



Committee on Bridges and Structures Update for Committee on Maintenance (MaC)

July 25, 2018



Bridge Preservation Technical Committee

Bruce Johnson, OR - Chair

Randall Mullins, AL

Pe-Shen Yang, AZ

James Nelson, IA

Wayne Frankhauser Jr., ME

Kathy Crowell, NM

Jeff Pouliotte, FL – Vice Chair

Raj Alaine, FHWA

Ken Walus, VA

Richard Marchione, NY

Dan Williams, MDTA

David Miller, LA - Liaison



Liaisons Between AASHTO COBS and MaC

- David Miller from Louisiana serves as the liaison from the MaC BTWG to COBS.
- Randall Mullins from Alabama serves as the liaison from COBS to the MaC BTWG.



Bridge Preservation Technical Committee Strategic Plan

The overall COBS Strategic Plan is presently being updated at this time. The plan will be viewable at the AASHTO COBS website when completed. Below is a synopsis of T-9's part of the draft plan:

1. Promote bridge preservation,
2. Develop and publish guidelines and best practices for bridge preservation.



3. Incorporate bridge preservation concepts and performance measures (for keeping bridges in a state of good repair) in bridge design, construction, inspection and management.
4. Promote methods for mitigation and prevention of corrosion and deterioration of steel, reinforced concrete, post-tensioning and other materials.
5. Keep AASHTO guidance and best practices current with state-of-the-art preservation and corrosion mitigation practices.
6. Identify and facilitate the advancement of state-of-the-practice through research.



1:00 PM	Welcome, Introductions	Bruce Johnson, Oregon DOT
1:15 PM	Update on NCHRP 12-108 - Guide Specification for Service Life Design of Highway Bridges	Tom Murphy, M&M
1:45 PM	Update on NCHRP 14-36 - Guidelines for Preservation Decision Making for Existing Bridges	George Hearn, UC Boulder
2:15 PM	Update on Service Life Design and R-19A implementation	Mike Bartholomew, Jacobs
2:45 PM	Bridge Preservation ETG & LTBP Program Update	Bruce for Raj Alainey, FHWA
3:00 PM	Break	
3:15 PM	Update on NCHRP 20-07(397) - Decommissioned Bridges	Basak Aldemir-Bektas
3:45 PM	Washington State DOT Preservation Program	Bijan Khaleghi, Washington DOT
4:15 PM	TSP-2 Update	Substitute for Ed Welch
4:30 PM	National Steel Coatings Working Group	Jeff Pouliotte, Florida DOT
4:45 PM	SCOM Bridge Task Force Update	David Miller, Louisiana DOT



Extend Service Life

NCHRP 12-108, Guide Specifications for Service Life Design of Bridges

(Tom Murphy, M&M)

1. The objective of this project is to “provide bridge owners and designers with specifications for design of bridges for a specific service life.”

2. Deliverables:

Report documenting service life design research effort

Guide Specifications

Design examples



3. Schedule:

Final Deliverables ... February 2019

Draft Service Life Design Guide Specifications ballot item at
COBS 2019 annual meeting,

Coordinate with T-5, T-10, T-14, T-18



NCHRP 14-36, Guidelines for Preservation Decision Making for Existing Bridges (George Hearn, UC Boulder)

1. The objective of this project is to “provide bridge owners and designers with guidelines for preservation decision making for existing bridges.” Decision making for preservation of bridge decks was added in 2017.
2. Deliverables:
 - Report documenting bridge preservation decision making research effort for bridges, and specifically for bridge decks



Guidelines

Design examples

3. Schedule:




Final Deliverables ... November 2018 for bridges in general,
September 2019 for bridge decks

Draft Guidelines for Bridge Preservation ballot item at
COBS 2019 annual meeting,

Draft Guidelines for Bridge Deck Preservation ballot item
at COBS 2020 annual meeting,

Coordinate with T-5, T-10, T-14, T-18







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AASHTO **SHRP2 SOLUTIONS**
TOOLS FOR THE ROAD AHEAD

SHRP 2 Service Life Design for Bridges

AASHTO > Strategic Highway Research Program 2 > Service Life Design for Bridges    

SERVICE LIFE DESIGN FOR BRIDGES (R19A)

Product Overview
Comprehensive guidance to select and design durable bridge systems and components that are both easier to inspect and better-suited to their environments.

