

# The Future of Bridge Preservation in a Changing World

*Panel Moderator:* Ed Lutgen, MnDOT & FHWA BPETG (Bridge Preservation Expert Task Group)

*Panel Members:*

- Dick Dunne, GPI & TRB AKT40 Structures Maintenance Committee;
- Başak Bektaş, Minnesota State University, Mankato & TRB AKT50 Bridge Preservation Committee;
- Michael Brown, Wiss, Janney, Elstner Associates & TRB AKT60 Bridge Preservation Committee
- Graham Bettis, TxDOT & AASHTO Committee on Maintenance Bridge Technical Working Group (MaC Bridge TWG);
- Jim Nelson, IowaDOT & AASHTO Committee on Bridges and Structures Bridge Preservation Technical Committee (COBS BPTC)

# TRB Committees

Infrastructure Management and System Preservation Section (AKT00)

**AKT40 Structures Maintenance**

rdunne@gpinet.com

**AKT50 Bridge Management**

arearick@indot.IN.gov

**AKT60 Bridge Preservation**

mbrown@wje.com

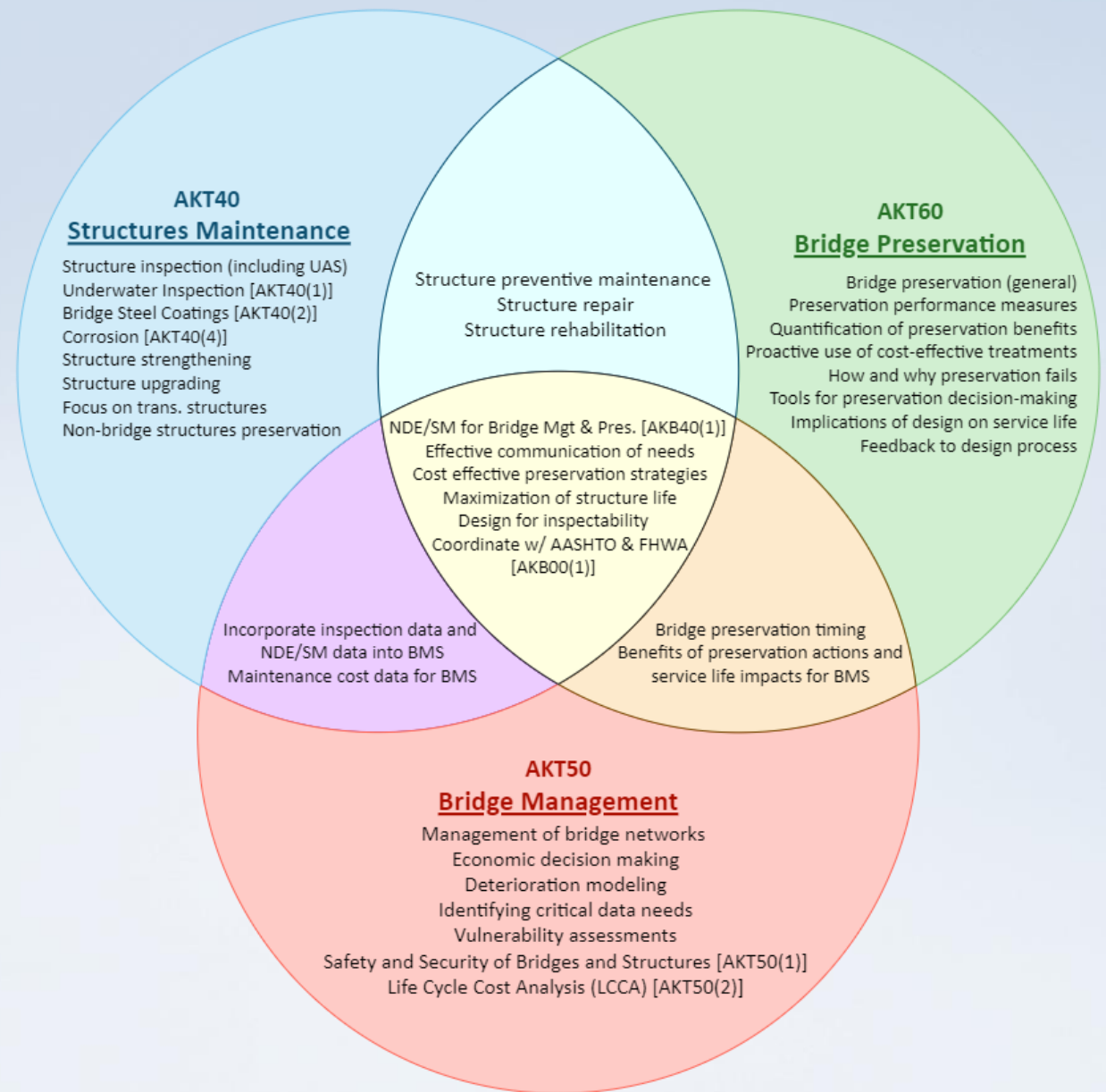
Also collaborate with:

**AKB20 Steel Bridges**

**AKB30 Concrete Bridges**

**AKB40 Testing and Evaluation of**

**Transportation Structures**



# TRB AKT40–Structures Maintenance

## Committee Scope:

This committee is concerned with maintenance of transportation structures including bridges, culverts, high-mast lights, sign structures and retaining walls. The committee emphasizes maintenance materials, actions and decisions related to structural coatings, corrosion of metals, underwater inspection and repair, and structural health monitoring.

