



Bridge Forum on 3D and Digital Deliverables
Sponsored by Iowa Department of Transportation

Hosted by-
American Council of Engineering Companies of Iowa
And
Associated General Contractors of Iowa

Tuesday, November 1, 2022
West Des Moines Marriott

Schedule of Events

7:30 am - 8:30 am Registration (60 min)

Dave Scott and Jill Huntley, ACEC-Iowa

8:30 am - 9:30 am Session 1: Forum Kickoff (60 min)

Moderator - Michael Nop, Iowa DOT

Iowa DOT Digital Delivery Roadmap (20 min)

Charlie Purcell, Deputy Director of Transportation Development Division

National Efforts: Open Data Standards and Model As Legal Document (MALD), (25 min)

David Unkefer, Senior Construction and Project Management Engineer, US DOT, FHWA

Iowa DOT Bridges and Structures 3D/DD Vision and Efforts (10 min)

Michael Nop, Bridge Project Development Engineer

Session 1 Q&A (5 min)

9:30 am - 10:30 am Session 2: Bridge Digital Delivery Case Study - Utah DOT (60 min)

Moderator - Will Sharp, HDR

Cheryl Hersh Simmons, Chief Structural Engineer (Utah DOT)

Daniel Jensen, Michael Baker (Designer)

Scott Fernald, Granite Construction Technology Manager (Contractor)

Kaleb Nelson, Project Engineering Consultants (Inspector)

Session 2 Q&A (as time permits)

Break – 10:30 am to 10:40 am (10 min)

10:40 am - 11:30 am Session 3: AGC of Iowa - Challenges & Opportunities (50 min)

Moderator - Ron Otto, Iowa AGC

Andy Stone, Vice President, United Contractors

Mark Freier, Assistant General Manager, Godbersen-Smith Construction

Dan Cramer, President, Cramer & Associates

Session 3 Q&A (as time permits)

11:30 am - 12:30 pm Session 4: ACEC-Iowa - Challenges & Opportunities (60 min)

Moderator - Al Nelson, HDR

I-80 over Sugar Creek, Cedar County (20 min)

Sean Connor, Structural Engineer, HR Green

IA 2 Overflow Bridge and Other Examples (20 min)

Tony Bower, Senior Structural Engineer

Jamie Wahl, Principal Designer, Stanley Consultants

I-80/I-380 BIM Pilot Project (20 min)

Grant Schmitz, Bridge Engineer, HDR

Session 4 Q&A (as time permits)

12:30 pm - 1:30 pm Lunch (60 min)

1:30 pm - 2:45 pm Session 5: Fabricators - Rebar & Steel - Challenges & Opportunities (75 min)

Moderator - Michael Nop, Iowa DOT

Rebar Fabrication (25 min)

Anne Duffield, President, Mid States Rebar and Supply

Travis Shelton, Director of CAD Products and Services, aSa

The Value of “i” – A Steel Bridge Fabricator’s Perspective on BIM (20 min)

Brad Dillman, P.E., Vice President of Engineering & Estimating, High Steel Structures

Steel Fabrication – Experience and Observations Working with BIM (20 min)

Adam DeMargel, Stupp Bridge Company

Session 5 Q&A (10 min)

2:45 pm - 3:40 pm Session 6: Construction Survey & Inspection - Challenges & Opportunities (55 min)

Moderator - Will Sharp, HDR

Construction Survey (20 min)

Josh Doughan, Vice President, McClure Engineering

Construction Inspection/Contract Administration (35 Min)

Curtis Carter, Iowa DOT Senior Structural Engineer

Cedric Wilkinson, Iowa DOT Senior Engineering Technician

Session 6 Q&A (as time permits)

Break – 3:40 am to 3:50 am (10 min)

3:50 pm - 4:50 pm Session 7: Facilitated Panel Discussion (60 min)

Moderator - Alexa Mitchell, HDR

Jim Hauber, Chief Structural Engineer, Iowa DOT

Will Sharp, Director of Highways, HDR

Andy Stone, Vice President, United Contractors

Cheryl Hersh Simmons, Chief Structural Engineer, Utah DOT

Session 7 Q&A (as time permits)

4:50 pm - 5:00 pm Closing Comments (10 min)

Charlie Purcell, Deputy Director of Transportation Development Division

Speaker Bios

Charlie Purcell, Deputy Director of Transportation Development Division

Charlie has been with the Iowa DOT for about 23 years and in his current role for the last 6 years. As Deputy Director of the Transportation Development Division, Charlie provides leadership for several bureaus involved in project development, including: Location and Environment, Design, Bridges and Structures, Right of Way, Contracts and Specifications, Project Management and Local Systems. Prior to that, Charlie served in various roles in the Local Systems bureau, most recently as the bureau director. Prior to coming to the Iowa DOT, Charlie worked for TranSystems Corporation in Kansas City doing roadway design. Charlie is a graduate of Iowa State University with degree in Civil Engineering and is also a Certified Public Manager.

