

Workshop Program Guide

W-01: Protection of the Delaware Memorial Bridge Against a Vessel Allision

Monday, July 14 4:00 - 4:30 PM

Gregory Pawlowski, P.E., Delaware River & Bay Authority, New Castle, DE

Gregory Pawloski, P.E., Delaware River & Bay Authority, New Castle, DE; Matt Becker, S.T. Hudson Engineers, Cherry Hill, NJ; Ralph Farabaugh, R.E. Pierson Construction, West Chester, PA

W-01: Vessel Collision Evaluations for Major Bridges

Monday, July 14, 2025 3:30 - 4:00 PM

Matthew Lengyel, P.E., GM2, Inc., Glastonbury, CT

Matthew Lengyel, P.E., GM2, Inc.

Vessel impacts to major bridges has increased significantly over the past 60 years, with 36 major bridge collapses being recorded worldwide between 1960 and 2024. This presentation will give a general overview of AASHTO Method II, introducing all of the variables that may need to be considered on major bridge projects. Case studies of major bridge vessel collision evaluations will be presented that will include many of the controlling decision factors for each case study.

W-02: International Workshop

Monday, July 14, 2025 3:30 - 5:30 PM

, , ,

Bridges Around the World – A journey in “Pecha Kucha” Images

IBC Attendees from Europe, Asia, Australia, and South America

Time: 3:30 – 4:30 PM

Join us for a tour of bridges around the world, given by international bridge colleagues! This session will include short, photo-based presentations to learn about bridges in several countries. Presenters will use the Pecha Kucha (chit-chat” in Japanese) presentation style. Pecha Kucha uses the 20×20 rule: each presentation is 20 slides, and each slide is displayed for only 20 seconds, automatically progressing to the next one. Enjoy the highlights of each country in just 6 minutes and 40 seconds! These entertaining presentations are known for telling stories through images rather than text. Attendees are welcome to stay for the following reception to network with presenters and other international attendees.

International Attendee Welcome Reception

Hosted by the IBC Executive Committee

Time: 4:30 – 5:30 PM

An International Bridge Welcome reception focused on our international attendees. Thank you for bringing your experience and perspectives to the conference. and for making the journey to join us in Pittsburgh!

W-03: Guidelines for Nonlinear Finite Element Analysis of Reinforced Concrete Columns with Various Types of Degradation Subjected to Seismic Loading

Tuesday, July 15, 2025 8:00 - 8:30 AM

Seyed Sasan Khedmatgozar Dolati, Ph.D., Stantec, Chicago, IL

Sasan Dolati, Ph.D., Stantec, Chicago, IL

At the International Bridge Conference, this workshop unveils a robust nonlinear finite element modeling framework developed from experimental calibration of 21 concrete pier columns. It simulates lateral cyclic behavior and axial collapse under diverse degradation modes, including flexure-shear, shear, and flexural deterioration. Attendees will explore techniques to optimize material parameters and predict seismic performance. This session bridges simulation with practical design, enabling engineers to enhance the safety and resilience of bridge structures facing seismic challenges.

W-03: Loading History Effects on Drift Capacity of Reinforced Concrete Columns Under Seismic Loading

Tuesday, July 15, 2025 8:30 - 9:00 AM

Seyed Sasan Khedmatgozar Dolati, Ph.D., Stantec, Chicago, IL

Sasan Dolati, Ph.D., Stantec

At the International Bridge Conference, this workshop presents an innovative drift capacity equation and load effect analysis derived from nonlinear finite element simulations of 116 concrete pier column models. It examines seismic behavior through a parametric study capturing multiple failure modes and quantifying drift, crack development, and strength degradation. Attendees will learn to integrate these equations with practical design principles, enhancing bridge resilience. Engage with experts to transform simulation data into effective seismic performance strategies.

W-03: GFRP Reinforcing: The future of Bridge Design

Tuesday, July 15, 2025 9:00 - 10:00 AM

Jesse Curtis, MSTBar USA, Cincinnati, OH

Richard J. Spino, P.E., The Mannik Smith Group; Jesse W. Curtis, P.E., MST Rebar Inc.

This study explores the utilization of Glass Fiber Reinforced Polymer (GFRP) bars in bridge deck construction, aiming to establish GFRP rebar as a viable and effective alternative to traditional materials such as black steel, galvanized steel, stainless steel, and epoxy-coated reinforced bridge decks. It will provide a comparative analysis of GFRP and steel rebar, focusing on design, costs and constructability.

W-03: Insights into Segmental Bridge Maintenance: Critical Components, Distress Identification, Repair Design, and Load Rating

Tuesday, July 15, 2025 11:00 AM - 12:00 Noon

Randale Shinn, P.E., S.E., H&H, Lakewood, CO

Randale Shinn, P.E., H&H, Lakewood, CO

This workshop provides an overview of four key aspects that collectively offer a foundational understanding of the maintenance and evaluation process for segmental bridges. The aspects covered are the distinctive critical components inherent for this structure type, identifying distress signals, prerequisites for designing an effective repair strategy, and load rating. These aspects help attendees gain an understating of the effort involved in the management of segmental bridges as compared with other bridge types.

