



September 9–11, 2015

Peppermill Hotel | Reno, Nevada

**PRACTICAL SOLUTIONS
TO BRIDGE ENGINEERING
CHALLENGES**

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Seminar managed by:



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Federal Highway Administration (HBR-WA)

NORMAN MCDONALD

Bridge Engineer, Iowa Department of Transportation



Norman L. (Norm) McDonald is the State Bridge Engineer for the Iowa Department of Transportation. He has worked for the DOT for 29 years with the last 15 years as State Bridge Engineer. Mr. McDonald is a member of the AASHTO Subcommittee on Bridges and Structures and serves as Vice-Chair

on the Technical Committee for Structural Supports for Signs, Luminaires and Traffic Signals (T-12), Chairman of the Technical Committee for Structural Steel Design (T-14), and is a Region III member on the Technical Committee for Bridge Preservation (T-9).

Areas of interest include high performance materials, accelerated bridge construction and non-destructive testing. The Iowa DOT Bridge Office is active in numerous areas of research including high mast light towers, ultra high performance concrete, curved girder bridges with integral abutments, and structural health monitoring.

KENNETH WRIGHT, P.E.

Design Manager, HDR Engineering



Kenneth J. Wright, P.E. is a Senior Vice President/Principal Project Manager with HDR Engineering. He was HDR's Design Manager for the \$3.142 billion Tappan Zee Bridge Replacement. Prior to Tappan Zee, he was the Independent Design Quality Manager for the \$287 million Cleveland Innerbelt

CCG1. He is currently HDR's project manager for the Pennsylvania Rapid Bridge Replacement Project, a P3 to replace 558 bridges within a three year period for PennDOT.

He earned a BSCE from Lehigh University in 1982 and has been with HDR for 32 years. He also earned an MBA from Baker College in 2007. He is a registered PE in seven states. He has presented at numerous conferences.



Bridge the gap...

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Tuesday, September 8

6:00–8:00 pm

ICEBREAKER RECEPTION

EXHIBIT HALL

Wednesday, September 9

7:30 am–5:00 pm

EXHIBIT HALL OPEN

7:30–8:30 am

CONTINENTAL BREAKFAST

EXHIBIT HALL

8:30–10:00 am

**WELCOME &
OPENING REMARKS**

MODERATOR: Jessen Mortensen, Nevada DOT TUSCANY BALLROOM

- **Opening Remarks**
Rudy Malfabon • Director, Nevada Department of Transportation
- **Keynote: I-74 Mississippi River Bridge**
Norman McDonald • Iowa Department of Transportation

10:30 am–Noon

TECHNICAL SESSIONS

2A ACCELERATED BRIDGE CONSTRUCTION

MODERATOR: Troy Martin, Nevada DOT TUSCANY 5

- **Utah SR201-Bridge Slide**
Richard Hansen • Michael Baker International
- **ABC Methods for Replacement SH55, North of Cascade (D)**
Leonard Ruminski • Idaho Department of Transportation
- **The Lardo Bridge Slide**
Brian Byrne • Lochner

2B BRIDGE FOUNDATION SEISMIC DESIGN

MODERATOR: Bruce Johnson, Oregon DOT TUSCANY 6

- **Modeling and Design of the Gilman Drive Overcrossing Foundations**
Garrett Dekker • Moffatt & Nichol
- **Seismic Design of Adjacent Rail Bridges in Deep Liquefiable Soils**
Kelly Burnell • Kleinfelder
Ebrahim Amirhormozaki • Kleinfelder
- **2D Seismic Site Response Analysis in a Subduction Zone Environment**
Zia Zafir • Kleinfelder

2C BRIDGE DESIGN CONSIDERATIONS

MODERATOR: Rafael Davis, Arizona DOT

TUSCANY 11

- **New Design Provisions for Lightweight Concrete in Bridges**
Reid Castrodale • Expanded Shale Clay and Slate Institute
- **FHWA Slide-in Bridge Construction Cost Estimation Tool**
AJ Yates • Michael Baker International
- **The Future of Bridge Design, Modeling and Analysis: 3D Modeling from Design to Decommission**
Barbara Day • Bentley Systems