David Unkefer, Senior Construction and Project Management Engineer, US DOT, FHWA

David has been with Federal Highway Administration for 30 years holding various engineering and leadership positions in 9 states. He provides national leadership and technical assistance to the (FHWA) and its partners; primarily for deploying innovative practices related to BIM for Infrastructure, digital project delivery, construction automation and alternative contracting methods. He currently leads the FHWA Every Day Counts initiative for "Digital As-Builts" (https://www.fhwa.dot.gov/innovation/everydaycounts/edc_6/eticketing.cfm) and has previously led EDC initiatives for 3D engineered models in construction and alternative contracting.

Michael Nop, Bridge Project Development Engineer

Michael has been with the Iowa DOT for about 22 years and has held various roles - all in the Bridges and Structures Bureau. Michael grew up in Vermont, graduated from Dordt College with a BSE and from Iowa State University with a MSCE, and also worked at the Missouri DOT Bridge Office for about 5 years prior to moving back to Iowa.

Cheryl Hersh Simmons, Chief Structural Engineer (Utah DOT)

Cheryl is the Chief Structural Engineer for the Utah Department of Transportation. She is a member of the AASHTO Committee on Bridges and Structures where she chairs the technical committee on Construction (T-4) and serves on the technical committee for Software and Technology (T-19). She is also a member the AASHTO Committee on Design Joint Technical Committee for Electronic Engineering Standards and of the newly formed AASHTO Joint Committee on Data Standardization. Cheryl is leading UDOT's structures digital delivery initiative.

Daniel Jensen, Michael Baker (Designer)

Daniel has 8 years of experience designing and leading various types of structures for multiple DOT's. Through his career he has been involved in many different project types including Traditional, Design-build, CMGC, and has been instrumental in helping deliver several models as the contract document projects with Utah DOT, including I-80 Blackrock, 5600 W and I-84 and I-696 over the Rouge River for Michigan DOT. His experience has given him proficiency in the design of steel and concrete bridges, culverts, sign structures, retaining walls and the load rating of applicable structures. In addition, Daniel has also been involved in developing BIM processes and standards for design and submittal for UDOT, MDOT and MnDOT. His understanding of UDOT design and workflows has been proven by the success of the various projects he has been a part of. Daniel has a Bachelors and Masters in Civil Engineering from Utah State University and is a Licensed Professional Engineer in the State of Utah, Idaho and Montana.

Scott Fernald, Granite Construction Technology Manager (Contractor)

Scott Fernald has enjoyed a 23-year career in the construction industry and has worked for Granite Construction for the past 20-years. Scott started his career with Granite as a project engineer and later as a project manager. He currently works as a construction manager responsible for asphalt paving operations for the Utah Region. Also known for having a strong passion around technology, Scott also works in the role of Construction Technology Manger for the Utah Region helping to advance efforts related to construction technology and just trying to “make things better”. Having benefitted from many mentors throughout his career, Scott is always willing to share what he has learned to hopefully “pay it forward” to the next generation. Scott also has a strong passion around workforce development and believes that we need to do all we can to make construction “cool again” in order to attract more people into the industry.

Kaleb Nelson, Project Engineering Consultants (Inspector)

Kaleb has been with Consor for over three years. Prior to working for Consor, Kaleb worked as a construction inspector for Ogden City. This experience has given Kaleb a strong background in roadway construction as well as interaction with the public. Recently, Kaleb worked on the Vine Street Reconstruction project in Murray City. He worked alongside both UDOT and Murray representatives to achieve the best results in a constantly changing environment. This job required inspection and testing of earth work, asphalt pavement, and utilities, including a new storm drain system. Currently, Kaleb is working on the SR-172; SR-201 to I-80 project. He is working closely with the construction team to ensure all testing requirements are being achieved. This includes rebar inspection, concrete testing, PCCP concrete testing, all drainage inspection, density testing, and other general inspection. Kaleb also oversees the SWPPP inspections, and tracks pay quantities on the project. Through this project Kaleb has become an expert in MBDC 3D project inspections and has helped provide valuable lessons learned to UDOT.

