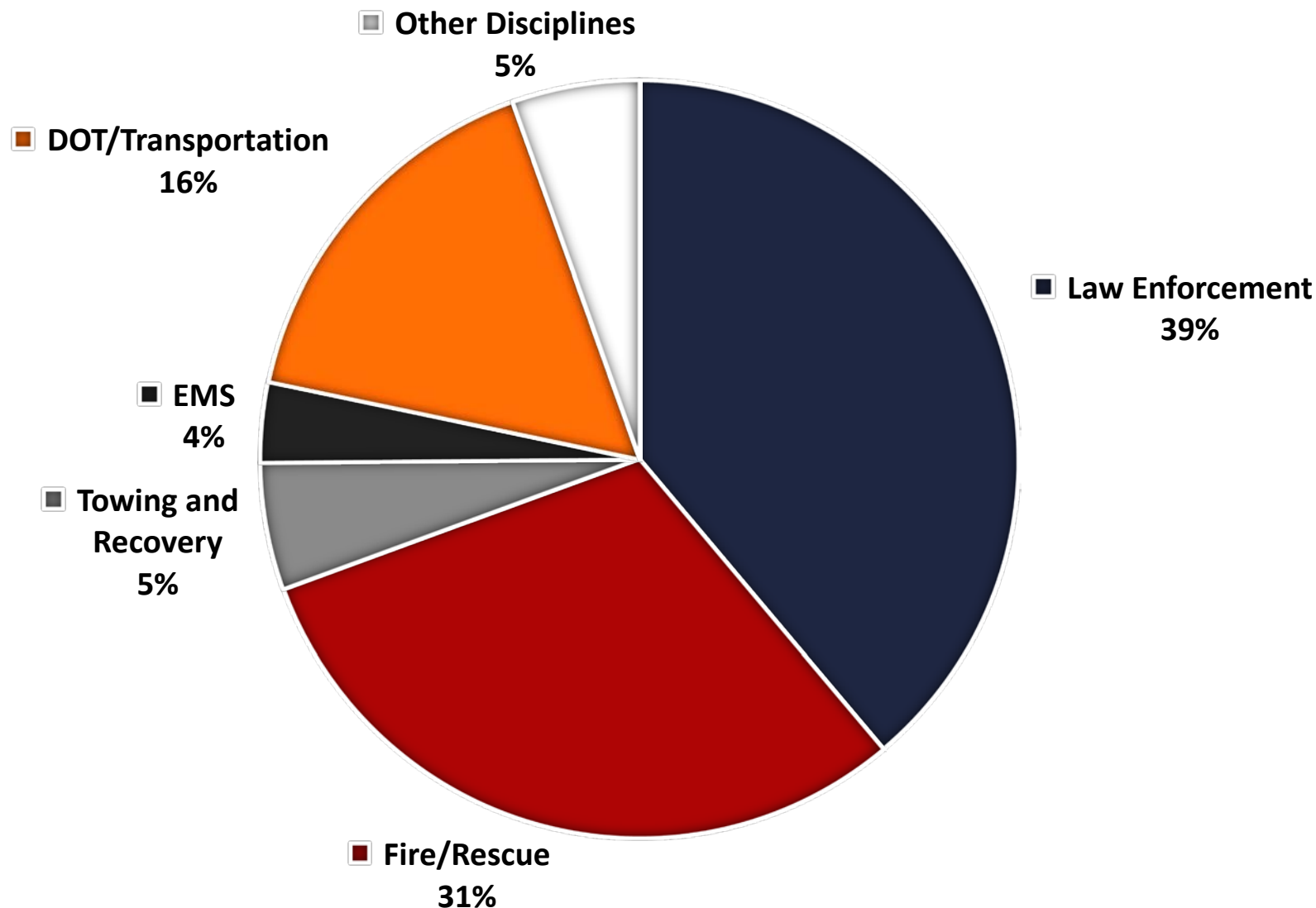
National TIM Responder Training Program Implementation Progress