2D BRIDGE REHABILITATION

MODERATOR: Pe-Shen Yang, Arizona DOT

TUSCANY 12

- **Rehabilitation of Bridges**
Kash Nikzad • TranTech Engineering, LLC
Vietanh Phung • TranTech Engineering, LLC
- **Replacement of Trunnion Bearing, 92nd Street Bascule Bridge, Chicago, IL**
Paul Bandlow • Stafford Bandlow Engineering, Inc.
- **Slausen Avenue Bridge Over San Gabriel River**
Bob Fish • AECOM Transportation

Noon

LUNCH

DINING ROOM

1:30 PM- 3:00 PM TECHNICAL SESSIONS

3A ACCELERATED BRIDGE CONSTRUCTION

MODERATOR: David Eberhart, Arizona DOT

TUSCANY 5

- **Accelerated Bridge Construction in Alaska**
Leslie Daugherty • Alaska DOT & PF
- **Alaskan Way Viaduct Replacement Program: Pre-cast Concrete Elements for ABC Construction**
Tim Moore • Washington State Department of Transportation
- **Innovative Bridge Designs for Rapid Renewal, SHRP2 RO4, Lessons Learned**
Finn Hubbard • Fish & Associates

3B BRIDGE DESIGN AND CONSTRUCTION

MODERATOR: Noon Viboolmate, Arizona DOT

TUSCANY 6

- **Design of the Gilman Drive Bridge over I-5 at the University of California, San Diego**
Gernot Kumar, Tony Sanchez • Moffatt & Nichol
- **Hybrid Spliced Girder Concept to Solve Bridge Constructability Challenges**
Sami Megally • Kleinfelder
- **Design of a Modern Cable-Stayed Bridge in a High Seismic Zone**
Patrick Montemerlo • David Evans & Associates, Inc.

3C BRIDGE CONSTRUCTION

MODERATOR: Michael Mayberry, Nevada DOT

TUSCANY 11

- **Girder Stability in Erection and Demolition**
Michael Garlich • Collins Engineers, Inc.
- **Project Risk Management on the New San Francisco Oakland Bay Bridge**
Richard Foley • California Department of Transportation
- **Response to Falsework Collapse During Bridge Construction**
Mark Creveling • Kleinfelder
Jeff Turner • Flatiron

3D BRIDGE REHABILITATION

MODERATOR: Sara Manning, Alaska DOT

TUSCANY 12

- **In-Service Replacement of Box Girder Bottom Slab WSDOT Bridge 5/537S Span 11**
Craig Boone • Washington State Department of Transportation
- **Bridge Deck Replacement on Precast Concrete Bulb-T Girders with Sacrificial Flange Technique**
Tanarat Potisuk • Oregon Department of Transportation
- **Accelerated Bridge Construction, Rehabilitation of the I-280 in San Francisco**
Ric Maggenti • California Department of Transportation

3:00–3:30 pm

COFFEE BREAK/EXHIBIT

EXHIBIT HALL

3:30–5:00 pm

TECHNICAL SESSIONS

4A ACCELERATED BRIDGE CONSTRUCTION

MODERATOR: David Eberhart, Arizona DOT

TUSCANY 5

- **Accelerated Bridge Construction of the West Humbug Creek Bridge**
Jason Kelly • OBEC Consulting Engineers
- **Prefabricated Bridge Elements and Systems for Accelerated Bridge Construction**
Greg Banks • BergerABAM
- **Seattle's Not-So-Boring SR99 Bored Tunnel Project**
Tim Moore • Washington State Department of Transportation

4B BRIDGE DURABILITY AND MATERIALS

MODERATOR: Noon Viboolmate, Arizona DOT

TUSCANY 6

- **Use of Grade 80 Reinforcement in Oregon**
Craig Shike • Oregon Department of Transportation
- **Durability Design of Bridges**
Mike Bartholomew • CH2M Hill
- **Durability of Lightweight Concrete for Bridges**
Reid Castrodale • Expanded Shale Clay and Slate Institute

