Implementation Update

Service Life Design for Bridges (R19A)

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AASHTO Technical Subcommittee for Bridge Preservation (T-9)

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Service Life Design for Bridges (R19A)

Challenge

• Designing for durability – Engineered service life that leads to lower life cycle cost for ridges

Solution

• The Service Life Design Guide for Bridges is a comprehensive reference document that complements AASHTO specifications

Link to the Guide:
http://www.trb.org/Main/Blurbs/168760.aspx
Solution: Service Life Design Guide

- “Fault Tree” Decision Matrix
- Bridge System Selection
- Materials Selection
- Bridge Deck
- Corrosion Protection
- Fatigue & Fracture
- Jointless Bridges
- Bridge Expansion Devices
- Bridge Bearings
- Life Cycle Cost Analysis
Benefits

• Maximizes bridge service life: lower life-cycle cost
• Applicable to any bridge type and size
• Provides solutions for a variety of service environments
• Provides design guidance for jointless integral bridges
Benefits cont’d

• Extends integral abutment designs to curved girder bridges

• Guide is customizable to agency experience and application

• Allows for maintenance planning at the design stage

• Minimizes bridge maintenance, resulting in fewer traffic delays

• Complements AASHTO specifications
• Identified a list of potential additional development/enhancements:
  – Self-guided examples for different bridge types and climate zones
  – More coverage for pre-stressed concrete elements/systems
  – A practical life cycle cost analysis (LCCA) decision-making framework
  – Development of a simple analysis tool to facilitate the navigation of the various steps in the design process
R19A Implementation
Strategies

• Planning for a parallel process to accomplish:
  – Utilize “early adopter” agencies to ground truth the guide
  – Refine the guide to cover the additional development efforts mentioned above and incorporate lessons learned from the early adopters
  – Incorporate a refined version of the guide into an AASHTO guide manual
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>
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<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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SHRP2 Implementation Assistance Program

SHRP2 Structures Products

Round 1: March 2013
- Innovative Bridge Design for Rapid Renewal (R04)

Round 4: Underway Now!! (Closes June 27th)
- Service Life Design for Bridges (R19A)
- NDT for Concrete Bridge Decks (R06A)
- NDT for Concrete Tunnel Linings (R06G)

Round 5: February 2015
- Service Limit State Design for Bridges (R19B)
### Assistance Opportunities

<table>
<thead>
<tr>
<th>Round 4 IAP</th>
<th>Proof of Concept Pilot</th>
<th>Lead Adopter Incentive</th>
<th>User Incentive</th>
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<tbody>
<tr>
<td>May 30th to June 27th</td>
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<tr>
<td>Service Life Design for Bridges (R19A)</td>
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<td>4 @ ≤ $150K</td>
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- Number/amount of awards may vary based on applications received
- Additional awards may be made in future implementation assistance rounds
- SHRP2 Implementation Assistance Website
How to Apply for Assistance?

• Applications are submitted through SHRP2 website [http://www.fhwa.dot.gov/goshrp2](http://www.fhwa.dot.gov/goshrp2)

• You will find the application form for each available product under Assistance Opportunities

• Each application requires a leadership endorsement from the Chief Executive Officer (or designee) of an organization or agency

• Each application requires a priority ranking
Implementation Assistance

Direct Funding Support

• Integrating SLD into agency bridge design and asset management programs

SME Support

• Training on SLD applications
• Applying SLD to a current or recent bridge project
• Developing customized applications
For More Information

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www.fhwa.dot.gov/GoSHRP2