

## September 6–8, 2017

# INNOVATIVE SOLUTIONS THAT STAND THE TEST OF TIME

Portland Marriott Downtown Waterfront Portland, Oregon

Seminar managed by:



**Conference Management** 

**Tuesday, September 5** 

**ICEBREAKER RECEPTION** 6:00-8:00 PM

## Wednesday, September 6

#### 7:30 AM-5:00 PM EXHIBIT HALL OPEN

7:30-8:30 AM CONTINENTAL BREAKFAST

8:30–10:00 AM WELCOME & OPENING REMARKS

- Funding for Oregon's Critical Highway Needs Travis Brouwer • Oregon DOT
- **Oregon's Innovative Bridge Solutions** Bruce Johnson • Oregon DOT
- Keynote: Overview of OR-18 Newberg-Dundee **Bypass Project** Matthew Stucker, Tony Snyder • Oregon DOT Robert Goodrich • OBEC Consulting Engineers Scott Schlechter • GRI

#### 10:00-10:30 AM EXHIBIT BREAK

#### 10:30 AM-Noon TECHNICAL SESSIONS

#### 2A BRIDGE DESIGN AND CONSTRUCTION I

- **Design and Construction of the SR-520 West Approach Bridge-North** *Greg Knutson* HDR Engineering Inc.
- Replacing the Aging US-52 Mississippi River Bridge Greg Hasbrouck • Parsons Faith Duncan • Illinois DOT

A New Signature Bridge for the City of Los Angeles: The Sixth Street Viaduct Michael H. Jones, Michael Van Duyn, Rui Lu, Semyon Treyger • HNTB Corporation Julie Allen • City of Los Angeles, Bureau of Engineering

#### 2B BRIDGE DESIGN AND CONSTRUCTION II

- Accelerated Bridge Construction Projects in California: I-10 Tex Wash Replacement Paul C. Chung, Jason Fang • CalTrans
- A Signature Bridge on the Fast Track Christopher Vanek, Adrian Moon WSP USA
- Steel I-Girder Bridge Cross-Frame Strength and **Stiffness Requirements** Domenic Coletti • Michael Baker International Michael Grubb • M.A. Grubb & Associates, LLC

#### **2C BRIDGE DURABILITY AND MATERIALS**

- Historic Perspective on Galvanic Anode Use for **Corrosion Protection of Bridges** Eliseo Conciatori • Vector Corrosion Technologies, Inc.
- Silane Concrete Water Repellents: An Innovative Solution That Stands the Test of Time Tim Woolery • Advanced Chemical Technologies, Inc.
- Method of Improving Concrete Durability in Bridges and Structures Philip Rhodes • Hycrete Inc.



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### 2D FOUNDATION DESIGN AND CONSTRUCTION

- Drilled Shaft Quality Through Thermal Integrity Profiling James M. Schmidt • Terracon Consultant, Inc.
- Innovative Large Shaft Repair for Abraham Lincoln Cable-stayed Bridge Claudio Osses, John Brestin • COWI North America, Inc.
- Fairview Avenue Bridge | Slip Sliding Away: Challenges in Foundation Design with Flow Loads and Plastic Hinging Ellen Brenden, Kiva Lints • HNTB Corporation
- Noon LUNCH

#### 1:30-3:00 PM TECHNICAL SESSIONS

#### **3A BRIDGE REHABILITATION**

- I-40 Willow Creek Bridge No. 5: Unique Bridge Deck Replacement Solution Christopher Labye, Ben C. Ansley • AECOM
- Reviving a Piece of History: Healdsburg Avenue Bridge Over the Russian River Mark Weaver • Cornerstone Structural Engineering Group
- **3B BRIDGE SEISMIC DESIGN** 
  - A New Type of EDD for the Seismic Retrofit of the Golden Gate Bridge Main Suspension Spans Michael Kochly, Ted Bush, Kuang Lim • HDR Engineering, Inc. Ewa Bauer-Furbush, John Eberle • Golden Gate Bridge, Highway and Transportation District
  - Seismic Design Challenges of West Mission Bay Drive Bridge Replacement Kumar Ghosh • T.Y. Lin International
  - Boeing Access Road Bridge Seismic Retrofit and Rehabilitation Kevin Kim, Hana D'Acci • Jacobs Engineering Inc.