4C BRIDGE CONSTRUCTION

MODERATOR: Michael Mayberry, Nevada DOT

TUSCANY 11

- **Lateral Slide of a Historic Warren Truss in Washington State**
Kevin Dusenberry • Jacobs
- **Tower Erection Engineering for the San Francisco-Oakland Bay Bridge Self-anchored Span**
William Wu, David Dowdell • Klohn Crippen Berger Ltd
- **Design and Construction of the St. Patrick’s Island Pedestrian Bridge**
Brent Whitcomb • Parsons Brinckerhoff

4D BRIDGE REHABILITATION AND REPLACEMENT\

MODERATOR: Sara Manning, Alaska DOT

TUSCANY 12

- **San Elijo Lagoon Bridge Replacement**
Jeremy Lahaye, Kumar Ghosh, Dan Fitzwilliam
• T.Y. Lin International
- **Tioga Pedestrian Bridge Replacement**
Bob Grubbs • Oregon Department of Transportation
- **Alexander Avenue Bridge Retrofit Project, Larkspur, CA**
Carlos Ramirez • Parsons Brinckerhoff

5:00–8:00 pm

EXHIBITOR RECEPTION & POSTER SESSION

EXHIBIT HALL

Thursday, September 10

7:30 am–5:00 pm EXHIBIT HALL OPEN

7:30–8:30 am CONTINENTAL BREAKFAST EXHIBIT HALL

8:30–10:00 am TECHNICAL SESSIONS

5A ACCELERATED BRIDGE CONSTRUCTION

MODERATOR: David Chase, Nevada DOT

TUSCANY 5

- **Faster Construction and Better Seismic Performance: You Can Have Both**
Marc Eberhard • University of Washington
- **Innovative, Accelerated, and Cost Effective Options for Short Span Bridges**
Michael Barker • University of Wyoming
- **Novel Deconstructible and Resilient Columns for ABC in High Seismic Zones**
Sebastian Varela • University of Nevada, Reno

5B BRIDGE RESEARCH AND ANALYSIS

MODERATOR: Justin Wilson, Alaska DOT

TUSCANY 6

- **Instrumenting Anchorage Zone of Post-tensioned Box Girder Bridges**
Ahmed Maree • University of Nevada, Reno
Marc Friedheim • California Department of Transportation
- **Structural Response of Bent Caps in Reinforced Concrete Box-Girder Bridges**
Mohamed Moustafa • University of California, Berkeley
- **Computer Aided Design, Analysis, and Load Rating of Precast-Prestressed Spliced Girder Bridges**
Rick Brice • Washington State Department of Transportation

5C FOUNDATION DESIGN AND CONSTRUCTION

MODERATOR: Nick Murray, Alaska DOT

TUSCANY 11

- **Thermal Integrity Profiling as a Drilled Shaft Quality Assurance Tool**
Mark Gaines • Washington State Department of Transportation
- **Honolulu Rail Transit Project: Drilled-Shaft Design Considerations and Challenges**
Ahilan Selladurai, Ahmad Abdel-Karim • AECOM Transportation
- **Sellwood Bridge Perched Box Caisson Design and Construction**
Garret Ellingson, Shayne Tennis • McGee Engineering

5D BRIDGE MATERIALS AND MAINTENANCE

MODERATOR: Travis Arndt, Alaska DOT

TUSCANY 12

- **Specialized Post-Tensioning Inspection and Repair**
Travis Green, Eric Anderson • Wiss, Janney, Elstner Associates, Inc.
- **Bridge Materials and Methods**
Hormoz Seradj • Oregon Department of Transportation
- **Development of National Training for Bridge Maintenance**
Eric Thorkildsen • Greenman-Pedersen, Inc.

