SHRP2 Round 6 Utilities
Implementation Assistance Program Webinar

Identifying and Managing Utility Conflicts (R15B)
Utility Locating Technologies (R01B)

May 12, 2015
Agenda

• SHRP2 overview
  – SHRP2 at a glance
  – Focus areas
  – Implementation assistance

• Utility Locating Technologies (R01B)
  – R01B product description
  – Implementation assistance opportunities

• Identifying and Managing Utility Conflicts (R15B)
  – R15B product description
  – Implementation assistance opportunities

• Implementation timeline

• Questions
SHRP2 at a Glance

- **SHRP2 Solutions** – more than 64 products
- **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

275+ SHRP2 projects nationwide
Focus Areas

**Safety:** fostering safer driving through analysis of driver, roadway, and vehicle factors in crashes, near crashes, and ordinary driving

**Reliability:** reducing congestion and creating more predictable travel times through better operations

**Capacity:** planning and designing a highway system that offers minimum disruption and meets the environmental and economic needs of the community

**Renewal:** rapid maintenance and repair of the deteriorating infrastructure using already-available resources, innovations, and technologies
SHRP2 Implementation Assistance Program

- Designed to help State DOTs, MPOs, local agencies, and other interested organizations deploy SHRP2 Solutions.

<table>
<thead>
<tr>
<th>Proof of Concept Pilot</th>
<th>Lead Adopter Incentive</th>
<th>User Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>To evaluate product readiness.</td>
<td>To help offset costs associated with product implementation and risk mitigation.</td>
<td>To support implementation activities, such as conducting internal assessments, changing processes, and organizing peer exchanges.</td>
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</table>

- 26 SHRP2 products have been offered in Rounds 1-5 of the IAP.
- Round 6 is the second to last round to be offered.
Challenge

• Utility issues are frequently cited as one of the top reasons for delays affecting transportation projects. A critical factor that contributes to these inefficiencies is the lack of adequate information about the location and other attributes of utility facilities that might be affected by a transportation project.

Solution

• R15B resulted in three products that use a utility conflict matrix (UCM)-based approach, which are designed to help agencies and utility companies manage utility conflicts effectively during project development, design, and construction.
SHRP2 R15B Products

• Product 1: Compact, standalone UCM
• Product 2: Utility conflict data model and database
• Product 3: One-day UCM training course
Product 1: Utility Conflict Matrix

- MS Excel format, includes drop-down lists
- Standalone UCM spreadsheet is the product
- Process embedded in table structure

<table>
<thead>
<tr>
<th>Utility Owner and/or Contact Name</th>
<th>Conflict ID</th>
<th>Drawing or Sheet No.</th>
<th>Utility Type</th>
<th>Size and/or Material</th>
<th>Utility Conflict Description</th>
<th>Start Station</th>
<th>End Station</th>
<th>Start Offset</th>
<th>End Offset</th>
<th>Utility Investigation Level Needed</th>
<th>Test Hole</th>
<th>Recommended Action or Resolution</th>
<th>Estimated Resolution Date</th>
<th>Resolution Status</th>
</tr>
</thead>
</table>
Product 1: UCM Cost Estimate Analysis

- MS Excel format, includes drop-down lists

<table>
<thead>
<tr>
<th>Project Owner:</th>
<th>Cost Estimate Analysis Developed/Revised By:</th>
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<tbody>
<tr>
<td>Project No.:</td>
<td>Date</td>
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<tr>
<td>Project Description:</td>
<td>Reviewed By:</td>
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<tr>
<td>Highway or Route:</td>
<td>Date</td>
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<tr>
<td>Utility Conflict ID:</td>
<td></td>
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<tr>
<td>Utility Owner:</td>
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<td>Utility Type:</td>
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<td>Size and/or Material:</td>
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<td>Project Phase:</td>
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Product 1 Benefits/Limitations

• Benefits
  – Systematic management of utility conflicts
  – Improved tracking and accountability
  – Cost estimate analysis spreadsheet
  – No IT support needed

• Limitations/challenges
  – Scalability
  – Variety of UCM structures in use
Product 2: Data Model and Database

- Formal data model (ERwin format)
- Enterprise database support (Oracle, SQL Server)
- Tested in MS Access using sample UCMs
- Focus on data model development and testing
Product 2 Benefits/Limitations