- SHRP2 Service Life Design Guide For Bridges Document

Presentations and Webinars

- Concept Overview presentation: Durability Design Structure Birth Certificate
- Product Detail presentation: Integrating Durability and Structural Design
- Service Life Design for Bridges Progress Update Webinar


Tools and Technologies

Reports

- Durability Assessment of a Bridge Substructure (R19A)

Design Tools

- Service Life Design – Graphical Solution
 - Calculations Instructions
 - Oregon Charts
- Service Life Design – Full Probabilistic Tools

Need More Information?
Pamela Hutton
SHRP2 Implementation Mgr
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303-263-1212 

Mike Bartholomew,
Jacobs

<http://shrp2.transportation.org/Pages/ServiceLifeDesignforBridges.aspx>



CHARACTERISTICS OF DECOMMISSIONED BRIDGES

NCHRP 20-07/Task 397

Research Need

- ✓ Earlier studies showed that bridges are decommissioned younger than their intended service-lives.
- ✓ What are the main drivers behind bridge decommissioning?

Research Objective

- ✓ The main objective of this research project was to determine the reasons of bridge decommissioning for State highway agency–owned bridges in the United States.



NCHRP 20-05, Synthesis topic 49-12, “Seismic Design of Non-Conventional Bridges”

1. The objective of this project is to document the state of practice in the seismic design of non-conventional bridges. These bridge include very long-span and non-conventional structures such as cable-supported superstructures, bridges with truss tower substructures and long-span arch bridges. The AASHTO LRFD Bridge Design Specifications and the AASHTO Guide Specifications for LRFD Seismic Bridge Design do not directly address the bridge types being considered in this synthesis project



2. Deliverable:

Current Project -- Final Report

Future Projects – Research to address knowledge gaps

3. Schedule:

Draft Report Received July 2018

Panel Review Meeting July 24, 2018

Final Report September 2018(?)



Future projects – Depends on needs identified and **available funding** for research to address knowledge gaps

1) Guide Specifications for Bridge Strengthening with Titanium

The objective of this pooled fund research project is to develop AASHTO guide specifications for titanium strengthening of bridges. Oregon is the lead state for this work with support from Virginia.

Deliverables:

Report documenting research findings



Draft AASHTO Guide Specifications for Titanium Strengthening of Bridges

Schedule:

Draft Deliverables – November 2018

Anticipate sharing draft documents for wide COBS review, so they can see it before the draft ballot item is distributed

Final Deliverables – January 2019

Hope to ballot at 2019 annual COBS meeting

Coordinate with T-5, T-6, T-10



2) Guide Specifications for Preservation of Historic Bridges

The objective of this **pooled** fund research project is to develop AASHTO guide specifications for preserving historic bridges.

Oregon is the lead state for this work.

Deliverables:

Report documenting research findings

Draft AASHTO Guide Specifications for preservation of historic Bridges



Schedule:

Draft Deliverables –January 2019

Anticipate sharing draft documents for wide COBS review, so they can see it before the draft ballot item is distributed

Final Deliverables – February 2019

Hope to ballot at 2019 annual COBS meeting

Coordinate with Committee on Environment, National Park Service



T-9 endorses three of the RNS proposals from TRB in the following priority order.

- 1) Corrosion resistant prestressing strands
- 2) Virtual and Augmented Reality for Integration and Effective Use of Heterogeneous Data from Visual Inspection, Nondestructive Testing/Evaluation, and Structural Health Monitoring
- 3) MASH – Bridge Decks and Overhangs



In addition, T-9 has two 20-07 proposals to submit

- 1) Evaluation of Durability of ABC Technologies
- 2) Synthesis of Best Practices for Steel Bridge Coating and Recoating Warranty Contract Requirements

Sweet
H A
M E
Alabama

**2019 AASHTO Committee
on Bridges and
Structures
Montgomery, AL**

June 23-27, 2019