- As of May 31, 2014



National TIM Responder Training Program Implementation Progress

- Total Trained By Discipline



Early Reliability Implementation Priorities



Organizing for Reliability Tools (L01/06/31/34)

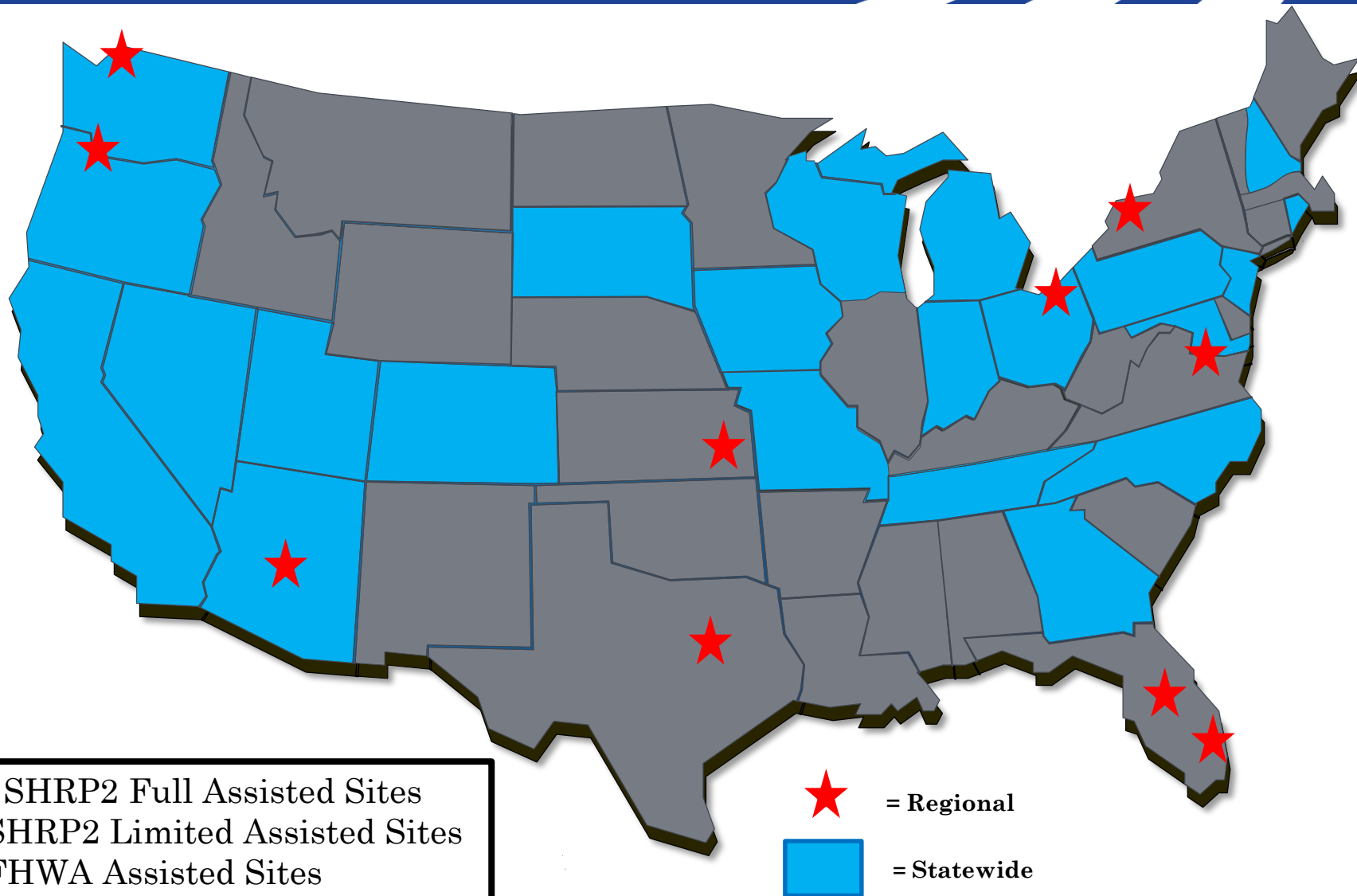
- Suite of products to assist States/MPOs evaluate and improve their capabilities for effective and sustained systems management & operations programs
 - CMM workshop and follow-up to assist agencies in better organizing to focus on transportation system management and operations
 - Reliability business process guidance
 - Outreach material
 - To assist CMM sites before/after assessments
 - To engage CEO support at DOTs and MPOs

