SHRP2 Solutions for Better Bridges

AASHTO Subcommittee on Bridges and Structures Meeting

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April 22, 2015
Today’s Presentation

• Brief Overview of Current SHRP2 Status
• FHWA/AASHTO Implementation Assistance Program
• SHRP2 Bridge-Related Solutions

Work on the Route B Bridge, Columbia, Missouri
• **SHRP2 Solutions** – more than 64 products bundled into 29 opportunities

• **Solution Development** – processes, software, testing procedures, and specifications

• **Field Testing** – refined in the field

• **Implementation** – 275+ transportation projects; adopt as standard practice

• **SHRP2 Education Connection** – connecting next-generation professionals with next-generation innovations
## Anticipated offering

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Status</th>
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<tbody>
<tr>
<td>PlanWorks (C01)</td>
<td>NEW</td>
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<tr>
<td>Utility Locating Technologies (R01B)</td>
<td>NEW</td>
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<tr>
<td>Precast Concrete Pavement (R05)</td>
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<tr>
<td>Identifying and Managing Utility Conflicts (R15B)</td>
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<tr>
<td>New Composite Pavement Systems (R21)</td>
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<tr>
<td>WISE: Work Zone Impacts and Strategies Estimator Software (R11)</td>
<td>NEW</td>
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- IAP Round 7 in 2016 is under development; numerous products will be offered
America’s Bridges Need Repair – SHRP2 is on the Job

Innovative Bridge Designs (R04)
Service Life for Bridges (R19A)
Service Limit State Design for Bridges (R19B)
Performance Specifications (R07)

Innovative Bridge Designs (R04)
GeoTechTools (R02)

Nondestructive Testing for Concrete Bridge Decks (R06A)
Nondestructive Testing for Tunnel Linings (R06 G)
Service Life Design for Bridges (R19A)
National IAP Deployment

30 IAP Bridge-Related Projects Underway

- NDT for Bridge Decks
- PBES/ABC
- Service Life Design
- Other Bridge-Related
Upcoming SHRP2

SHRP2 Implementation Assistance Program
SHRP2 Implementation Assistance Program

Proof-of-Concept Pilot

Lead Adopter

User Incentive
SHRP2 IAP Projects In Action
Toolkit

- Standard design plans for all bridge components
- Design examples
- Videos and peer exchange information

Implementation States

- Arizona, California, Iowa, Kentucky, Maine, Michigan, Missouri, New York, Rhode Island and Wisconsin
GeotechTools.org (R02)

- **Website** provides a convenient and efficient way to identify and apply geotechnical solutions
- 46 technologies, design issues and other variables
- **Photographs, case histories and examples**
  - 14 States involved in implementation projects
Design Methods and Guidance for Service Life Design

- Environmental factors, materials, new technologies for longer bridge life
- Design examples
- Training and webinars
- **IAP states**: Iowa, Oregon, Pennsylvania, Virginia and Central Federal Lands (Hawaii)
**Service Limit State Design for Bridges (R19B)**

**Toolkit** to assess service limit states more accurately

- A framework for calibrating service limit state specifications.
- Service limit state load and resistance factors.
- Bridge design procedures and model specs for service limit states.
- Tools required for future service limit state improvements.
- Model specification changes that include designing for durability.
Performance Specification for Rapid Renewal (R07)

• **Model performance specifications** in 5 categories

• 23 different specifications
  – Design-bid-build, design-build, design-build-warranty and design-build-operate-maintain

• **Decision Tree and Writers Guide** offer a step-by-step “how to” for developing the specifications

• **States implementing** are Alabama, Maine, Missouri, Pennsylvania and Vermont
Non-Destructive Testing Technologies

Concrete Bridge Decks (R06A)

- Web based tool – selecting appropriate testing for specific applications
- Identifies tests procedures, protocols and available standards
- Eight states currently implementing: FL, IA, IN, LA, MO, OR, PA, VA
- NDTToolbox.org
Non-Destructive Testing Technologies (R06G)

**Tunnels (R06G)**

- Web based tool – information on methods for mapping voids, debonding and other defects
- Users manual and guide for evaluating the best NDT for the situation
- Implemented by Colorado and Pennsylvania
For More SHRP2 Information

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http://SHRP2,transportation.org