#### **3C BRIDGE RESEARCH**

- Design Strategy to Minimize Seismic Residual Displacements and Damage in a New ABC Bridge Bent Marc Eberhard, John Stanton • University of Washington Travis Thonstad • National Institute of Standards and Technology David Sanders, Islam Mantawy • University of Nevada, Reno
- ABC Low Damage in High Seismicity: Concept, Experimental Validation and Real-Life Application Mustafa Mashal • Idaho State University
- Investigation of Macro-Defect Free Concrete for Accelerated Bridge Construction, including Robotic Construction Katelyn Freeseman, Brent Phares • Iowa State University

#### **3D BRIDGE DESIGN AND CONSTRUCTION**

- Design of the I-405/SR167 Flyover Bridge Alice Fong, Anthony Gasca • Jacobs Engineering Inc.
- Designing Long Span Precast/Prestressed Concrete Bridge Girders for Lateral Stability Richard Brice • Washington State DOT
- Design and Construction of 2nd Street Connector
  Ali Seyedmadani WSP USA
- 3:00-3:30 PM EXHIBIT BREAK
- 3:30-5:00 PM TECHNICAL SESSIONS

#### 4A BRIDGE DESIGN AND CONSTRUCTION

- Design and Construction of the Rockingham Bridges 24N & 24S Nicholas Rodda • HDR Engineering Inc.
- Using Single-Column Bents With Large Eccentricities to Avoid Straddle Bents Nicholas Murray, Kuan Go, Aamir Durrani • HNTB Corporation
- California Incline Bridge Replacement Project, City of Santa Monica
   Curtis Castle • City of Santa Monica, Civil Engineering Scott Dendall • CALTROP Corporation
   Peter Smith • T.Y. Lin International

#### 4B PEDESTRIAN BRIDGE PROJECTS

- Minto Island Bicycle & Pedestrian Bridge: Design and Construction Bob Goodrich, Jim Bollman • OBEC Consulting Engineers
- Through the Eye of the Needle (Scioto River Pedestrian Bridge)
   Dan Fitzwilliam, Mirek Olmer, Marwan Nader • T.Y. Lin International
- Construction Methods for Rural Pedestrian Suspension Bridges Nathan Bloss • Bridging the Gap Africa (CH2M) Matthew Bowser • Bridging the Gap Africa (WSP)

#### **4C BRIDGE TECHNOLOGY AND SOLUTION**

- Recent Innovations in WSDOT Bridge Design and Construction Bijan Khaleghi • Washington State DOT
- Bridge Lighting Efficiencies for Bridges Spanning Navigable Water Rowan Plaxton, Lee Walker • Sealite USA, LLC
- Using Bridge 3D Models After The Design Process
  Alexander Mabrich Bentley Systems



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#### **4D BRIDGE MANAGEMENT**

- Structural Monitoring of Floor-beam/Stiffener Connections on the Benicia Martinez Bridge Maged Armanuse • CalTrans Miguel Hernandez-Garcia • Alta Vista Solutions
- Who Wants a Green-Certified-Platinum-Triple-Star Bridge? A Bridge Engineer's Introduction to Current Sustainability Rating Methods Kelly Burnell • Kleinfelder, Inc.
- Evaluation of Gusset Plate Connections in Steel Truss Bridge Bo-Shiuan Wang • COWI North America, Inc.
- 5:00-8:00 PM EXHIBITOR RECEPTION & POSTER SESSION