## Three Subcommittees:

AKT40(1) Subcommittee on Underwater Structures Inspection and Maintenance

AKT40(2) Subcommittee on Bridge Steel Coatings

AKT40(4) Subcommittee on Corrosion

Richard W. Dunne, PE, Chair

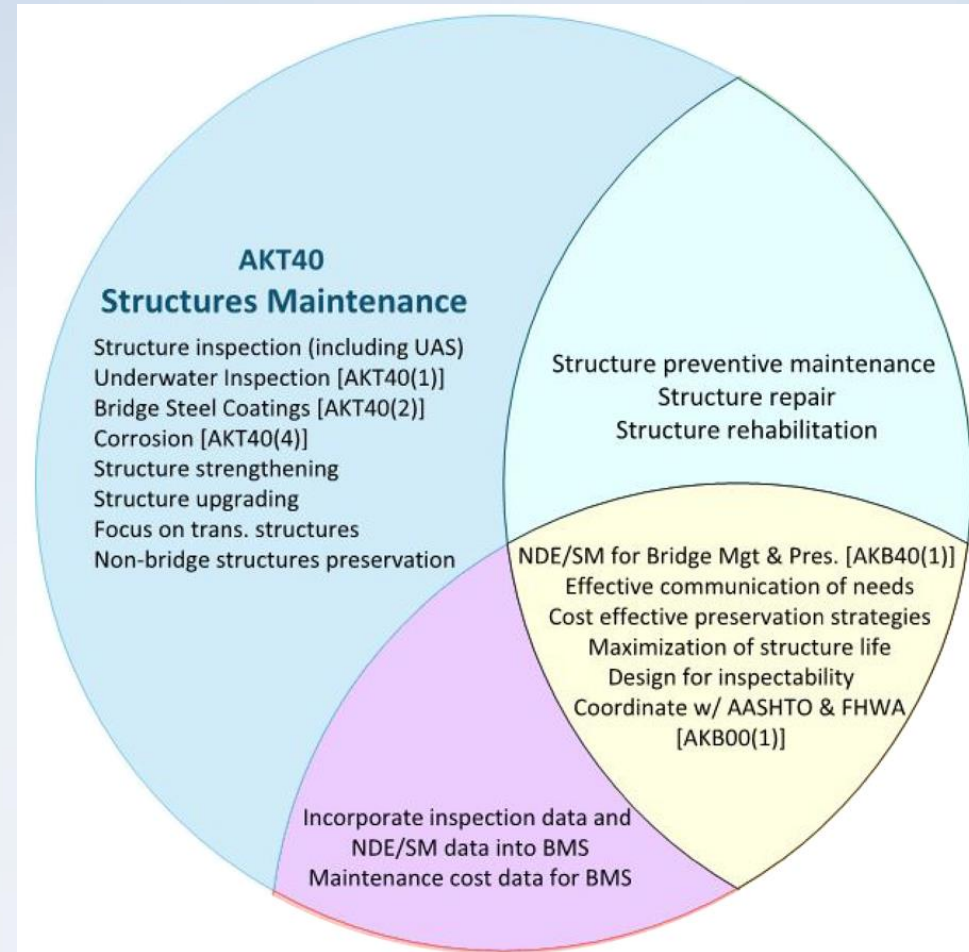
[rdunne@gpinet.com](mailto:rdunne@gpinet.com)



# TRB AKT40 Committee Members and Focus

- 30 Current Members

- 3 Federal government
- 3 State government
- 4 Industry or Producers
- 11 Consultant
- 9 Academia
- 1 Transit
- Friends – self-appoint via [myTRB.org](https://myTRB.org)



Members:	
✓ James Ault	✓ Mehdi HonarvarNazari
✓ Hoda Azari	✓ Qindan Huang
✓ Soundar Balakumaran	✓ Rahul Kalyankar
✓ Michael Brown	✓ Stacey Kulesza
✓ Joe Campbell	✓ Malcolm Lim
✓ George Connor	✓ Barritt Lovelace
✓ David Darwin	✓ Ardalan Mosavi
✓ Junhua Dong	✓ Roya Nasimi
✓ Richard Dunne	✓ Douglas Nims
✓ Matthew Frazier	✓ Renee Oats
✓ Amir Gheitasi	✓ Brian Pailes
✓ Christopher Hahin	✓ Sophia Puerto
✓ Rade Haidin	✓ John Sobjano
✓ Arne Henriksen	✓ Ali Sohanghpurwala
	✓ David Whitmore