Early Reliability Implementation Priorities

Organizing for Reliability Tools – CMM Workshop and Technical Assistance

- 27 States/MPOs selected for implementation assistance in round 1 (Spring 2013)
- Goals for selected DOTs/MPOs:
 - **Dec 2013** - Local champion team established & committed to applying SHRP2 Reliability products (nearly complete)
 - **Summer 2014** - CMM Assessment workshop conducted (being scheduled now)
 - **Dec 2014** - Action plan developed and vetted through their leadership (1 to 2 months after workshop)
 - **Dec 2016** - 2-year implementation of their action plans completed
- FHWA HQ, Division, Resource Center staff engaged

Implementation Sites for SHRP2 L01/06 (CMM)



Status of Implementation Sites as of June 6, 2014

Phase	Timeline	Completed
Outreach	January 2013 to June 2014	32 of 32
Assessment	October 2013 to July 2014	29 of 32
Development	October 2013 to December 2014	7 of 32
Implementation	December 2013 to December 2016	0 of 32

Early Reliability Implementation Priorities



Organizing for Reliability Tools

- Business Process Guidance
 - eTool - *complete*
 - Developing capability frameworks for non-recurring congestion - *underway*
- Outreach material
 - Presentation materials - *complete*
 - Prep Kit - *complete*
 - Tool Kit – *complete (will be updated based on use experience and to add new resources)*
- Updates to CMM web-based tool - *complete*

Early Reliability Implementation Priorities - L17 EKTS



- The L17 Enhanced Knowledge Transfer System (EKTS) project will
 - Enhance the current KTS web platform
www.tsmoinfo.org
 - Provide a home for SHRP2 Reliability products and tools
 - Integrate the National Transportation Operations Coalition (NTOC) website
 - Intended to be the web portal for the National Operations Center of Excellence (NOCoe)

Key L17 Milestones



1. MOU between AASHTO/ITE/ITS America (completed)
2. Formation of an EKTS Executive Committee (completed)
3. Establish Project Management Plan (completed)
4. Conduct soft launch of Prototype KTS w/ outreach and engagement to TSMO community (completed)
5. Coordinate and integrate KTS and NTOC resources (on-going)
6. Define user needs & functional requirements and development path (completed)
7. Build enhanced web portal (May - August 2014)
8. Beta test web portal (September to October 2014)
9. Launch and conduct day-to-day management of EKTS (January 2015)

Web Portal Development



- Interviews with 9 public and private sector TSM&O representatives
- Nine 90-minute listening sessions (TSM&O cross section of 115 participants)
- Feedback from additional 70+ questionnaires
- All used to:
 - Validate prototype KTS user needs
 - Validate prospective functional requirements of the enhanced version
 - Context of the conceptual web platform functionality
 - Needed enhancements to support the NOCoE.
- Updated definition of functional requirements for the web portal and content management.

Web Portal Development



- Create a high-level design of web portal architecture.
- Execute detail design, selection of sub-elements, apps, etc.
- Implement the software
- Conduct a Beta Test of web portal w/ outreach group.
- Verify of sub-elements of web portal (e.g. calendar, forums, etc.)
- Verify full web portal and deployment (launch)
- Validate the web portal with the user community
- Operate and maintain the web portal

National Operations Center of Excellence and EKTS



- Completed EKTS will become the web portal for the NOCoE
- NOCoE will be staffed by an Executive Director, a Senior Technical Program Manager, and support staff
- The Center will be housed adjacent to AASHTO headquarters, with an independent identity, access, and infrastructure (IT, web, and multimedia)
- The NOCoE will be funded by two sources:
 - Cooperative agreement with FHWA
 - AASHTO Operations Technical Service Program
- MOU with ITE and ITS America are in place for joint partnership to operate the NOCoE
- The NOCoE will be governed by an NOCoE Board of Directors consisting of members from AASHTO committees, ITE, and ITS America, with non-voting participation from FHWA