• Benefits
  – Efficient management of utility conflicts
  – Automated tracking and accountability
  – Wide range of queries and reports
  – More effective use of staff and other resources

• Limitations/challenges
  – IT support depending on implementation level/path
  – Higher initial investment
  – Need to develop user interface
<table>
<thead>
<tr>
<th>Planning</th>
<th>Preliminary Design</th>
<th>Detailed Design</th>
<th>Letting</th>
<th>Construction</th>
<th>Post Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Definition, Selection, Financing, Sched.</td>
<td>Agreements, Scope Update</td>
<td>Environmental Process</td>
<td>Environmental Commitments</td>
<td>Construction authorization</td>
</tr>
<tr>
<td></td>
<td>Alternative Analysis and Preliminary Plans</td>
<td>Environmental Process</td>
<td>Design and PS&amp;E Assembly</td>
<td>Property Acquisition and Relocation Assistance</td>
<td>Environmental reevaluation</td>
</tr>
<tr>
<td></td>
<td>Environmental Process</td>
<td>Right-of-Way Map Development</td>
<td>Property Acquisition and Relocation Assistance</td>
<td>Utility Conflict Analysis, Permits, Relocation, and Reimbursement</td>
<td>Property Management</td>
</tr>
<tr>
<td></td>
<td>Preliminary Utility Conflict Analysis</td>
<td>Property Acquisition and Relocation Assistance</td>
<td>Utility Conflict Analysis, Permits, Relocation, and Reimbursement</td>
<td>Letting</td>
<td>Construction</td>
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<tr>
<td></td>
<td>0% design</td>
<td>15-20% design</td>
<td>30% design</td>
<td>60% design</td>
<td>90% design</td>
</tr>
<tr>
<td></td>
<td>30% design</td>
<td>60% design</td>
<td>90% design</td>
<td>0% design</td>
<td>15-20% design</td>
</tr>
</tbody>
</table>

Project Management
Product 3: UCM Training Course

- Lesson plan (6 lessons)
- Training course binder:
  - PowerPoint files
  - Presenter notes
  - Participant handouts
  - Sample project plans
  - UCM templates
  - Companion CD:
    - All training materials + Products 1 and 2
SHRP2 R15C: Pilot Implementation

- **Objective:**
  - Work with MDSHA to conduct a pilot implementation of the SHRP2 R15B products

- **Deliverables:**
  - Report describing application and lessons learned
  - Updates to SHRP2 R15B products
• Avoided $500,000 gas line relocation, resolved utility conflicts by changing drainage design
• 4-6 months time savings
• Changed construction sequencing, which avoided other conflicts
• Improved working relationship with utility owners, creating goodwill for future projects
• UCM challenged designers to think out of the box, facilitated teamwork
  – Made designers aware of utility issues on the project
  – Helped utility coordinators understand design process better
  – Brought district staff closer together
The draft standalone and database UCM products, as well as training materials, are already available on TRB's website if the agency is interested today.

R15B Products
1. Compact, standalone UCM
2. Utility conflict data model and database
3. UCM training course

• Awarded agencies will receive:
• Training on using the UCM excel and access databases
• Training on how to incorporate UCM in their existing business processes
• Technical assistance for tweaking current business processes within your agency to accommodate the use of the matrix throughout the design process
## R15B Implementation Assistance Opportunities

<table>
<thead>
<tr>
<th>Type of assistance</th>
<th>Number of awards</th>
<th>Amount of assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead adopter</td>
<td>Up to 5 awards</td>
<td>Up to $100,000 per award</td>
</tr>
</tbody>
</table>

Who can apply: State DOTs, State Tollway and Thruway authorities, local agencies, tribal agencies.
Recipient Requirements

1. Commitment to use products
2. Commitment of applicant’s leadership
3. Existing internal process for managing utility conflicts that would benefit from improvement
4. Willingness to host at least 1 training course, with technical assistance from our team
5. Identification of at least one geographic area in which to use product
6. Identification of two or more pre-construction projects to test the UCM at varying levels of design
7. Willingness to share the product to aid in future training materials, with technical assistance from our team
8. Participation in R15B product evaluation
9. Willingness to share knowledge with future users, with technical assistance from our team
10. Willingness to participate in regional or national knowledge sharing events, with technical assistance from our team
11. Description of what the agency intends on accomplishing if they receive the award, including the complexity of the project(s) and when the project(s) would be let and a general timeline for implementation
### Application Tips