10:00–10:30 am COFFEE BREAK/EXHIBIT

EXHIBIT HALL

10:30–Noon TECHNICAL SESSIONS

6A BRIDGE DESIGN AND CONSTRUCTION

MODERATOR: David Chase, Nevada DOT

TUSCANY 5

- **Design and Construction Complexities of the Yerba Buena Island Transition Structures for the New East Span - SFOBB**
Robert Dameron • Moffatt & Nichol
- **Replacement of the Highway 85 Bridge Over the Missouri River Near Williston, North Dakota**
Michael Marks, Colin Moran • KLJ
- **US-34 Missouri River Pushing the Design and Construction Limits for a Haunched Steel Girder with Substringer Bridge**
Phil Rossbach • HDR Engineering, Inc.

6B BRIDGE DESIGN AND CONSTRUCTION

MODERATOR: Justin Wilson, Alaska DOT

TUSCANY 6

- **Maximizing the Flexibility of Precast Concrete to Accommodate Unusual Bridge Geometry in a Constrained Urban Environment**
Yuling Teo • City of Seattle
Hong Guan, Mark Johnson • CH2M Hill
- **Salt Creek Half Viaducts**
Bob Goodrich • OBEC Consulting Engineers
- **MSS Box Girder Transverse Design of Geral Desmond Bridge Replace Project**
Sammy Tu • STV Inc.

6C BRIDGE MATERIALS AND DETAILS

MODERATOR: Nick Murray, Alaska DOT

TUSCANY 11

- **Material Properties of Lightweight Concrete for Bridge Design**
Reid Castrodale • Expanded Shale Clay and Slate Institute
- **Good Bridges, Bad Details, and Ugly Cracks: A Study in Titanium Alternatives to Fiber Reinforced Polymers**
Paul Strauser • Oregon Department of Transportation
- **Crack-less Bridge Decks**
Craig Knapp • California Department of Transportation

6D INVENTORY AND MAINTENANCE

MODERATOR: Leslie Daugherty, Alaska DOT

TUSCANY 12

- **Utilizing 3D Models for Better Bridge Asset Inspection and Management of Complex Bridges**
Lee Tanase • Bentley Systems
- **Where’s the Guidance? An Interim Approach for Load Rating Culverts and Flexible Buried Bridges**
Joel Hahm • Big R Bridge
- **Developing Risk Assessment Protocols for Six Iconic Willamette River Bridges**
*Douglas Lampkin • David Evans and Associates Inc.
Ian Cannon • Multnomah County*

Noon

LUNCH

DINING ROOM

1:30–3:00 pm

TECHNICAL SESSIONS

7A BRIDGE SEISMIC DESIGN

MODERATOR: Craig Shike, Oregon DOT

TUSCANY 5

- **Seismic Design of Light Rail Transit Bridges with Fault Rupture**
James Gingery, Ebrahim Amirhormozaki • Kleinfelder
- **Seismic Design Considerations for Single-Column Piers Supporting Highly Curved Ramp Bridges**
Greg Griffin • AECOM Transportation
- **Sellwood West Approach Interchange Bridge - Design Challenges and Project Delivery**
Vu Phan • CH2M Hill

7B BRIDGE DESIGNS AND SCOUR CHALLENGES

MODERATOR: Bob Grubbs, Oregon DOT

TUSCANY 6

- **Design of the 13th Street Bridge at Vandenberg AFB for Hydraulics, Scour, and Seismic**
Tony Sanchez • Moffatt & Nichol
- **Acquiring and Implementing TIGER Grant Funding for the I-15 Virgin River Bridge #6 Superstructure Replacement and Substructure Widening**
Rafael Davis • Arizona Department of Transportation
- **History of the Oldest Bridge Pons Fabricius**
Luong Tran • Washington State Department of Transportation

7C BRIDGE SEISMIC DESIGN

MODERATOR: Rebecca Burrow, Oregon DOT

TUSCANY 11

- **Performance of Bridge Columns Under Long Duration Ground Motions**
Mohammed Mohammed • University of Nevada - Reno
- **Maximizing Bridge Value with Advanced Seismic Analysis**
Christopher Pitt • KPFF Consulting Engineers
- **Application of Performance Based Earthquake Engineering (PBEE)**
Yeo (Tony) Yoon, Toorak Zokaie • California Department of Transportation