# TRB AKT50–Bridge and Structures Management

## Committee Scope:

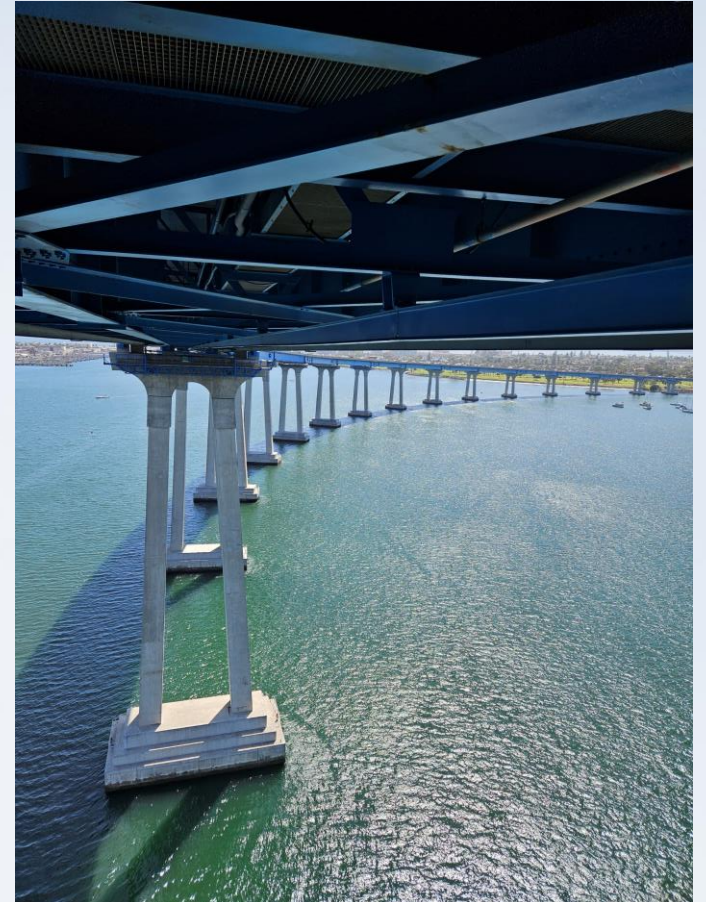
This committee is concerned with identification, development, evaluation and implementation of cost-effective programmatic optimal strategies for the comprehensive management of highway bridges and structures. It is concerned with identifying critical data needs, performance measures, and vulnerability assessments for their effective lifecycle cost analysis and management, and communicating the findings to decision makers to take appropriate actions for the design, construction, maintenance, preservation, rehabilitation, functional improvement and replacement of highway bridges and other structures.

## Two Subcommittees:

- AKT50(1) - Subcommittee on Safety and Security of Bridges and Structures
- AKT50(2) - Subcommittee on Bridge Life Cycle Cost Analysis

Anne Rearick, Chair

[arearick@indot.in.gov](mailto:arearick@indot.in.gov)



Coronado Bridge, San Diego, CA  
Photo: Michael B. Johnson, CALTRANS

# TRB AKT50 Committee Members and Focus

- 29 Current Members

- 2 Federal government
- 4 State government
- 7 Industry or Producers
- 8 Consultant
- 8 Academia
- Friends – self-appoint via [myTRB.org](https://myTRB.org)

## 2023-2026 TSP Focus Areas

- General implementation of bridge management systems and existing challenges
- Objective condition assessment through technology
- BIM and Digital Twins
- Performance measurement and deterioration modeling
- Durability of materials and structures in relationship to service life extension from maintenance, repair and rehabilitation actions
- Life-cycle cost evaluation, benefit/cost analysis of structure related activities
- Development of robust risk assessment and management methods of bridges and bridge networks
- Quantification and use of risk in bridge management decisions

Members:

- |                       |                           |
|-----------------------|---------------------------|
| ✓ Anne Rearick        | ✓ Srimaruthi Jonnalagadda |
| ✓ Saeed Nejad         | ✓ Maqbool Mohammed        |
| ✓ Joshua Steelman     | ✓ Roya Nasimi             |
| ✓ Sreenivas Alampalli | ✓ Massoud Nasrollahi      |
| ✓ Basak Bektas        | ✓ Saeed Nejad             |
| ✓ Jacob Bronder       | ✓ Rebecca Nix             |
| ✓ Harry Capers        | ✓ Alan O'Connor           |
| ✓ Derek Constable     | ✓ Pinar Okumus            |
| ✓ John Duke           | ✓ Hooman Parvardeh        |
| ✓ Rade Hajdin         | ✓ Joshua Steelman         |
| ✓ Ralph Holst         | ✓ Pingbo Tang             |
| ✓ Stuart Hudson       | ✓ Peter Vanderzee         |
| ✓ Nancy Huether       | ✓ Yi Zhou                 |
| ✓ Arezoo Imani        | ✓ Arunprakash Shirole     |
|                       | ✓ Paul Thompson           |

<https://sites.google.com/view/akt50/Welcome>

# TRB AKT60–Bridge Preservation

## Committee Scope:

This committee is concerned with research, methods and tools that can extend the useful life of bridges through preservation treatments, and design and construction practices.

The committee advances bridge preservation research and provides a forum for practitioners, academia and industry to share information on preservation needs and emerging topics in bridge preservation.