W-03: Hydrodemolition in the United States

Tuesday, July 15, 2025 10:30 - 11:00 AM

Edward Liberati, P.E., Hydro-Technologies, Inc., Columbus, Ohio

Edward Liberati, P.E., Hydro-Technologies, Inc., Columbus, OH

At the workshop, I will discuss the history & science of hydrodemolition and how it is used to rehabilitate and preserve the aging US Infrastructure. I will discuss the different equipment types used for the hydrodemolition operations, the cleanup operations and for environmental compliance. Also, I will include hydrodemolition applications and recent projects that our company has performed over the past several years on bridges, dams, factory's, etc.

W-04: Accounting for Deterioration in Bridge Load Rating

Tuesday, July 15, 2025 8:00 - 10:00 AM

Lubin Gao, USDOT/FHWA, Washington, DC

Moderator: Lubin Gao, USDOT/FHWA, Washington, DC

Presenters: Spencer Koehler, Illinois DOT; Mike Brokaw, FHWA; Lubin Gao, FHWA

It is of crucial importance to appropriately account for deterioration in the determination of load ratings for in-service bridges. This workshop will focus on how to identify, quantify and account for different types of deterioration and present case studies. The following are three focused topics:

1. Identification, quantification and documentation of deterioration.
2. Consideration of deterioration in bridge load rating; and
3. State DOT's practice and case studies.

The anticipated attendees for this workshop are bridge and structure staff from local, regional, and State transportation agencies, as well as private consultants who want to acquire the fundamental knowledge of bridge load rating. The attendees will get better understanding of the importance of accounting for deterioration in bridge load rating and will learn how to appropriately consider in-service condition in bridge load rating analysis.

W-04: Characterizing Design-Basis Fire Exposure for Highway Bridges

Tuesday, July 15, 2025 10:00 AM - 12:00 Noon

Vincent Chiarito, USDOT/Federal Highway Administration, Washington, DC

Moderator: Vince Chiarito, FHWA

Presenters: Justin Ocel, FHWA; Ryan Slein, FHWA; Spencer Quiel, Lehigh University; Frank Artmont, Ph.D., P.E., Modjeski and Masters

The workshop intends to create awareness and discuss the potential vulnerability of bridge damage from nearby fires. Presented techniques describe design-basis fire exposure levels for highway bridges to quantify the thermal load in a performance-based structural-fire engineering framework for bridges. The topics include fire events' history and hazards on bridges in the U.S.; summarized selected case studies of fire events on bridges; the physics of fire; and an application example.

W-05: Transforming Structural Bolting: Cutting-Edge Developments in F3148 TNA® Fastening System

Tuesday, July 15, 2025 1:30 - 2:30 PM

Jeff Greene, LeJeune Bolt Company, Burnsville, MN

Jeff Greene, LeJeune Bolt Company, Burnsville, MN

The F3148 TNA® Fastening System by LeJeune Bolt Company has introduced groundbreaking advancements in structural bolting, enhancing efficiency, constructability, and safety. Utilizing smart torque monitoring for reliable snug tightening and automated angle control ensuring precise load distribution, the system minimizes failures and reduces installation time while improving joint reliability. Corrosion-resistant materials and coatings extend lifespan, reducing maintenance costs. These innovations will streamline construction processes and augment end of life considerations, transforming the future of infrastructure and heavy engineering projects worldwide.

W-05: Constructability Design Requirements for Steel I-Girder Bridges

Tuesday, July 15, 2025 2:30 - 4:30 PM

Brandon Chavel, National Steel Bridge Alliance, Rocky River, OH

Brandon Chavel, National Steel Bridge Alliance; Frank Russo, P.E., Russo Structural Services; Tony Ream, HDR; Ryan Jenkins, HDR

This workshop will focus on the constructability design requirements for steel I-girders bridges that bridge designers should consider during the design phase to reduce potential issues during the bridge construction phase. Topics will include the flexural resistance of noncomposite sections; applicable loadings including the effects of deck overhang brackets; load factors and limit states; global system buckling; cross-frame and lateral bracing stability requirements; girder deflections; and staged construction considerations.

W-05: Building for the Future: Corrosion Protection Systems for Steel Bridges

Tuesday, July 15, 2025 4:30 - 5:30 PM

Dan Snyder, American Iron and Steel Institute, Washington, DC

Dan Snyder, American Iron and Steel Institute; Michael Barker, University of Wyoming; Brandon Chavel, National Steel Bridge Alliance; Ben Bristol, Industrial Steel Construction; John Krzywicki, American Galvanizers Association; Derrick Castle, Sherwin-Williams

Steel bridges are essential to our nation's infrastructure, requiring effective corrosion protection for long-term durability. Various coating systems—weathering steel, galvanizing, metallizing and painting—offer unique benefits in performance and cost. Experts from the Short Span Steel Bridge Alliance will discuss their applications for new construction and rehabilitation. A moderated discussion will follow, providing further insights into these protection options.