Andy Stone, Vice President, United Contractors

Andy is a graduate of Iowa State University with a degree in Civil Engineering and a licensed Professional Engineer in the state of Iowa. Andy started his career working for Edward Kraemer and Sons in St. Louis, MO and moved back to Iowa in 2005 to work for United Contractors on the I-235 projects. Since 2005, Andy has been a part of bridge projects large and small with United and an active member of AGC of Iowa, serving on the Technical Specifications Committee as well as the Board of Directors.

Mark Freier, Assistant General Manager, Godbersen-Smith Construction

Mark has been with Godbersen-Smith Construction for 27 years in project management, estimating, and engineering. Prior to working for Godbersen-Smith, Mark worked in the Sac County Iowa Engineers office and the Iowa DOT in Bridge Design. Mark graduated from Iowa State University in Civil Engineering and lives in Lake View, IA.

Dan Cramer, President, Cramer & Associates

Dan has worked as a bridge contractor for Cramer and Associates over 40 years. He is currently President of Cramer and Associates, and President of AGC of Iowa.

Sean Connor, Structural Engineer, HR Green

Sean earned his BS degree in Civil Engineering and ME degree in Structural Engineering from the Iowa State University and has 9 years of experience as a structural engineer in the transportation field. He is currently a Lead Engineer in HR Green’s Des Moines office and was the engineer of record for the I-80 over Sugar Creek bridge project.

Tony Bower, Senior Structural Engineer

Tony serves as the Bridge Department Manager for Iowa in the Stanley Consultants' Des Moines office. He also serves as a Senior Project Manager working with the Iowa DOT as well as other local municipalities. As part of those roles, he has helped Stanley Consultants develop their 3D modeling capabilities for bridges and other structures by utilizing OpenBridge Designer on many projects. He graduated from Iowa State in 2004 and joined Stanley Consultants in 2014.

Jamie Wahl, Principal Designer, Stanley Consultants

With 23 years' experience, Jamie Wahl serves as a Multidisciplinary Principal Designer at Stanley Consultants where he leads modeling tasks of different scopes and sizes for both roadway and structures in the Transportation Market. Jamie also serves as an Adjunct Instructor at DMACC teaching Introduction to MicroStation, Road Design using OpenRoads Designer, and Structural Detailing and Modeling using OpenBridge Designer and MicroStation 3D modeling.

Grant Schmitz, Bridge Engineer, HDR

Grant Schmitz is a Bridge Engineer in HDR's Des Moines office. He has nine years of experience in bridge design, modeling, and inspection work. Grant has been heavily involved with BIM for Bridges and Structures over the past five years. His work assisting with the development of the I-80/I-380 bridge BIM models led to one of the nation's first 3D BIM deliverables for a Design-Bid-Build contract. Since then, he has been involved with a number of other state and national initiatives to enhance BIM usage.

Anne Duffield, President, Mid States Rebar and Supply

Anne Duffield is President of MID STATES REBAR AND SUPPLY INC. - she built an excellent 30-year reputation within the state of Iowa's DBE program as a Contractor, Manufacturer, Supplier. In 2016 Anne decided to build a state-of-the-art Fabrication facility. Anne became one of two female rebar Fabrication facilities in the country and is located in Atkins, Iowa off Highway 30. MSRS, in a short time, has expanded licenses as a DBE Supplier/Manufacturer into 11 states and is now a contender in the Midwest as an independent fabricating facility doing Epoxy, Plain and Stainless Reinforcing Steel. Mid States Rebar and Supply received the IOWA Department of Transportation's DBE Manufacturer/Supplier of the Year award in 2021 and Anne currently Serves on the State of Iowa's DBE Advisory committee. Anne is also an active member of CRSI and AGC of Iowa.

Travis Shelton, Director of CAD Products and Services, aSa

Travis Shelton has been in the reinforcing steel industry for more than 24 years. He began working in an engineering department as a rebar detailer for one of the largest reinforcing suppliers in North America. In his 20+ years with the company, Travis gained experience in detailing, estimating, scheduling, project management and production. Travis was the Regional Engineering Manager for the Florida region for 10 years before making the switch to aSa. He is an active member of several CRSI technical committees, including Engineering Practice, Reinforcing Bar Detailing, Placing Reinforcing Bars, Bar Supports, Reinforcing Bar Fabrication, and Safety. Travis is also a member of the American Concrete Institute and Precast/Prestressed Concrete Institute.