7D INSTRUMENTATION AND INSPECTION

MODERATOR: Rick Jensen, Idaho DOT

TUSCANY 12

- **Implementing the Next Generation of Bridge Inspection and Management Systems**
Lee Tanase • Bentley Systems
- **Economics of Infrastructure Health Monitoring**
Brian Westcott • Intelligent Structures, Inc.
- **Macro vs. Micro:
The Future and Past of Bridge Instrumentation**
Shaun Dustin • Campbell Scientific

3:00–3:30pm

COFFEE BREAK/EXHIBIT

EXHIBIT HALL

3:30–5:00 pm TECHNICAL SESSIONS

8A BRIDGE JOINTS AND BEARINGS

MODERATOR: Craig Shike, Oregon DOT

TUSCANY 5

- **High Load Multirotational Bearings for the Sellwood Bridge**
Ron Watson • R.J. Watson, Inc.
- **Nenana River Bridge Seismic Retrofit**
Travis Arndt • Alaska DOT&PF (Bridge Design)
- **Innovations in Bridge Engineering**
Iman Talebinejad • SC Solutions

8B RAIL AND RETAINING STRUCTURES

MODERATOR: Bob Grubbs, Oregon DOT

TUSCANY 6

- **Design Optimization for Sound Transit’s Light Rail Lynnwood Extension**
Yuhe Yang • Parametrix
- **Significant Changes for Design and Construction Costs of Earth Retaining Structures Caused by Changes in Recent AASHTO LRFD Design Criteria**
Ahilan Selladurai, Robert Fish • AECOM Transportation
- **Lightweight Cellular Concrete Fill to Mitigate Railroad Bridge Approach Settlement**
Nathan Johnson, Moises Arzamendi • Kleinfelder

8C BRIDGE SEISMIC DESIGN

MODERATOR: Rebecca Burrow, Oregon DOT

TUSCANY 11

- **Base Isolating the New NY Bridge**
Nick McDowell, Ted Bush • HDR Engineering
- **2nd Street Connector, Gateway to Historic Sacramento**
Ali Seyedmadani • Parsons Brinkerhoff
- **Seismic Design of Walnut Avenue Overpass**
Ali Rejaie • HNTB

8D LOAD RATING

MODERATOR: Rick Jensen, Idaho DOT

TUSCANY 12

- **Methods for Improving Load Rating of Existing Bridges**
Kash Nikzad • TranTech Engineering, LLC
- **An Innovative Procedure for Load Rating of Suspension Bridges**
Hassan Sedarat • SC Solutions
- **Snake River Load Test: Addressing Bridge Management Issues**
Brice Carpenter • Bridge Diagnostics
Shanon Murgoitio • Idaho Transportation Department

5:00–9:00 pm EXHIBITOR MOVE-OUT

Friday, September 11

7:30–8:30 am

CONTINENTAL BREAKFAST

DINING ROOM

8:30–10:00 am

TECHNICAL SESSIONS

9A BRIDGE DESIGN AND CONSTRUCTION

MODERATOR: Matt Farrar, Idaho DOT

TUSCANY 5

- **Hells Canyon Bridge SR89**
Mike Morrison • Arizona Department of Transportation
- **Design and Construction of an International Airport Bridge between California and Mexico**
Paul Morel • Kleinfelder
- **Seismic Retrofit and Reconstruction of the Historic Georgia Street Concrete Arch Bridge**
Ebrahim Amirihormozaki, Nathan Johnson • Kleinfelder

9B BRIDGE ANALYSIS

MODERATOR: Rich Pratt, Alaska DOT

TUSCANY 6

- **Effect of Curved Alignment and Skewed Supports on Bridge Response**
Lucas Miner • Drake Haglan and Associates
- **Liveload Distribution on Bridge Abutments**
Toorak Zokaie • California Department of Transportation
- **Impact of Air Pressure Testing on Post-Tensioned Anchorage Ducts**
Brett Allen • Eclipse Engineering