NOCoE Products & Services



- Host an actively manage the ECTS website with a suite of services provided by full-time staff
 - Strong search engine
 - Cross citation of best practices
 - Social media connections
 - Moderated forums
 - Links to other websites
- Technical Services Program
 - Platform for Peer Exchanges or a Peer-to-Peer Program
 - HELP desk or “Live Librarian” or Ask an Expert
 - Best Practices & Project and Product Showcases
 - Comprehensive Calendar & E-newsletter
 - Webinars grounded in on-demand topics
 - Connection to the Operations Academy & Training
 - Linkages to resources across all platforms – Federal, State, and Local DOTs, academia, research centers, industry, associations

NOCoE Timeline

Spring
2014

June-
July 2014

Fall
2014

January
2015

2015
STSMO &
AASHTO
Spring
Meetings

AASHTO / STSMO Efforts

STSMO
(formerly SSOM)
passed TSP
Resolution and
finalized NOCoE
BP

TSP Resolution
received final
approval from
SCOH and BoD

TSP invoices
are being sent
to states in
June 2014

Begin
advertising
NOCoE
Executive
Director
position in
July

NOCoE
Executive
Director
selected

Construct
NOCoE office
space

Executive
Director to
start no later
than January

NOCoE office
space open for
business

TSP activities

Possible joint
AASHTO
STSMO
meetings with
MOU partners

Host additional
NOCoE
Inauguration
Ceremonies &
Regional Ops
TSP activities

NOCOE Expected Outcomes

AASHTO
expanded MOU
with ITE and
ITSA and
partnering to
develop scope
for NOCoE

AASHTO
begins
collecting TSP
moneys @
yearly
contribution of
\$15000
beginning July
2014

Staff NOCoE,
Develop
NOCoE Work
plan, and
establish
NOCoE Board
of Directors

Establish
NOCoE
Advisory
Committee

NOCoE
Begins with
opening
ceremonies
being planned
at 2015 TRB
to officially
launch
NOCoE & web
portal (L17
EKTS)