<table>
<thead>
<tr>
<th><strong>Do</strong></th>
<th><strong>Don’t</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Make your application clear and concise</td>
<td>Forget to provide a thorough and thoughtful response in each of the fields</td>
</tr>
<tr>
<td>Describe any previous DOT efforts related to incorporating utility conflicts in the project design process</td>
<td>Assume the SHRP2 program is familiar with details about your DOT; narrative should be complete</td>
</tr>
<tr>
<td>Describe how the DOT anticipates implementing product including necessary resources</td>
<td>Forget that implementation assistance is to advance utility conflict management and improve upon existing business practices</td>
</tr>
<tr>
<td>Describe the outcomes and deliverables you expect to achieve</td>
<td>Apply if you do not represent a state DOT</td>
</tr>
<tr>
<td>Expect to share the results of your product implementation</td>
<td>Be late; applications are due by <strong>June 29, 2015</strong></td>
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Utility Investigation Technologies (R01B)

Challenge

- Accurately knowing the location, depth, and important attributes of utilities enables more efficient and productive coordination with utility owners during the design process; helps minimize utility conflicts during the design process; and can save lives, money, and time through the sustainable application of SUE technologies.

Solution

- Round 6 IAP for the R01B product will include taking a two-step process to pilot advanced utility investigation technologies. The intended incentive to the IAP agencies is to help advance the state of the practice of utility investigation, in a manner that is beneficial to the agency in the future.
IAP Proof Of Concept Pilots will include taking a two-step process:

1. Run through the SUE process using normal and advanced utility investigation technologies.

2. Validate the accuracy of the advanced utility investigation technologies.
**Important Note:** This award of up to $150,000 includes the cost of equipment rental or purchase needed to conduct the implementation of the multi-channel GPR and TDEMI technologies.

**SHRP2 Implementation Assistance will include consultant and Subject Matter Expert (SME) support to help implement the Proof-of-Concept pilot activities.**
## R01B Implementation Assistance Opportunities

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Who can apply: State DOTs, State Tollway and Thruway authorities, local agencies, tribal agencies.
Additional R01B Product Information

• Project Brief:

• Research Report:
  – http://www.trb.org/Main/Blurbs/171470.aspx

• Report:
  – http://onlinepubs.trb.org/onlinepubs/shrp2/SHRP2_R01BandR01Ceva
tuationoftools.pdf
## Round 6 Implementation

### Product Webinars (all times EDT)

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>WISE: Work Zone Impact Estimation Software (R11)</td>
<td>May 6</td>
<td>11:00 a.m. –12:30 p.m.</td>
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<tr>
<th>Renewal</th>
<th>Date</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Pavement Solutions Webinar (R05) &amp; (R21)</td>
<td>May 7</td>
<td>11:00 a.m. –12:30 p.m.</td>
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| Utility Solutions Webinar (R01B) & (R15B) | May 13  | 2:00 p.m. – 3:30 p.m. |

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<tr>
<th>Capacity</th>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>PlanWorks (C01)</td>
<td>May 14</td>
<td>2:00 p.m. – 3:30 p.m.</td>
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### Round 6 Product Research

#### Webinar Recordings

<table>
<thead>
<tr>
<th>Renewal</th>
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<tbody>
<tr>
<td>Precast Concrete Pavement (R05)</td>
<td><a href="http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/Blurbs/169376.aspx">http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/Blurbs/169376.aspx</a></td>
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<tbody>
<tr>
<td>PlanWorks (C01)</td>
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<tr>
<th>Reliability</th>
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</table>
Round 5 Application Timeline

• Round 5 Application Period

May 29 – June 26

• Recipients Announced

Early August
For More Information

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FHWA Product Lead  
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kplatte@AASHTO.org

Visit: www.fhwa.dot.gov/GoSHRP2  
Sign up: www.fhwa.dot.gov/goshrp2/contact  
Email: GoSHRP2@dot.gov