Michael C. Brown, PhD, PE, Chair

<https://sites.google.com/view/trb-bridge-preservation/home>



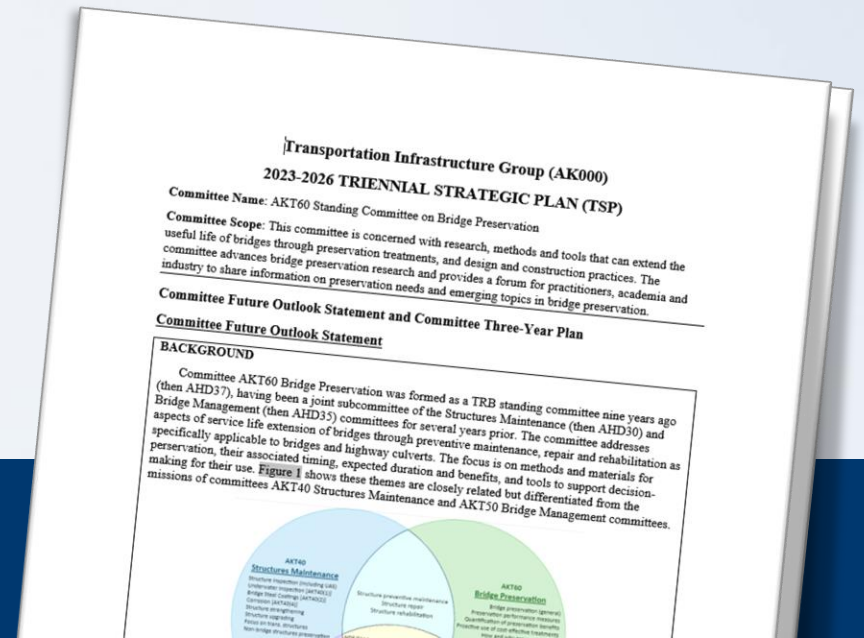
# TRB AKT60 Committee Members and Focus

- 23 Current Members

- 1 Federal government
- 5 State government
- 3 Industry or Producers
- 12 Consultant
- 2 Academia
- Friends – self-appoint via [myTRB.org](https://myTRB.org)

- 2023-2026 TSP Focus Areas

- Design
- Construction
- Innovative Technologies and Practices
- Resilience
- Performance Measurement
- Workforce Development





# AASHTO Committee on Maintenance Bridge Technical Working Group (TWG)

- Sarah Sondag | Chair | Minnesota DOT
- Graham Bettis | Vice Chair | Texas DOT
- Vacant | Vice Chair
- Ping Lu | FHWA Liaison

# 2023/2024 AASHTO MaC Bridge TWG Focus Areas

Safety and  
Mobility



Emergency/  
Rapid  
Response

Organizational  
Excellence



Knowledge  
Transfer

Safety and  
Mobility



Performance  
Measures

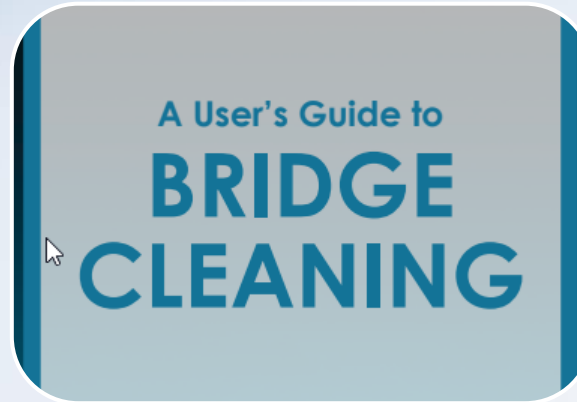
# 2024/2025 AASHTO MaC Bridge TWG Focus Areas