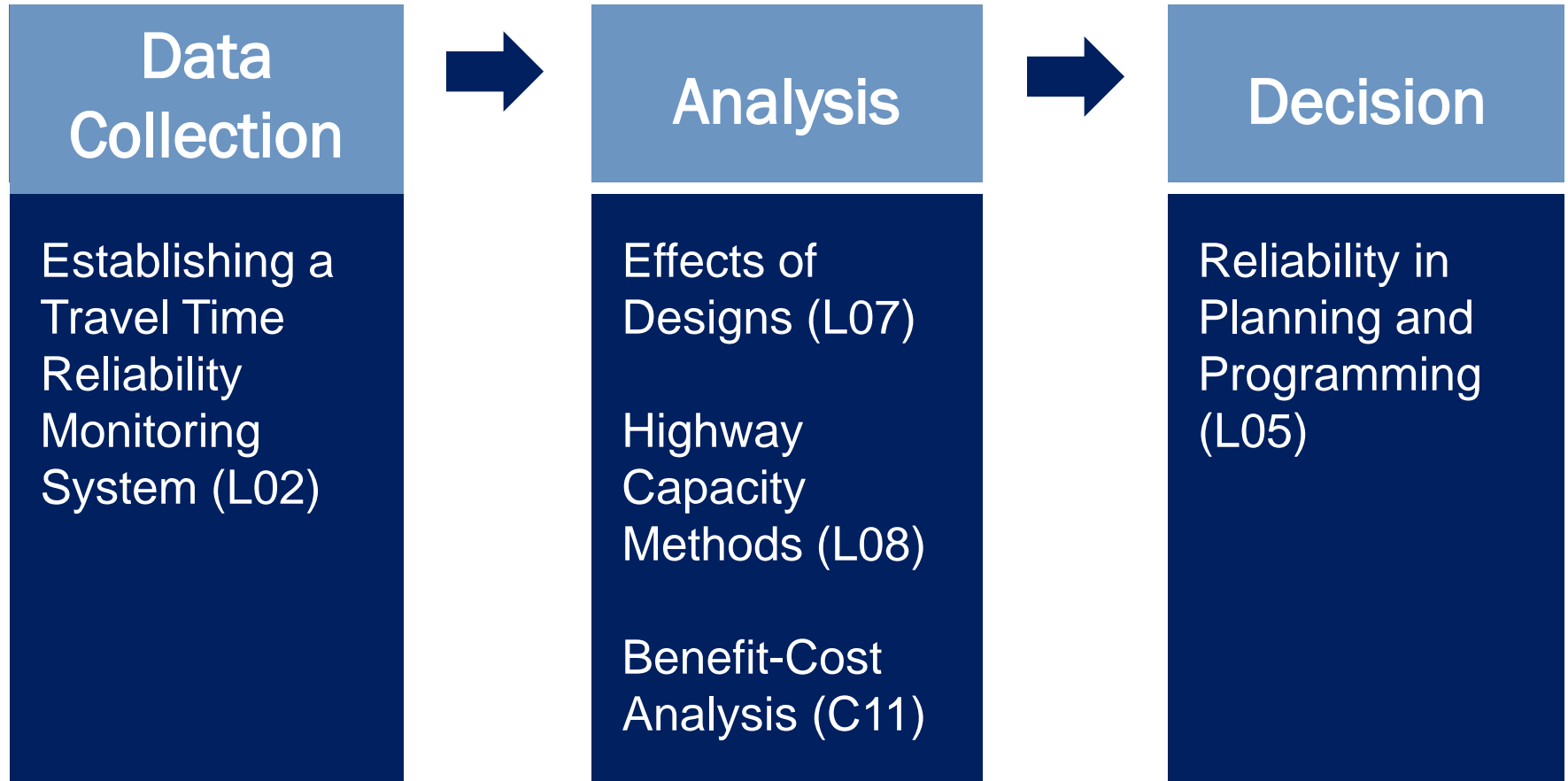
NOCoE
managed
Regional
Summits on
Operations
Programs, Peer
Exchanges,
technical
demonstrations
and summits

Moving to Implementation - Reliability

Data and Analysis Tools

- Data monitoring
 - Setting up a monitoring program for reliability (L02)
- Analysis tools
 - Analyzing reliability using Highway Capacity Manual methods (L08)
 - Assessing how design treatments affect reliability (L07)
 - Estimating economic impacts of capacity projects – delay and reliability (C11)
- Incorporating reliability performance measures into transportation planning and programming (L05)
 - Guide, Technical Reference, Spreadsheets applied to case studies
 - Helps agencies consider reliability as part of decisions on transportation investments

Bundle - from Data to Decisions



Moving to Implementation - Reliability

Data and Analysis Tools

- Pilots done in CA, FL, MN, WA
- Some improvements to products made
- Implementation Planning Workshop – March 2014
 - Implementation plan – in draft
- In Round 4 Implementation Assistance Program
 - 4 to 8 proof of concept pilots of up to \$400k each
 - Encouraging applications using multiple products in bundle
- Implementation plan – other key elements
 - Continue pilot projects to develop champions, expertise
 - Continue refinements to L08, and possibly L07 or C11
 - Do second IAP offering for lead adopter, user incentive awards to broaden user base once tools refined
 - Technical assistance, outreach

Moving to Implementation – Traveler Information



Communicating about Travel Time Reliability (L14)

- How to effectively convey Reliability information to different audiences
 - Particularly focused on traveler information (emphasis on pre-trip)
- Lab tested during development, but not piloted
- Implementation
 - Held implementation discussion with TETG and set of potential users –Dec 2013
 - Will conduct pilot tests – begin Fall 2014
 - Assess field use
 - Develop set of tips and deployment recommendations
 - Supplemented funding to add \$250k to enable more pilots (new total of \$750k) - 3 sites anticipated