### **Thursday, September 7**

- 7:30 AM 3:30 PM EXHIBIT HALL OPEN
- 7:30-8:30 AM CONTINENTAL BREAKFAST
- 8:30–10:00 AM TECHNICAL SESSIONS
- 5A BRIDGE DESIGN AND CONSTRUCTION
  - Spliced Precast Concrete Girder Bridges: 20 Years of Lessons Learned in Design and Construction Gregg Reese • Modjeski and Masters/Summit Engineering Group
  - Sellwood Bridge Replacement Project Eric Rau • T.Y. Lin International Ian Cannon • Multnomah County (OR)
  - Riverside Drive Viaduct Replacement
    Y. Nien Wang, Jiahwa Wang HNTB Corporation
    Shirley Lau City of Los Angeles, Bureau of Engineering

#### **5B BRIDGE REHABILITATION**

- Kotzebue Slough Bridge Underwater Pile Repair in Remote Alaska Jared Levings • Alaska DOT & Public Facilities
- Reconstruction Challenges of a Nationally Historic Arch Bridge in San Diego Ebrahim AmiriHormozaki, Nathan Johnson • Kleinfelder
- WSDOT Experience Resurfacing Existing Bridge Decks with Hot-Mix Asphalt Dick Stoddard • Washington State DOT

#### **5C SUBSTRUCTURE ANALYSIS AND CONSTRUCTION**

- US-20 | Pioneer Mountain: Eddyville Construction Innovation and Engineering Jaimé Viramontes Sr., Derryl James • Oregon DOT
- Applications and Implications of AASHTO for Assessment of Vessel Collision Risk and Vulnerability for New and Existing Bridges Michael Roberts • HDR Engineering Inc.
- Repair of Large Diameter Non-Redundant Drilled Shaft
  Alan Marchman, Kuan Go HNTB Corporation

#### **5D BRIDGE TECHNOLOGY AND SOLUTION**

- Incorporating Innovative Materials into a Seattle, WA Bridge to Improve Seismic Resilience Jedediah Bingle • Washington State DOT
- High Load Multirotational Bearing for the Tilikum Crossing Ronald J. Watson • R. J. Watson, Inc.
- Fiber Reinforced Polymer Decks and Challenging Micropile Installation for Pedestrian Bridges in Difficult Terrain JP Loomis • CH2M Michael Mayberry • Nevada DOT

#### 10:00-10:30 AM **EXHIBIT BREAK**

#### 10:30–Noon TECHNICAL SESSIONS

#### 6A BRIDGE DESIGN AND CONSTRUCTION

- Helpful Hints for Designing in Alaska Leslie Daugherty • Alaska DOT & Public Facilities
- Issues in Cofferdam Design and Construction Michael Garlich • Collins Engineers, Inc.
- The Design of The Chena River Bridge at University Ave. Jesse Escamilla III • Alaska DOT & Public Facilities

#### 6B BRIDGE DURABILITY AND MATERIALS

- Case Studies for 125-Year Service Life Utilizing High Strength Low Chromium Reinforcing Bars Neal Berke, Ranjani M. Vijayakumar, Justin Thomson • Tourney Consulting Group, LLC
- Accelerating Construction and Improving Service-Life using UHPC in Bridge Infrastructure Projects Gregory Nault • LafargeHolcim - Ductal
- Specifying Lightweight Concrete for Bridges: Reduced Density and Enhanced Durability Reid Castrodale • Expanded Shale Clay and Slate Institute



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#### **6C LIGHT RAIL BRIDGE PROJECTS**

- Design-Build of the First Ten Miles of Honolulu Rail Transit Project
   Kuan Go, Alan Marchman • HNTB Corporation
- Light Rail Transit Bridges: Crenshaw/LAX Transit Corridor Design-Build Aamir Durrani, Murali Hariharan, Hoda Emami • HNTB Corporation Kevin Acosta • ARUP
- Sound Transit Eastlink and Lynnwood Link Aerial Guideway Joshua Schettler, Kent Ferguson • Jacobs Engineering Inc. Steve Gleaton • Sound Transit Matt Vaggione • HNTB Corporation