Safety and  
Mobility



Minimize  
Movement of  
Good to Fair

Policy  
Leadership



Pocket Guide  
Needs

Organizational  
Excellence



Risk of No  
Maintenance

# AASHTO Committee on Bridges and Structures: Bridge Preservation Technical Committee

## Vision

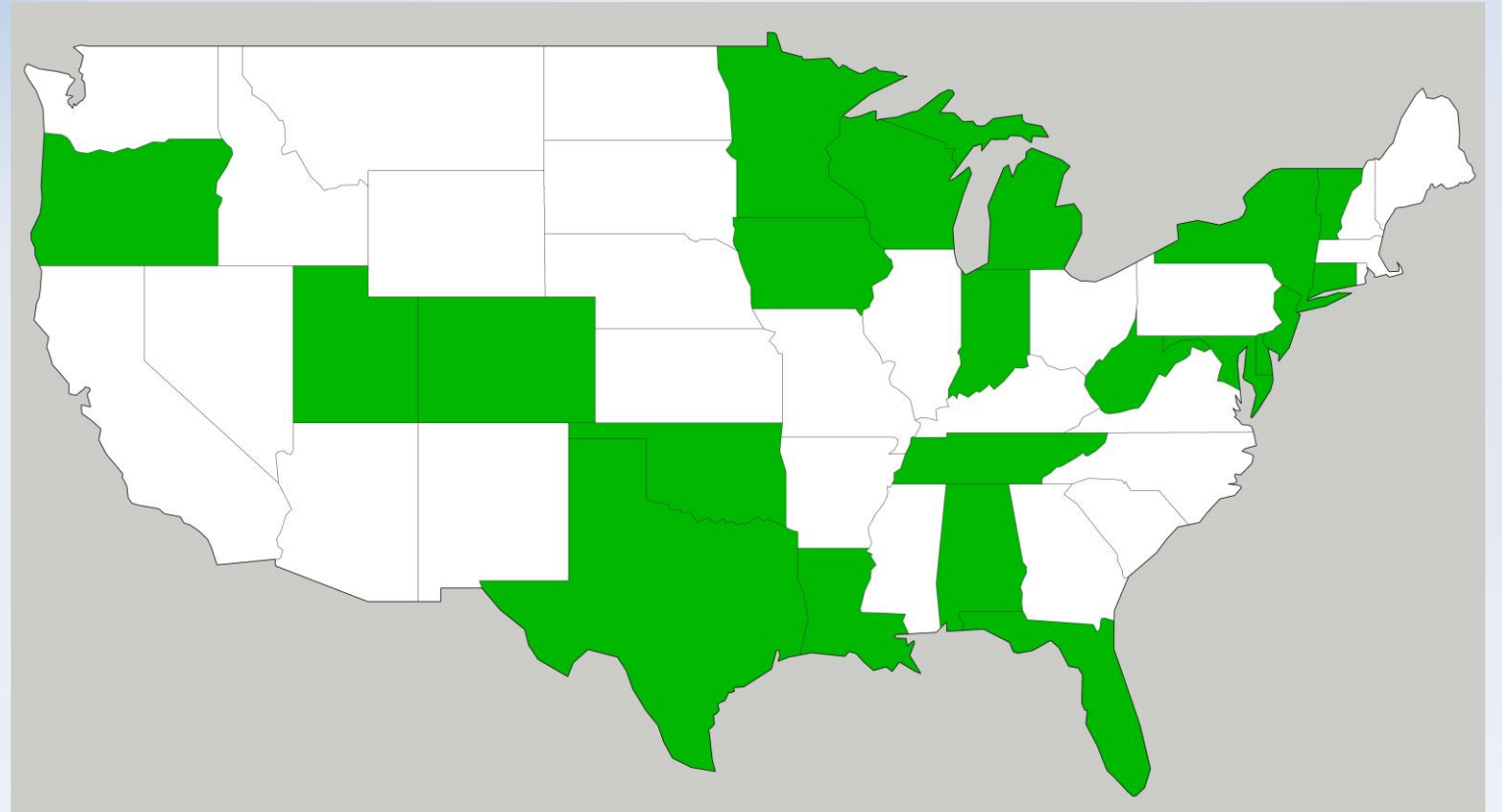
Bridge owners are equipped with the bridge preservation tools, training and practices to effectively manage their bridges.

## Mission

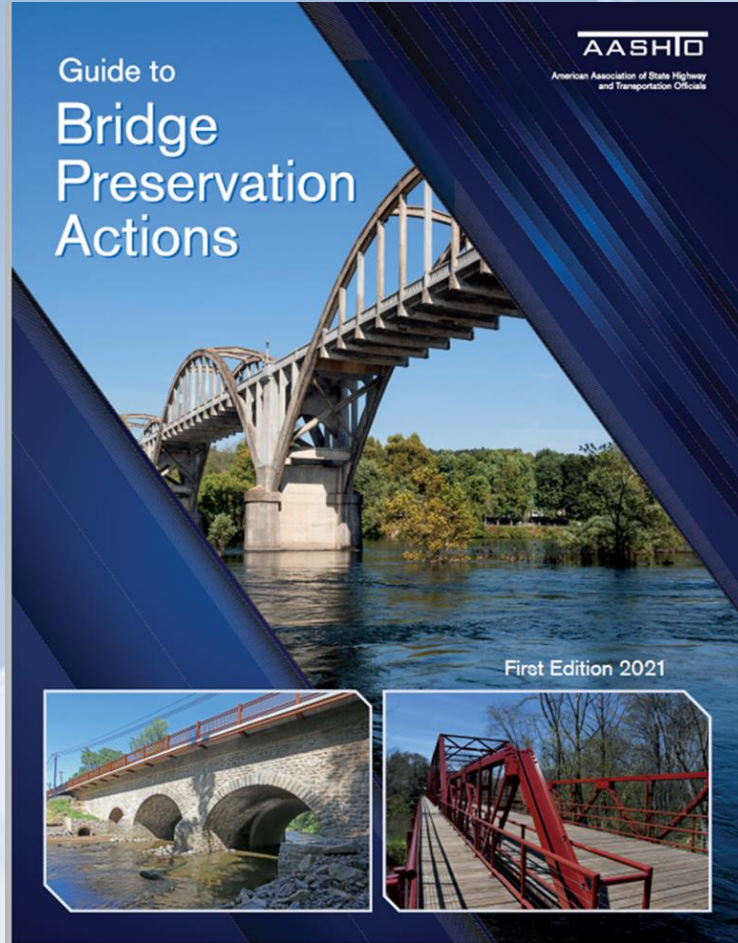
Promoting nationwide use of proactive best practices and innovations of bridge preservation technologies to extend structure service life and reduce infrastructure life-cycle costs.