W-06: Drone-base bridge inspection – Hands on

Tuesday, July 15, 2025 1:30 - 2:00 PM

Gilad Shloosh, B.Sc., Manam Applications Ltd., Ceserea,

Gilad Shloosh, B.Sc., Manam Applications Ltd., Ceserea, Israel

Drone inspection techniques: Achieve 100% bridge coverage.

Efficient image organization: Handle 1,500–10,000 images per bridge.

3D model creation: Use simple, common tools.

Data integration: Upload to Manam's 3DBIA portal.

Remote defect analysis: Access data from anywhere.

AI-assisted detection: Use built-in or custom AI models.

Automated reports: Generate bridge condition reports effortlessly.

W-06: Connecting Digital Twins with 2D Plans

Tuesday, July 15, 2025 4:30 - 5:00 PM

Alexander Mabrich, Bentley Systems, Sunrise, FL

W-06: Bridge Inspection and Load Rating Updates

Tuesday, July 15, 2025 2:00 - 4:30 PM

Thomas Anthony, P.E., Michael Baker International, Moon Township, PE

Thomas Anthony, P.E., Michael Baker International, Moon Township, PA; Anne Irish, P.E., Michael Baker International, Louisville, KY; Petrina Butler, P.E., Michael Baker International, Greenville, SC; William Sobieray, P.E., Michael Baker International, Harrisburg, PA; Tyler Martin, P.E., Michael Baker International, Harrisburg, PA

This workshop will focus on implementation of the Specifications for the National Bridge Inventory (SNBI), and some of the changes to inspection and load rating practices. It will also cover updated inspection practices for NSTM and weathering steel structures, as well as the procedures for accurately coding bridge barriers. It will delve into load rating topics, including the implementation of LRFR, strategies to avoid posting, and the necessary changes to ensure SNBI compliance.

W-06: Damage Detection in Concrete Elements Strengthened or Reinforced with FRP

Tuesday, July 15, 2025 5:00 - 5:30 PM

Seyed Saman Khedmatgozar Dolati, Ph.D., P.E., HDR, ,

Saman Dolati, Ph.D., P.E., HDR

This study determines all possible or potential damages attributed to FRP reinforced/strengthened concrete (FRP-RSC) elements. It then investigates Non-Destructive Testing (NDT) methods applicable to their inspection. Several concrete specimens with different FRP types (i.e., Glass, Carbon, Basalt), bar diameter, bar depths, and defect types (debonding, rupture, etc.) are fabricated and investigated using several NDT devices. This study results in proposing innovative and the most promising methods for detecting FRP and its damage in FRP-RSC elements.

W-07: Steel Orthotropic Bridge Decks – Design, Fabrication and Implementation

Wednesday, July 16, 2025 8:00 AM - 12:00 Noon

Sougata Roy, Socotec Inc., New York, NY

Sougata Roy, Socotec, Inc., New York, NY

W-08: The Future of Transportation Engineering

Wednesday, July 16, 2025 8:00 - 8:30 AM

Mike Culmo, P.E., CHA, ,

Mike Culmo, P.E., CHA

- Discussion on how the industry has changed over the last 40 years
- Insight into where the industry potentially will go in the next 40 years.

W-08: Things I Wish I Knew - Guidance for New Bridge Engineers

Wednesday, July 16, 2025 11:00 AM - 12:00 Noon

Lou Ruzzi, P.E., WSP, ,

Lou Ruzzi, P.E., WSP (former PennDOT District Bridge Engineer)

- General Career Advice
- How to balance learning versus productivity (Training first 4 years)
- Types of bridge projects to work on first 4 years
- How to approach bridge design
- Computer Programs- Your responsibility
- Coordination with other non-bridge specialties (Roadway, ROW, Utilities, Construction)
- What a bridge owner wants to see in an SOI

W-08: Education and Training Resources for Concrete Bridges

Wednesday, July 16, 2025 10:30 - 11:00 AM

Gregg Freeby, P.E., National Concrete Bridge Council, ,

Gregg Freeby, National Concrete Bridge Council

The NCBC will highlight training opportunities, certification programs, manuals of practice, specifications, and reference materials available to concrete bridge practitioners seeking to expand their expertise.

W-08: Steel Bridge Training Opportunities for Young Engineers

Wednesday, July 16, 2025 10:00 - 10:30 AM

Frank Russo, P.E., Russo Structural Services, ,

Frank Russo, P.E., Russo Structural Services

The presentation will highlight various training materials and steel bridge design resources available from the American Institute of Steel Construction. These resources vary from college level courses in Steel Bridge design to various design aids that can be used by designers at all levels.

W-08: ABC Details

Wednesday, July 16, 2025 9:00 - 9:45 AM

Mike Culmo, P.E., CHA, ,

Mike Culmo, P.E., CHA

- Current state of practice in ABC in the US
- Available resources including details and design specifications.

W-08: What is AASHTO all about?

Wednesday, July 16, 2025 8:30 - 9:00 AM

Mike Culmo, P.E., CHA, ,

Presenter: Mike Culmo, P.E., CHA

- History the AASHTO LRFD Bridge Design Specifications.
- How to read and interpret AASHTO specification language.
- History of the HL-93 Live load model