#### 6D PEDESTRIAN BRIDGE PROJECTS

- Spiraling Toward the Beach: The Idaho Avenue Pedestrian Bridge Hunter Ruthrauff, Peter Smith • T.Y. Lin International
- Tiger Mountain Lower High Point Steel Truss Bridge Design and Construction Jane Li • RHC Engineering, Inc. Jim Patton • Washington State DOT
- Reuse of Unreinforced 1920s Railroad Piers for New Pedestrian Bridge Lucas Miner • Psomas Wenn Chyn • City of Los Angeles, Department of Public Works
- Noon LUNCH
- 1:30 3:00 PM TECHNICAL SESSIONS

#### 7A BRIDGE DESIGN AND CONSTRUCTION

- 240'-Long Precast Single Span Bridge: Chief Joseph Dam Bridge Replacement Project Jian Xu • Jacobs Engineering Tom Whiteman • KPFF Consulting Engineers Aaron Simmons • Douglas County (WA)
- Broadway Bridge Tied Arches: Value Engineering Natalie McCombs • HNTB Corporation
- I-15 Capitol/Cedar Interchange (Helena, MT): Front-end Planning Mitigates Construction Risk Dustin Hirose • HDR Engineering Inc. Stephanie Brandenberger • Montana DOT

#### 7B ACCELERATED BRIDGE CONSTRUCTION

- Accelerated Bridge Construction: National Perspective and ABC-UTC Activities Atorod Azizinamini • Florida International University
- Seismic Behavior of Columns with Grouted Bar Couplers in Idaho ABC Applications Arya Ebrahimpour • Idaho State University Leonard Ruminski • Idaho Transportation Department

 Rapid Cost Effective Bridge Replacement Technology: Geosynthetic Reinforced Soil-Integrated Bridge System Alan Cukurs • J-U-B Engineers Inc.

#### 7C BRIDGE RESEARCH

- Design and Configuration of Jointless Bridges for ABC Applications
   Behrouz Shafei, Brent Phares, Michael Dopko, Shahin Hajilar • Iowa State University
- Performance of General Anchorage Zone for Post-tensioned Box Girder Bridges Ahmed Maree, David Sanders • University of Nevada, Reno
- Standards to Control Fracture in Steel Bridges Through the Use of High-Toughness Steel and Rational Inspection Intervals Ryan J. Sherman • University of Nevada, Las Vegas William Collins • University of Kansas Robert Connor • Purdue University

#### 7D BRIDGE MANAGEMENT AND DESIGN POLICIES

- MASH Implementation for California Bridge Railings Tom Ostrom, Gregory Kaderabek • CalTrans
- Successful Preservation Practices for Steel Bridge Coatings Raymond Bottenberg • Oregon DOT
- Seismic Risk Analysis of Ferry Terminal Bridge Structures Jeri Bernstein, Chris Stearns • Washington State DOT
- 3:00-3:30 PM EXHIBIT BREAK
- 3:30–5:00 PM TECHNICAL SESSIONS

#### 8A BRIDGE DESIGN AND CONSTRUCTION

- Constructing the SR-520 Floating Bridge Jason Pang, Greg Hess • KPFF Consulting Engineers
- Design of Pre-Cambered Concrete Girders with Moderate to High Levels of Pre-Camber Amanda Wong, Claudio Osses • COWI North America, Inc.
- Predicting Major Bridge Construction Costs Ken Saindon • EST, Inc.

#### 8B BRIDGE RESEARCH

 Steel I-Girder Bridge Fit Research Domenic Coletti • Michael Baker International Don White • Georgia Tech Thanh Nguyen • RS&H Brandon Chavel • HDR Engineering Inc. Michael Grubb • M.A. Grubb & Associates, LLC Calvin Boring • Brayman





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- Concrete-Filled Tubes for Improved Seismic Performance and Constructability Dawn Lehman, Charles Roeder • University of Washington Bijan Khaleghi • Washington State DOT
- Alternative ABC Connections Using UHPC Mohamadreza Shafieifar, Mahsa Farzad, Atorod Azizinamini • Florida International University

#### **8C BRIDGE SEISMIC DESIGN**

- Earthquake Duration Effect on Collapse Capacity of Reinforced Concrete Bridge Columns David Sanders • University of Nevada, Reno Mohammed Mohammed • Dynamic Isolation Systems
- I-5 Overcrossing (Cook, Over PNWR) Seismic Retrofit Design and Phase II Construction Michael Roberts, Mark Libby • HDR Engineering Inc.