# AASHTO COBS Bridge Preservation Technical Committee

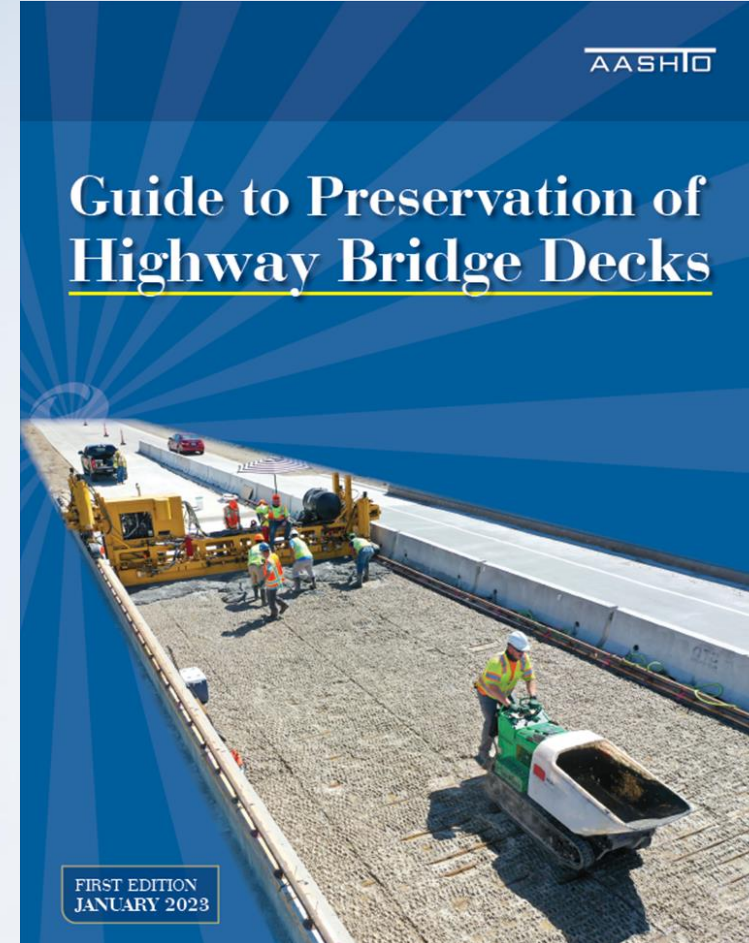
- Raj Ailaney – FHWA (Liaison)
- Graham Bettis – Texas [Vice Chair (WD and KM)]
- Ray Bottenberg – Oregon
- Haylye Brown – Louisiana (Liaison)
- Tracy Brown – West Virginia [Vice Chair (Research)]
- Michael Collins – Colorado
- Jim Flynn – New York
- Mike Halloran – Michigan
- Justin Hernandez – Oklahoma
- Daniel Jones – Alabama
- Robert Klinefelter – Vermont
- Ted Kniazewycz – Tennessee
- Kevin Lindell – Delaware
- Ed Lutgen – Minnesota
- Jim Nelson – Iowa (Chair)
- Becky Nix – Utah
- Felix Padilla – Florida
- Anne Rearick – Indiana
- Ruel Sabellano – Maryland (Associate Member)
- Laura Shadewald – Wisconsin
- Bart Sweeney – Connecticut
- Eric Yermack – New Jersey



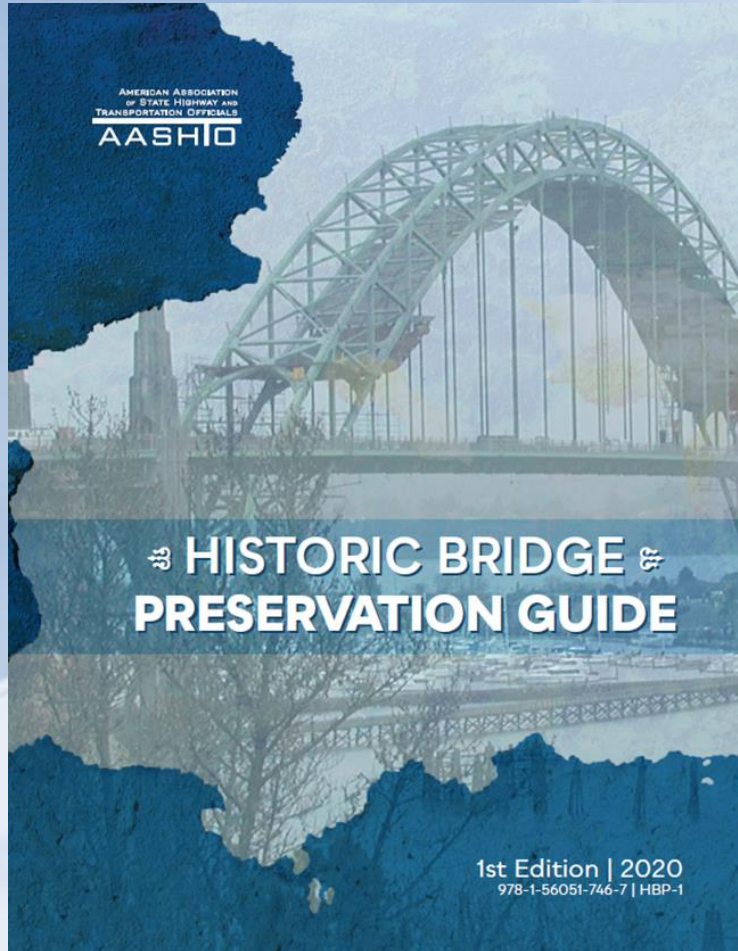
Guide to Bridge Preservation Actions, 1st Ed.  
(BPA-1) – published July 2021.