9C BRIDGE DESIGN AND CONSTRUCTION

MODERATOR: Dale Wegner, FHWA

TUSCANY 11

- **Accelerated Scheduling for I-90/Cliff Ave. Bridges**
Hadley Eisenbeisz • South Dakota Department of Transportation
- **Seismic Retrofit of Ogden Siphon Pipe Suspension Bridge**
Mark Reno • Quincy Engineering, Inc.
- **I Didn't Know They Could Do That! Capabilities and Design Considerations for Flexible Buried Bridges**
Joel Hahm • Bridge R Bridge

9D BRIDGE INSPECTION

MODERATOR: Barry Brecto, FHWA

TUSCANY 12

- **Vertical Clearance Measurements & Posting of VC Signs**
Homer Saidi • Arizona Department of Transportation
- **Underwater Inspection of the Golden Gate Bridge: The Image of an Icon**
Daniel Stromberg • Collins Engineers, Inc.
- **Summary of Safety Inspection Practices for Bridges with Fracture Critical Members**
Brian Leshko • HDR Engineering, Inc.

10:00–10:30 am COFFEE BREAK

DINING ROOM

10:30–Noon GENERAL SESSION

MODERATOR: Jessen Mortensen, Nevada DOT

TUSCANY BALLROOM

- **Keynote: The Tappan Zee Bridge**
Kenneth Wright • HDR Engineering
- **Closing Remarks & Invitation to 2017 Conference**
- **Adjourn**

1

Accelerated Bridge Construction

Alfred Mangus
Professional Engineers in California Government

2

Prefabricated Bridge Elements and Systems for Accelerated Bridge Construction

D. Stephen Fitz
Structural Component Systems Inc.

3

SPS Bridge Decks for Accelerated Deck Replacement

Kay Jimison
SPS North America



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4

Using GFRD Reinforcing as a Cost Effective Solution of Extending the Service Life of Bridge Decks

Ryan Koch
Aslan FRP – Hughes Brothers

5

Converting Existing Railroad Bridges to Multi-Use Recreation Trails

David Clemens
Wheeler

6

Bridge in a Box

Ken Sweeney
AIT Bridge Systems

Vendors

- 100** BGFMA
- 101** Big R Bridge
- 102**
- 103** Applied Bolting Technology
- 104** BridgeSight Inc.
- 107** Epoxy Interest Group of CRSI
- 109** R.J. Watson, Inc.
- 110** Precast/Prestressed Concrete Institute
- 112** Nickel Institute
- 114** Bentley Systems
- 115** Viathor, Inc.
- 116** Euclid Chemical Company
- 117** AIT Bridge Systems
- 118** Computers and Structures Inc.
- 120**
- 121** Perryman Company
- 122** Williams Form Engineering Corp.
- 123** West Coast Chapter of ADSC
- 200** Jensen Precast
- 201** Campbell Scientific
- 202** Loadtest USA
- 203** The D.S. Brown Company
- 206** Case Foundation Company/Hayward Baker Inc.
- 207** American Segmental Bridge Institute
- 209** Concrete Reinforcing Steel Institute
- 214** Watson Bowman Acme Corp.
- 215** ACROW Corporation
- 216** Dynamic Isolation Systems
- 217** MISTRAS Group
- 220** Wheeler
- 221** Contech Engineered Solutions
- 222** Resource International, Inc.
- 223** Scougal Rubber
- 300** SSL LLC
- 301** Short Span Steel Bridge Alliance
- 302** LUSAS
- 303** Wiss, Janney, Elstner Associates, Inc.
- 306** Bridge Diagnostics, Inc.
- 308** DYWIDAG Systems International (DSI)
- 314** Galvanizers Company
- 316** The Reinforced Earth Company
- 320** U.S. Bridge
- 321** Eriksson Technologies, Inc.
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