Moving to Implementation – Regional Operations Forums



- Multi-state regional operations forums (L36)
 - 4-day session for transportation agency staff and partners
 - Training, transfer knowledge of Reliability products and other TSM&O resources, foster peer exchange and networking
- Five SHRP2 Pilots
 - Nashville, TN: held Sept 2013
 - Seattle, WA: held Nov 2013
 - Phoenix, AZ: held Jan 2014
 - Concord, NH: held Apr/May 2014
 - Milwaukee, WI: held Jun 2014
- Bonus pilot
 - California-only ROF funded by Caltrans: held May 2014

Moving to Implementation – Regional Operations Forums



- Implementation planning workshop held – May 20-21, 2014
 - Included reps from DOT decision-maker and mid-level practitioner level, MPO, public safety
- ROFs have been very well-received
 - Provide key TSM&O training, networking, and momentum in agencies
 - Key “onboarding pathway” to TSM&O community, other SHRP2 Reliability products
- Key efforts identified for implementation
 - Update content of modules in current pilot format
 - Develop a few alternate formats to increase flexibility
 - Additional offerings of ROF to other locations, practitioners
 - Follow-on activities to maintain peer network, expand knowledge
 - Outreach/marketing
- Next steps
 - Draft implementation plan

Moving to Implementation – Other Modeling and Data Products

- Incorporating Reliability into Operations/Planning Models (L04)
 - Enhance simulation models to incorporate reliability
 - Developed a scenario generator and trajectory processor that can be interfaced with existing models
 - Implementation - initiating
 - Pilot tests
 - Work with software vendors to incorporate into commercial models
- Freight Demand Modeling and Data Improvement (C20)
 - Organizational approach to achieving improved freight data sets and freight modeling practices
 - Implementation assistance in Round 3
 - 4 awards for Behavior-Based Modeling, 7 awards for Innovations in Local Freight Data
 - Collaborative effort with Capacity area

Future Implementation Efforts

- Integrating Freight Considerations into the Highway Capacity Planning Process (C15)
 - Guide with case studies/examples to help identify strategies for incorporating market-driven freight considerations into highway capacity decision making
 - Implementation planning workshop – held June 2014
 - Collaborative effort with Capacity area
- Workzone Impact & Strategy Estimator (R11)
 - Tool to help agencies coordinate road projects to reduce user impacts
 - Assess optimal sequencing, cost-effectiveness of strategies
 - Use during planning/programming when projects are being scheduled and sequenced, and during design
 - Status
 - Validated/tested in 4 States; Final report recently completed
 - Assessing product readiness for implementation
 - Implementation planning workshop – Late summer 2014

Framework to Expedite Deployment of Products



- Develop a framework for deploying SHRP2 Reliability products and other TSM&O tools to:
 - Facilitate and expedite deployment
 - Equip agencies to deploy multiple products and strategies to gain synergies and maximize benefit
- Capture the interrelation, value, and potential applications in the real world
 - Show how Reliability products can integrate with existing tools, methodologies, and products
 - Show how agencies can use the products to achieve their goals (Use Cases)

Reliability Implementation Resources



- L12/32A/32B/32C - \$8.05 million approved
- L01/06/31/34 - \$6.6 million approved
- L17/13A - \$2.5 million approved
- L36 - \$1.0 million approved
- L02/05/07/08/C11 (L38 bundle) - \$6 million approved
- L14 - \$500k approved (+\$250k contingency)
- L04 - \$500k approved

SHRP2 on the Web

- **goSHRP2 website**
www.fhwa.dot.gov/goSHRP2
 - Product details
 - Information about SHRP2 implementation phase
- **SHRP2 @TRB**
www.TRB.org/SHRP2
 - Information about research phase
- **SHRP2 @AASHTO**
<http://SHRP2.transportation.org>
 - Implementation information for AASHTO members