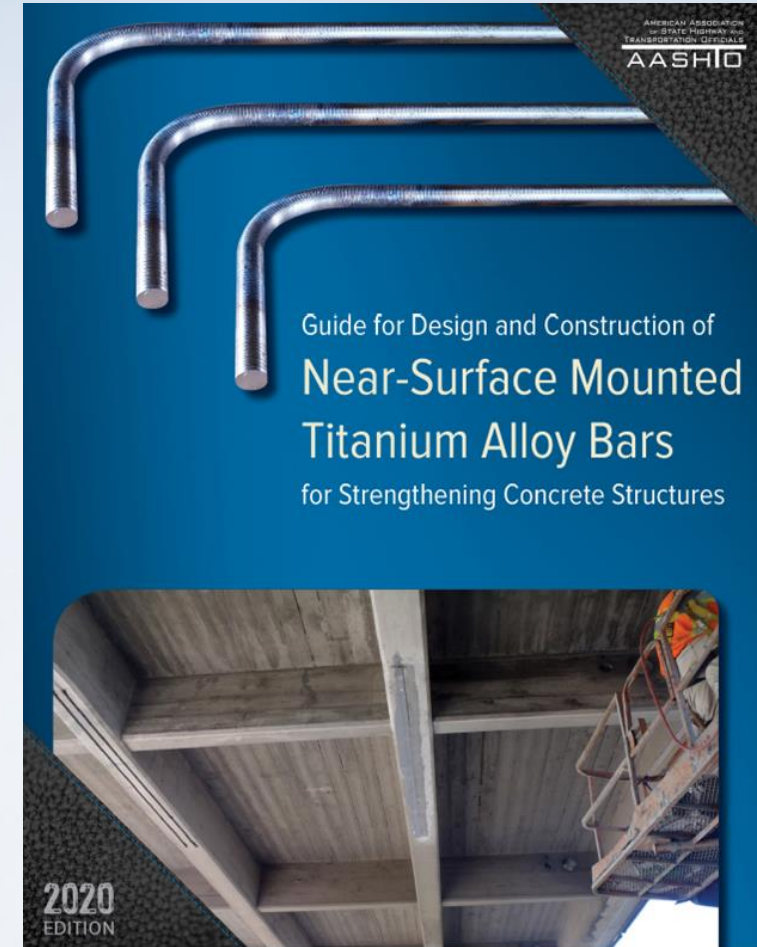
Guide to Preservation of Highway Bridge Decks, 1st Ed.  
(GPHBD-1) – published January 2023.



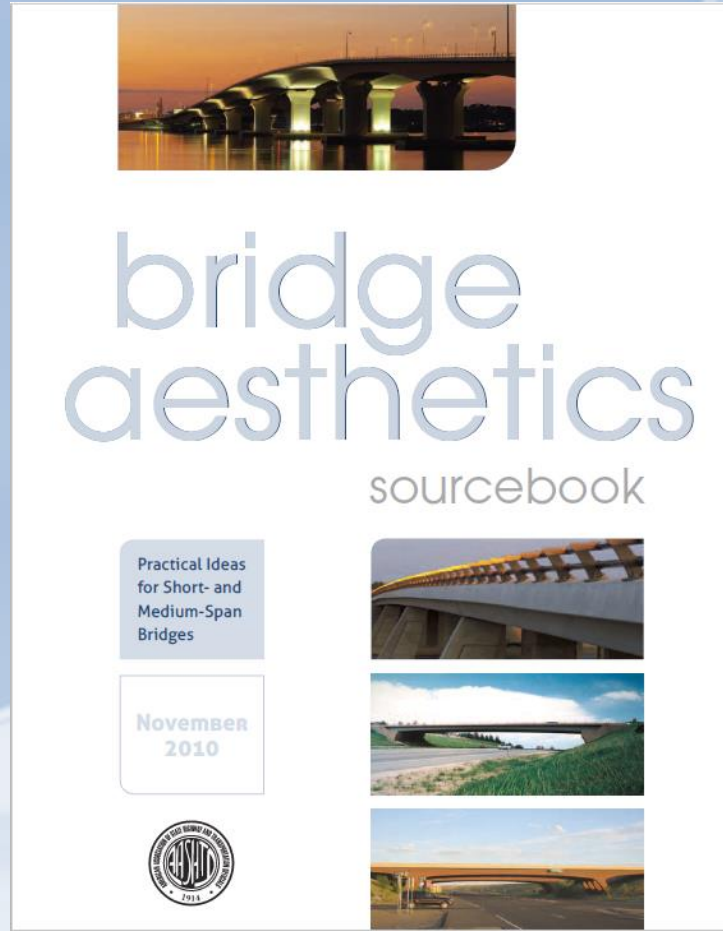
Historic Bridge Preservation Guide, 1st Ed.  
(HBP-1) – published November 2020.