 Dynamic Interaction of Bridge Superstructure and Light Rail Vehicle Aamir Durrani, Hao Luo • HNTB Corporation Xiaoyun Wu • IDC

#### 8D BRIDGE ANALYSIS AND DESIGN

- Foundation Restrained Analysis of Bridge Structures for Liquefaction Induced Lateral Spreading Soil Load Ahilan Selladurai • T.Y.Lin International
- A Case Study on Extreme Scour at an Alaska Bridge and the Monitoring Efforts Used to Track the Changing Conditions Michael Knapp • Alaska DOT & Public Facilities Jeff Conaway • USGS Alaska Science Center
- Arch Bridge Buckling Analysis Methods Benjamin Blasen • CH2M

## Friday, September 8

#### 7:30-8:30 AM CONTINENTAL BREAKFAST

#### 8:30-10:00 AM TECHNICAL SESSIONS

#### 9A BRIDGE DESIGN AND CONSTRUCTION

- Design and Construction of the Tilikum Crossing in Portland, Oregon Norman Smit, Kevin Almer • T.Y.Lin International
- Structural Design of Main Post Cut & Cover Tunnels: Presidio Parkway Allen Rejaie • HNTB Corporation
- Balancing Innovation, Constructability, and Maintenance to Cross the San Diego River Nathan Johnson, Kelly Burnell • Kleinfelder

#### 9B ACCELERATED BRIDGE CONSTRUCTION

- SH-97, I-90 OPASS IC #22
  Shawn Metts HMH Engineering John Vaudreuil • Idaho Transportation Department
- "I Didn't Know It Would Be That Fast!" ABC Advancements and Advantages with Buried Bridges Joel Hahm • Big R Bridge
- Ohio's ABC Demonstration Project with Rapid Bridge Replacement with Tub Girders Integrated with SPS Bridge Deck. Self-Performing Installations of Short Span Bridges with SPS Bridge Decks. Rolando Moreau, Kay Jimison • SPS North America

#### 9C FOUNDATION DESIGN AND CONSTRUCTION

 Sellwood Bridge Replacement: Landslide Mitigation Tom Westover • Cornforth Consultants, Inc.

- Changes to AASHTO LRFD & CalTrans Design Criteria for Design of Retaining Structures over the Last Decade Ahilan Selladurai • T.Y.Lin International
- Lightweight Embankment Materials for Bridge Approaches Murali Hariharan, Aamir Durrani • HNTB Corporation

#### 9D PEDESTRIAN BRIDGE PROJECTS

- Design and Construction of Long Span Pedestrian Bridges in Remote Sites with Difficult Access Douglas Sarkkinen • Otak, Inc.
- Truckee River Bridge (Tahoe City, CA): A Unique Cellular Abutment Approach Provides Significant Reduction of Cost and Bridge Deck Area as Well as a Pleasant Trail User Experience John Rohner • CH2M
- UP, OVER, DOWN | The Bridge Architecture of Pedestrian Overpasses: Two Case Studies Noel Shamble • T.Y. Lin International

#### 10:00–10:30 BREAK

10:30–Noon GENERAL SESSION: OREGON'S INNOVATIONS

- Keynote: Renewal of Aging and Deteriorated Reinforced Concrete Bridges with Titanium Alloy Bars Chris Higgins • Oregon State University
- Keynote: Achieving Operational Seismic Performance of Existing Highway Bridges with Ductile Fuse Retrofit Peter Dusicka • Portland State University
- Closing Remarks & Invitation to 2019 Conference Matt Farrar • Idaho Transportation Department