Brad Dillman, P.E., Vice President of Engineering & Estimating, High Steel Structures

Brad Dillman is the Vice President of Engineering & Estimating at High Steel Structures, a structural steel fabricator based in Lancaster, PA. Brad is responsible for leading and directing the company's estimating efforts as well as the development of shop drawings and data for fabrication. Prior to joining the High Companies, Brad worked at Modjeski and Masters as a structural bridge engineer for over 13 years. Brad has Bachelor of Science degrees in Civil Engineering and Architectural Engineering from Drexel University and a Master's Degree in Engineering Science from the Pennsylvania State University.

Adam DeMargel, Stupp Bridge Company

Adam DeMargel is the Senior Vice President - Sales for Stupp Bridge Company, where he is responsible for Sales, Marketing and Project Management. In the 20+ years that Adam has worked for the Stupp organization, he has sold and worked on plate girder bridge projects large and small located throughout the Midwest and Southeastern United States, including the I-80/I29 Interchange Projects in Pottawattamie County, IA, the Ohio River Bridges Design Build Project in Louisville, KY and the Valley View Design Build Bridge in Cleveland, OH. In addition to his duties at Stupp Bridge Company, Adam is a member of the NSBA Market Development Committee. Adam earned a BSBA from the University of Missouri and an MBA from Washington University in St. Louis.

Josh Doughan, Vice President, McClure Engineering

Josh Doughan is a Vice President for McClure Engineering Company and is in charge of the firm's Survey Team and all associated resources. McClure's Survey Team is comprised of over 50 team members and more than 20 survey crews dedicated to providing Survey Services all over the Midwest. Josh's experience of more than 20 years is focused largely in the Construction arena, with a focus on technology including terrestrial scanning, mobile mapping, and drone technology. Through investment in a talented workforce and the latest technology, McClure continues to push the limits of what surveyors can contribute to project success. McClure's Survey Team has provided Construction Survey Services on hundreds of projects throughout the State of Iowa over the last decade, including some of the largest and most complex bridges and structures built during that time period.

Curtis Carter, Iowa DOT Senior Structural Engineer

Curtis has been with Iowa DOT for over 12 years, serving about half that time as a structural design engineer, and the other half as a construction engineering and contract administration specialist. Prior to Curtis joining the DOT, he spent several years working for consultants in the fields of geotechnical engineering and construction inspection. He received his BS Civil Engineering degree at the University of Nebraska and is a graduate of Iowa's Certified Public Manager program.

Cedric Wilkinson, Iowa DOT Senior Engineering Technician

Cedric started with the Iowa DOT in 1994 and works as the project manager for the Davenport RCE office. Cedric has worked on all aspects of highway and bridge construction inspection including survey over the years. Cedric led a Construction Survey user group for the Iowa DOT for 10 years. Cedric is also on several teams that are leading the charge for innovation that include e-ticketing, Iowa DOT AASHTO Construction Core Team, AASHTO Construction TRT member and Digital construction.

Moderator - Alexa Mitchell, HDR

Alexa has a B.S. in Civil Engineering from the University of Missouri and is a registered professional engineer in Arizona and Missouri. She started her career at the Missouri Department of Transportation, during her tenure, she worked as a senior highway designer, construction inspector and automation engineer. She pioneered the implementation of 3D models for construction, electronic plans and 3D survey technologies. During the last six years, Alexa has been engaged in several national studies and strategic activities to help advance BIM and Model-based Digital Delivery, including her work with TRB, State DOTs and the AASHTO Joint Technical Committee on Electronic Standards. As a BIM consultant, Alexa has helped develop modeling standards and best practices, and contract language to align with model-based deliverables.

Jim Hauber, Chief Structural Engineer, Iowa DOT

James Hauber is a graduate of Iowa State University with a degree in Civil Engineering. He is a licensed Professional Engineer in the state of Iowa. He has been working in the Office of Bridges and Structures at the Iowa Department of Transportation for the past 22 years. He worked as a bridge designer for 10 years, Bridge Management Engineer for 2 years and Load Rating Engineer for 9 years before becoming the Chief Structural Engineer. Jim is a member of the AASHTO CBS Technical Committee on Software and Technology (T-19) and is the Iowa DOT BIM for Bridges and Structures Pooled Fund Project Manager.

Will Sharp, Director of Highways, HDR

Will Sharp is HDR's Director of Highway's and is the buildingSMART USA Roadway and Bridges Industry Committee Chair. He has 35 years of experience in highway planning and design and is actively involved in many US national BIM for Infrastructure industry efforts including the AASHTO Joint Technical Committee on Electronic Engineering Standards, the five-year AASHTO BIM for Bridges and Structures Transportation Pooled Fund, the National Institute of Building Sciences (NIBS) U.S. National BIM Program Steering Committee, and the American Road & Transportation Builders Association Innovation and Technology Forum.