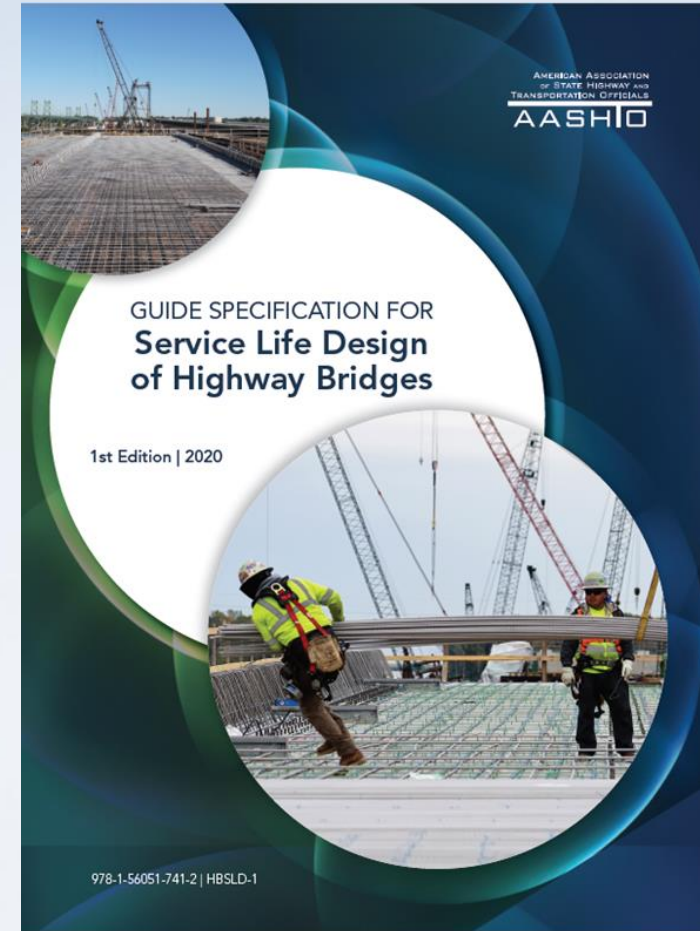
Guide for Design and Construction of Near-Surface Mounted  
Titanium Alloy Bars for Strengthening Concrete Structures, 1st Ed.  
(NSMT-1) – published March 2020.



Bridge Aesthetics Sourcebook, 1st Ed.  
(BAS-1) – published 2010

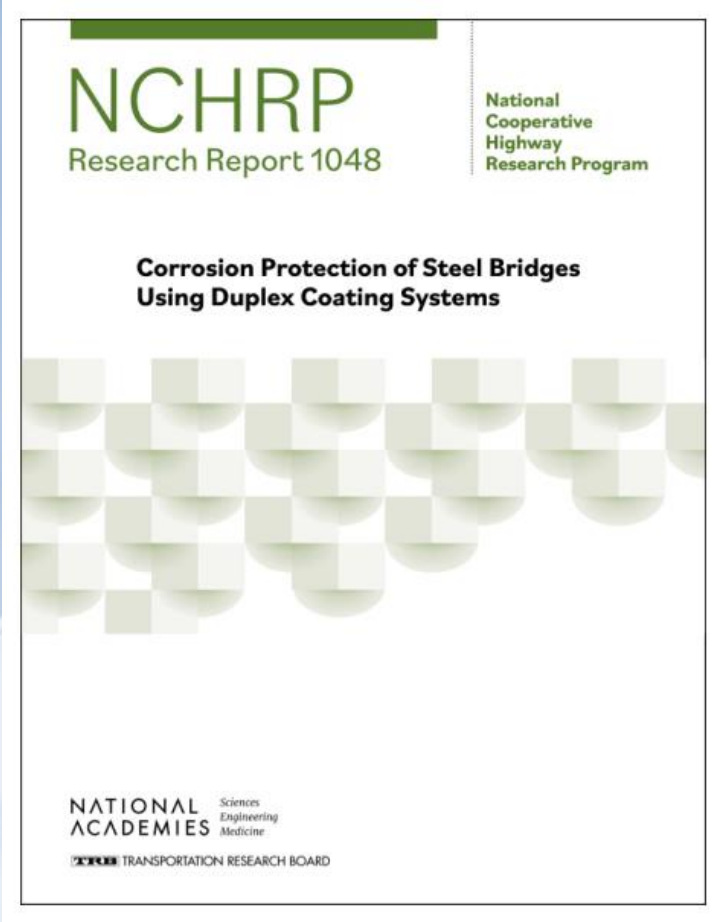


Guide Specification for Service Life Design of Highway Bridges, 1st Ed.  
(HBSLD-1) – published August 2020.





Guidelines for Corrosion Protection of Steel Bridges Using Duplex Coating Systems, 1<sup>st</sup> Ed.  
(GCPS-1) – Pending AASHTO Publication



## Each Panel Member:

- What are 1-2 thoughts for the challenges in bridge preservation? And how can we mitigate that?

## Each Panel Member:

- What is 1 opportunity you see for bridge preservation community that we can all take home? Technology, material, asset management, training, innovation...

# Audience Questions

- ?